



Meltio Space Software Removing key barriers for metal 3D Printing adoption in industry

Presented by our Meltio Engine and Space Product Manager

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#ICAM2023



INTERNATIONAL
ADDITIVE MANUFACTURING



Wed
11:00



Developing Wire-Laser Metal 3D Printing Technology

Our mission is to **delight customers, partners and employees by pioneering the development of affordable metal 3D printing solutions that are reliable, safe and easy to use**, continually reinforcing our status as **disruptors**.

Meltio has a **multidisciplinary** team in order to develop our product line up, including Hardware, Software & Firmware, Electronics and Electrical engineers.





Meltio's Partner Ecosystem

250+

Systems
Installed

50+

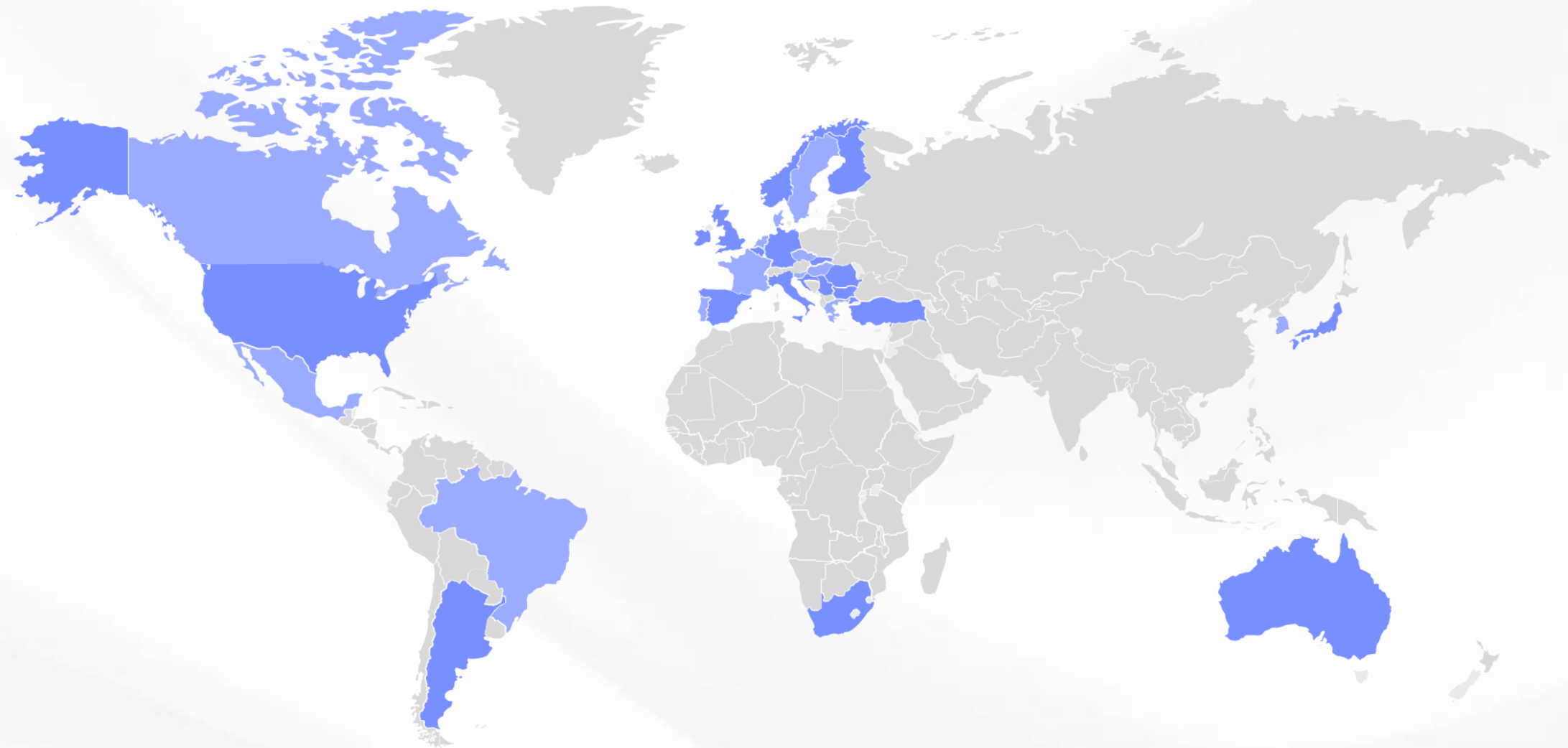
Sales and
Integration partners

13+

Software
Partners

60+

Universities and
Technology Centers





Robot 3D Printing Software Challenges



Toolpath Generation

- Precise volumetric **material calculation for LMD**
- **Predefined workflows** for key printing applications.
- **Combine Multiple Strategies** within one program



Tailored to Meltio Process

- Key **process parameters** available in GUI, and as **presets**
- Delivered with **material print profiles**
- **Fine-tuned by geometry and print strategy**



Kinematics/Collision Simulation

- **Direct output** of robot code
- **Accessible and compatible** with the most popular robot brands
- **Collision detection** with robot and part





Why Meltio Space? 1/2

Seamless adoption = Knowledge + Accessibility.

Our target audience may not necessarily possess expertise in metal AM or robotics.

Our mission is to break down the barriers to entry, making this accessible to all.

Strong emphasis on the User Experience (UX) & User Interface (UI).

Aim to minimize the potential for errors and streamline tedious processes.

Contemporary Intuitive and user-friendly interface, we're creating an environment that fosters ease of use and efficiency.

Robot-Centric New Generation of software.

Significant progress in AM, particularly in the context of CNC machines and machining tool path development has created a standard in the industry, based in machining workflows.

The experience required to manage machining software require weeks of training, and this is why Meltio Space can not be based on this.





Why Meltio Space? 2/2

Focus: user-friendliness.

Generate toolpaths in the shortest time possible while incorporating a wealth of printing knowledge as print profiles. Our aim is to empower users to start the printing process from day one, enabling them to develop applications and solutions rapidly.

Potential to disrupt traditional production systems.

Bundled with the Meltio Engine Robot or the Meltio Robot Cell. For existing clients, we offer one-year software license with the purchase of training through your distributor.

Dynamic and ever-evolving.

Committed to continuously adding value to your investment by providing regular updates and improvements. Our mission is to be your partner in reshaping the landscape of metal part manufacturing, making it more efficient, accessible, and cost-effective than ever before."





Meltio Products



Meltio M450
3D Printer

For near net shape manufacturing.



Meltio Engine
CNC Integration

For hybrid manufacturing, repairs and feature addition.



Meltio Engine
Robot
Integration

Versatile solution for complex parts and laser cladding.

ABB
YASKAWA



Meltio
Robot Cell

Turn-key robotic Solution

KUKA
FANUC





SCENE GRAPH

- Cell Meltio Robot Cell - Product
 - ABB IRB4600 60/2.05
 - Robot Integration Hardware V3
 - IRBP A 500 D1000 H700
 - IRBP A Work frame
 - Work frame 1
 - Document
 - Tool path 4
 - 220221_CoolingBed.stl
 - TEXT.stl
 - CELL.stl

TOOL PATH

PROPERTIES

Layers	Print time
1359	31:52:21
Path length	Start/stop points
1148.078 m	2718
Segments	Material use
6795	1,288 cm ³
Layer time	
AVG 01:24 MIN 00:10 MAX 02:23	
Adaptive deposition	<input type="checkbox"/>

SETTINGS

Robot start target: Default home position

Add end target:

TOOL ORIENTATION

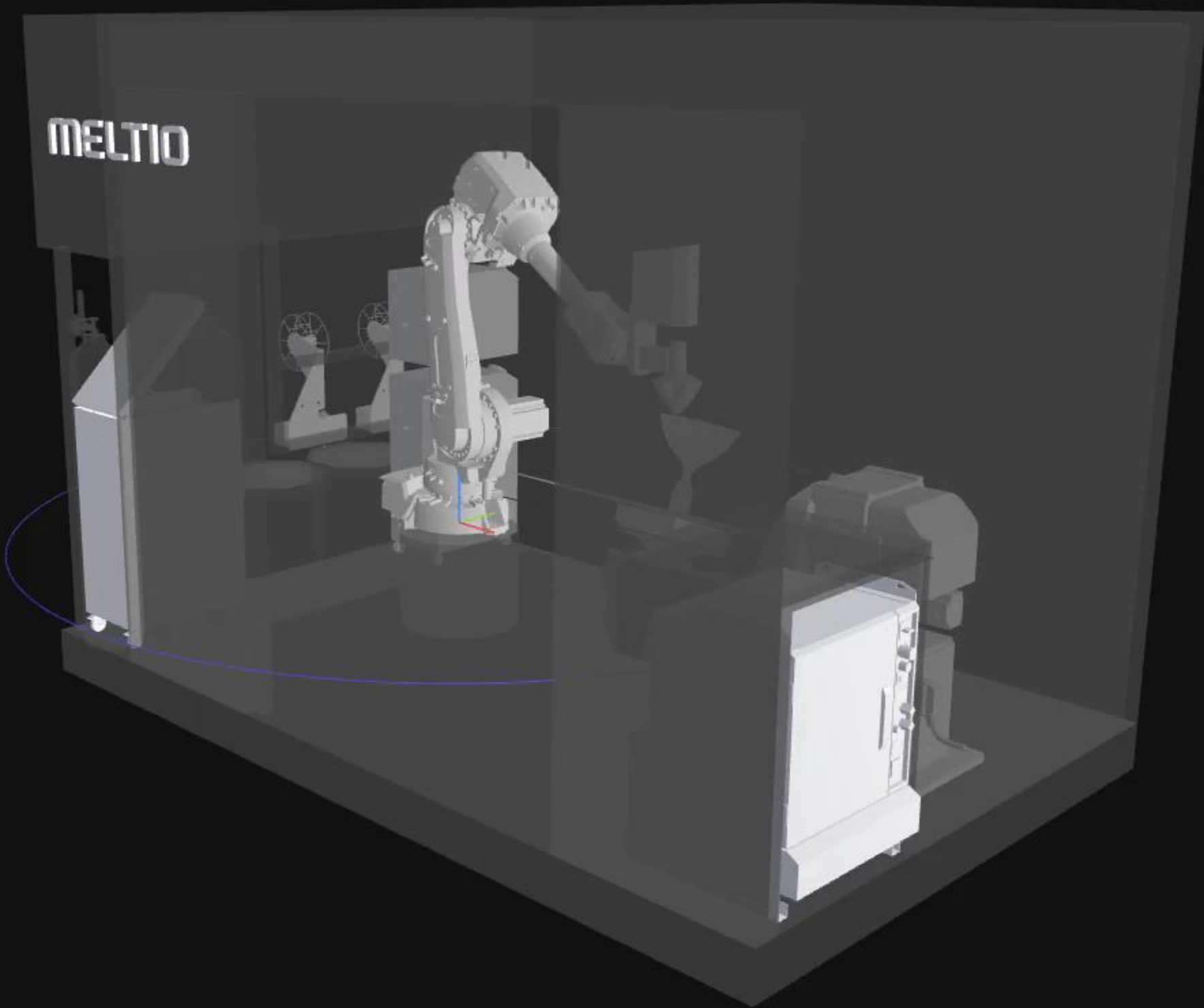
POSITIONER

Axis 1: 0 Dynamic

Axis 2: 0 Dynamic

Switch configuration:

EXPORT PROGRAM



PATHS || Animated

MELTIO



Matched together with The new Meltio Engine Software

Version 2.0.0.0



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What offers the new software update?

Updated and renewed User Interface

Custom profiles without the need of writing macros, every possibility parametrized.

Live 3D model based on reading TCP positions from robot

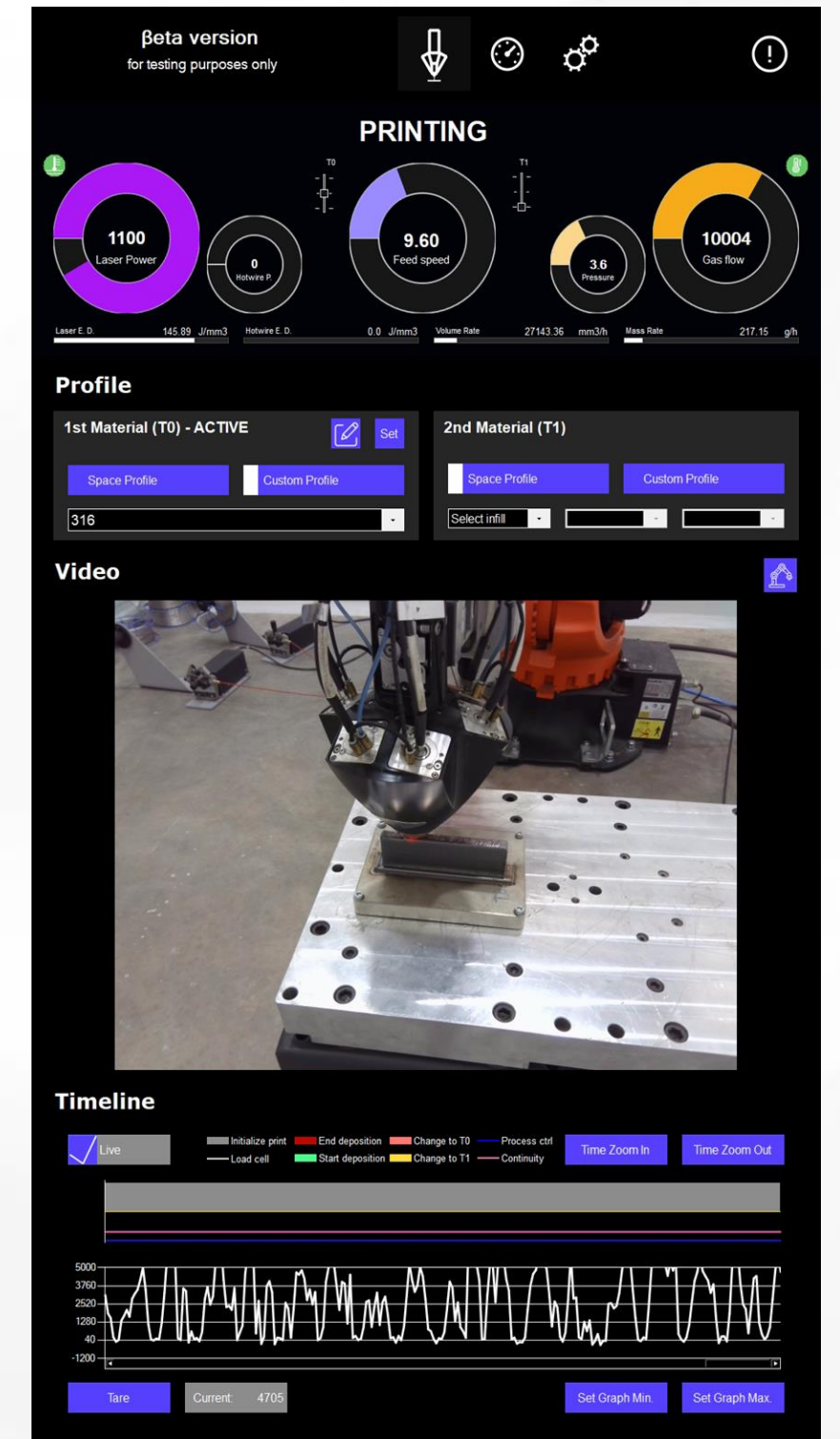
Timeline for Sensors Analysis

4K Webcam Integration

Compatible with **Welding Camera**

Profiles for **Meltio Materials** and **Meltio Space**

Free One-Click Update






Meltio Space Workflow & Slicing Strategies

Meltio Space provides a diverse range of slicing options to cater to your 3D printing needs. Our enhanced slicing techniques are designed to optimize your experience. Some of the slicing types we offer include:

- Planar Horizontal
- Planar Angled
- Planar Along Curve
- Revolved Surface
- Radial


- Radial 360
- Cladding
- Non-Planar Surface
- Conical Fields
- Sweep



Planar along curve

Slices the part in planar layers where the slicing angle varies according to a guiding curve you define.


EXAMPLE PARTS
Pipes | Manifolds | Furniture



Revolved surface

Slices rotationally symmetric parts, creating equally spaced toolpaths on the part surface with a tangent tool orientation.


EXAMPLE PARTS
Nozzles | Fuel tanks



Radial 360

Slices a part using layers that are "wrapped around" a radial surface. Optimized for features which twist or twine around a cylindrical substrate.

EXAMPLE PARTS
Screws | Impellers



Conical fields

Slices a part with a conical substrate. Can be used to print difficult overhangs in multiple directions.

EXAMPLE PARTS
Pipe joints | Sculptures



MELTIO



THANK YOU!
Visit our booth
Hall 9 – F06



Or Contact us info@meltio3d.com for more information