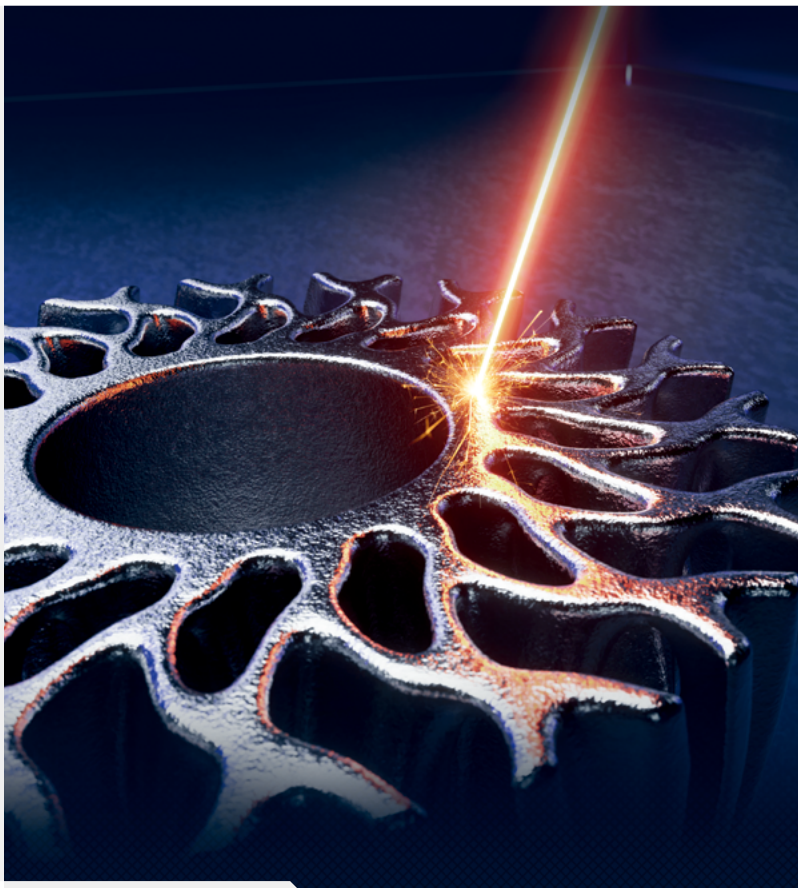
DN SOLUTIONS

ADDITIVE MANUFACTURING SOLUTIONS

DLX

DLX 150
DLX 325
DLX 450



END TO END SOLUTION

SOLUTION

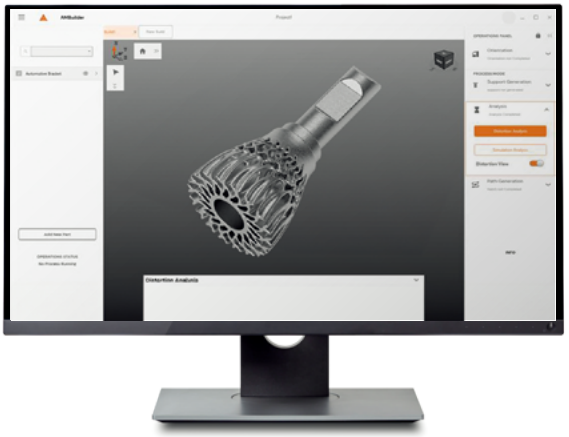
End-to-End solution from single source through Machine + Automation + Post Processing.

SOFTWARE

End-to-End software portfolio with 6 consistent products for every step of the process from a single source.

AMExplorer AMCosting AMSimulation
AMBuilder AMBuildSmart AMOptoMet

You step into a new world of manufacturing and we support you every step of the way with a comprehensive 360° solution offering.



SERVICES

Enable R&D to identify / explore additive parts, redesign for additive manufacturing and support production ramp up.

SUPPORT

Additive Solution Centers (ASC) in all major regions as well as remote locations to support customers anywhere across the globe.

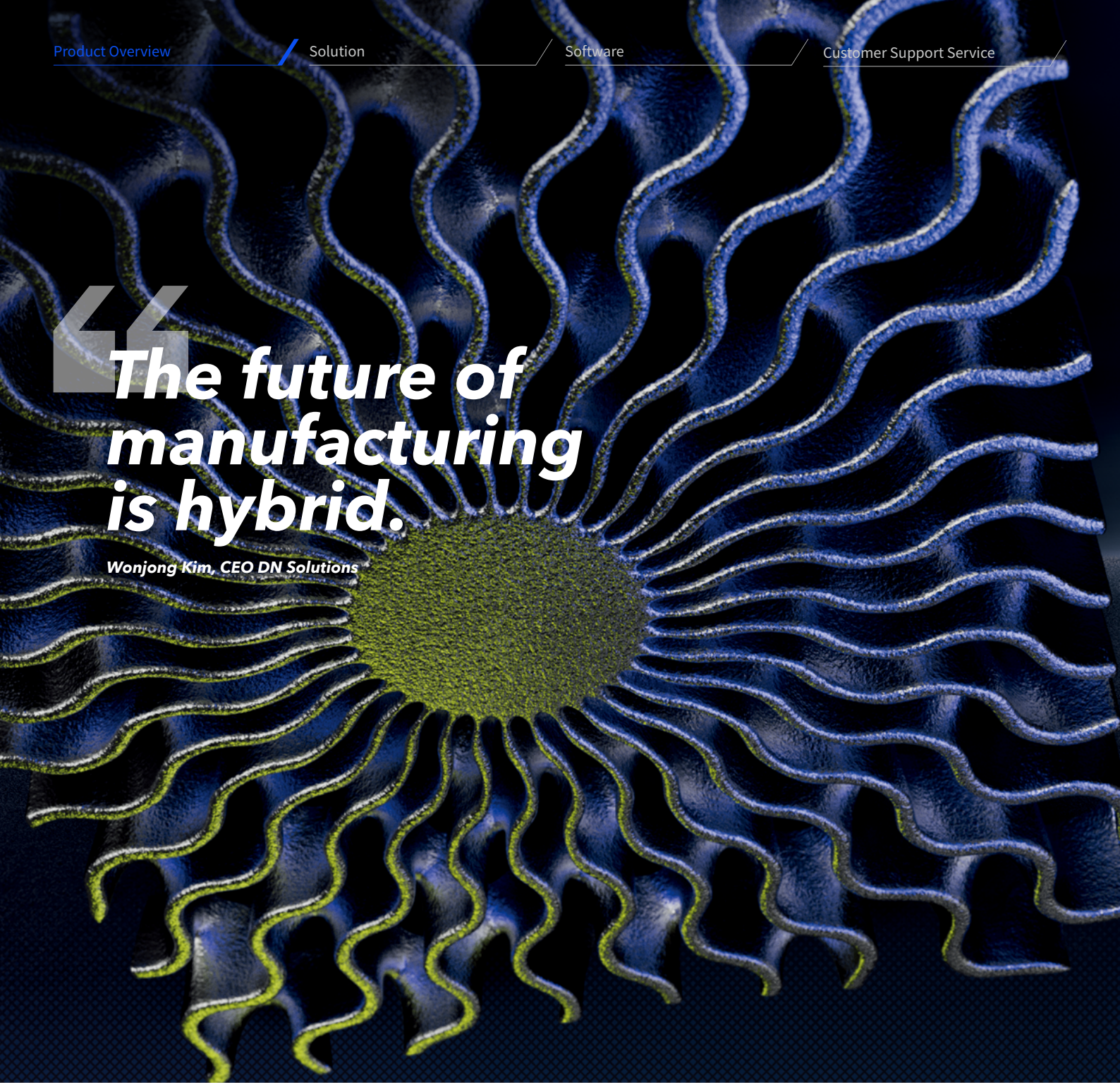
Additive Solution Centers (ASC) worldwide

SCALE

SPEED

Transitioning towards end to end single source solution provider.

360° OFFERING



7 ADVANTAGES OF ADDITIVE TECHNOLOGY

1

PART CONSOLIDATION

Reduced assemblies
by part integration

2

DESIGN FREEDOM

Conformal cooling channels impossible
to manufacture subtractively

3

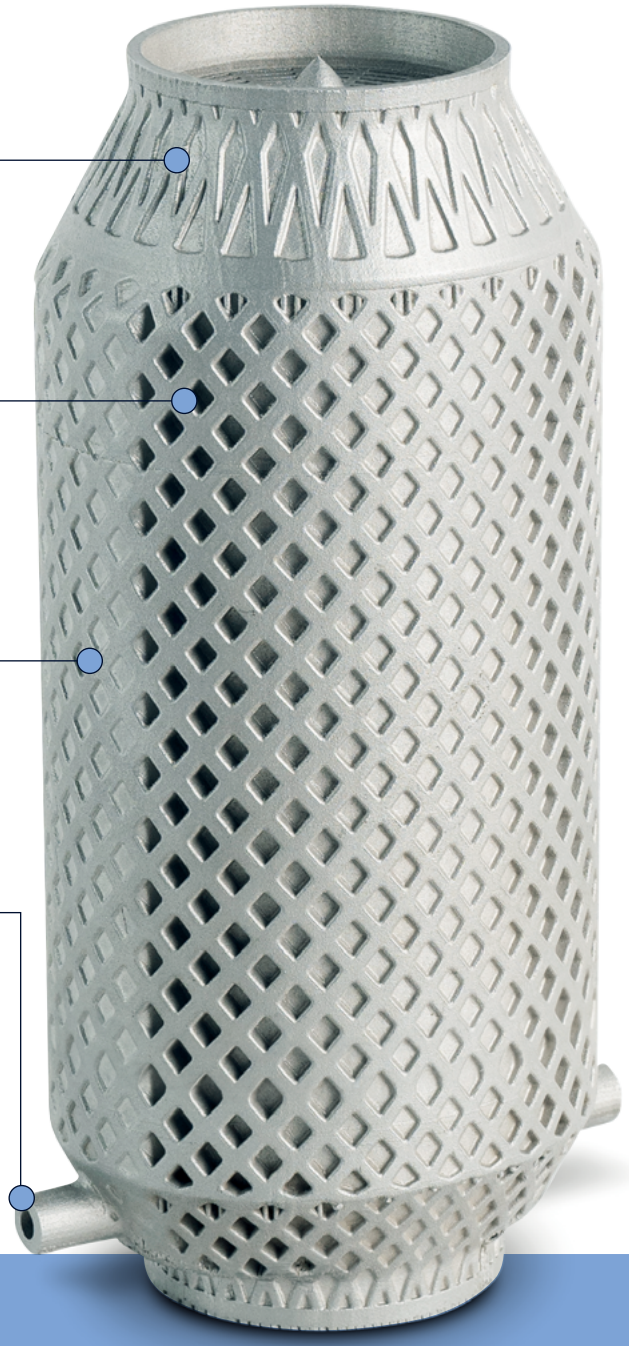
LIGHTWEIGHT DESIGN

Reduce tooling wear and
optimize use of material

4

FUNCTIONAL INTEGRATION

Lattice Structures



OVERALL BENEFITS OF ADDITIVE MANUFACTURING

5. **Reduced time to market:** Functional prototypes and fast iteration
6. **Supply chain enhancement:** Reduced inventory and just-in-time production
7. **Mass customization:** Multiple designs produced without tooling changeovers

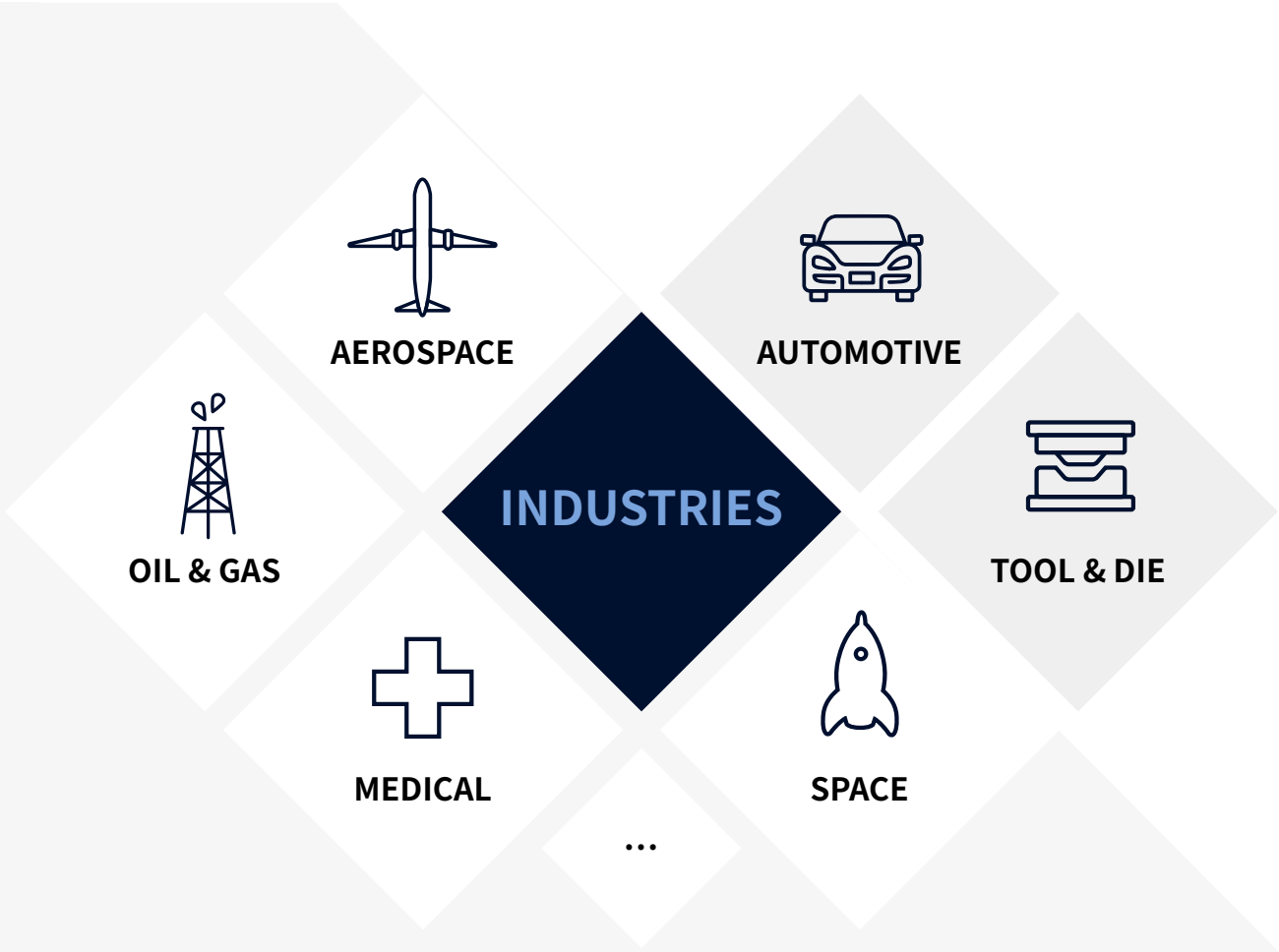
- Aerospace Industry, Heat Exchanger
- Material: AlSi10Mg
- Size: 102 × 161 × 319 mm

KEY TECHNOLOGY FOR

FUTURE INDUSTRIES

Additive Manufacturing is decisive for today's industries as it enables unparalleled flexibility, speed, and customization in production and allows for complex geometries. This capability is transformative for sectors where lightweight design, mass customization and performance increase within limited space are key.

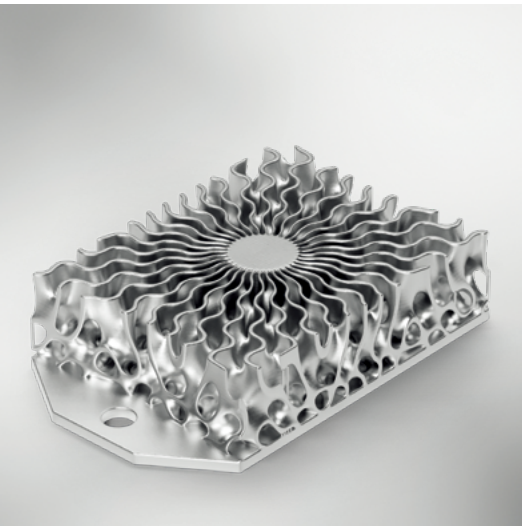
By reducing material waste and enabling localized production, Additive Manufacturing also supports the transformation to sustainable practices, positioning it as a **key technology for innovation** in a wide range of industries.



DN SOLUTIONS IS **THE GAME CHANGER** TO **PUSH THE BOUNDARIES** OF ADVANCED MANUFACTURING.

17 %
PERFORMANCE INCREASE

- Automotive, Heat Sink
- Material: AlSi10Mg
- Size: 35 × 35 × 78 mm



52 %
LESS WEIGHT

76 %
LESS POWER CONSUMPTION

- Consumer Electronics, UAV Rectifier Heat Sink
- Material: AlSi10Mg
- Size: 94 × 54 × 21 mm

70 %
LESS PRO-DUCTION TIME

50 %
COST CUT

- Automotive, Tyre Mould
- Material: SS316L
- Size: 172 × 111 × 113 mm

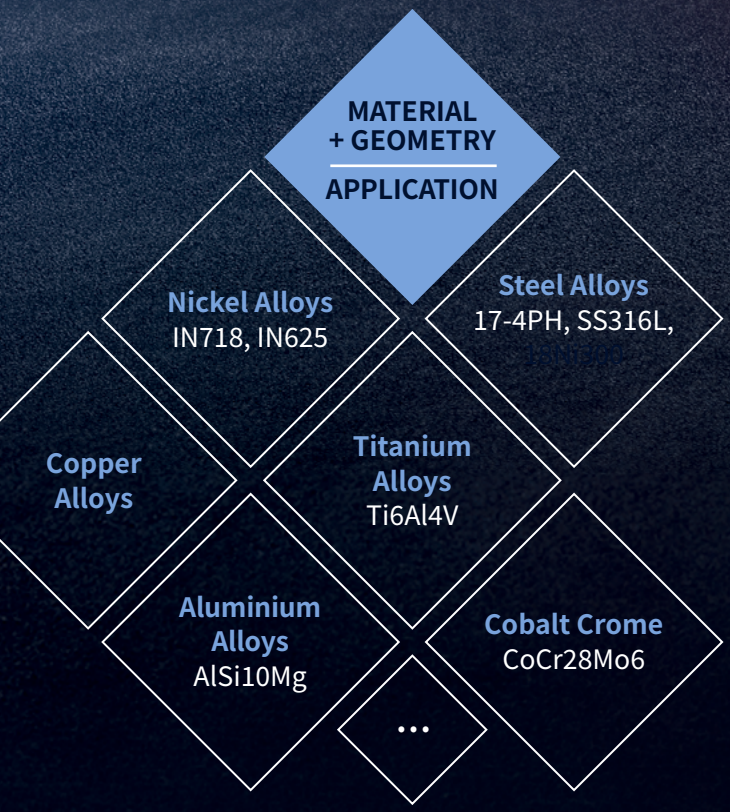
16.5 %
LESS WEIGHT

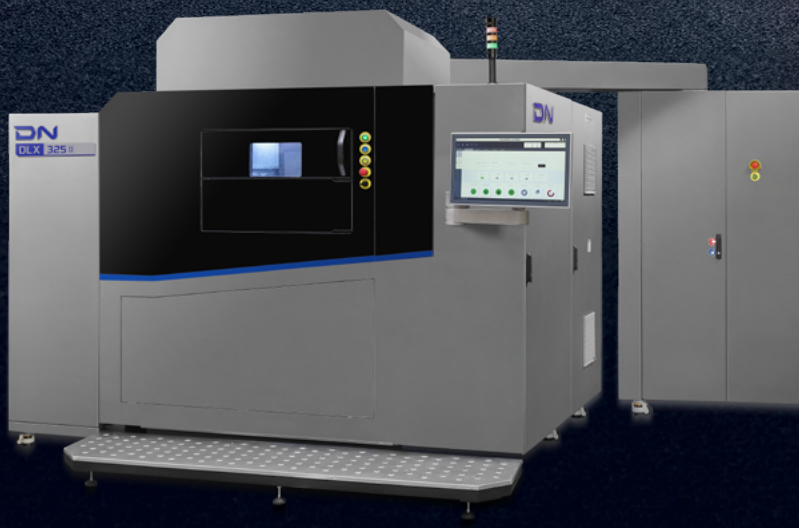
29 %
INCREASED COOLING PERFORMANCE

- Aviation, Heat Exchanger
- Material: AlSi10Mg
- Size: ∅ 120 × 143 mm

END TO END SOLUTION

ALL FROM A SINGLE SOURCE





END TO END SOLUTION

APPLICATION → ADDITIVE MANUFACTURING

6 SOFTWARE SOLUTIONS FOR A COMPLETE

AMExplorer AMBuilder AMCosting

ESTABLISH A ROBUST, **END TO END PROCESS** TO MAXIMIZE **PRODUCTIVITY AND QUALITY.**

COMPLETE MACHINE RANGE
OFFERED BY DN SOLUTIONS

POST PROCESSING

FINISHED PART

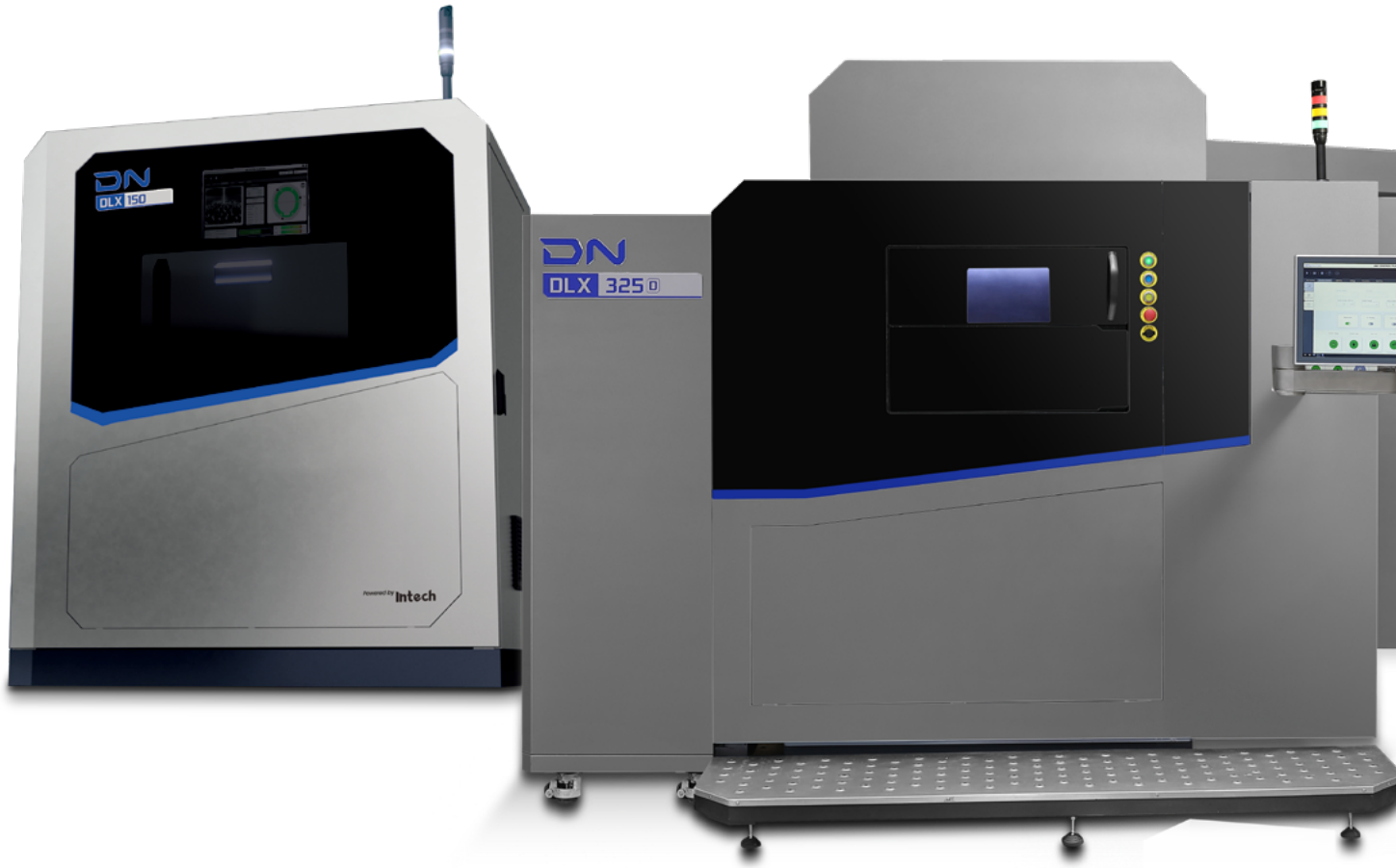
AND CONSISTENT DIGITAL PROCESS CHAIN

AMSimulation

AMBuildSmart

AMOptoMet

3 DLX MODELS



Build Volume
ø150 ×
180 mm

Build Volume
325×
325×
420 mm

SMALL FORMAT
FOR ACADEMIA

The perfect compact machine for

- R&D
- Universities
- Vocational schools

Build Volume
450×
450×
470 mm

MID FORMAT LARGE FORMAT

INDUSTRIAL SOLUTIONS

Offering uninterrupted 24/7 series production utilizing the segment‘s largest build volume and mid to large size components.

DLX 325

16 SQM
FOOTPRINT

ADDITIVE FOR HIGH PERFORMANCE INDUSTRIES

DLX 325 / 450

Exceptional build size and maximum productivity with advanced laser optics combinations enables the printing of mid to large-sized complex parts at a faster rate to maximize the productivity of every build.

NO. OF LASERS	LASER POWER	LAYER THICKNESS	DIMENSIONS (W x D x H)
1 / 2 / 4	500 W / 1000 W	30 – 90 µm	DLX 325* 4500 x 3800 x 2700 mm (177.2 x 149.6 x 106.3 inch) DLX 450 4600 x 4100 x 2800mm (181.1 x 161.4 x 110.2 inch)

** DLX 325 Lite with fixed build tank, DLX 325 Full with removable build tank: 4.5 × 3.8 × 2.7 m*

DLX 450

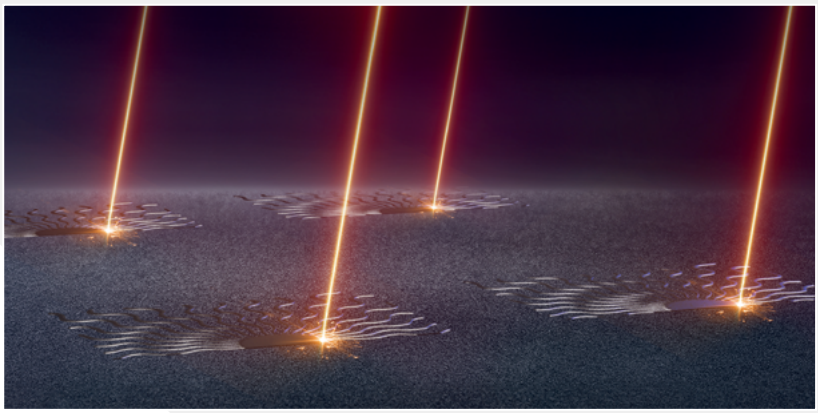
19 SQM
FOOTPRINT

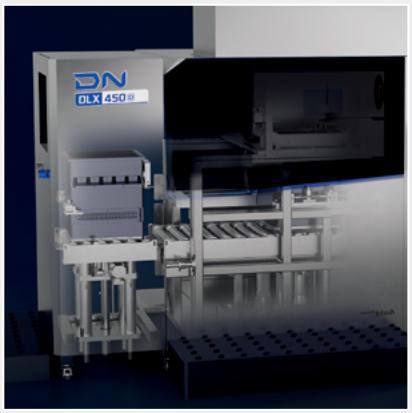
INTEGRATED POWDER REMOVAL STATION
for safe, non-contact, constant quality production

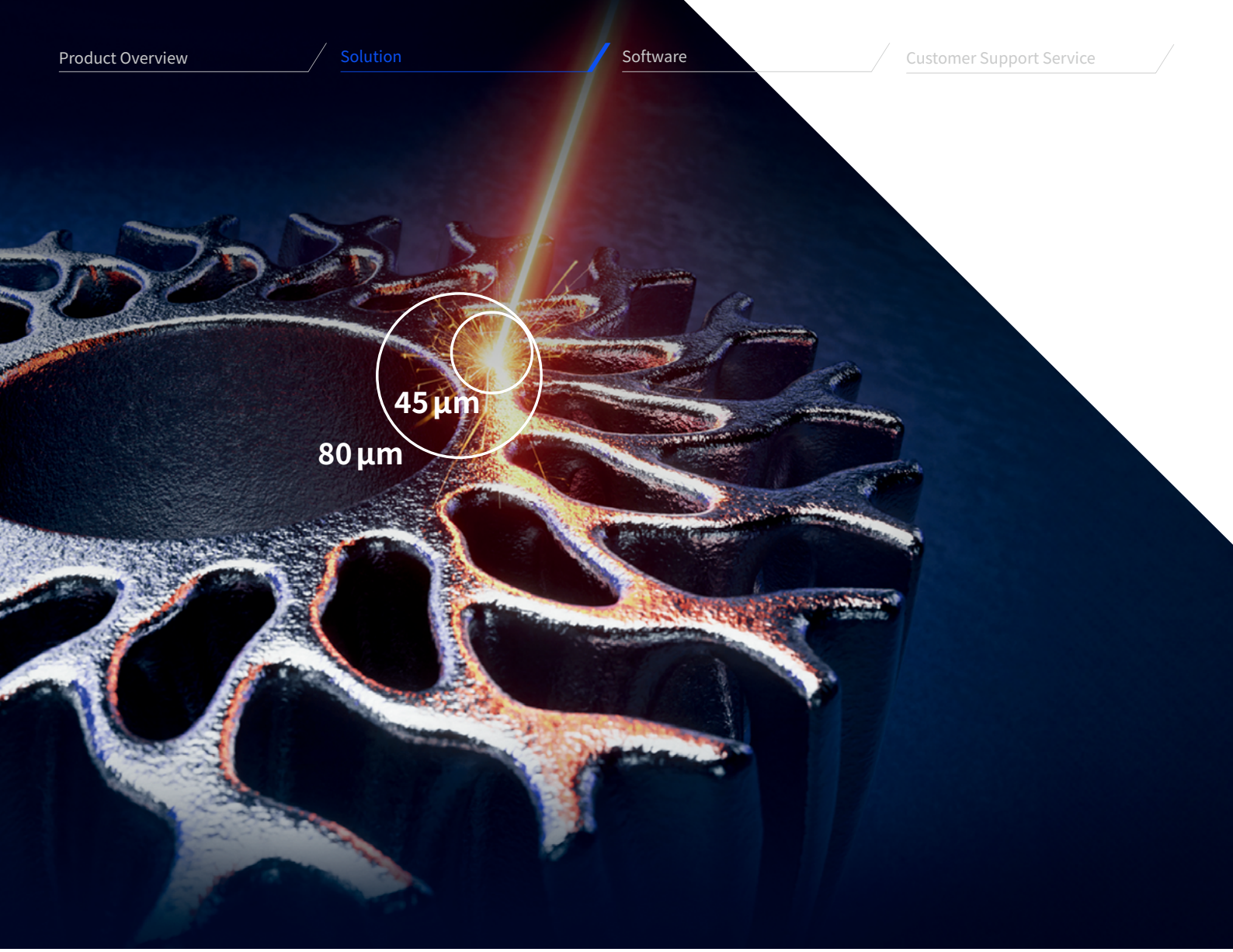
PERMANENT FILTER MODULE
for uninterrupted printing and minimized operational costs

UP TO 4 LASER
for highest productivities

REMOVABLE BUILD CYLINDER*
for minimized job to job time







ADDITIVE FOR ACADEMIA

DLX 150

Powerful yet compact, the DLX 150 allows for up to 1000 W laser power enabling part builds with a higher layer thickness, greater throughput and to work with a wider range of alloys. For fine feature detailing, the laser focus diameter can be configured to 45 µm.

BUILD VOLUME	LASER POWER	LAYER THICKNESS	DIMENSIONS (W x D x H)
Ø 150 × 180 mm	500 W / 1000 W	20 – 90 µm	DLX 150 1650 x 1250 x 2350 mm (65.0 x 49.2 x 92.5 inch)

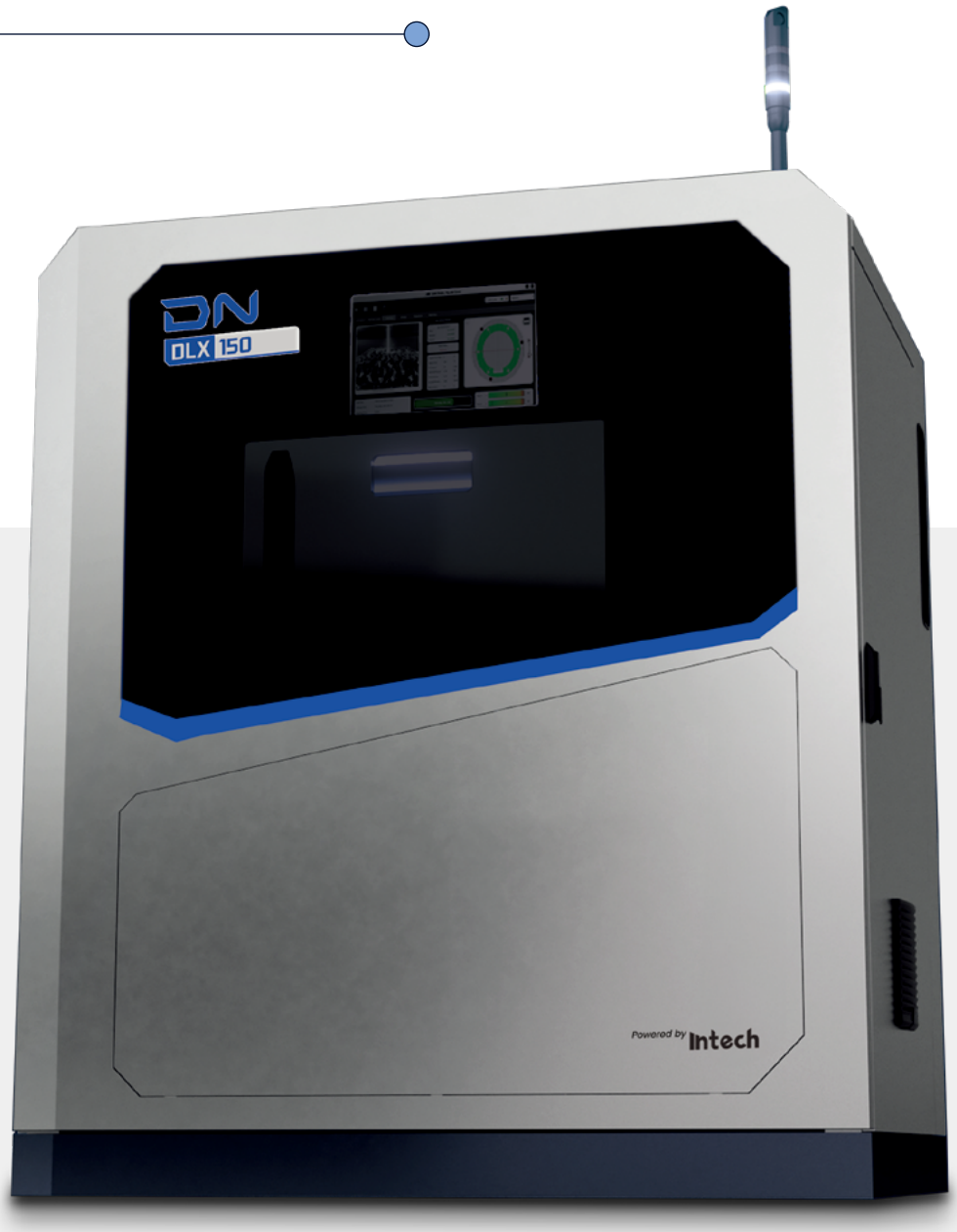
ONLY
2.11 SQM
FOOTPRINT

CUSTOMIZABLE LASER

Spot diameter with
45 µm or 80 µm for
unparalleled flexibility
in education and research

AUTOMATIC FILTER CHANGEOVER

for uninterrupted
printing process



6 CONSISTENT INTEGRATED SOFTWARE SOLUTIONS

DIGITAL END TO END PROCESS CHAIN

Consistent software is key for high quality productive Additive Manufacturing and it all starts with R&D.

1. RESEARCH & DEVELOPMENT

STEP 1

IDEATION R&D

AMExplorer

Identify AM parts within the customers portfolio

STEP 2

PLANNING

AMCosting

Calculate the cost per part quickly

STEP 3

PREPARATION

AMBuilder

Slice, hatch, support and nest the part to be printed

EMPOWER YOUR PROCESS WITH OUR **COMPREHENSIVE SOFTWARE SUITE.**

2. PRODUCTION

3. QUALITY

STEP 4

OPTIMIZATION

AMBuildSmart

Boost efficiency by minimizing support structures

STEP 5

CHECK

AMSimulation

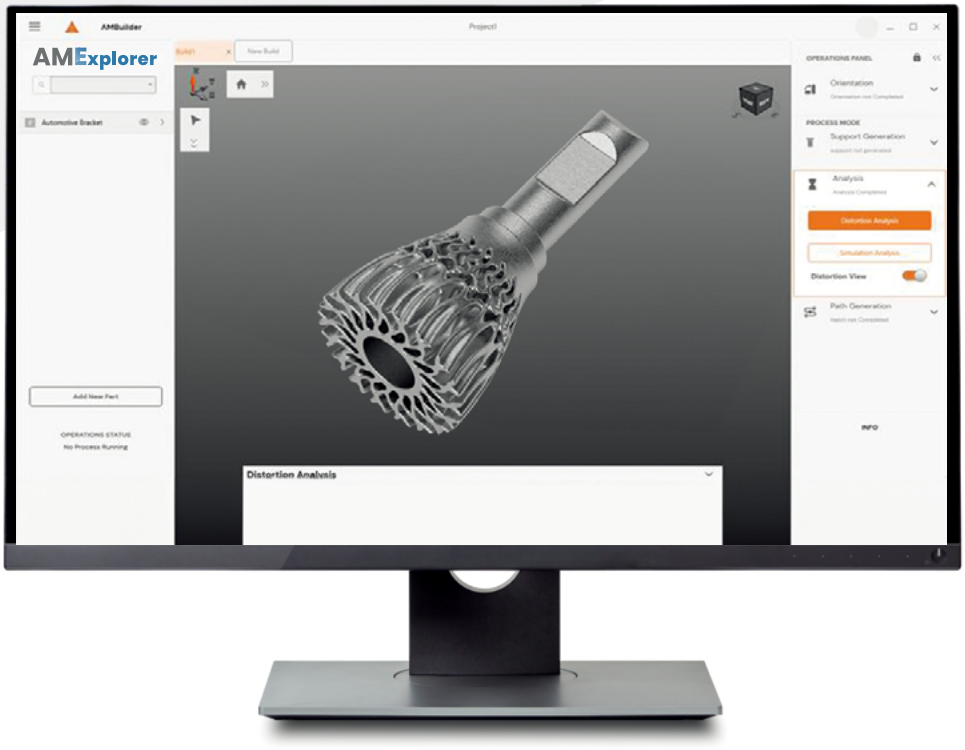
Predict and avoid distortions

STEP 6

RAMP UP

AMOptoMet

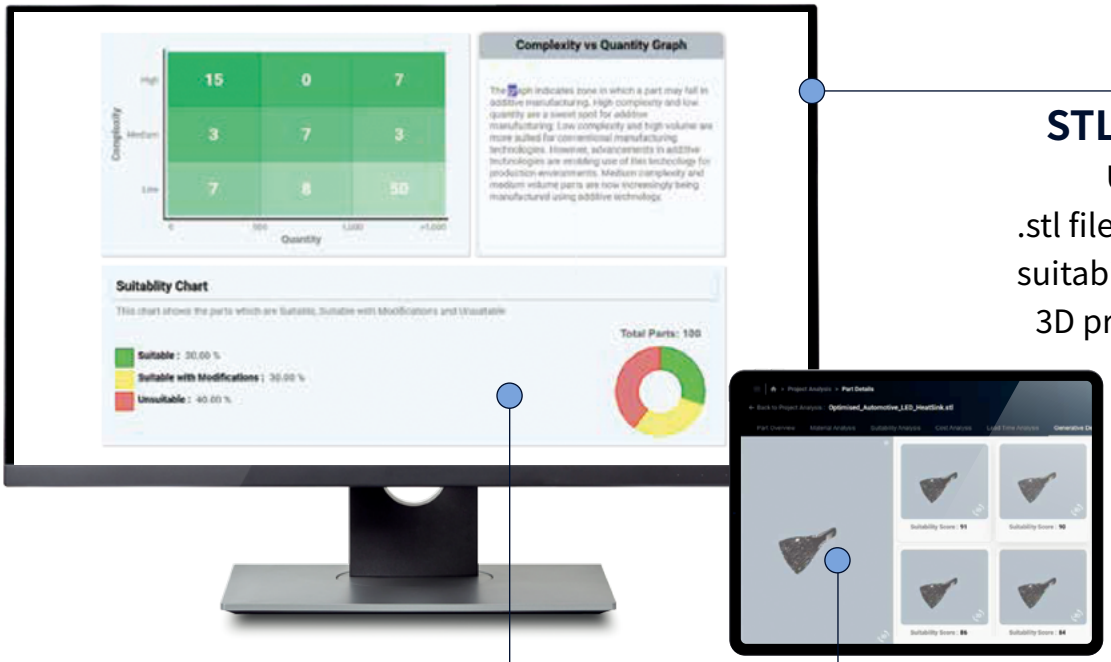
Print new alloys and increase productivity for existing ones



STEP 1 – IDEATION / R&D

FIND THE RIGHT PART

AMExplorer



STL UPLOAD

Upload your .stl file and get the suitability score to 3D print the part.

SUITABILITY

The suitability chart indicates how suitable the part is for 3D printing.

GET STARTED

Automatic modification of part to improve.

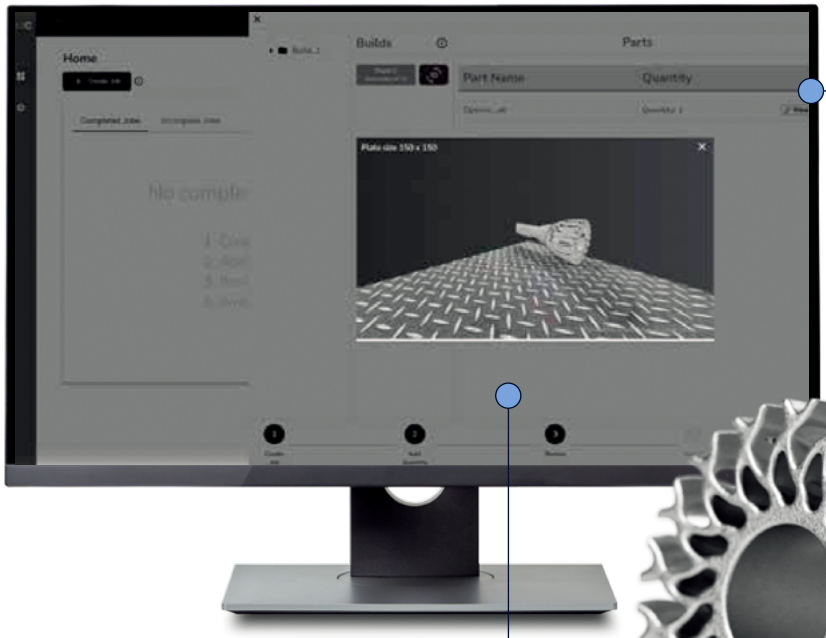
1	2	3
Automatically find parts to print	Understand the part suitability for Addditive	Automatically redesign the part for printing

It all starts with R & D ...

STEP 2 – PLANNING

GET ACCURATE COST

AMCosting



INSTANT COST TRANSPARENCY
Proceed from AMExplorer or upload multiple .stl files for a “nested print” cost.

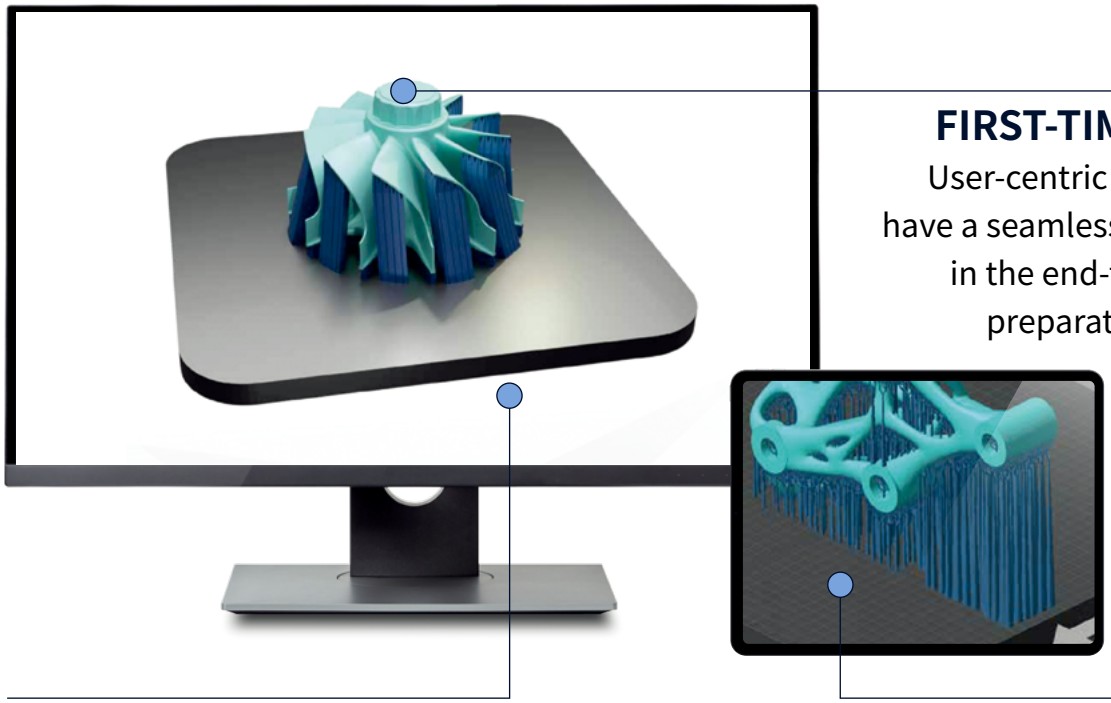
AUTOMATED COST ESTIMATION
based on CAD files or 2D drawings.

1	2	3
Arrive at accurate metal 3D printed part cost	Reduce response times with an instant quote	Decide between contract printing and buying a 3D printer

STEP 3 – PREPARATION

PREPARE ACCURATE DATA

AMBuilder



FIRST-TIME-RIGHT

User-centric workflow to have a seamless experience in the end-to-end build preparation process.

PATH GENERATION

Optimizes tool path to reduce the build time exponentially.

SUPPORT GENERATION

Easily identify critical support areas and reduce data preparation time with semi-automatic support generation.

1	2	3
Fast tool for smart data preparation	Create and manipulate supports required	Fast and robust slicer and path generator

… moves to production …

STEP 4 – OPTIMIZATION

REDUCE BUILD TIME

AM BuildSmart

BEFORE

Manufacturing of a bracket on a DLX 150; Material: SS316L, Part Volume: 8.5 cm^3

AFTER

SAVINGS	
	52 % LESS SUPPORTS 4.3 cm^3 vs. 9.1 cm^3
27 % LESS MATERIAL CONSUMPTION 99.5 g vs. 137 g	**21 %** LESS TIME 392 min. vs. 500 min.

1 Drastically eliminate or reduce support structures

2 Build faster and reduce post processing effort

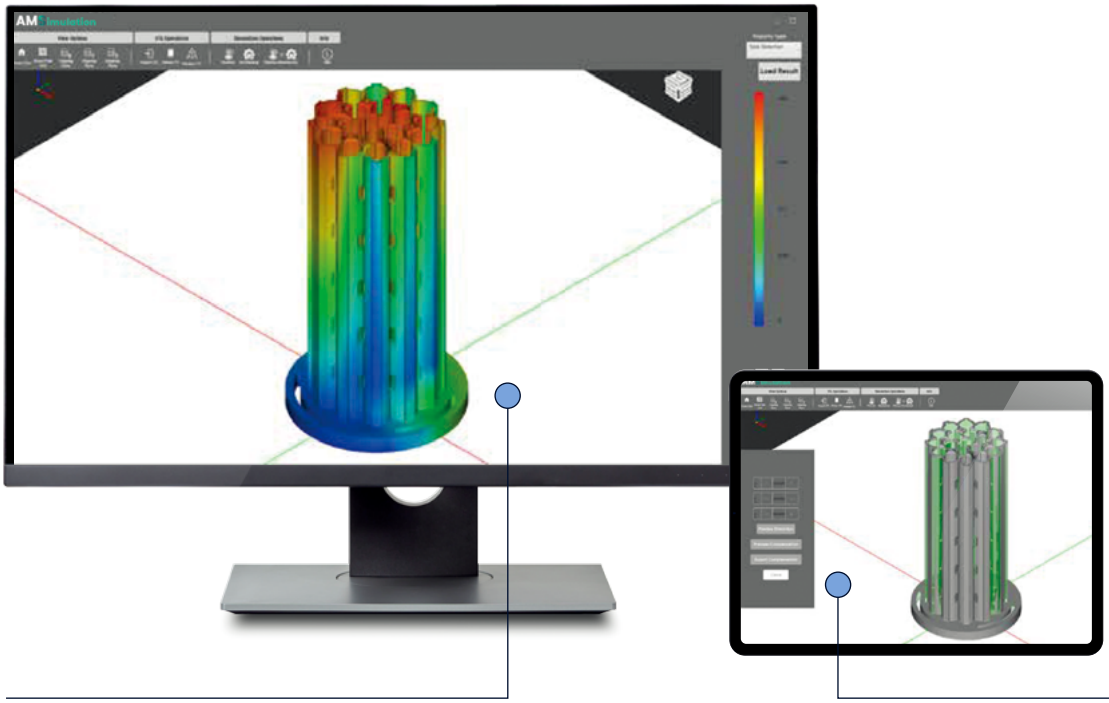
3 Print larger diameters for internal channels

… and after quality checking …

STEP 5 – CHECK

CORRECT DISTORTIONS

AMSimulation



THERMAL DISTORTIONS

The part undergoes a change in volume when cooled down having a deviation from the original geometry.

MECHANICAL DISTORTIONS

Predict location of distortion and correct before printing.

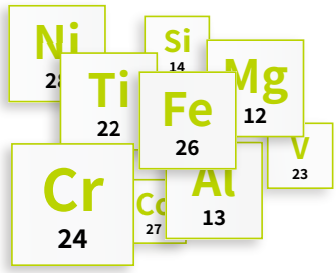
1	2	3
Simulate thermal distortions	Predict mechanical deformation and stress	Print first time right

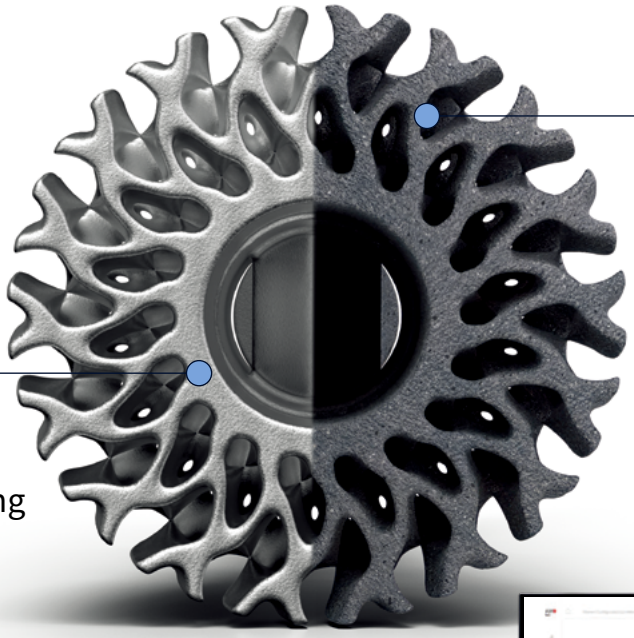
… it scales up.

STEP 6 – RAMP UP

OPTIMIZE PARAMETERS

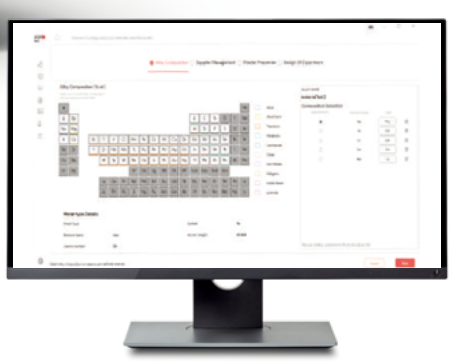
AMOptoMet





WITHOUT OPTOMET
Additional post process steps and time consuming process parameter development efforts.

WITH OPTOMET
Reduced post-processing by achieving better surface finish.



1	2	3
Up to 50 % increase in build rate	Up to 35 % reduction of printing-hours	Development of new alloys in < 50 % of the usual time

SERVICE WHENEVER YOU NEED IT

FULL STACK SERVICES FROM END TO END

Experience comprehensive support in Additive Manufacturing.
We provide tailored guidance on finding the right parts, optimizing the part design, process setup and performance enhancement, ensuring your production runs smoothly and efficiently.

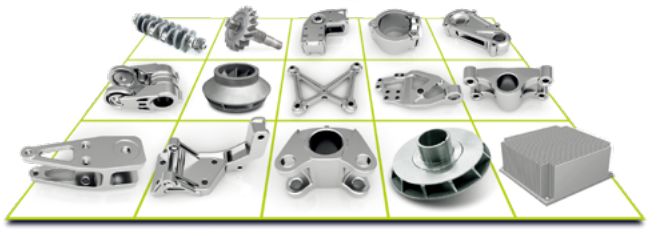
R&D

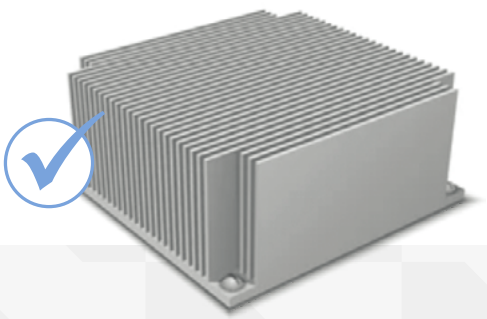
1. FIND THE RIGHT PART

Automated part identification and optimization

- Automatic identification of parts suitable for Additive Manufacturing based on your part catalogue
- Automatic basic redesign for Additive Manufacturing

AMExplorer





2. OPTIMIZE PART DESIGN

On site training for optimizing part design

- Train to prepare parts for additive production
- Minimize support structures to reduce post processing efforts
- Enhance the part quality by minimizing distortions through pre-simulating the printed result

AMBuilder AMBuildSmart AMSimulation

TRAINING

Empowering your additive journey with on site and virtual trainings for:

1. Part identification
2. Part redesign
3. Part production
4. Part validation

PRODUCTION

3. RAMP UP MANAGEMENT

On site set up and training for stable part production

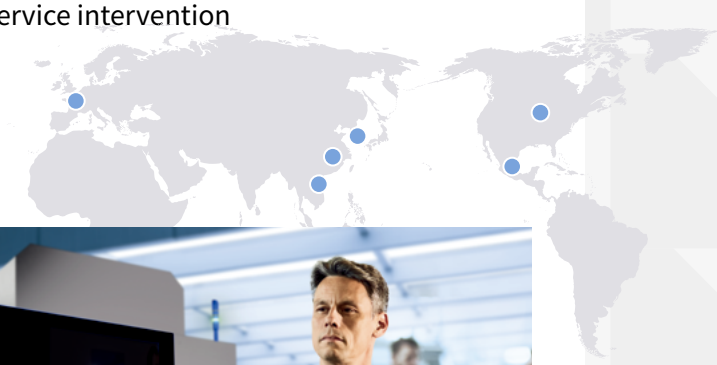
- Produce parts
- Verify quality
- Set up peripherals
- Ensure supply of consumables

ON SITE SERVICE

4. LOCAL SERVICE SUPPORT

In-house resources for software, hardware, and testing

- Industry-specific domain expertise
- Worldwide support of local operations
- Fast response times and local on site service intervention



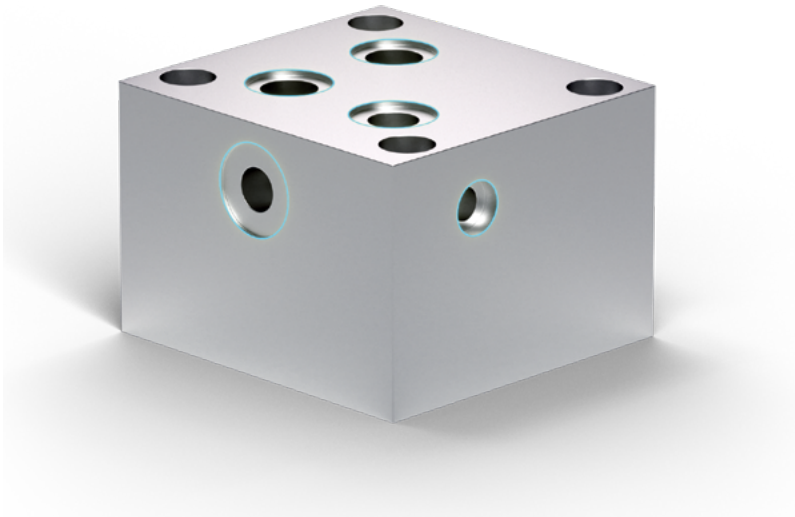
BEST PRACTICE

ADDITIVE REDESIGN

Additive Manufacturing requires a new approach in design.
We support companies with the introduction and enabling the use of Additive Manufacturing. We offer on site or virtual consulting on part identification and redesign for additive production.

OLD **TECHNOLOGY-DRIVEN**
Which material do I have to remove?

TRADITIONAL DESIGN



HYDRAULIC MANIFOLD

- Size: 100 × 95 × 68 mm
- Material: Stainless Steel

OBJECTIVE

Reduce the weight of the hydraulic manifold and maintain the structural integrity for given loading conditions.

...

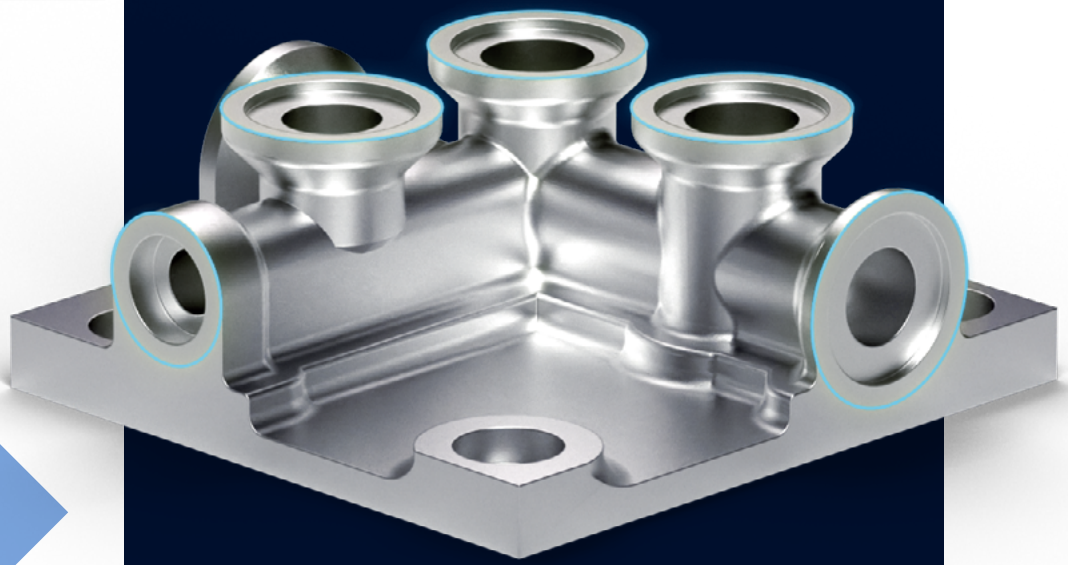
DEVELOPING
THE FULL POTENTIAL
OF ADDITIVE DESIGN
TOGETHER.

NEW

FUNCTIONAL-DRIVEN

Which material do I have to add?

ADDITIVE DESIGN



1. WEIGHT REDUCTION

2. FUNCTIONAL OPTIMIZATION

3. PERFOR-MANCE INCREASE

BENEFITS

- Total deformation: 0.01 mm
- Equivalent stress: 328 mpa
- Factor of safety: 1.7
- Weight: 0.917 kg
- Weight reduction: 80 %

RELIABLE PARTNER

END TO END SUPPORT GLOBALLY

Our global network, spanning Korea, China, India, USA and Europe among others, is operated as an efficient integrated system in order to provide customers with high-quality products, technologies and services.

Sales Networks
Additive Solution Centers

MARKET LEADER

With around 15,000 sold units in 2023 DN Solutions satisfies the needs of customers in diverse demanding industries and has been recognized for its high global market share.

With over 140 sales networks in 66 countries we are always nearby.

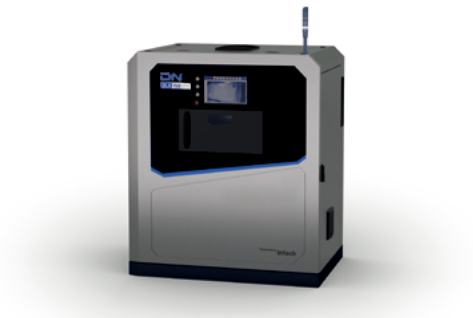
AND MORE TO COME

3 ADDITIVE SOLUTION CENTERS (ASC) WITHIN 2025

1	2	3	4
Local application development	Technology and material development	Customer training	Local service support

MACHINE SPECIFICATIONS

DLX 150



SPECIFICATIONS	DLX 150
Build Volume (⌀ × H)	150 x 195 mm (5.9 x 7.7 inch) (w/o build plate)
Layer Thickness	20 – 90 µm
Build Rate	20 cm^3/h and above
Precision Optics Laser	F-theta lens, High speed scanner
Laser Type	Yb – Fiber Laser
Laser Power	500 W / 1000 W
Optical Configuration	2-axis
Focus Diameter	45 – 80 µm, factory set
Standard Accessories	Chiller, Vacuum cleaner with wet separator
Optional Accessories	N2 Generator
Software	◆ AMBuilder : Build Processing Software ◆ AMOptoMet (optional): Parameter Optimization Software
Weight	1.6 ton (approx.)
Dimension (W / D / H)	1650 x 1250 x 2350 mm (65.0 x 49.2 x 92.5 inch)
Material	AlSi10Mg, CoCr28Mo6, IN718, IN625, Ti6Al4V, Ti6Al4V ELI, 17-4PH, SS316L, 18Ni300

MACHINE SPECIFICATIONS

DLX 325/450

SPECIFICATIONS	DLX 325	DLX 450
Build Volume (X / Y / Z)	325 x 325 x 420mm (12.8 x 12.8 x 16.5 inch) (w/o build plate)	450 x 450 x 470mm (17.7 x 17.7 x 18.5 inch) (w/o build plate)
Layer Thickness	30 – 90 µm	30 – 90 µm
Build Rate	20 cm^3/h and above	20 cm^3/h and above
Precision Optics Laser	High speed scanner, Dynamic focussing unit	High speed scanner, Dynamic focussing unit
Laser Type	Yb – Fiber Laser	Yb – Fiber Laser
No. of lasers	1 / 2 / 4	1 / 2 / 4
Laser Power	500 W / 1000 W	500 W / 1000 W
Laser Configuration (customizable as per request)	◆ Single: 1 x 500 W / 1000 W ◆ Dual: 2 x 500W/1000W	◆ Single: 1 x 500 W / 1000 W ◆ Dual: 2 x 500 W / 1000 W ◆ Quad: 4 x 500 W
Optical Configuration	3-axis	3-axis
Focus Diameter	min. 80 µm	min. 80 µm
Standard Accessories	Powder removal station, Chiller, Stacker	Powder removal station, Chiller, Stacker
Optional Accessories	◆ Powder sieving unit ◆ Powder convey system ◆ Vacuum cleaner with wet separator ◆ N2 generator	◆ Powder sieving unit ◆ Powder convey system ◆ Vacuum cleaner with wet separator ◆ N2 generator
Software	◆ AMBuilder : Build Processing Software ◆ AMOptoMet (optional): Parameter Optimization Software	◆ AMBuilder : Build Processing Software ◆ AMOptoMet (optional): Parameter Optimization Software
Weight	4.5 ton (approx.)	5.5 ton (approx.)
Dimension (W / D / H)	4500 x 3800 x 2700 mm (177.2 x 149.6 x 106.3 inch)	4600 x 4100 x 2800 mm (181.1 x 161.4 x 110.2 inch)
Material	AlSi10Mg, CoCr28Mo6, IN718, IN625, Ti6Al4V, Ti6Al4V ELI, 17-4PH, SS316L, 18Ni300	AlSi10Mg, CoCr28Mo6, IN718, IN625, Ti6Al4V, Ti6Al4V ELI, 17-4PH, SS316L, 18Ni300

DN SOLUTIONS

ARE YOU INTERESTED?
SEND YOUR SALES INQUIRY TO

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