

# Big Data and AI for Material Efficiency

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**AIRBUS**

# Challenges for Materials in the Aerospace Industry



One product that has to operate in all conditions



Long lifetime > 25 years



Importance of weight reduction



**Structural Cost  
per KG**

200€ - 800€ / KG

**Value per KG  
weight reduction**

300€ - 1000€ / KG

1 - 2€ / KG

2€ - 10€ / KG

# Examples for Optimizing Material Management through Digitalization



Optimized (bionic) part design



Accelerate material discovery



Reduced B2F ratio through additive manufacturing

Reduced defects



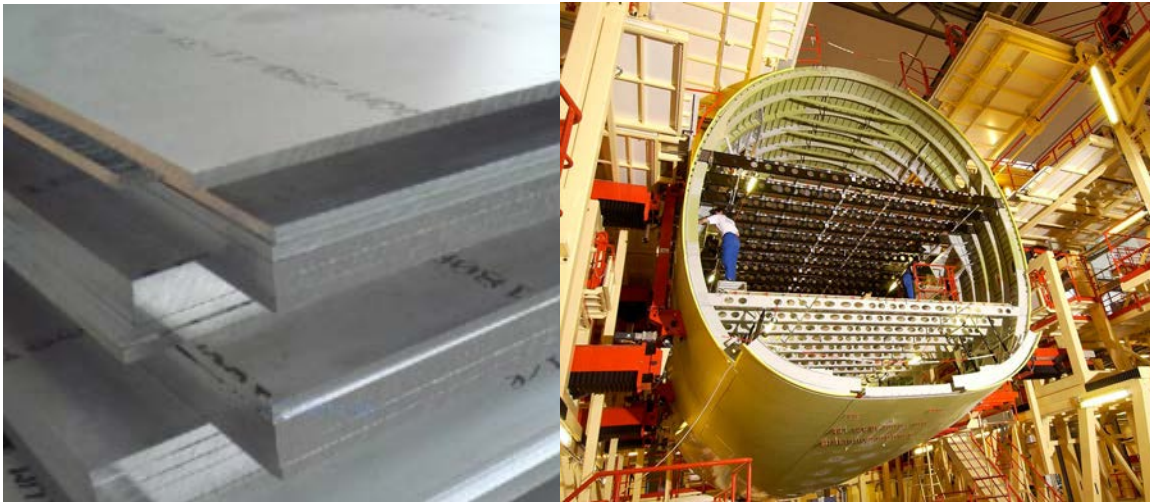
Vertical integration



Maintenance optimization based on part condition

# Additive Manufacturing

**Step 1:  
Buy 2 Fly Optimization**



**Step 2:  
(Bionic) Part Optimization for Add. Manufacturing**



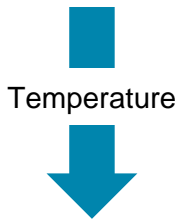
# Maintenance Optimization

## Traditional



Part maintenance after certain number of flight hours/cycles

## Advanced



Optimized maintenance depending on individual part condition based on big data analysis

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Thank You!