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GRSIMOL10, GRSIMOL11, GRSIMOL12

Digital Twin lite version to use in central unit

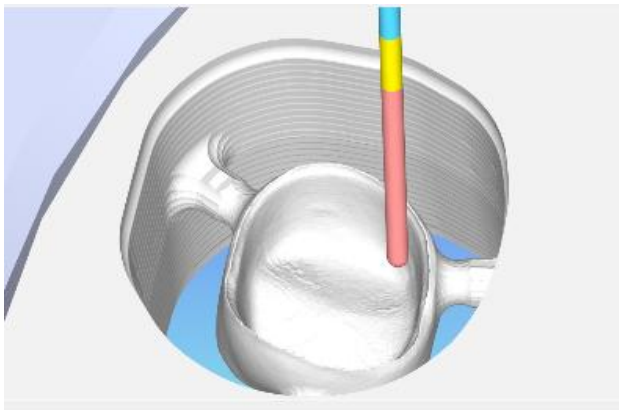
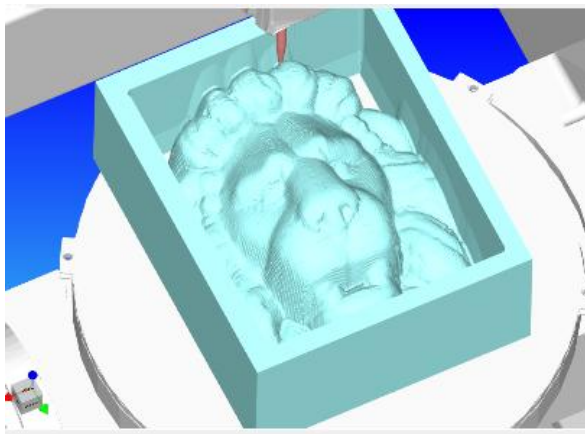
Reduced Data sheet

Version: 1

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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 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.



This data sheet describes group of products usable in CNC central units

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Part Number

Code

Code	Description
GRSIMOL10	SIMON: software license simulation offline, collision check, machining time prevision, material removal simulation, ACC
GRSIMOL11	SIMON: software license simulation offline with only programmatic interface, collision check, machining time prevision, material removal simulation, ACC
GRSIMOL12	SIMON: software license simulation online

Alternative codes

Described codes relates to a group of products that can be used in CNC central units. To make a more complete simulation, or to create the project of the machining environment, refer to product codes GRSIMDEV0 and GRSIMDEV1.

Product status

Item	Value
Status	Obsolete
In production since:	2021
Obsolete since:	2025

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Requirements

Hardware

- Processor x86, recommended Intel i5 10th
- At least 8GB RAM
- GPU with support to OpenGL 1.0
- At least one free USB 2.0 port

OS

Windows 10 IoT LTSC 16, 64 bit version

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Technical data summary

Feature	GRSIMOL10	GRSIMOL11	GRSIMOL12	GRSIMDEVO	GRSIMDEV1
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	✓	✓	✓	✓	✓
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			✓	✓	
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:	None
ISO 62443-2 classification:	None

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Reference documents

Use manuals

SIMON_2x_EN.pdf

Programming manuals

TDP003_SIMON XML definition.pdf

ANRAC0018_simon_octave_integration.pdf