

DOARI 2020-01 Consultation Paper

1 Introductory Note

The hereby presented deviation requests shall be subject to public consultation, in accordance with EASA Management Board Decision No 7-2004 as amended by EASA Management Board Decision No 12-2007 products certification procedure dated 11th September 2007, Article 3 (2.) of which states:

“2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency.”

2 Original PART 21 requirement and/or AMC

21.A.231, 21.A.234, 21.A.239, 21A.243, 21.A.245, 21.A.247, 21.A.251, 21.A.253, 21.A.257, 21.A.263, 21.A.265

AMC-ELA and GM-ELA

3 Problem Description

Currently, an application for an UAS type-certificate (TC) can only be accepted by the Agency when the applicant has demonstrated, or is in the process of demonstrating, its capability by holding a design organization approval (DOA) issued by the Agency [21.A.14(a)]. No derogation for this eligibility requirement is available in the regulatory framework in force, as the existing derogations [21.A.14(b), (c)] are intended for manned aircraft only.

The available AMC and GM contain guidance for an appropriate demonstration of design capability of the organizations for those cases where the organization designs UAS to be operated in the certified category or in the specific category with specific assurance and integrity level (SAIL) V or VI.

This DOARI, on the other side, aims to cover the introduction of proportionality elements in the acceptable means of compliance with the requirements for obtaining a DOA for UAS TC applicants, provided that the UAS is to be operated exclusively in the specific category with SAIL level equal or lower than IV.

The SAIL level is determined while conducting the specific operations risk assessment (SORA) for the intended concept of operations (ConOps) [1]. The SAIL assigned to a particular ConOps is determined in the SORA process using the following SAIL determination table:

SAIL determination [1]				
Final Ground Risk Class (GRC)	Residual Air Risk Class (ARC)			
	a	b	c	d
≤2	I	II	IV	VI
3	II	II	IV	VI
4	III	III	IV	VI
5	IV	IV	IV	VI
6	V	V	V	VI
7	VI	VI	VI	VI
>7	Category C operation			

- [1] ED Decision 2019/021/R on Acceptable Means of Compliance (AMC) and Guidance Material (GM) to Commission Implementing Regulation (EU) 2019/947.
AMC1 Article 11 Rules for conducting an operational risk assessment

4 Industry Position

N/A

5 EASA position

Small and non-complex organisations designing UAS to be operated in the specific category for operations with SAIL level equal or lower than IV can consider the complete, self-contained set of “AMC/GM-ELA” as a baseline to build-up a Design Assurance System compliant with Subpart J requirements, and complement them, if necessary, with additional or more stringent controls, processes or methods that are appropriate for the complexity of design.

In any case, applicants designing UAS as defined above can alternatively use other AMC and GM contained in Part 21.

Additionally, bearing in mind that AMC are a means, but not the only means of showing compliance, applicants designing UAS as above can propose their own alternative means of compliance. In this last case, the proposal shall be subject to public consultation, unless they have been previously agreed and published in the Official Publication of the Agency.

Being “AMC/GM-ELA” developed for manned aircraft, the following adaptations are proposed for UAS:

1. AMC-ELA No 1 to 21.A.239(b) states that CVEs scope of authorization “should follow a logical structure, commensurate with the type of product”. Mention is made to the allocation by the usual technical disciplines (e.g. structures, flight, electrical system, etc.), or by a set of CS requirements, or by a set of ATA chapters.
 - For UAS, the scope of CVE can be broken down more flexibly and proposing newly defined disciplines as well.

2. AMC-ELA No 2 to 21.A.243 includes some aspects that are covered by the risk and managements system contained in the policies and procedures in relation to flight tests. Two of the mentioned aspects are only applicable to “aircraft with MTOMs of 2 000 kg or more” (bullet point n. 7). For UASs for which the provisions of Part-21 Appendix XII do not apply, the 2 mentioned aspects can be replaced with the following one:
- Applicant should define key qualifications, responsibilities and accountabilities of the staff involved in conducting the flight tests so that individuals may be selected and appointed on a case-by-case basis if no internal authorisations already exists and persons are named in the procedures.

6 Final disposition after consultation process

To be determined.

Acronyms

AMC	Acceptable Means of Compliance
ARC	Air Risk Class
ATA	Air Transport Association
ConOps	Concept of Operations
CS	Certification Specification
CVE	Compliance Verification Engineer
DOA	Design Organisation Approval
DOARI	Design Organisation Approval Review Item
EASA	European Union Aviation Safety Agency
ED	Executive Director
ELA	European Light Aircraft
EU	European Union
GM	Guidance Material
GRC	Ground Risk Class
MTOM	Maximum Take-Off Mass
SAIL	Specific Assurance and Integrity Level
SORA	Specific Operations Risk Assessment
TC	Type Certificate
UAS	Unmanned Aircraft System