EASA European Union Aviation Safety Agency	**Special Condition**	Doc. No.: **SC-E21** Issue : 1 Date : 09 April 2021 Proposed ☒ Final ☐ Deadline for comments: 30 April 2021

SUBJECT	:	**Propeller control system components as part of engine type design**
REQUIREMENTS incl. Amdt.	:	**CS E, Initial Issue to Amendment 6**
ASSOCIATED IM/MoC[1]	:	Yes☒ / No ☐
ADVISORY MATERIAL	:	

INTRODUCTORY NOTE:

The following Special Condition (SC) has been classified as important and as such shall be subject to public consultation in accordance with EASA Management Board decision 12/2007 dated 11 September 2007, Article 3 (2.) 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.*"

IDENTIFICATION OF ISSUE:

In accordance with point 21.B.75 of Part 21, the Agency proposes a special condition for the certification of engines equipped with components of the propeller control system that are included in the engine type design. The applicable EASA certification specifications of CS-E, in difference to the equivalent regulation in the USA i.e. 14 CFR Part 33 (§ 33.19 (b)) do not contain adequate or appropriate safety standards for such propeller control system components which are considered to be novel or unusual design features relative to the design practices on which the applicable certification specifications are based.
Guidance Material GM 21.B.75 states the following: "The term 'novel or unusual design features' should be judged in view of the applicable certification basis for the product. A design feature, in particular, should be judged to be a 'novel or unusual design feature' when the certification basis does not sufficiently cover this design."

The propeller control system components are usually certified as part of the propeller certification using CS-P certification specifications. The CS-P specifications applicable to these components can be used to complement the CS-E certification basis whenever the components are included in the engine type design.

In doing so, the EASA certification basis is harmonised with the equivalent FAA certification basis based on the application of 14 CFR Part 33.

Considering all the above, the following Special Condition is proposed:

[1] In case of SC, the associated Interpretative Material and/or Means of Compliance may be published for awareness only and they are not subject to public consultation.

Special Condition

Propeller control system components as part of engine type design

1. Each component of the propeller blade pitch control system which is included in the engine type design must comply with the following certification specifications of CS-P Amendment 2: CS-P 70, CS-P 210; CS-P 220 (b); CS-P 230;- CS-P 420, CS-P 430, CS-P 440.
2. When showing compliance with either CS-E 210 Failure Analysis or CS-E 510 Safety Analysis, as applicable, the applicant must consider the potential major and hazardous propeller effects as defined in CS-P 15 (d).

Associated Interpretative Material / Means of Compliance

The associated Interpretative Material / Means of Compliance is published for awareness only and is not subject to public consultation.

When showing compliance with the above Special Condition, the applicant should take into account AMC P 210, AMC P 220, AMC P 230, and AMC P 420 of CS-P Amendment 2.

AMC 20-1 Chapter 5 addresses the inter-relation between engine, propeller and aircraft certification of electronic control systems, like interface definition and distribution of compliance demonstration. The principles of this guidance document should also be considered for non-electronic control systems with propeller control system functions as part of the engine Type Certificate.

Additional Information Note

This Additional Information Note is published for awareness only and is not subject to public consultation.

For compliance to Part 21, procedures for coordination of certification and continued airworthiness related activities between engine, propeller and aircraft Type Certificate holders should be established. Part 21.A.239 Design assurance system, paragraph (c) refers to the related design organisational aspects.
In case the methods and disciplines used by the engine TC holders for demonstrating that the above mentioned specifications of CS-P can be fulfilled are already used for compliance demonstration to CS-E, no extension of the DOA scope would be required.