



# INTERNATIONAL CONFERENCE ON ADDITIVE MANUFACTURING (ICAM)



Wednesday, 20 September  
11:00 to 12:30



Room 3A, Convention Center  
EMO Hannover Fairground



# Renishaw's Perspective on AM

**Matt Parkes**

**AM Strategic Development Manager, Renishaw PLC**

**[linkedin.com/in/matt-parkes](https://www.linkedin.com/in/matt-parkes)**

**[www.Renishaw.com](http://www.Renishaw.com)**

**#ICAM2023**



# Agenda



- Introduction to Renishaw
- Where are the existing opportunities in AM and how can we enable them?
- What are the outstanding AM challenges and how can we address them?





# Introduction to Renishaw



## Transforming Tomorrow Together

We make it possible to create the products, materials and therapies that will define our world in the decades to come and touch billions of lives

### Products

Manufacturing technologies

Industrial Metrology

Position Measurement

Additive Manufacturing



### Materials

Analytical instruments

Spectroscopy



### Therapies

Medical devices

Neurological

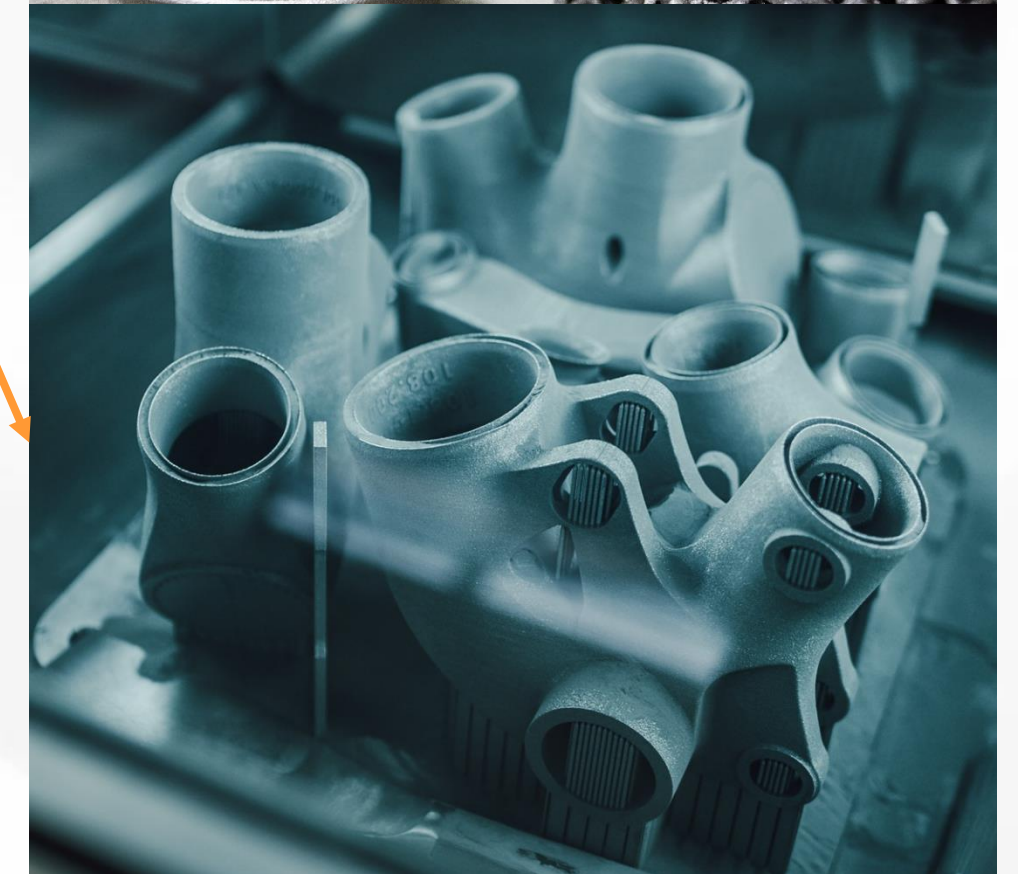
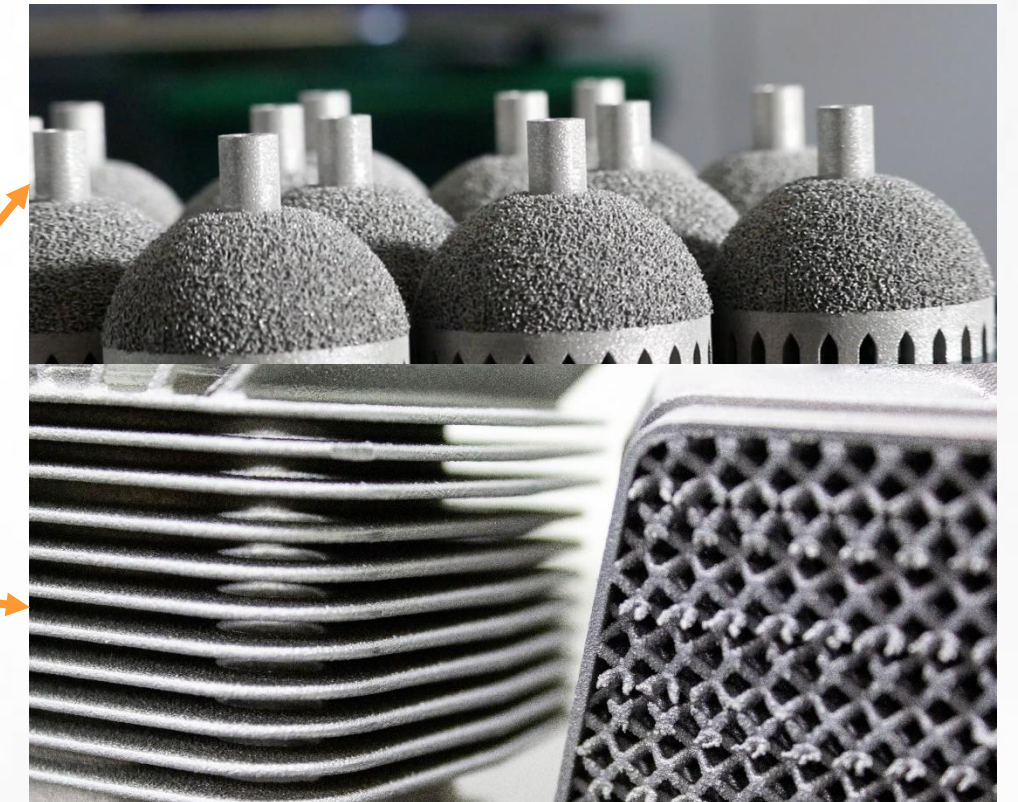
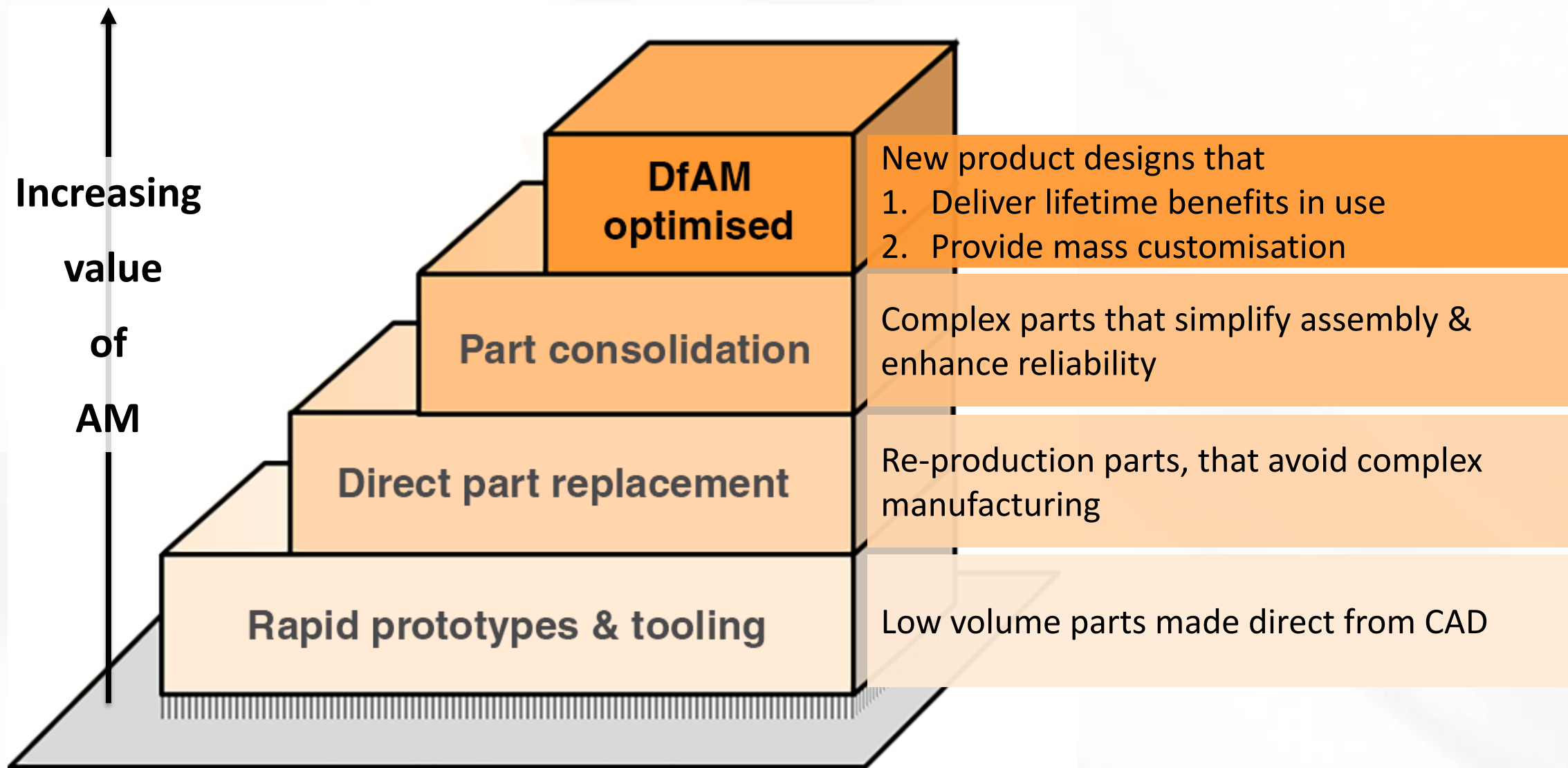


#ICAM2023

Neurological image: Chris Marshall / Mint Motion



# Accelerating the adoption of AM for volume production



[www.renishaw.com/en/additive-manufacturing-business-impact--43297](http://www.renishaw.com/en/additive-manufacturing-business-impact--43297)

#ICAM2023



# Scaling AM applications on RenAM 500



**LAB:**  
Material prove out

**PRE-PRODUCTION:**  
Part prove out

**FACTORY:**  
Volume production

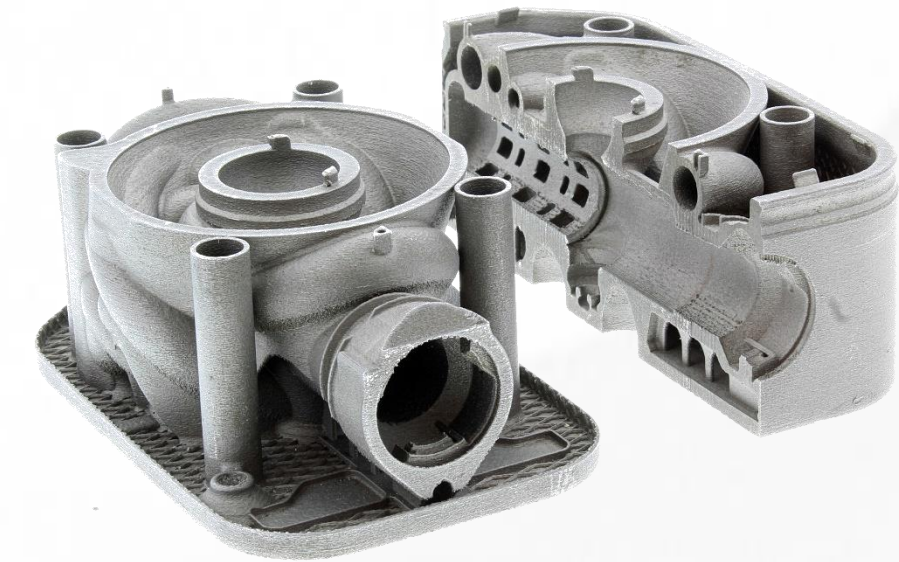




# Domin – ultra-efficient hydraulic valve



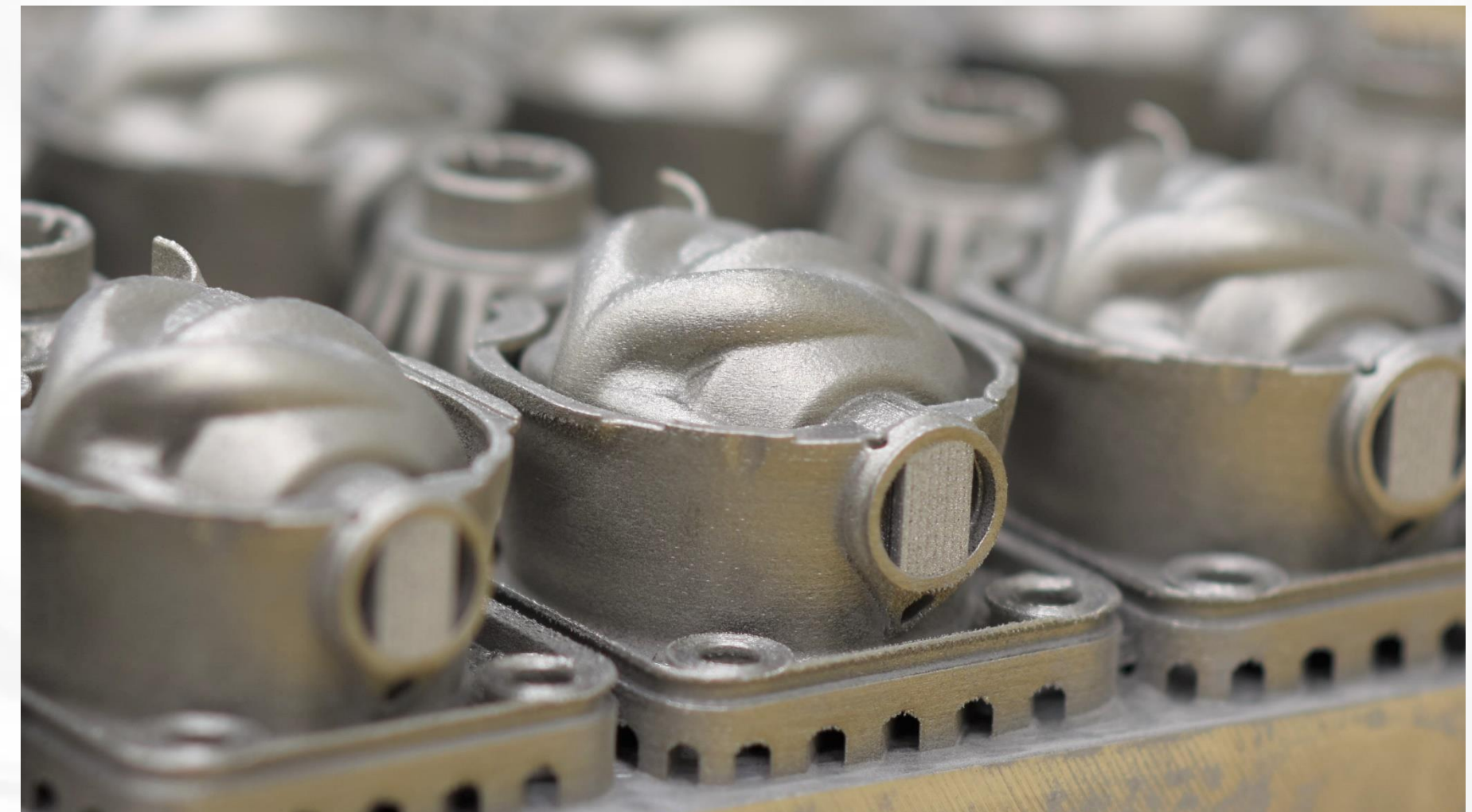
“Most hydraulic systems today only operate at **23 per cent efficiency**, resulting in the wastage of billions of kilowatt-hours every year...Globally, **hydraulics produces twice the CO2e emissions of the aerospace industry**<sup>1</sup>.



<sup>1</sup>Oak Ridge National Laboratory, *Estimating the Impact (Energy, Emissions and Economics) of the U.S. Fluid Power Industry*  
[www.renishaw.com/en/domin-chooses-renishaw-am-system-for-ultra-efficient-hydraulic-valve-production--47883](http://www.renishaw.com/en/domin-chooses-renishaw-am-system-for-ultra-efficient-hydraulic-valve-production--47883)



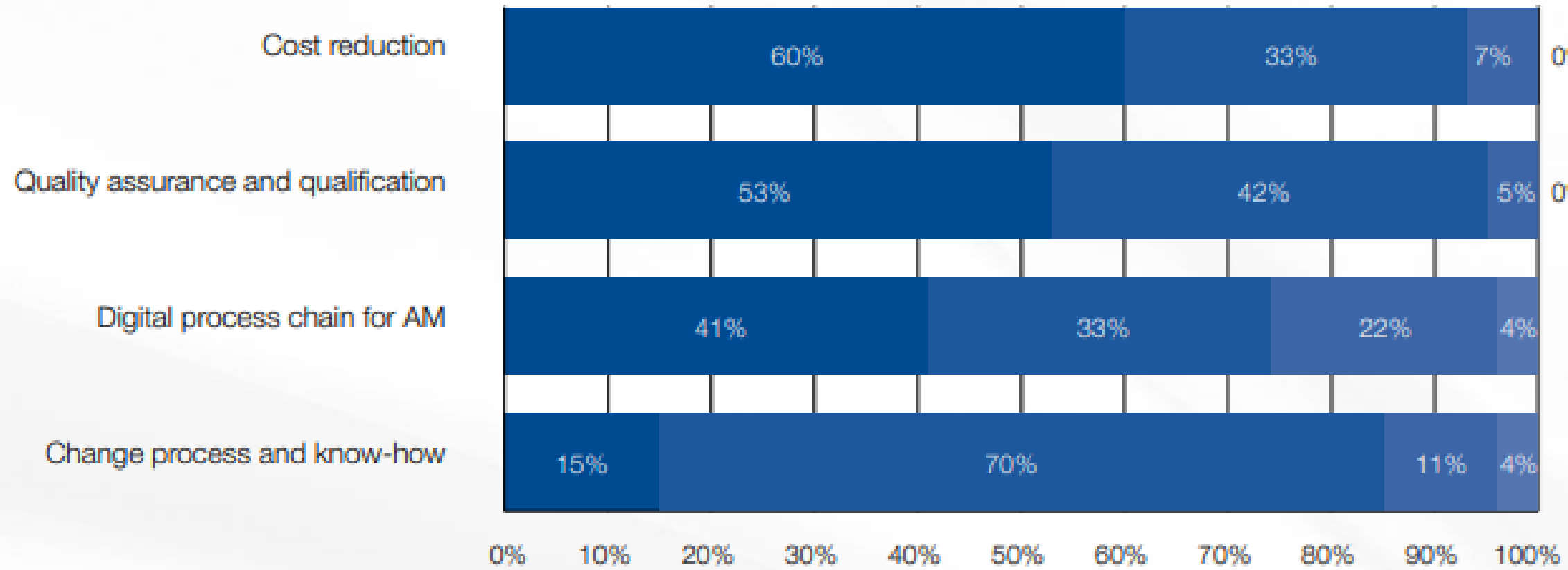
[www.domin.co](http://www.domin.co)



# Outstanding challenges to AM adoption



How important do you rate the following challenges in one to five years' time for your relevant business model?



- Cost remains the biggest barrier to broader adoption of AM for series production.
- Where the business case is proven, there's an outstanding challenge for users scaling up.
- So how can we ensure process control in Additive Manufacturing?

Source: Fraunhofer surveys and interviews

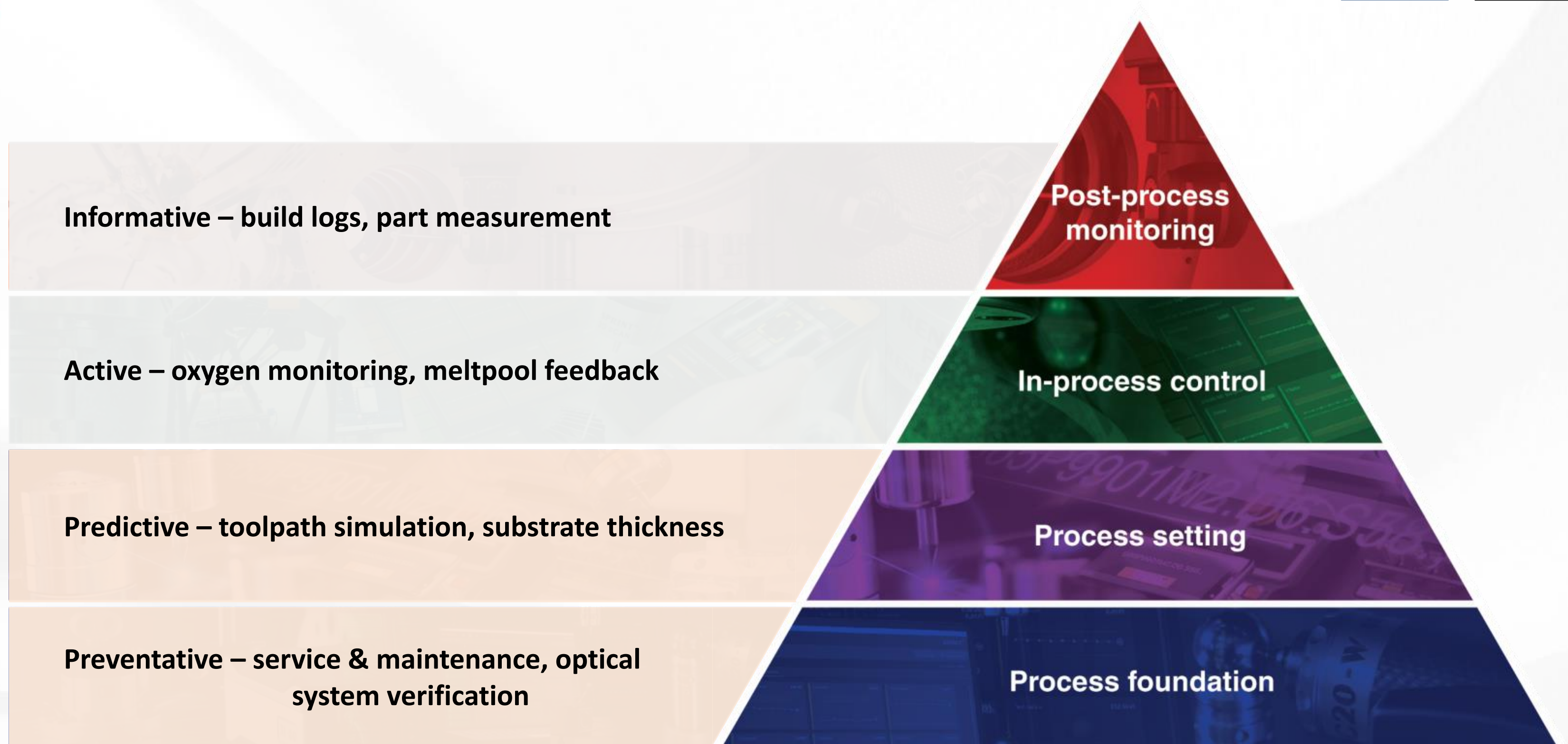
World Economic Forum Additive Manufacturing Breakthrough, January 2022  
 Weforum.org

#ICAM2023





# AM process control



**Informative – build logs, part measurement**

**Post-process monitoring**

**Active – oxygen monitoring, meltpool feedback**

**In-process control**

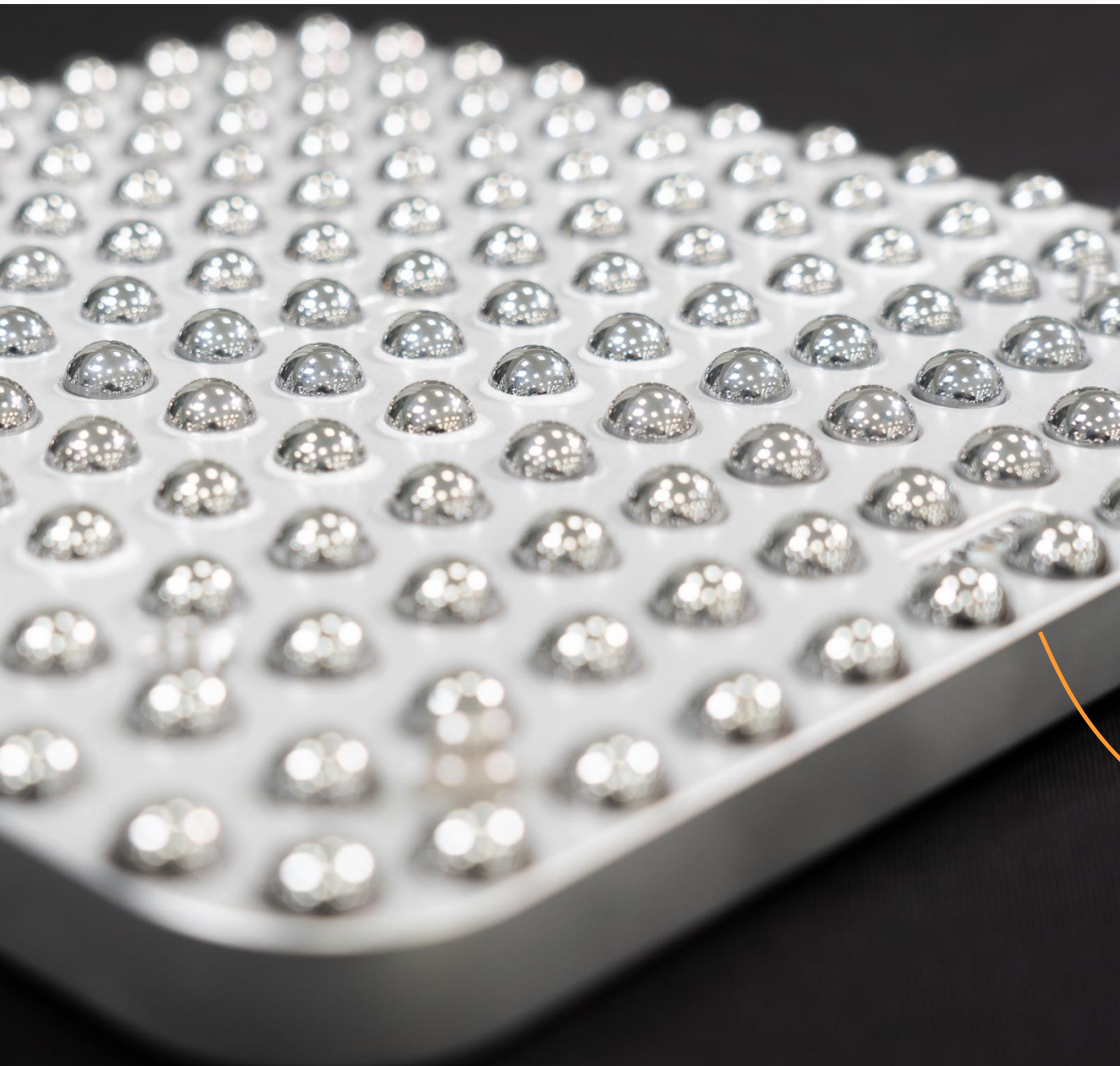
**Predictive – toolpath simulation, substrate thickness**

**Process setting**

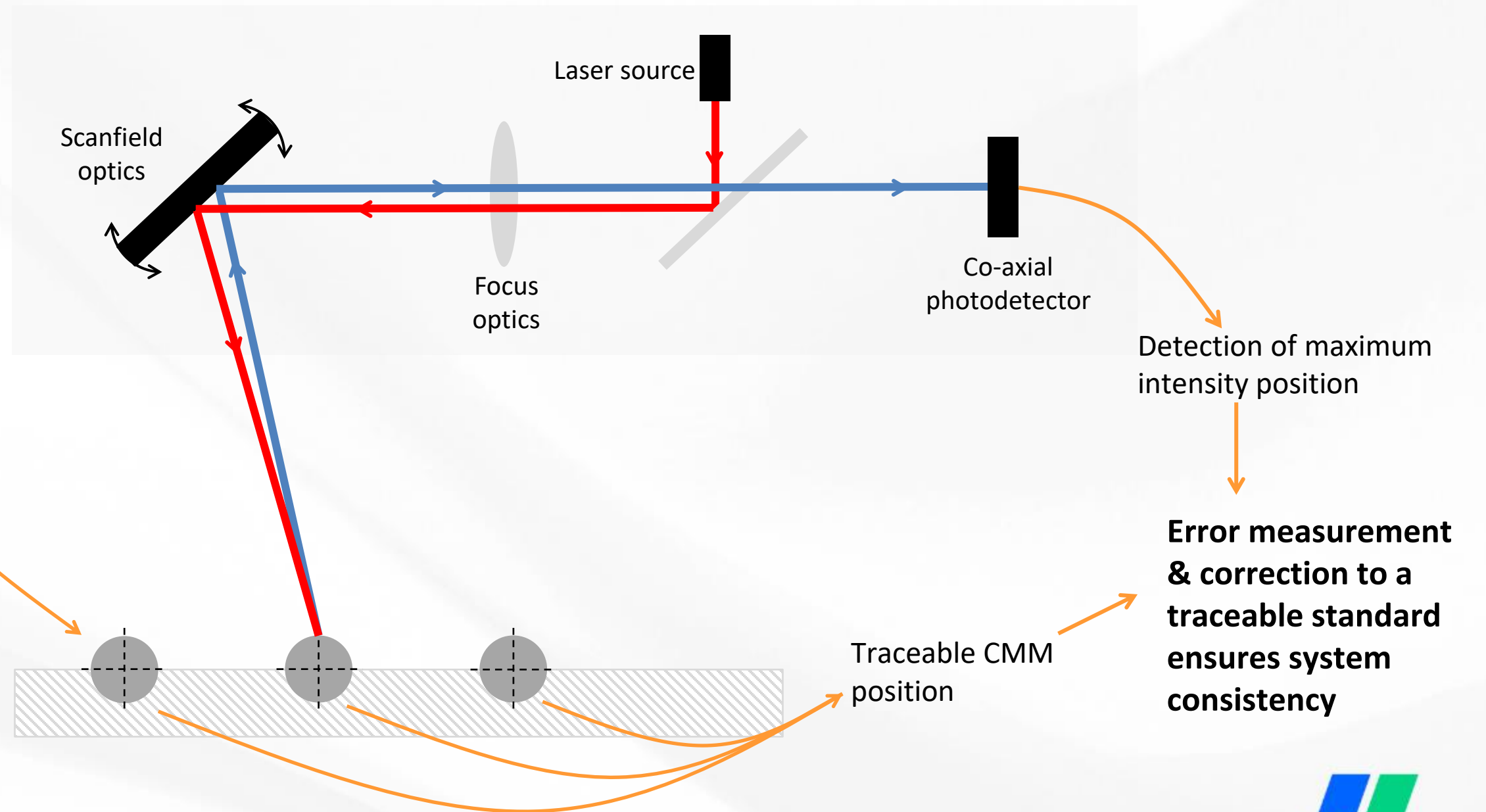
**Preventative – service & maintenance, optical system verification**

**Process foundation**

# Process foundation – optical system verification



## Optical System Verification





# Summary



- **Where are the existing opportunities in AM and how can we enable them?**
  - **Greatest value add comes from the DfAM components with lifecycle benefits.**
  - **Solutions that enable users to climb the value ladder are critical for the continued growth of AM.**
- **What are the outstanding AM challenges and how can we address them?**
  - **While cost remains the biggest barrier to adoption, validation and digital processes remain barriers to volume production.**
  - **Focusing on process foundation is key to enabling scalable applications.**



**THANK YOU!**

See you at ICAM 2025

