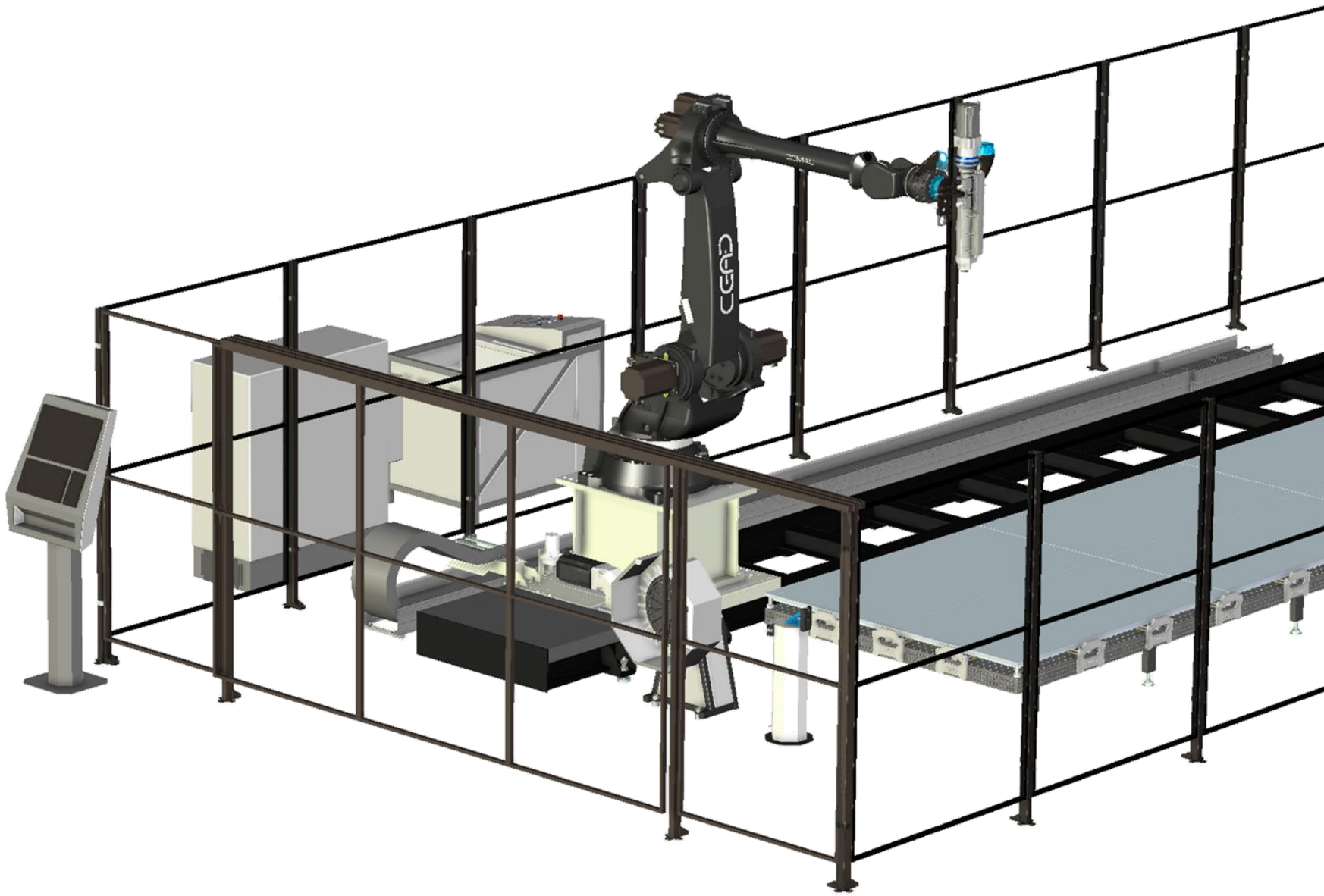
Pioneering LFAM solutions and collaboration with REDU

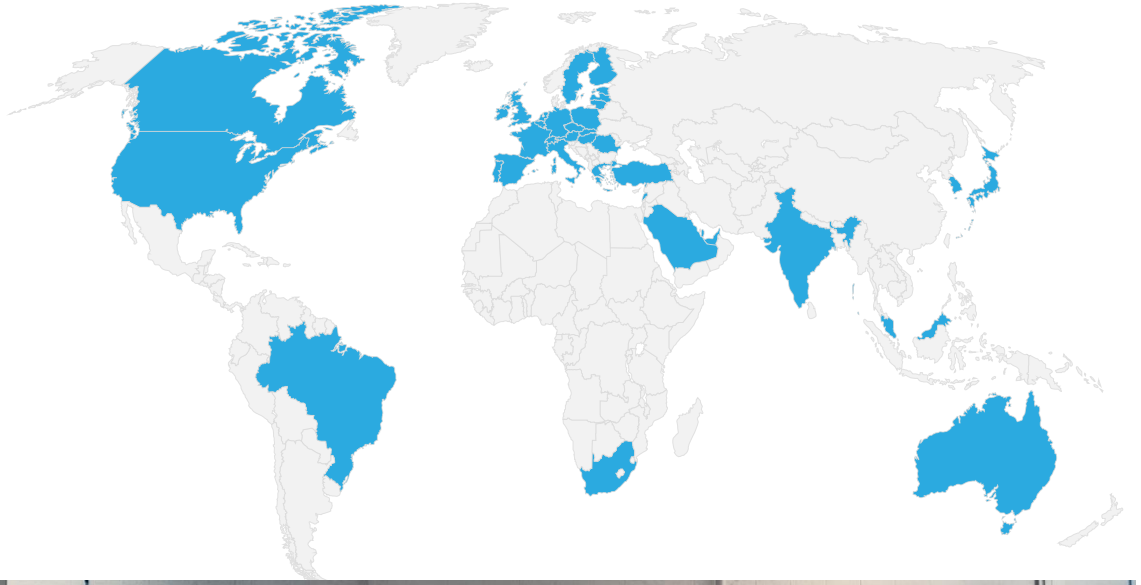
8 May 2026 | Erik Päßler – Technical Sales Engineer |

Agenda

1. About CEAD
2. Collaboration with REDU
3. Value and future of LFAM



We deliver & install worldwide

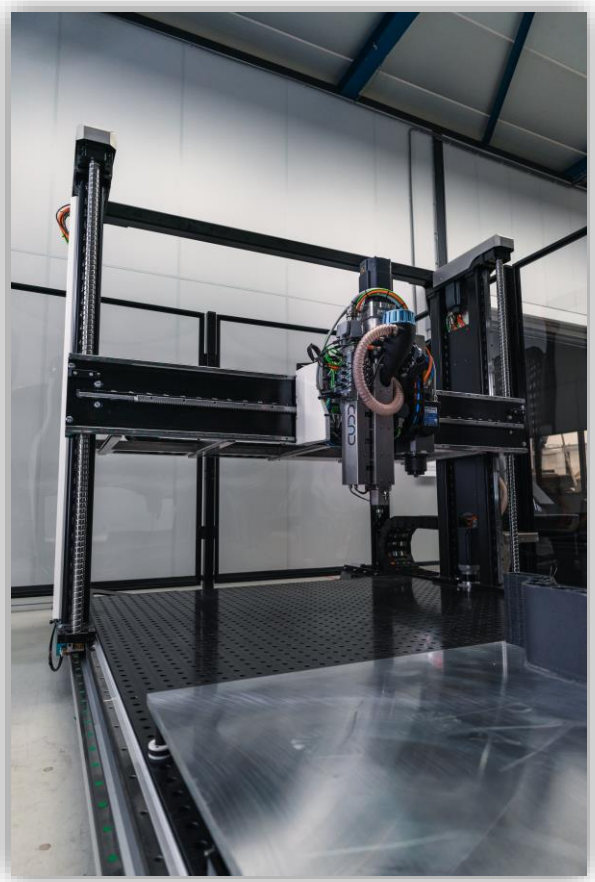


- privately owned LFAM technology supplier
- founded in 2014 – CEAD turns 12 today!
- approx. 90 employees (2026)
- locations:
  - CEAD B.V, Delft, The Netherlands
  - CEAD Group Inc. , Detroit, United States
- 240+ solutions in 25+ countries worldwide.
- local sales & support in France, DACH and USA
- a global network of partners

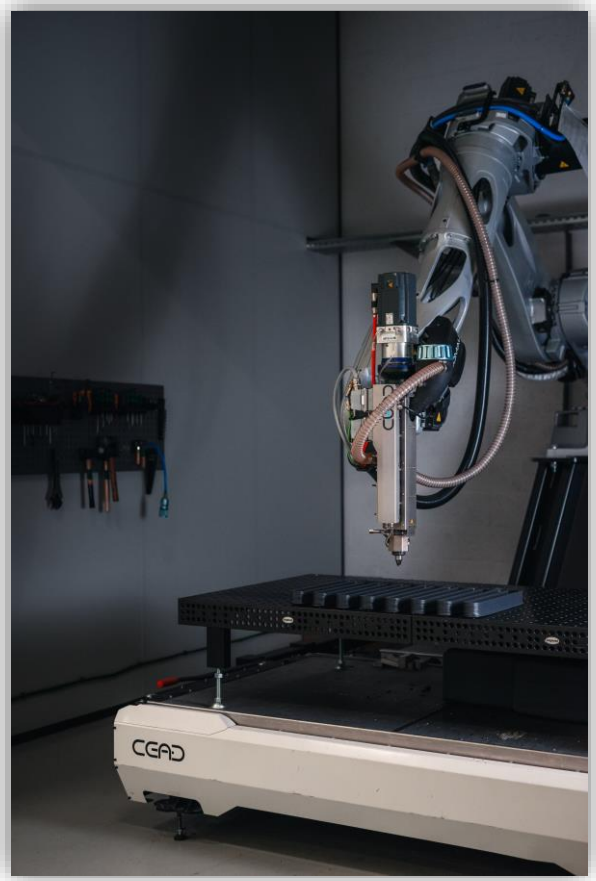
CEAD LFAM equipment

Print heads for pellet extrusion

Gantry-based solutions



Robot-based solutions

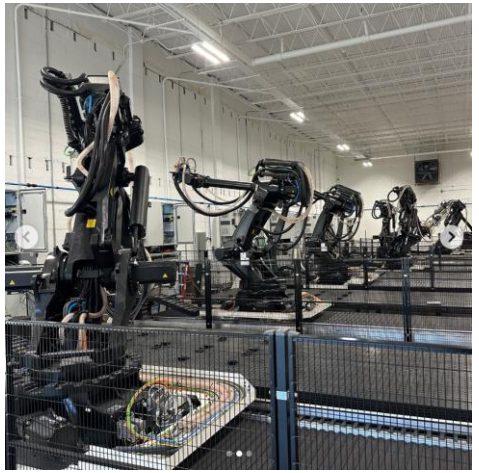


Flexbot custom solutions

Flexbot with heated printbed

Flexbot 40 m x 4m

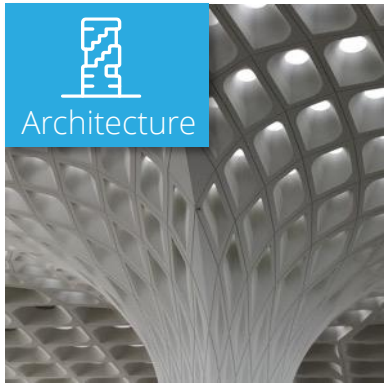
Rotary table solutions



Multiple systems/microfactory

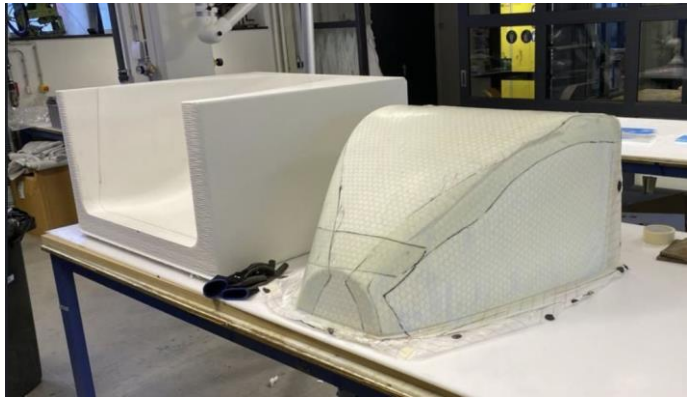
Modular by design. Scalable by nature. Built to grow with you.

Market segments

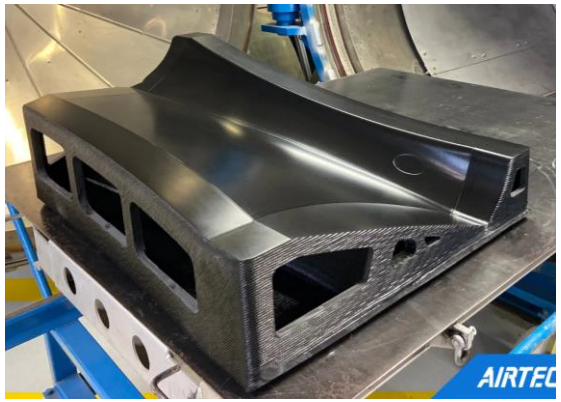


Applications - Molds & tooling

Composites - VARI/hand lay-up



Composites - Autoclave molds



Plastics/composites - Trimming fixtures

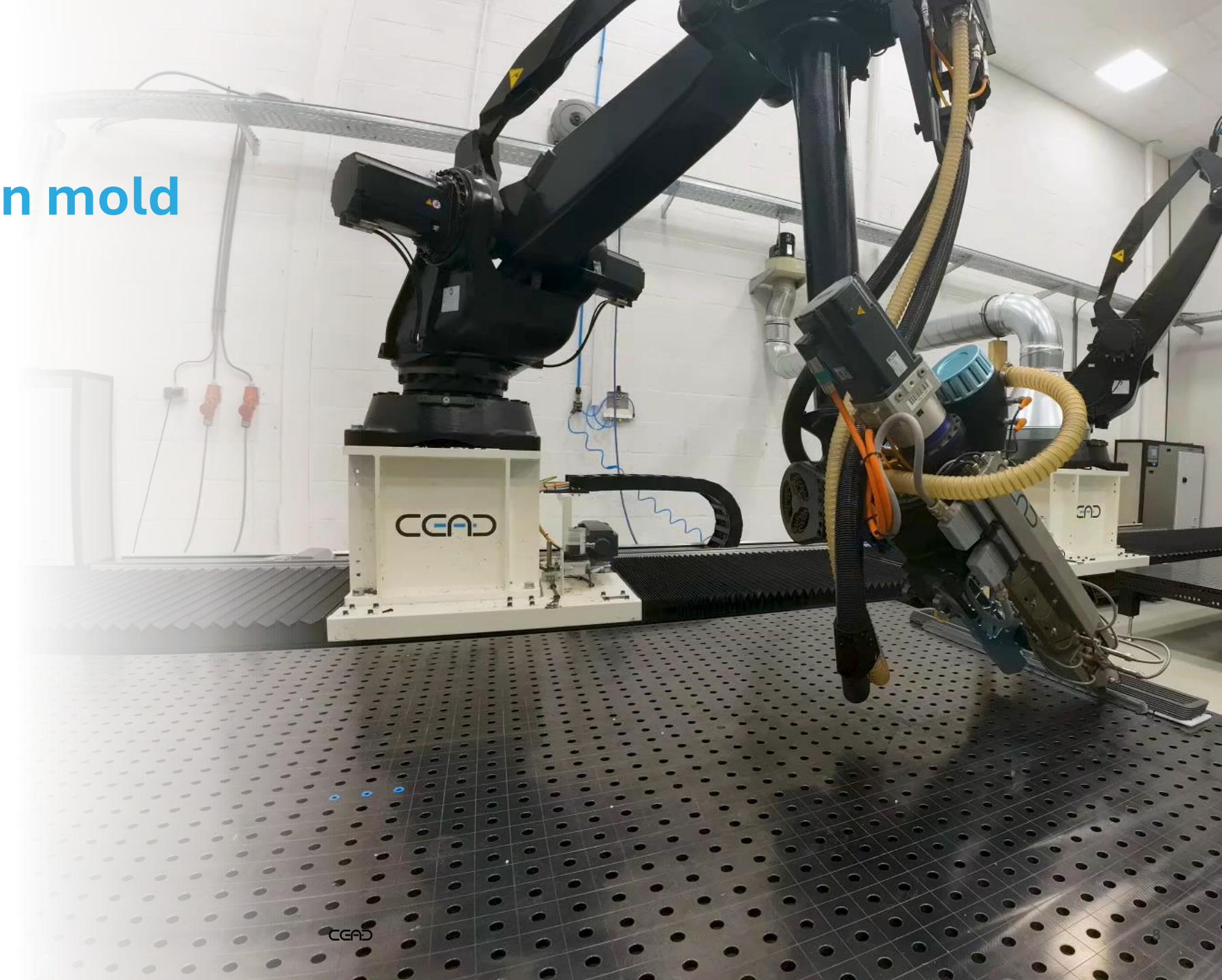
Plastics – Thermoforming molds

Concrete - Formwork

Sand casting - patterns

Vacuum infusion mold

- **Material:** **rPETG-GF**
- **Preparation time:** **1 day**
- **Printing time:** **20 hours**
- **Milling time:** **8 hours**
- **Post processing:** **2 days**



Applications - End use parts

Construction - Chimney deflector hood

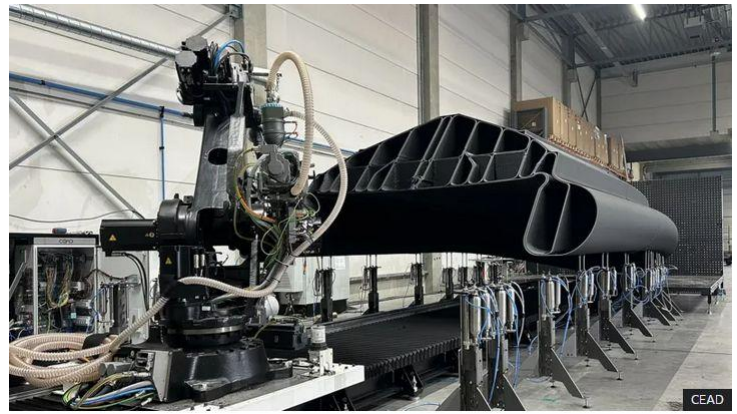
Furniture & design – shelfs, chairs, tables, pots

Retail - Shop interior elements

Architectural - pavillions

Tiny meeting rooms

Maritime - Boat hull



Collaboration between REDU and CEAD

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JOINT MARKETING AND PUBLIC RELATIONS

Opportunity to present 3DTY and REDU

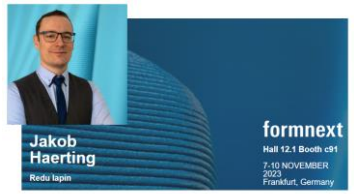
- Formnext 2023
- CEAD/Siemens LFAM event 2024
- Formnext 2025
- Mutual LinkedIn posts
- Case studies on CEAD website

- Create awareness of technology
- Present REDU's capabilities
- Acquiring industry partners

REVOLUTIONIZING WINDSHIELD TOOL PRODUCTION WITH THE FLEXBOT

Automotive

Revolutionizing windshield tool production with the Flexbot REDU, the Lapland Education Center, provides state of the art training to young adults to create a competitive workforce. As such, REDU creates an important link between education and industry, granting companies access to the latest technologies whilst also training and providing their future workforce.



Mold Making and Rapid Prototyping with the CEAD AM Flexbot

CEAD Group
19.197 Follower:innen
1 Jahr •

Partner Spotlight: REDU's Innovative & sustainable 3D-Printed Furniture

REDU started this project with **two core ideas** in mind:
1. Designing furniture that can be **flat-packed** and **easy to ship** for maximum convenience.
2. Prioritizing **sustainability** by reducing unnecessary weight in 3D-printed pieces through optimized print design.

By leveraging their **CEAD's hybrid Flexbot** with its **multiplanar printing** and **advanced machining capabilities**, REDU achieved:
- **Printing** a minimal mold and milling it to precision
- **Printing** the final furniture components directly onto the mold
- **Milling** alignment holes for furniture screws for easy assembly.

The result?
Sustainable, lightweight, and modular furniture production - enabled by a streamlined workflow that combines **additive manufacturing** and **machining** into a single system.

At CEAD, we're proud to see #LFAM technology empowering our **partners** to explore groundbreaking possibilities and create innovative and beautiful designs

Congratulations to the REDU team - check out the process below!
Maxim Narbrough
Jakob Haerting
Severi Salmirinne

#additivemanufacturing #sustainable #innovation #sustainability #workflow #optimizedworkflow #3Dprinting #LFAM #technology #engineering #machining #cnc #cncmilling #milling #advancedtechnologies #success #customersuccess #partner #partners #opportunities

Übersetzung anzeigen

How REDU is driving sustainable furniture innovation with their CEAD h...

Collaboration between REDU and CEAD

TECHNICAL EXCHANGE

- **REDU** early adopter and pioneer of LFAM
- **Stretching boundaries** of hybrid manufacturing
- **Knowledge exchange** on
  - Printing strategies
  - Postprocessing
  - Software tools
  - Hardware improvements
  - Materials
- **Expanding networks**
  - **Industry experts**
  - **Material suppliers**
  - **Software**
- **Projects** like NAVIX would not have happened without 3DTY and the collaboration

Collaboration between REDU and CEAD

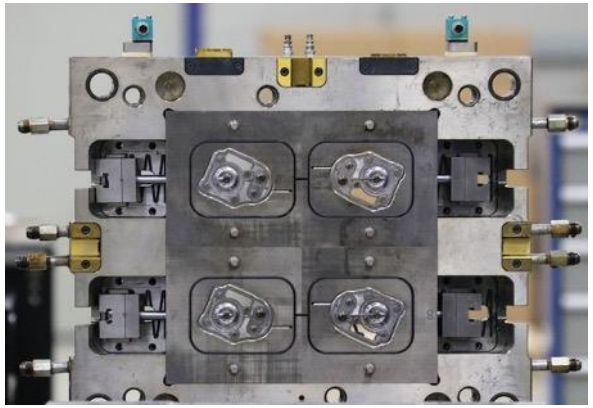
NEXT GENERATION OF PRODUCTION EXPRTS

- Students gain **hands-on experience** with CEAD Flexbot technology at REDU
- Curiosity to skills: students develop robotics and 3D printing interest and skills with mentorship at REDU
- **Cross-border opportunity**: The collaboration enabled her internship at CEAD in the Netherlands
- **Education meets industry**: She applied and expanded her skills on CEAD's production floor
- **Opening new paths**: Early access to technology broadens career opportunities in modern manufacturing

TRAINING THE NEXT GENERATION: A STUDENT'S JOURNEY COMBINING CARPENTRY AND LARGE-FORMAT ADDITIVE MANUFACTURING

Alexia (18) at CEAD, together with production and field service engineers from CEAD

Challenges in traditional manufacturing



Traditional man. characteristics

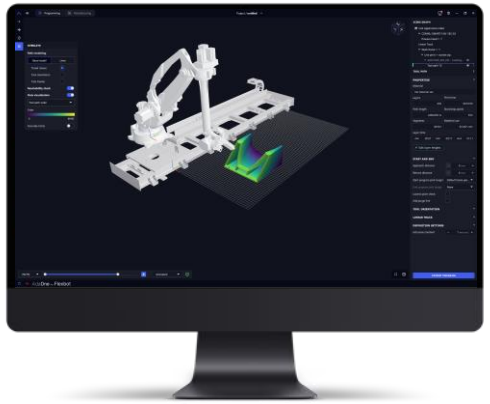
- Multiple production steps
- Multiple tooling
- Multiple machines
- Skilled manual labour
- Large stock inventory
- Waste intensive
- Third party dependency

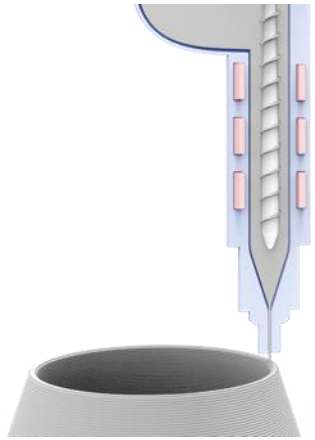
Pains

- Long lead times
- High cost
- Low sustainability
- Lack of skilled labour

Can LFAM contribute to tackle these challenges?

Contribution of LFAM to tackle these challenges





Current design →

- Multiple parts
- Skilled Manual Labour (welding)
- Stock inventory

Optimised design & slicing →

- Freedom in geometry One machine/tool can make almost all geometries if designed properly
- Quick iteration & design for assembly Optimized design consists only of 1 part
- Add complexity The complexity added in the design did not affect print time
- Slicing (e. g. AdaOne/ADAXIS)

Production →

- Net shape printed Print only the shape you need, less waste
- Local on demand production No need for large stock inventory
- Upcycled materials Thermoplastic pellet material can be recycled & suppliers offer a variety of partly recycled options
- No skilled manual labour The complexity is in the digital design and programming

Final product

- Reduce lead times
- Lower costs
- Decrease footprint
- Automated process

What does LFAM bring to the table?

Shorter Time-to-Market
Print large tools & parts in days instead of weeks or months → faster innovation and delivery.

Lower Production Costs
Less expensive or no tooling for low/medium volumes.

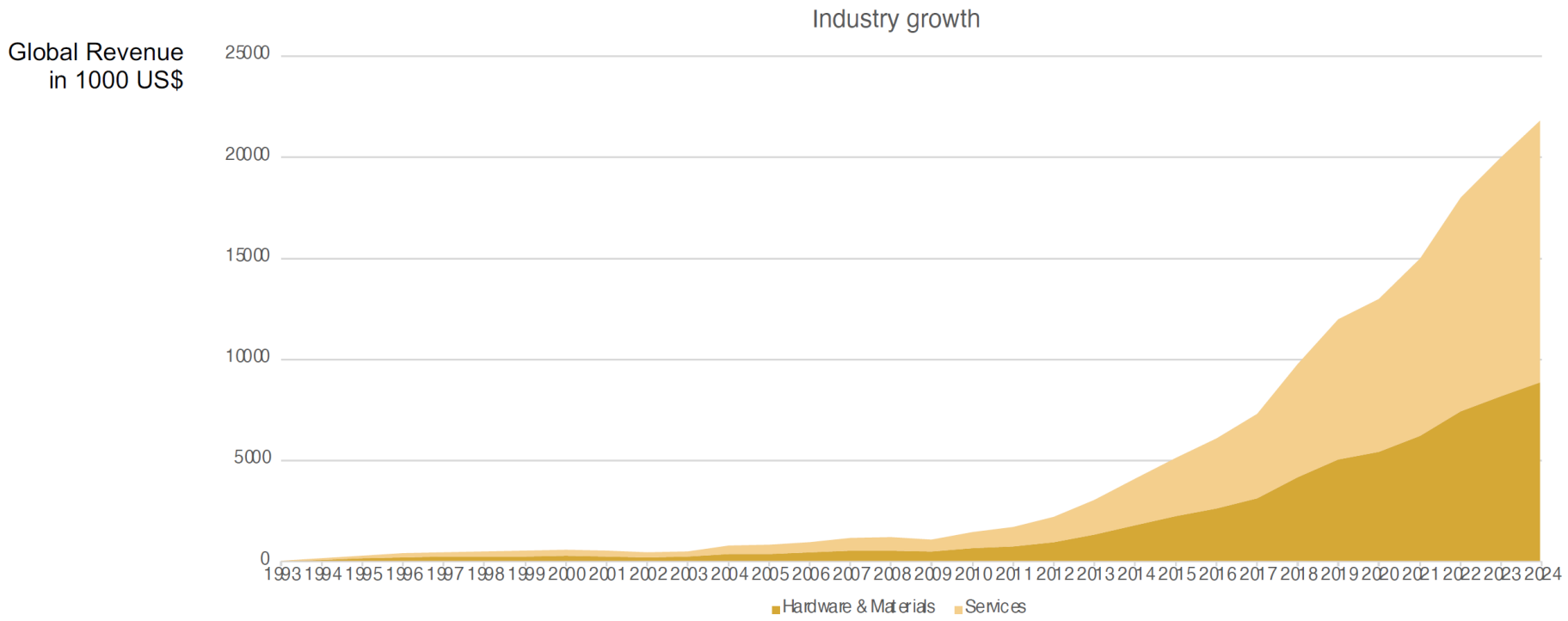
Integrative Design & New Products
Large, complex shapes that may unlock new applications to extend business.

Simplified Supply Chain
Local, on-demand production reduces dependency on external suppliers and lowers inventory.

Operational Efficiency
Less manual or heavy labor → fewer bottlenecks, higher consistency.

Sustainability
Enables recycled materials, reduces waste, and cuts transport CO_2.

AM industry growth



Source: AM Connect 2025: Politics Meets Production: The Future of Additive Manufacturing in the EU; Johannes Gartner/ Wohlers Report 2007 to 2025

- AM in general: ~$24B global market, ~10% annual growth
- Transition from high growth → industrial maturity (entering consolidation & efficiency phase)
- More and more application driven
- AM is becoming a true manufacturing technology (acceptance and adoption in the industry)

Future of LFAM

Automation

- Shift toward **end-to-end automated workflows** (print → machining → finishing)
- Reduced manual intervention → **lower labor cost & higher consistency**
- Enables **repeatable, production-grade LFAM**, not just prototyping

Artificial Intelligence (AI)

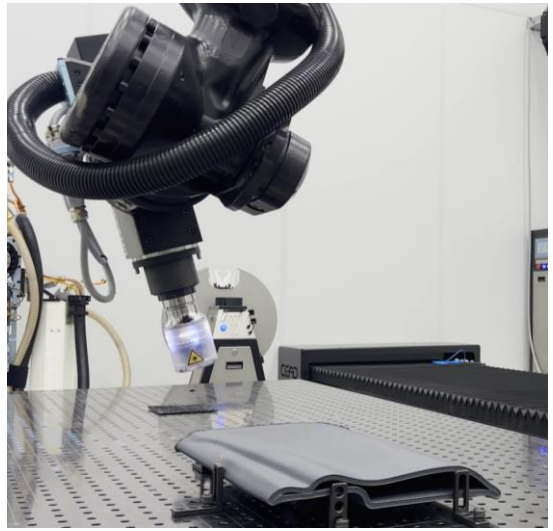
- AI-driven **process optimization** (print parameters, thermal control, warpage reduction)
- **Predictive quality control** using sensors + real-time monitoring
- Generative design + DfAM tools to **optimize large structures for weight & cost**
- AI improving **machine uptime, maintenance, and utilization**

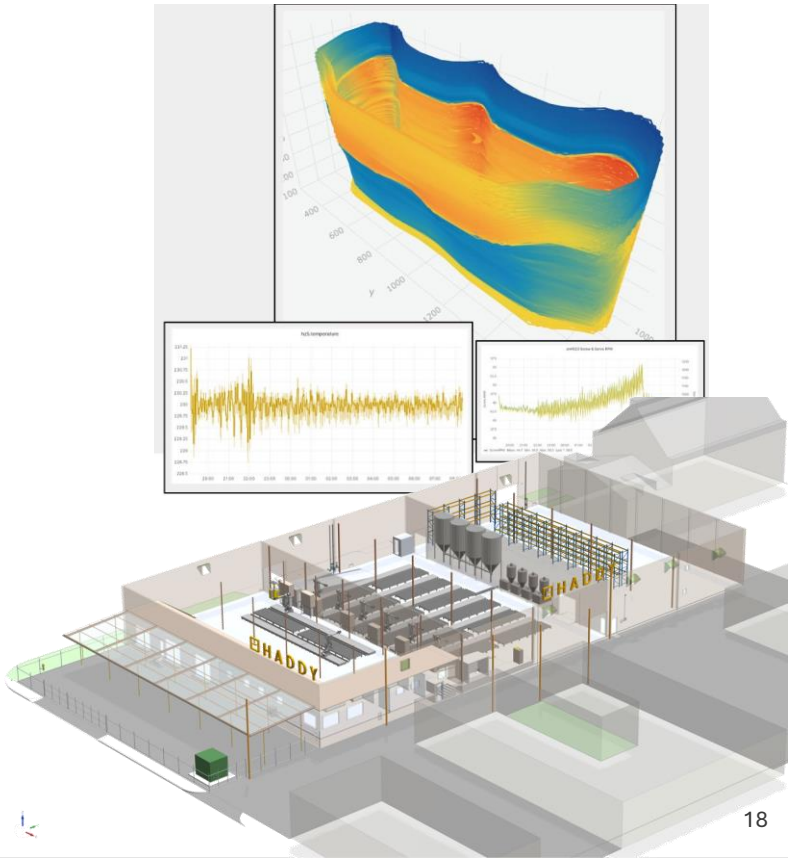
Microfactories

- Emergence of **decentralized, small-scale production hubs** using LFAM
- Located close to end-use → **reduced logistics & faster delivery**
- Enables **on-demand, localized manufacturing**

Sustainablility

- Recycled and bio-based materials
- Less failures, less waste
- Production close to end-use → reduced logistics





Thank you for your attention!

Need more information?