Additive Manufacturing in Space Industry: "Initial findings"

19th AM Platform meeting, June 14th

M. Gschweitl RUAG Space, PU-S 12 June 2017



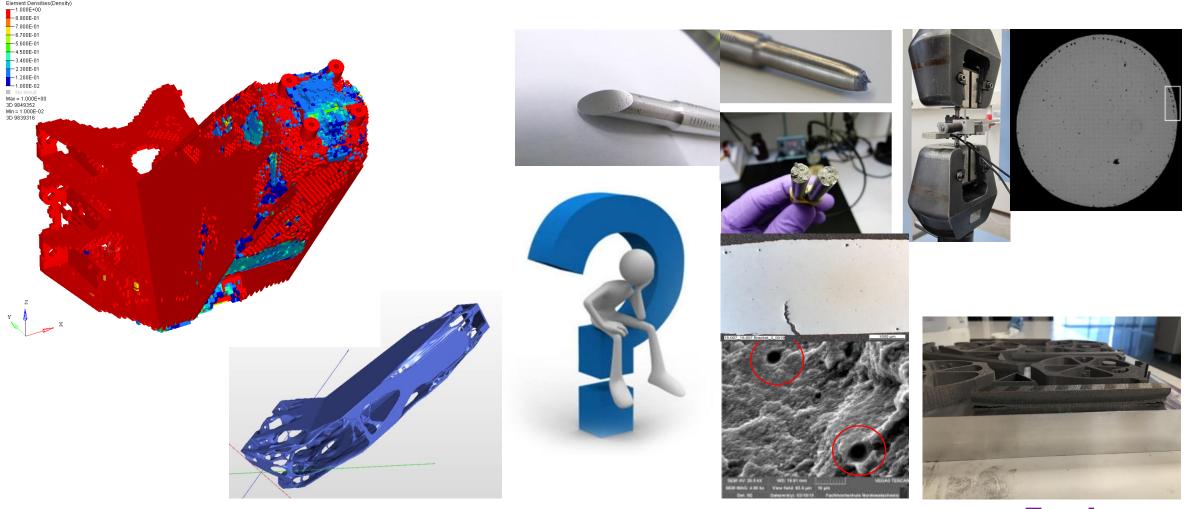
The early years – Everything is possible...

Advanced Analytics With Self-Service Delivery expectations Autonomous Vehicles Internet of Things Smart Advisors -Speech-to-Speech Translation Micro Data Centers -- Machine Learning Digital Dexterity -Wearables Software-Defined Security -- Cryptocurrencies - Consumer 3D Printing Neurobusiness - Natural-Language Question Answering Citizen Data Science Biochips IoT Platform Connected Home Affective Computing -Smart Robots Hybrid Cloud Computing 3D Bioprinting Systems for Organ Transplant Volumetric Displays -Human Augmentation -Brain-Computer Interface -Enterprise 3D Printing Quantum Computing -Augmented Reality - Virtual Reality Bioacoustic Sensing Cryptocurrency Exchange - Autonomous Field Vehicles People-Literate Technology -Digital Security Virtual Personal Assistants - Smart Dust As of July 2015 Peak of Innovation Trough of Plateau of Inflated Slope of Enlightenment Trigger Disillusionment Productivity Expectations time Plateau will be reached in: obsolete ▲ more than 10 years 8 before plateau

Figure 2. Hype Cycle for Emerging Technologies, 2015

Source: Gartner (July 2015)

The early years – Everything is possible, but....



Together ahead. RUAG

Key Enablers to succeed...together ahead!!

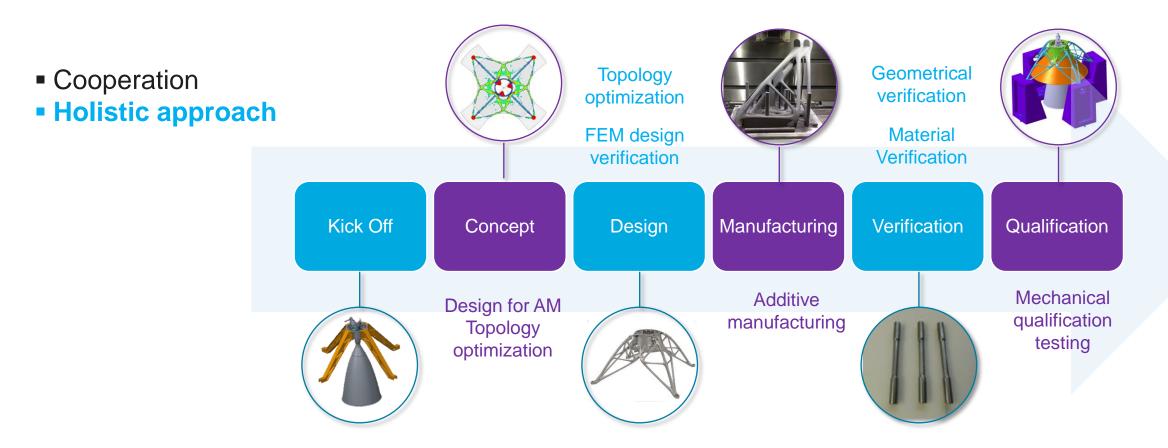
Cooperation



Try to use synergies and identify strength, overlaps, needs...



Key Enablers to succeed...look at the wider picture!!

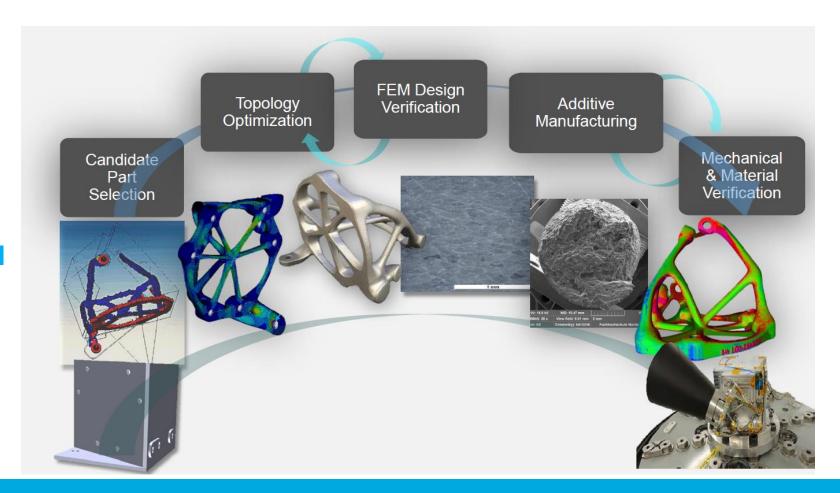


Understand the hole product life cycle, interdisciplinary...



Key Enablers to succeed...be agile!!

- Cooperation
- Holistic approach
- Know exactly what you want
- Keep it simple
- Identify main drivers
- Have schedule under control

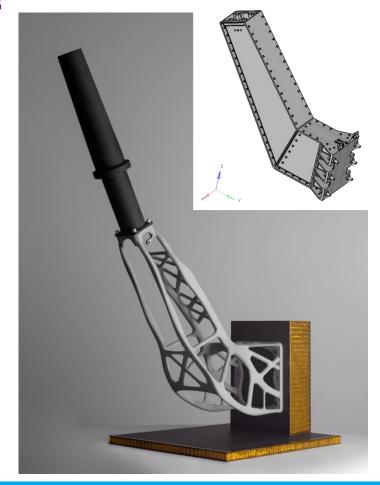


Realised within 8 weeks



Key Enablers to succeed...do it differently!!

- Cooperation
- Holistic approach
- Know exactly what you want
- Keep it simple
- Identify main drivers
- Have schedule under control
- Try not to replicate



New design tools, Integration of Functions, new Architectures...



Key Enablers to succeed...how to integrate?

- Cooperation
- Holistic approach
- Know exactly what you want
- Keep it simple
- Identify main drivers
- Have schedule under control
- Try not to replicate make it different
- AM is not a "stand alone" silo



Embedded?

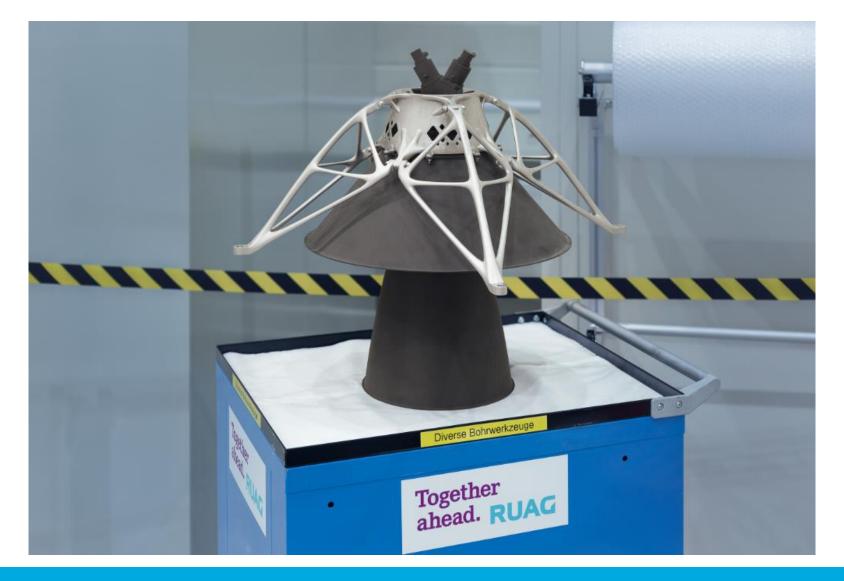
centre of excellence?

VS.



AM is an manufacturing technology that is part of product development





Thank you very much for your attention!!