

ANNEX C – Boundaries between Category B (Specific) and Category C (Certified)

The categorization principle adopted by JARUS for UAS operations states that UAS categories are qualitatively determined by the level of risks that the operation poses to other aircraft, people, and structures on the ground, as described in the following figure. In some cases, the UAS operation may not require certification if risks are sufficiently mitigated and the operation can be executed without certification under applicable regulations.

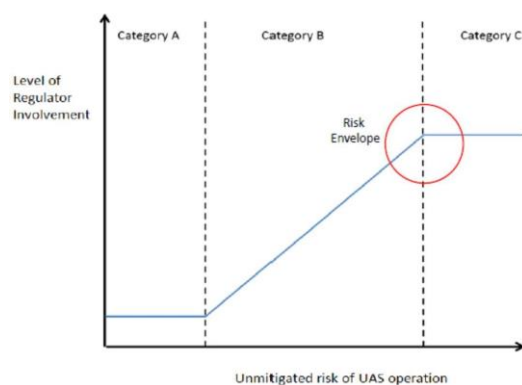


Figure 1 – Cat A, B and C boundaries

The aim of this Annex is to define criteria to establish the differentiation between Category B (“Specific”) and Category C (“Certified”) UAS operations. It is important to distinguish Category B operations, which have almost the same level of regulator involvement, from Category C operations which have slightly greater involvement in order to clearly set expectations related to how regulators are involved in the approval of an operation. It should be noted that in a Cat C operation requires all aspects to be certified while in a Cat B operation some aspects (e.g., the aircraft) may need to be certified to manage risk. In addition, this boundary facilitates the clear distinction between those operations which are subject to domestic frameworks and those which may need to align with international expectations such as ICAO RPAS operations. In this context defining a boundary between operations is achieved by providing means and procedures to assess or evaluate the risks posed by an UAS operation, in order to state whether it may be considered in Cat. B or in Cat. C.

This is achieved with the following assumptions:

- (i) National / regional UAS Regulation may specify a type of operation, or the specific characteristics of an operation, such that its risks are considered high and therefore the operation must be certified (Cat. C) by the competent aviation authority; e.g.: passenger-carrying operations. There may be other cases, explicitly identified by the applicable National/regional regulation (following national regulatory development processes), where the operation must be certified. These types of operation are therefore recognized as high-risk operation and fall automatically into Cat. C. Other types of operation may fall into Cat. C after a holistic hazard and risk assessment has been performed (see below).
- (ii) High risk operations, whenever assessed and recognized to be so, are considered to be Cat. C, by definition. This implies that a holistic total hazard and risk assessment

- methodology or tool is available and recognized by the Authority, to be used to assess the holistic risk of an operation. This does not exclude possible delegation of some certification or oversight tasks to independent, accredited and competent third parties.
- (iii) Cat. A boundaries are clearly defined. This is typically achieved by regulation (e.g., the EU regulation) through defining precise technical and operational parameters, including pilot competence, to be respected by the operator.
 - (iv) In the B category, the risk increases from a level comparable to Cat. A to a level almost equivalent to Cat. C. Therefore the mechanisms for verification of compliance in Cat. B may vary. This includes but is not limited to declarative standard scenarios, predefined risk assessments subject to an operational authorization, and/or verification by an independent, accredited, and competent third party.
 - (v) The Authority can always assess and judge whether the risks of an operation, as obtained from a risk assessment, are high enough to classify the operation a Cat. C operation, or if the operational risks are low enough for the operation to be considered Cat. B.

The procedure to assess whether an operation falls into Cat. B or Cat. C, based on the above assumptions, is shown in the following flowchart and described below (Figure 2).

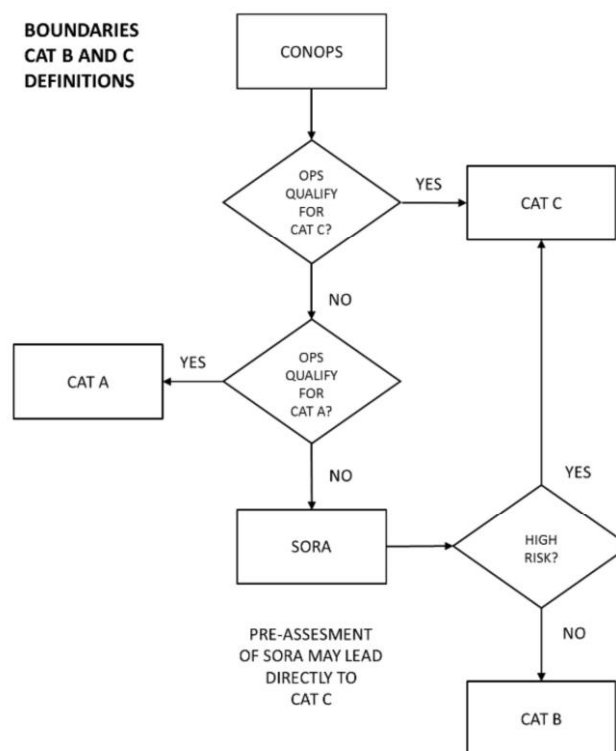


Figure 2 – Boundaries between Cat. B and Cat. C flowchart

Step 1

Analyse the ConOps to understand the type of the operation, its scope(s), its main characteristics and the hazards it poses to third parties on ground, in the air and on critical infrastructure (as defined by the Authority)

Step 2

Answer the question: *“Does the operation qualify for Cat. C?”*. Check the applicable national or regional regulation to verify if the type of operation or any of its characteristics are such that the operation must be certified by law. E.g., international cross-border operations, flights carrying persons, dangerous goods, risks of the operation cannot be mitigated without certification of the UAS and/or operator, etc. If this is the case the operation is considered Cat. C, otherwise go to Step 3.

Step 3

Answer the question: *“Does the operation qualify for Cat. A?”*. Check applicable National or regulation to check whether the characteristics of the UA and the operation are encompassed within a Subcategory of the Cat. A. E.g., in EU: A1, A2, A3. If this is the case the operation is considered Cat. A, otherwise go to Step 4.

Step 4

Run a holistic total hazard and risk assessment on the operation based on the ConOps, by using criteria, methodologies and tool recognized by the Authority. Go to Step 5.

Step 5

Answer the question: *“Are the risks associated with a loss of control during the UAS operation high?”*. Evaluate the outcome of the risk assessment coming from Step 4. If the outcome of the risk assessment is **not** *“high risk”*, and the Authority concurs, then the operation is considered Cat. B. If the outcome of the risk assessment is *“high risk”*, and the Authority concurs, then the operation is considered Cat. C.