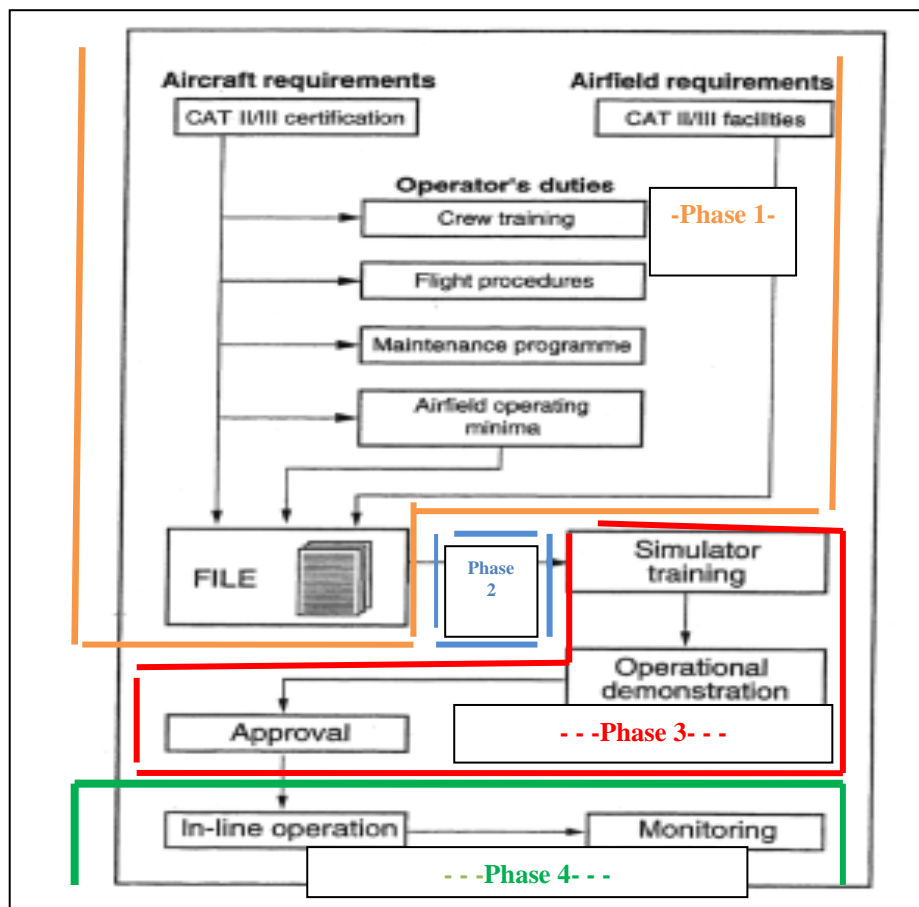




ΑΙΤΗΣΗ ΓΙΑ ΠΙΣΤΟΠΟΙΗΣΗ LVO

Application Form for LVO Approval
(Airworthiness & Operational Approval Conformance Document)

REFERENCES	ISSUE DATE	TITLE
Reg. (EU) No 965/2012 (As Amended)	10 October 2012	SUBPART E: LOW VISIBILITY OPERATIONS (LVO)
ICAO 9365		MANUAL OF ALL –WEATHER OPERATIONS



Approval to conduct LVO will be performed in 3 phases (an additional Phase 4 refers to Continuous monitoring by Operator/HCAA of Low Visibility Operations :

Phase 1: Begins when the operator formally submits a CAT II and/or CAT III application for HCAA evaluation.

Phase 2: HCAA evaluates the formal submission for compliance and approves necessary CAT II/III training, manual revisions, etc;

Phase 3: Phase Three is referred to as the Operator ability to conduct CAT II/III operations in accordance with the application evaluated in Phase Two and is the line with operational evaluation of the operator's application including Trainings/Demonstration Flights/ Checks and periodic reviews etc Ends with HCAA approval

Phase 4: Continuous monitoring by Operator/HCAA of low visibility operations (AMC3 SPA.LVO.105 LVO approval (a)-(b)-(c)).

1. Applicant / Operator			
Name			
Address			
Tel		e-mail	
Contact person			
Number of e-paravolo (fee) <i>(if applicable)</i> :			
Date of Submission :			
2. Aircraft			
Aircraft Type			
Aircraft S/N		Aircraft Registration	
3. Applicant request for (*)			
LTS CAT I	YES <input type="checkbox"/>	SPA.LVO.110(a)	
Requested DH: RVR:.....		AMC3 SPA.LVO.100 (a)	
Approval for CAT II	YES <input type="checkbox"/>	SPA.LVO.110(b)	
Requested DH:RVR:.....		AMC4 SPA.LVO.100 (a)	
OTS CAT II SPA.LVO.110	YES <input type="checkbox"/>	SPA.LVO.110(b)	
Requested DH: RVR:.....		AMC4 SPA.LVO.100 (B)	
Approval for CAT IIIa	YES <input type="checkbox"/>	SPA.LVO.110(b)	
Requested DH: RVR:.....		AMC5 SPA.LVO.100 (a-b-c)	
Approval for CAT IIIb	YES <input type="checkbox"/>	SPA.LVO.110(b)	
Requested DH:RVR:.....		AMC5 SPA.LVO.100 (a-b-c)	
LVTO			
-Approval for LVTO lower than 400m RVR to 150m RVR	YES <input type="checkbox"/>	AMC1 SPA.LVO.100 (a)	
-Approval for LVTO between 150m to 125m RVR	YES <input type="checkbox"/>	AMC1 SPA.LVO.100 (b)	
-Approval for LVTO between 125m to 75m RVR	YES <input type="checkbox"/>	AMC1 SPA.LVO.100 (c)	
Approach operations utilising an EVS	YES <input type="checkbox"/>	SPA.LVO.110(c)	
4.Applicant previous experience in CAT II or CAT III (*)			
4.1 Operators with no previous CAT II or CAT III experience should demonstrate to HCAA that it has gained a minimum experience of 6 months of CAT I operations on the aircraft type. Operator to refer experience gained in months :			
AMC4 SPA.LVO.105 LVO approval			
4.2 Applicant has to refer to previous experience gained with the requested aircraft type mentioning number of Approaches performed . CAT II Approaches: CAT IIIa Approaches: CAT IIIb Approaches:.....			
Yes <input type="checkbox"/> No <input type="checkbox"/>			
4.3 Applicant has to refer to proposed number of approached that will be performed during the Demonstration Flights (Phase 3) Proposed number of Approaches :.....			
Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>			
4.4 The operator should establish a reporting system to enable checks and periodic reviews to be made during the operational evaluation period before the operator is approved to conduct CAT II or III operations. AMC2. SPA.LVO.105 LVO(b)(1) approval			
4.5 The operator should establish a reporting system to enable checks and periodic reviews to be made during the operational evaluation period before the operator is approved to conduct CAT II or III operations. AMC2 SPA.LVO.105 (b) (2) LVO approval			
PART 1 Airworthiness			
SPA.LVO.110 General operating requirements (b) The operator shall only conduct CAT II, OTS CAT II or CAT III operations if: (1) each aircraft concerned is certified for operations with a decision height (DH) below 200 ft, or no DH, and equipped in accordance with the applicable airworthiness requirements;			
5.Type Design Approval (*)			
5.1 The AWO type design approval is reflected in: (*)			
Type Certificate	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Type Certificate Data sheet	Yes <input type="checkbox"/>	No <input type="checkbox"/>	

AFM	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Supplement Type Certificate	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
AFM supplement	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Service Bulletin	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Service Letter	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Other (specify)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
HCAA Note: Applicant to attach the evidence			
Aircraft flight control system is certified as : Fail-passive flight control system : Yes <input type="checkbox"/> Fail –operational : Yes <input type="checkbox"/> <div style="text-align: right;">HCAA Note: Applicant to attach the evidence</div>			
5.2 Maintenance program (*)			
Applicant has to submit sections of the approved Maintenance Program (AMP) related to LVO systems for the aeroplane Yes <input type="checkbox"/> Maintenance instructions for the Category II or III autoland equipment must be incorporated by the operator and included in the Approved Maintenance Program (AMP) for the aeroplane. <div style="text-align: right;">AMC5 SPA.LVO.105 LVO approval</div>			
5.3 MEL (*)			
Applicant has to submit sections of the approved MEL related to LVO systems for the aeroplane Yes <input type="checkbox"/> Minimum Equipment List (MEL) must be clearly identify the equipments/systems that must be installed and serviceable at the commencement of a Low Visibility Take Off or a Category II or III . (a) The operator shall include the minimum equipment that has to be serviceable at the commencement of an LVO in accordance with the aircraft flight manual (AFM) or other approved document in the operations manual or procedures manual, as applicable. (b) The pilot-in-command/commander shall be satisfied that the status of the aircraft and of the relevant airborne systems is appropriate for the specific operation to be conducted. <div style="text-align: right;">SPA.LVO.130 Minimum equipment</div>			
5.4 Periodic operational sampling (**)			
Procedures for periodic maintenance of systems ground check, and systems flight check, as applicable. For example, following a heavy maintenance, suitable checks may need to be performed prior to return to service			
5.5 Defects Monitoring (**)			
Action for non-compliant aeroplane (downgrading, technical log entries, corrective actions, placarding, upgrading, release to service procedures, monitoring and reporting of repetitive defects, reliability reporting, reporting to the NAA, etc.).			
5.6 Continuous Monitoring of LVO Operations/ Reliability of LVO systems (**)			
Applicant has to refer to the related procedure on how the LVO operations is continuously monitored to detect any undesirable trend. The data to be collected and utilised is : (a):The total number of approaches, by aeroplane type where a Category II or III approach/landing was made satisfactorily whether or not it was an actual or practice approach. (b):Reports of unsatisfactory approaches/landings by aerodrome and aeroplane registration and categorised into - (a) airborne equipment fault, (b) ground facility problem - (c) missed approach due to ATC instruction and - (d) other reasons. <div style="text-align: right;">AMC3 SPA.LVO.105 LVO approval (b) 1-2</div>			
-A suitable system for recording approach and/or automatic landing success and failure is established and maintained to monitor the overall safety of the operations; <div style="text-align: right;">SPA.LVO.110 (b) (2) General operating requirements</div>			

Part 2 Operation	
SPA.LVO.105 LVO approval	
To obtain an LVO approval from the competent authority, the operator shall demonstrate compliance with the requirements of this Subpart. (SUBPART E: LOW VISIBILITY OPERATIONS).	
6.1 Operation Manual procedures and instructions to be used for LVOs . (**)	
The operator shall establish procedures and instructions to be used for LVOs. These procedures and instructions shall be included in the operations manual or procedures manual and contain the duties of flight crew members during taxiing, take-off, approach, flare, landing, rollout and missed approach operations, as appropriate.	
SPA.LVO.125 Operating procedures AMC1 SPA.LVO.125 Operating procedures (b)(1)	
The instructions should be compatible with the limitations and mandatory procedures contained in the AFM and cover the following items in particular:	
(i) checks for the satisfactory functioning of the aircraft equipment, both before departure and in flight; (ii) effect on minima caused by changes in the status of the ground installations and airborne equipment; (iii) procedures for the take-off, approach, flare, hover, landing, rollout and missed approach; (iv) procedures to be followed in the event of failures, warnings to include HUD/HUDLS/EVS and other non-normal situations; (v) the minimum visual reference required; (vi) the importance of correct seating and eye position; (vii) action that may be necessary arising from a deterioration of the visual reference; (viii) allocation of crew duties in the carrying out of the procedures according to (b)(2)(i) to (iv) and (vi), to allow the pilot-in-command/commander to devote himself/herself mainly to supervision and decision making; (ix) the rule for all height calls below 200 ft to be based on the radio altimeter and for one pilot to continue to monitor the aircraft instruments until the landing is completed; (x) the rule for the localiser sensitive area to be protected; (xi) the use of information relating to wind velocity, wind shear, turbulence, runway contamination and use of multiple RVR assessments; (xii) procedures to be used for: (A) LTS CAT I; (B) OTS CAT II; (C) approach operations utilising EVS; and (D) practice approaches and landing on runways at which the full CAT II or CAT III aerodrome procedures are not in force; (xiii) operating limitations resulting from airworthiness certification; and (xiv) information on the maximum deviation allowed from the ILS glide path and/or localiser.	
AMC1 SPA.LVO.125 Operating procedures (b)(2)	
OM – B Chapter 2 “Normal Procedures”	
LVO Abnormal procedures	
LVO Aerodrome considerations	
6.3 Flight Crew qualifications (**)	
The operator shall ensure that, prior to conducting an LVO each flight crew member:	
(1) complies with the training and checking requirements prescribed in the operations manual, (2) is qualified in accordance with the standards prescribed in the operations manual; (3) the training and checking is conducted in accordance with a detailed syllabus.	
Yes <input type="checkbox"/> No <input type="checkbox"/>	
SPA.LVO.120 Flight crew training and qualifications	
6.4.Training (O.M. Part D) (**)	
The Operation Manual (O.M. Part D) to contain the following topics	
-General (as per AMC1 SPA.LVO.120 (a))	
-Ground training (as per AMC1 SPA.LVO.120 (b))	
-Flight simulator training and/or flight training (as per AMC1 SPA.LVO.120 (c))	
-Conversion training (as per AMC1 SPA.LVO.120 (d))	
-Type and command experience (as per AMC1 SPA.LVO.120 (e))	
-Low visibility take-off RVR lower than 400m(as per AMC1 SPA.LVO.120 (g))	
-Recurrent training and checking (as per AMC1 SPA.LVO.120 (f))	
-Additional training (as per AMC1 SPA.LVO.120 (h))	
6.5 Operational Demonstration (**)	
Applicant to define:	
- Number of approaches and landings as defined in AMC1 SPA.LVO.105 LVO approval (a) and (b)	

- The Transitional Periods for operators without previous CAT II/III experience (AMC4 SPA.LVO.105 LVO approval) -Data collection and data analysis for operational demonstrations as defined in AMC1 SPA.LVO.105 LVO approval (c) and (d) and the form used to collect approaches data. SPA.LVO.105 LVO approval	
Continuous Monitoring of all aircraft (**)	
Applicant to define how the requirement for continuous monitoring of LVO to detect any undesirable trends before they become hazardous is accomplished . AMC3 SPA.LVO.105 LVO (a) (b) approval	
6.5 Reporting (**)	
Does the applicant implemented procedures as per EU 376/2018 <div style="text-align: right;">Yes <input type="checkbox"/> No <input type="checkbox"/></div>	
7. Documents to be submitted	
The applicant has to refer to the attachments submitted with this application. : 1) e-paravolo (fee) (**) 2) Part of AFM/TCDS/SB (*) 3) Parts of Maintenance Program (*) 4) Parts of MEL (*) 5) The procedures for Operational Sampling (**) 6) Part of Operation Manual (**) 7) Reliability of LVO sytems (**) 8) Flight Crew qualifications (**) 9) Training requiremnts (**) 10) Procedures/Analysis/Forms used during operational demonstration phase (**) 11) LVO continuous Monitoring system (**) 12) Reporting procedures (**) <div style="text-align: right;">HCAA note: Operator to refer the parts submitted</div>	
8. Items marked with(*) or (**)	
Note 1: (*) Items marked with one asterisk the required evidence must be submitted for each aircraft applying for RVSM approval . Note 2 : (**) Items marked with two asterisks may not be submitted provided that the evidences required have been submitted to HCAA / D2 in a previous application for approval of the same type and have not been modified.	
9. Applicant Compliance statement	
I hereby declare that all documentation and information submitted have been verified and found in compliance with Regulation (EC) No EU 965 , its Implementing Rules and all other applicable requirements / procedures.	
Continuing Airworthiness Manager	
<u>(name)</u>	<u>(Signature)</u> <u>Date</u>
CAMO Quality Manager	
<u>(name)</u>	<u>(Signature)</u> <u>Date</u>
Flight Operation Manager	
<u>(name)</u>	<u>(Signature)</u> <u>Date</u>
Flight Training Manager	
<u>(name)</u>	<u>(Signature)</u> <u>Date</u>

Recent Experience and Crew Competence-Requirements
 Training Requirements

VM Notes

LVTO OPERATIONS TRAINING AMC1 SPA.LVO.120 (g)

The description in the Chapter "Introduction" must contain the information/value concerning Low Visibility Operation:

- Approved approach minima and the relevant RVR limits must be listed.

INTRODUCTION:

Abbreviations

A)

"Decision Height (DH)". Decision height is the wheel height above the runway elevation by which a go-around must be initiated unless adequate visual reference has been established and the aeroplane position and approach path have been assessed as satisfactory to continue the approach and landing in safety. In this manual, it refers to Height Above Threshold (HAT) which is defined as the theoretical height above the runway threshold elevation. HK.....

"Alert Height (AH)". The alert height is a specified radio height, based on the characteristics of the aeroplane and its fail-operational landing system. HK.....

"Fail-Passive flight control system". A flight control system is fail-passive if, in the event of a failure, there is no significant out-of-trim condition or deviation of flight path or attitude but the landing is not completed automatically. For a fail-passive automatic flight control system the pilot assumes control of the aeroplane after a failure. HK.....

"Fail-Operational flight control system". A flight control system is fail-operational if, in the event of a failure below alert height, the approach, flare and landing, can be completed automatically. In the event of a failure, the automatic landing system will operate as a fail-passive system. HK.....

"Lower than Standard Category I Operation". A Category I Instrument Approach and Landing Operation using Category I DH, with an RVR lower than would normally be associated with the applicable DH. HK.....

(18)

"Other than Standard Category II Operation". A Category II Instrument Approach and Landing Operation to a runway where some or all of the elements of the ICAO Annex 14 Precision Approach Category II lighting system are not available. HK.....

- LIFUS : Line Flying under Supervision

B) Phases to Approve applicant for LVO

B.1:Phase One:

Begins when the operator formally submits a CAT II and/or CAT III application for HCAA evaluation

B.2 Phase Two:

- HCAA evaluates the formal submission for compliance with the direction provided in this document, other safety-related documents and safe operating practices;
- When results of HCAA evaluation are unsatisfactory, return submission to the operator for correction and/or terminate the phase;
- Begin planning Phase Three;
- HCAA approves necessary CAT II/III training, manual revisions, etc;

When results of HCAA evaluation are satisfactory, proceed with Phase Three .

B.3 Phase Three :

Phase Three is referred to as the Operator ability to conduct CAT II/III operations in accordance with the application evaluated in Phase Two and is the line with operational evaluation of the operator's application.

B.4 Phase 4:

In Phase Four HCAA approves the operator's LVO program proposal. If the proposal is not approved or accepted, the operator is notified in Phase Two or Three. Approval is granted by issuance of operations specifications (to be incorporated together with the AOC "Ops Specs") and an Approval for LVO as applicable.

C. Applicant request Tables DH/RVR (AMC1 SPA.LVO.105 LVO approval)

Table 2: LVS CAT I operation minima

RVR/CMV vs. approach lighting system

DH (ft)	Class of light facility *			
	FALS	IALS	BALS	NALS
	RVR/CMV (m)			
200 – 210	400	500	600	750
211 – 220	450	550	650	800
221 – 230	500	600	700	900
231 – 240	500	650	750	1 000
241 – 249	550	700	800	1 100

*: FALS: full approach lighting system
 IALS: intermediate approach lighting system
 BALS: basic approach lighting system
 NALS: no approach lighting system

Table 3: CAT II operation minima RVR vs. DH

DH (ft)	Auto-coupled or approved HUDLS to below DH *	
	Aircraft categories A, B, C RVR (m)	Aircraft category D RVR (m)
100 – 120	300	300/350**
121 – 140	400	400
141 – 199	450	450

*: This means continued use of the automatic flight control system or the HUDLS down to a height of 80 % of the DH.

Table 4: OTS CAT II operation minima

RVR vs. approach lighting system

DH (ft)	Auto-land or approved HUDLS utilised to touchdown				
	Class of light facility				
	FALS		IALS	BALS	NALS
	Aircraft categories A – C	Aircraft category D	Aircraft categories A – D	Aircraft categories A – D	Aircraft categories A – D
	RVR (m)				
100 - 120	350	400	450	600	700
121 - 140	400	450	500	600	700
141 - 160	400	500	500	600	750
161 - 199	400	500	550	650	750

Table 5: CAT III operations minima

RVR vs. DH and rollout control/guidance system

CAT	DH (ft) *	Rollout control/guidance system	RVR (m)
IIIA	Less than 100	Not required	200
IIIB	Less than 100	Fail-passive	150**
IIIC	Less than 50	Fail-passive	125
IIIB	Less than 50 or no DH	Fail-operational ***	75

*: Flight control system redundancy is determined under CS-AWO by the minimum certified DH.

**: For aeroplanes certified in accordance with CS-AWO 321(b)(3) or equivalent.

***: The fail-operational system referred to may consist of a fail-operational hybrid system.

D. OPERATIONAL DEMONSTRATION – AEROPLANES

Operator without previous CAT II/ III experience

Type / DH	New airplane or new operator
Cat I	6 months *
Cat II	30 app.
Cat IIIA - <100ft but >= 50ft	30 app.
Cat IIIB - <100ft but >= 50ft	6 months */ 30 app.
Cat IIIB - < 50ft	6 months */ 100 app.
Cat IIIB - 0ft	6 months */ 100 app.

Operator with previous CAT II/III experience

Type / DH	New airplane and/or new to HCAA	New variant / new flight control /display sys.	New airplane and known HCAA	Cat II to Cat III
Cat I	n/a	n/a	n/a	n/a
Cat II	30 app.	15 app.	20 app.	n/a
Cat IIIA - <100ft but >= 50ft	30 app.	15 app.	20 app.	15 app.
Cat IIIB - <100ft but >= 50ft	30 app.	15 app.	20 app.	15 app.
Cat IIIB - < 50ft	100 app.	30 app.	50 app.	30 app.
Cat IIIB - 0ft	100 app.	30 app.	50 app.	30 app.

E. OPERATIONAL DATA COLLECTION (SAMPLE)

AMC1 SPA.LVO.105 LVO (c) Data collection

Auto-Approach and Auto-Land Performance

Aircraft Type _____

SECTION I. Complete All Items

A/C #	Captain	Employee #	
Airport	Runway	Conditions CAT I+ <input type="checkbox"/> CAT II <input type="checkbox"/> CAT III <input type="checkbox"/>	Wind Dir/Spd

The Auto-Approach Auto-Land was:

☐ Satisfactory ☐ Unsatisfactory

If unsatisfactory you must complete SECTION II

Auto-Land Touchdown Zone is 900 feet to 2400 feet down the runway, and within 27 feet of centerline.

Record Area of Touchdown with an X on Runway Depiction ----->

SECTION II. Complete ONLY if Auto-Approach or Auto-Land was UNSATISFACTORY

If the Approach was discontinued, it was due to:

- ☐ Airborne Equipment Failures
☐ Ground Facility Difficulties
☐ ATC Instructions
☐ Other (specify)

LOCALIZER (L/R) GLIDE SLOPE (H/L)

OUTER		MIDDLE		INNER	
<input type="checkbox"/> L	<input type="checkbox"/> H	<input type="checkbox"/> L	<input type="checkbox"/> H	<input type="checkbox"/> L	<input type="checkbox"/> H
R <input type="checkbox"/>	L <input type="checkbox"/>	R <input type="checkbox"/>	L <input type="checkbox"/>	R <input type="checkbox"/>	L <input type="checkbox"/>

If the autopilot was disconnected the altitude was

_____ ft MSL

Other Comments: _____