

Product Certification & Design Organisation Approval Workshop

Cologne, Germany

19th - 20th November 2019

By Duane Kritzinger

Duane Kritzinger (Principal Consultant and Part 21 Subject Matter Expert) represented Baines Simmons at the Product Certification & Design Organisation Approval workshop in Cologne.

The following synopses/interpretation should be read in conjunction with the presentations, which can be accessed (in due course) on EASA's website (<https://www.easa.europa.eu/newsroom-and-events/events/product-certification-design-organisation-approval-workshop-2019>).



I. Opening of the Workshop and Welcoming Remarks

by R. Daeschle (acting EASA Certification Director)

Mrs Daeschle opened this popular event (over 400 attendees this year), which is now in its 10th anniversary.

2. Introduction Remarks, Agenda Overview, Practical Arrangement

by M. Goernemann (Head of Dept. - Design Organisations & ETSO / Deputy Certification Director)

Marcus introduced the objective of this workshop which was influenced by an industry survey.

3. New Basic Regulation

by M. Gerhard (Section Manager - Initial Airworthiness Specifications), C. Garvie (Regulations Officer - Initial Airworthiness) and B. Deuss (Regulation Officer – Initial Airworthiness)

Michael summarised the recent changes to Part 21. Note (at bottom of slide 3) an imminent change coming soon, which provides alignment with the Continuing Airworthiness regulations.

For LOI related changes (slide 7) see more information here:

- ▶ <https://www.easa.europa.eu/newsroom-and-events/news/new-easa-approach-definition-level-involvement-loi>. Note that ETSO applicants do not have to propose their LOI, it will be determined by EASA.
- ▶ <https://www.linkedin.com/feed/update/urn:li:activity:6582613175097716736/>
- ▶ https://www.linkedin.com/posts/baines-simmons-limited_regulation-eu-2019897-changes-to-part-activity-6598561843768246272-sL6l

Note that the Part 21 “Easy Access Rules” will only be updated mid 2020.

Currently there is no plan for an Issue 3 of the AMC/GM to Part 21. EASA is planning to change the output of the Decisions, which might negate the need for this.

Future important changes to Part 21 were discussed (status is summarised on slide 17) and include:

- ▶ Proportionality to allow the rules to be more scalable. This includes:
 - ▶ GA aircraft (slide 11)
 - ▶ Parts without Form I see slide 12
- ▶ SMS (slide 13)
- ▶ Instructions for Continued Airworthiness (slide 14)
- ▶ Other regular updates (slide 15), which includes proposals made by industry using this link: <https://www.easa.europa.eu/document-library/rulemaking-programmes/rulemaking-proposal>

In the subsequent presentation the new Basic Regulation (NBR) and its impact on future amendments to Part 21 were discussed. See highlights on slides 6-7. Two significant topics were explored further:

- ▶ Proportionate rules (“Part 21-light”) for sport and recreational aircraft (slides 8-10) which will allow new applicants to gradually enter the EASA system (slide 10) with lower overheads. ELA1 and ELA2 will form part of this consideration, but not UAV and VTOL. Slides 11-13 summarise the key concepts of the new Part 21-light. For more information, see <https://www.easa.europa.eu/easa-and-you/general-aviation/general-aviation-road-map/part-21-light-making-design-manufacturing-easier>. Note that if no DOA, then the POA cannot issue a Form I, so EASA will need to define another option.
- ▶ Non-installed equipment (NIE, see slide 19 and refer Article 13 in the NBR) which could have a safety effect (see slide 17) on the aircraft. Slide 18 (refer Annex II para 1.4 in the NBR) specifies the “Essential Requirements” for this equipment. Note (on slide 20) that some equipment might, in future, be considered to be “NEI” and no longer a “Part” so it could be that some ETSOs might be replaced/supplemented with another approach (see options on slides 21-24). The NPA will propose the NIE certification process in Part 21.

4. Implementation of Part 21

by R. Boersma, Senior DOA Team Leader for LOI/SMS.

This presentation focused on the new privileges to approve “*certain major repairs/certain major changes/ certain STCs*” under “*certain*” preconditions (see slide 5). For further guidance see slides 8 and 23, which refer to this EASA Policy.

See slide 14 for the key principles of the new privileges.

Note, applying for an extension of these privileges probably only makes sense if you are doing repetitive types of certification projects (refer slide 19).

To get FAA validation, submit your STC (+data) to EASA, who will check it and then submit it to the FAA via the existing TIP.

Note (slide 9 in paragraph 6 below) that there are many DOA's who will not be ready in time, or who have not scheduled time with EASA in time (and who will subsequently be vulnerable to Level 2 findings of non-compliance)

5. Cybersecurity

by A. Karakoliou, Junior Aviation Professional

Ms Karakoliou did an engaging presentation, which provided the background to this area of concern, key terminology and the intent (i.e. in terms of the threats and the vulnerabilities). Note:

- ▶ EASA is growing their capacity to 9 people (see slide 7) in the near term for this area of specialism.
- ▶ Slide 5 shows the link between safety and cybersecurity, whilst slide 6 shows the differences (i.e. the intent is to purposefully have a negative impact on safety, so traditional barriers are purposefully compromised).
- ▶ Slide 11-15 provides an example risk assessment methodology:
 - ▶ Top table on slide 12 is the safety severity assessment, whilst bottom table is the security severity assessment
 - ▶ Slide 13 shows how to determine the treat level (please note there are 3 scenarios explored on this slide, which might not be visible in pdf format)
 - ▶ Slide 14 evaluates the resulting risk (again, the pdf version of this presentation will not contain all the information)
- ▶ Slide 16 shows that cybersecurity risk is dynamic. As technology evolves, so the threat increases.
- ▶ Slide 17 shows, that on average, most organisations go 6.9 years without mitigating their cybersecurity risks
- ▶ The 1st rulemaking task status is summarised on slide 18. The impact on DOAs are summarised on slides 19-20.
- ▶ The 2nd rulemaking task status is summarised on slide 21. Note on slide 22 that cybersecurity risk management will most probably be integrated with the organisations SMS and that a new Part AISS will be proposed to look at cross organisational cyber concerns and risk management

Note that DOA would need to invest in cybersecurity skills. Currently there is no software coding rules and robustness tests being prescribed by EASA. EASA did suggest that that a DOA might choose to invest in a “Blue Team” (who build the software) and a “Red Team” (who will try to hack it).

6. Design Organisation Department Updates

by M. Goernemann (Head of Dept. - Design Organisations & ETSO / Deputy Certification Director)

The EASA DO Department's resources are summarised on slide 7, and slide 16 provides the Certification Directorate's Organisation chart. Slide 15 provides a Certification Team (CT) roadmap which will influence future evolution. The intent will be to increase the involvement of NAA staff (see slide 26).

The number of DOAs are constantly increasing (see slide 3) – the most being in Germany, Italy France and the UK (hence why Brexit attracts so much attention from this Department).

Slides 11-13 contains information on a Brexit “no-deal” scenario.

Slides 17-18 provides a summary of changes to the /investigation surveillance/investigation process, refer 21.A.234, 21.A.247, 21.A.249 and 21.A.257.

The evolution of EASA's DOA Performance Dashboard is discussed on slide 19-25. Note the importance of the ISM function on slide 24. This dashboard will be shared with each DO (after signature of a Memorandum of Understanding) via their DOATL.

7. International Cooperation

by F. Steffens (Head of International Cooperation Department) and C. Leboeuf (Chief PCM – Validation Process)

This presentation provides a general update on EASA's international cooperation initiatives (slides 2-7):

- ▶ EU-EASA BASA update is on slide 8 (BOB = Bilateral Oversight Board)
- ▶ EU-Canada BASE updated is on slide 9.
- ▶ EU-China BASA was signed this year (slide 10) and will only be in force once the TIPs have been agreed (which is a high priority) (see also slide 24 of the next presentation).
- ▶ EU-Japan BASA was initiated this year and the plan is to have the BASA signed early 2020.
- ▶ EU-Brazil BASA should be signed in 2020
- ▶ EU-Russia status is provided on slide 13.

The second presentation of this session focussed in the EU-China BASA:

- ▶ Slides 2-3 provide a good summary of the intent of BASAs (in general) and the benefits to both regulators and the regulated. See also slide 6 for layout of the relationship between the BASA and the TIP
- ▶ Slides 4-23 provide information regarding the EU-China approach. Note the scope of the agreement on slide 11. Note the design acceptance/validation approaches:
 - ▶ From EU to China on slides 16-19
 - ▶ From China to EU on slides 20-22

8. Part 26 and CS 26

by Y. Auroque (Regulations officer – Initial Airworthiness) and X. Vergez (Senior Regulations Officer – Initial Airworthiness)

The presentation provides an update on recent additional (and foreseen) airworthiness specifications which will require a production cut-in or retrofit of approved designs. Because of the retrospective implications, Part 26 is needed to mandate required action into Hard Law.

The latest revision of Part 26 addresses (see slide 4):

- ▶ Halon Replacements,
- ▶ Seat Crashworthiness, and will require retrofit of large CAT aircraft with 16g seats
- ▶ Thermal/Acoustic insulation material

EASA opinions pending EU adoption are listed on slide 5:

- ▶ Ageing aircraft structures (slide 6) to address fatigue, widespread fatigue damage corrosion and fatigue of changes and repairs. This will impact a future revision of AMC20-20.
- ▶ Reduction of runway excursions (slide 6), which will require large CAT aircraft to be equipped with a runway overrun awareness and alerting system (ROAAS).
- ▶ Conversion of Class D compartments (see slide 7) to either Class C or Class E.

Slide 9 contains ongoing RMTs for the next 2 years.

9. SEPIAC: Quality Feedbacks & the digitalisation of EASA

by A. Castoldi (PCM - General Aviation) and E. Sivel (Head of Information Technology Department)

The intent of SEPIAC is summarised in slides 2-4, which should mean a better service provided by EASA to industry. EASA are now acquiring IT solutions (slide 5) and industry should start noting the difference in 2020, but that means that DO's also need to evolve to interface with these systems (slide 6).

10. Input from Side Meeting groups

The following presentations were made by industry representatives, who met prior to the EASA Workshop:

- ▶ Cabin Safety: Discussed a variety of topics and issues (industry and EASA concerns). Emphasised the upskilling required (slide 5) for LOI and providing a more robust Certification Plan.
- ▶ Airlines: Raised a concern that issues raised at the event in 2018 were not followed up by EASA. Topics discussed included:
 - ▶ Compliance by similarity (see slide 6)
 - ▶ Repairs approvals from non-TC holders (see slide 7).
 - ▶ Generic repairs for a TC (see slide 8)
 - ▶ EPA marking (see slide 9), and there was wide industry support of why EPA was required/justified
 - ▶ Form 1 re-issue after STC before RTS (see slide 10)
- ▶ GA: Highlighted that CS23 Amm5 requires changes to a DO's DAS (see slide 3). Also asked that EASA publish a list of "standard" CRIs (slide 5)
- ▶ Competences: Demonstrating (and attracting/retaining) competence is every DOAH's challenge and this group recommended that we need to do more pro-actively (slides 3 and 7). The importance of both hard and soft skills was emphasised (and is not only applicable to CVEs). Actions were identified on slide 6, which included the need to develop further guidance/best practices.
- ▶ ETSO: Discussed change classification (including cumulative changes), non ETSO functions, when full DOA becomes mandatory, and bilateral challenges
- ▶ STC: Main points discussed included the Occurrence Reporting Database (which would benefit from an EASA feedback loop to encourage DO learning); LOI process (and the desire for EASA to allocate CS requirements to CS panels); Special Conditions and CRIs (and the fact that they are not publicly available) (note that a change impacting a SC/CRI is automatically classified as MAJOR); ambiguity in the TC basis defined in the TCDS; OSD changes.
- ▶ ISM: Discussed the role of the ISM function in DOA performance (and the need to go beyond auditing only); the challenge of being involved in the digitisation of the DO; control/oversight of design suppliers; ISM competence requirements (the group asked EASA to develop more training material – but please do consider TQI I) .
- ▶ Continued Airworthiness: Discussed occurrences resulting from maintenance errors; the interface between the Occurrence Reporting systems and the Accident/Incident Investigation process; the fact that the FAA's DER approval process is cheaper/easier than a DOA approved repair (not a level playing field); ICA (and what constitutes it).

Slide 7 provides a very useful illustration of the continued airworthiness obligations (but note it does not include the Occurrence Reporting System)

I 1. Additive Manufacturing (AM) & DOA aspects

by A. Enache (Section Manager - Design Organisations & Policy Issues) and W. Hoffmann (Structures Expert)

No additional amendments to Part 21 or CS25 are foreseen (see slide 7, with extant requirements in the following 3 slides). However the importance of close DO-PO cooperation is correctly emphasised on slides 15 and 23.

Note EASA/FAA Workshop 2019 information on slide 10, which can be downloaded here: <https://www.easa.europa.eu/newsroom-and-events/events/2019-easa-faa-workshop-additive-manufacturing>.

Note also the development of SAE AM Standards (slides 11-13) for process, powder and material specifications, as well as the Certification Memorandum CM-S-008 (slide 14).

Slides 20-23 provides useful information regarding the DO's approach to AM part qualification.

Adding AM procedures to the DAS is considered (slides 24-25) to be a Significant Change [21.A.247].

See also the AM article in the latest J-News.

I 2. SAB C.COM update

G. Garrouste (C.COM representative)

The Stakeholder Advisory Group (SAB) is an industry advisory group to EASA (see legal framework on slide 3). For more information, see <https://www.easa.europa.eu/the-agency/other-easa-boards-and-bodies/advisory-bodies>.

- ▶ C.Com is the Certification Committee within the SAB (see slides 6 and 12) and their recent focus is summarised on slide 13.
- ▶ DM.TEC is this Design and Manufacturing Technical Committee (slides 14-17)

Industry is encouraged to use these groups and reach out to the chairman of each committee to raise issues of concerns.

I 3. EASA's involvement in the development of industry standards and their recognition in the EASA system (e.g. via EUROCAE, SAE, ASD-STAN)

A. Leroy, Manager Innovation & Special Projects / Principal Advisor to the Certification Director

The scope of EASA's involvement in the Internal International Standards Committee (IISC) is summarised on slides 4 and 7. The IISC participants are illustrated on slide 5 and their priorities on slide 6. It is worth noting that EASA would indeed like to rely more on industry standards in the future.

I 4. Innovation & related activities

A. Leroy, Manager Innovation & Special Projects / Principal Advisor to the Certification Director

The presentation provides an overview on how the Certification Directorate (and more globally the Agency) is preparing itself to the challenges associated with new/novel technologies, business models and/or services. Slides 4 and 7 shows how industry can obtain EASA involvement in the feasibility phase of safety related innovation projects.

I 5. Wrap up and Closing Remarks

P. Kye (Executive Director)

Patrick closed the 2019 workshop by highlighted that this workshop has proven to be useful to both industry and to EASA. He proposed that EASA will look into creating a dedicated DOA community.

The 737Max was briefly discussed to emphasise that the DOA system is quite different from the USA equivalent, and the system of privileges has the right share of responsibilities and accountabilities allocated between industry and the Agency (paraphrased). That does not mean that there is no room for improvement and its continuing success is dependent on a mature partnership between the regulator and the regulated.

About Baines Simmons

We are specialists in aviation regulations, compliance and safety management and partner with the world's leading civil and defence aviation organisations to improve safety performance.

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Duane Kritzinger is an experienced Certification and Safety Engineering specialist. His distinguishing safety expertise lies in the ability to differentiate and integrate the Safety Assessments in the design phase with the Safety Management activities in the operational phase. His certification skills cover both the military and civil aviation domains, where he not only provides expertise in the certification of products/parts/appliance, but also assists with EASA/EMAR Part 21 Design Organisation Approvals (which includes the establishment of organisation processes and structures to move beyond minimum compliance towards organisational performance).

Since the publication of EMAR 21, Duane has been assisting both the military regulators (in their adoption of EMAR 21) and the regulated community (in demonstration of compliance in the most efficient manner with due consideration of other approvals held).