This Certification Programme Template is intended to be used as template/example for ELA1 and ELA2 TC projects (and with some adaptions, it can be used also for major changes and STC projects)

* to assist applicants in applying for DOA and therefore demonstrating the required design capability and provide a basis for the DOA applicant to produce the own Template for a Certification Programme or
* to assist applicants for type certification or restricted type certification in demonstrating the required design capability according Annex 1 (Part 21) of COMMISSION REGULATION EU No 748/2012 as last amended by Reg (EU) 2019/897, point 21.A.14 (b) or (c) (by providing a certification programme according to point 21.A.15 (b))

The form and text of this template provides examples and shall be checked whether it is appropriate or needs to be changed by the organisation.

Some paragraphs are only required if the design capabilities are shown in accordance with point 21.A.14(c). In such case, the relevant text boxes contain the information *“Only required for applicant demonstrating the required design capability according Annex 1 (Part 21) of COMMISSION REGULATION EU No 748/2012, point 21.A.14 (c) (by providing a certification programme according to point 21.A.15 (b))”*

Text boxes and cyan highlighted text are provided throughout the document to add explanations to the reader (and should be deleted).

It is not mandatory to use this template/example. The information that has to be provided according to Part 21 can be presented in any other way acceptable for EASA.

The required information can be presented entirely in this document, or in separate documents.

Amendments record

|  |  |  |
| --- | --- | --- |
| *Issue* | *Amendment Description* | *Date* |
| 01 | Initial Issue | 10.10.2012 |
| 02 | updated based on EU REG. 2019/897 (including LOI proposal) | 16.12.2019 |

Company name / logo

Document number

Document title

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Name / Function* | *Date* | *Signature* |
| Prepared |  |  |  |
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# Amendment Record

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| *Issue* | *Amendment Description* | *Date* |
| 01 | Initial Issue |  |
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# Introduction

This Certification Programme is prepared in accordance with point 21.A.15(b) and describes how compliance will be demonstrated with the applicable requirements in the certification basis, the resources and sequence of activities relevant to the Project and a proposal of the involvement of the EASA.

The Certification Programme will be updated to reflect any relevant changes to the project.

## Project Description

The following chapter contains a detailed description of the project and the type design, including all the configurations to be certified, the proposed operating characteristics and limitations, the intended use of the product and the kind of operations for which certification is requested (Ref. point 21.A.15 (b).

## Project History

Provide an overview on the history of the project. If the design is based on an EASA certified product the following paragraphs should contain a detailed description of all differences. The service experience with the existing fleet should be included. Experience with proof of concept prototypes or similar models should also be provided.

## Design Description

Provide a detailed description of the aircraft design as required by point 21.A.15(b), including configuration and information about performance and limitations as well as systems and equipment. Any novel or unconventional design feature has to be presented.

## Design Organisation Resources

Provide a description of the DO resources that will be used in the project. The CVE’s (for applicant with a DOA) for all relevant areas should be mentioned. Additional information should be provided when relevant, e.g. new CVE’s or new area’s of competence.

Design Organisations without DOA have to define in detail who is working on the project and give detailed information on responsibilities and experience of staff.

EASA has to be informed about any change of nominated staff and the Certification Programme has to be updated.

## Design Subcontractors

Provide a list of all design subcontractors involved in the project with detailed description of their tasks and responsibilities. Every external source for data used for compliance demonstration is a design subcontractor. For example suppliers for

* components of the aircraft also delivering design data used for compliance demonstration;
* structural tests (components, specimen, flammability, …);
* noise tests;
* flight tests;
* equipment tests;
* ground vibration test and/or flutter analysis;
* external CVE’s, test pilots;
* Maintenance and configuration control of test aircraft;

## Technologies and Process Description

Detailed description of the technologies and processes used for design and manufacturing of the product.

Any unconventional technology or process not part of DOA procedures has to be presented, for example:

* new FEM tool;
* new verification of Analysis or Software tools;
* composite manufacturing process;

# Type Certification Basis and environmental protection requirements

In this chapter, the certification basis for this project is defined.

In accordance with point 21.A.15(b), the applicant shall provide as part of the application *“a proposal for the initial type-certification basis, operational suitability data certification basis and environmental protection requirements, prepared in accordance with the requirements and options specified in points 21.B.80, 21.B.82 and 21.B.85”*. In the frame of this document this will referred to as the “certification basis”.

The Agency will establish after familiarisation with the project and based on also on the initial proposal made by the applicant, the certification basis for the project, typically through the issuance of the Certification Review Item (CRI) CRI A-01. The certification basis may be updated during the project (due to the evolution of the design and/or the project) and the applicant will need to update the certification programme.

It is important to note that the applicant according to point 21.A.20(a) shall demonstrate compliance with the certification basis established by the Agency.

In accordance with point 21.A.15(e) “*an application for a type-certificate or restricted type-certificate for a large aeroplane or a large rotorcraft shall be valid for five years and an application for any other type-certificate or restricted type-certificate shall be valid for three years, unless the applicant demonstrates at the time of application that its product requires a longer time period to demonstrate and declare compliance and the Agency agrees to that longer time period.“*

In the case where a type-certificate or restricted type-certificate has not been issued, or it is evident that it will not be issued, within the time limit provided for in point 21.A.15(e), the certification basis may be updated in accordance with point 21.A.15(f).

For major changes and STC, the certification basis will be defined in accordance with point 21.A.101.

## Type Certification Basis

Based on the date of application for this project (dd.nmm.yyyy). The type certification basis for this project consists of CS LSA amdt.X and the additional requirements defined in sections 2.2 and 2.3.

## Equivalent Safety Findings (ESF), Deviations

If there is the intention to propose an equivalent safety finding (or a deviation) to compensate (or to mitigate) the non-compliance with any certification specification in accordance with point 21.B.80, this can be mentioned and justified here. The Agency will assess the proposal and typically issue a CRI to raise the ESF/deviation and record the related discussion. Deviations and important ESF’s are published for consultation.

## Special Conditions

In some cases the related certification specifications do not contain adequate or appropriate safety standards for the product, because:

1. the product has novel or unusual design features relative to the design practices on which the applicable airworthiness code is based; or

2. the intended use of the product is unconventional; or

3. experience from other similar products in service or products having similar design features, has shown that unsafe conditions may develop.

the Applicant may propose a special condition to the Agency containing safety standards to establish a level of safety equivalent to that established in the applicable airworthiness code.

The Agency will assess the proposal and typically issue a CRI to raise the special condition and record the related discussion. Important special conditions are published for consultation.

**Interpretative Material and Means of Compliance**

Despite not part of the certification basis, the EASA Team may provide additional Interpretative Material (IM) or Means of Compliance (MOC), through the issuance of project CRI’s or through reference to already published EASA documents (e.g. AMC/GM, Certification Memorandum, etc.).

This information will be provided in CRI A-01.

## Environmental Protection

The applicant shall provide a proposal of the environmental protection requirements in accordance with 21.B.85.

## Operation Suitability Data (OSD) – Master Minimum Equipment List (MMEL)

Operational Suitability Data (OSD) means data, which are part of an aircraft type-certificate, restricted type-certificate or supplemental type-certificate, consisting of the following:

1. the minimum syllabus of pilot type rating training, including determination of type rating;
2. the definition of scope of the aircraft validation source data to support the objective qualification of simulators or the provisional data to support their interim qualification;
3. the minimum syllabus of maintenance certifying staff type rating training, including determination of type rating;
4. determination of type or variant for cabin crew and type specific data for cabin crew;
5. the master minimum equipment list (MMEL);

OSD Data need not to be established for ELA1 and ELA2 aircraft with the exception of MMEL. For MMEL as explained in GM No 1 to 21A.15(d), “for ELA1 and ELA2, the applicant may develop a list of the required equipment to be included in the TCDS and/or AFM/POH. This list, in combination with the equipment required for the flight by the applicable implementing rules for a given type of operations, establishes the list of equipment that must be operative for all flights. The list of the other installed equipment that may be inoperative constitutes the MMEL.

This chapter should provide the information on the MMEL as explained above.

# Certification Process

The certification programme has to be developed in line with point 21.A.15. The responsible persons to manage the process have to be defined as well as the flow of information to the Agency.

## Means of Compliance

The Means of compliance proposed for this project are provided in the Compliance Check List in Annex C.

The certification programme shall include in accordance with point 21.A.15(b)(5) a proposal of the means for demonstrating compliance to the certification basis. This information is typically included as Annex to the Certification Programme through a “Compliance Check List” addressing each requirement, the proposed means of compliance and the related compliance document(s). Additional information can be found in AMC 21.A.15(b) and the related Appendix A.

For some requirements it may be useful to specify also the methods for the demonstration of compliance. Some examples are provided below:

* flight testing according Part 23 flight test manual
* flight testing using data recording and experienced test pilot
* composite materials following LBA guidance material
* flutter using an experienced supplier for GVT and Analysis
* noise testing using an experienced supplier for testing

The proposal of the means of compliance shall be accepted by the Agency in accordance with point 21.A.20(a).

## Certification Schedule

|  |
| --- |
| The applicant shall provide in accordance with point 21.A.15(b)(7) a project schedule.  According EASA Working Procedure for Type Certification (<http://easa.europa.eu/certification/docs/internal-working-procedures/PR.TC.00001-002%20Type%20certification.pdf> ) the EASA type certification process can generally be divided in the following phases.   * **Phase I – Technical Familiarisation and establishment of the Type Certification Basis**   The objective of this phase is to provide technical information about the project to the EASA Team to enable the establishment of the initial EASA Certification Basis.   * **Phase II – Agreement of the Certification Programme**   The objective of this phase is the definition of and the agreement on the proposed means of compliance to demonstrate compliance to the Certification Basis and the determination of the Level of involvement of the Agency.   * **Phase III – Compliance demonstration**   The objective of this phase is the demonstration of compliance with the Certification Basis and the corresponding verification by the Agency based on the involvement determined in accordance with 21.B.100.   * **Phase IV- Final Report and issue of a Type Certificate**   The objective of this phase is the issuance of the EASA Type Certificate in accordance with 21.B.103. In particular the applicant shall have completed the demonstration of compliance, submitted to the Agency the declaration of compliance required in point 21.A.20(d), and complied with point 21.A.14.  Typically the EASA team will issue (only internal to the Agency) a final report before the issuance of the EASA Type Certificate.  The schedule should be provided following the phases described above and should include the major milestones, for example:   1. EASA application; 2. Issuance of the certification programme (if not provided together with the application); 3. Familiarization Meeting with EASA team; 4. Notification of EASA Certification Basis; 5. Acceptance of the Certification Programme and definition of EASA LOI; 6. Issuance of Main Ground (e.g. structural) Test Plan(s); 7. Issuance of Flight Test Plan(s); 8. EASA Agreement on Test Plans; 9. Production of aircraft Prototype, major Test Articles; 10. Execution on main Major (e.g. structural) Ground Tests; 11. Issuance of main Compliance Data packages; 12. Application for Approval of Flight Conditions for flight tests for demonstration of compliance; 13. Execution of Maiden Flight; 14. Start and main items of Flight Test campaign; 15. Issuance of Noise Test Plan; 16. Execution of Noise Test; 17. Completion of demonstration of compliance and of related compliance Data; 18. Issuance of Declaration of Compliance; 19. EASA Approval. |

## Approval of Flight conditions

The Applicant should provide a proposal (within the certification programme and/or flight test plan(s)) of the justifications that will be provided in support of the request of approval of flight conditions for the first flight and the subsequent flight test campaign. Such proposal is typically based on the completion of some of the compliance activities for the demonstration of compliance to the certification basis (e.g. loads calculations, Structural substantiations and tests, Ground tests, Aeroelastic investigations, etc.), but may be amended or complemented by additional activities (e.g. additional or alternative analyses/tests, conformity inspections, etc.). Such proposal should be shared the EASA team with sufficient time before approval of the flight conditions is requested.

## Engine/Propeller certification and interactions with aircraft

The applicant for an aircraft TC is responsible for the installation of the engine/propeller on the aircraft and has to demonstrate compliance with the corresponding requirements in the certification basis. The engine/propeller manufacturer is expected to support the aircraft manufacturer in this process.

If the engine and/or the propeller are certified as part of the aircraft, the certification basis of the aircraft shall include also the corresponding certification basis.

## Equipment qualification

The applicant should provide as part of the Type Definition a list of the installed equipment including reference to specifications, declaration of design and performance, ETSO authorisations. The ETSO Authorisation is the recognition by EASA that the equipment meets predefined qualification and performance criteria. The applicant should clearly identify if the equipment will be certified as part of the aircraft or has obtained an ETSO authorisation.

For equipment to be certified as part of the Product, the applicant for the TC/STC is responsible for the approval of the equipment as part of the aircraft and its installation. An acceptable means of providing compliance data in support of the equipment and its installation is to show that the equipment meets the appropriate ETSO standard.

The Equipment List should also contain information if the equipment is optional and if there are any conditions or limitations for installations.

## Control of Production and Configuration for test articles and prototypes

According to 21.A.33 (c) an applicant shall issue a statement of conformity for the test articles used for compliance demonstration.

Such statement should be issued with the support of a POA holder/applicant (according to 21.A.133 (c) and related AMC a POA holder/applicant should have an appropriate arrangement with the applicant for a TC approval also to assist a design organisation in demonstrating compliance with CS).

## Compliance Documentation

*Only required for applicant demonstrating the required design capability according Annex 1 (Part 21) of COMMISSION REGULATION EU No 748/2012, point 21.A.14 (c) (by providing a certification programme according to point 21.A.15 (b)).*

The applicant should issue compliance document to record the justification of compliance in accordance with point 21.A.20 (c). AMC 21.A.20 (c) can be followed.

A documents management system should be defined. In particular:

* a numbering system shall be defined to identify the compliance documents in order to have an adequate link with the certification programme;
* the type of document and the technical objectives should be determined at the beginning of the process;
* the issuance of the documents should be carefully managed all along the process, in accordance with the milestones defined in the certification programme;
* the various revisions of a document should be controlled.

All compliance documents shall be issued before the final declaration of compliance required by point 21A.20(d). Good experience has been made in previous projects with a “compliance summary document” containing:

* the full text of the requirement;
* a summary of all essential steps necessary to demonstrate compliance including reference to specific pages/chapters were the full information can be found;
* a statement declaring compliance with that requirement;
* the signatures from the author, the CVE and/or relevant personnel from the Office of Airworthiness.

## Type Design Definition

Annex A provides a description of how the type design is defined and how the corresponding configuration will be managed.

*Only required for applicant demonstrating the required design capability according Annex 1 (Part 21) of COMMISSION REGULATION EU No 748/2012, point 21.A.14 (c) (by providing a certification programme according to point 21.A.15 (b)).*

The applicant should describe how the type design will be identified in accordance with 21.A.31 and how it will be managed for subsequent changes. EASA typically raise CRI A-05 to request the related discussion.

## Master Document List

Master Document List is in Annex B.

The applicant should issue a Master Document List (MDL) including the list of all compliance documents. The Master Document List may include a reference to the type design definition.

## Final Declaration of Compliance

After completion of the compliance demonstration, the applicant shall submit to the Agency the declaration of compliance provided for in point 21.A.20(d). If the applicant holds an appropriate design organisation approval, the declaration of compliance shall be made in accordance with Subpart J and submitted to the Agency. Such declaration of compliance is typically provided as a separate document.

## Proposed EASA Involvement

In accordance with point 21.A.15(b)(6) the applicant shall provide a proposal of EASA involvement as part of the certification programme.

This chapter provides an example of such proposal and is prepared according to AMC 21.B.100(a) and 21.A.15(b)(6). The concept of Compliance demonstration item (CDI) is used in this example in line with AMC 21.A.15(b)(5) with the following definition:

**CDI: a meaningful group of compliance demonstration activities and data identified in the certification programme which can be considered in isolation for the purpose of performing a risk assessment.**

More information can be found in AMC 21.A.15(b)(5), AMC 21.B.100(a) and 21.A.15(b)(6).

This proposal of EASA Involvement is based on the assessment required by point 21.A.15(b)(6) and it is prepared using AMC 21.B.100(a), AMC 21.A.15(b)(5) and AMC 21.A.15 (b)(6). In particular the following tables (from AMC 21.B.100(a) and 21.A.15(b)(6)) have been used for this project:

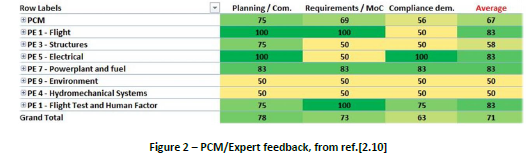
|  |  |  |  |
| --- | --- | --- | --- |
| Step 1 — Likelihood of an unidentified non-compliance | | | |
| CDI  Performance  level of the DOAH | No novel or complex aspects | No novel, but complex aspects  Novel, but no complex aspects | Novel and complex aspects |
| High | Very low | Low | Medium |
| Medium | Low | Medium | High |
| Low or unknown | Medium | High | High |

**Table 1** - Step 1 — Likelihood of an unidentified non-compliance

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Step 2 — Risk classes | | | | |
| Likelihood  Criticality | Very low | Low | Medium | High |
| Non-critical | Class 1 | Class 1 | Class 2 | Class 3 |
| Critical | Class 1 | Class 2 | Class 3 | Class 4 |

**Table 2** - Step 2 — Risk classes

For the DOA performance the following dashboard (dated dd.mm.yyyy – the date of the dashboard should be provided) has been used for the affected panels.



**Figure 1** – DOA Dashboard

The DOA performance should be considered at panel level. Additional information may be provided by the applicant if they have an impact on the performance shown in the dashboard. For example: new staff working in the project, change in DO suppliers, etc.). In such case the dashboard may need to be updated.

In the sections below, the CDIs used in this project and the corresponding risk assessment are described, in line with AMC 21.A.15(b)(5). In particular the following information are provided for each CDI:

* Description of the CDI and the related compliance demonstration activities and data;
* Certification basis affected by the CDI (Certification Specifications (CS), Special conditions (SC), Equivalent Safety Findings (ESF), Deviations, where applicable);
* Related compliance activities and data (e.g. compliance documents, tests, audits, etc.);
* Affected panels;
* Proposal of EASA involvement based on the risk assessment performed in accordance with AMC 21.B.100(a) and 21.A.15(b)(6). This includes:
* Novelty of the CDI;
* Complexity of the CDI;
* DOA performance for the affected CDI based on the Dashboard in the above table and considering the involved panel(s). In case more panels are involved for a CDI, the performance of the primary and secondary panels are considered and the rationale provides the related explanation;
* Criticality of the CDI;
* Risk assessment and the risk class;
* Proposed EASA involvement in the verification of compliance activities and data (e.g. compliance data review, test witnessing, involvement in audits, etc.).
  + 1. CDI ABC.1

This section provides an example for a given CDI. The description of the CDI should be as detailed as necessary to allow EASA to understand the content of the CDI and the subsequent risk assessment. Furthermore, it is the responsibility of the applicant to ensure that the risk assessment is complete, i.e. includes CDIs for all elements of the certification basis and compliance demonstration.

The applicant should also provide a cross reference in the Compliance Checklist between all the elements of the certification basis (i.e. Certification Specifications, Special conditions, Equivalent Safety Finding, etc.), the agreed means of compliance, the compliance data and the CDIs.

For applicant using AP to DOA or working under 21.A.14(c) the performance of the DOA is low/unknown for the affected panel.

Appendix 1 provides an example of LOI proposal for aircraft with simple and conventional design.

|  |  |  |
| --- | --- | --- |
| CDI name |  | |
| Primary panel |  | |
| Secondary panel |  | |
| Affected requirements |  | |
| Brief Description of the compliance demonstration activities of the CDI |  | |
| Novel | yes/no | |
| Rationale: | |
| Complex | yes/no | |
| Rationale: | |
| DOA panel(s) performance | High/medium/low | |
| Additional comments (if any): | |
| Critical | Yes/no | |
| Rationale | |
| Risk class | 1/2/3/4 | |
| Additional comments (if any): | |
| LOI proposal | Document 1 | Retained |
| Document 2 | Not Retained |
| Document 3 | Not retained |
|  |  |
| Document n | Not retained |
|  |  |
| Test 1 | Witnessed |
| Test 2 | Not witnessed |
|  |  |
| Test n | Not witnessed |

# List of Annexes

## A Type Design Definition issue date

## B Master Document List issue date

## C Compliance Check List issue date

# List of Appendices

## Appendix 1 - Example of applicant proposals of EASA LOI for ELA1 and ELA2 aircraft with simple and conventional design

This appendix provides an example of simplified approach for proposing the EASA LOI according to point 21.A.15 that may be used by applicants for aircraft having “simple and conventional design” (in the frame of this appendix, simplified and conventional design means ELA1 Aircraft with single carburetted piston engine, limited to VFR Day).

The LOI proposal in this example is the result of a predefined risk assessment performed by the Agency using the AMC 21.B.100(a) and 21.A.15(b)(6), using the above assumptions on the design and the assumptions below regarding the performance of the Applicant and the novelty of the CDI:

Example 1: Applicant using AP to DOA or working under 21.A.14(c) (without DOA):

* The DOA performance is always considered ‘low - unknown’;
* Each CDI is considered as ‘novel’ (this is an assumption made in this example);

Example 2: Applicant with DOA and medium/low performance:

* The DOA performance is considered ‘low - unknown’, except for the panels "Flight", "Structure" and "Powerplant" where it is assumed 'medium';
* Some CDIs are considered ‘novel’ and some CDIs are considered not novel;

The complexity and criticality of each CDI are the same in examples 1 and 2;

Applicants may use this example in its entirety, or use it as a starting point and adapt it as necessary to reflect their DO and project, i.e. the applicant may propose different CDI’s, novelty and panel performances. The applicant should use the AMC 21.B.100(a) and 21.A.15(b)(6), and justify the adaptions. Based on the applicant proposal, EASA team will determine their LOI (which may differ from the proposal of the applicant, due to specific aspects of the project).

In the following tables the following type of involvements are considered:

* W= Test witnessing (including review of test plan/report);
* R = review of document (R-: Partial review);
* RTP = review of test plan (RTP-: partial review);
* RTR = review of test Report (RTR-: partial review);
* N= No involvement.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Example 1: Applicant without DOA (under point 21.A.14(b) or point 21.A.14(c)): 1. The DOA performance is considered ‘unknown’; 2. Each CDI is considered ‘novel’ (this is an assumption made in this example); 3. Complexity and criticality of each CDI are the same in the examples 1 and 2; | | | | | | | | | |
|
|
| Panel | CDI | Novelty | Complexity | Panel performance | likelihood | Criticality | Risk class | LOI  (21.A.14(b)) | LOI  (21.A.14(c)) |
| Flight | Performance flight test | yes | no | unknown | high | yes | 4 | RTP,RTR | W |
| Stall, spin | yes | yes | unknown | high | yes | 4 | W | W |
| Stability/controllability | yes | yes | unknown | high | yes | 4 | W | W |
| Avionic system flight tests | yes | no | unknown | high | no | 3 | RTP | RTP,RTR |
| Airspeed calibration | yes | yes | unknown | high | yes | 4 | W | W |
| AFM review | yes | yes | unknown | high | yes | 4 | R | R |
| Flutter and high speed flight tests | yes | yes | unknown | high | yes | 4 | RTP,RTR | RTP,RTR |
| Structure & Hydro mechanical systems | V-n envelope | yes | no | unknown | high | yes | 4 | R- | R |
| Load calculations | yes | no | unknown | high | yes | 4 | R | R |
| Wing strength | yes | yes | unknown | high | yes | 4 | W | W |
| Fuselage strength | yes | yes | unknown | high | yes | 4 | RTP,RTR | W |
| Engine mount strength | yes | no | unknown | high | yes | 4 | RTP,RTR | W |
| Landing gear strength and absorption performance (Drop tests) | yes | yes | unknown | high | no | 3 | RTP,RTR | W |
| Landing gear system description and assessment (for retractable landing gear) | yes | no | unknown | high | no | 3 | R | R |
| Brake system description and assessment | yes | no | unknown | high | no | 3 | R | R |
| Control surfaces and systems strength and operations tests | yes | no | unknown | high | yes | 4 | W | W |
| Material qualification | yes | yes | unknown | high | yes | 4 | W | W |
| Flutter, GVT | yes | yes | unknown | high | yes | 4 | RTP,RTR | RTP,RTR |
| Powerplant | Engine and subsystems (cowling, oil, etc.) installation and ground tests | yes | no | unknown | high | yes | 4 | R, RTP, RTR | W |
| Fire tests (only CS VLA and CS 23) | yes | yes | unknown | high | yes | 4 | W | W |
| Fuel system description and assessment of the installation | yes | no | unknown | high | yes | 4 | R | R |
| Propeller installation | yes | no | unknown | high | yes | 4 | R | R |
| Hot fuel tests | yes | yes | unknown | high | yes | 4 | RTP,RTR | RTP,RTR |
| Avionic/  electric | Avionic system description and assessment of the installation (including 1309 assessment for vfr day | yes | no | unknown | high | no | 3 | R | R |
| Avionic system ground and flight tests | yes | no | unknown | high | yes | 4 | RTP,RTR | RTP,RTR |
| Electrical system description and assessment of the installation. | yes | yes | unknown | high | yes | 4 | R | R |
| Electrical system ground tests | yes | no | unknown | high | yes | 4 | RTP,RTR | RTP,RTR |
| Electrical Load analysis | yes | no | low | high | no | 3 | R | R |
| Cabin safety | Cabin/cockpit evaluation | yes | no | low | high | no | 3 | R | R |
| Noise | Analysis and/or tests | yes | yes | low | high | yes | 4 | W | W |

**Table 3 -** example of LoI proposal for 21.A.14(b) and 21.A.14(c)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Example 2: Applicant with DOA panel performance medium/low:  1. The DOA panel performance is considered ‘low - unknown’, except for the panels "Flight", "Structure", “hydromechanical” and "Powerplant" where it is assumed 'medium';  2. Some CDIs are considered ‘novel’ and some CDIs are considered ‘not novel’;  3. Complexity and criticality of each CDI are the same in examples 1 and 2; | | | | | | | | |
| Panel | CDI | Novelty | Complexity | panel performance | likelihood | Criticality | Risk class | LOI |
| Flight | Performance flight test | no | no | medium | low | yes | 2 | N |
| Stall, spin | yes | yes | medium | high | yes | 4 | W |
| Stability/controllability | yes | yes | medium | high | yes | 4 | W |
| Avionic system flight tests | no | no | medium | low | no | 1 | N |
| Airspeed calibration | no | yes | medium | medium | yes | 3 | RTP |
| AFM review | no | yes | medium | medium | yes | 3 | R (of approved parts) |
| Flutter and high speed flight tests | yes | yes | medium | high | yes | 4 | RTP,RTR |
| Structure & Hydro mechanical systems | V-n envelope | no | no | medium | low | yes | 2 | N |
| Load calculations | no | no | medium | low | yes | 2 | R- |
| Wing strength | no | yes | medium | medium | yes | 3 | W |
| Fuselage strength | no | yes | medium | medium | yes | 3 | RTP |
| Engine mount strength | no | no | medium | low | yes | 2 | RTP |
| Landing gear strength and absorption performance (Drop tests) | no | yes | medium | medium | no | 2 | RTP- |
| Landing gear system description and assessment (for retractable landing gear) | no | no | medium | low | no | 1 | N |
| Brake system | no | no | medium | low | no | 1 | N |
| Control surfaces and systems strength and operations tests | no | no | medium | low | yes | 2 | RTP |
| Material qualification | yes | yes | medium | high | yes | 4 | RTP,RTR |
| Flutter, GVT | yes | yes | medium | high | yes | 4 | RTP,RTR |
| Powerplant | Engine and subsystems (cowling, oil, etc.) installation and ground tests | no | no | medium | low | yes | 2 | R- |
| Fire tests (only CS VLA and CS 23) | yes | yes | medium | high | yes | 4 | RTP,RTR |
| Fuel system description and assessment of the installation | yes | no | medium | medium | yes | 3 | R |
| Propeller installation | no | no | medium | low | yes | 2 | R- |
| Hot fuel tests | no | yes | medium | medium | yes | 3 | RTP |
| Avionic/  electric | Avionic system description and assessment of the installation (including 1309 assessment for vfr day | yes | no | low | high | no | 3 | R |
| Avionic system ground and flight tests | no | no | low | medium | yes | 3 | RTP,RTR- |
| Electrical system description and assessment of the installation. | no | yes | low | high | yes | 4 | R |
| Electrical system ground tests | yes | no | low | high | no | 3 | RTP |
| Electrical Load analysis | no | no | low | medium | no | 2 | n |
| Cabin safety | Cabin/cockpit evaluation | yes | no | low | high | no | 3 | R |
| Noise | Analysis and/or tests | yes | yes | low | high | yes | 4 | W |

**Table 4** - example of LoI proposal for a DOA