

EASA AM Machine Producer – Knowledge Transfer – Training Meeting

Group 2 – Type Certificate Holders

28-29 June 2018



TC Holder Perspective ... **Machine Producers**

- 1 TCHs Must Know That Established/Frozen Processes Remain Valid Over Time
- 2 TCHs Must Know Machine Producers Have the Knowledge & Rigor Required to Support the Aerospace Industry
- 3 Machine Producers Must Adopt a “Listen/Understand/Learn” Mindset



1 TCHs Must Know That Established/Frozen Processes Remain Valid Over Time

Software & Hardware Changes

Requested Actions:

- COMMUNICATE proposed changes PRIOR to incorporation if the change:
 - (a) is being rolled to existing machines,
 - (b) creates a difference in operating software or hardware between previously purchased machines and yet to be delivered machines, or
 - (c) will drive changes to recommended calibration and maintenance
- VALIDATE proposed changes with a “generic test plan” PRIOR to incorporation
 - demonstrate no impact to mechanical properties, feature resolution and/or anomaly generation with a “generic test plan”



2 TCHs Must Know Machine Producers Have the Knowledge & Rigor Required to Support the Aerospace Industry

Mechanical Property Relationships

Requested Actions:

- *Execute basic parametric studies with aerospace materials to develop a better understanding of key process to property correlations ... e.g. gas flow rates & coverage*
- *Implement process improvements to address machine-to-machine variability ... ensure that frozen parameters can be used on all “identical” machines from same producer*

Industry Certification

Requested Actions:

- *Machine producers should identify a credible accreditation body (e.g. NADCAP) and work to establish “minimum accreditation requirements” for the aerospace industry*



3 Machine Producers Must Adopt a “Listen/Understand/Learn” Mindset

Partner Not Supplier

Requested Actions:

- *Develop a “best practices” guide covering part orientations, design and use of supports, nesting of parts on build platforms, etc.*
- *Enter into proprietary information agreements and share information related to machine design and software to better support TCH needs*
- *Support customization of machines and parameters to help TCHs achieve unique design and regulatory criteria*

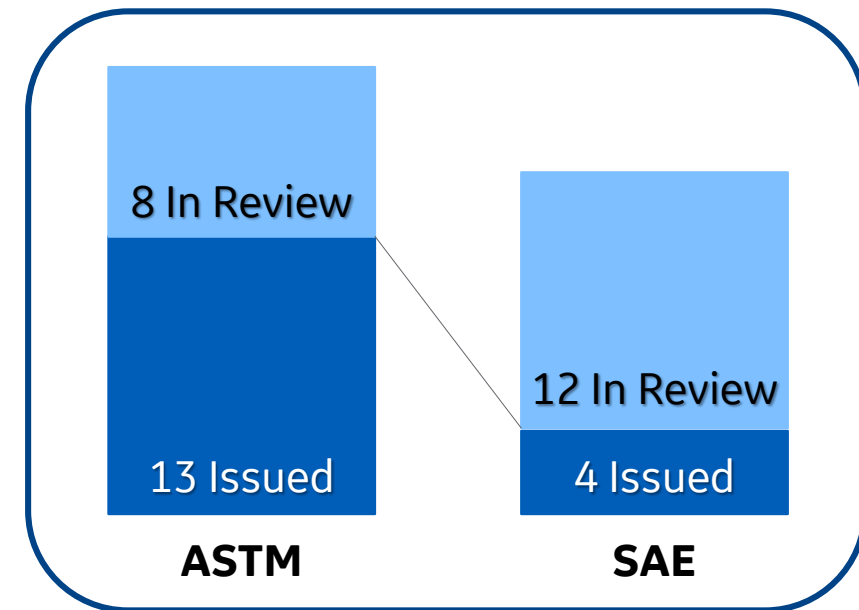


TC Holder Perspective ... **Standards Bodies**

TCHs will primarily rely on company proprietary specifications

Requested Actions:

- *Minimize the number of unique additive manufacturing specifications created for industry use ... work together!*



TC Holder Perspective ... **EASA**

Performanced Based Regulations

Requested Actions:

- *Continue to focus on performance based regulations*

National Aviation Authority Engagement

Requested Actions:

- *Help TC Holders educate the National Aviation Authorities that will be overseeing POA Holder activities with additive manufacturing*

