Additive Manufacturing in Space Industry: "Initial findings"
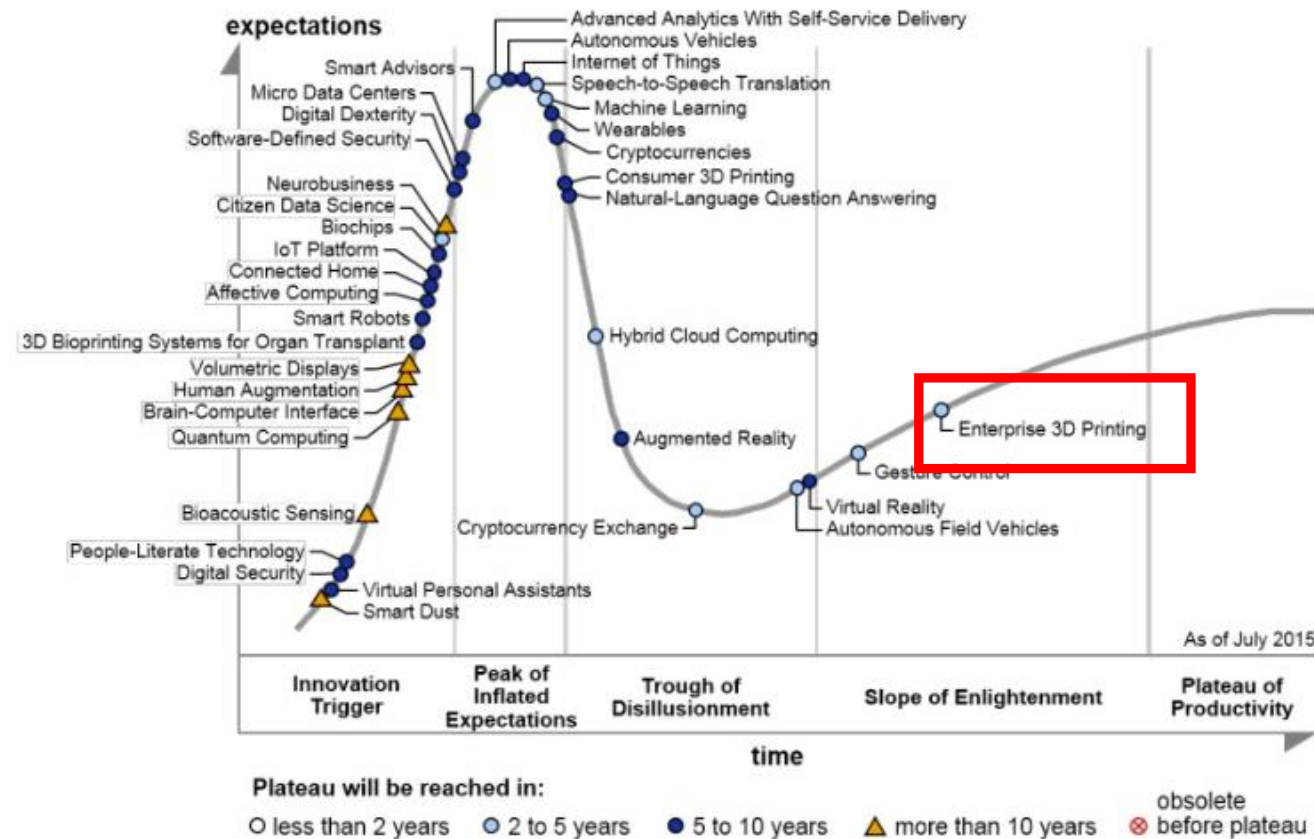
19th AM Platform meeting, June 14th

M. Gschweitl

RUAG Space, PU-S

12 June 2017

The early years – Everything is possible…

Figure 2. Hype Cycle for Emerging Technologies, 2015

Source: Gartner (July 2015)
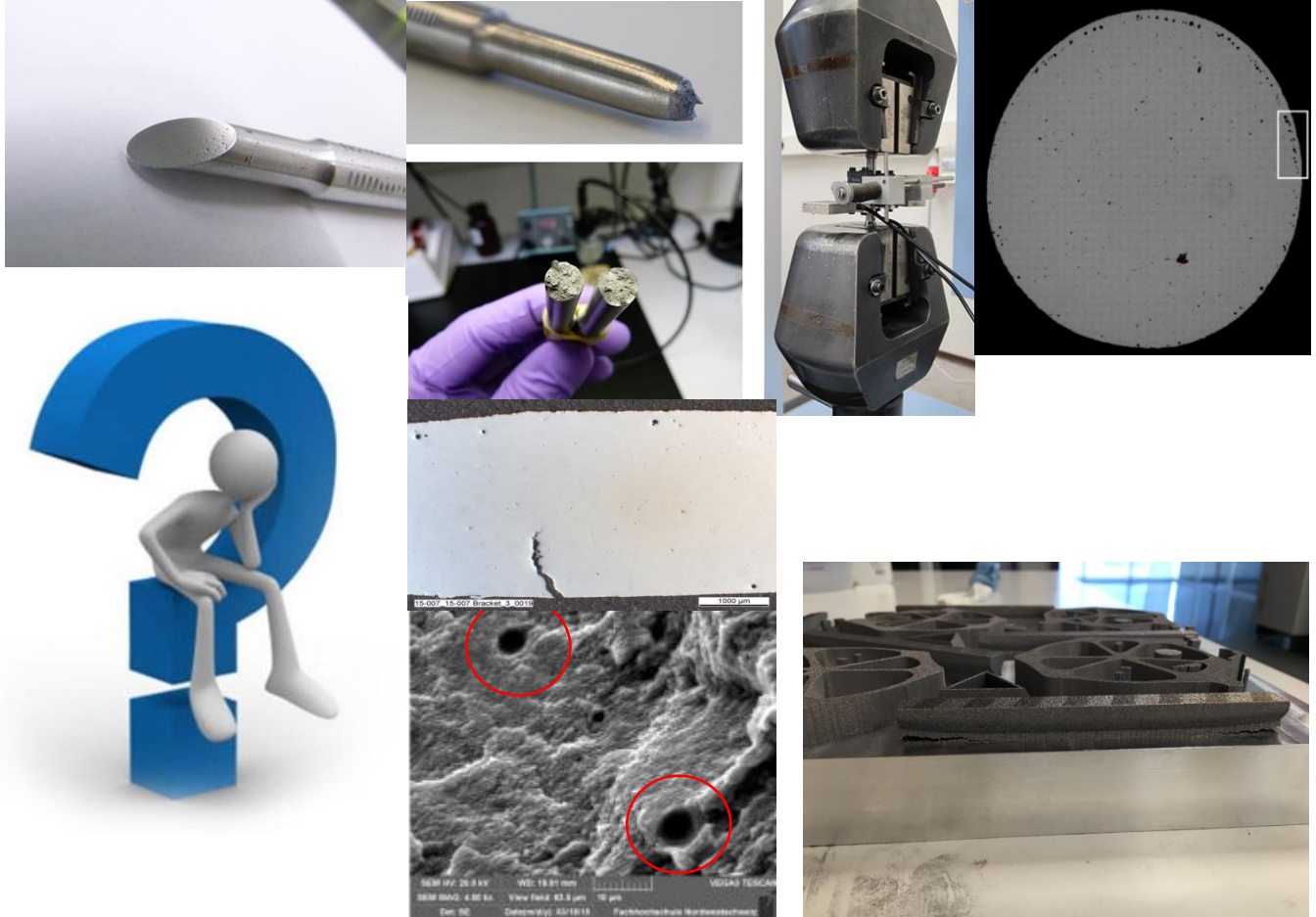
The early years – Everything is possible, but….

Together ahead. RUAG

Key Enablers to succeed…together ahead!!

- **Cooperation**

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

Together ahead. **RUAG**

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

- Cooperation
- **Holistic approach**

Topology optimization

FEM design verification

Geometrical verification

Material Verification

| Kick Off | Concept | Design | Manufacturing | Verification | Qualification |

Design for AM Topology optimization

Additive manufacturing

Mechanical qualification testing
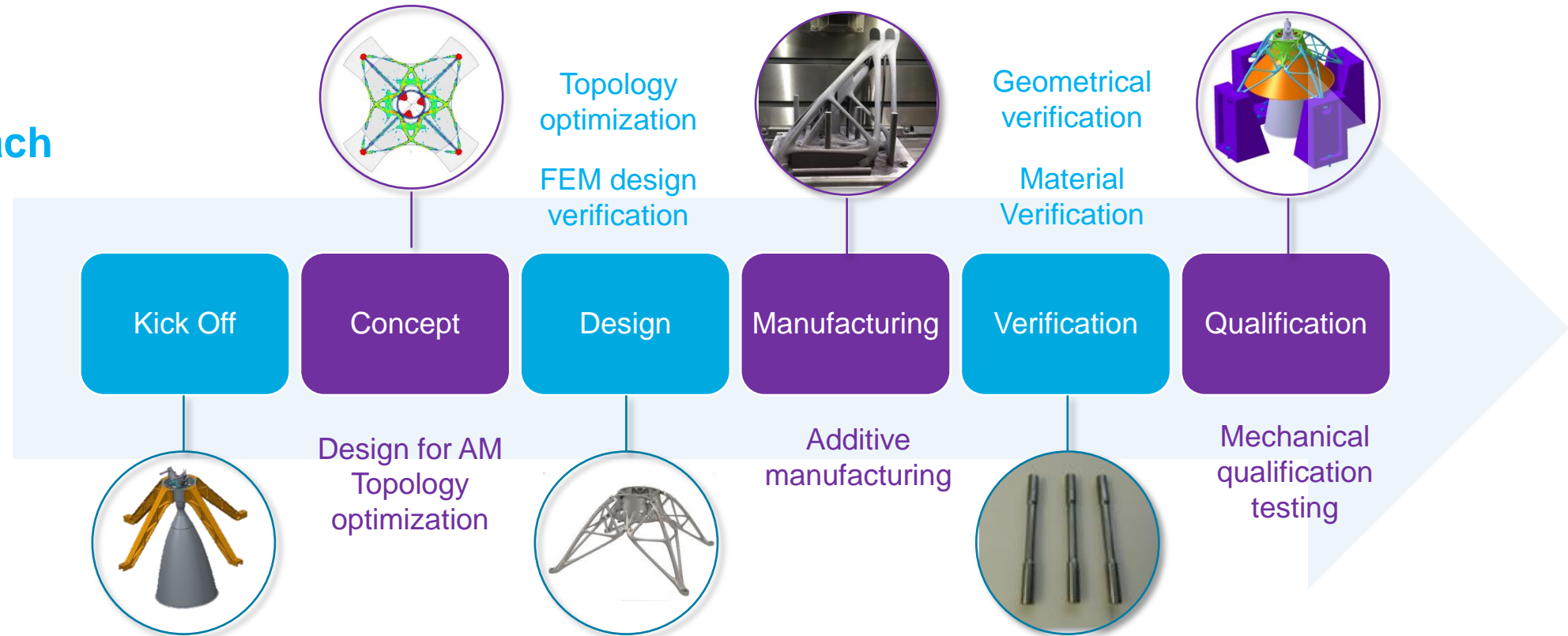
Understand the hole product life cycle, interdisciplinary…

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Key Enablers to succeed…be agile!!

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

Candidate Part Selection · Topology Optimization · FEM Design Verification · Additive Manufacturing · Mechanical & Material Verification
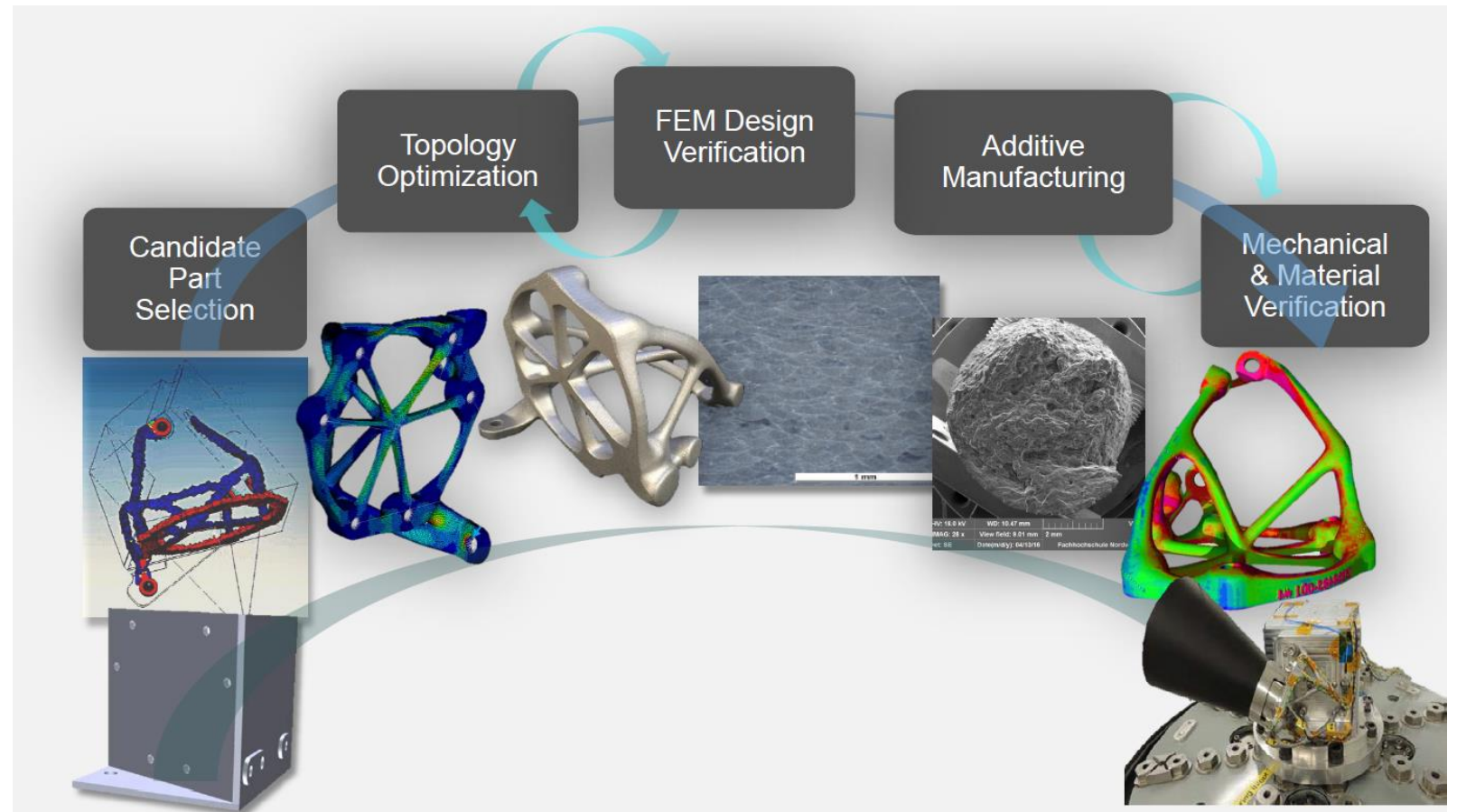
Realised within 8 weeks

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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…

Together
ahead. **RUAG**

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?

vs.

centre of excellence?

AM is an manufacturing technology that is part of product development

Together ahead. **RUAG**

Thank you very much for your attention!!

Together
ahead. RUAG