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GRSIMDEV0-3, GRSIMDEV1-3

Digital Twin development environment

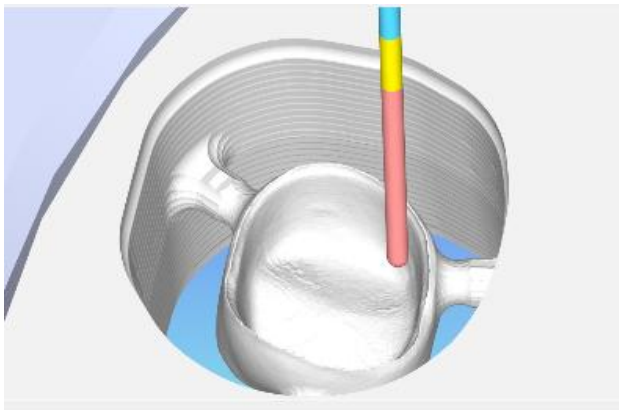
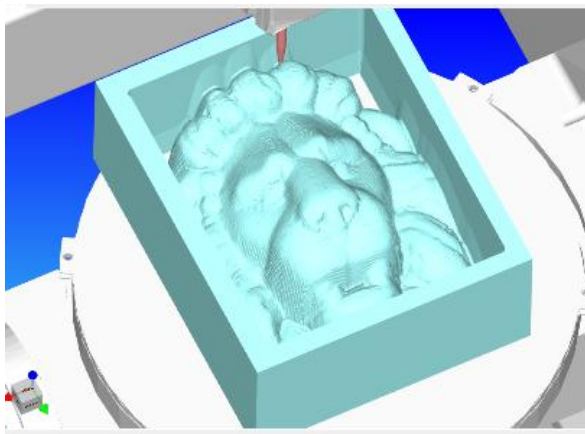
Reduced Data sheet

Version: 1

Date: 31.08.2026

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Overview



SIMON is the ISAC digital twin using the same engine of ISAC CNC.

It simulates a full reproduction of machining environment including machine tool kinematics, solids and obstacles, fixtures, tool shapes, and material stock.

Using this tool machine and automation developers, and machine operator, have a powerful tool to have the most accurate simulation possible, very similar to using a physical machine to test machining, without concern of collision, tool ruptures etc.

Digital twin can work either in offline mode or online mode.

In offline mode (sometimes referred as *simulation software in the loop*), it uses same engine of CNC in different versions and different brands, to run same part-program of the real machine, using same macros, and settings. It predicts accurately mechanical collisions among parts and machining time. It checks feasibility of machining and possible problems arising from real execution.

In online mode (sometimes referred as *simulation hardware in the loop*), it uses a connection with the CNC to show position of the machine controlled by the real CNC, and interacts with it to give inputs to automation logic and check outputs.

Machining, either in online or offline, can be viewed in all possible points of view and with no obstacles that limits visibility in real machine.

SIMON can be used to host script, as automation server, and as an embeddable control in third-party HMI.

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	This data sheet describes group of products usable as development environment. Described products are based on SIMON version 3.x
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Part Number

Code

Code	Description
GRSIMDEV0-3	SIMON: software license simulation offline and offline, editor, collision check, machining time prevision, material removal simulation, ACC
GRSIMDEV1-3	SIMON: software license simulation offline, editor, collision check, machining time prevision, material removal simulation, ACC

Alternative codes

Described codes relates to a group of products that can be used as development environment. To make a lite solution useful in CNC central units, refer to product codes GRSIMOL10-3, GRSIMOL11-3, GRSIMOL12-3.

These products are compable with GRSIMDEV0 and GRSIMDEV1.

Product status

Item	Value
Status	Prototype
Prototype since:	2026

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Requirements

Hardware

- Processor x86, recommended Intel i5 12th . Minimum 4 cores
- At least 8GB RAM
- GPU with support to OpenGL 4.0, recommended 4.6
- At least one free USB 2.0 port

OS

Windows 10 IoT LTSC 21, 64 bit version. Recommended Windows 11 IoT LTSC 24H2

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Technical data summary

Feature	GRSIMOL10-3	GRSIMOL11-3	GRSIMOL12-3	GRSIMDEV0-3	GRSIMDEV1-3
HMI: project tree visualization, item parameter interface, tool table, tools to generate stock, TCP parameters, menu and graphic tool	✓		✓	✓	✓
Machining environment editor: changes project tree, saves .ros2 file				✓	✓
Part-program editor	✓			✓	✓
Programming interface (COM interface)	✓	✓	✓	✓	✓
Scripting host	✓	✓	✓	✓	✓
Activex control	✓		✓	✓	✓
Machining file open (.simon)	✓	✓	✓	✓	✓
Machining file save (.simon)	✓			✓	✓
Offline simulation	✓			✓	✓
Offline simulation recording	✓			✓	✓
Offline part-program performance profiling tool	✓			✓	
Collision check	✓	✓		✓	✓
Material removal simulation	✓			✓	✓
Online connection			✓	✓	

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Feature	GRSIMOL10-3	GRSIMOL11-3	GRSIMOL12-3	GRSIMDEV0-3	GRSIMDEV1-3
ACC: online collision control. PLC logic interacts with simulation and receives feedback of collision before executing it	✓	✓		✓	✓

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Certifications

Certification	Description
Origin	Italy
CRA classification:	Product with digital items
ISO 62443-2 classification:	None

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Reference documents

Use manuals

TDU0200_simon3x.pdf

Programming manuals

TDP003_SIMON XML definition.pdf

ANRAC0018_simon_octave_integration.pdf