SUBJECT	:	**RPAS Ancillary elements – Arresting cable system**
CERTIFICATION SPECIFICATION	:	CS-VLA
PRIMARY GROUP / PANEL	:	4 (HM Systems) and 3 (Structure)
NATURE	:	Special Condition

This Special Condition and the related AMC are applicable to any RPAS:

- for which a type certification is requested,
- for which the kinetic energy assessment in accordance with section 6 of the EASA policy E.Y013-01 results in an initial certification basis according to CS-VLA,
- with no occupant on board, and
- for which an arresting cable in the runway and a hook in the RPA is used instead of a conventional braking system.

Identification of issue

This Special condition is applicable to RPAS not fitted with a conventional braking system (brakes on wheels). To provide the RPA with the required deceleration after landing or in a rejected take off event, a cable is used as barrier in the runway and a hook is fitted on the RPA and both elements are part of the RPAS design.

As this feature is not considered in the CS-VLA, arresting cable and hook are not considered in CS-VLA regarding brake energy absorption requirements on wheels and therefore a Special Condition is established to ensure safe operation for Landing and Rejected Take-off phases.

SPECIAL CONDITION

RPAS Ancillary elements – Arresting cable system

(a) The design of barrier system shall be able to absorb maximum kinetic energy necessary to stop the RPA following a rejected take-off or landing for standard temperatures at maximum weight and altitude within the operational limits established.

(b) The accelerate-stop Distance or Critical Field Length must be determined as follows: For single engine RPA, the accelerate-stop distance is the sum of the distances necessary to:

(1) Accelerate the RPA from a standing start to VRf with engine operating;
(2) Come to a full stop from the point at which VRf is reached and arresting cable is caught.

(c) Means other than wheel-brakes may be used to determine the critical field length if that means

(1) Is safe and reliable; and

(2) Is used so that consistent results can be expected under normal operating conditions; and

(3) Provides that all wheels remain on the ground during braking.

(d) The following shall be included in the ground roll calculation

(1) Engine spool down characteristics

(2) System and RPAS crew reaction time to sense a failure and make the appropriate response to the failure.

(e) The design of any arrestor system shall ensure that it retards the air vehicle without imparting forces and accelerations in excess of those for which its airframe and internal equipment are designed.

(f) Design of arresting hook must be determined according safety objective. Landing or rejected take-off must be made without excessive tendency to bounce, porpoise or nose-over. Structural capability of arresting hook must demonstrated under worst adverse conditions.

ANNEX, Appendix 1 Acceptable Means of Compliance to SC-RPAS Ancillary elements – Arresting cable system

(b) Accelerate-stop Distance or Critical Field Length

RPAS crew and system response delays should be considered as part of the Accelerate-stop distance or Critical Field Length calculation.