'25 MANUFUTURE CONFERENCE

MANUFUTURE CONFERENCE

Dual use in advanced manufacturing: metal AM at the crossroads of civil and defense applications

Paolo Calefati, CEO Prima Additive by Sodick

MANUFUTURE-EU

Prima Additive by Sodick

Dual use in manufacturing

Metal Additive Manufacturing (AM) represents a strategic **dual-use technology**.

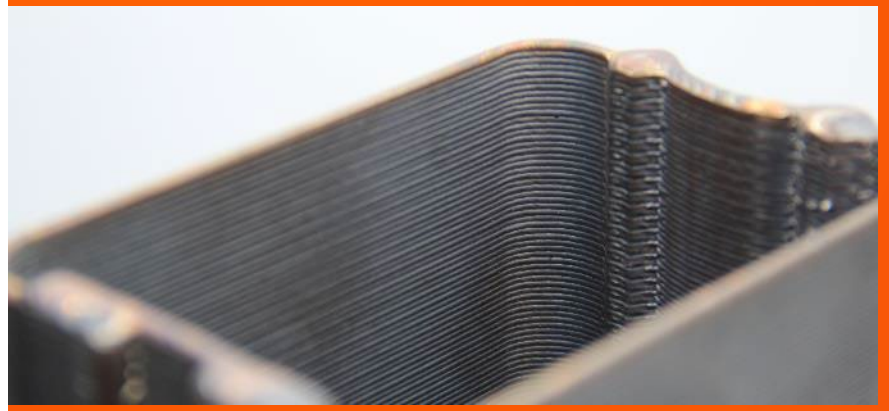
- On the one hand, it enables lighter, more efficient, and sustainable industrial components.
- On the other, it offers **critical capabilities for defense and aerospace**, where flexibility, resilience, and independence of supply chains are paramount.

Dual use is not just about technology: it is about building bridges between civil innovation and defense security.

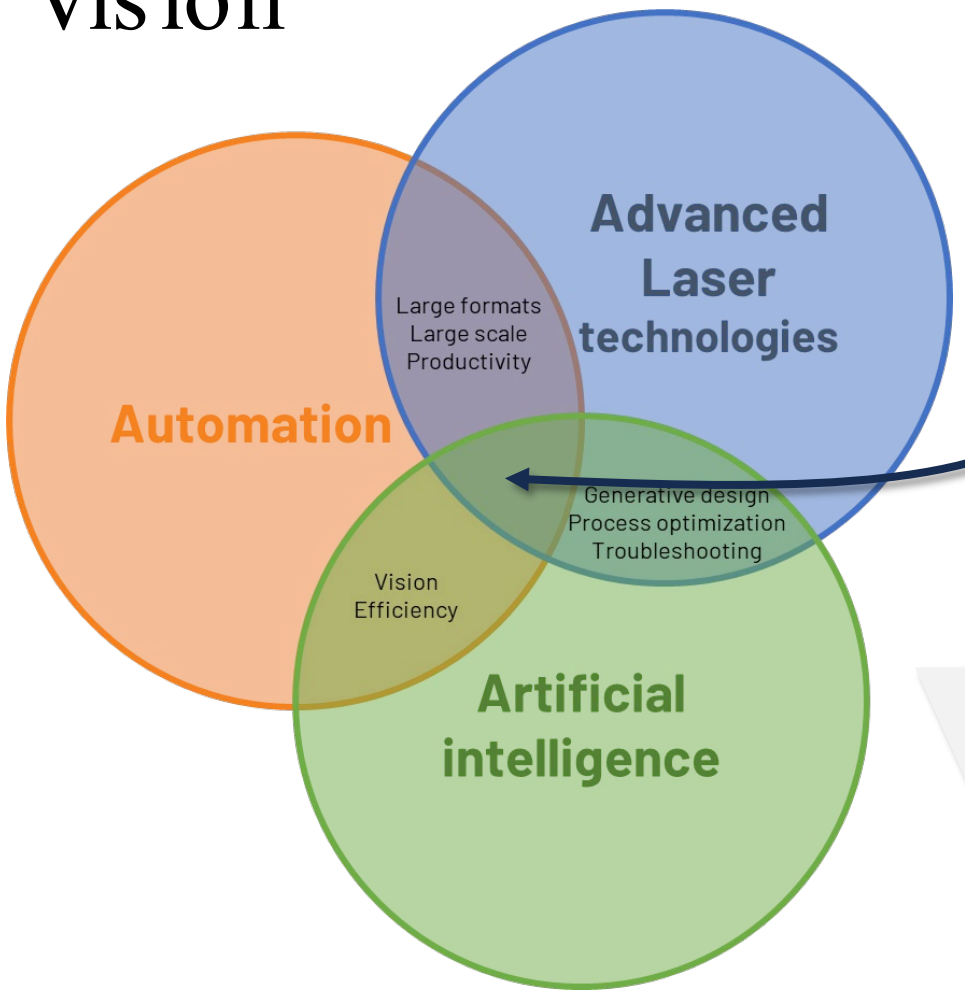
Key trends in Metal AM

We are witnessing an unprecedented acceleration in the **industrialization of Metal AM**:

- From **prototyping to production** : companies are deploying fleets of machines, enabling serial production and cost competitiveness.
- **Wire-DED growth**: Wire-based Directed Energy Deposition is gaining rapid traction, with a forecast global market of **$1.5 billion by 2033** (CAGR 15.5%).
- **Sector-specific demand** : Aerospace, defense, energy, and oil & gas require **large, complex components** , especially in titanium and aluminum.
- **Powder costs reduction** : making AM viable for **medium-lot production** in steels and aluminum, reshaping traditional foundries.



Vision



Scalability at the intersection of Laser, Automation and AI

our strategic vision is to deliver scalable manufacturing solutions that combine **advanced laser technologies**, **automation**, and **AI**.

The future of metal manufacturing is:

- **Laser-powered** for precision, repeatability, and material flexibility
- **Automation-driven**, enabling consistent quality, high throughput, and reduced human error
- **AI-enhanced** for real-time insights, predictive maintenance, and smarter decision-making

› For **civil industries**, this means **efficient**, **scalable**, and **automated** production lines

› For the **defense sector**, it means **reliable**, **secure**, and **flexible** manufacturing platforms

One technological core,
applied across dual-use domains.

Our European roots

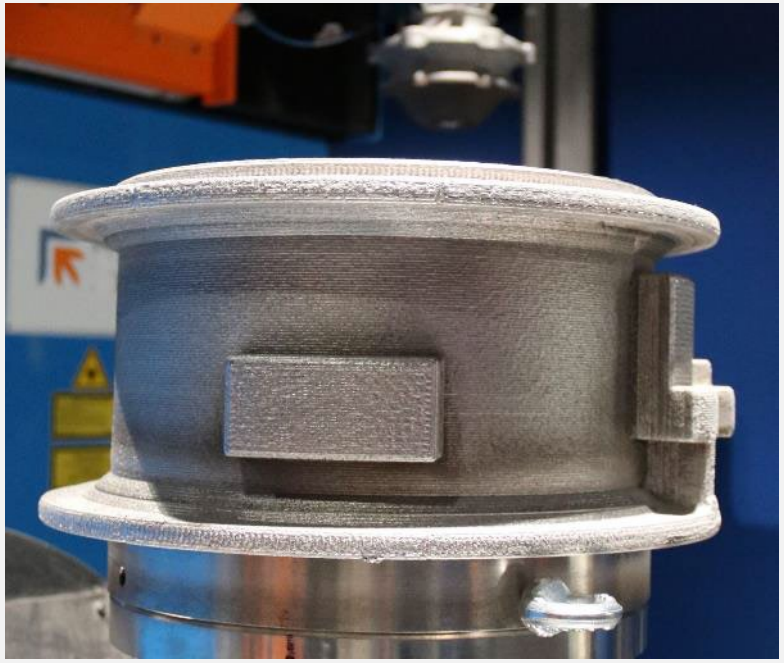
Our journey is deeply rooted in Europe.

- We were born within the **EU-funded Borealis project**, which gave us the opportunity to build strong know-how in metal additive technologies
- Between 2015 and 2025, we have been involved in **over 30 national and EU-funded research projects**, continuously contributing to Europe's innovation ecosystem

Through EU projects and industrial collaborations, we have achieved **steady organic growth**, becoming a **key player** in metal additive manufacturing and advanced laser systems.

- Partnerships with major aerospace and industrial players in Europe
- Constant innovation in both **Powder Bed Fusion (PBF)** and **Direct Energy Deposition (DED)**

Research is in our DNA. Collaboration has always been our engine.



NEW PARTNER

Sodick acquisition

Founded in **1976**, Sodick is a Japanese company and a world leader in the production of **high-speed, high-precision machine tools**, additive manufacturing systems and **hybrid solutions** that combine additive manufacturing and chip removal. Sodick is a pioneer in industrial manufacturing technologies and has a global network of customers in the **aerospace**, **medical**, **automotive** and **electronics** industries. It has **over 3,500 employees** and branch offices dedicated to sales and service activities **all over the world**.

In May 2025, **Sodick** acquired Prima Additive.

Sodick is a **global leader in precision machine tools**, with decades of expertise in EDM and high-accuracy systems.

With Sodick's financial strength and engineering heritage, we now combine:

- **Italian genius in laser innovation**
- **Japanese precision in industrial excellence**

Our Next Chapter: AltForm

Exclusive anticipation for ManuFuture

A NEW BEGINNING

On **November 5, 2025**, Prima Additive by Sodick will officially become **AltForm** – *Advanced Laser Technologies for Manufacturing*

- Anew name, expressing our new scope
- Anew brand identity, reflecting our transformation
- Astronger positioning: from Additive to the broader universe of Advanced Laser Technologies

You are among the first to hear this.

Innovation example

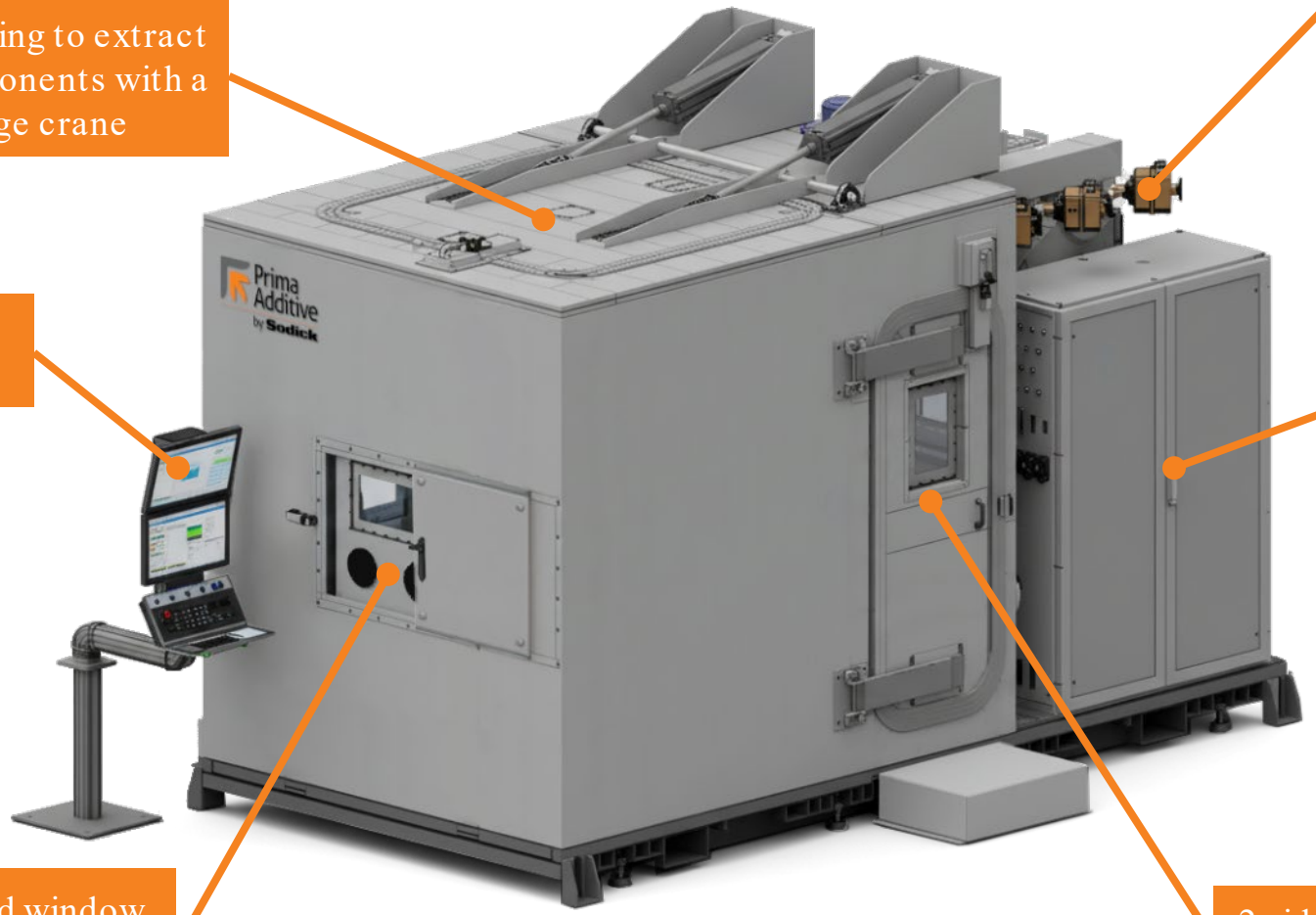
IANUS Dual-Process Cell with Inert Atmosphere

The IANUS Dual-Process system integrates both **Powder DED** and **Wire DED** technologies into a **fully enclosed, inert chamber**, enabling safe and high-quality processing of reactive metals such as titanium and aluminum.

Key Benefits :

- **Inert environment** (argon or nitrogen) ensures oxidation-free processing of reactive alloys
- **Dual-process flexibility** : powder DED for precision and geometry; wire DED for high-deposition-rate operations
- **Ready for Aerospace and Defense**: from new builds to repair and coating
- Unlock **research potential** and **markets** on topics related to **reactive materials**

Machine features



Top opening to extract the components with a bridge crane

TEXT

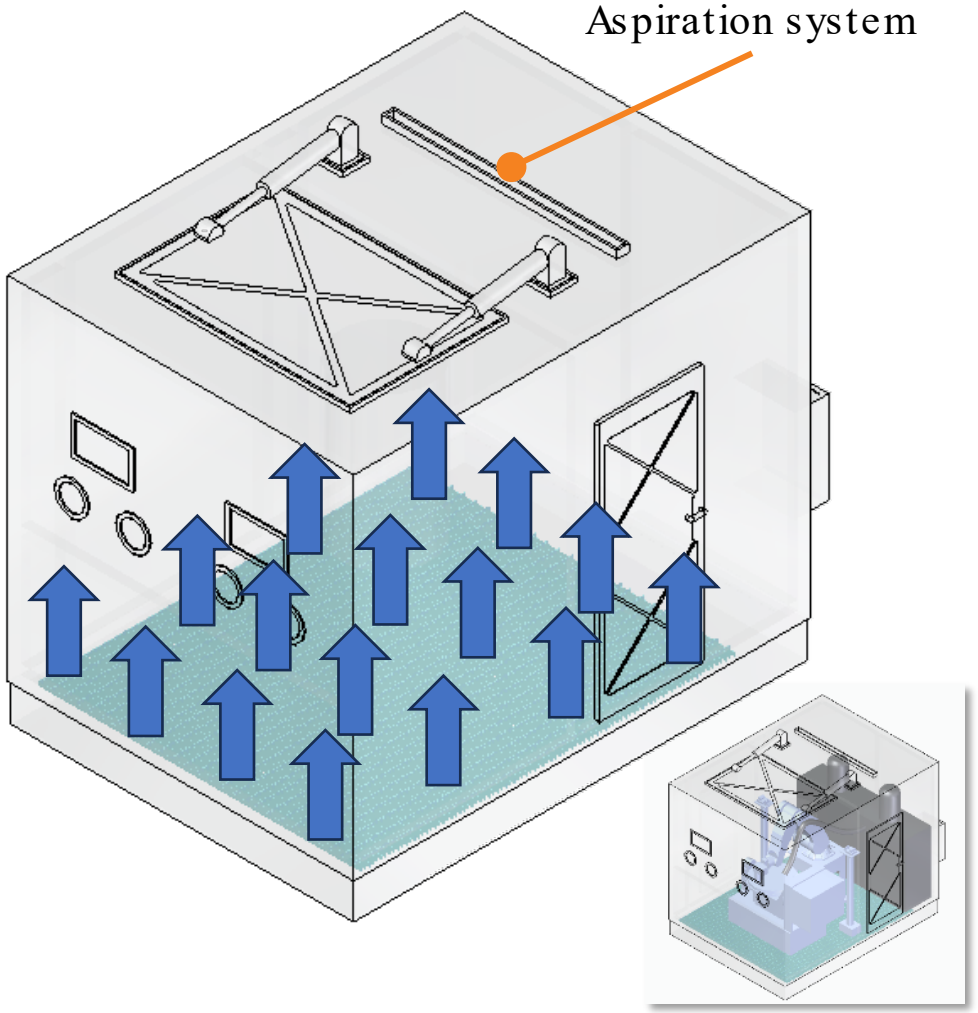
Powered by Siemens Sinumerik One

TEXT

Glovebox and window to observe the inside of the work area

2 side doors for access to the work area

Inerting specifications



To optimize chamber inertization, we designed an **innovative gas inlet system**, with **organized flow from the floor** and **suction from above**.

The goal of the organized flow is to **avoid turbulence** that could mix argon and oxygen. Inertization is achieved by **alternating phases of inert gas flow (flushing) with quiet periods**, necessary to stabilize the atmosphere.

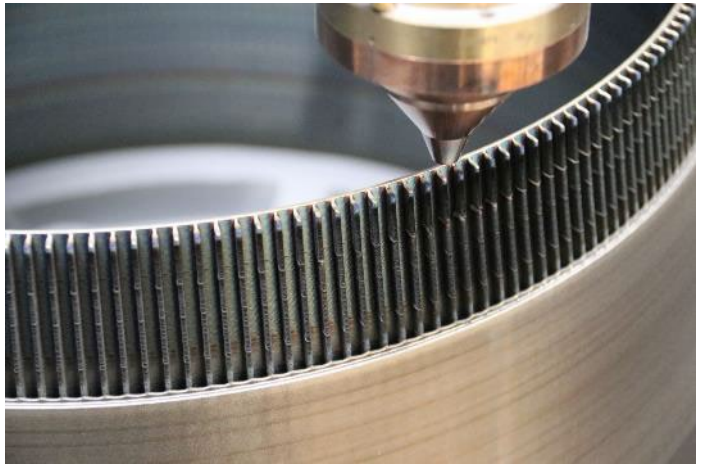
The quiet phase allows for the evacuation of any oxygen pockets and makes the subsequent flushing phase more efficient.

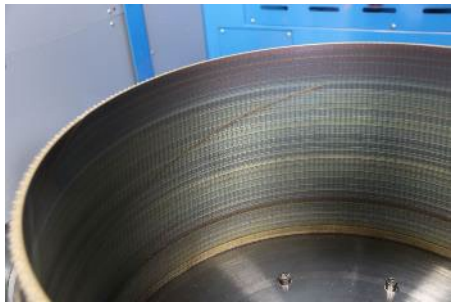
This inertization concept significantly reduces gas consumption and inertization times, eliminating the need for an antechamber.

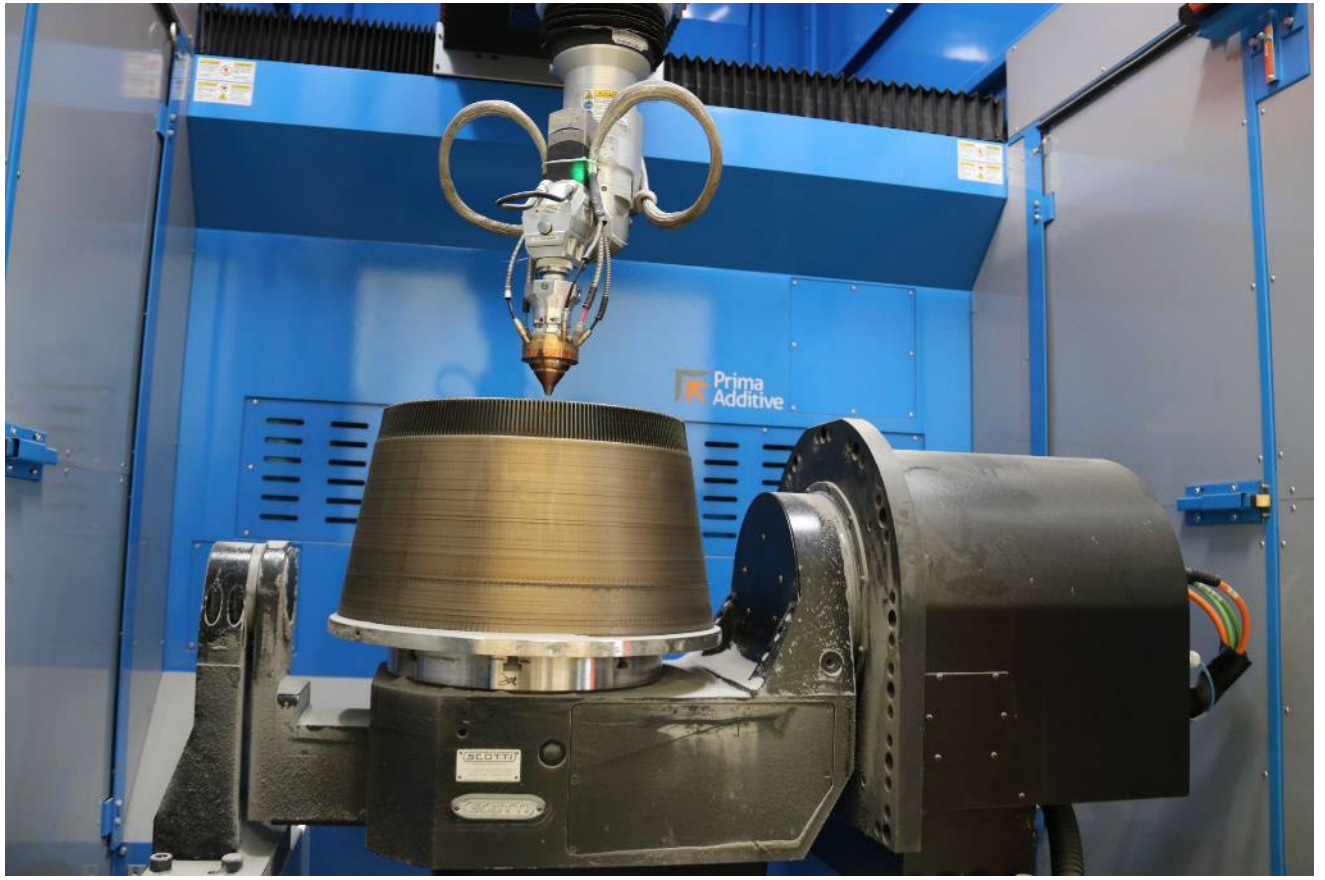
Estimated time for inertization (100 ppm O_2)	**50 – 60 mins**
Estimated Argon consumption for inertization	**120 m³**

High Precision Configuration
Large Component with Thin Channels

Material: Inconel 718
Industry: Aerospace

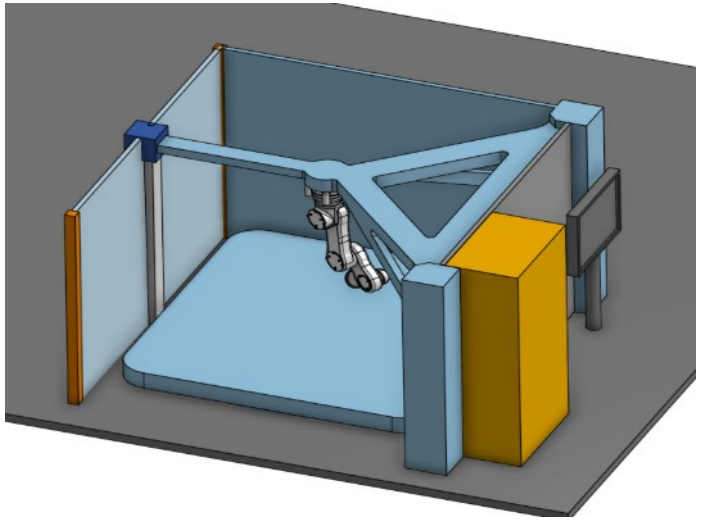




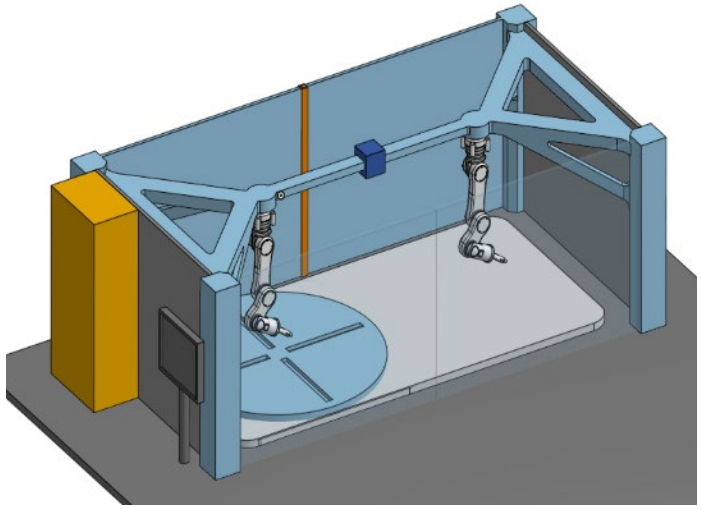


Innovation example

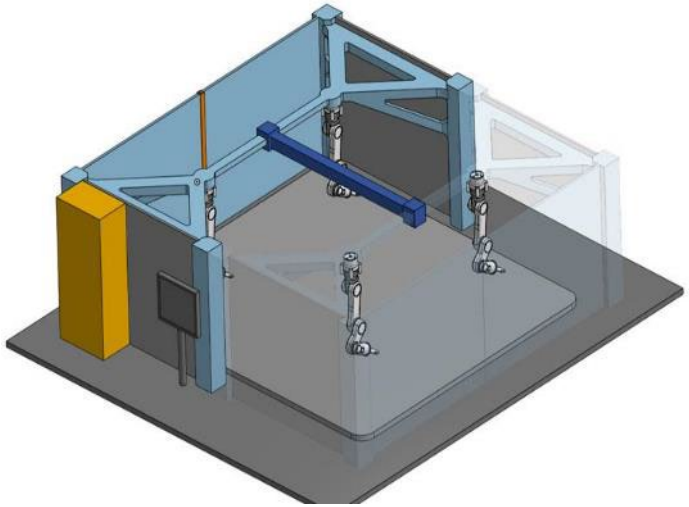
New patented Modular Cell with Inert Atmosphere



Single module configuration



Dual module configuration



Quad module configuration

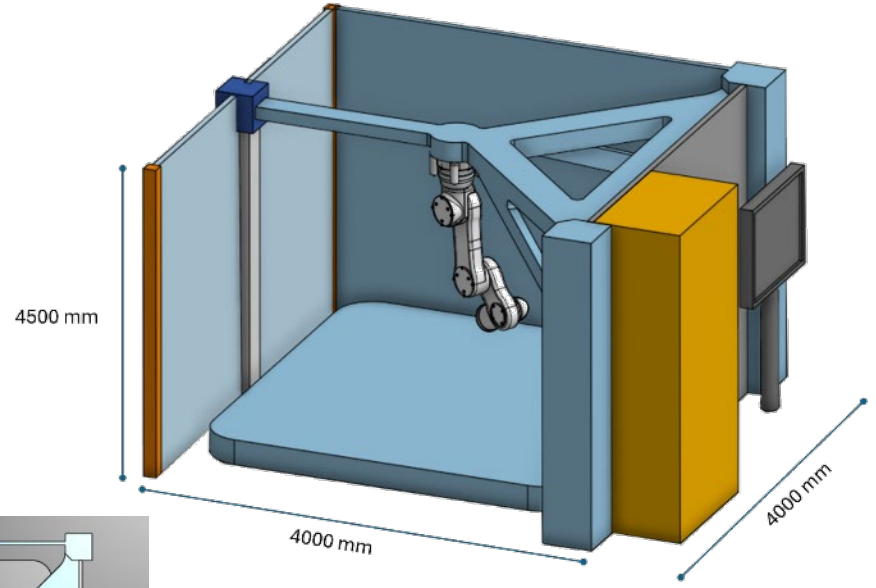
Technical competitive advantages

- **Inertization from the bottom** allows a **modularity of inert volume** because lateral panels can be removed resulting in a **modular expansion of the inert chamber**
- **Synchronized control unit**
- **Ceiling-mounted robots** free up floor space, allowing for an **extended working area**
- **Centralized inert gas atmosphere management**
- Suitable for **big parts printing** or operation on multiple parts

New Modular Advanced Laser Processes Cell

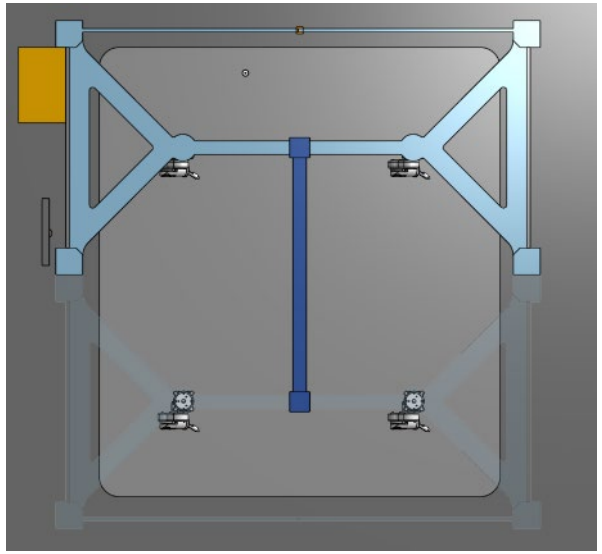
System advantages

- High flexibility and modularity
- Lower costs and faster production
- Easily adapts to different components and tasks
- Enhanced quality control and safety
- Simple scalability



Technical features

- Robotic arm with laser unit
- Intelligent control unit
- Height-adjustable working table
- Movable panels with seals
- Human-machine interface (HMI)
- Automatic recognition of connected cells



This project will soon be deployed by a **leading European defense company** to produce **large fighter aircraft components** .

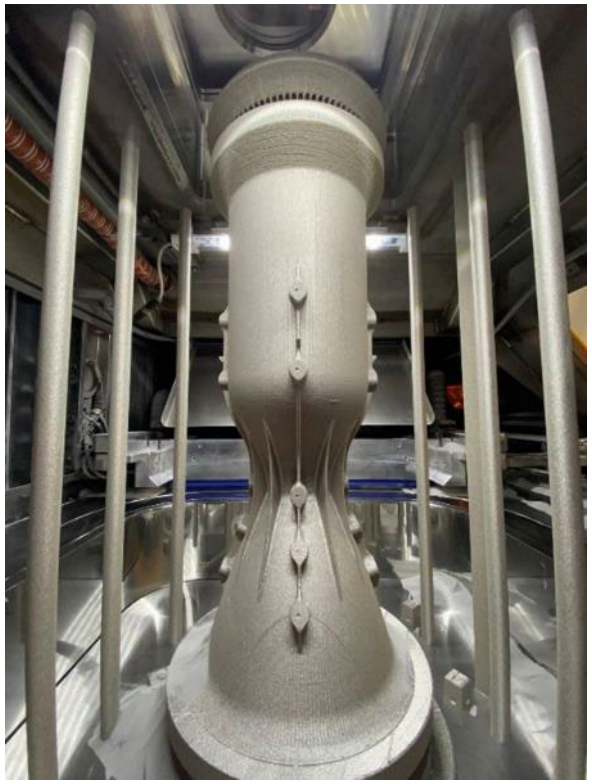
FROM AEROSPACE TO DEFENSE

Dual use transferability

Our aerospace know-how is **directly transferable** to defense.

- From repairing critical parts to building structural components
- From powder to wire, from compact to modular cells

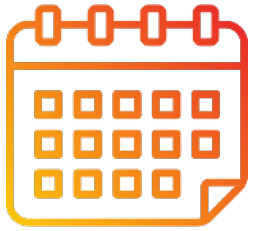
Always combining **automation, scalability, and security**.



Conclusions and next steps

Prima Additive by Sodick (soon AltForm) has grown from European roots into a global player.

- Dual-use technologies are the future of industrial sovereignty
- Our mission: enabling **industrial-scale, automated, AI-driven metal AM and advanced laser processes**



Join us at **Formnext, Frankfurt, 18–21 November 2025**
Hall 12.0, Booth E139
Be the first to discover our **new brand, new machines, and new digital ecosystem**

Let's continue to **collaborate in Europe's Open Innovation framework**, where civil and defense applications converge.

MANUFUTURE-EU

'25 MANUFUTURE CONFERENCE

Prima Additive by Sodick

www.primaadditive.com

cecimo · Centimfe · DIE METALLTECHNISCHE INDUSTRIE Österreichs stärkste Branche · INESC TEC · InoPro · IRISH MANUFACTURING RESEARCH · LMS · MANU-KET

MONDRAGON · Prima Additive by Sodick · PRODUTECH · SINTEF · smart advanced manufacturing · TAL TECH · Teaching Factory · Teknikföretagen

Thank you!