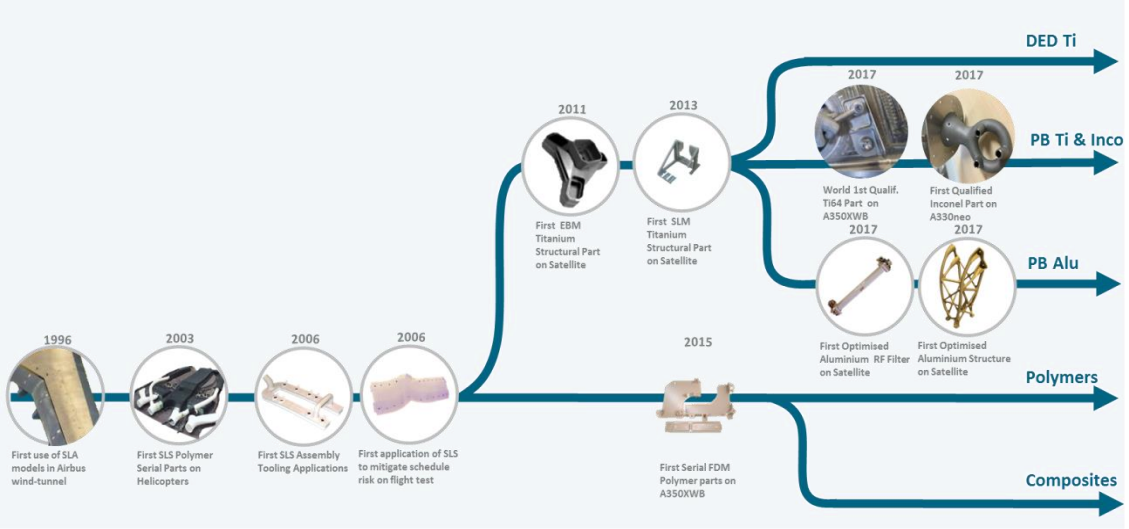
Additive Manufacturing @ Airbus

3rd Munich Technology Conference on Additive Manufacturing (MTC3)

Dr. Remedios CARMONA
Additive Manufacturing Roadmap Owner
October 2019

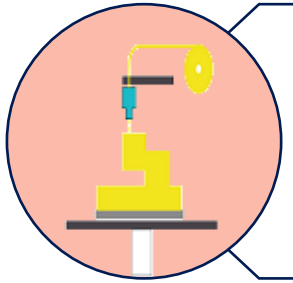
AIRBUS

Current use of AM in Airbus



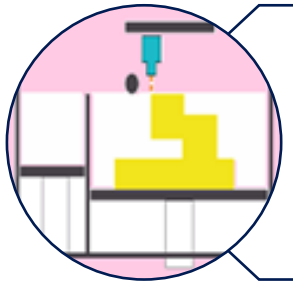
Our Firsts in each technology and material

The main technologies used in Airbus TODAY are:



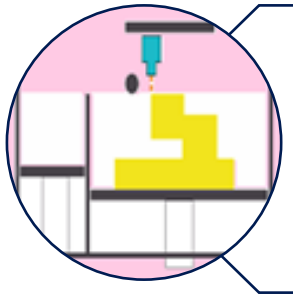
Fused Deposition Modeling (organic):

- Tooling
- Cabin parts
- System installations



Powder Bed Organic:

- Cabin parts
- Non loaded system parts

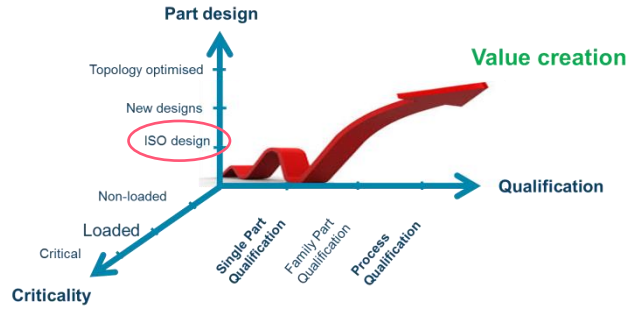


Powder Bed Metals:

- Ti for solicited, long lead time & high value parts
- Al alloys for satellite components
- Inconel for high temperature, long lead time components.

AIRBUS

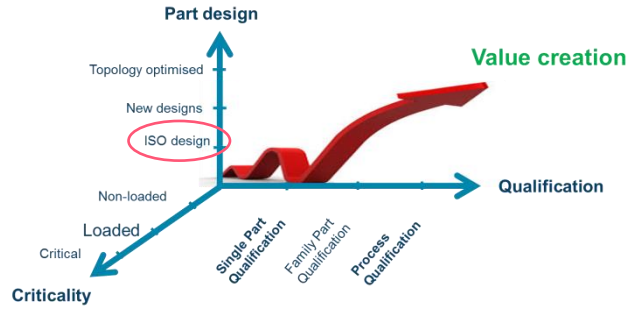
Use Cases I – A350 Water Waste System Venturi



- ISO Design part in Ti-6Al-4V.
- Part of A350 design to cost initiative.
- Responsibility of STELIA (Airbus Subsidiary).
- **Main learning:** industrializing a (relatively) complex part makes sense from an AM point of view, even if it is one-to-one replacement.

AIRBUS

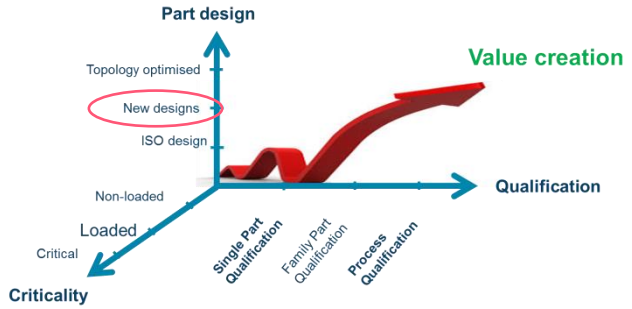
Use Cases II - A330NEO Nacelle Anti-Ice O-Ring



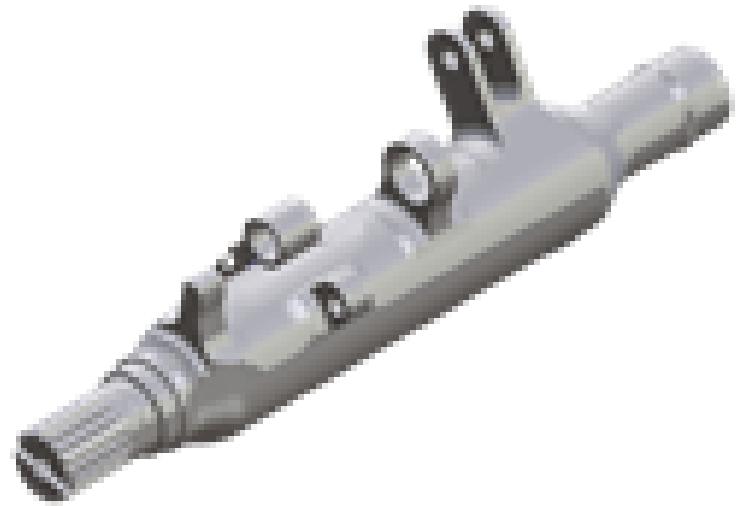
- ISO Design in INCONEL 718.
- AM more competitive than casting.
- Qualified A330NEO, A320NEO O-Ring parts, A350 O-Ring parts in qualification.
- Manufactured in St Eloi Plant
- **Main learning:** AM may represent a competitive advantage to Casting, presenting a lower scrap rate.

AIRBUS

Use Cases III – A350 Door Latch Shaft



- Design for Additive Manufacturing in Ti-6Al-4V.
- Savings in recurrent costs and weight, by integration of 10 parts in 1.
- Manufactured by Airbus Helicopters (Donauwörth)
- **Main learning:** Integration of components and design for additive manufacturing are the key.



Conclusions and Outlook

Last year's conclusions…

→Airbus engaged in AM development, still early days of AM

→Challenging requirements, lack of equipment maturity & marginal business cases

… Now …

✓Efforts on machine maturity have been made

✓Powder Bed Metal has its niche applications

✓First stages of serial production

… In the future:

- Performance needs to be improved
- Design for Additive Manufacturing is key

AIRBUS

Thank you

AIRBUS