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Ingenuity for life

Realize the value of the Digital Enterprise Suite

Industrialize Additive Manufacturing

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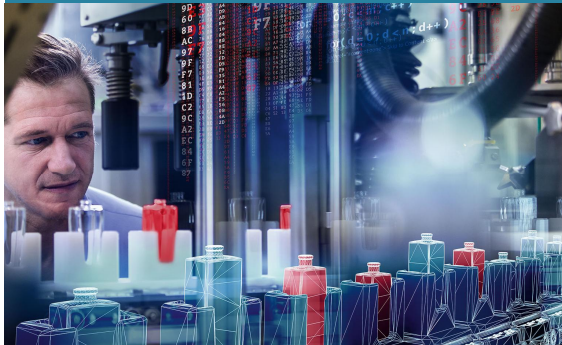
Rethink Products. Retool Manufacturing. Rethink Business.

Additive Manufacturing is a Company Core Technology Field



Electrification, automation, digitalization - Siemens' divisional setup

Digital Factory



Energy Management



Wind Power



Power and Gas, Power Generation Services



Process Industries and Drives



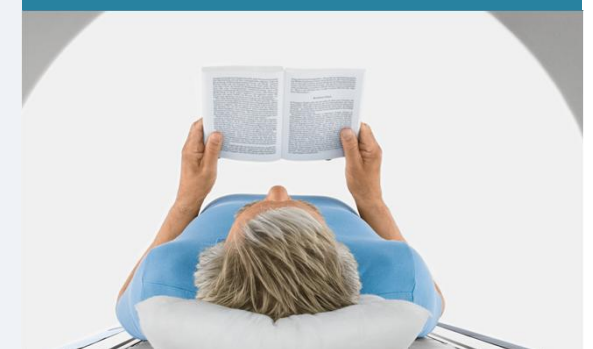
Mobility



Building Technologies



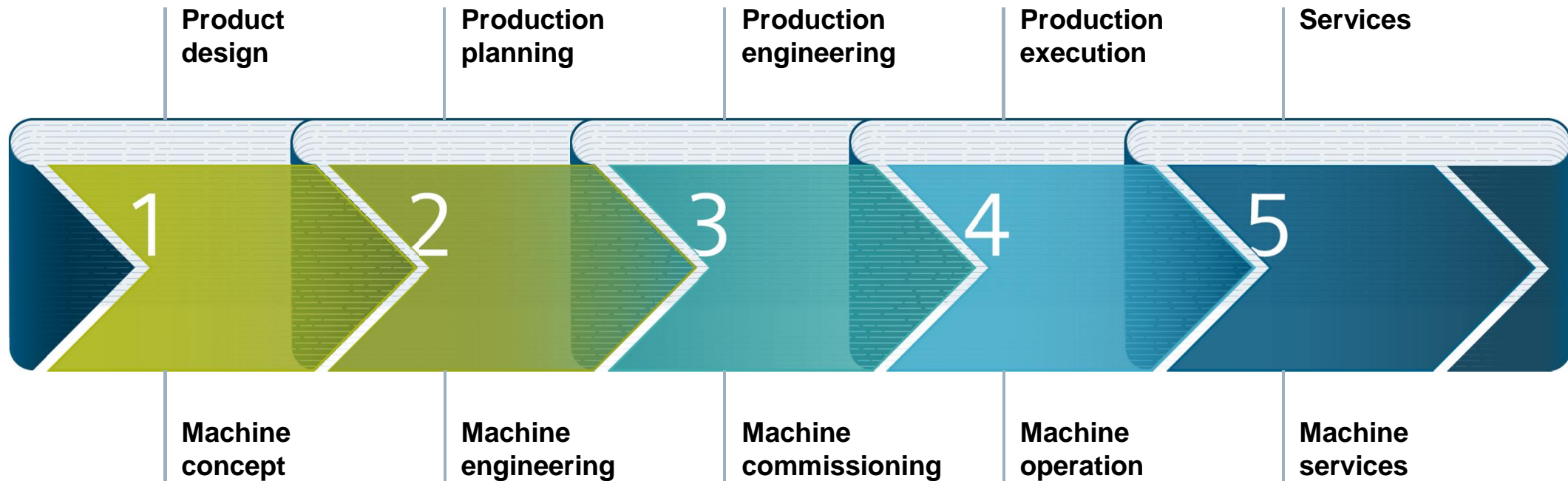
Healthineers



Realize the value of the Digital Enterprise Suite



Product manufacturer perspective

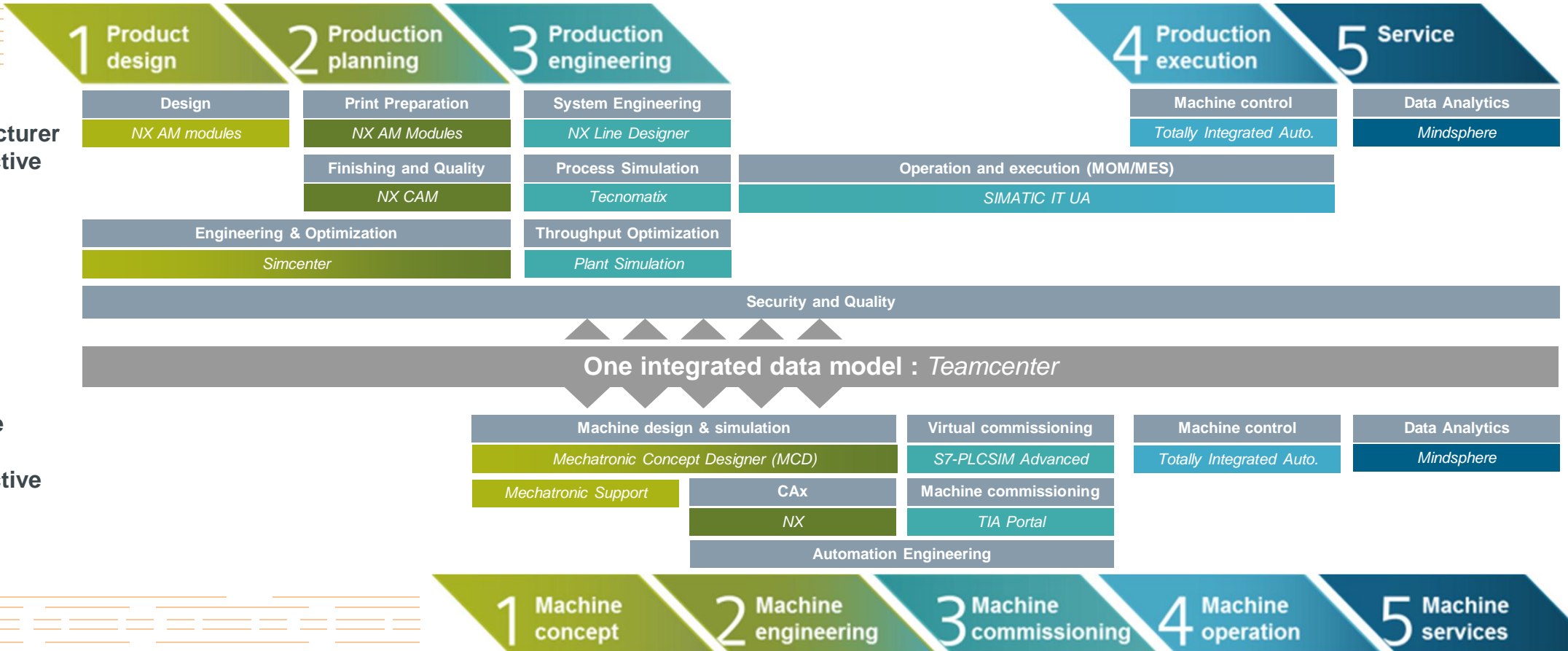


Machine builder perspective

Focus on seamlessly integrated offerings for Additive Manufacturing with software, control and automation solutions



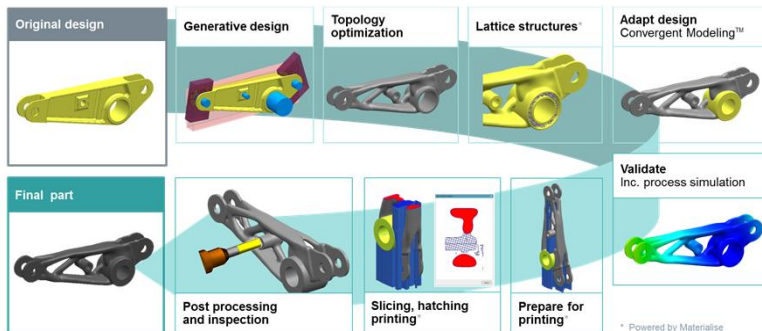
Part Manufacturing Platform



Seamlessly integrated from software over automation solutions to final applications



PLM Software



NX PBF Module with integrated topology optimization and lattice structure generation

Automation



New generation EOS machines will be equipped with automation systems from Siemens

Engineering & Manufacturing

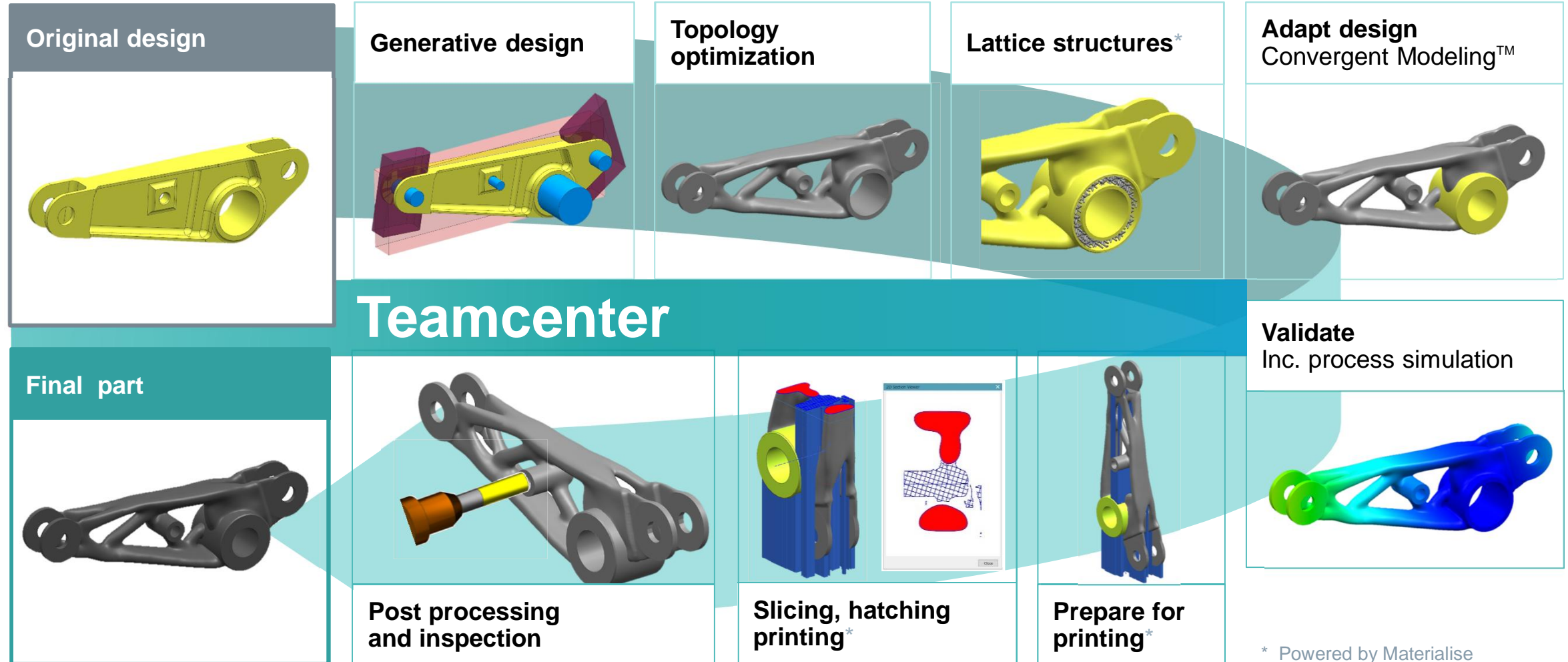


SGT400 turbine blade designed for AM, printed and successfully tested



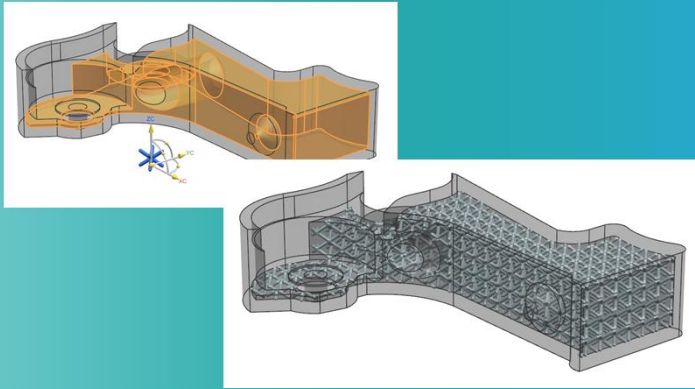
Reimagining design, production and service for greater business value

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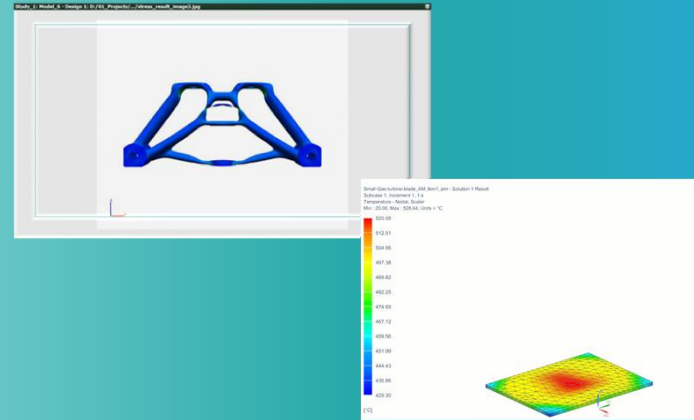
NX 12 for Additive Manufacturing

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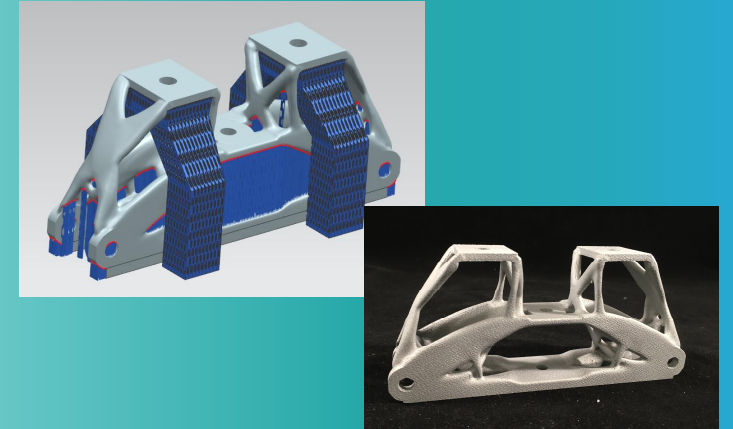
Design

Generative design tools, lattice structures and Convergent Modeling™ technology enable delivery of lighter, stronger products to market in much less time.



Simulation

Automate design exploration with Simcenter 3D and HEEDS™ to innovate new designs that meet more stringent requirements and simulate 3D printing processes with Simcenter 3D to ensure expected print results.



Manufacturing

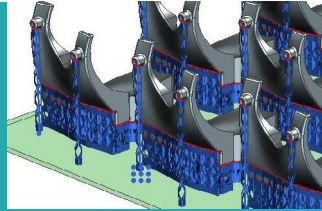
Combine additive manufacturing of plastic and metal parts with post processing, finishing and quality assurance operations for end-to-end associativity and process control.

NX 12 for Manufacturing

Enhanced key capabilities

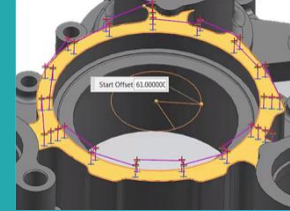
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Additive manufacturing



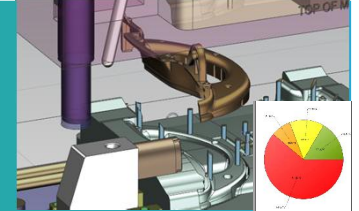
- Industrial powder bed fusion
- HP Multi Jet Fusion 3D printers

CMM inspection programming



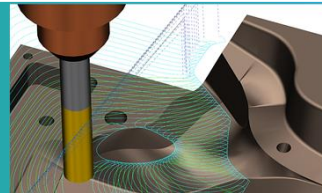
- Feature-specific programming
- Seamless inspection data transfer

Tooling design



- Automated tool costing
- Integrated solution, from 3D model to accurate estimates

Mold and die machining



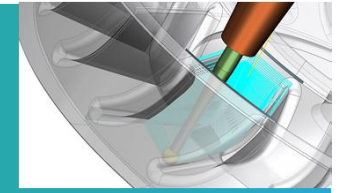
- High-speed Adaptive Milling
- Advanced finishing

Production machining



- Machining Line Planner
- Automated NC programming

Complex part machining



- 5-axis Tube Machining
- Robotic machining & pick-and-place operations

Siemens businesses use Additive for real Production Parts in high-demanding Power Generation Applications



“Design for AM” Burners



12 → 1 parts

H² capability
Emissions

20.000 hrs
repaired parts

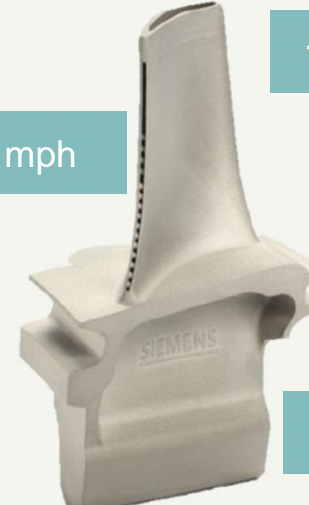
“Spare parts on demand”



6 months
leadtime reduction

2016
Commercial OPs

“Functional prototyping” of gas turbine blades



1.250° Gas

1.000 mph

11 tons pull

Massive ramp-up in
internal AM Business

New Business Models

Acceleration in technology
validation 18 → 3 months

Launch “AM Engineering & Manufacturing Services” leveraging our Knowhow to accelerate AM at your business

What is setting us apart?

10 years

EXPERIENCE in high-temp metals

Alloy 247

Wide-range of Ni / Ti / Maraging Steels
High integrity fluidics & hydraulics

30.000 hrs

ENGINE experience on Siemens GTs

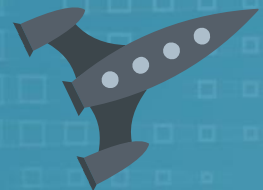
AS9100

QUALIFIED supplier to Aerospace

Who we work with



- Siemens 9000HL parts
- A world first! SGT 400 B1



- >1.000 rig/test parts
- Adv. combustion designs



- Ni based parts Ti-light weight structurals
- Other industry applications / Tooling

How we can help you?

- Manufacturing of fully **functional prototypes**
- **Design** for AM
- **Materials & Process** development
- **Demonstration of application of NX** end to end
- Expand into **new ‘state-of-the-art’ AM facility** in early 2018

Imagine what challenges we can solve for your business and your customers!



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Further information about Siemens at the formnext 2017

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