

ControlTech



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A ROCKWELL AUTOMATION PARTNER

PRŮMYSLOVÉ A EDUKATIVNÍ ROBOTY

VLADYKA PAVEL



DOBOT

PRŮMYSLOVÉ A EDUKATIVNÍ ROBOTY



**DO
OUR
BEST
OF
TECHNOLOGY**



DOBOT

PRŮMYSLOVÉ A EDUKATIVNÍ ROBOTY

**DO
OUR
BEST
OF
TECHNOLOGY**



ControlTech NEWS 2021

Ve spolupráci s: **Rockwell Automation**

NOVINKY | APLIKACE | INOVACE

- Condition monitoring DYNAMIX™ 1444
- ControlLogix® 5580 a redundance V33
- 1783-CSP CIP Security™ Proxy
- Elektronické ochrany E100
- FactoryTalk® View SE V12
- Dobot MG400
- Lidary Swift E



DOBOT

DOBOT CR5

ROBOTA PRACOVAT NAUČTE
jednoduše i bez programování



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CR5



5 kg

1096 mm

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DOBOT

CR3



3 kg

795 mm

CR5



5 kg

1096 mm

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DOBOT

CR3



3 kg
795 mm

CR5



5 kg
1096 mm

CR10



10 kg
1525 mm

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CR16



16 kg

1223 mm

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NEUTRÁCEJTE ZA TEACH PENDANT



POUŽÍVEJTE TABLET

doporučíme Vám tablet, kterým můžete robota ovládat



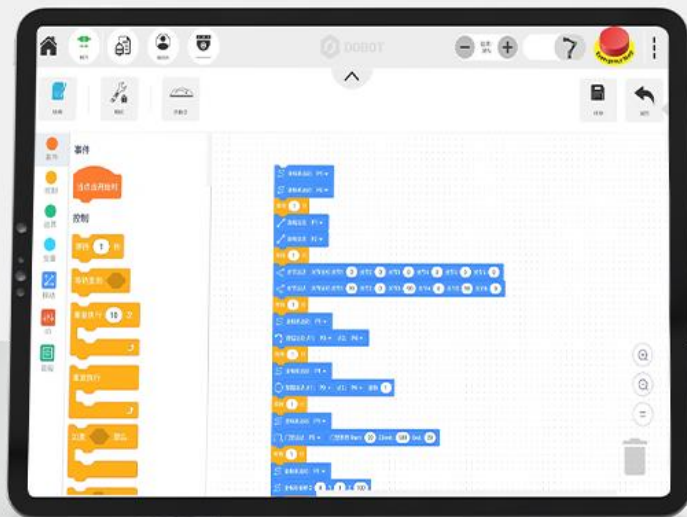
DOBOT



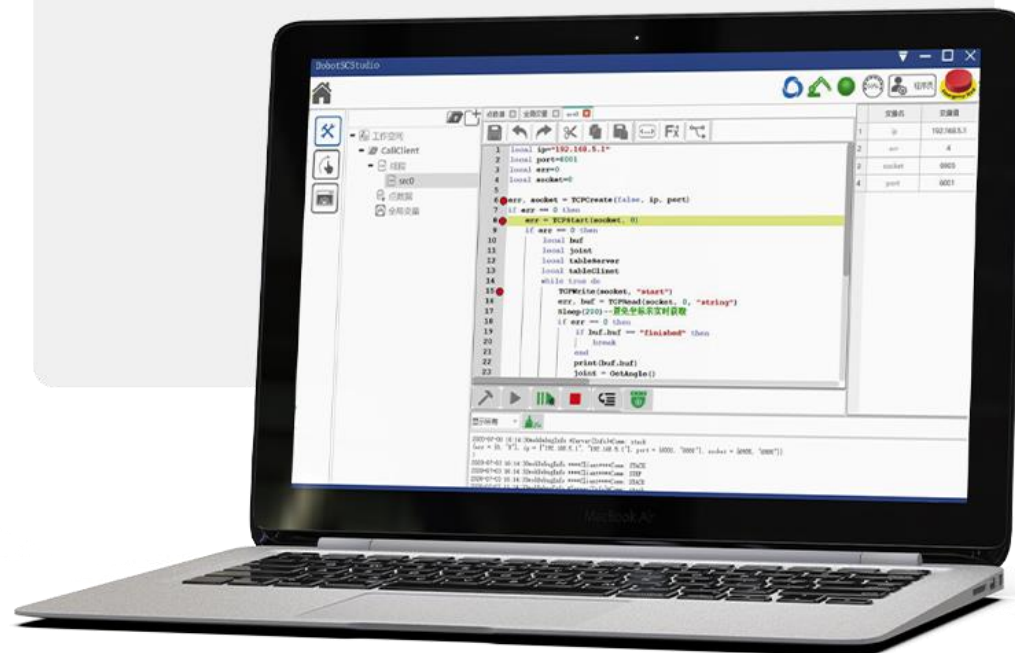


DOBOT

CR Studio



DOBOT SCStudio



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User: 0
Tool: 0
Coordinate...

JOG Joint Unit: °

J1	-72,362	X	-25,059
J2	16,4223	Y	-377,50
J3	-104,70	Z	459,957
J4	-3,3128	Rx	-176,97
J5	92,6137	Ry	0,4579
J6	-112,79	Rz	-49,595

R: -1 D: -1 N: -1

J1- J1+
J2- J2+
J3- J3+
J4- J4+
J5- J5+
J6- J6+

```
1  --WARNING!: Please keep enough room for the CR5 arm to move
2  Accel(100)  --Set the "Go MoveJ GoR MoveJR" command accelerat
3  Speed(100)  --Set the "Go MoveJ GoR MoveJR" command speed rat
4  AccelS(100) --Set the "Move Arc3 Circle3 MoveR Jump" accelera
5  SpeedS(100) --Set the "Move Arc3 Circle3 MoveR Jump" command
6  CP(100)     --Sets the smoothness of all movement instructio
7  --Example: Speed parameters can be changed to observe the mot
8  --An infinite loop
9  for i=1,10 do
10 Go (P1)
11 Go (P2)
12 Move (P1)
13 Move (P2)
14 end
15 while true do
16 print("Please set the first DI signal high")
17 if DI(1)==1 then
18 DO(1,ON)--The first IO signal output
19 Wait(2000)--Script waits for 3s
20 DO(2,ON)--The second IO signal output
21 Wait(2000)
22 DO(1,OFF)--The first IO signal is off
23 Wait(2000)
24 DO(2,OFF)--The second IO signal is off
25 Wait(2000)
26 break
27 end
28 end
```

Workspace

- Functional in...
- thread
- src0
- point
- global

IO

- MOVE
 - CP
 - Arch
 - Speed
 - LimZ
 - SpeedS
 - Accel
 - AccelS
 - Go
 - MoveJ
 - Move
 - Arc3
 - Jump
 - Circle3
 - GetPose
 - GetAngle
- Modbus
- Process
- Relative MOVE
- System
- TCP/UDP

2021-03-13 12:47:37 User Operation: robot connected!
2021-03-13 12:51:08 User Operation: Robot state Changed: enable
2021-03-13 12:52:02 User Operation: open project: Functional instruction
2021-03-13 12:52:02 User Operation: autoManual Changed: manual
2021-03-13 12:52:02 User Operation: Robot state Changed: enable



User: 0
 Tool: 0 Coordinate...

JOG Joint Unit: °

J1	-72,362	X	-25,059
J2	16,4223	Y	-377,50
J3	-104,70	Z	459,957
J4	-3,3128	Rx	-176,97
J5	92,6137	Ry	0,4579
J6	-112,79	Rz	-49,595

R: -1 D: -1 N: -1

J1- J1+
 J2- J2+
 J3- J3+
 J4- J4+
 J5- J5+
 J6- J6+

CurrentProject: test1

Control

- Events
- Control
 - wait 1 seconds
 - wait until
 - repeat 10
 - forever
- Operators
- Variables
- Move
- IO
- Modbus
- TCP

```

When start button clicked
  repeat 15
    line move P1
    line move P2
    line move P3
  set digital output tool DO 1 OFF

Move
  line move InitialPose
  joint move
  coordinate move InitialPose
  line offset move X 30 Y 0 Z
  joint offset move joint1 30 joint2
  coordinate offset move X 30 Y

TCP
  open SOCKET IP: 192.168.5.10 port:
  get open SOCKET result
  create SOCKET IP: 192.168.5.1 port:
  get create SOCKET result
  close SOCKET
  get variable type: string name:
  SOCKET send variable
  get SOCKET send result

IO
  set digital output controller DI
  wait digital input controller DI
  set analog output 1 to 1
  digital input controller DI 1
  get analog input controller DI 0

Modbus
  get input register address 0 type U1
  get holding register address 0 type
  get discrete input register address 0
  get coils register address 0
  
```

New
 Save
 SaveAs
 Open
 Point

▶
 ■



DOBOT



SMC®



Magnetická úchopná hlavice | SMC
smc.eu



MHS3, Úchopná hlavice, 3 čeli...
smc.eu



MDHR2, Úchopná hlavice, 2 čeli...
smc.eu



MHC2, Úchopná hlavice, 2 čeli...
smc.eu



MHS3, Úchopná hlavice, 3 čeli...
smc.eu



MHS4, Úchopná hlavice, 4 čelist...
smc.eu



JMZH2, Úchopná hlavice, parale...
smc.eu



MHZA2, Úchopná hlavice, 2 čeli...
smc.eu



MHS3-X6708, Úchopná hlavice...
smc.eu



JMZH2-X7400B, Úchopná hlav...
smc.eu



MHS2, Úchopná hlavice, 2 čelis...
smc.eu



MDHR3, Úchopná hlavice, 3 čelis...
smc.eu



MHT2, Úchopná hlavice, 2 čelist...
smc.eu



MHZAJ2, Úchopná hlavice, 2 čeli...
smc.eu



MHR3, Úchopná hlavice, 3 čelisti...
smc.eu



MHY2, Úchopná hlavice, 2 čelisti...
smc.eu



MHZ2, Úchopná hlavice, 2 čelisti...
smc.eu



MHL2, Úchopná hlavice, 2 čelisti...
smc.eu



LEHS, Elektrická paralelní úchop...
smc.eu



LEHF
smc.eu



MHW2, Úchopná hlavice, 2 čelist...
smc.eu



Robotické aplikace | SMC
smc.eu



MHF2-F, Úchopná hlavice, 2 čelis...
smc.eu



Úchopná hlavice, 2 čelisti, průměr 25mm, z...
eshop.technoline.cz



MHL2-X6110, Úchopná hlavice, ...
smc.eu



Nové prvky 2020 | SMC
smc.eu



DOBOT

VAKUUM
technik





DOBOT



Robotiq
Gripper



Schunk
Gripper



Onrobot
Gripper



SIASUN
Gripper



DH-Robotics
Gripper



Rochu
Gripper



HITOBOT
Gripper



SRT
Gripper



Robotiq
Sensor



Onrobot
Sensor



LINKTOUCH
Sensor



ATI
Sensor



COGENEX
Vision



MICROSCAN
Vision



Hikvision
Vision



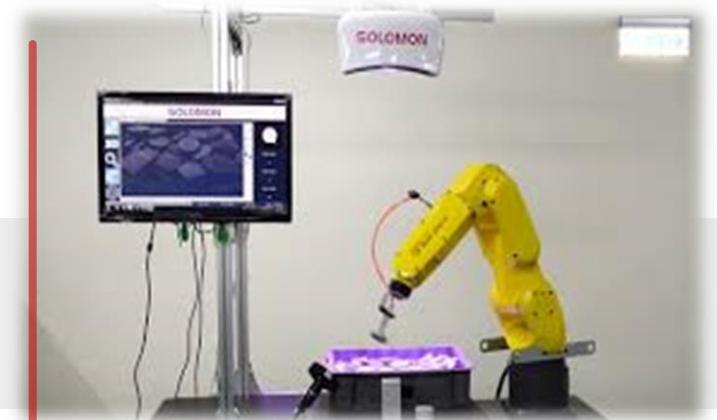
Hikvision
Vision



- Taipei, Taiwan
- Založeno 1973

SOLOMON

2D a 3D stojové vidění pro roboty





YKK



DB SCHENKER



adidas



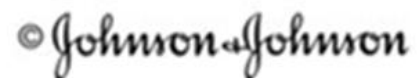
Pfizer



CJ
LOGISTICS



NIKE



Johnson & Johnson



mergon



Valeo



IDEC



3M



SIEMENS



chassix



ZODIAC
AEROSPACE



TOYOTA TSUSHO



TATA



DENSO



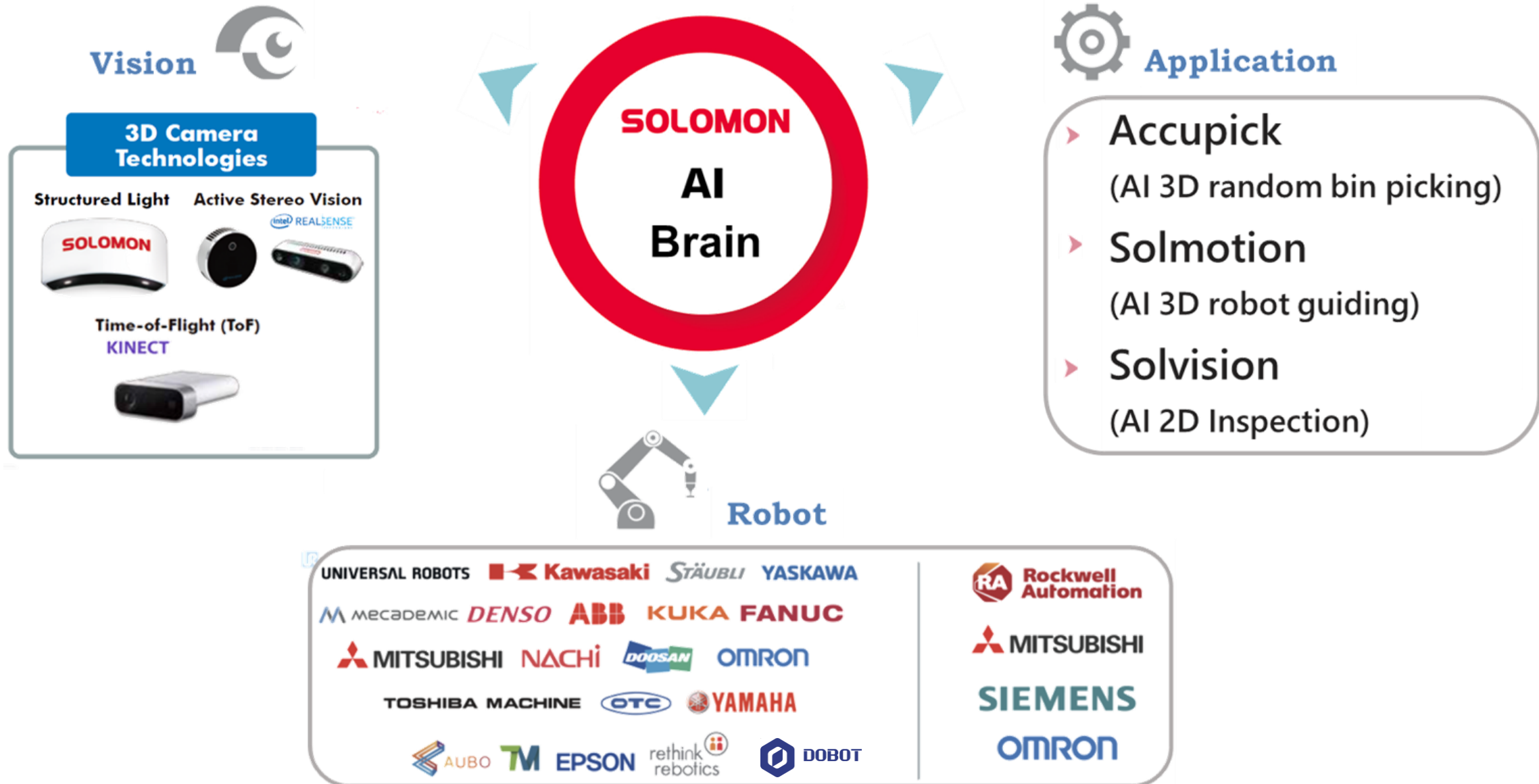
FUSHENG



JOHN DEERE



LUOZUI
國瑞汽車



AccuPick 3D



Solmotion



Solvision



Solscan





**SOLOMON
Camera**



**Intel RealSense
Depth Camera**



**Microsoft
Azure Kinect**

AccuPick 3D

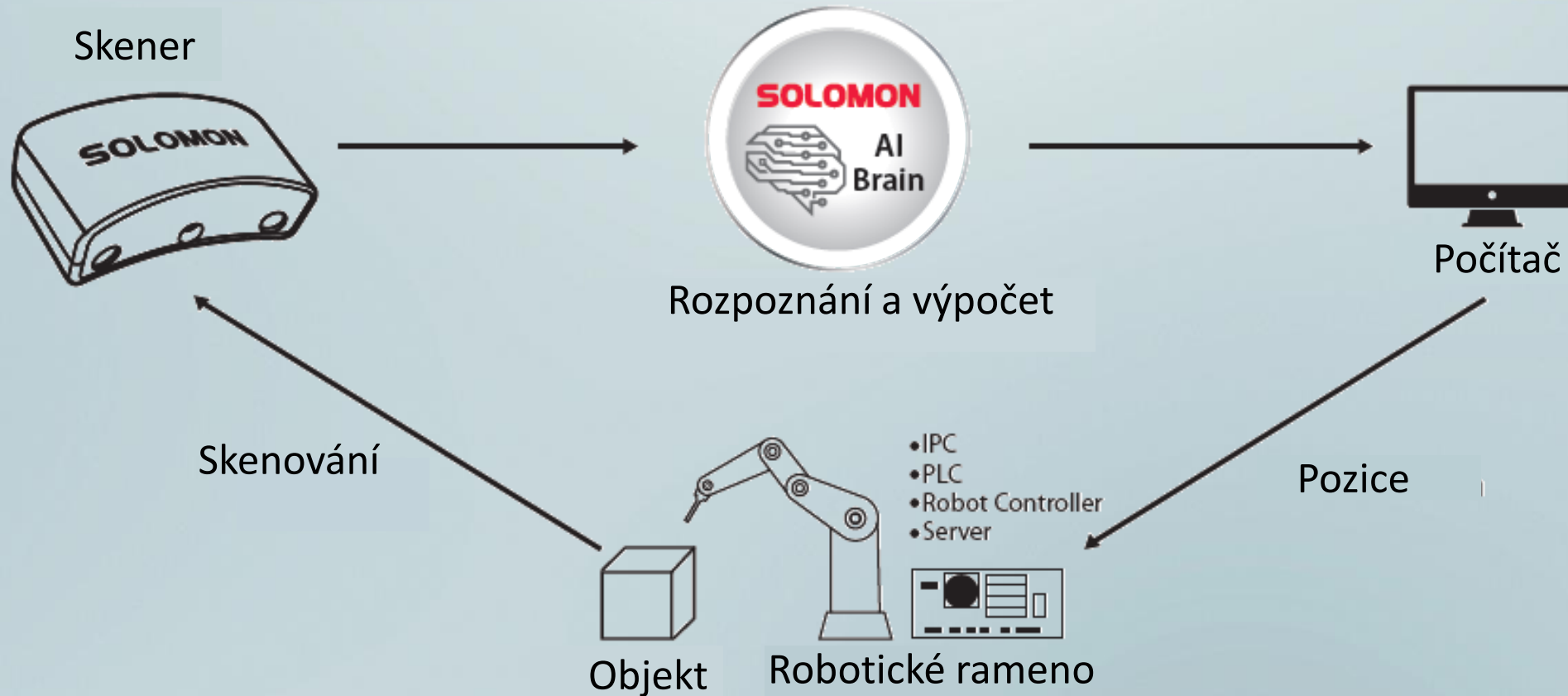


AccuPick



Rychlý • Spolehlivý • Jednoduchý • Univerzální

reddot winner 2020
best of the best interface design





Snímání



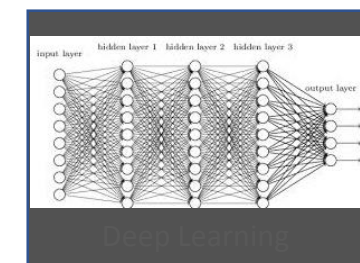
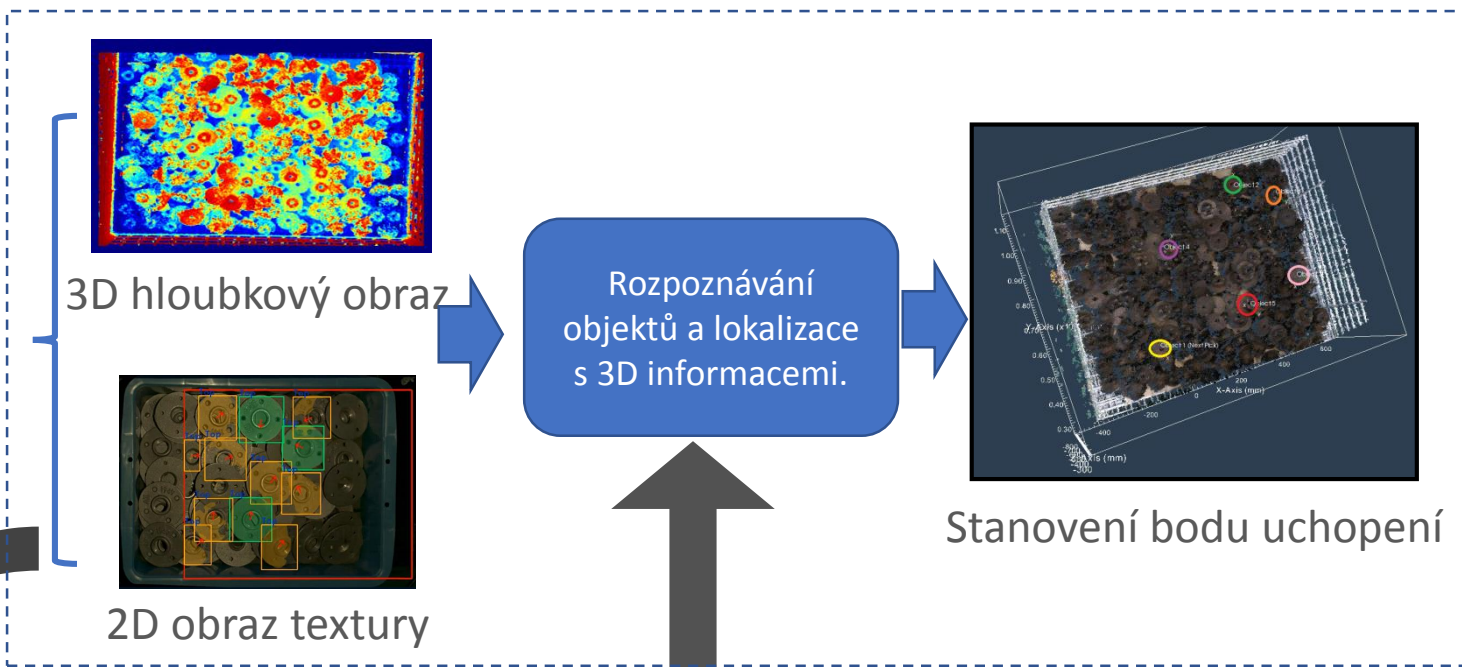
Rozpoznání a lokalizace



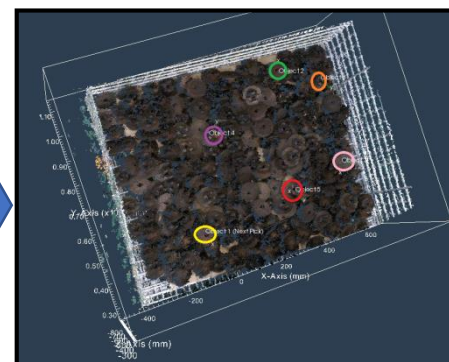
Pick-and-place
operace



3D Skener



Rozpoznání „super“modelu

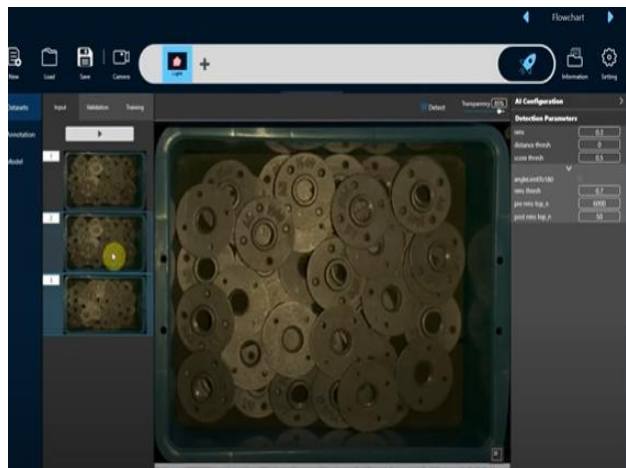


Stanovení bodu uchopení

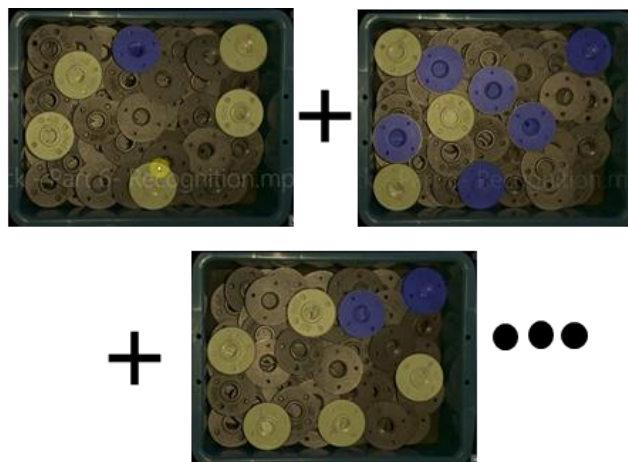


Robot Pick & Drop

2D



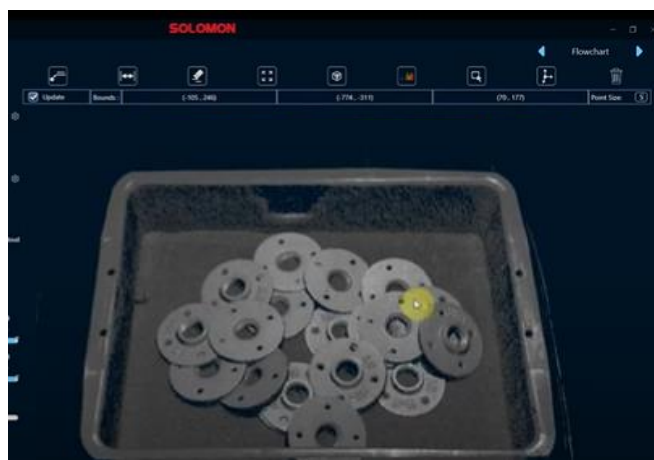
Pořízení 2D obrazu



Rozpoznávání a segmentace



3D



Získání 3D bodového cloudu



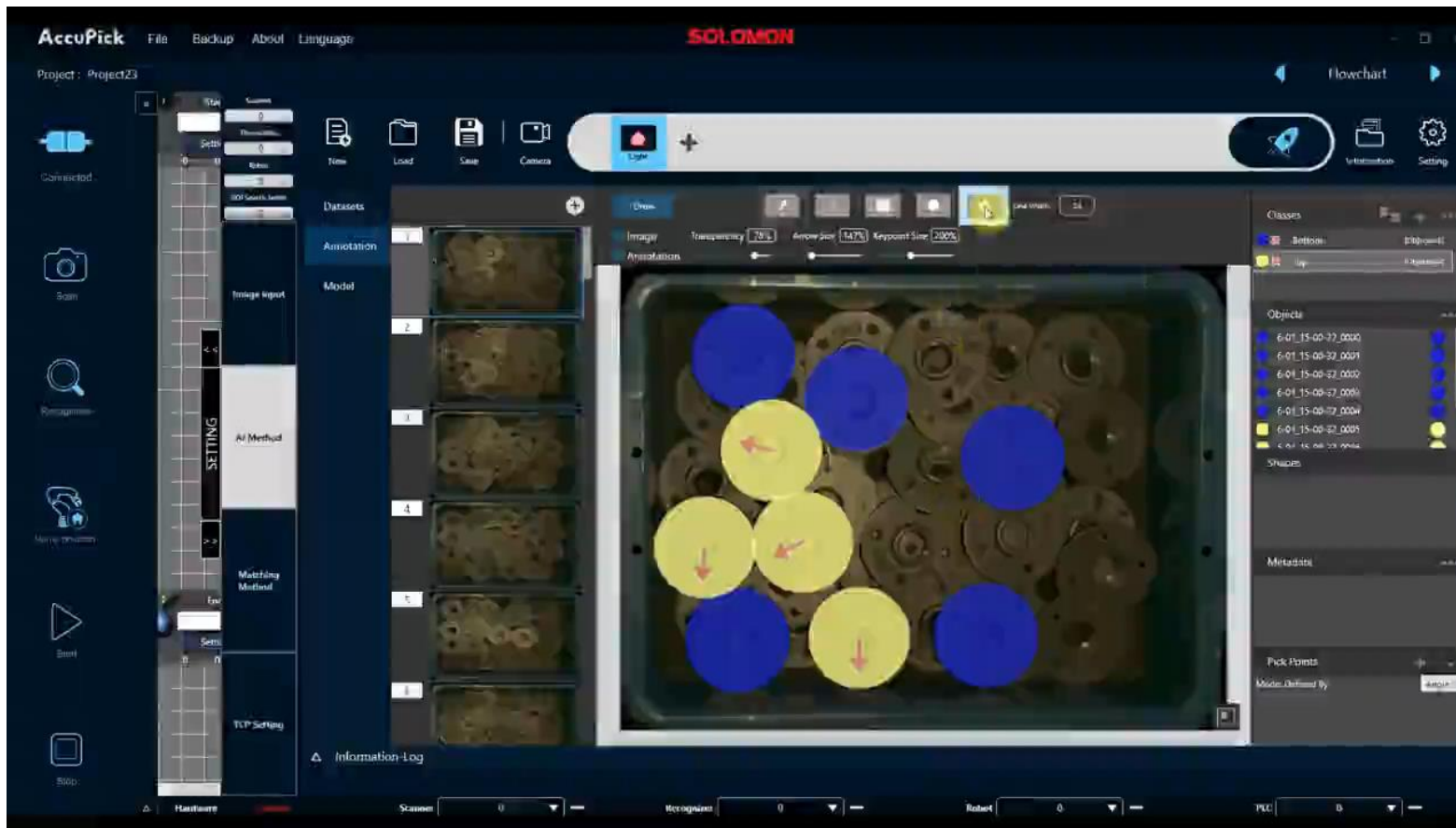
Přizpůsobení geometrického vzoru



Výběr kusu a definice bodů uchopení.



AI Based Localization



- Funkce označování vybavená různými nástroji pro kreslení tvarů
- Úhel uchopení může být definován šipkou
- Nástroj pro automatické označování objektů, které vyžadují testování
- Podle potřeby zákazníka lze uspořádat a přidat různé nástroje pro deep-learning



 DOBOT

 DOBOT
Shake Hands With The Future



DOBOT

MG400



Nosnost	500 g / 750 g
Dosah	440 mm
Opakovateľnosť	±0.05 mm
Komunikace	TCP/IP, MODBUS
Hmotnosť	8 kg
Základňa	190 x 190 mm

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MG400

Nosnost	500 g / 750 g
Dosah	440 mm
Opakovateľnosť	±0.05 mm
Komunikace	TCP/IP, MODBUS
Hmotnosť	8 kg
Základňa	190 x 190 mm



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Kompaktní provedení se snadným přístupem a obsluhou

Enkodér - 1x

USB 2.0 - 2x

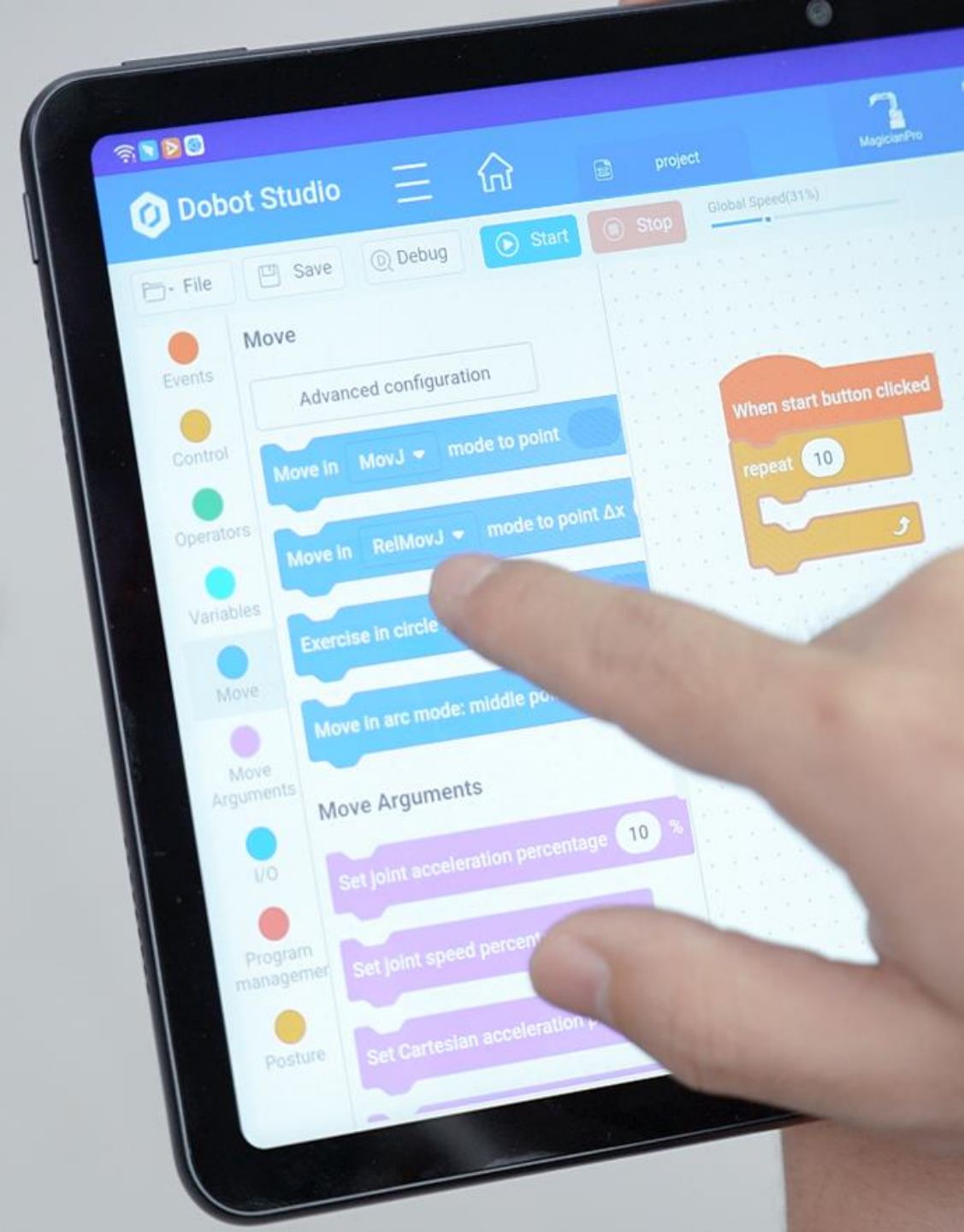
Ethernet - 2x

Pneumatika - 1x

Digitální vstupy - 16x

Digitální výstupy - 16x





MG400

programování

FORMOU UČENÍ

bez znalosti programovacích jazyků

INTUITIVNÍ GRAFICKÉ PROGRAMOVÁNÍ

bez znalosti přesné syntaxe

STANDARNÍ PROGRAMOVÁNÍ

pomocí skriptů LUA



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Welcome to DobotStudio2020

- Brand new user interface
- Easy to use and user friendly
- More Dobot products will be supported

VERSION: 1.1.0-stable.202102091847
Please email to pm@dobot.cc if you have any suggestions.

Recent Projects

Test_LUA_001	2021-02-24 09:03:28
script_Test_LUA_001	
TEST_TaP_001	2021-02-24 09:02:30
playback_TEST_TaP_001	
test002_mata	2021-02-20 14:40:42
blockly_test002_mata	
test_sc_001	2021-02-19 08:30:12
blockly_test_sc_001	

Teach & Playback

DobotBlockly

Script

Remote Control

Directive Type

Variable List

Main

Motion

- move to
- cartesian speed
- joint speed
- CP
- sync
- DO
- DOInstance
- Logic
- if/else
- wait
- loop

var_name =

Number

Text

Variable

Joint J1: J2:
J3: J4:

Cartesian X: Y: Z:
R:

Add

Body I/O

Digital input name

DI_01	<input type="checkbox"/>	DI_09	<input type="checkbox"/>
DI_02	<input type="checkbox"/>	DI_10	<input type="checkbox"/>
DI_03	<input type="checkbox"/>	DI_11	<input type="checkbox"/>
DI_04	<input type="checkbox"/>	DI_12	<input type="checkbox"/>
DI_05	<input type="checkbox"/>	DI_13	<input type="checkbox"/>
DI_06	<input type="checkbox"/>	DI_14	<input type="checkbox"/>
DI_07	<input type="checkbox"/>	DI_15	<input type="checkbox"/>
DI_08	<input type="checkbox"/>	DI_16	<input type="checkbox"/>

Digital output name

DO_01	OFF	ON	DO_09	OFF	ON
DO_02	OFF	ON	DO_10	OFF	ON
DO_03	OFF	ON	DO_11	OFF	ON
DO_04	OFF	ON	DO_12	OFF	ON
DO_05	OFF	ON	DO_13	OFF	ON
DO_06	OFF	ON	DO_14	OFF	ON
DO_07	OFF	ON	DO_15	OFF	ON
DO_08	OFF	ON	DO_16	OFF	ON

End I/O

Digital input name

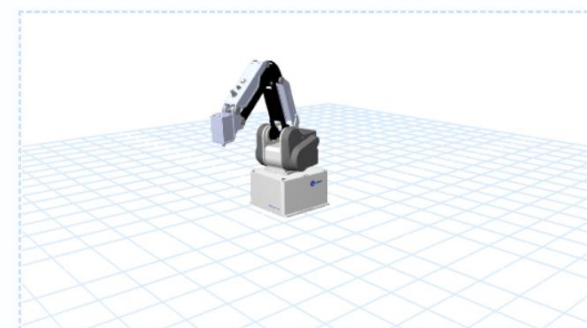
DI_17	<input type="checkbox"/>	DI_18	<input type="checkbox"/>
-------	--------------------------	-------	--------------------------

Digital output name

DO_17	OFF	ON	DO_18	OFF	ON
-------	-----	----	-------	-----	----

User Frame 0

Tool Frame 0



Mode

Jog

Step

Inch

0.1	1	5	10
-----	---	---	----

X 282.14
Y 68.48
Z 27.96
R 116.70



J1 13.64
J2 10.36
J3 31.40
J4 103.06



File Save Undo Redo Debug Start Stop

Directive Type

Motion

move to

cartesian speed

joint speed

CP

sync

DO

DOInstance

Logic

if/else

wait

loop

set variable

Movement type

MovJ MovL Jump JointMovJ

RelMovJ RelMovL Arc Circle



Parameter Config

Coordinates of point P: InitialPose Customize

Raise height h1 10 mm

Descent height h2 20 mm

Max height z_limit 100 mm

Advanced setting

Speed Accel CP

Add

Main

move to Jump P1 (Start=10, ZLimit=100, End=20)

DO DO_01 1

move to Jump P2 (Start=10, ZLimit=100, End=20)

DO DO_01 0

move to Jump InitialPose (Start=10, ZLimit=100, End=20)

Points

Name	User	Tool	X	Y	Z	R
InitialPose	0	0	350	0	0	0
P1	0	0	259.94	114.27	-96.01	23.709
P2	0	0	259.35	-261.6	-96.23	22.625
P3	0	0	263.51	160.10	-96.14	31.262

Add

File Save Undo Redo

Directive Type

- Motion
 - move to
 - cartesian speed
 - joint speed
- CP
- sync
- DO
- DOInstance
- Logic
 - if/else
 - wait
 - loop
 - set variable

Movement type

- MovJ
- MovL
- Jump
- JointMovJ
- RelMovJ
- RelMovL
- Arc
- Circle



Parameter Config

Coordinates of point P: InitialPose Custom

Raise height h1: 10 mm

Descent height h2: 20 mm

Max height z_limit: 100 mm

Advanced setting

- Speed
- Accel
- CP

Add

Directive Type

- Motion
 - move to
 - cartesian speed
 - joint speed
 - CP
 - sync
 - DO
 - DOInstance
- Logic
 - if/else
 - wait
 - loop
 - set variable

Movement type

- MovJ
- MovL
- Jump
- JointMovJ
- RelMovJ
- RelMovL
- Arc
- Circle



Parameter Config

Coordinates of point P: InitialPose Custom

Raise height h1: 10 mm

Descent height h2: 20 mm

Max height z_limit: 100 mm

Advanced setting

- Speed
- Accel
- CP

Control

User	Tool	X	Y	Z	R
0	0	350	0	0	0
0	0	259.94	114.27	-96.01	23.709
0	0	259.35	-261.6	-96.23	22.625
0	0	263.51	160.10	-96.14	31.262

- Control
- Points
- I/O

Add

Directive Type

Motion

- move to
- cartesian speed
- joint speed
- CP
- sync

DO

DOInstance

Logic

- if/else
- wait
- loop
- set variable

DO_01 = OFF

DO_01 = OFF

DO_01 = OFF

DO_01 = OFF

DO_01 = OFF

DO_01 = OFF

+

Directive Type

Motion

- move to
- cartesian speed
- joint speed
- CP
- sync

DO

DOInstance

Logic

- if/else
- wait
- loop
- set variable

if

I/O DI_01 == 0

Variable var_name == 0

else if

I/O DI_01 == 1

Variable var_name == 0

else if

I/O DI_01 == 1

Variable var_name == 0

+ else if

else

Directive Type

Motion

- move to
- cartesian speed
- joint speed
- CP
- sync

DO

DOInstance

Logic

- if/else
- wait
- loop
- set variable

Variable List

var_name =

Number 0

Text input text here

Variable var_name

Joint J1 20 J2 20 J3 20 J4 0

Cartesian X 20 Y 20 0 Z 20 R 20 0

- Events
- Control
- Operators
- Variables
- Move
- Move Arguments
- I/O
- Program manager
- Posture

Events

When start button clicked

Control

wait 1 seconds

wait until

repeat 10

forever

if then

if then else

repeat until

Operators

+ - * / <

```

When start button clicked
  set joint acceleration percentage 100 %
  set joint speed percentage 100 %
  Move in MovJ mode to point Point P1
  Move in MovJ mode to point Point P2
  set the status of digital output DO_01 to ON
  Instruction pause time 100 ms
  Move in Jump mode to point Point P3 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to OFF
  Instruction pause time 100 ms
  Move in Jump mode to point Point P4 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to ON
  Instruction pause time 100 ms
  Move in Jump mode to point Point P5 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to OFF
  Instruction pause time 100 ms
  Move in Jump mode to point Point P6 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to ON
  Instruction pause time 100 ms
  Move in Jump mode to point Point P7 Raise height h1 10 mm DDescent height h2 10 mm MMax height z_limit mm
  set the status of digital output DO_01 to OFF
  Instruction pause time 100 ms
  Move in MovJ mode to point Point P9
  
```

Name	User	Tool	X	Y	Z	R
InitialPose	0	0	350	0	0	0
P1	0	0	284.07	118.21	-40.32	206.96
P2	0	0	286.16	112.94	-94.17	206.64
P3	0	0	274.58	-198.6	-95.54	207.66
P4	0	0	288.49	155.54	-94.78	214.66
P5	0	0	276.29	-198.6	-38.04	214.98
P6	0	0	293.72	199.93	-94.32	206.39
P7	0	0	277.91	-197.0	20.636	206.73
P8	0	0	293.77	115.06	-38.94	208.45
P9	0	0	277.91	-197.0	70.616	206.73

Add

- Events
- Control
- Operators
- Variables
- Move
- Move Arguments
- I/O
- Program manager
- Posture

Control

- wait 1 seconds
- wait until
- repeat 10
- forever
- if then
- if then
- else
- repeat until

Operators

- + - * / < = > and or not
- join hello world
- letter 1 of world
- length of world
- hello contains world ?
- mod
- round
- abs of
- Print Hello world!

Move

Advanced configuration

- Move in MovJ mode to point
- Move in RelMovJ mode to point Δx Δy Δz ΔR
- Move in Jump mode to point Raise height h1 mm DDescent height h2 mm MMax height z_limit mm
- Move in Jump mode to point Arch parameter index 0
- Exercise in circle mode: middle point end point count 1
- Move in arc mode: middle point end point

Move Arguments

- set joint acceleration percentage 10 %
- set joint speed percentage 10 %
- set Cartesian acceleration percentage 10 %
- set Cartesian speed percentage 10 %
- set smooth transition percentage 10 %
- Stop at this point
- Set Payload Parameters: Payload g X-Offset mm Y-Offset mm Servo Index(Optional)

I/O

- Read status of digital input DI_01
- set the status of digital output DO_01 to ON
- set the status of digital output (immediate) DO_01 to ON

Program management

- Instruction pause time ms
- Blocking time ms
- get SysTime

Posture

- Gets the value of the current Cartesian position
- Gets the X value of the current Cartesian position
- Gets the value of the current joint position
- Gets the J1 value of the current joint position
- Custom Cartesian point X Y Z R User Tool
- Custom joint point J1 J2 J3 J4
- Point InitialPose
- X value of point InitialPose

- Control
- Points
- I/O

Input search text

- Motion
 - Point to point, the target point is Cartesian point (MovJ)
 - Linear Movement (MovL)
 - Point to point, the target point is Joint point (JointMovJ)
 - Jump Movement, Jump parameters can be set in this command (Jump)
 - Jump Movement, Jump parameters are called by Arch index (Jump1)
 - Move to the Cartesian offset position in a point to point mode (RelMovJ)
 - Move to the Cartesian offset position in a straight line (RelMovL)

Help Document

can double-click to insert the command with optional parameters.

CP: Continuous path rate. Value range: 0-100

SpeedJ: Velocity rate. Value range: 1 - 100

AccJ: Acceleration rate. Value range: 1 -100



```

src0.lua
global.lua
-- Version: Lua 5.4.1
1  MovJ (P1)
2  MovJ (P2)
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

```

- Param
 - Joint Acceleration (AccJ)
 - Cartesian Acceleration (AccL)
 - Joint Speed (SpeedJ)
 - Cartesian Speed (SpeedL)
 - CP (CP)
 - Synchronization (Sync)
 - Set Load Parameters (SetPayload)
- I/O
 - DI (DI)
 - DO (DO)
 - DOInstant (DOInstant)
- Util
 - Motion command waiting (Wait)

- TCP
 - Create TCP (TCPCreate)
 - Establish TCP connection (TCPStart)
 - Receive TCP data (TCPRead)
 - Send TCP data (TCPWrite)
 - Close TCP (TCPDestroy)
- UDP
 - Create UDP (UDPCreate)
 - Receive UDP data (UDPRead)
 - Send UDP data (UDPWrite)
- Modbus
 - Read the value from Modbus slave coil register address (GetCoils)
 - Set the coil register in the Modbus slave (SetCoils)

- Stack
 - Instantiate matrix pallet (MatrixPallet)
 - Instantiate teaching pallet (TeachPallet)
 - Set the next stack index which is to be operated (SetPartIndex)
 - Get the current operated stack index (GetPartIndex)
 - Set the next pallet layer index which is to be operated (SetLayerIndex)
 - Get the current pallet layer index (GetLayerIndex)
 - Reset pallet (Restet)
 - Check whether the stack assembly or dismantling is complete (IsDone)
 - Release palletizing instance (Release)
 - The robot moves from the current position to the first stack position as the configured stack assembly path (PalletMoveIn)

- Conveyer Belt
 - Set conveyer number to create a tracing queue (CnvVison)
 - Obtain status of the object (GetCnvObject)
 - Set X,Y axes offset under the set User coordinate system (SetCnvPointOffset)
 - Set time compensation (SetCnvTimeCompensation)
 - Synchronize the specified conveyor (SyncCnv)
 - Stop synchronous conveyor (StopSyncCnv)

Settings

Common

MG400

Basic

IP Configuration

Collision Detection

Firmware Download

Jump Params

Load Params

Home Calibration

Coordinate System

Specification

Device Name

Device SN DT18-2106-0009

Controller Hardware Version 2001018102

Servo Hardware Version 2001018502

Initial Position

InitialPose

X	350.000	Z	0.000	User	0
Y	0.000	R	0.000	Tool	0

Settings

Common

MG400

Basic

IP Configuration

Collision Detection

Firmware Download


Jump Params

Load Params

Home Calibration

Coordinate System

IP Configuration

 Only the IP address of LAN2 can be modified to connect external devices

IP Address - - -

Netmask - - -

Gateway - - -

Settings

Common

MG400

Basic

IP Configuration

Collision Detection

Firmware Download

Jump Params

Load Params

Home Calibration

Coordinate System

Collision Detection

Collision Detection Sensitivity

Level1

Level2

Level3

Level4

Level5

Higher level, higher sensitivity

Recovery Method After Collision Detection

Method

Automatically resume after 5s

Pause

Settings

Common

MG400

Basic

IP Configuration

Collision Detection

Firmware Download

Jump Params

Load Params

Home Calibration

Coordinate System

Controller Firmware

Current Version: 1.4.4.7.20210205171053

Controller Firmware:

Servo Firmware

Current Version: 1.0.4.0

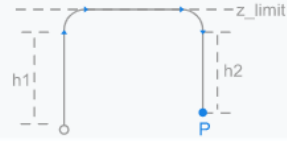
Servo Firmware:

Current Version: 3.4.14

Configuration File:

Settings

Jump parameter setting



Number	h1(mm)	h2(mm)	zLimit(mm)
0	5	50	50
1	0	0	135
2	6	24	
3	7	50	
4	7	50	
5	7	31	
6	7	50	
7	7	50	
8	7	50	
9	7	50	

Settings

Common

MG400

Basic

IP Configuration

Collision Detection

Firmware Download

Jump Params

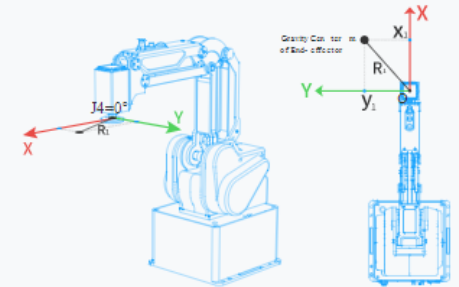
Load Params

Home Calibration

Coordinate System

Load Params

In order to ensure the smooth operation of the manipulator and avoid the phenomenon of collision detection, it is necessary to set the eccentric coordinates (x1, Y1) of the end load when the J4 axis angle is 0 degrees



Payload g

Offset-x mm

Offset-y mm

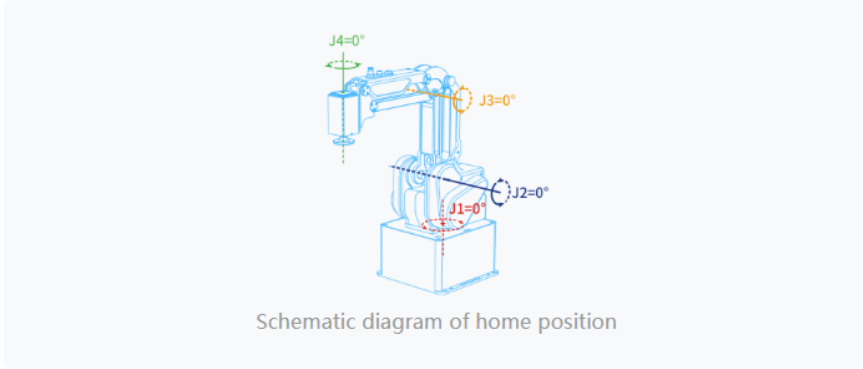
Cancel

OK

Settings

Home Calibration

⚠ Home calibration is only used when the home position changes, please operate carefully.



Please enable and move the device to the home position and click home calibration.

Home

- Common
- MG400
- Basic
- IP Configuration
- Collision Detection
- Firmware Download
- Jump Params
- Load Params
- Home Calibration
- Coordinate System

Settings

User Frame

Tool Frame

Common

copy Modify Add

MG400

Basic

IP Configuration

Collision Detection

Firmware Download

Jump Params

Load Params

Home Calibration

Coordinate System

index	X	Y	Z	R
<input type="checkbox"/> 0	0.000	0.000	0.000	0.000
<input type="checkbox"/> 1	0.000	0.000	0.000	0.000
<input type="checkbox"/> 2	123.595	43.286	0.000	0.000
<input type="checkbox"/> 3	70.063	5.412	0.000	0.000
<input type="checkbox"/> 4	0.000	0.000	0.000	0.000
<input type="checkbox"/> 5	0.000	0.000	0.000	0.000
<input type="checkbox"/> 6	0.000	0.000	0.000	0.000
<input type="checkbox"/> 7	0.000	0.000	0.000	0.000
<input type="checkbox"/> 8	0.000	0.000	0.000	0.000

Apply



DOBOT

SCARA M-1



Opakovateľnosť
0,02 mm



Rychlosť
200°/s



Nosnosť
1,5 kg



Dosah
400 mm



ControlTech



Playback Script

New Open Save Save As Start Stop

Infinite Loop Loop 5 DynRatio 100% 1% 200%

Index	Name	Type	Content
0		OUTPUT	OUT18=0V
1		MOVJ	To(154.0141, 298.2269, 96.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
2		MOVJ	To(154.0141, 298.2269, 69.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
3		OUTPUT	OUT17=0V
4		MOVJ	To(154.0141, 298.2269, 96.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
5		MOVJ	To(78.1350, -386.5726, 96.0000, -161.1687), Vel/Jerk(50%, 50%), ArmOrientation(Left)
6		MOVJ	To(78.1350, -386.5726, 69.0000, -161.1687), Vel/Jerk(20%, 50%), ArmOrientation(Left)
7		OUTPUT	OUT17=24V
8		MOVJ	To(78.1350, -386.5726, 96.0000, -161.1687), Vel/Jerk(20%, 50%), ArmOrientation(Left)
9		WAIT	Pause 1.00 S
10		MOVJ	To(78.1350, -386.5726, 69.0000, -161.1687), Vel/Jerk(20%, 50%), ArmOrientation(Left)
11		OUTPUT	OUT17=0V
12		MOVJ	To(78.1350, -386.5726, 96.0000, -161.1687), Vel/Jerk(20%, 50%), ArmOrientation(Left)
13		MOVJ	To(154.0141, 298.2269, 96.0000, 22.6511), Vel/Jerk(50%, 50%), ArmOrientation(Right)
14		MOVJ	To(154.0141, 298.2269, 69.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
15		OUTPUT	OUT17=24V
16		MOVJ	To(154.0141, 298.2269, 96.0000, 22.6511), Vel/Jerk(20%, 50%), ArmOrientation(Right)
17		WAIT	Pause 1.00 S

Add At Last
 Insert Before Selected Row
 OverWrite Selected Row

Enable Hand Hold Teach

Add Motion Command

PTP MOVJ

Vel 50% Jerk 50%

Add Wait Command

1.00 s

Add I/O Command

Output
 Trigger

Apply DynRatio

Operation Panel

X 0,0000 Joint1 0,0000

Y 0,0000 Joint2 0,0000

Z 0,0000 Joint3 0,0000

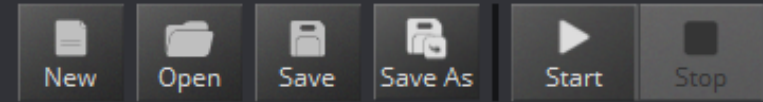
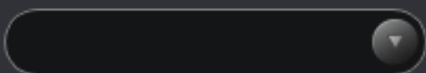
R 0,0000 Joint4 0,0000

Joint

J1+ J2+ J3+ J4+

Vel 35% Acc 52%

Motor: Power:



- Logic
- Loops
- Math
- Text
- Lists
- Colour
- Variables
- Functions
- ▼ DobotAPI
 - Basic
 - Config
 - Motion
 - I/O

```
Set Coordinate Speed VelocityRatio 20 JerkRatio 50
Set Jump Params JumpHeight 20 ZLimit 200
repeat while true
do
  Set Arm Orientation Left
  Jump To X 223 Y 276 Z 60
  Set Arm Orientation Right
  Jump To X 223 Y 276 Z 60
  Set Arm Orientation Right
  Go to X 258 Y 177 Z 120
```

- + Other
- QueueCmd
 - ? dType.GetQueuedCmdCurrentIndex(api)
 - ? dType.SetQueuedCmdStartExec(api)
 - ? dType.SetQueuedCmdStopExec(api)
 - ? dType.SetQueuedCmdForceStopExec(api)
 - ? dType.SetQueuedCmdClear(api)
- Pose
 - ? dType.GetPose(api)
- Alarms
 - ? dType.GetAlarmsState(api, maxLevel)
 - ? dType.ClearAllAlarmsState(api)
- ArmOrientation
 - ? dType.SetArmOrientation(api, arm, orientation)
 - ? dType.GetArmOrientation(api)
- JOG
 - ? dType.SetJOGCommonParams(api, speed, accel, decel)
 - ? dType.GetJOGCommonParams(api)
 - ? dType.SetJOGCmd(api, isJoint, cmd)
- PTP
 - ? dType.SetPTPJumpParams(api, jumpMode, speed, accel, decel)
 - ? dType.GetPTPJumpParams(api)
 - ? dType.SetPTPCommonParams(api, speed, accel, decel)
 - ? dType.GetPTPCommonParams(api)
 - ? dType.SetPTPCmd(api, ptpMode, x, y, z, r)
- ARC
 - ? dType.SetARCCmd(api, speed, accel, decel)
- WAIT
- TRIG
- IO

```

25 while not (dType.GetIODI(api, 19)[0]) == 0: # Cekani na stisk tlacitka
26     pass
27 if (dType.GetIODI(api, 20)[0]) == 1:
28     break
29 dType.SetArmOrientation(api, 1, 1)
30 dType.SetPTPCmd(api, 0, 79.55, 189, 27, 331, 1)
31 close_grip()
32 dType.SetArmOrientation(api, 1, 1)
33 dType.SetPTPCmd(api, 0, 162, 314, 89, 331, 1)
34 print(dType.GetIODI(api, 17)[0])
35 print(dType.GetIODI(api, 18)[0])
36 dType.SetWAITCmdEx(api, 1000, 1)
37 while (dType.GetIODI(api, 18)[0]) == 1 and (dType.GetIODI(api, 17)[0]) == 1:
38     pass
39 print(dType.GetIODI(api, 17)[0])
40 print(dType.GetIODI(api, 18)[0])
41 if (dType.GetIODI(api, 18)[0]) == 1 and (dType.GetIODI(api, 17)[0]) == 0:
42     dType.SetArmOrientation(api, 0, 1)
43     dType.SetPTPCmd(api, 0, x1, y, z, r, 1)
44     open_grip()
45     x1=x1-35
46 elif (dType.GetIODI(api, 18)[0]) == 0 and (dType.GetIODI(api, 17)[0]) == 1:
47     dType.SetArmOrientation(api, 0, 1)
48     dType.SetPTPCmd(api, 0, x2, y2, z, r, 1)
49     open_grip()
50     x2=x2-35
51 elif (dType.GetIODI(api, 18)[0]) == 0 and (dType.GetIODI(api, 17)[0]) == 0:
52     dType.SetArmOrientation(api, 0, 1)
53     dType.SetPTPCmd(api, 0, x3, y3, z, r, 1)
54     open_grip()
55     x3=x3-35
    
```

api : The object of Dobot Library.

cirPoint : List of transition position

- cirPoint[0] : Value of x-axis
- cirPoint[1] : Value of y-axis
- cirPoint[2] : Value of z-axis
- cirPoint[3] : Value of r-axis

toPoint : List of target position

- toPoint[0] : Value of x-axis



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BIOMEDICA



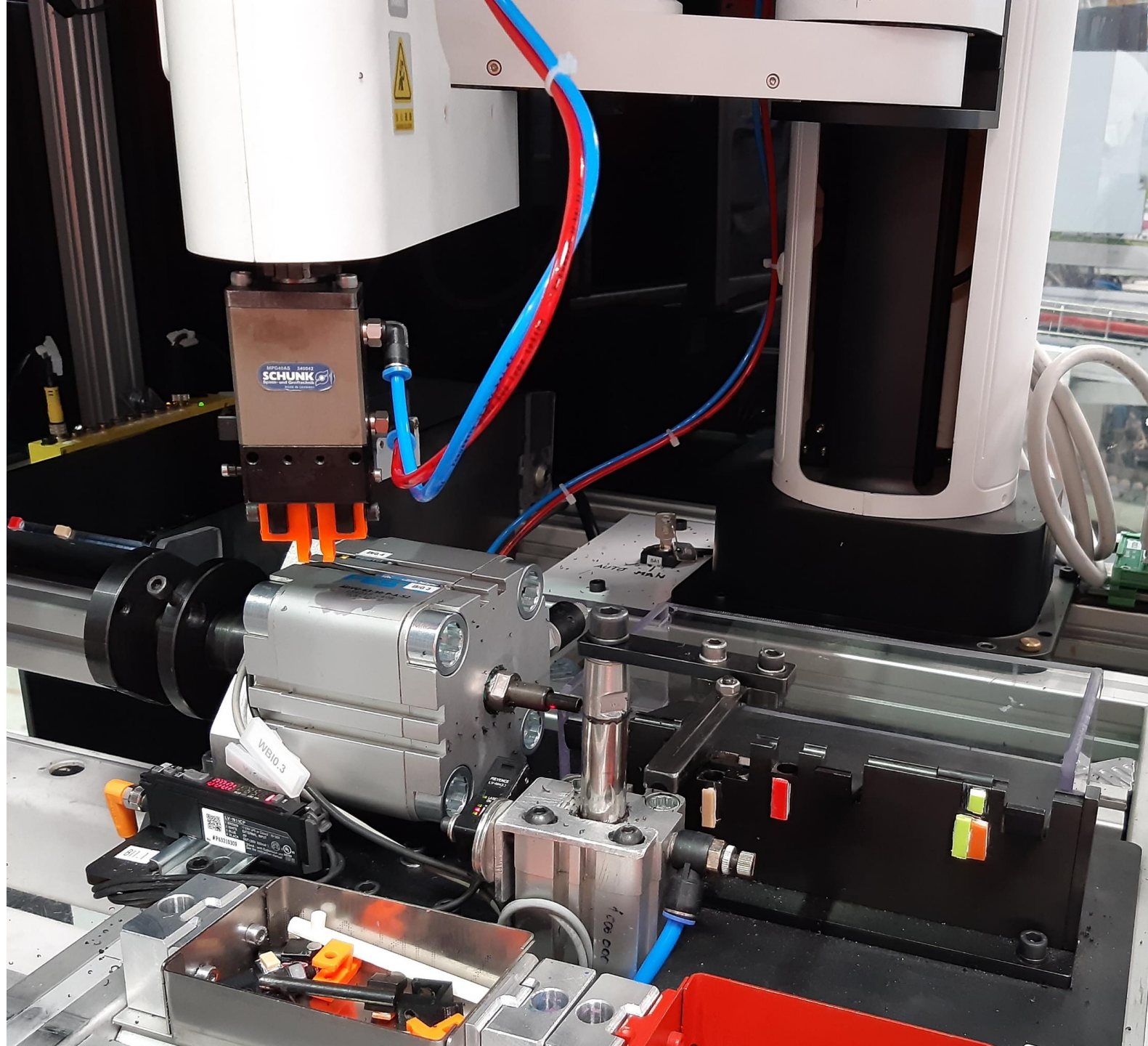
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Rendszer



u-shin





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**EDUKATIVNÍ
ROBOTY**
nejen pro školy



reddot award 2018
winner



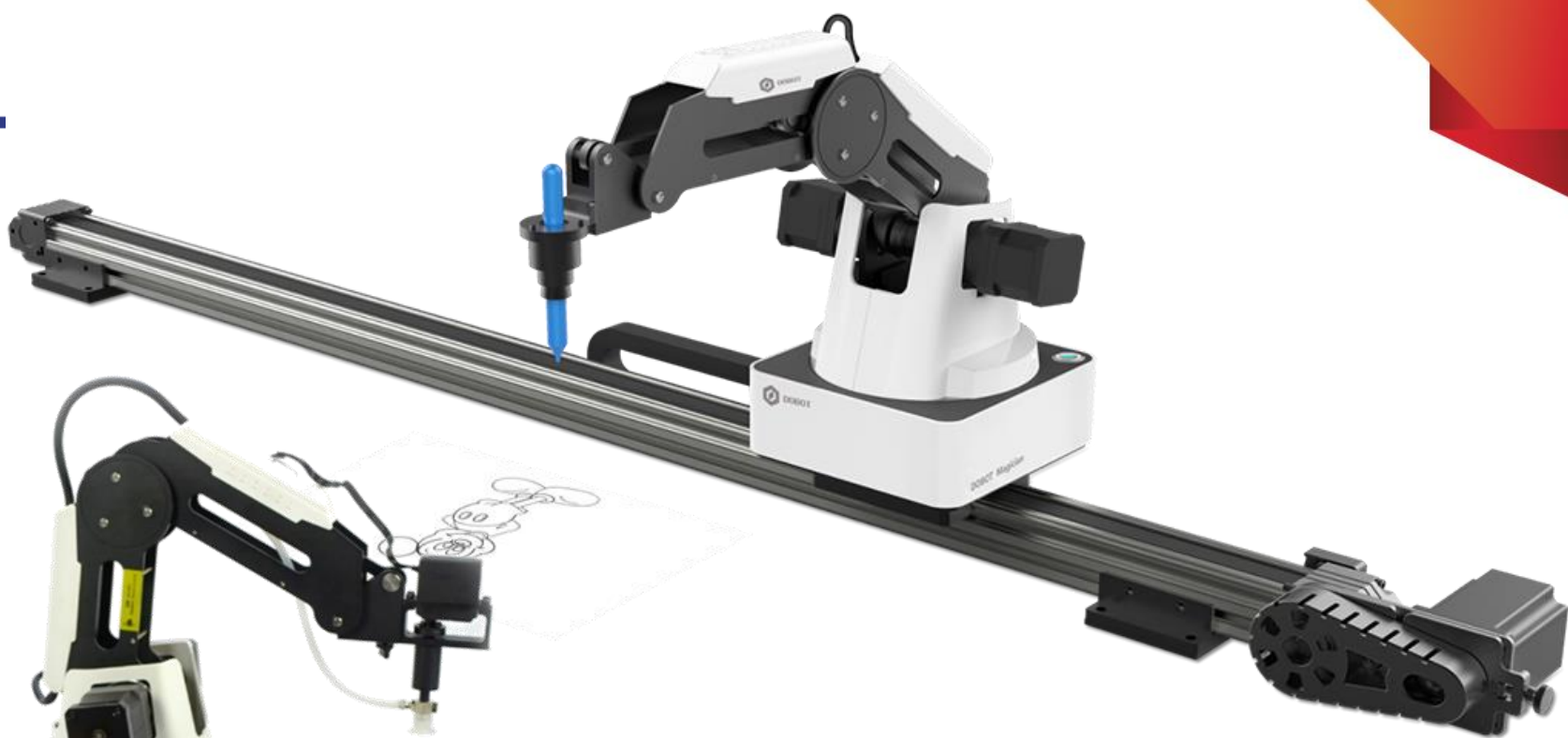


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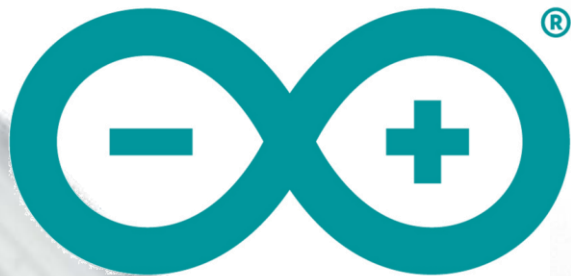


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DOBOT Soubor Upravit Návoděda Výukové centrum Projekt Scratch Scénáře

Ovládání Operátory Proměnné Vnímání Události Nastavení Pohyb Stav I/O Moje bloky

Pohyb

- Kalibrovat
- Skoč na X 0 Y 0 Z 0 R 0
- Jdi na X 0 Y 0 Z 0 R 0 Způsob pohybu Lineární pohyb
- Relativní pohyb ΔX 0 mm ΔY 0 mm ΔZ 0 mm ΔR 0 °
- Otoč klouby na Kloub 1 0 ° Kloub 2 0 ° Kloub 3 0 ° Kloub 4 0 °
- Nastavit R 0 °
- Uchopovač Uchopit
- Přísavka Uchopit

Stav

- Získat současné souřadnice X
- Získat současné úhly kloubů Kloub 1
- Smazat alarm

I/O

- Nastavit Pin EIO1 Režim IO Funkce Dummy
- Nastavit PWM výstup Pin EIO1 Frekvence 0 Střída 0 %
- Nastavit digitální výstup Pin EIO1 Hodnota Logická 1

Zařízení Sprite

Magician

Souřadnice Rychlost

X 0 Y 0 Z 0 R 0

Y+ Z+ X+ Y- Z- X- R- R+

Lineární pojezd L- L+

Uchopit Pustit Přísavka



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Technická Univerzita v Košiciach

Slovenská technická univerzita v Bratislave

Žilinská univerzita v Žiline

Vyšší odborná škola a Střední průmyslová škola Děčín

VOŠ, SPŠ a JŠ Kutná Hora

Středná odborná škola Dubnica nad Váhom

Středná odborná škola polytechnická

Střední průmyslová škola Ostrov

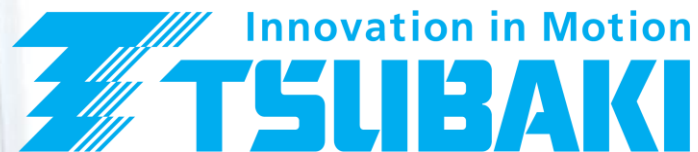
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