

Information Bulletin no. 2019/03

“J-NEWS”



Dear Madam, dear Sir,

I am glad to share with you the third edition of the J-News for the year 2019. Once again, we took on board several proposals made by you, the Industry. In the list of articles, you will find topics that some of you raised during your exchanges with your DOA Team Leader. We hope that this information will help you to further improve the way you are working.

I take advantage of this end-of-the year edition to remind you of the publication of the Commission Delegated Regulation (EU) 2019/897 that introduces changes and improvements to the Part-21. I am sure that most of you are already in contact with your allocated DOA Team Leader to discuss of an action plan, and I wish you a smooth transition towards this updated regulation.

On the forthcoming pages, you will find useful information on the following topics¹:

Item 1. Generic CRIs PART 2

Item 2. Use of “old” flammability test results

Item 3. DOA dashboard: how does it work?

Item 4. Acceptability of data coming from suppliers

Item 5. Are you competent at competence? – Part 1

Did you know? Table of EASA Panels

I would like to thank particularly Ralf BADER, Carmela BOSSO, Iain HIGGINS, Dirk KRAPPEL, Ciro PIRONE, Olivier TRIBOUT and Raphaël AUBERT who proposed and contributed to the articles in this edition, especially as this is an additional task to their normal work.

All *Aircraft & Products* newsletters including the *J-News* bulletins are available on [our web site](#).

I would like to take the opportunity to wish you all a Merry Christmas and a Happy New Year.

Yours faithfully,

Markus GÖRNEMANN

Head of the Design Organisations & ETSO Department

Deputy Certification Director

1 As usual, should you need more information on any of the topics presented, please get in contact with the DOA Team Leader allocated to your DO.

Changes to Type Certificate

Item 2019/3/1
Generic CRIs PART 2

This article on Generic CRIs should be understood as a continuation to the article published in the [J-NEWSs 2018/03](#). A general introduction and explanation of Generic CRIs are provided there. As a short summary, subject to 21.A.16B, the Agency prescribe Special Conditions by means of a CRI when the related certification specifications do not contain adequate or appropriate safety standards for the product.

Usually, CRIs are individually set up for the specific product and project. However, certain design features or certification aspects are independent of aircraft type or applicable to other similar modifications so that such CRIs, and the additional airworthiness requirements defined therein, are of more generic nature and applicable also for other projects. These kind of CRIs are known as “Generic CRIs” but nevertheless are subject to adaptation on individual project level. “Generic CRIs” as the tool may contain Special Conditions, Interpretative Material, Means of Compliance or Equivalent Safety Findings. Nevertheless, the “Generic CRIs” have to be taken into account during the classification of design project as they might trigger a major classification as per GM 21.A.91, paragraph 3.4 point (a), if not already due to the technical aspects of the change. If such “Generic CRIs” are already part of the Type-Certification Basis, i.e. incorporated into the TCDS, they do not have an additional impact on classification since the additional requirements defined therein are already part of the Type-Certification Basis.

This J-News article is the second tranche with regard to Generic CRIs and is a continuation of the first article addressing the other EASA Panels. Please note that some of the Generic CRIs are of interdisciplinary nature. In addition, the provided examples are not exhaustive and our intention is to provide an enhanced awareness with focus on STC related cases. In addition, the focus is on Large Aeroplanes if not stated otherwise in below examples.

Cabin Safety:

Although this panel was already addressed in the last “Generic CRI” article in [J-NEWSs 2018/03](#), we would like to take the opportunity here to highlight that the final version of the new Certification Memorandum CM-CS-010 Incomplete Cabin (Zero-PAX Layouts) is close to publication. Besides of that, we published the new EASA Proposed CM-CS-011-001 Issue 01, Guidance on smoke propagation and smoke penetration tests. In addition, please be informed that a new draft for a Certification Memorandum related to the Classification Guidance on Cabin Safety related changes will be published soon for consultation. This CM is of particular interest for all DOAs designing cabin interior changes.

We would also like to emphasize that for the classification of cabin related changes the pre-mod configuration is of utter importance. LOPA changes are quite sensitive in this respect.

For example, when a used aircraft with installed cabin is transferred to a Maintenance Organisation with an empty cabin (Zero Pax STC installed just for the ferry flight), the pre-mod configuration is not the former cabin layout before the Zero Pax STC installation but the empty cabin (Zero Pax Layout). This means that the new LOPA constitutes a new cabin installation and therefore treated from EASA side as a Major Change.

Flight Panel:

- Vibration and Buffeting for large external antenna installation
- Runway Excursion Classification
- Derated Take-off
- Human factors methodology
- digital AFM
- Use of FAA Flight Test Guide AC 25-7C
- Use of JAA Flight Test Guide
- Landing Distances Using HUD
- Steep Approach

All other generic CRIs are related to TC certification and not listed here.

Environmental Control Systems:

- High Altitude Operation High Cabin Heat Load (SC)
- Packs off Operation (ESF)
- Flight instrument External Probes Qualification in Icing (SC)
- CPR-STC-Post TC Pitot probes-Qualification in Icing Conditions (SC)
- Oxygen Outlets in Galley Working Areas (IM)
- Distributed HP Oxygen Bottles in the Passenger Cabin (IM)
- Portable Oxygen Equipment (IM)
- Oxygen Equipment Qualification above 40000 ft. (IM)
- OHFRA (Oxygen Hazard Fire Risk Analysis)
- Minimum Mass Flow of Passenger Supplemental Oxygen (ESF)
- Risk Time approach for 25.1438 (IM)
- Use of thermal analysis for 25.1438 compliance (IM)

All other generic CRIs are rather related to TC certification, especially those related to Icing Certification (which is a trigger for Major Classification anyway), and not listed here.

Hydromechanical Systems including Flight Control Systems:

The “Generic CRIs” are rather related to TC certification, however, below examples might also be of interest for STC cases:

- Towbarless Towing (Large Aeroplanes, is integrated into the CS-25 Amdt. 13)
- Interaction of Systems and Structure (to prevent interference and riding condition of systems due to structural changes, is now part of CS 25.302)
- Hydraulic Design Ultimate Pressure Factor(s) (Large Rotorcraft)
- Tyre Pressure Indication System (TPIS)

Powerplant Installation (including Fuel System):

Most of the “Generic CRIs” are rather addressing Type Certification of the powerplant installation and fuel system performed only by the TC holder. For this reason, they are not explicitly listed here but need to be taken into account when changes to these systems are designed by non-TC holder (applicable CRIs are listed in the aircraft TCDS). These CRIs may be made applicable for STCs as well where required. Special attention has to be taken, as for instance but not limited to those examples, when new engines/APU/Propeller are installed (not common in GA STC LA aircraft world), extinguishing agents of the engine fire extinguishing system are replaced (e.g. replacement of HALON) (not common in STC LA aircraft world), installation of servicing/additional/auxiliary fuel tanks (e.g. ferry tanks which are deemed to be Major Changes anyway), changes to Fuel Specification (refer to Certification Memorandum CM-PIFS-009) (not common in STC LA aircraft world), and projects affecting Fuel Tank Safety (foam instead of inert gas to prevent accumulation of explosive fuel-air mixtures).

Safety Assessment Panel:

- Electronic Engine Control System Development Assurance Activities as per ED-79A (mainly TC case)

Software/AEH:

- The Use of Multi-Core Processors

In addition, we like to inform that CMs used in many projects are now superseded by AMC 20 material and will not lead to CRIs in the future anymore:

- EASA CM-SWCEH-001: Development Assurance of Airborne Electronic Hardware (AMC 20-152A is in the final publication phase for Airborne Electronic Hardware);
- EASA CM-SWCEH-002: Software Aspects of Certification is superseded by ED Decision 2017/020/R publishing AMC 20-115D Airborne Software Development Assurance using EUROCAE ED-12 and RTCA DO-178.

Instructions for Continued Airworthiness Panel:

- Instructions for Continued Airworthiness (Interpretative Material)
Intent of this “Generic CRI” was to provide clarification on the requirements, content and timescale for provision of ICA addressing Type Certification cases.

The “Generic CRIs” of all other EASA Panels are rather related to TC cases and not addressed here. In case of doubt, especially related to classification, please contact an Expert of the affected Panel or your responsible DOATL.

General DOA information

Item 2019/3/2

Use of “old” flammability test results

In the frame of compliance demonstration towards flammability requirements (e.g. 2x.853, 2x.854, 2x.855, 25.869...), it is quite a common practise for a Design Organisation Holder (DOH) to make use of test results which were obtained (MoC 4) in the frame of a “past” certification exercise.

To which extent is this approach possible?

PART 21.A.33(b) requirement quotes:

(b) Before each test is undertaken during the demonstration of compliance required by point 21.A.20, the applicant shall have verified:

1. for the test specimen, that:

(i) the materials and processes adequately conform to the specifications for the proposed type design;

(ii) the parts of the products adequately conform to the drawings in the proposed type design; and

(iii) the manufacturing processes, construction and assembly adequately conform to those specified in the proposed type design;

In the light of the above requirement, the Design Organisation Holder has to demonstrate that the (old) design and new one are identical, with a specific focus on the manufacturing processes; this would lead theoretically to an identical specimens' definition.

Comparison between configurations (i.e. raw materials and manufacturing processes) is only the first step. Besides that, additional elements should be considered, like the environment where the material is kept (which could be not under direct control of the DOH).

There are materials which naturally vary their flammability performances over time, even if configurations remain unchanged; others are very susceptible to the storage conditions. In such cases, even at the level of design definition, the DOH should give an indication on periodical testing, to ensure that the original design assumption are still met (21.A.31(a)(2)).

In conclusion:

- Theoretically flammability test results can have an unlimited validity if it can be proven that the design and the performance is identical;
- In reality, the material performances are changing over time, this may be unknown to the DOH. Therefore, a meaningful **Design assurance system** should require repetitive testing to demonstrate that the initial design assumptions for that material are still met.

Based on the above EASA is expecting flammability test reports that do reflect the actual batch of materials used for the design approval(s). Materials (even from the same batch) very susceptible to storage conditions, should be periodically retested i.a.w. DOH definition² (21.A.31(a)(2)).

In addition, re-use of flammability test results should be avoided, if the fireworthiness test results were marginally succeeded in relation to pass/fail criteria.

² It is assumed, for the frame of this discussion, that in the period between the date of the originally performed flammability tests and date of re-test no change occurred in the testing equipment/test procedure/test location (which could imply additional variability in the test results).

General DOA information

Item 2019/3/3

DOA dashboard: how does it work?

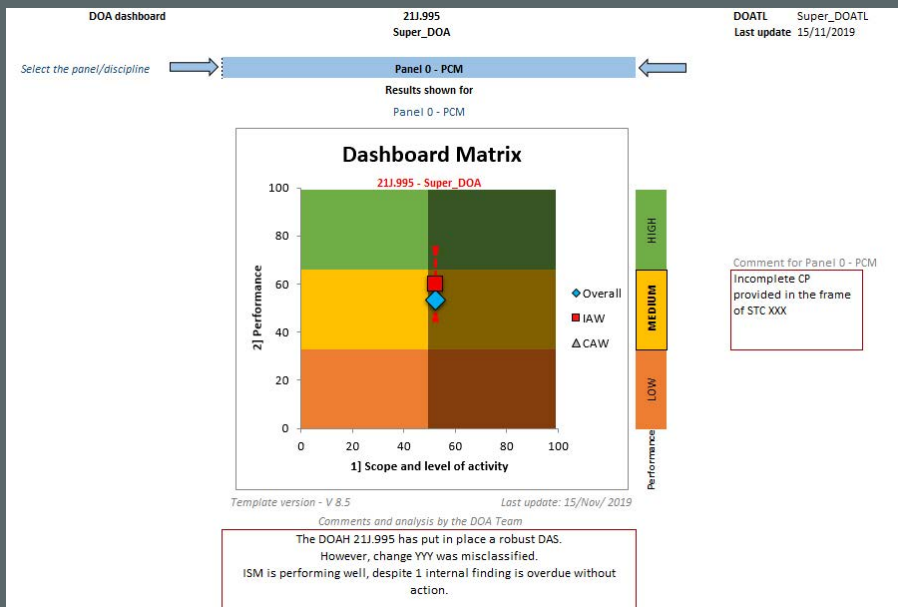
The DO Department has updated its DOA Dashboard. This tool is well-known by the DOA Holders that have TC, major changes, STC or major repairs, in their scope of work.

This internal EASA tool is used for building a yearly overall picture of the DOAH performance. The tool includes the quality feedbacks received from PCMs & Experts, following the closure of certification projects involving the Agency's Product Certification teams. In addition, the DOA Team is requested to evaluate the DOAH performance through a set of questions, covering the activities undertaken during each year of the surveillance cycle. The DOA Team also assesses the ISM performance, using a dedicated set of questions.

These inputs allow the tool to compute two distinct indicators:

- Performance on IAW (Initial AirWorthiness): yearly average (anniversary date to anniversary date) of the feedbacks received from Product certification; this indicator is thus Panel-specific;
- Overall DOA Performance: mapping of the Overall performance, accounting for both the performance on IAW and the assessments made by the DOA Team.

Please note that no CAW data is provided in the current version of the tool, since the CAW feedback system is being developed.



In the above example, both the 'Performance on IAW' and the 'Overall DOA Performance' are MEDIUM. These values are used both by the DOA & the Product certification teams to tailor the surveillance plan and to support EASA's decision on the proposed LOI.

This new version of the Dashboard introduces certain novelties and improvements:

- All input fields are mandatory: the overall performance picture is analysed over each cycle/year to detect any trends in performance;
- The DOA Team will provide evidenced-based assessments & justifications to the DOAHs to support their efforts in improving their performance. The standard questions provided ensure a harmonisation of assessments between DOATLs;
- Data requested from the DOAHs is optimised (e.g. number of approval obtained in the last 12 months);
- Clarification of the management of Level 2 findings: the number of Level 2 findings is not directly included in the performance assessment as the Agency focusses mainly on the number of overdue or extended (more than once) Level 2 findings.

The DOA Dashboard being an internal EASA tool, it is not meant to be shared in its entirety with the DOA community. However, average performance data per panel, that are an input for the risk assessment as part of the LOI process, will be shared with each DOAH. Performance data at project level will be shared provided that a Memorandum of Understanding is signed between the Agency and the given DOAH.

This tool will support the Agency's efforts in building a comprehensive and transparent performance picture for each DOAH. This improvement will be complemented by the introduction of a standard questionnaire in SEPIAC for PCMs and Experts to rate the performance of the DOAH at project level.

Part 21 implementation

Item 2019/3/4

Acceptability of data coming from suppliers

For the issuance of a product approval, such as TC, STC, major or minor changes to TC and repairs, whether by the Agency or under DOA privileges an applicant shall demonstrate compliance with Part 21 requirements. Those requirements may be related to procedural, organisation or competence aspects as related to the design activities and associated data which are to be released for the approval of the design.

Therefore, if some of those design activities and data are conducted or produced by design subcontractors or partners, the DOA holder is responsible to identify the Part 21 requirements applicable to the scope of those activities and data, and determine how the subcontractors can be compliant with those requirements.

The establishment of an interface agreement, where the means to comply with those requirements, are specified (e.g. design assurance system procedures, competence of personnel, facilities, etc.) is an acceptable manner (but not the only one) to demonstrate compliance with Part 21.A.239(c), which requires the DOA holder to specify the manner in which the design assurance system accounts for the acceptability of the parts or appliances designed or the tasks performed by partners or subcontractors according to methods which are the subject of written procedures.

The design activities and associated data, such as laboratory tests for example, conducted by a subcontractor to demonstrate compliance of a design, whether of a product type of a change/repair to a product type, with the applicable requirements of its chosen certification basis are subject to several Part 21 requirements. For example:

- Part 21.A.33 for inspections and tests;
- Part 21.A.55, 21.A.105 for record keeping, if held by the subcontractor;
- Part 21.A.239(a) for the supervision and control of activities conducted, in proportion to the level of involvement of the DOA Holder, and the autonomy granted to the subcontractor in the conduction of those activities (i.e. written procedures);
- Part 21.A.239(a)(3) for the independent system monitoring of the compliance with the agreed procedures and other means to show compliance with the Part 21 requirements applicable to the subcontracted scope of activities;
- Part 21.A.245(a) for the necessary experience of the personnel and the adequacy of the laboratory test equipment;
- Part 21.A.245(b) for the necessary coordination between DOA holder and subcontractor.

If the subcontractor holds a DOA with terms of approval appropriate to the scope of subcontracted activities, the principal DOA holder may refer to the DOA subcontractor procedures for each of the Part 21 requirement applicable to that scope.

However, it must be proven that the subcontractor has agreed to use the procedures on the basis of which its DOA is granted, and that proper arrangements have been made for compliance with Part 21.A.239(a)(3) related to the independent system monitoring, e.g. regular reporting of subcontractor ISM activities and results (please refer to the J-News 2018/3/1 and 2019/1/4 for more details) to the DOA holder ISM function, and ultimately to the Head of Design Organisation.

Part 21 implementation

Item 2019/3/5

Are you competent at competence? – Part 1

Technical Competence is recognised as one of the basic components of a successful design organisation.

Part 21.A.243(d) and its associated GM No.1 and No.2 require a DOA to show how it will demonstrate the competence (knowledge, background and experience) of those “staff responsible for making decisions affecting airworthiness”.

The GM then helps us define which DOA personnel fall under the category of “staff responsible for making decisions affecting airworthiness” by listing two distinct categories of person.

1. Compliance Verification Engineers (CVEs).
2. Personnel of the Office of Airworthiness making decisions affecting airworthiness, operational suitability and environmental protection, especially those linked with the 21.A.263 privileges.

The GM further explains that the competence of such personnel should be ensured by a system that selects, trains, maintains and identifies them.

It is the defined procedures of such a system and their robust implementation that could determine if a DOA can be considered ‘competent at competence’.

The complexity and scope of such procedures can be tailored to the complexity and scope of the DOA itself but some fundamental aspects should be covered;

1. What are the minimum knowledge, background and experience standards required for each category of person?
2. What training policy is in place to ensure necessary complimentary training to ensure appropriate knowledge and background?
3. How those minimum knowledge, background and experience standards are translated into the basic selection criteria for each category of person?
4. How does the system assess the knowledge, background and experience of the person against those criteria?
5. Who should be involved in conducting such assessments and what should be their level of knowledge, background and experience?
6. How is the process documented and what records are retained?
7. What are the details of the scope of authorisation of each person?

EASA experience from its DOA surveillance activities indicates a clear positive correlation between the potency of the system for selecting “staff responsible for making decisions affecting airworthiness” and the quality of DOA deliverables and the assessed performance of the organisation.

Bearing in mind the imminent arrival of the LOI requirements, where DOA performance will be a contributing factor, now is the time to reassess whether your organisation is truly ‘competent at competence’.

In Part 2 – What about our Design Engineers and how do we best utilise our “staff responsible for making decisions affecting airworthiness”?

General DOA information

Item 2019/3/6

Did you know? List of EASA Panels

In order to support the risk analysis needed in the frame of LOI, the Agency has published the list of EASA team Panels.

The list and numbering of the Panels is now available in the [EASA Website](#) for consultation.



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