BeAM is a global OEM of Directed Energy Deposition machines headquartered in Strasbourg, France. Our technology is ideal for repairing components, adding features to existing parts or building near net shape parts with minimal post processing. Designed durably for the demands of today’s metal additive applications, BeAM’s DED systems are truly a critical ingredient in your “factory of the future”.

WHO WE ARE
DED is an Additive Manufacturing process where focused thermal energy is used to fuse materials by melting them as they are deposited.

BeAM's industrial solutions typically utilize a deposition nozzle mounted on the Z-axis of a DED dedicated CNC machine. This allows continuous 5 axis of freedom to build/repair components layer by layer without the need for support structures.

Utilizing traditional numerical controls and using ISO G-code gives our customers tools that their skilled workforce is already accustomed to.
DIRECTED ENERGY DEPOSITION (DED) (DMD, LMD)
Developed in the 1970s (as Cladding)
Industrialized in the 2000s
Productionized in the 2020s

BeAM’s DED process involves directing metallic powder into a laser beam. The powder converges at the focal point of the laser, creating a melt-pool which is laid down in a 5-axis configuration.
One process isn’t necessarily better than another. Each has capabilities it excels at with minimal overlap.

**RIGHT TOOL**
**RIGHT JOB**

**PBF VS DED COMPARISON**

**POWDER BED FUSION**
**PBF** (DMLS, EBM, SHS, SLM, SLS)
Developed in 1980s
Industrialized in the 2000s
Productionized in 2010s

**NOT ALL ADDITIVE IS THE SAME**
DED APPLICATIONS

**FIX**
- Previously un-repairable with traditional methods
- Extend the life of parts
- Reduce lead time

**ADD**
- Add to existing parts
- Multi-material applications
- Reduce machining time

**FORM**
- Reduce material waste on small and large parts
- Complex geometries
- Print less, machine less
NNS REPAIR OF BLADES
- Less material waste
- Low energy, no scrapped parts
- Less post-machining

CASE STUDY
OEM-approved repair of turbine parts
Previously un-repairable with traditional methods
Over 1,500 components back in flight
Can be repaired 4 times before life cycle is complete
**ADD TO EXISTING PARTS**

**REDUCE MACHINING TIME**

**ADDITION OF FEATURES**

**Process Mix**
*Use each manufacturing technique at its best to optimize costs, quality and time*

**Multi-material Applications**
*Add functions in another (compatible) material*

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Addition of features on tube in Inconel 625
Near-Net-Shape Geometries

- **ISOGRID**
  - Material: IN718
  - Build Time: 11 hours

- **EXHAUST NOZZLE**
  - Material: 316 SS
  - Build Time: 13 hours

**Near-Net-Shape Geometries**
Large dimensions, complex shapes
Successive use of materials, material grading
Our range of industrial coaxial deposition nozzles offer precise, different deposition width powered by high quality fiber laser sources of 500 W to 2 kW and dual gas flow.
Industrial | Production-ready | High-performance

5-Axis machines with Siemens 840D control | Operated by ISO G-Code

Controlled atmosphere | BeAM nozzles | Touch probe | Melt-pool monitoring
MODULO 250

R&D – SMALL PARTS | COMPACT | ECONOMICAL

Build volume: 400 x 250 x 300 mm
500W fiber laser - 10Vx deposition head
Powder feeder with up to 2 hoppers of 1.5L
VERSATILE | PORTABLE | UPGRADABLE

Build volume: 650 x 400 x 400 mm
500W to 2kW fiber laser - 10Vx/24Vx deposition heads
Powder feeder with up to 5 hoppers of 1.5L
MAGIC 800

FLAGSHIP | LARGE CAPACITY | ADAPTABLE

Build volume: 1200 x 800 x 800 mm
500W to 2kW fiber laser - 10Vx/24Vx deposition heads
Powder feeder with up to 5 hoppers of 1.5L
3-Axis secondary build table (700 x 500 x 1400 mm)
OPEN INNOVATION

We collaborate with R&D centers and universities to maintain our technological lead. We also offer complete knowledge transfer to partners that wish to become regional DED experts.

With the support of

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