Head of Emerging Technologies & Concepts
Peter Sander

**Airbus
Innovation Days 2016**

**The Future of
ALM – "3D-Printing"**

*Additive Layer Manufacturing

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Additive Layer Manufacturing (ALM): Airbus leading in metal "3D printing"

First bionic cabin bracket „printed" from titanium powder

June 20th, 2014: First flight of bionic cabin bracket

# Additive Layer Manufacturing: In service for Spare Parts

Spare Parts

- First „printed" Spare Part in service with Air Transat since February 2014

- Topology optimized and printed Safety Collars
  - → improved maintenance
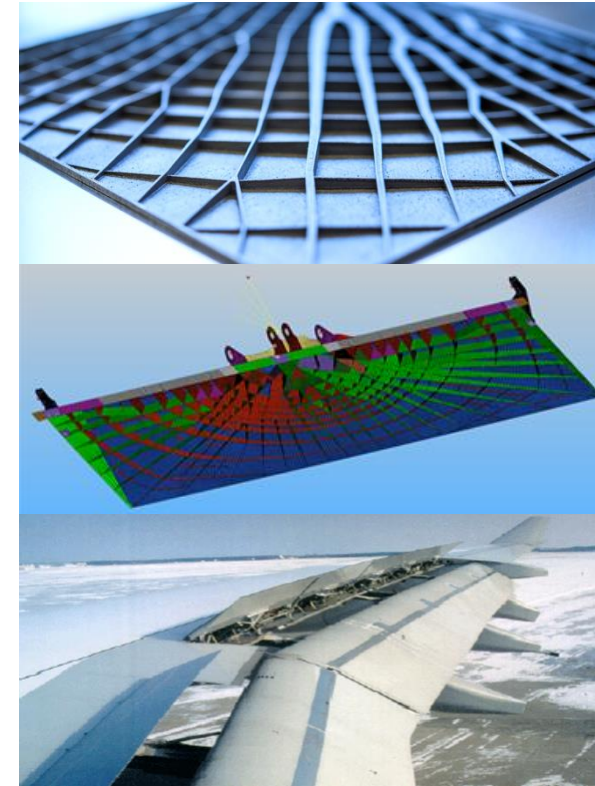   handling enabled by
    Bionic Design

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Bionic design: understanding & copying nature's solutions

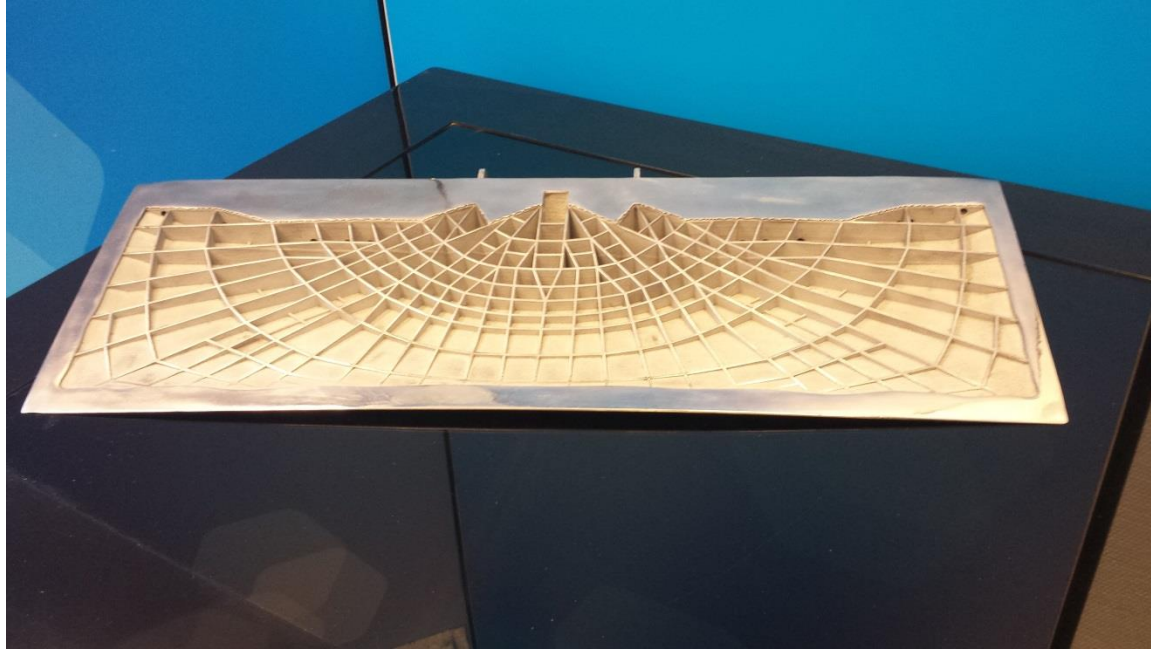Improving aviation's environmental footprint
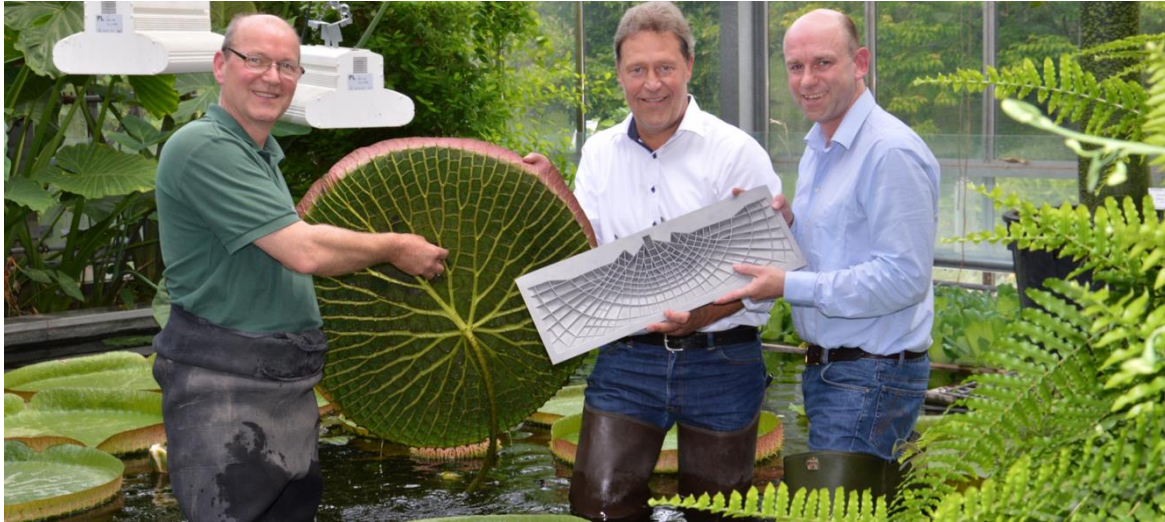
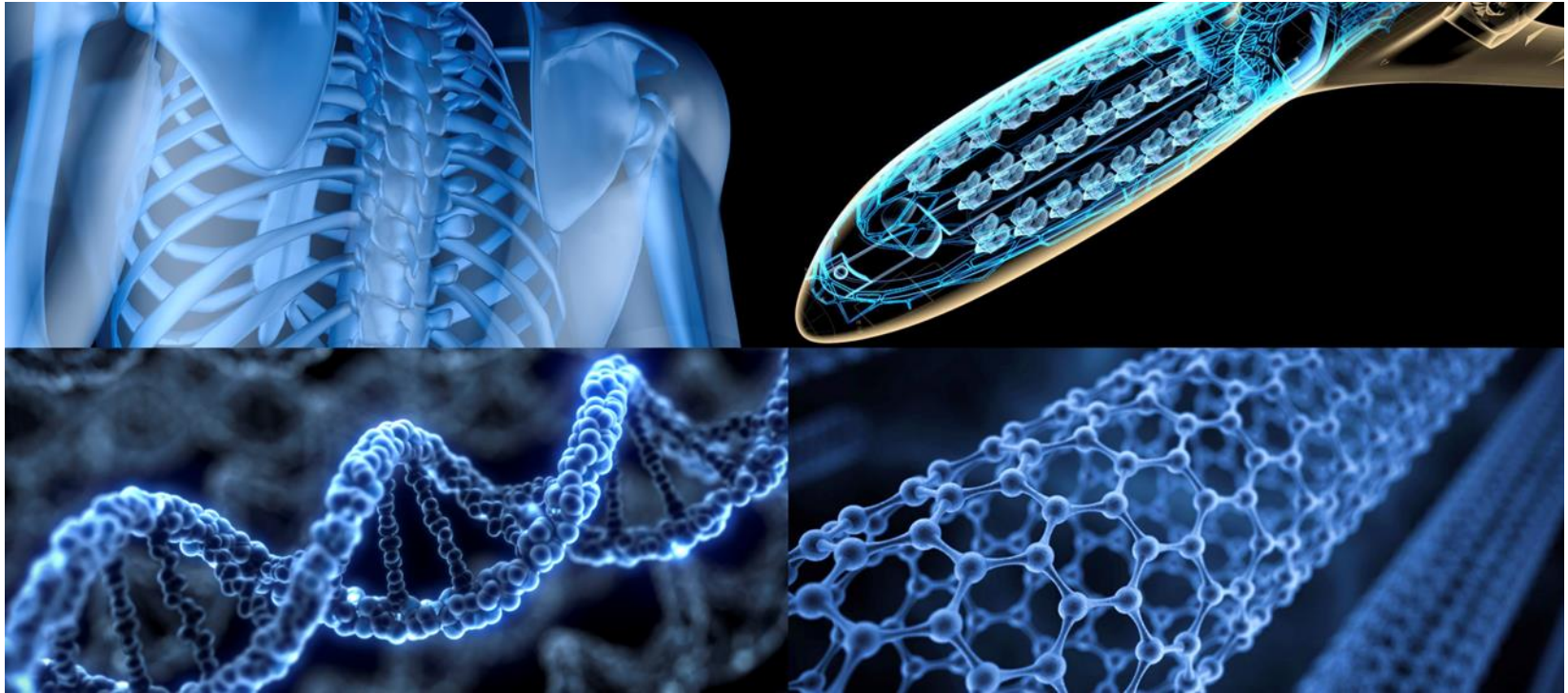Giant water lily at the University of Kiel

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ALM + bionic design: up to 55% less weight

Enormous potential to revolutionise aircraft design & manufacturing
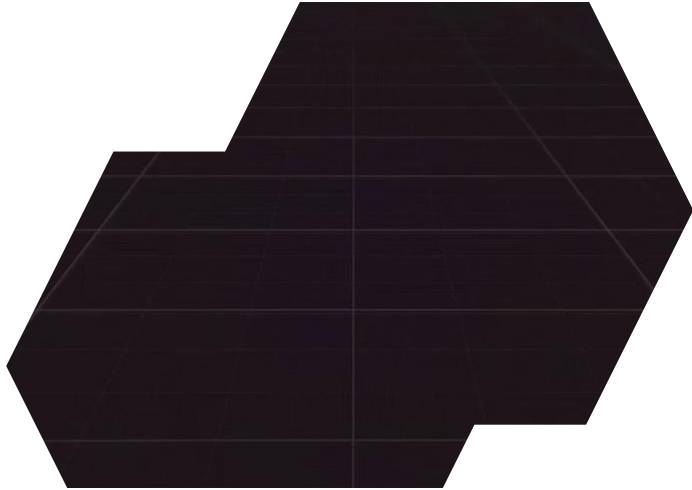

➔ flyable on Airbus test aircraft approx. Q4 2018

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Re-thinking today´s product design

"Algorithms are the new star-designers" - Carl Bass, CEO AUTODESK, 2014

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Bionic Partition: 50% weight reduction is possible & demonstrated
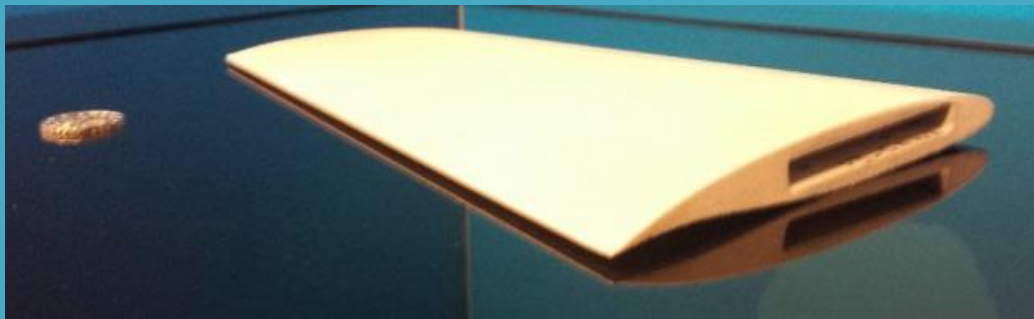
First bionic cabin partition „printed" from Aluminium powder

➔ flyable on Airbus test aircraft approx. Q4 2016

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Future fast track product development by using ALM (1/2)
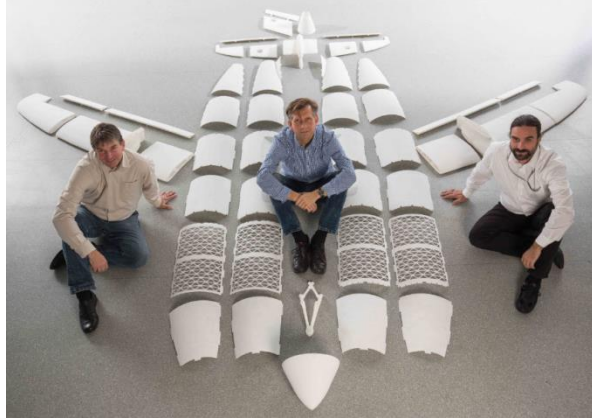
Wind tunnel tests

- Polyamide-Alumide materials
- 90% lead time reduction
- 75% cost reduction
- Rapid analysis of future aircraft components

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Future fast track product development by using ALM (2/2)

THOR

- THOR - Test of High-tech Objectives in Reality
- Flyable platform 4 x 4 m
- 25 kg
- 4 weeks for 1 Aircraft
- 18 missions planned for 2016

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Airbus ALM Industrial Platform

Europe-wide ALM Platform

- Material & process development
- New bionic design methods and design software
- ALM trainings

and

- Industrial ramp-up

➔ **Established 2014**

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