Duane Kritzinger (Principal Consultant and Part 21 Subject Matter Expert) represented Baines Simmons at the recent EASA “Product Certification and Design Organisation Approval Workshop”.

The objective of this annual workshop is to give both industry representatives and authority staff involved in EASA DOA an update on working methods and related Product Certification topics and with an overview of ongoing rulemaking activities.

The following synopses/interpretation should be read in conjunction with the presentations, which can be accessed via the Newsroom and Events page at www.easa.europa.eu
1. Conference Introduction - by Trevor Woods (EASA Certification Director)

Trevor welcomes the 440 attendees (80 from non-EU) to this very popular event, which was fully booked within 4 hrs. EASA is facing a number of challenges, which include:

- Changes in technology (e.g. RPAS)
- Many new production organisations from across the world
- EASA resource constraints (i.e. need to reduce number and increase efficiencies)
- Imminent changes in the Basic Regulation (which will impact industry too).

Trevor emphasised that EASA want to empower industry to use new technologies to work smarter and accomplish more with less.

2. Certification Directorate Strategic Objectives – by Trevor Woods (EASA Certification Director)

Certification activities are increasing (with circa 10xTCs and over 1000xSTCs in 2015) and so have the number of reportable occurrences (which has doubled since 2012).

An amended Basic Regulation will be promulgated in 2017, with more to do on topics such as:

- Cyber security
- Single organisational approvals (i.e. if you have multiple places of business)
- Networked NAAIs (to share expertise and resources)
- Certification of military/state aircraft
- Additional noise and emission levels (EASA will issues a comprehensive environmental strategy)
- Certification of RPAS (EASA are working on a number of NPAs).

International validation is being facilitated with a number of agreements which are aimed to reduce duplication of EASA validation effort (even to the extent of no certificates and/or extra charging, and example being reciprocal ETSO/TSO acceptance).

The EASA certification team is now subject to organisational changes (see slide 14) to improve efficiencies and facilitate the move to LOI.

Trevor concluded by introducing CORAL (Certification and Organisation Approval information hub), which will (in mid 2017) be a tool to help implement LOI and reduce the burden of communication and progress management.

3. Rulemaking Activities Affecting Part 21– by Michael Gerhard (EASA Regulations & Certification Policy Section Manager)

- Foreseen application of Opinion 07/2016 (i.e. LOI into Part 21) is expected in Feb 2018
- 0262 (LOI Phase2)- NPA expected Q2 2017
- 0251 (SMS rules for DOA, POA and MAO). NPA expected in Q4 2017
- 0689 (Part 21 Proportionality for GA aircraft). NPA expected by Q4 2017
- 0018 (installation of parts/appliances released without an EASA Form 1 or equivalent). NPA expected Q1 of 2017
- 0252 (Instructions for Continuing Airworthiness). NPA expected Q1 of 2017, although updated CMR will be published in CS-25 during Q1 of 2017
- 0278 (Part 21 Subpart H): Opinion expected Q2 of 2018
- 0513 and 0514 (Noise and Emissions). NPA expected early 2017
- 0031 (Regular Updated of AMC/GM of Part 21). Update to GM21.A.101(Change Product Rule), with decision expected during Q1 of 2017
- 0681 (Occurrence Reporting. Will include Just Culture and updates to AMC20.8 with NPA expected Q3 of 2017
- 0230 (UAV). NPA expected for “certified category” in Q1 of 2018

Foreseen changes to the Basic Regulation will result in many changes to Part 21, expected to be publicised in Rule Making Programme (RMP 2017-2021).
4. Level of Involvement (LOI) – by Michael Gerhard, (EASA Regulations & Certification Policy Section Manager), A. Leroy (EASA Head of Large Aeroplanes Department) and D. Roland (EASA Head of GA & RPAS)

This presentation regarded Opinion 7/2016, which is expected to become applicable by Feb 2018.

- Compliance activities may be grouped (into Compliance Demonstration Items (CDI) so that LOI could vary across the same project. CDI is a new concept for both industry and EASA – more practical experience is still required on how best to define and manage
- Note slide 9 where LOI is:
  - proposed (in certification Phase 1) by the applicant as part of the Certification Programme (a key deliverable for successful certification)
  - “determined” (or formally agreed) by the EASA (in certification Phase 2) before the start of any compliance demonstration
  - adjusted (as required) during verification of compliance (in Phase 3) might lead to an adjusted LOI.

EASA is working on guidance material to make the LOI less PCM subjective. See slides 11-12 and note 21.B.100. Gaps in guidance are expected and will be bridged via a Certification Memorandum (CM) early 2017, which will later (2018) be transposed into additional GM/AMC. See slides 14-27. Note:
- Slide 31 and EASA encourages industry to help make the CM as useful as possible. The CM allows more flexibility and responsiveness compared to AMC/GM
- The Organisation Performance Dashboard (slide 19) will be shared with each DO
- That “Criticality” (slide 21) is expected to be more than just CSxx.1309 “Catastrophic” and “Hazardous”.

When local NAA’s provide the oversight it is important that this is not a delegated authority and that these agencies need to work in accordance with EASA processes. So, LOI implementation should be standardised.

Note (on slide 9) that increased LOI does not mean that EASA “verifies” compliance instead of the CVE’s doing so. EASA does interchange the terms “validation” and “verification” (with English not being a first language of many) and they do not always follow SAE ARP4754A definitions). To clarify: The DOA’s CVE need to check the “verification” of compliance; EASA will only check “validity”.

5. Level of Involvement (LOI): DOA Performance Considerations – by Olivier Tribout (EASA DOA Team Leader)

LOI and LOO (Level of Oversight) is a balancing concept: If LOI goes lower then LOO becomes higher (see slide 5).

Olivier demonstrated the MS Excel Performance evaluation tool:
- He showed how it can be filtered to evaluate performance against different subject areas (e.g. Electrical Systems). Currently the tool cannot evaluate Continued Airworthiness
- Industry will be provided with the tool and will be expected to pre-populate it with some data before returning it to EASA for performance evaluation
- The procedure by which EASA PCMs will score organisations is defined in EASA’s internal Certification Handbook. Industry expressed concern about PCM subjectivity and Olivier confirmed that this is unavoidable, but will be mitigated via intensive internal training
- In support of the annual EASA internal reporting system, the intent is that the Performance tool will only be updated once per annum. In due course this will become more dynamic and interactive.

6. General Aviation Roadmap update and Part 21 proportionality – by Dominique Roland (EASA Head of GA & RPAS) and Boudewijn Duess (EASA Regulations Officer)

Sustainable development of the GA industry is the driving force behind this initiative, as the current EASA rules, processes and culture are more focussed on large aircraft and large organisations.

7. Operational Suitability Data (OSD) implementation – by Robert Boersma (EASA DOA Team Leader) and Andrea Boiardi (EASA Chief Expert OSD)

OSD is data to support operational aspects for which the design approval holder is responsible. It has a certification basis and is referenced in the TCDS.
Most DOA’s need to extend their scope of approval to include OSD (the deadline is 19/12/16, but some DOAs have not yet applied. Confirmation must be obtained from each DOATL if “consequences” are to be avoided).

Changes to OSD:
- “Minor” changes can only impact MMEL (no other OSD). See slide 8
- Changes to OSD are provided to the end user through supplementary and/or additional information (the original documentation belong to the OEMs). See slides 9-10
- Two applications (change to Type and change to OSD), but one approval. See slide 11.

Note that provision of ICA and OSD may be chargeable (although there is an obligation to provide to “end users”, Part 21 does not stipulate that it must be free of charge). Industry responded to state that there is no obligation on the TCH to provide ICA or OSD to 3rd party STC applicants (i.e. they are not “end users”). Andrea Boiardi confirmed that this interpretation is a known concern (will be clarified in future updates and the EASA intent is that the data be shared where needed) and encourages STC applicants to obtain data via the operator if not obtainable from the TCH. Airbus and Boeing stated that there are contractual and legal responsibilities if operators do pass on this data without explicit agreement.

8. CS-STAN – by M. Reichel (EASA CS-23 Aeroplanes Section Manager)

CS-STAN has been mis-used, so is being tightened-up in planned amendments (NPA is due early Dec 2016).

Note that CS-STAN does not provide “approved data”, it merely provides the boundaries of what is allowed.

9. International Cooperation (4 presentations)

Kampfe (EASA Agreements & External representation Section Manager) provided a high level update (see presentation) on the:
- 3x bilateral agreements EASA have (with USA, Canada and Brazil). Work is underway to do the same with China and Japan
- The Working Arrangements with other authorities.

Ralph Erckmann (EASA Deputy Certification Director and Head of Certification Policy & Safety Information Department) discussed the EU/USA BASA and emphasised that all authorities have the same resource challenges/constraints and need to make full use of their agreements for mutual acceptance of technical work and certificates (i.e. there should be no need to re-issue certificates). On slide 7, the shaded areas indicate the current “things EASA do”, with the arrows indicating future intent.

Jean-Louis Ammeloot (EASA Certification Policy Officer) discussed the next update of the EU/EASA TIP. “Level 1” or “Level 2” changes has now been replaced with “Basic” or “Non-Basic” changes respectively.

Gregorie Lievre (EASA Senior Certification Programmes Manager) discussed the current BASA negations with China and Japan, emphasising that a BASA is one of the highest forms of law in the EU system. It was interesting to note that China’s regulatory system is based on the FAA’s system.

10. Design Organisation Department Update – by Markus Goernemann (EASA Head of DOA) and Lex. Dop (EASA DOA Team Leader)

Circa 60 applications for DOA in 2016 and 30 ADOA applications.

The presentation contained a number of EASA standardisation and simplification initiatives to improve the management and oversight of approved DOs.

Note:
- EASA should (in 2017) allow DOAs to extent their approval to include ETSOA, i.e. an organisation will no longer need to hold both DOA and ADOA simultaneously. See presentation 1 slide 15
- EASA have an action to update the handbook templates (DOA and ADOA). See presentation 2 slide 8.

11. Clean Sky – by Manfred Reichel (EASA DOA Team Leader)

Manfred introduced some of the short and mid-term initiatives to reduce emissions, with developments in electrics playing a significant role. The presentation also included longer terms developments, which includes an Uber initiative to provide an electric on-demand pilotless single-seat aircraft for taxi purposes.
12. Shared Electronic Platform for Initial Airworthiness Certificates (SEPIAC) - by Olivier Tribout (EASA DOA Team Leader)

The objective is to optimise the coordination and configuration control of certification documentation which needs EASA review, by providing a secure collaborative platform.

A prototype of SEPIAC is under trial by some volunteer DO and should be released by July 2017 (once a service provider is appointed) and is seen as a key enabler for the LOI approach to certification.

13. DOA Terms of Approval – by Fernando Salazar (EASA DOA Team Leader)

Objective was to better define and harmonise the Terms of Approval (ToA). Implementation has started on Nov 2016 and over the next 18 months all DOA certificates will be re-issued with improved ToA. Note:

- Slides 5-7 for the approach taken to re-define the ToA
- Obligations will be now specified (as it is a contractual expectation), see slide 8
- Slide 9 where better visibility of capability is obtained
- Slide 11 for the tool (i.e. matrix) which will be used to manage ToAs. At present it is not envisaged that this tool will not be published on the EASA website, and will be provided via DOATL directly to each DO.

Industry did express concerns that this level of granularity will lead to many more significant change applications, although EASA responded that the Handbooks should already contain that level of detail.

14. Input from Airlines Community

Topics discussed (see presentation) at this side meeting on 21 Nov included:

- Exterior look of an aircraft is considered part of the aircraft configuration, and a change to marking is considered a MINOR change
- Items required by AirOps (e.g. CAT.IDE.A.00) which are not always part of the certified configuration
- Should CS26 be considered as part of the Cert Basis?
- SMS into Part 21 and Australia Standard CAO 82.5 was proposed as a benchmark
- Zero Pax configurations, which is allowed under a PtF and is considered by EASA to be a “MAJOR” change
- The need for the long promised EASA PMA process
- BASAs, which need to be more industry orientated.

EASA DOM (Mr M Goernemann) thanked the group and committed to investigate the topics raised.

15. Independent System Monitoring (ISM), the “Process” Approach – by Ciro Pirone (DOA Team Leader)

This is an update to the ISM 2011 presentation on the EASA website at https://www.easa.europa.eu

The presentation can be found under EASA & you, by clicking on Aircraft & products then Design Organisations Approvals, where it is under the Good Practices heading.

Note:

- Slide 12 discusses how the adequacy of procedures can be evaluated
- Slide 13 discussed process owners vs process operators
- The ISM should collect data from various sources (slide 14) and the analyses (slide 15) the data and needs to be a Part 21 expert to draw the right conclusions
- Slide 16 for the reasons why people do not follow procedures, which will help with defining appropriate corrective/preventative action.

A question was asked on how to evaluate the effectiveness of the ISM, i.e. should an independent agency audit the ISM function? Ciro responded that EASA “checks the checker” and do not expect/demand anything more. However, he suggested that the Lead ISM auditor should use independent expects to help audit the full complexity of Part 21.
16. Input from GA community
Topics discussed (see presentation) at this side meeting on 21 Nov included:

- Part 21 proportionality
- SMS and the need for possible exemptions for smaller organisations
- OSD requirements for out-of-production aircraft
- Single DO/PO approval concept
- CS23 and CS-STAN
- Use of COTS equipment
- Lack of standardisation across NAAs, and inability of industry to raise issues to EASA.

Mr Rosay introduced the concerns around cyber security, which is becoming more concerning as data interconnectivity improves. An example is “spoofing” where GPS signals can be manipulated.

Slide 10 shows the IAW rules/initiatives which are (or will be used) to control the threat.

See slides 11- for a risk assessment case study (noting that the normal “probability” is replaced with “difficulty”).

18. Input from Out of Production TCH community
Expressed a number concerns and recommendations on topics, which included:

- EASA responsiveness
  - reminded EASA to provide comments/feedback on the comments raised by this group at last year’s workshop.
  - EASA acknowledged that this responses was omitted by mistake in last year’s Q&A and this will be addressed as part of this workshop’s Q&A
  - expressed concern about Project Certification Manager (PCM) responsiveness and transparency
- Occurrence Reporting (disconnect between Part 21 and 376/2015 as well as the portal not being very user friendly)
- Slow OSD approval extension process
- MMEL differences between EASA and FAA
- LOI dashboard not available to all and scoring process is not transparent.

19. Certification Programme – Jannes Neumann (EASA Project Certification Manager)
Emphasised the key role the Certification Programme plays in the project’s liaison with EASA. He focussed on the following elements desirable in a Certification Programme:

- Project Description: Need to make it as self-contained as possible so that PCM cab quickly and efficiently understand the scope of the project (without having to search and download data from various website
- Certification Basis: It is helpful to include a high level summary of the scope and the manner in which it was determined
- Project Schedule: Should be supported by a description of key milestones
- Declaration of Obligations -see slides 12-14.

EASA are compiling a template for a Certification Programme (see slide 11).
20. Input from small organisation STC Holder Community

Topics discussed (see presentation) at this side meeting on 21 Nov included:

- Insufficient (or timely) feedback/acceptance by EASA of the Certification Plan
- STCs for multiple aircraft types
- EASA should publish the excel sheet with guidance for cabin safety classification of changes (refer 2014 Cabin Safety Workshop). EASA confirmed that this will be issued as a Certification Memorandum
- LOI’s not expecting to benefit smaller DOA’s who do less frequently do STC projects
- Long FAA validation times (TIP communication processes need to improve)
- The “Direct Delivery Authorisation” in the DOA/POA interface required more practical advise for industry to use
- OSD concerns (including target date of 19/12/16, as well as access to OEM data needed)
- DOA Subcontracting, with further guidance needed for COTS and if suppliers could be qualified.

21. Input from ASD Community

ASD proposed:

- Multiple changes to EASA to rationalise Part 21 (EASA feedback is awaited).
  - Use of digital solutions to replace hard copy documents
  - A draft Cert Memo for the management of DOA Performance Dashboards (as a LOI Level 1 or Level 2 is not foreseen to occur as frequently as possibly desired)
  - EASA emphasised that each approved organisation must manage performance under its own management system, and should not only rely on the LOI performance tool.

22. Input from ASD-Europe DOA Think Tank – by Patrick Le Guirriec

Patrick introduced the ADS DOA Think Tank (TT), the scope of their activities and key points of contact.

23. Input from non-EU DOA Community

14 topics were discussed of which the last 4 apply to EU DOAs too. See presentation for details

EASA responded by stating:

- that they recognise the efficiencies obtainable if EASA team leader were to be multi-skilled to survey DOAs, POAs and MOAs (and are currently doing a trial)
- STC for non EU organisations will not be allowed (a ICAO “State of Design” need to take on more responsibilities, and EASA will validate what they do).

24. Concluding Remarks – by Markus Goernemann
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.

As trusted advisors to businesses, armed forces, governments and regulators across all sectors of aviation, we help to advance best practice, shape safety thinking and drive continuous improvement to safety performance through our consulting, training and outsourced services.

Author

Duane Kritzinger
Principal Consultant, Baines Simmons

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).