

Hereafter there are some examples on how parts of a test campaign should typically be classified. In case of any doubt contact the Agency:

Category 1

#	CAT 1 Flight Test	Justification (3.1. Annex XII Part 21 unless stated)
1	H-V diagram determination	<i>(b) Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known;</i> GM, Annex to ED Decision 2015/026/R
2	Category A engine failures	<i>(b) Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known;</i> <i>(d) Flights to determine or expand the flight envelope;</i> REMARK: As a matter of fact, this activity is aimed to determine the Cat A take-off and landing envelope GM, Annex to ED Decision 2015/026/R
3	Flights to determine the Power ON and Power OFF V _{NE} envelopes for a new type or a significantly modified aircraft.	<i>(d) Flights to determine or expand the flight envelope;</i> <i>(b) Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known;</i>
4	Engine Failure Controllability	<i>(b) Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known;</i>
5	Icing Testing (for both Limited and Full Icing Approval)	<i>(b) Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known;</i> GM, Annex to ED Decision 2015/026/R “Upon determination, aircraft handling and performance in conditions where at least one of the following parameters is approaching the actual limits of the aircraft envelope: altitude, attitudes, weights, CG, speed/Mach, stalls, temperature , engine and aerofoil performance.”

#	CAT 1 Flight Test	Justification (3.1. Annex XII Part 21 unless stated)
6	<p>Hot and High / Cold Weather trials These include: - IGE & OGE controllability in hot & high conditions - Cold soak testing - Takeoff and landing envelope determination</p>	<p><i>(e) Flights to determine the regulatory performances, flight characteristics and handling qualities when flight envelope limits are approached;</i> GM, Annex to ED Decision 2015/026/R <i>“Upon determination, aircraft handling and performance in conditions where at least one of the following parameters is approaching the actual limits of the aircraft envelope: altitude, attitudes, weights, CG, speed/Mach, stalls, temperature, engine and aerofoil performance.”</i></p>
7	<p>Maximum Rotor Mach Number determination</p>	<p><i>(b) Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known;</i></p>
8	<p>Automatic Flight Control System (AFCS) Failure Testing. Including hardover, runaway, etc.. (CS 2x.1309)</p>	<p><i>(b) Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known;</i> <i>(d) Flights to determine or expand the flight envelope;</i></p>
9	<p>Handling Qualities and Performance flights at maximum cruise altitude</p>	<p><i>(d) Flights to determine or expand the flight envelope;</i> <i>(e) flights to determine the regulatory performances, flight characteristics and handling qualities when flight envelope limits are approached;</i> GM, Annex to ED Decision 2015/026/R <i>“Upon determination, aircraft handling and performance in conditions where at least one of the following parameters is approaching the actual limits of the aircraft envelope: altitude, attitudes, weights, CG, speed/Mach, stalls, temperature, engine and aerofoil performance.”</i></p>
10	<p>Ground Resonance tests on a new type or a significantly modified aircraft.</p>	<p><i>(b) Flights during which it can be envisaged to potentially encounter flight characteristics significantly different from those already known;</i></p>

#	CAT 1 Flight Test	Justification (3.1. Annex XII Part 21 unless stated)
11	Determination or expansion of the aircraft envelope following a cargo hook or hoist installation.	<p><i>(d) Flights to determine or expand the flight envelope;</i></p> <p>GM, Annex to ED Decision 2015/026/R</p> <p>“Where the embodiment of new systems is anticipated to significantly affect the aircraft’s handling or performance characteristics “</p>

Category 2

#	CAT 2 Flight Test	Justification (3.2. Annex XII Part 21 unless stated)
1	Performance Based Navigation testing	<p><i>(b) Flights ...after embodiment of a not yet approved modification and which:</i></p> <p><i>(ii) require an assessment of the basic crew procedures when a new or modified system is operating or is needed;</i></p>
2	NVIS testing for initial approval or lighting modification with major impact on NVIS capability	<p><i>(b) Flights ...after embodiment of a not yet approved modification and which:</i></p> <p><i>(ii) require an assessment of the basic crew procedures when a new or modified system is operating or is needed;</i></p> <p>NOTE: for more information reference NVIS CM-FT-001.</p>
3	Workload IFR/VFR flights for minimum crew determination	<p><i>(b) Flights ...after embodiment of a not yet approved modification and which:</i></p> <p><i>(ii) require an assessment of the basic crew procedures when a new or modified system is operating or is needed;</i></p>
4	AFCS performance flights following for example: - Change or installation of an AFCS. - FMS new installation or modification.	<p><i>(b) Flights ...after embodiment of a not yet approved modification and which:</i></p> <p><i>(i) Require an assessment of the general behaviour of the aircraft; or</i></p> <p>GM, Annex to ED Decision 2015/026/R</p> <p>Systems tests of autopilot (...), when the modes themselves are tested, requiring operating the aircraft by deviating from the standard operational procedures. Additionally, in the case of embodiment of such systems on an already certified aircraft, when the system integration in an existing cockpit requires a more global crew procedure assessment (...).</p>

#	CAT 2 Flight Test	Justification (3.2. Annex XII Part 21 unless stated)
	- Invasive external installation affecting in a significant way the aerodynamics of the helicopter.	
5	Function and Reliability Flights as required by Part21A.35	GM, Annex to ED Decision 2015/026/R REMARK: These are flight tests carried out before TC issuance
6	Pitot static system calibration for an aircraft not yet certified	<i>(a) Flights not classified as Category 1 on an aircraft whose type is not yet certified;</i>
7	Flights for initial or post mod validation of Emergency/Normal procedures which significantly modify the approved Flight Manual	<i>(a) Flights not classified as Category 1 on an aircraft whose type is not yet certified;</i> <i>(b) Flights ...after embodiment of a not yet approved modification and which:</i> <i>(ii) require an assessment of the basic crew procedures when a new or modified system is operating or is needed;</i>
8	Noise tests for a new type	<i>(a) Flights not classified as Category 1 on an aircraft whose type is not yet certified;</i> REMARK: These are flight tests carried out before TC issuance
9	Powerplant cooling tests	GM, Annex to ED Decision 2015/026/R <i>"The flight test envelope has already been opened and it has been demonstrated that the general behaviour of the aircraft is adequately safe and there are no unsafe flight characteristics"</i>
10	Engine Installation losses measurement	GM, Annex to ED Decision 2015/026/R <i>"The flight test envelope has already been opened and it has been demonstrated that the general behaviour of the aircraft is adequately safe and there are no unsafe flight characteristics"</i>

#	CAT 2 Flight Test	Justification (3.2. Annex XII Part 21 unless stated)
11	HMI evaluation following Terrain Awareness and Warning System (TAWS) – System integrated in the cockpit	<p>GM, Annex to ED Decision 2015/026/R</p> <p>Systems tests of guidance/warning systems such as Terrain Awareness and Warning System (TAWS) (...), when the modes themselves are tested, requiring operating the aircraft by deviating from the standard operational procedures. Additionally, in the case of embodiment of such systems on an already certified aircraft, when the system integration in an existing cockpit requires a more global crew procedure assessment — for example, when the system has been integrated in cockpit screens and a centralised warning system which requires a new cockpit procedure assessment (...).</p> <p>REMARKS/CLARIFICATIONS:</p> <ul style="list-style-type: none"> - A deviation of the standard operational procedures exists when (part of) the flight test is performed outside of the approved envelope of height and speed - If none of the above conditions apply, it can be classified as Category 4
12	HMI evaluation of TCAS I or TCAS II systems integrated in the cockpit, or a TCAS II in an IFR aircraft	<p><i>(b) Flights ...after embodiment of a not yet approved modification and which:</i></p> <p><i>(ii) require an assessment of the basic crew procedures when a new or modified system is operating or is needed;</i></p> <p>GM, Annex to ED Decision 2015/026/R</p> <p>Systems tests of guidance/warning systems such as (...) Airborne Collision Avoidance System (ACAS), when the modes themselves are tested, requiring operating the aircraft by deviating from the standard operational procedures. Additionally, in the case of embodiment of such systems on an already certified aircraft, when the system integration in an existing cockpit requires a more global crew procedure assessment — for example, when the system has been integrated in cockpit screens and a centralised warning system which requires a new cockpit procedure assessment (...).</p> <p>REMARKS/CLARIFICATIONS:</p> <ul style="list-style-type: none"> - A deviation of the standard operational procedures exists when (part of) the flight test is performed outside of the approved envelope of height and speed <p>If none of the above conditions apply, it can be classified as Category 4</p>

#	CAT 2 Flight Test	Justification (3.2. Annex XII Part 21 unless stated)
13	Performance, Handling Qualities and Load survey following an external installation like a Camera/ FLIR / search light (SX16, Trakka etc.) or external modifications (e.g. weather radar radome, bubble window)	<p><i>(b) Flights ...after embodiment of a not yet approved modification and which:</i></p> <p><i>(i) Require an assessment of the general behaviour of the aircraft; or</i></p> <p>This applies when an engineering assessment shows that there is no potential encounter of flight characteristics significantly different from those already known; Otherwise it must be classified as Category 1.</p>
14	Replacement of a conventional cockpit with a glass cockpit avionics suite	<p><i>(b) Flights ...after embodiment of a not yet approved modification and which:</i></p> <p><i>(ii) require an assessment of the basic crew procedures when a new or modified system is operating or is needed;</i></p>

Category 3

CAT 3 Flight Test	Justification (3.3. Annex XII Part 21 unless stated)
Production Flight	<i>Flights performed for the issuance of statement of conformity for a new-built aircraft which do not require flying outside of the limitations of the type certificate or the aircraft flight manual.</i>

Category 4 (flight tests for a type not yet certified cannot be classified as Category 4)

#	CAT 4 Flight Test	Justification (3.4. Annex XII Part 21 unless stated)
1	Functional evaluation and EMI following a simple and stand-alone avionic installation (e.g. radio, ELT, SATCOM, GSM phones, FLARM, FLOICE, weather radar, transponder)	GM, Annex to ED Decision 2015/026/R — <i>good functioning test only is required; and</i> — <i>there is no need to fly the aircraft outside the AFM limitations.</i>
2	Functional evaluation following Terrain Awareness and Warning System (TAWS) or Airborne Collision Avoidance System (ACAS) – System not integrated in the cockpit and not coupled to the AFCS	GM, Annex to ED Decision 2015/026/R If the “ <i>flight test is performed in a domain corresponding to the normal operation of the aircraft</i> ” in terms of height, speed, and combination of both
3	Functional evaluation and EMI following: <ul style="list-style-type: none"> - Cabin entertainment installation - Cabin new configuration or new interiors installations - Internal public address system 	GM, Annex to ED Decision 2015/026/R — <i>good functioning test only is required; and</i> — <i>there is no need to fly the aircraft outside the AFM limitations.</i>

#	CAT 4 Flight Test	Justification (3.4. Annex XII Part 21 unless stated)
4	Functional evaluation following avionic equipment replacement without additional functionalities	<p>GM, Annex to ED Decision 2015/026/R</p> <ul style="list-style-type: none"> — <i>good functioning test only is required; and</i> — <i>there is no need to fly the aircraft outside the AFM limitations.</i> <p>An example would be a replacement of a GNSS receiver, attitude indicator, moving map (in a VFR helicopter), radar altimeter, transponder, etc.</p>
5	Pitot static calibration following a dynamic or static port relocation without any external modification	<p>GM, Annex to ED Decision 2015/026/R</p> <ul style="list-style-type: none"> — <i>good functioning test only is required; and</i> — <i>there is no need to fly the aircraft outside the AFM limitations.</i> <p><i>Without the use of techniques such as pace vehicle or trailing bomb that require an adequate flight test training</i></p>
6	Avionics cooling tests on an already certified aircraft	<p>GM, Annex to ED Decision 2015/026/R</p> <ul style="list-style-type: none"> — <i>good functioning test only is required; and</i> — <i>there is no need to fly the aircraft outside the AFM limitations.</i>
7	NVIS evaluation following a change which has a minor effect on an already NVIS approved cockpit	<p>GM, Annex to ED Decision 2015/026/R</p> <ul style="list-style-type: none"> — <i>good functioning test only is required; and</i> — <i>there is no need to fly the aircraft outside the AFM limitations .</i>