



# iNTROSYS

Global Control System Designers



1

About us



# HEADQUARTERS



Introsys is a leading company specialized in developing control systems focused on the automotive industry

# CASTELO BRANCO OFFICE

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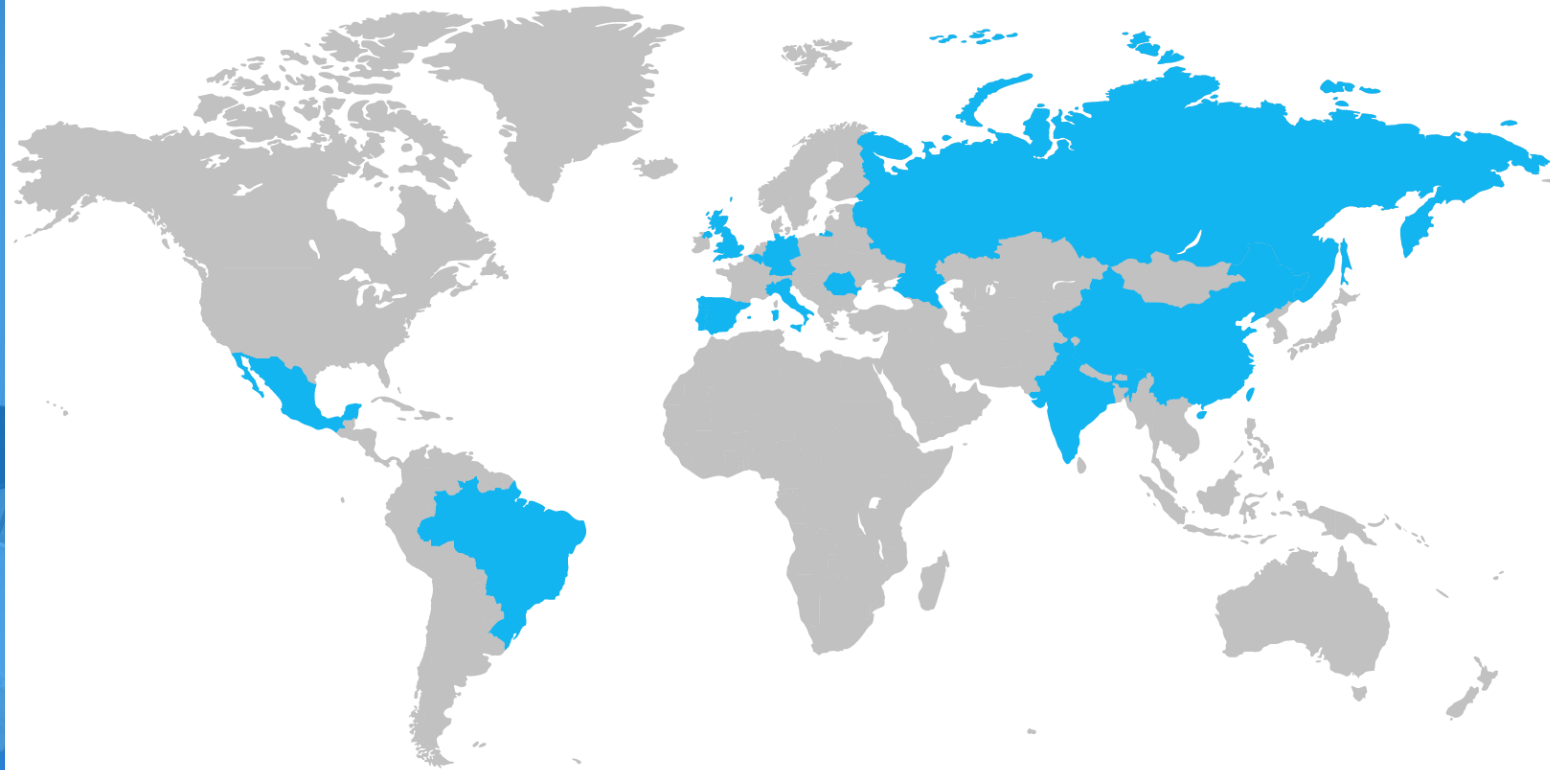


# MULTINATIONAL

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We have projects in Portugal, Spain, Germany, Belgium, Romania, Russia, UK, India, Holland, Mexico and Brazil;

And offices in Portugal, Germany, Mexico, India and China



**More than 3000 robots fully integrated**

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# VALUE CHAIN

- Electrical design and planning (Eplan)
- Electrical installation
- PLC programming
- Robot programming
- Virtual commissioning
- Project management
- Standards development
- R&D
- Training academy

## OEM

CHRYSLER



## MACHINE BUILDER



TMS



ABB

## CONTROL SYSTEM DESIGNER

INTROSYS  
Global Control System Designers





# 2

# Our Products

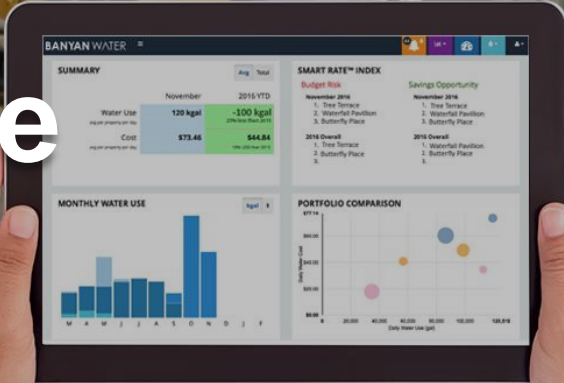




2

1

# Automotive Industry







PROJECT AND  
ELETRICAL  
DEVELOPMENT



ELETRIC  
INSTALLATION



VIRTUAL  
COMMISIONIN  
G



AUTOMATON  
PROGRAMMIN  
G



OFFLINE  
PROGRAMMING  
OF ROBOTS – OLP



INDUSTRIAL  
ROBOT  
PROGRAMMING  
PROJECT  
MANAGEMENT

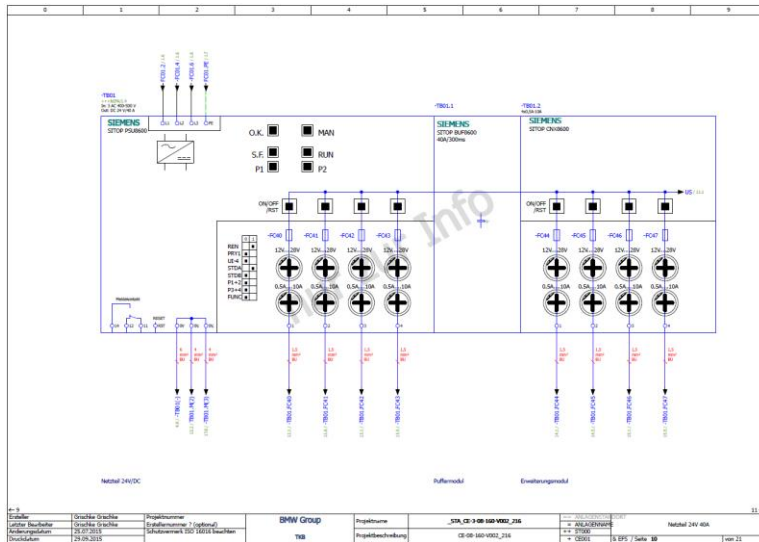




# 2.2 INTROSYS TRAINING ACADEMY

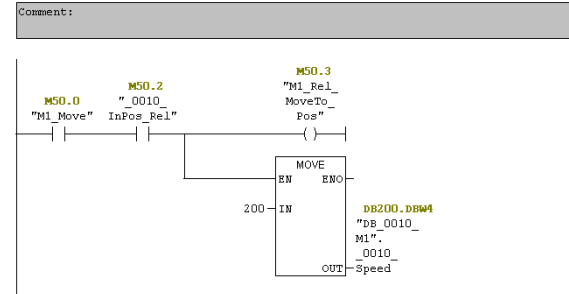


## PLC Programming

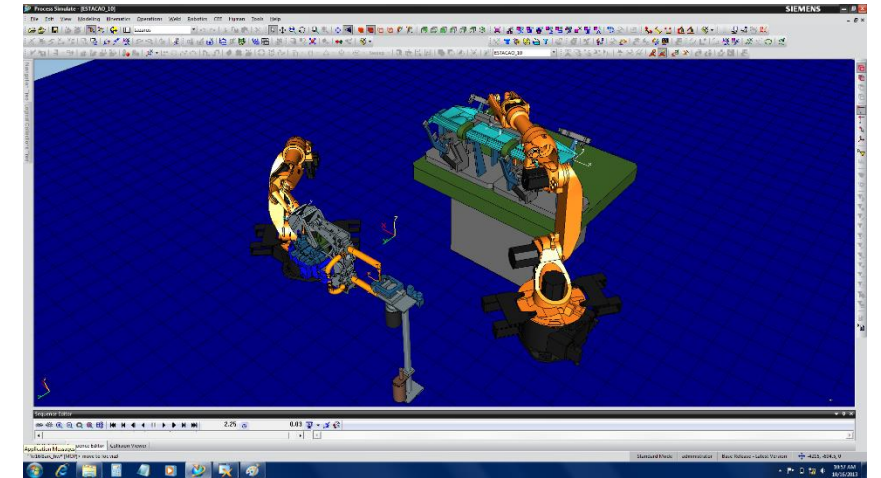
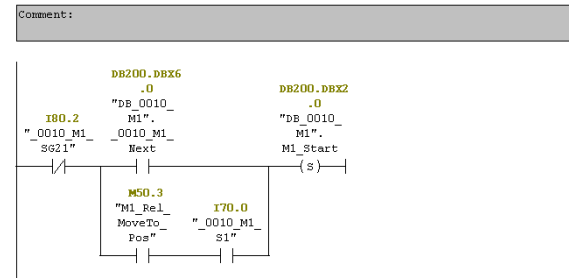


## Electrical Design

Network 1: Release to Move and Station Speed



Network 2: Engine Start Station 0010



## Robot Programming







# R&D

POWERED BY

INTROSYS



AGÊNCIA NACIONAL  
DE INOVAÇÃO



# COFINANCING

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**UNIÃO EUROPEIA**

**Fundo Europeu de  
Desenvolvimento Regional**





# PARTNERS

INTROSYS  
Global Control System Designers

UNINOVA  
INSTITUTO DE DESENVOLVIMENTO DE NOVAS TECNOLOGIAS

afag

ASYS  
GROUP

Electrolux

fortiss

csem

elrest®  
Wir steuern  
Ihren Erfolg

We+

HSI  
SMI  
HIGH SPEED  
SUSTAINABLE  
MANUFACTURING  
INSTITUTE

KTH  
VETENSKAP  
OCH KONST

KTH Industrial Engineering  
and Management

ISCTE IUL  
University Institute of Lisbon

Loughborough  
University

if TÉCNICO  
LISBOA

li.u LINKÖPING  
UNIVERSITY

MASMEC

SenseAir®  
Sensors for Life

TQC  
Automation & Test Solutions  
www.tqc.co.uk

The University of  
Nottingham

asyrîl  
experts in mechatronics

School of  
Engineering  
zhaw  
IMS Institute of  
Mechatronic Systems

SIEMENS

SIMPLAN

LabMAG  
laboratório de modelação de agentes

INOTEC  
Innovative Technology

Fraunhofer  
IGD



# 2.3 Mobile Robotics



# INTROBOT<sup>®</sup>

Basic platform for outdoor perimeter surveillance



INTROBOT<sup>®</sup>  
sampler

For soil samples in  
estuarian environments  
collection







# Fire MANAGER

# INVADER

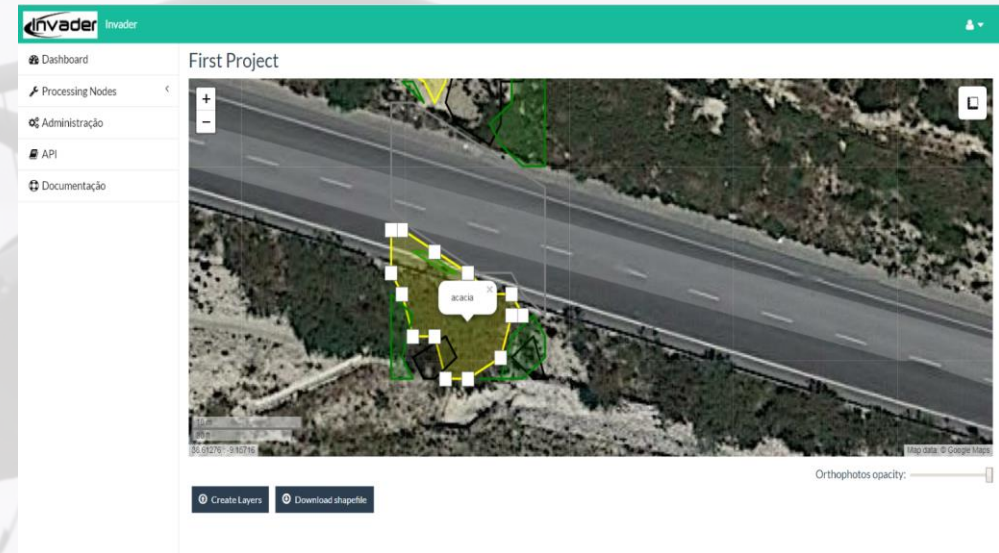


# Habitat SURVEY

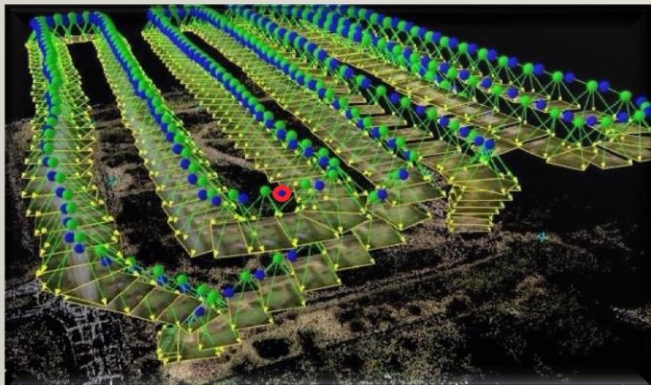
Image processing for decision support in forest fire fighting – after extinction




Lisb@20<sup>20</sup>



Monitoring of invasive species with UAV and Artificial Intelligence algorithms (NN)





A computer monitor in a dimly lit office setting. The screen shows a software interface with a sidebar on the left and a main workspace containing a grid or table. A large, bright blue number '2.4' is overlaid on the left side of the screen. Below the number, the text 'Efficiency Improvement' is written in white.

2.4

Efficiency Improvement



## Quality check of robot programs

FK Spot

File Export Import Image Help

Line: 8N Station:

With data

Project 1

Project 2

Program Name	Point Name	Robot Point Name	X DB	X Robot	Y DB	Y Robot	Z DB	Z Robot
P21WELD1	83191-08-L	lwp8i3191_08_0008119	4502	4508	-524	-517	621	619
	83904-01-R	lwp8r3904_01_0008122	5056	5061	270	273	541	539
	83900-05-R	lwp8r3900_05_0008121	4875	4875	289	290	570	568
	83900-03-R	lwp8r3900_03_0008124	4801	4802	289	290	570	569
	83191-09-L	lwp8i3191_09_0008120	4735	4741	-456	-453	572	566
	83118-03-L	lwp8i3118_03_0008118	4495	4506	-451	-446	560	554
	83904-03-R	lwp8r3904_03_0008123	5077	5082	270	275	595	597
	83117-03-L	lwp8i3117_03_0008117	3713	3718	-697	-696	465	465

Session: Tutorial Local DB

Line	Station	Robot Number	Robot Name	Index Type	Index	Welding Program	Point Name	Robot Point Name	X	Y	Z	Thickness 1	Thickness 2	Thickness 3	Force	Ele
8N	120	R03	8N120R03		8120	120	83191-09-L	lwp8i3191_09_0008120	4735	-456	572	2.20	1.70	0		





# DOCGENERATOR

Automatic system to create robot program documentation

DocGenerator  
Folder Structure

Project Name:

Line Name:

Path to robot backups:  Browse

Save path: C:\Users\renato.martins\Desktop\DocGenerator\TESTS\ Browse

VW VASS  VW OLD

Exit Back Next



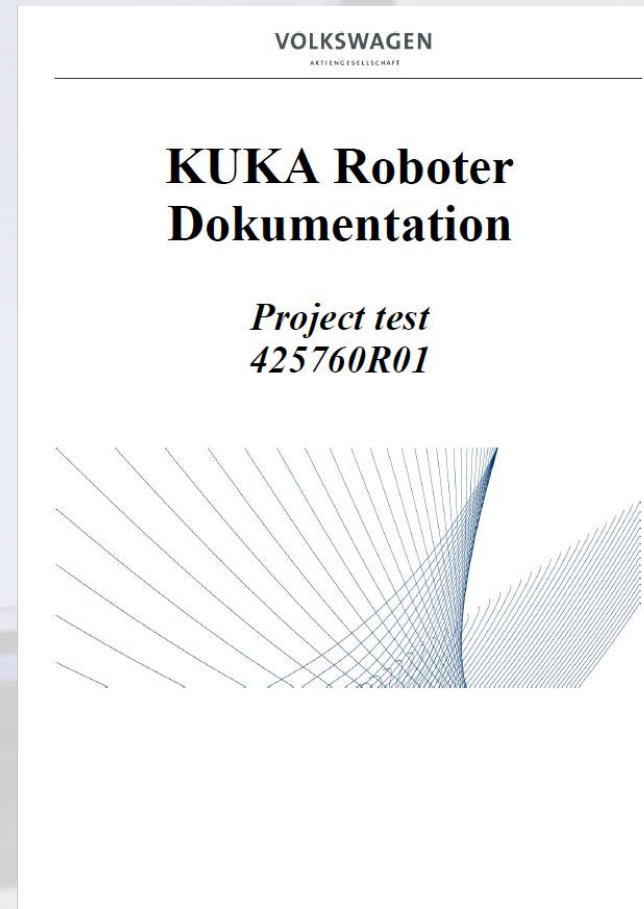
DocGenerator  
Folder Structure

Ignore All Refresh

Robot Model	Documentation Files	IP
425760R01	Topology Collisions Payload Data Payload Chart	10.209.209.170
115010R01	Topology Collisions Payload Data Payload Chart	10.209.190.220

Ignore	Program Name	Ignore	Program Name
<input checked="" type="checkbox"/>	cell.src	<input checked="" type="checkbox"/>	Up81.src
<input type="checkbox"/>	folge13.src	<input type="checkbox"/>	Up82.src
<input type="checkbox"/>	Folge53.src	<input type="checkbox"/>	Up106.src
<input type="checkbox"/>	folge123.src	<input type="checkbox"/>	up112.src
<input type="checkbox"/>	folge124.src	<input type="checkbox"/>	up113.src
<input type="checkbox"/>	folge125.src	<input type="checkbox"/>	up114.src
<input type="checkbox"/>	Folge333.src	<input type="checkbox"/>	Up141.src
		<input type="checkbox"/>	up201.src
		<input type="checkbox"/>	up202.src
		<input type="checkbox"/>	up203.src
		<input type="checkbox"/>	up206.src
		<input type="checkbox"/>	up207.src
		<input type="checkbox"/>	up208.src

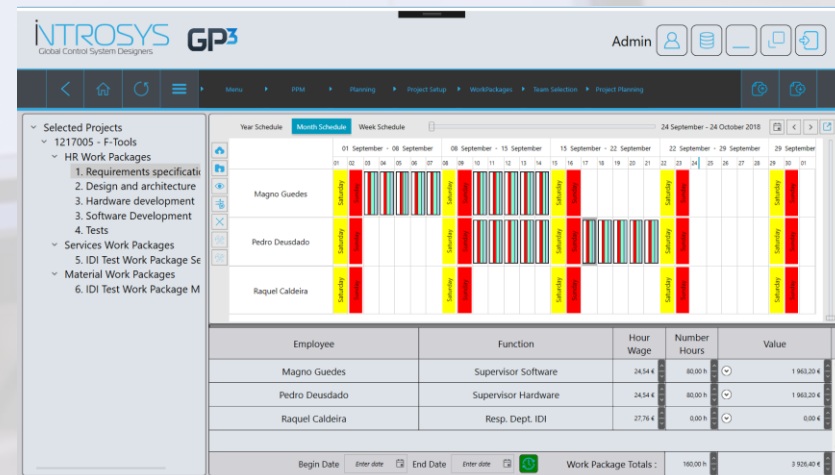
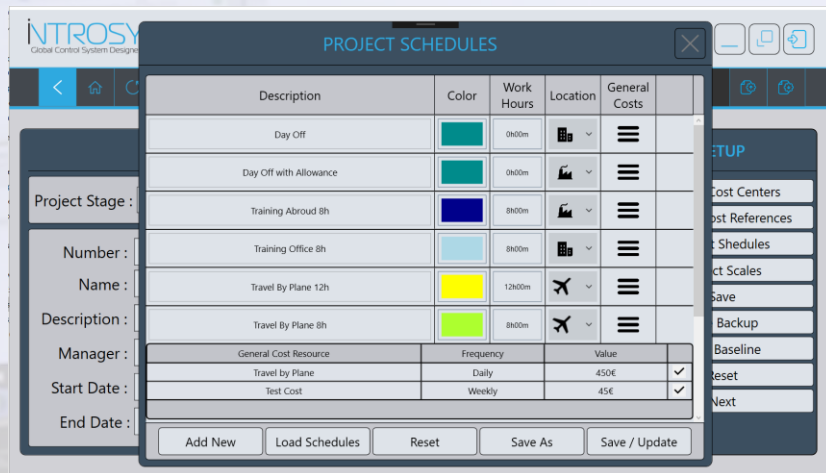
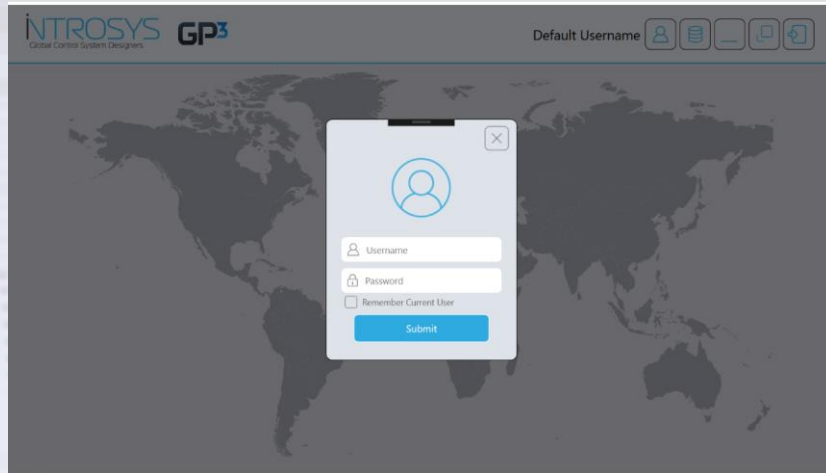
Exit Back Next



# F-TOOLS



## Project management software





A close-up photograph of an industrial robotic arm. The arm is primarily black and silver. A blue metal bracket is attached to the side of the arm. A blue cable is connected to the bracket. A nozzle, labeled 'EFD', is positioned at the end of the arm. The background is blurred, showing a factory setting with blue and green elements.

# 2.5 Vision Systems

### Historical data analysis & report

see-vision  
powered by NITOSYS

Models  
 ▶ VW428 [0]  
 ▶ SE428 [1]

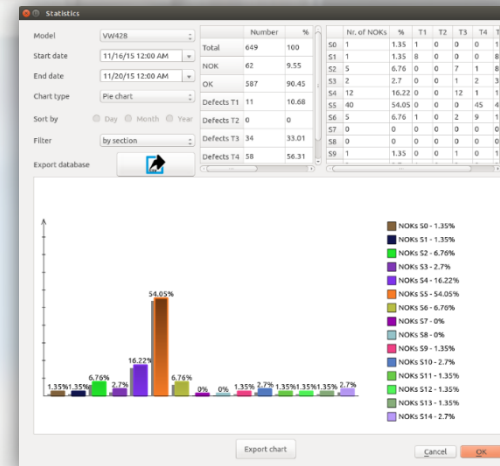
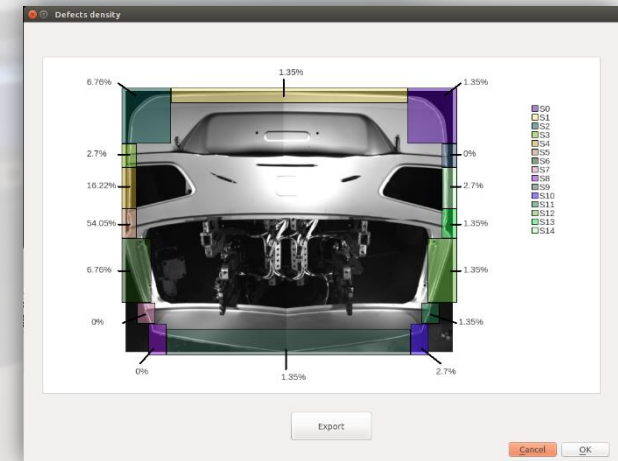
Defect types  
 1 - incomplete  
 2 - narrow  
 3 - wide  
 4 - displaced

OK - 98.91%  
 NOK - 1.09%

15:40

OK: 181  
 NOK: 2  
 TOTAL: 183

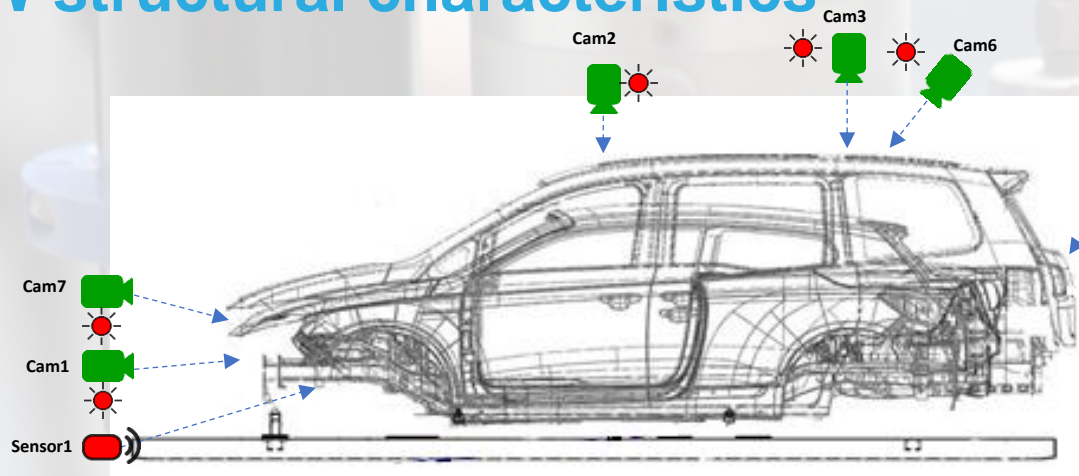
Part ID	Date	Model	Result	Incomplete	Narrow	Wide	Displaced	Secção	Secção	Secção	Secção	Secção	Secção
1	12207061	ter Fev 16 17:42:23 2016	SE428	OK	0	0	0	0	0	0	0	0	0
2	12207060	ter Fev 16 17:39:38 2016	SE428	NOK	0	0	0	1	0	0	0	0	0





# iSent<sup>o</sup> Check

## Check vehicle BIW structural characteristics

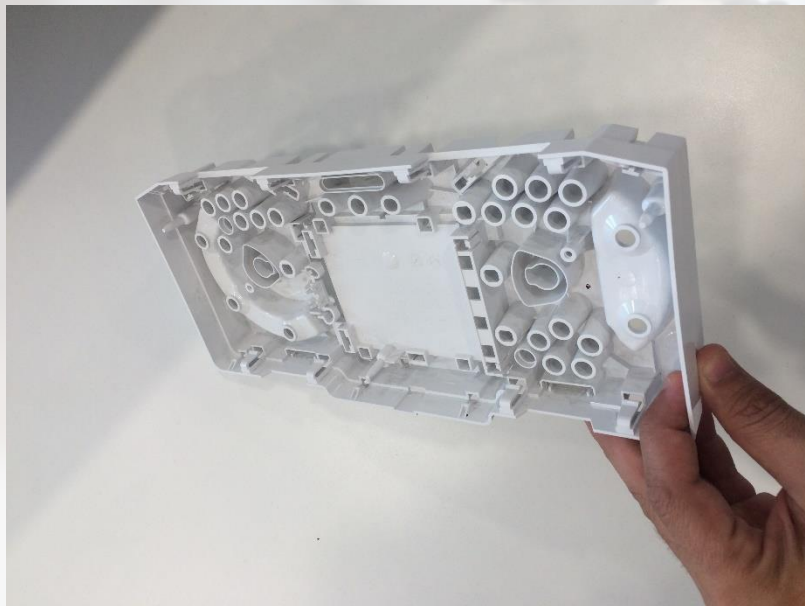


Software interface showing vehicle characteristics and detection results. The interface includes a navigation bar, a checklist table, and a log table.

CARACTERISTICAS	FIS	Resultado	Deteção
Tecto Abrir	PRESENTE	✓	PRESENTE
Símbolo Mala	VW	✓	VW
Símbolo Capot	VW	✓	VW
Direção	ESQUERDA	✓	ESQUERDA
4Motion	AUSENTE	✓	AUSENTE
Furo Dachrail 1	PRESENTE	✓	PRESENTE
Furo Dachrail 2	PRESENTE	✓	PRESENTE
Furo Dachrail 3	PRESENTE	✓	PRESENTE
Furo Dachrail 4	PRESENTE	✓	PRESENTE
Furo Dachrail 5	PRESENTE	✓	PRESENTE
Furo Dachrail 6	PRESENTE	✓	PRESENTE
Furo Dachrail 7	PRESENTE	✓	PRESENTE
Furo Dachrail 8	PRESENTE	✓	PRESENTE
Antena	PRESENTE	✓	PRESENTE

TIME	DATE	STATUS	TEXT
16:50:00	14-07-2017	1	Leitura OK Camera 1
16:50:00	14-07-2017	1	Leitura OK Camera 2



**DETECTION**

Software interface showing a top-down view of the vehicle chassis with injection points highlighted in red and green. The interface includes a navigation bar, a date/time display, and a summary of injection results.

**DETECTION**

18/09/18  
09:19:19

Nº Injeções OK: 0  
Nº Injeções NOK: 2

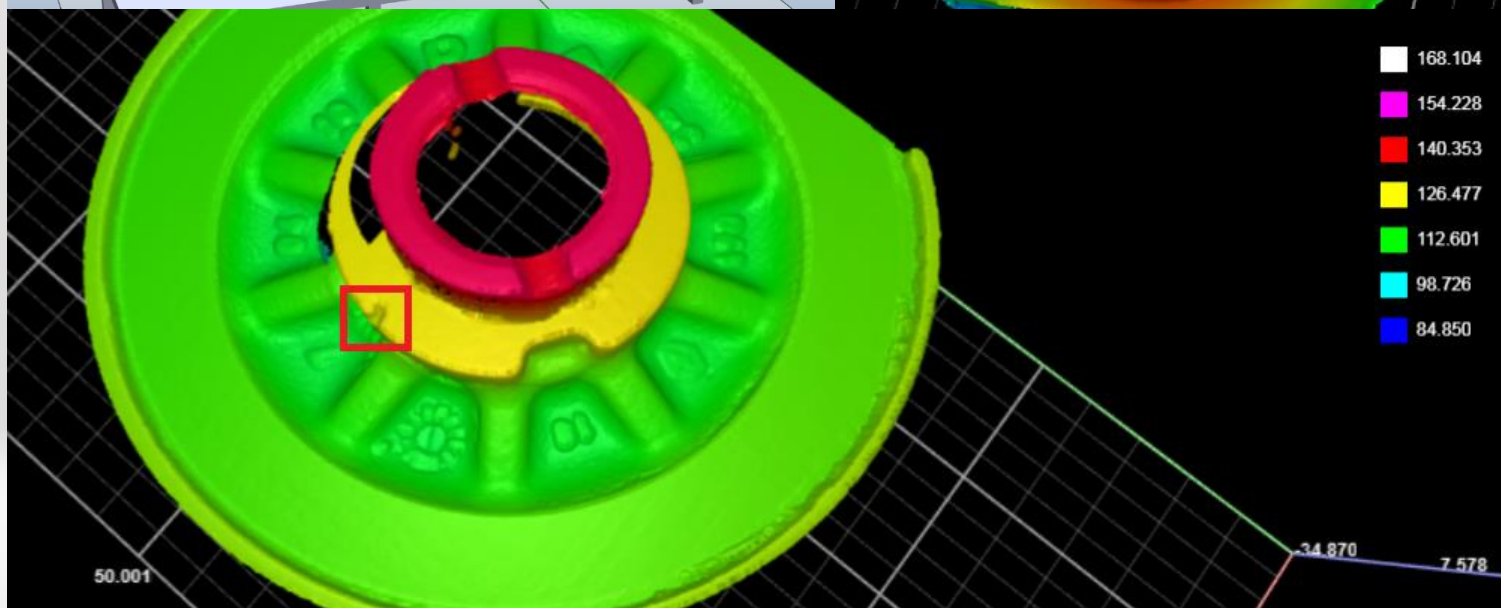
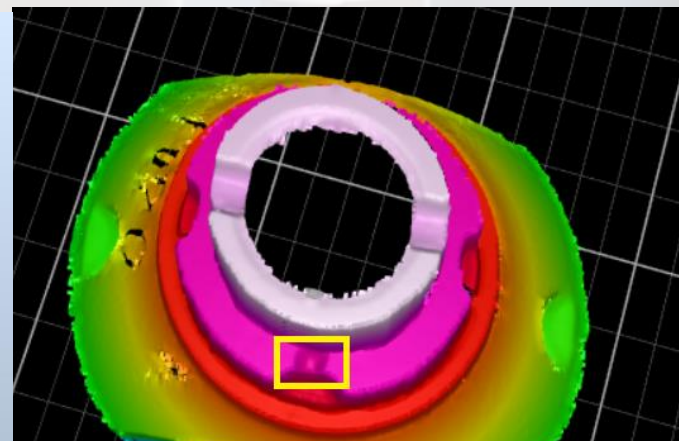
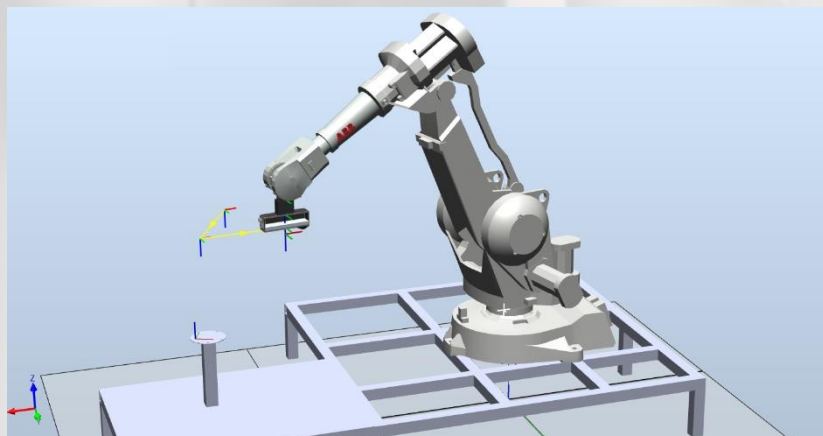
INJEÇÃO NOK INJEÇÃO NOK



Press  
VISION

Lisb@20<sup>20</sup>

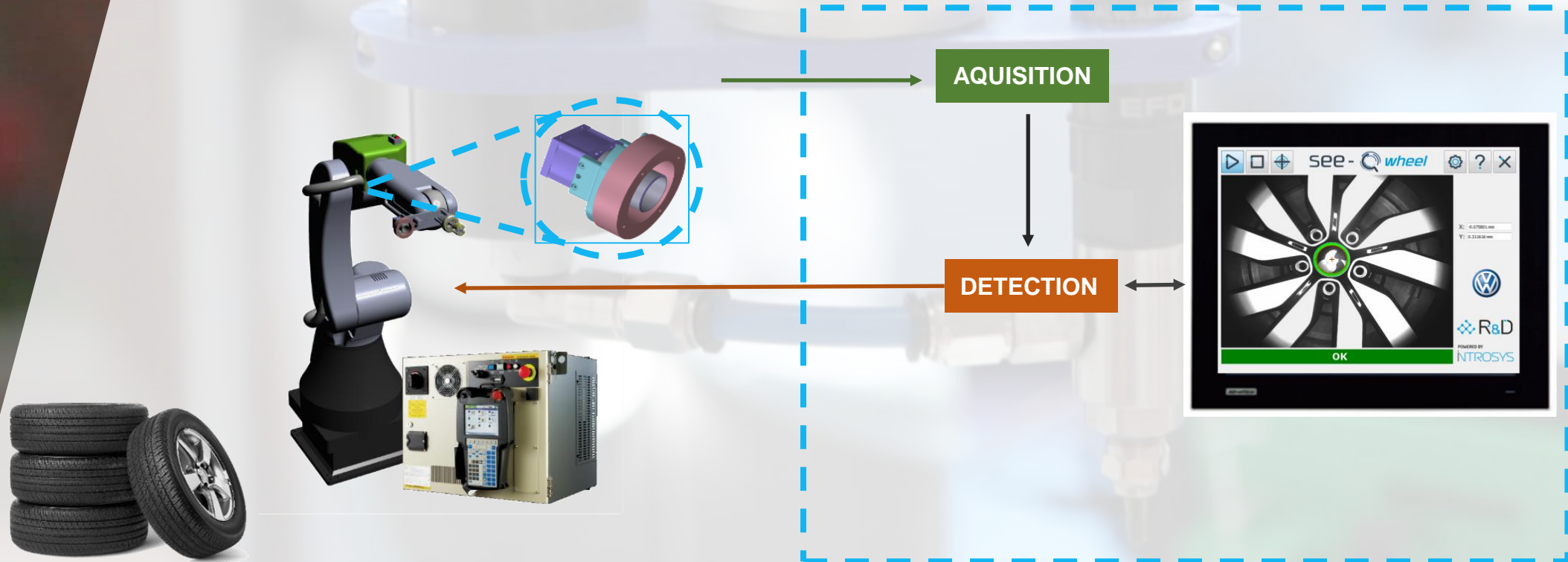
## 3D Inspection of pressed, machined or molded parts





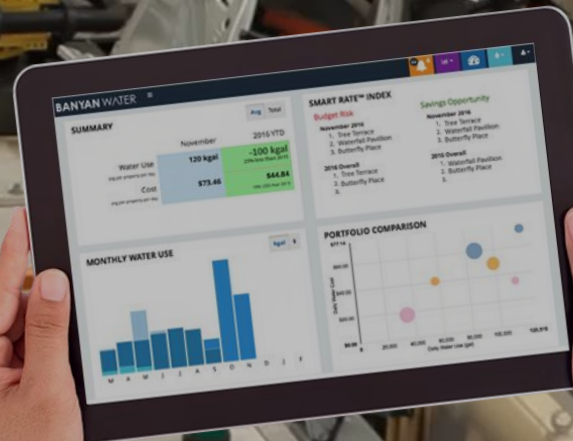
# iSent<sup>o</sup> Wheel

Vision guided collaborative industrial robot



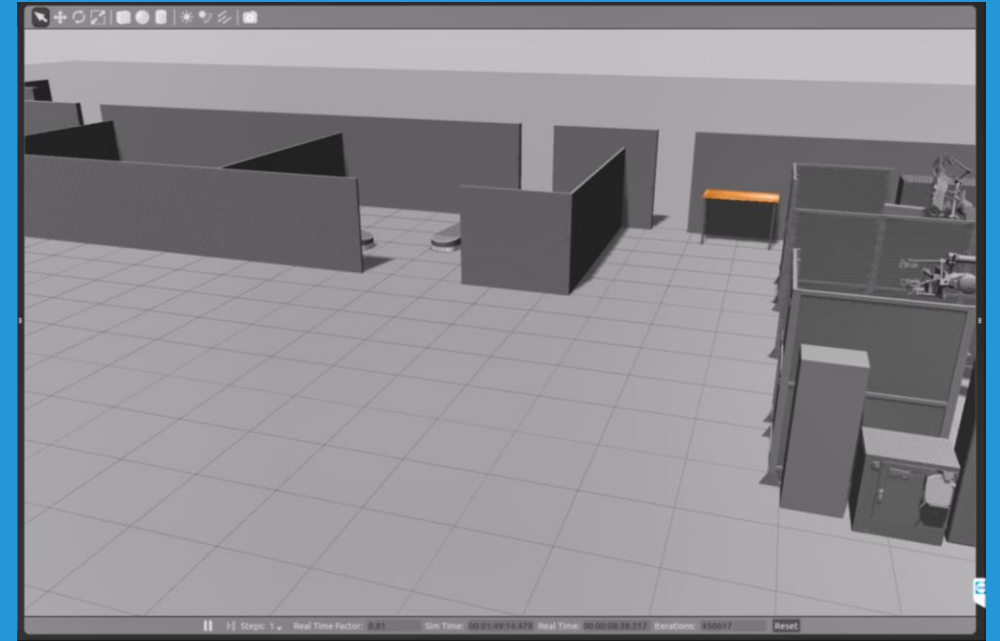
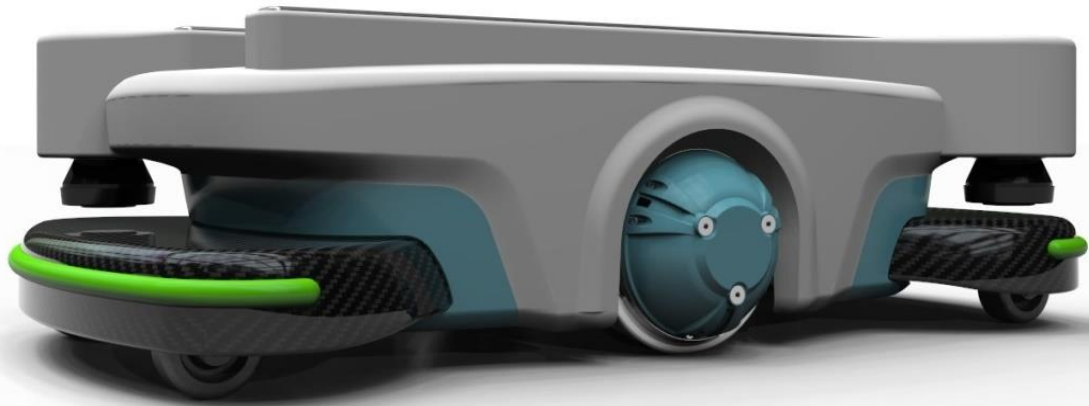


# 2.6 Industry 4.0

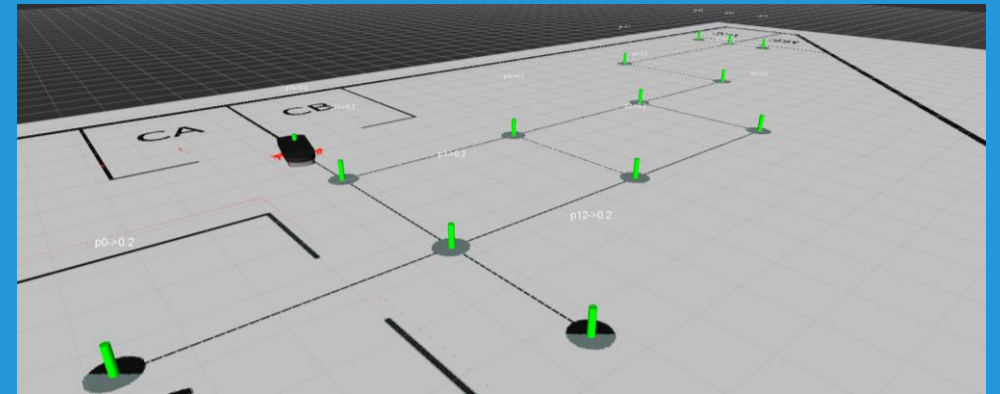




# openmos



- Agile and flexible manufacturing system for intelligent automation components 'plug-and-produce'
- European project - FoF (Factories of the Future) of H2020 (2015-2018)
- Introsys was the project coordinator



***The minds that move the  
matter***