Additive Fertigung mit Fusion 360

Johannes Kaindl
Education Account Manager

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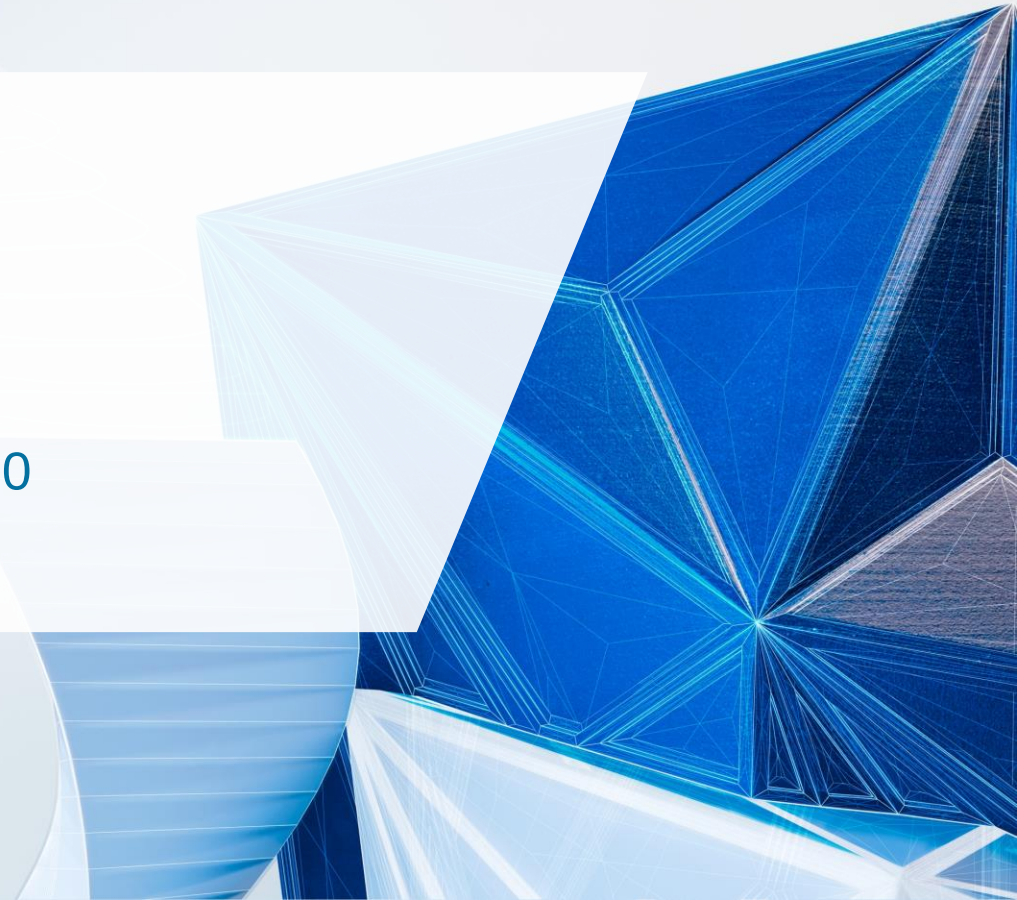
- **Vorstellung**
- **Fusion 360**
- Additive Technologien
- Additive Fertigung mit Fusion 360
- Workflows



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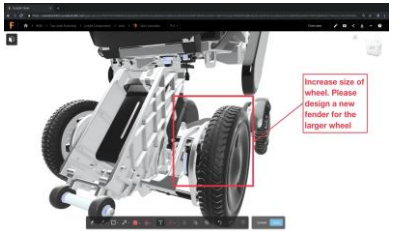
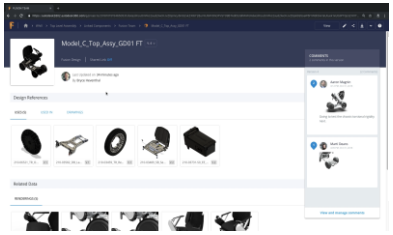
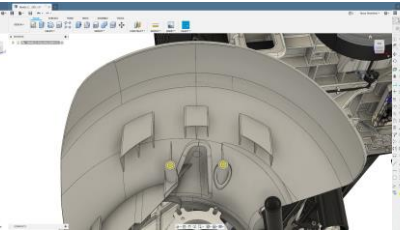
Get There Quicker
5 MPH
All-Day Excursions
10 Mile Range
Climb Over Obstacles
Up to 2"
Travel Unhindered
2.25"
Ground Clearance
Power Up Inclines
Ride Smoothly
2 Suspensions
Up to 10 Degrees

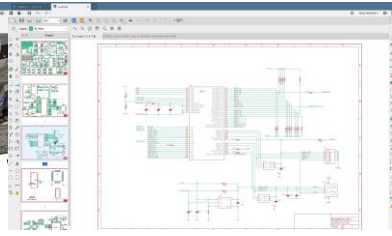

Increase size of wheel. Please design a new fender for the larger wheel

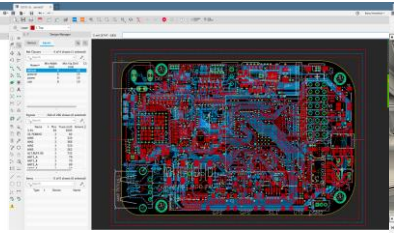

Hello
Bluetooth

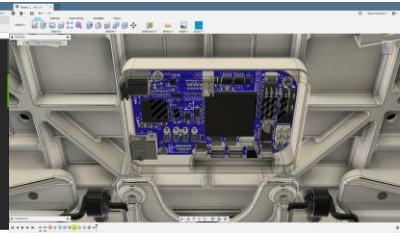

Model_C_Top_Assy_GD01.FT

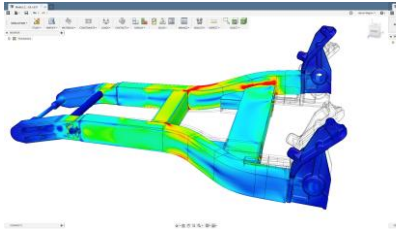

Quickly Disassemble
Load Simply

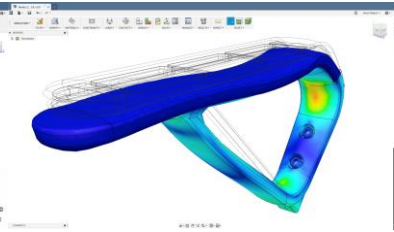


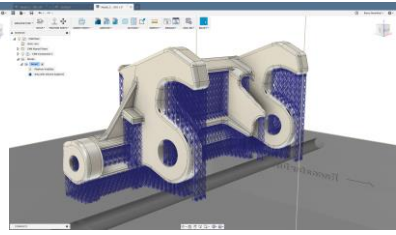


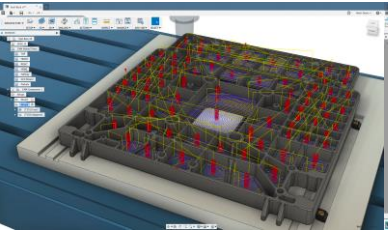


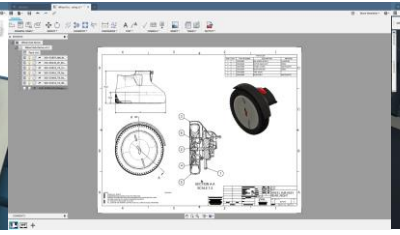


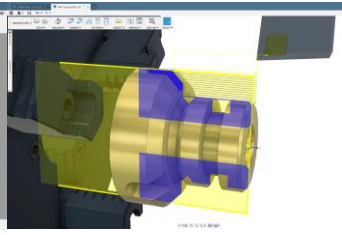


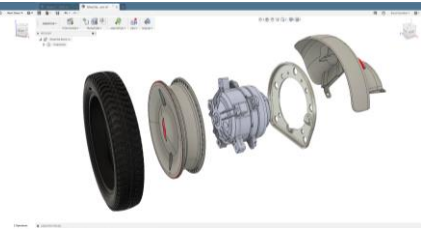


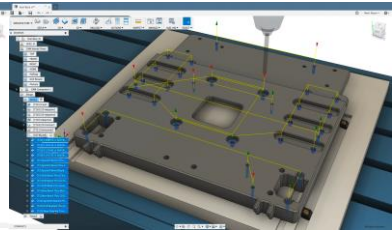




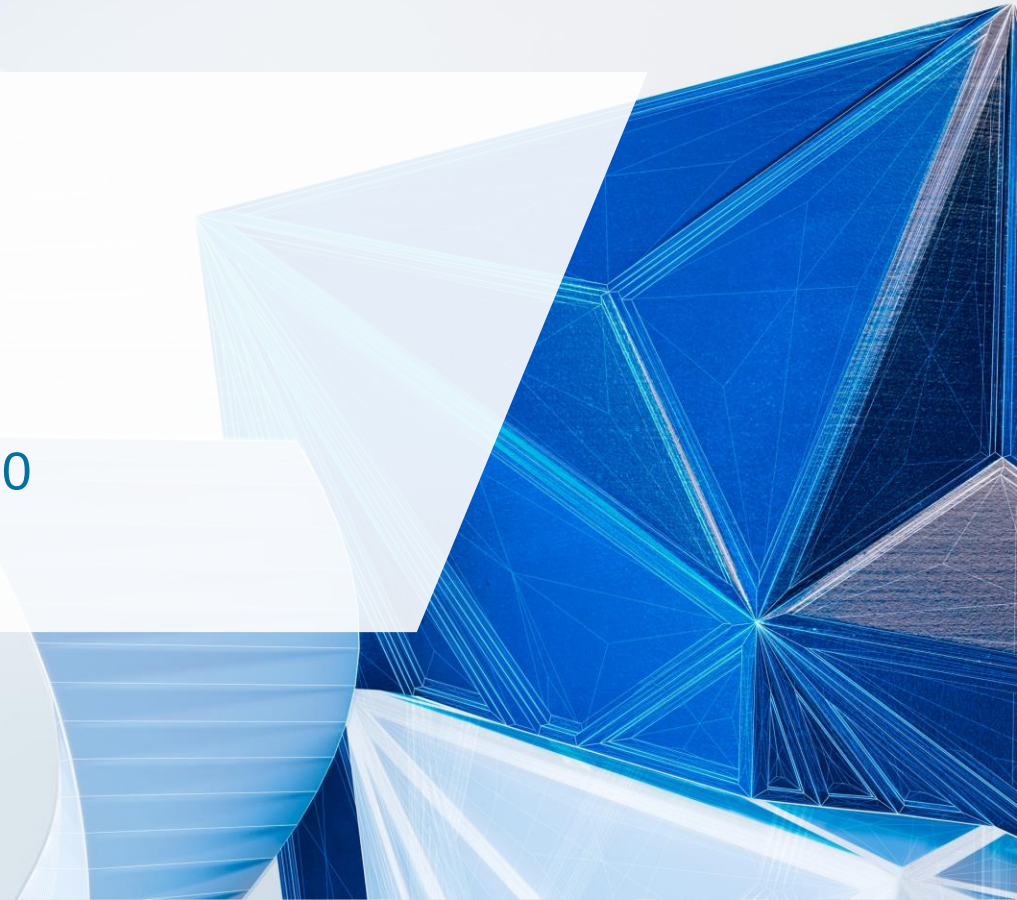








- Vorstellung
- Fusion 360
- **Additive Technologien**
- Additive Fertigung mit Fusion 360
- Workflows



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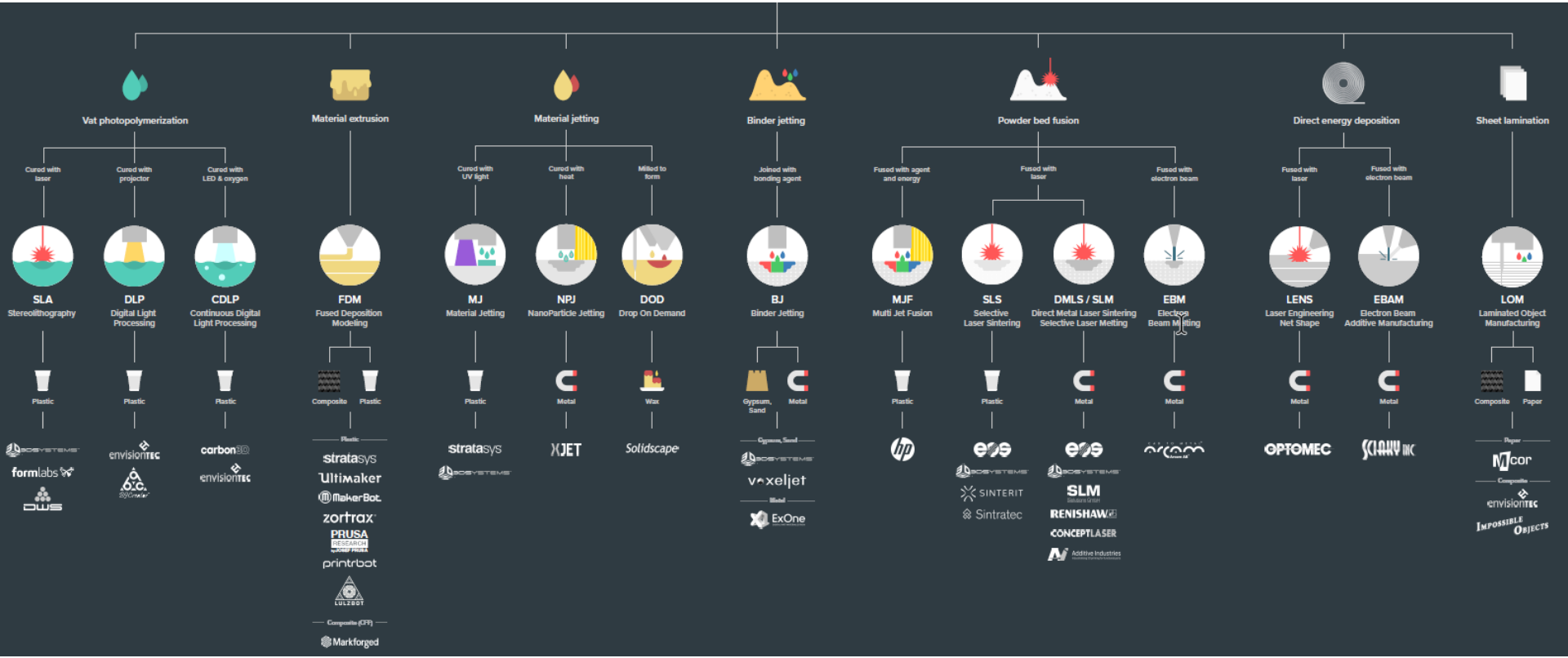
Additive Technologien sind vielfältig

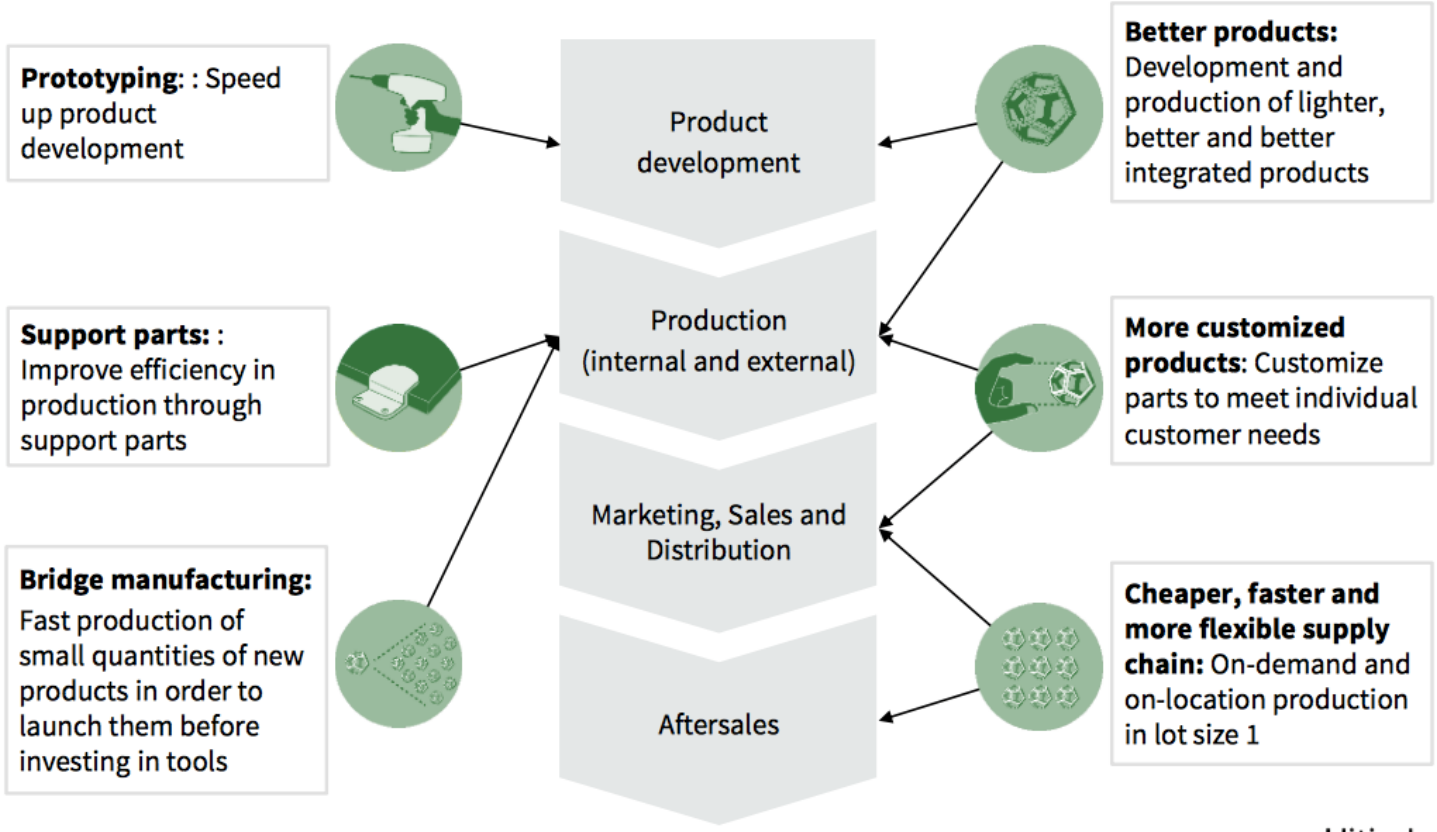


https://www.3dhubs.com/get/am-technologies/

Additive Technologien sind vielfältig

- Externe Software für mehrere unterschiedliche Systeme
- Materialien
- Integrierte Lösungen (Fusion 360)
- ……..

Potentiale der Additiven Fertigung



additively
your access to 3D printing

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CHALLENGES

- Keeping updated with new technologies
- Reduce manual intervention in set up and finishing
- Highly specialized technologies
- Produce increasingly complex products
- Reduce cost of the additive process
- Maximizing machine capabilities

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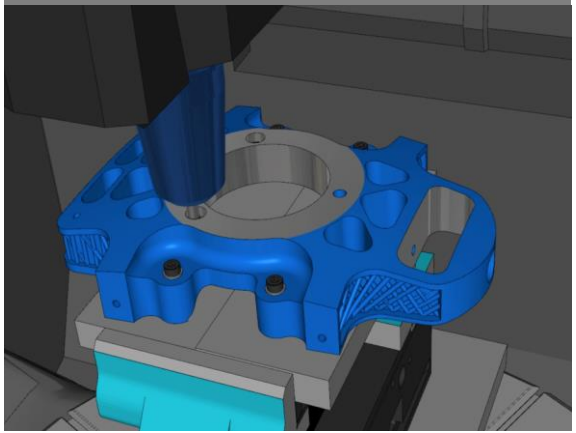
Heutige Workflows an Instituten

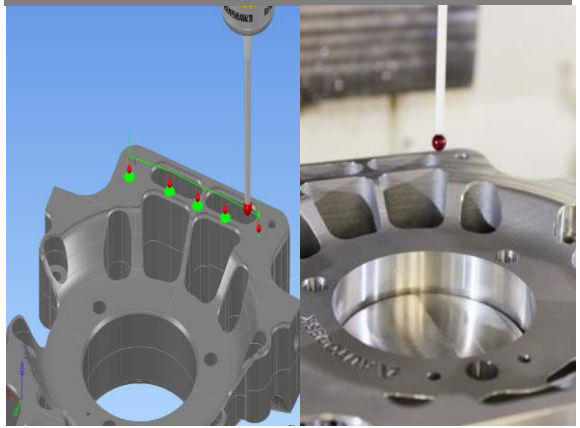
- Modellierung von Bauteilen
- Exportiert über STL
- Import Slicer Software über USB Stick, Outlook, …..
- Verschiedene Drucker an verschiedenen Standorten (verschiedene Verantwortlichkeiten)
- Änderungen am Bauteil erzeugt verschiedene Versionen V1, V2, V3_final_final_2, ….
- Bei Änderungen Workflow und Einstellungen wiederholen

1. Exploit the Freedom in Design offered by AM
2. Reduce Cost by Optimizing the Machine Utilization
3. Eliminate Build Failures through Process simulation
4. Prepare for post (AM) processing & Machining
5. Machine Finishing and Quality Inspection

MACHINING TOOLPATHS



AUTOMATED FIXTURING



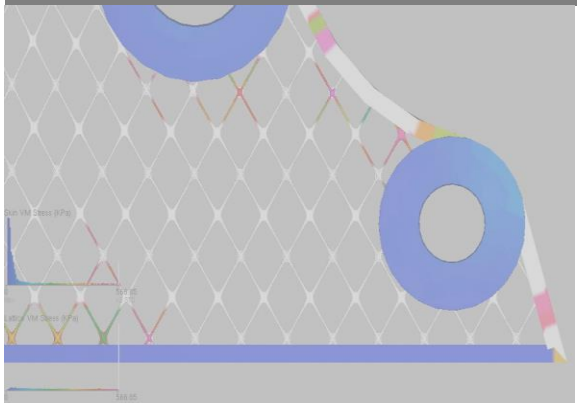
FINISH MACHINING

1. Exploit the Freedom in Design offered by AM

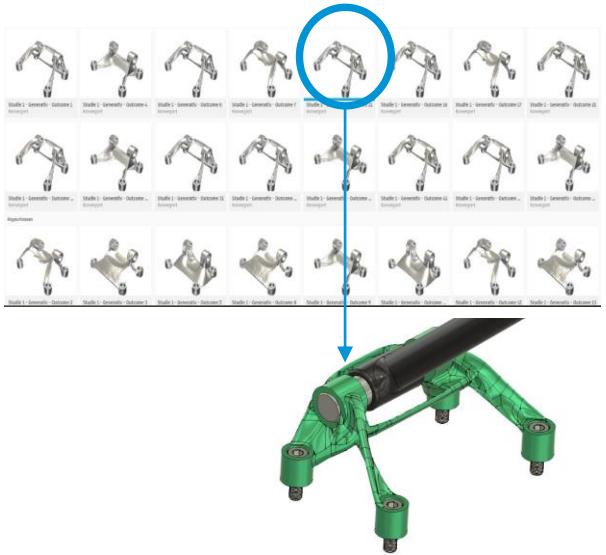
2. Reduce Cost by Optimizing the Machine Utilization

TOPOLOGY OPTIMIZATION

LATTICE STRUCTURES



DESIGN EXPLORATION
Generativ Design



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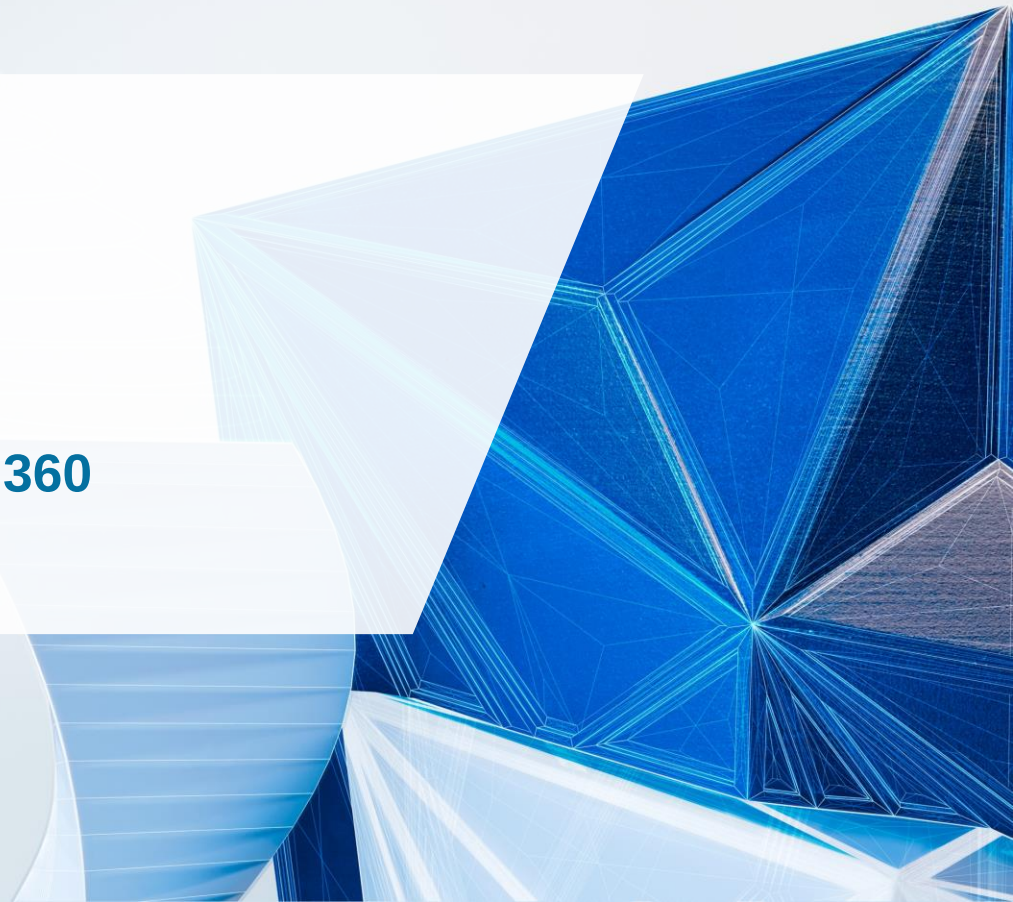

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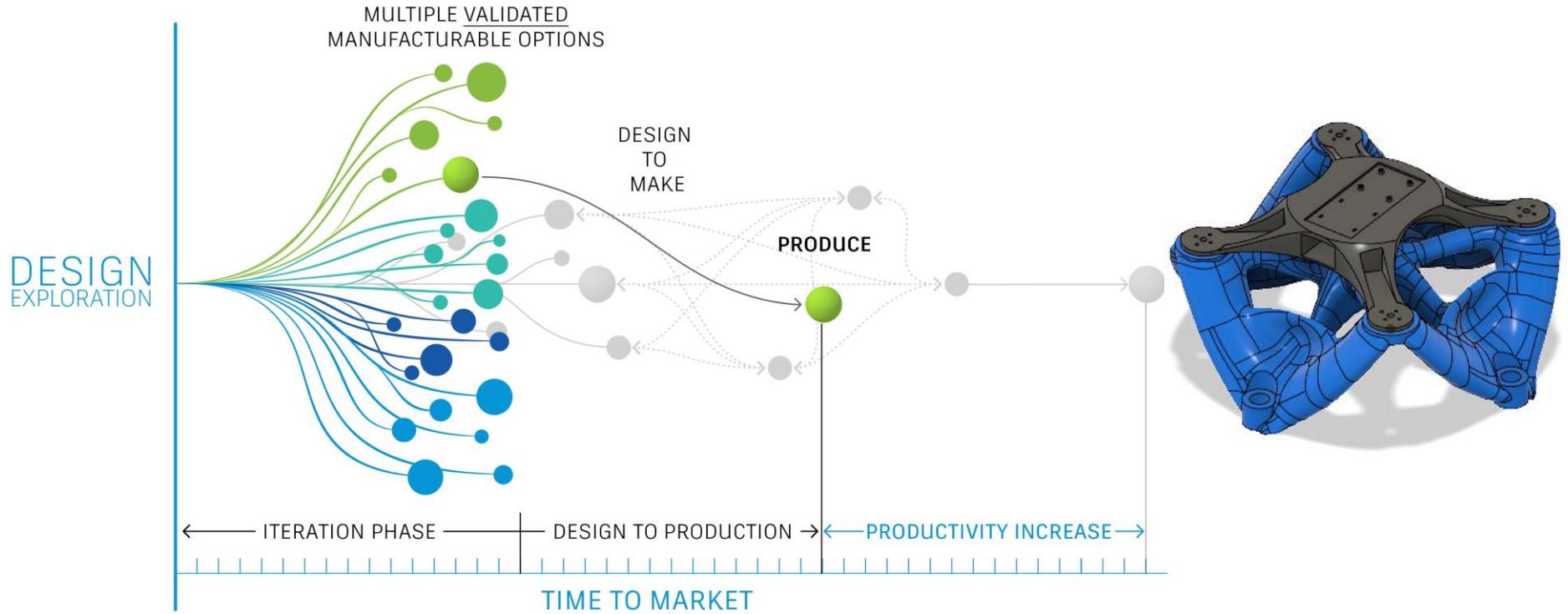
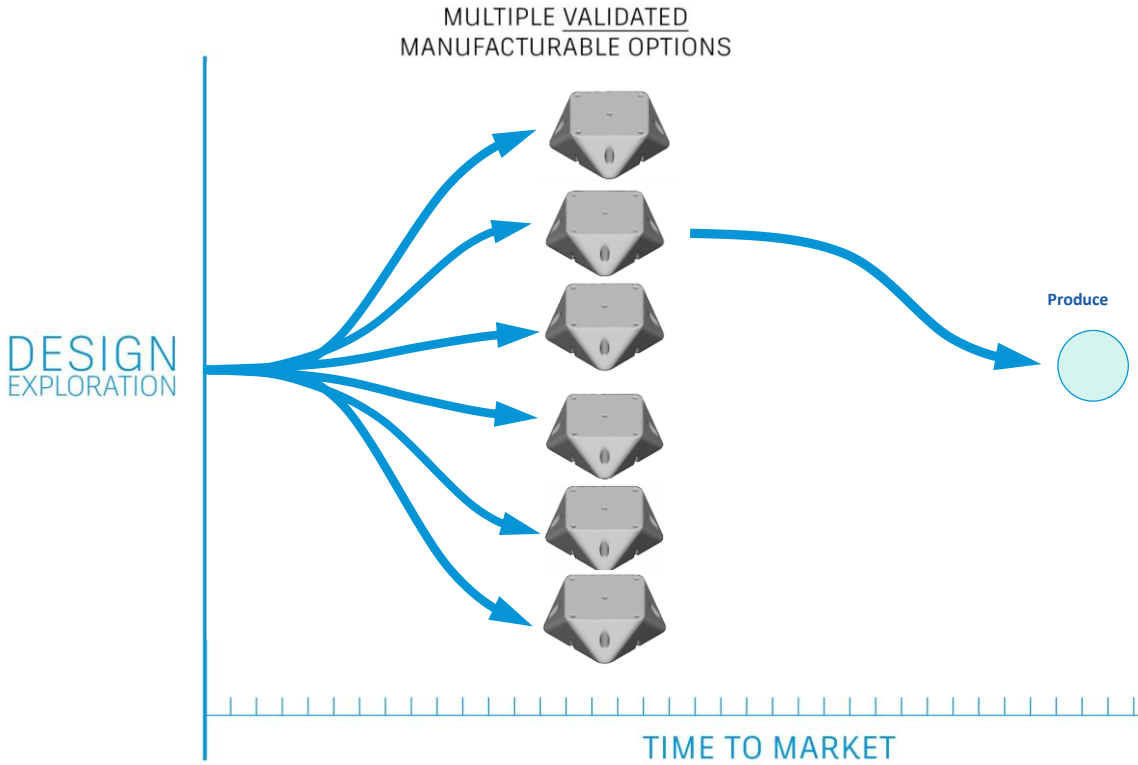
Generative Design Approach



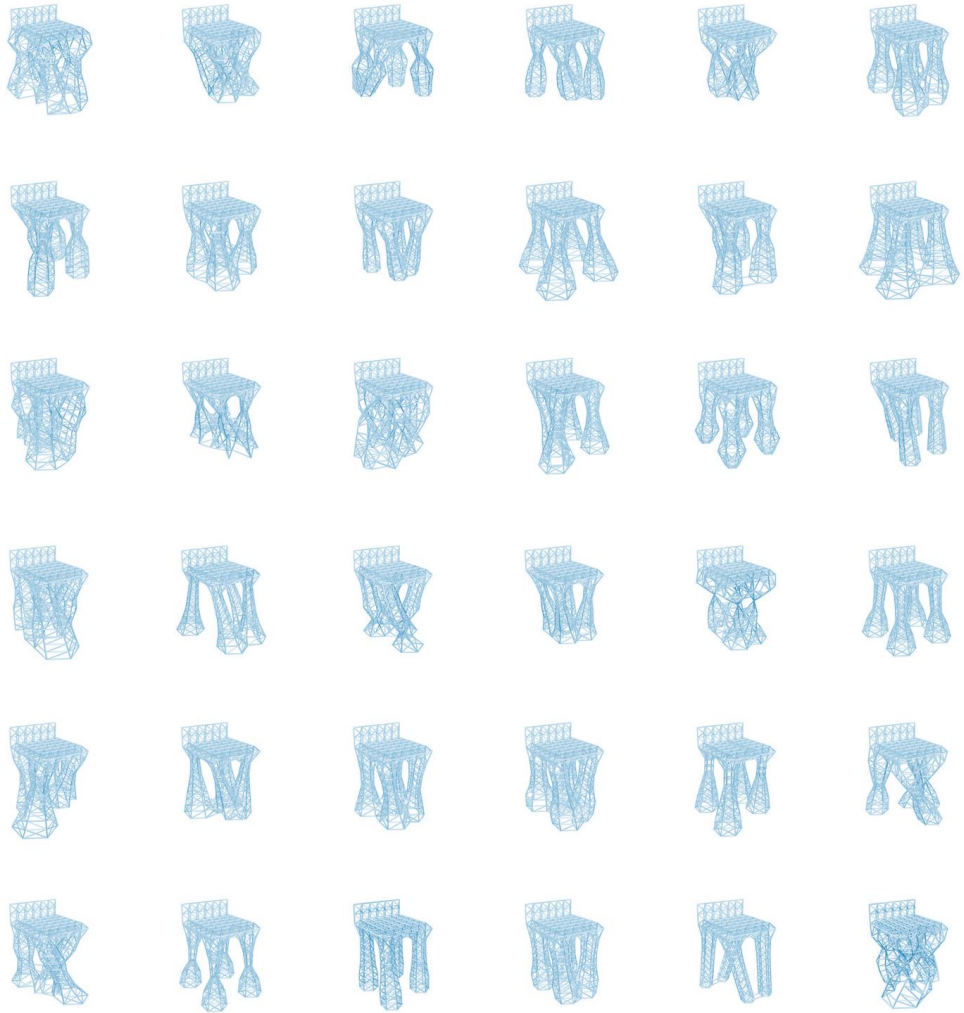
Generative Design Approach



AUTODESK GENERATIVE DESIGN

Autodesk generative design is a **design exploration** technology.

Simultaneously generate multiple CAD-ready solutions based on real-world manufacturing constraints and product performance requirements.

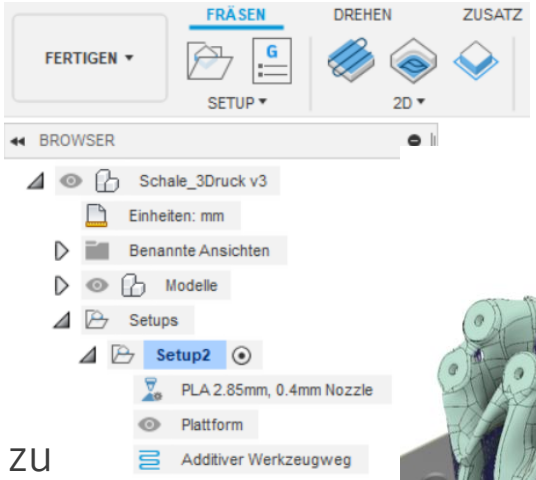


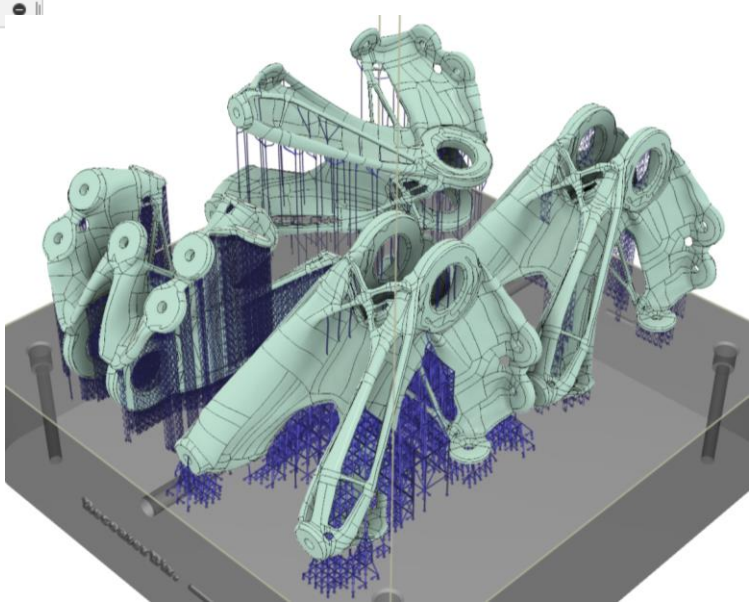
Fusion 360
Additive Fertigung

Fusion 360

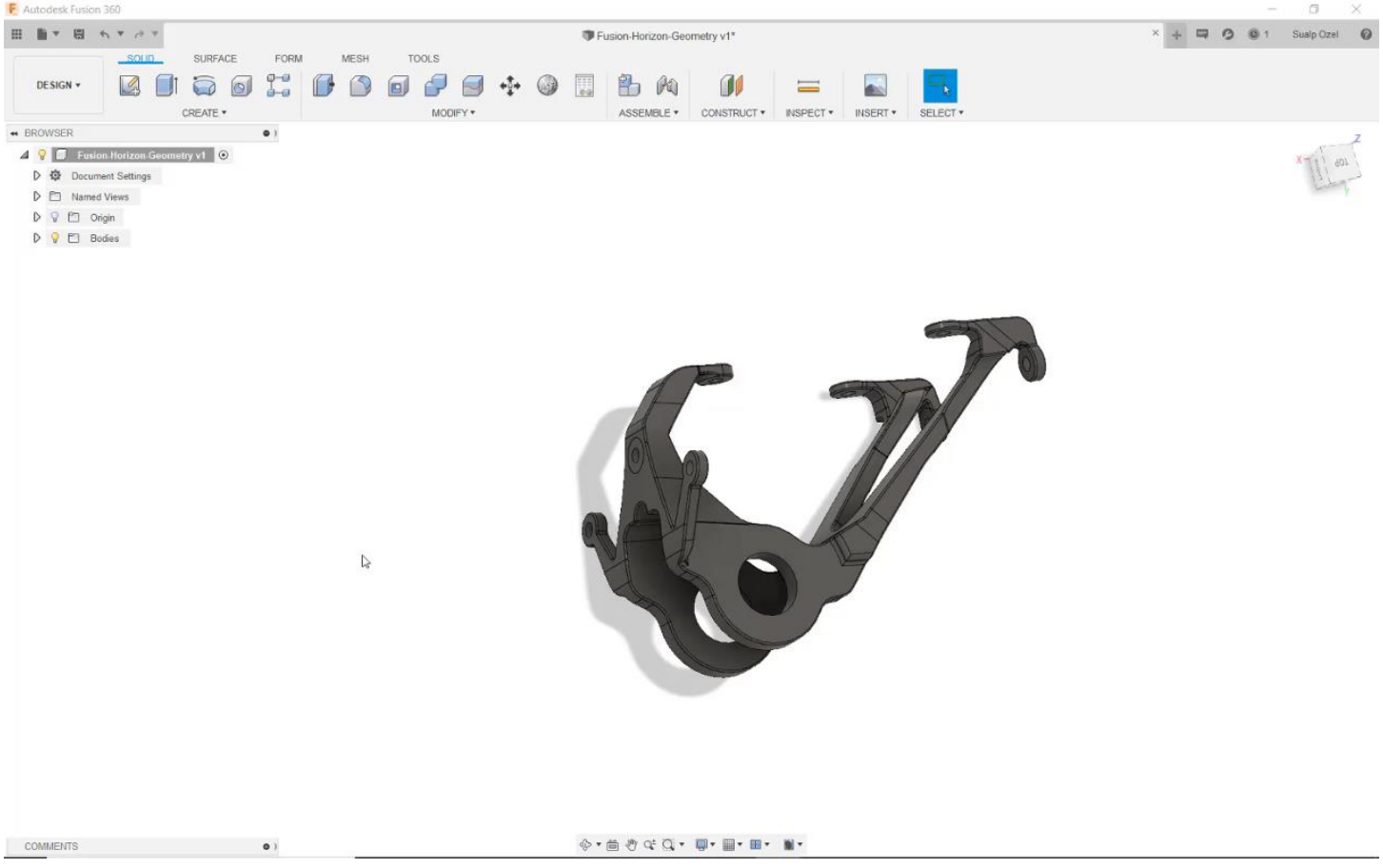
Additive Fertigung

- Druckparameter wählen
- Automatische Orientierung der Bauteile
  - Minimale z Höhe um Bauzeit zu reduzieren
- Erstellen von Stützstrukturen & Toolpaths
- Direkter export zu ausgewähten Pulverbettmaschinen
- 3MF export



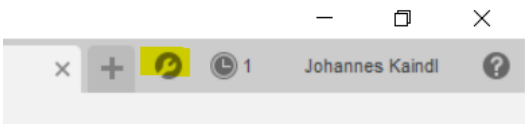


Metall Additive Workflow

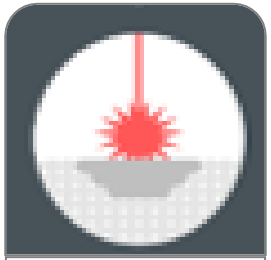


Fusion 360 Additive Fertigung

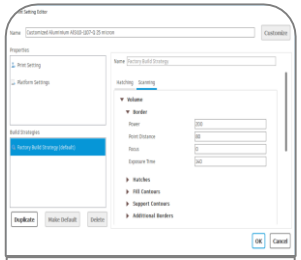
Extensions

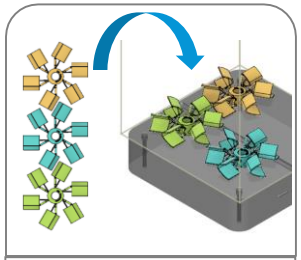


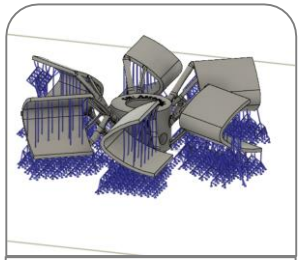
Technologie	Metallpulverbett
Drucker	EOS, Renishaw, Additive Industries, Xact Metal, LMI, OCM
Anpassungen	Druckeinstellungen, Plattformeinstellungen, Supporteinstellungen,
Positionierung	Automatische Ausrichtung und Orientierung, Manuelle Bewegungen, Minimale Bauhöhe, Kollisionserkennung, Bauteile auf der Plattform positionieren
Support Erstellung	Volumen, Stab, Polylinie, Lattice, Dom, Kontur mit Polylinie unterstützen
Toolpathing	Toolpath Generierung, Toolpath Visualisierung, Export Toolpath/ machine file

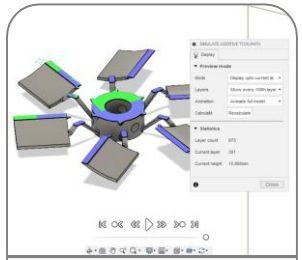

Technology

Printers


Customization

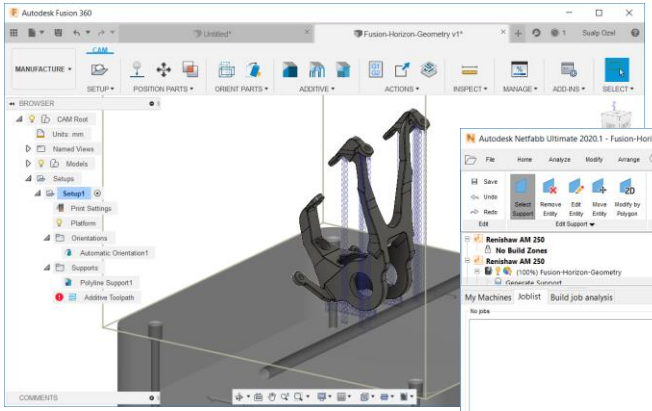

Positioning

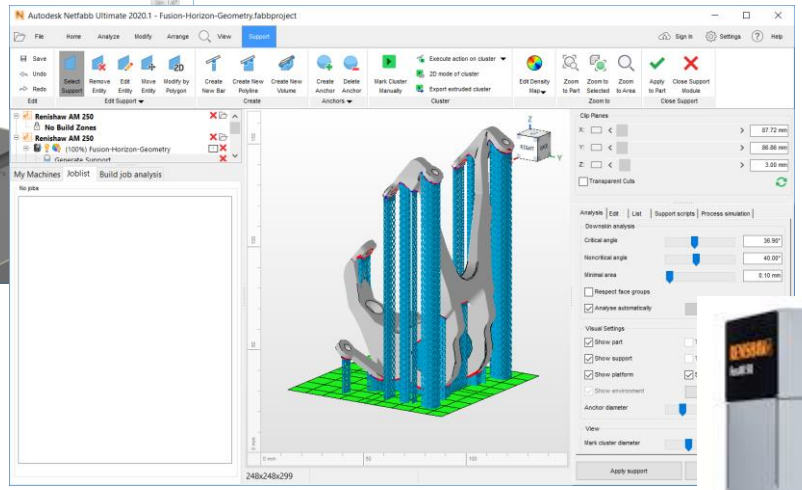

Supports


Toolpathing

Metall Additive – Erweiterte Workflows

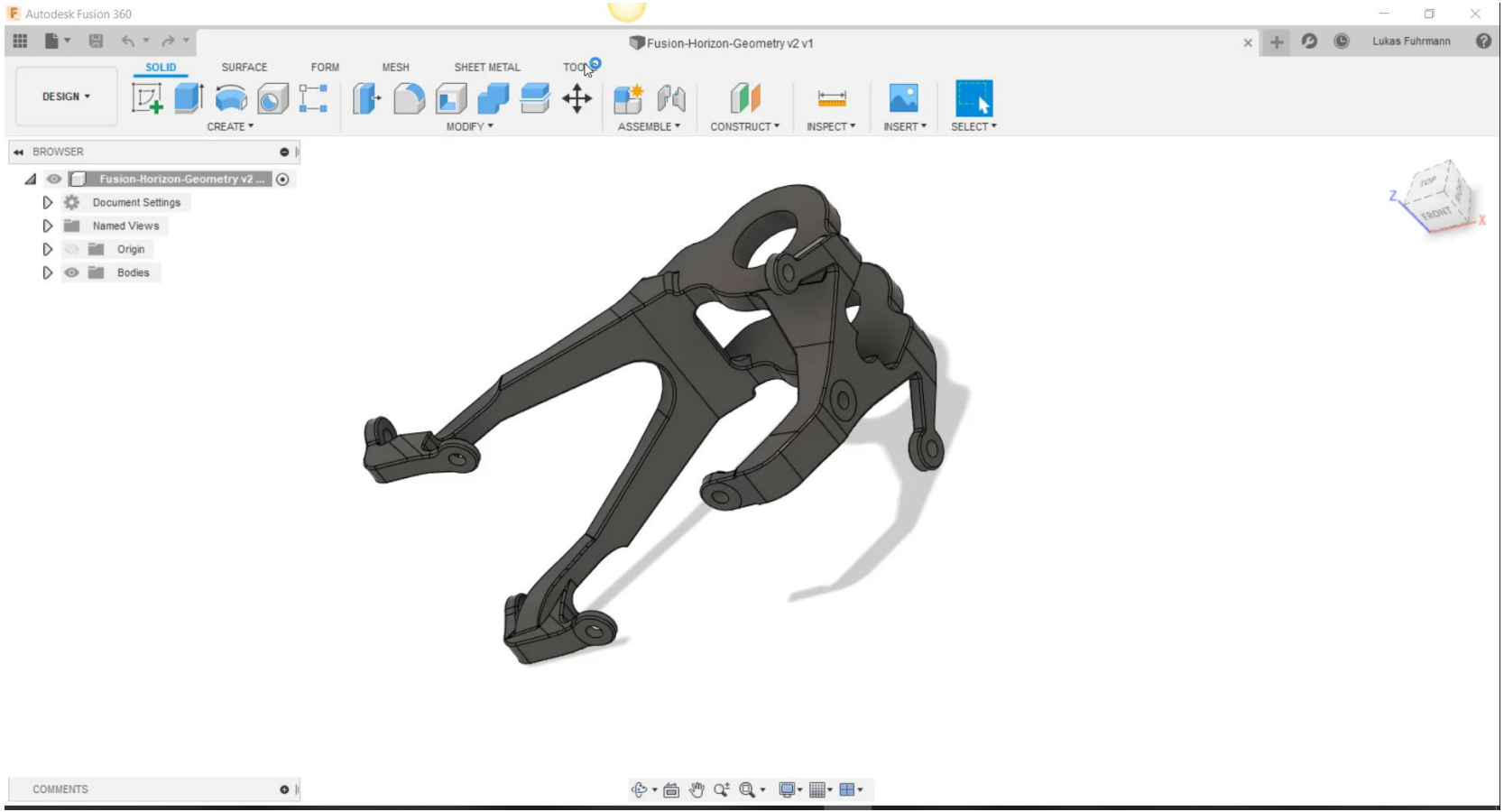
Direkte Verbindung zwischen Fusion 360 und Netfabb für erweiterte Metall Workflows



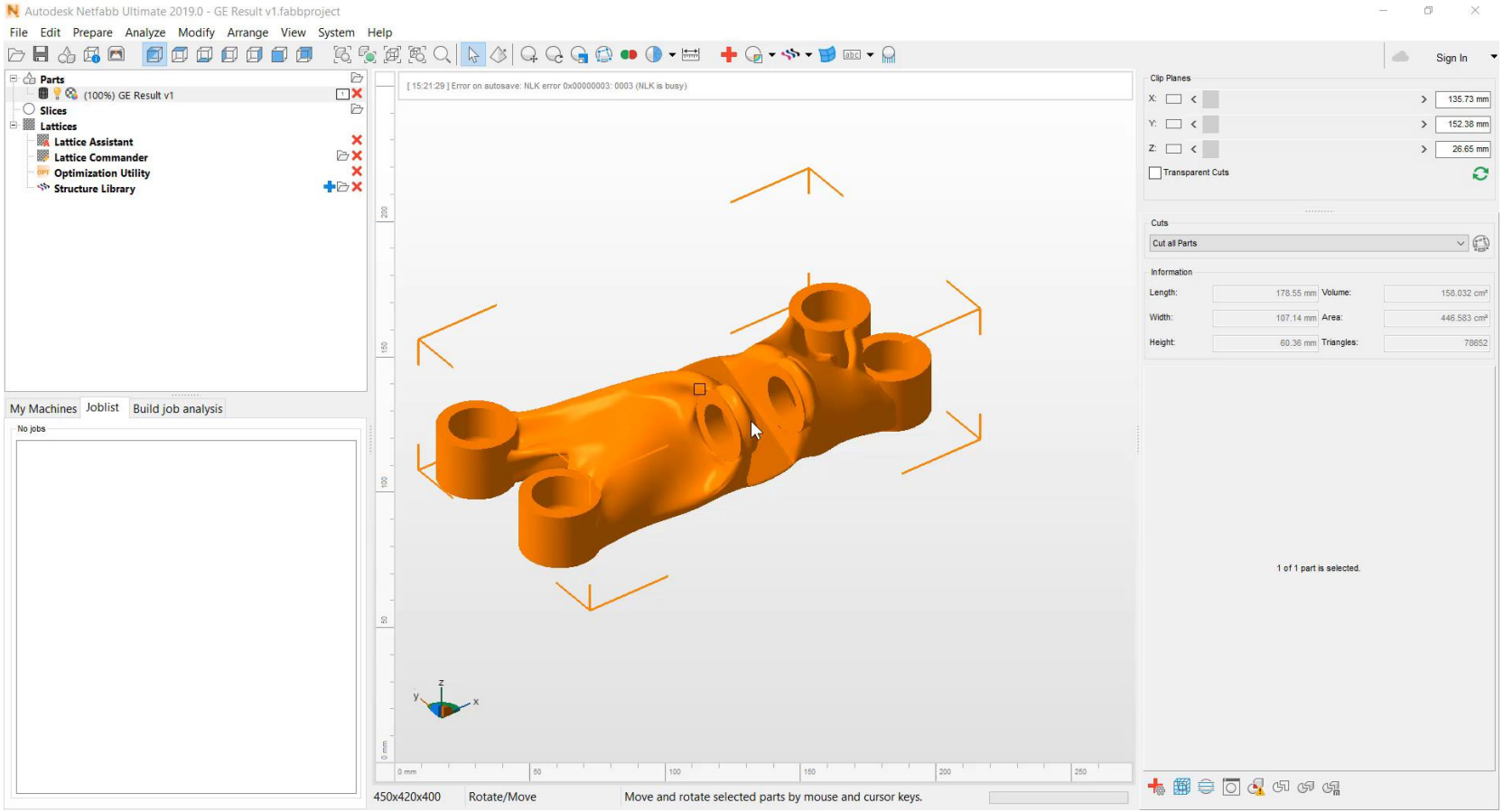


.MTT File

Metall Additive – Erweiterte Workflows 1/2



Metall Additive – Erweiterte Workflows 2/2



Autodesk Knowledge Network (AKN)

Fragen …

https://knowledge.autodesk.com/de/search-result/caas/sfdcarticles/sfdcarticles/DEU/Additive-Manufacturing-machines-available-in-Fusion-360.html

https://help.autodesk.com/view/fusion360/ENU/?guid=Fusion_CAM_concepts_additive_overview_html

https://www.autodesk.com/products/fusion-360/blog/fusion-360-fff-printing/?dysig_tid=a394983b2e954cdeb18e18bced6d1258&utm_source=FacebookPage&utm_medium=social&utm_campaign=Bonfireshares&utm_content=97748

Education Software

https://www.autodesk.de/education/free-educational-software

Life Demo

- Vorstellung
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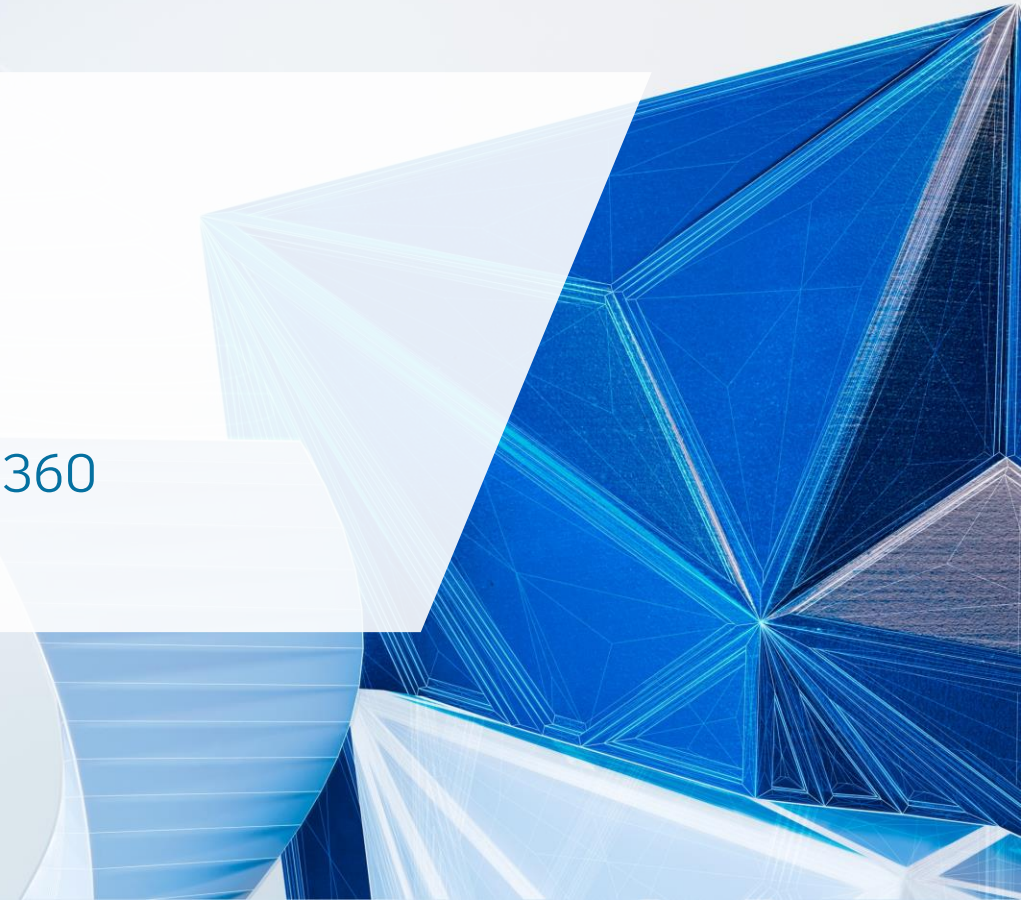
- Additive Fertigung mit Fusion 360
- **Workflows**



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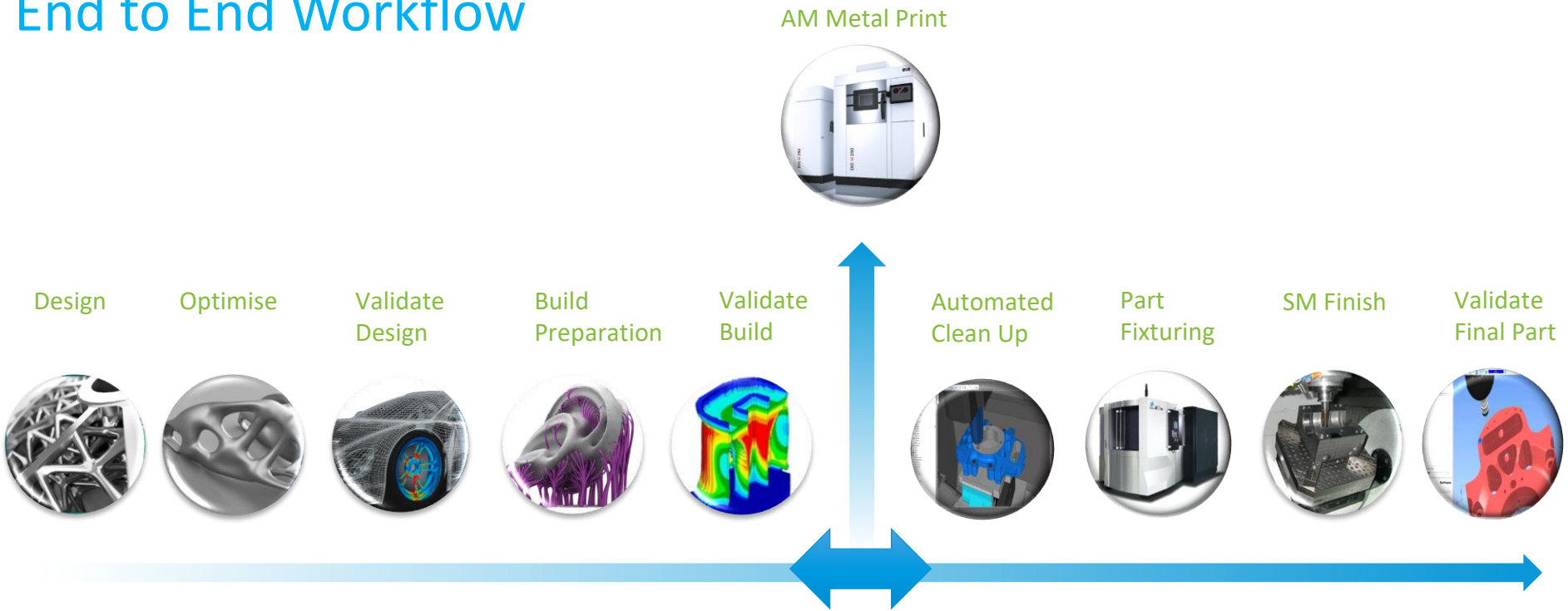
Additive Fertigung
End to End Workflow



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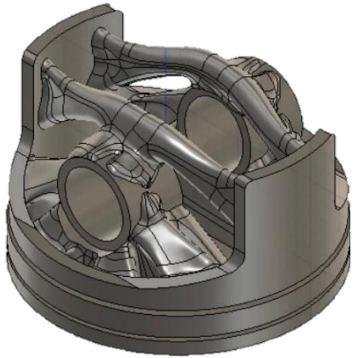
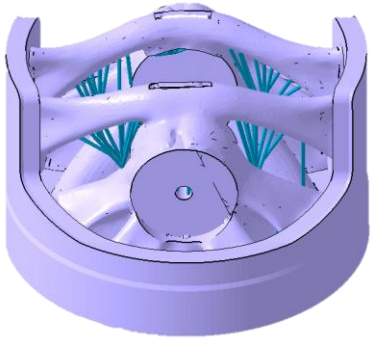
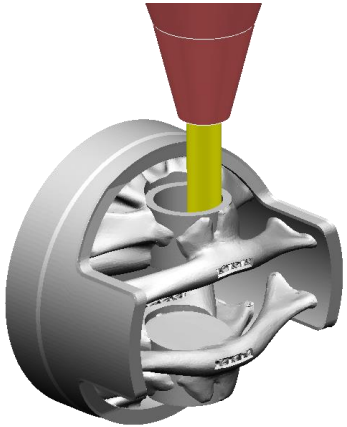
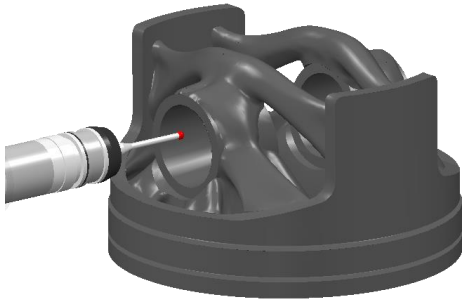
Hybride Herstellung eines Kolbens









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AUTODESK® FUSION 360™

AUTODESK® NETFABB®

AUTODESK® FUSION 360™

AUTODESK® POWERMILL®

AUTODESK® FUSION 360™

AUTODESK® POWERINSPECT®

Q&A

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