

ATM/ANS Equipment Certification Minor/Major changes (part2 - classification)

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Changes to equipment design – Classify changes as major

ATM/ANS.EQMT.CERT.020 Changes that require the issue of a new ATM/ANS equipment certificate

An approved design organisation that proposes changes to ATM/ANS equipment shall apply for the issue of a new certificate where the changes in the design or the functionality of that ATM/ANS equipment are so extensive that a complete investigation of compliance with the applicable certification basis is required.

(c) For that purpose, the holder of an ATM/ANS equipment certificate shall have a system in place to identify the scope of the changes to ATM/ANS equipment as 'minor' and 'major'.

- Changes implying needs for **significant reverification of compliance** of the functions are **Major** changes, and requires EASA reinvestigation.
 - Note : EASA PCM will consider the DPO information in change impact analysis of the Major change to define its Level of Involvement (LoI)
- DPO applicant's CMP will contain a Classification procedure that must introduce criteria to classify changes as Minor/Major
- These criteria should be tailored and refined for each type of DS function

AMC to Changes to equipment design – Generic Criteria to classify changes as major



AMC1 DPO.OR.B.005(b) Change management

ATN Practice Doc 10034.0005(b)

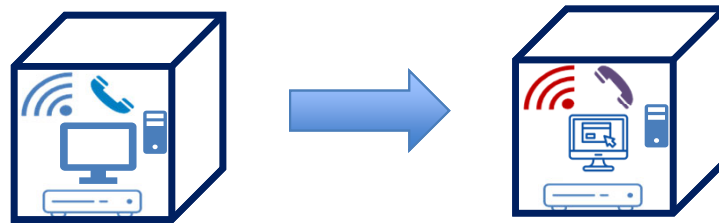
- (b) The change is classified as major when:
- (1) the change includes one of the following evolutions:
 - (i) new concept of operation of the equipment;
 - (ii) new technologies or techniques used in the ATM/ANS equipment development (e.g. used in design or verification);
 - (iii) changes to the ATM/ANS equipment that could significantly impact its functions and its reverification;
 - (iv) changes to the software that significantly impact a software function and induce subsequent reverification and reinvestigation;
 - (v) changes to the hardware that significantly impact a hardware function and induce subsequent reverification and reinvestigation; or
 - (vi) modified ATM/ANS equipment architecture

*High Level means of compliance
for the Minor/Major classification*

- DPO must define Criteria to be used in its classification procedure, refined to the DPO scope of work (type of DS functions) and to a level of detail sufficient to support its Design team to classify design changes.
- Major classification is related to the design content (inner part) of the equipment and impact on a signification reverification. Impact of changes on the installer is not the only driver.
- Note: the anticipation of design changes in the certification program should be established in consistency with the classification procedure

Some generic examples

- significant redesign of equipment, with no changes in inputs/outputs and functions → is Major



- light change in redesign adding a new interface with no consequence on DSs → could be Minor
- change a connector with no consequence on DSs → could be Minor
- adding a new function to DSs is Major

More examples – just for illustration

- New technology:
 - Change of interface protocol in Datalink : Major
 - “use of AI” by equipment would potentially call for EASA specific “Special Conditions”: Major
- Change of SW function
 - Bug fix on a specific function, not affecting the overall operations of SW functions : could be minor
 - Add a new SW monitoring to make an existing function more robust (no or just a few DS requirements impacted): could be minor
 - Add a new SW function from DS / redesign SW architecture and interfaces : Major
 - SW Changes inducing 60% of modified/new SW requirements : Major
- Change of Hardware HW function
 - Complete design change of HW computing solution for FDP : could be Major
 - Change to a new revision of HW computing solution, with same processor family : could be minor

AMC to Changes to equipment design – Criteria to classify changes



AMC1 DPO.OR.B.005(b) Change management

- (2) the change introduces the need to add requirements to or remove requirements from:
 - (i) the previously approved certification basis (for ATM/ANS equipment subject to certification); or
 - (ii) the detailed specifications referred to in the declaration (for ATM/ANS equipment subject to declaration of design compliance); for instance, addition or removal of a function addressed in the detailed specifications;
- (3) the change introduces a new limitation to or a new deviation from:
 - (i) the previously approved certification basis (for ATM/ANS equipment subject to certification); or
 - (ii) the detailed specifications referred to in the declaration (for ATM/ANS equipment subject to declaration of design compliance); and

- When changes imply adding/removing requirements from the Certification Basis, then are “Major”
- When changes require new limitations or new deviations, then are “Major”

Remember

- DPO applicant's Classification in the change management procedure must introduce criteria to classify changes as Minor/Major
- These criteria should be developed and refined for each type of DS function. EASA expects to have 3 cases
 - Changes clear as Minor
 - Changes clear as Major
 - Changes in a **grey zone**, where DPO apply the classification criteria but can be arguable in both sides: DPO may call for presentation and discussion to seek EASA's views.
- DPO has the privilege to perform Minor changes without pre-authorization of EASA, but need to be communicated in any case
- EASA may disagree when review it and may require a reclassification of the changes

Changes to design of Art. 5 equipment (DEC) follow same principles

ATM/ANS.EQMT.DEC.020 Changes to the declaration of ATM/ANS equipment design

(a) An approved organisation involved in the design of ATM/ANS equipment may make changes to the design that are within the scope of the approved organisation's privileges. In this case, the changed equipment shall keep its original part number.

MINOR



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(b) Any change to the design that is within the scope of the approved organisation's privileges and that is extensive enough to require a complete investigation in accordance with point ATM/ANS.EQMT.AR.B.020 to determine its compliance shall require the assignment of a new model designation to the equipment.

MAJOR

AMC1 DPO.OR.B.005(b) Change management

ED Decision 2024/002/R

Classification criteria are shared with Certification

- Privilege of the DPO to perform minor changes
- DPO change management procedure include classification minor/major, including criteria applied to its scope of work
- For a given equipment, DPO includes the provision for **anticipated minor changes in the 'DDC'** applied to the specific associated equipment
- When performing a minor change, **DDC is updated to a newer revision** to reflect the minor change in the design of such equipment
- DPO communicate these changes to EASA

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