Materialise Control Platform

Fully empowering your 3D printer
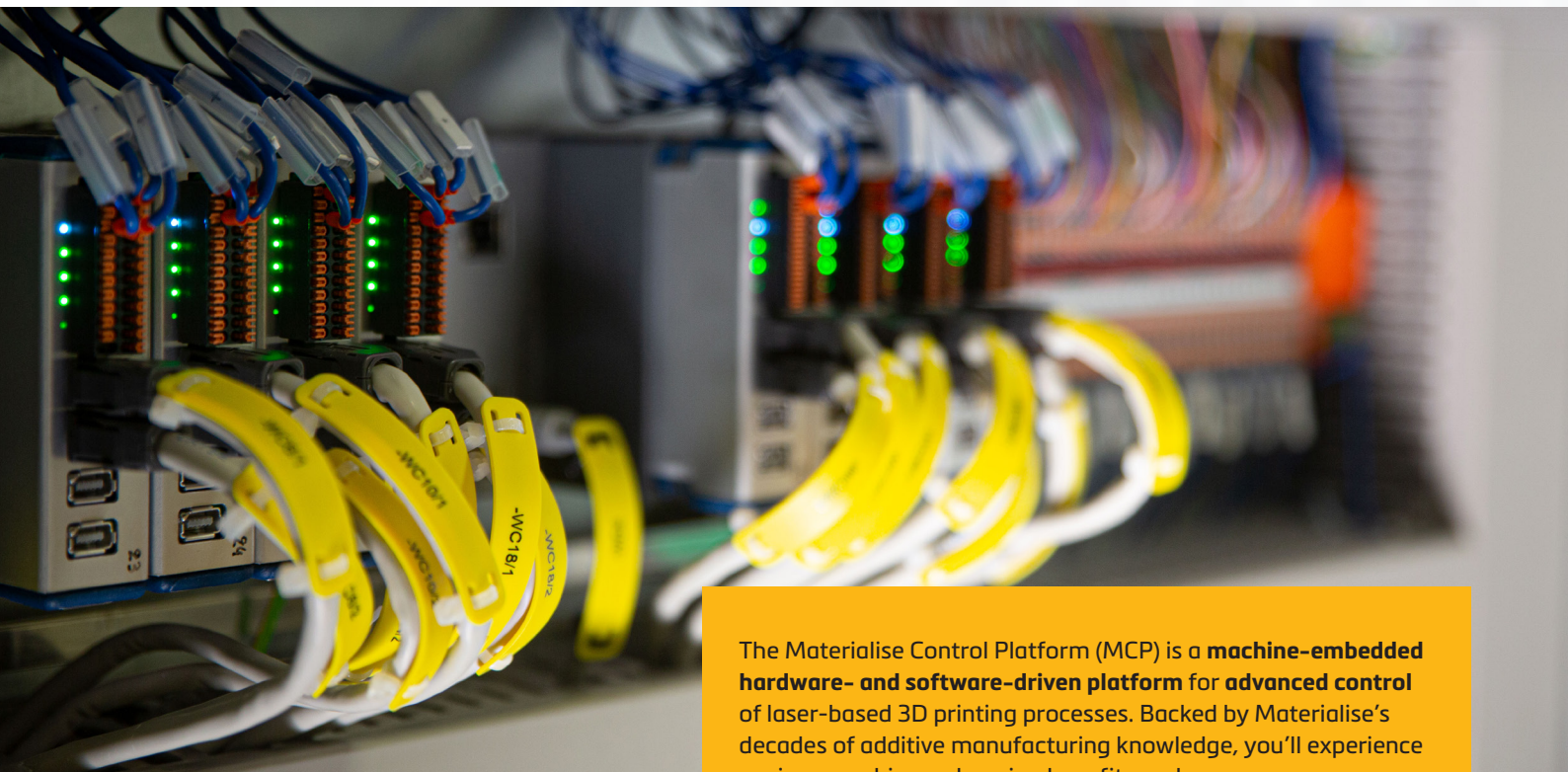
The Materialise Control Platform (MCP) is a **machine-embedded hardware- and software-driven platform** for **advanced control** of laser-based 3D printing processes. Backed by Materialise's decades of additive manufacturing knowledge, you'll experience copious machine-enhancing benefits such as:

- ► **Reduced costs**
  expand upon Materialise's IP to avoid funneling extra money into additional research and development

- ► **Shortened time-to-market**
  speed up machine development and modifications with an off-the-shelf controller

- ► **Higher part quality**
  control over 250 parameters to determine the highest quality combinations

- ► **Improved process repeatability**
  apply the highest performing parameters every time

- ► **Designed for Multi-Optics, the MCP controls up to 16 lasers**

- ► **With the automatic calibration tool API, get out of your machine the highest accuracy, the optimum speed and the highest efficiency**

software.materialise.com

materialise magics
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# An Essential Part of the Materialise Software Ecosystem

1. CAx
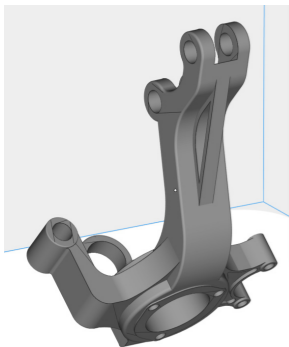
Enabling you to focus on your core.

Seamless integration with MTLS & Partner innovative AM SW solutions for you and your customers to scale and:

- Manage an entire AM production with controlled traceability and repeatability
- Develop process parameters at the speed of light
- Gain ultimate control in preparing your AM data to increase productivity
- Produce complex designs directly from your design package
- Leverage MTLS know-how, support and consultancy to get the most out of your machine

2. Materialise Magics
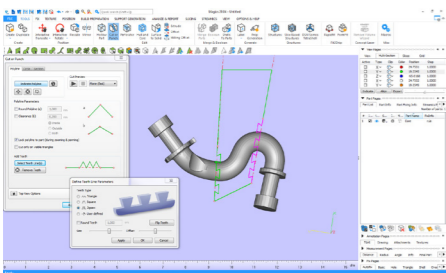
From data preparation in Magics to managing production with Streamics, Materialise's integrated software solutions simplify 3D printing, enhance workflows, and provide traceability. The MCP's capabilities add invaluable advantages to this lineup, including its own dedicated Build Processor as well as Materialise Inspector.
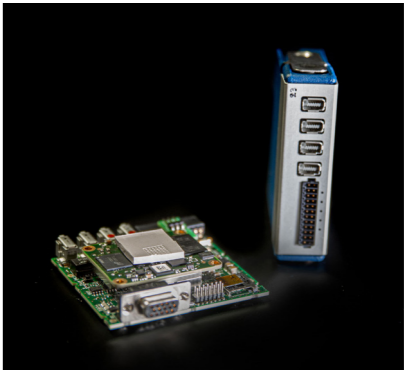
3. Materialise Build Processor

Control at your fingertips

- Process and transfer build data to your controller automatically
- Define more than 250 parameters to control the speed and quality for your machine, applications and material'
- Use with the Laser Sintering, Laser Melting, and Stereolithography technologies, including multi-optics machines
- Enable your machine's users to generate different build styles
- View slices and verify complex jobs before sending them to your machine
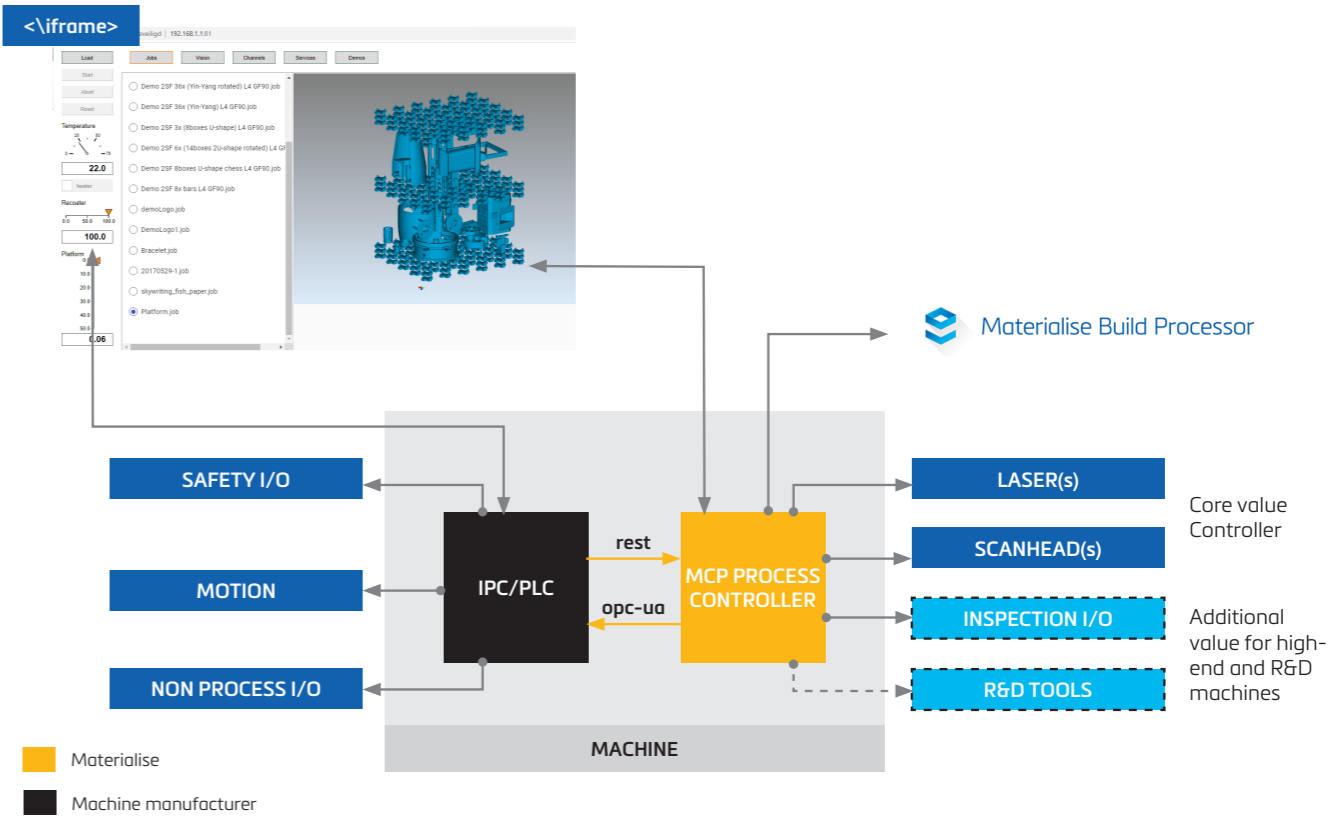- 'Make it your own' via a scalable offering of partner collaboration models

4. Materialise Control Platform

A Flexible Solution with an Open Connection

The sleek MCP seamlessly integrates into any 3D printer and simplifies the development of AM machine upgrades. With a flexible interface and direct Build Processor connection, you'll experience a customizable and efficient workflow.

5. Machine

Materialise Build Processor

SAFETY I/O	LASER(s) — Core value Controller
MOTION — IPC/PLC — rest / opc-ua — MCP PROCESS CONTROLLER	SCANHEAD(s)
NON PROCESS I/O	INSPECTION I/O — Additional value for high-end and R&D machines
MACHINE	R&D TOOLS

- Materialise
- Machine manufacturer

> *Consistency and reliability are now a must in this industry. Thanks to the Materialise Control Platform, our customers get the most out of our machines. ensuring consistent, high-quality results time and time again.*
>
> **Sindoh**

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Let's advance additive manufacturing together

By combining our shared know-how and expertise, we can bring more control to AM users than ever before. We're with you each step of the way to ensure that we bring a top-of-the-line solution to the market together.

Discovery

Discover the Materialise Control Platform technology. Our experts will share with you the possibilities that can be created by integrating our solutions into your machines to bring more control into the users' hands.

Exploration

Explore ways to build your technology upon Materialise know-how. We'll work together to determine the best way to incorporate our combined IP to build a first-rate machine that differentiates you from the competition.

Implementation

Verify the implementation of the MCP into your technology before you buy, and finalize your machine through easy modifications and developments with support from Materialise. Experience your fastest time-to-market yet.

Datasheet

- ► Machine type: laser-based powder/ resin systems (SLA, LS, LM)
- ► Recommended power supply: 100 W, 24 VDC (separate PS)
- ► Temperature limits: 0-45°C (MTLS-4 operating temp: 0-45°C), NI-9147 operating temp: -40°C-70°C
- ► International protection rating: IP 20 Size panel mount:
- ► Supported protocols: REST, OPC-UA, RS232, RS485, USB, Modbus (RS485 and TCP/IP), ADS (Beckhoff)
- ► OS: Windows 10 (x64), 4Gb RAM

Software	Description	Info
Configuration Tool	Configure the software representation of your AM machine	Fully web based tool. The Configuration Tool allows you to easily configure the H/W components and parameters of your machine
Calibration Tool	Calibrate your entire optical set-up	Deviations in the range of 20-50 μm

Hardware modules	Description	Info
Controller	cRIO NI-9147	4-slot Ethernet chassis, Zynq-7020 FPGA
Scanning + Laser	SL2-100 (MTLS-0004)	Supporting SL2-100 protocol (preferred protocol), steers Scan head + Z – Axis 20-bit positioning resolution
	XY2-100 (MTLS-0004)	Supporting XY2-100 protocol, steers Scan head + Z – Axis, 16-bit positioning resolution
	Digital laser (MTLS-0004)	High speed DO for up to 2 lasers PWM and FREQ laser interfaces
	Analog laser (MTLS-0004)	2 Analog Output signals [V] Analog laser interface

Contact us

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