

**Checklist low visibility operations/operations with operational credits approval (SA
CAT I, CAT II, SA CAT II, CAT II, LVTO with an RVR<400 m)(SPA.LVO)**

Operator⁽¹⁾		
Aircraft type/variant		
Ref.		
Inspectors	(Name/signature)⁽²⁾	Date
Principal Operations Inspector (POI)		
Flight Operations Inspector (FOI)		
Airworthiness Operations Inspector (AWI)		

⁽²⁾ By signing this checklist, I hereby confirm that, at the time of performing this activity, I did not have any conflict of interest to declare regarding the above-mentioned operator ⁽¹⁾.

OM amendment information			
Rev. No		Date	

List of non-compliances identified			
No	Ref Non-compliance	Ref OM (if applicable)	Non-compliances

List of remarks	
Ref OM	Remarks

Additional notes/comments:

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NA = Not Applicable; C = Compliant; NC = Not Compliant; R = Remark; N/R = Not Reviewed

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
General						
SPA.LVO.105	<u>Content of the application package:</u> - C/L filled - Aircraft certification evidence, if applicable - FC training programme (OM-D amdt) - Operating procedures (OM-A/B amdt) - MEL amendment, if applicable - Maintenance programme amendment, if applicable - Procedure for the determination of the suitability of aerodromes (OM-A amdt) - Procedure for monitoring of LVO operations/maintenance of performance indicators - Safety assessment - Change management implementation evidence.	ALL	- Check that the application package addresses all the points mentioned. - In case one or several applicable items are not covered, the operator will be asked to complete it to allow the assessment of the application to start.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
ORO.GEN.200(a)(3)	<u>Management of changes / safety risk management</u>	ALL	- Check that the hazard identification process of the operator captured the risks associated with the new type of operations (LVO). - Check the adequate subsequent risk analysis and definition of mitigations. - Check that this was completed in the frame of the operator's management of change process.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Safety assessment - Monitoring, data collection and performance indicators						
Safety assessment						
SPA.LVO.105(g)	<u>Minimum number of approaches/time period:</u> - Sufficient to collect enough data to support the safety assessment - May be reduced in case of multiple application (LVO or operational credit) based on the following similarities: • Type of technology • Operational procedures • Handling characteristics	ALL	- Regarding landing performance, check that the operator has established criteria for successful approach and landing - Check that the data gathered provides for a representative sample of the expected operating conditions. (1) for approval of operations with a DH of not less than 50 ft, 30 approaches are recommended;		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
			(2) for approval of operations with a DH of less than 50 f, 100 approaches are recommended. - Regarding LVTO, review the proposed number of take-offs using the LVTO procedures for the purpose of data gathering			
SPA.LVO.105(g)	<u>Safety assessment:</u> Prior to commencing LVOs or operations with operational credits, an operator should demonstrate to the competent authority that such operations will achieve an acceptable level of safety. This requires the operator to gather data from operations using the relevant systems and procedures and conduct safety assessments taking that data into account.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.105(g)	<u>Use of data related to another LVO application:</u> If an operator is applying for more than one LVO approval or an approval for operation with operational credits for a particular aircraft type, then data gathered from operations using the systems and procedures designed for one classification of operations or operation with operational credits may be used to support the application for another classification of operations or operation with operational credits provided the following elements are similar: - Type of technology; - Operational procedures; and - handling characteristics.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.105(g)	<u>Use of data from another aircraft type:</u> An operator holding an approval for low-visibility approach operations or operations with operational credits may use data gathered from approaches conducted using one aircraft type to support an application for approval for a different aircraft type or variants provided the following elements are similar: - Type of technology; - Operational procedures; and - handling characteristics.	CAT II, CAT III, SA CAT I, SA CAT II, EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Monitoring, data collection						
SPA.LVO.105(g)	<u>Monitoring</u> The operator should monitor LVOs and operations with operational credits in order to validate the effectiveness of	ALL	- Regarding landing performance, check that the operator has established criteria for successful approach and landing		☐ N/A ☐ C	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	the applicable aircraft flight guidance systems, training, flight crew procedures, and aircraft maintenance programme, and to identify hazards		- Check that sufficient data is recorded to allow the identification of safety hazards.		☐ NC ☐ R ☐ N/R	
SPA.LVO.105(g)	<u>Data collection: type of data/collection rate:</u> Data should be collected whenever an LVO or an operation with an operational credit is attempted regardless of whether the approach is abandoned, is unsatisfactory, or is concluded successfully. The data should include records of the following: (1) occasions when it was not possible to commence an approach due to deficiencies or unserviceabilities of related airborne equipment; (2) occasions when approaches were discontinued, including the reasons for discontinuing the approach and the height above the runway at which the approach was discontinued; (3) occasions when system abnormalities required pilot intervention to ensure a continued approach or safe landing; (4) landing performance, whether or not the aircraft landed satisfactorily within the desired touchdown area with acceptable lateral velocity or cross-track error. The approximate lateral and longitudinal position of the actual touchdown point in relation to the runway centre line and the runway threshold, respectively, should be recorded.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.105(g)	<u>Data collection means:</u> Data about LVOs should be collected by means of the operator's flight data monitoring programme supplemented by other means including reports submitted by flight crew. Operators that do not have a flight data monitoring programme should use reports submitted by flight crew as the primary means of gathering data.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Performance indicators						
SPA.LVO.105(g)	Performance indicators should include the following: (1) the rate of unsuccessful low-visibility approaches, i.e. the number of attempted approaches terminating in discontinued approaches, approaches where pilot	CAT II, CAT III, SA CAT I, SA CAT II, EFVS	- check if the operator has defined the means used to determine the rate of unsuccessful low-visibility approaches, and as well the related rate limit.		☐ N/A ☐ C	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	intervention was required to ensure a continued approach or safe landing or where landing performance was unsatisfactory, compared to the number of low-visibility approaches attempted; (2) measures of performance of the airborne equipment for low-visibility approaches or operations with operational credits; (3) safety performance indicators related to other specific risks associated with LVOs.		- Check that the operator is using the relevant data at its disposal, and In particular the data gathered via flight crew reports, flight data monitoring or other means, as appropriate (see GM2 SPA.LVO.105(g) for a detailed list of data that may be gathered).		☐ NC ☐ R ☐ N/R	
Records						
SPA.LVO.105(g)	The following information should be retained for at least 5 years: (1) the total number of low-visibility approaches or operations with an operational approval attempted or completed, including practice approaches, by aircraft type; and (2) reports of unsatisfactory approaches and/or landings, by runway and aircraft registration, in the following categories: (i) airborne equipment faults; (ii) ground facility difficulties; (iii) missed approaches because of air traffic control (ATC) instructions; or (iv) other reasons.	CAT II, CAT III, SA CAT I, SA CAT II, EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Operating minima						
Take-off with visibility conditions of less than 400 m RVR						
SPA.LVO.100(a)	For multi-engined aeroplanes which, in the event of a critical engine failure at any point during take-off, can either stop or continue the take-off to a height of 1 500 ft above the aerodrome while clearing obstacles by the required margins, table 1 of AMC1 SPA.LVO.100(a) applies	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.100(a)	For the other multi-engined aeroplanes, there may be a need to land immediately and to see and avoid obstacles. Such aeroplanes may be operated to the take-off minima shown in Table 2 of AMC1 SPA.LVO.100(a) and the marking and lighting criteria shown in Table 1 of AMC1 SPA.LVO.100(a) , provided that they are able to comply	LVTO			☐ N/A ☐ C ☐ NC	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	with the applicable obstacle clearance criteria, assuming engine failure at the height specified.				☐ R ☐ N/R	
SPA.LVO.100(a)	The reported RVR value representative of the initial part of the take-off run can be replaced by pilot assessment.	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.100(a)	The minimum RVR value specified in Table 1 or 2 of AMC1 SPA.LVO.100(a) should be achieved for all reporting points representative of the parts of the runway from the point at which the aircraft commences the take-off until the calculated accelerate-stop distance from that point.	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.100(a)	<u>LVTO - RVR of less than 125 m:</u> the following additional elements should apply: (1) The runway has centre line lights spaced at intervals of 15 m or less; (2) If an ILS signal is used for lateral guidance, the ILS localiser signal meets the requirements for category III operations, unless otherwise stated in the AFM; (3) If an ILS signal is to be used, low-visibility procedures (LVPs) include protection of the runway and, where an ILS localiser signal is used, it should include protection of the ILS-sensitive area unless otherwise stated in the AFM; and (4) If a GLS signal is used for lateral guidance, the GLS performance type meets the requirements for category III operations (GAST D and to GBAS point to which guidance is required), unless otherwise stated in the AFM.	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.100(a)	<u>LVTO - RVR of less than 125 m:</u> The reported RVR should be not less than the minimum specified in the AFM or, if no such minimum is specified, not less than 75 m.	LVTO			☐ N/A ☐ C	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
					☐ NC ☐ R ☐ N/R	
SPA.LVO.100(a)	LVTO - RVR of less than 125 m; The minimum required RVR should be achieved for all reporting points representative of the parts of the runway from the point at which the aircraft commences the take-off until the greater of the calculated take-off distance or accelerate-stop distance from that point.	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Instrument approach operations in LVO						
SPA.LVO.100(b)	The following should apply for CAT II: (a) The DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance and be not lower than the highest of: (1) the minimum DH specified in the AFM, if stated; (2) the applicable obstacle clearance height (OCH) for the category of aircraft; (3) the DH to which the flight crew is qualified to operate; or (4) 100 ft. (b) The lowest RVR minima to be used are specified in Table 4 of AMC1 SPA.LVO.100(b).	CAT II			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.100(b)	The following should apply for CAT III: (a) For operations in which a DH is used, the DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance and be not lower than: (1) the minimum DH specified in the AFM, if stated; (2) the DH to which the flight crew is qualified to operate. (b) Operations with no DH should only be conducted if: (1) operation with no DH is specified in the AFM; (2) there is no published information indicating that the approach aid or aerodrome facilities cannot support operations with no DH; and (3) the flight crew is qualified to operate with no DH.	CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(c) The lowest RVR to be used should be determined in accordance with Table 5 of AMC2 SPA.LVO.100(b) .					
SPA.LVO.100(b)	<u>Effect on landing minima of temporarily failed or downgraded equipment for approach operations with a DH below 200 ft:</u> - Only those facilities mentioned in Table 6 of AMC3 SPA.LVO.100(b) should be acceptable to be used to determine the effect of temporarily failed or downgraded equipment on the required RVR for CAT II/III approach operations. - The following conditions should be applied to Table 6: (1) multiple failures of runway/FATO lights other than those indicated in Table 6 are not acceptable; (2) failures of approach and runway/FATO lights are acceptable at the same time and the most demanding consequence should be applied; (3) for approach operations with a DH below 200 ft, a combination of deficiencies in runway/FATO lights and RVR assessment equipment are not permitted; and (4) failures other than ILS, GLS and MLS affect the RVR only and not the DH.	CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Operations with operational credits						
SPA.LVO.100(c)	<u>Effect on landing minima of temporarily failed or downgraded equipment for approach operations with a DH below 200 ft:</u> Table 7 of AMC1 SPA.LVO.100(b) applies.	SA CAT I, SA CAT II, EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.100(c)	(a) The DH of an SA CAT I operation should not be lower than the highest of: (1) the minimum DH specified in the AFM, if stated; (2) the applicable OCH for the category of aeroplane; (3) the DH to which the flight crew is qualified to operate; or (4) 150 ft. (b) Where the DH for an SA CAT I operation is less than 200 ft, it should be determined by the use of a radio	SA CAT I			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	altimeter or other device capable of providing equivalent performance. (c) The following visual aids should be available: (1) approach lights as specified in Table 8 of AMC1 SPA.LVO.100(c) ; (2) precision approach (PA) runway markings; (3) category I runway lights. (d) The lowest RVR should not be lower than the higher of: (1) the minimum RVR specified in the AFM, if stated; or (2) the RVR specified in Table 8 .					
SPA.LVO.100(c)	The following should apply: (a) The DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance, if so determined by the aircraft certification process, and be not lower than the highest of: (1) the minimum DH specified in the AFM, if stated; (2) the applicable OCH for the category of aeroplane; (3) the DH to which the flight crew is qualified to operate; or (4) 100 ft. (b) The following visual aids should be available: (1) approach lights as specified in Table 9 of AMC2 SPA.LVO.100(c) ; (2) precision approach runway markings; (3) category I runway lights. (c) The lowest RVR minima to be used are specified in Table 9 .	SA CAT II			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
	When conducting EFVS operations to a runway: (a) the DA/H used should be the same as for operations without EFVS; (b) the lowest RVR minima to be used should be determined: (1) in accordance with criteria specified in the AFM for the expected weather conditions; or (2) if no such criteria are specified, by reducing the RVR determined for operation without the use of EFVS/ CVS in accordance with Table 10 of AMC3 SPA.LVO.100(c) ; (c) where the lowest RVR to be used, determined in accordance with (b), is less than 550 m, then this should be increased to 550 m unless LVPs are established at the aerodrome of intended landing;	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(d) where the EFVS is part of a CVS, it is only the EFVS element that should provide the operational credits. The other part of the CVS, the synthetic vision system (SVS), should not provide operational credits.					
Aircraft certification						
SPA.LVO.105(a)	Aircraft used for LVTO in an RVR of less than 125 m should be equipped with a system certified for the purpose.	LVTO	The kind of systems in use today includes paravisual display (PVD) and HUD.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.105(a)	Aircraft used for low-visibility approach operations should be equipped in accordance with the applicable airworthiness requirements and certified as follows: (1) For CAT II operations, the aircraft should be certified for CAT II operations. (2) For CAT III operations, the aircraft should be certified for CAT III operations. (3) For SA CAT I, the aircraft should be certified for SA CAT I operations. (4) For SA CAT II, the aircraft should be certified for CAT II operations and be equipped with HUDLS or fail-passive autoland or better. (5) For EFVS operations, the aircraft should be equipped with a certified EFVS-A or EFVS-L.	CAT II, CAT III, SA CAT I, SA CAT II, EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Flight crew competency						
SPA.LVO.120(a)	<u>Risk assessment:</u> To ensure that the flight crew is competent to conduct the intended operations, the operator should assess the risks associated with the conduct of low-visibility approach operations by pilots new to the aircraft type or class and take the necessary mitigations. Where such mitigations include an increment to the visibility or RVR for LVOs, this should be stated in the operations manual.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Recent experience						
SPA.LVO.120(a)	<u>Recent experience for SA CAT I, CAT II, SA CAT II and CAT III:</u>	SA CAT I, CAT II, SA	- Approaches conducted in a suitably qualified FSTD and/or during a proficiency check or demonstration of		☐ N/A	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	At least two approaches using the operator's procedures for low-visibility approach operations or operations with operational credits, during the validity period of each OPC or periodic demonstration of competence, unless credits related to recent experience when operating more than one type are defined in the OSD.	CAT II, CAT III	competence may be counted towards the recent experience requirements		☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(a)	<u>Recent experience for SA CAT I, CAT II, SA CAT II and CAT III:</u> For operators approved for more than one piece of aircraft equipment used (e.g. autoland, HUD, auto-coupled approach with manual landing, SVGS, etc.): at least one additional approach in the lowest approved RVR (either to go-around or landing) for each piece of aircraft equipment used during the validity period of each OPC or periodic demonstration of competence (e.g. two approaches CAT II with autoland and one CAT II with auto-coupled to below DH with manual landing, two CAT II autoland and one CAT II HUD to below DH with manual landing or vice versa) unless credits related to recent experience when operating more than one type are defined in the OSD.	SA CAT I, CAT II, SA CAT II, CAT III	- Approaches conducted in a suitably qualified FSTD and/or during a proficiency check or demonstration of competence may be counted towards the recent experience requirements		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(a)	<u>Recent experience for SA CAT I, CAT II, SA CAT II and CAT III:</u> Pilots authorised to conduct low-visibility approach operations or operations with operational credits using HUDLS or equivalent display systems to touchdown: two approaches (e.g. an operator approved for CAT II/III HUDLS will do two CAT III HUDLS; other examples would be two CAT III autoland and two CAT III HUDLS to touchdown, two SA CAT II autoland and two SA CAT II HUDLS, or when combining several LVOs and equipment, two CAT III autoland and one CAT II auto-coupled to below DH with manual landing and two CAT III HUDLS to touchdown) using the operator's procedures for low-visibility approach operations or operations with	SA CAT I, CAT II, SA CAT II, CAT III	- Approaches conducted in a suitably qualified FSTD and/or during a proficiency check or demonstration of competence may be counted towards the recent experience requirements		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	operational credits using HUDLS, during the validity period of each OPC or periodic demonstration of competence unless credits related to recent experience when operating more than one type are defined in the OSD.					
SPA.LVO.120(a)	Recent experience for EFVS: Pilots should complete a minimum of two approaches on each type of aircraft operated using the operator's procedures for EFVS operations during the validity period of each OPC or periodic demonstration of competence unless credits related to recent experience when operating more than one type are defined in the OSD. When the operator is approved for both EFVS-L and EFVS-A, a minimum of one approach in each EFVS operation should be completed.	EFVS	- Approaches conducted in a suitably qualified FSTD and/or during a proficiency check or demonstration of competence may be counted towards the recent experience requirements		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(a)	PF and PNF: If a flight crew member is authorised to operate as pilot flying and pilot monitoring, the flight crew member should complete the required number of approaches in each operating capacity.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Initial training and checking						
SPA.LVO.120(b)	LVTO: The operator should ensure that the flight crew members have completed: - a ground training course - a course of FSTD/flight training covering system failures and engine failures resulting in continued as well as rejected take-offs unless credits related to training and checking for previous experience in LVTOs on similar aircraft types are defined in the operational suitability data established in accordance with Regulation (EU) No 748/2012	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	SA CAT I, CAT II, SA CAT II and CAT III:	SA CAT I, CAT II, SA				

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	The operator should ensure that the flight crew members have completed: - a ground training course - a course of FSTD and/or flight training - a check, if applicable - practice approaches during LIFUS, if applicable. unless credits related to training and checking for previous experience on similar aircraft types are defined in the OSD.	CAT II, CAT III, EFVS				
LVTO initial training and checking						
SPA.LVO.120(b)	<u>LVTO ground course:</u> The ground training course should include at least the following: (1) characteristics of fog; (2) effects of precipitation, ice accretion, low-level wind shear and turbulence; (3) the effect of specific aircraft/system malfunctions; (4) the use and limitations of RVR assessment systems; (5) procedures to be followed and precautions to be taken with regard to surface movement during operations when the RVR is 400 m or less and any additional procedures required for take-off in conditions below 150 m; (6) qualification requirements for pilots to obtain and retain approval to conduct LVOs; and (7) the importance of correct seating and eye position.	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>LVTO FSTD/flight training:</u> The FSTD/flight training should include at least the following: (1) normal take-off in minimum approved RVR conditions; (2) take-off in minimum approved RVR conditions with an engine failure: (i) for aeroplanes, between V1 and V2 (take-off safety speed) or as soon as safety considerations permit; (ii) for helicopters, at or after the take-off decision point (TDP); and (3) take-off in minimum approved RVR conditions with an engine failure: (i) for aeroplanes, before V1 resulting in a rejected take-off; and	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(ii) for helicopters, before the TDP.					
SPA.LVO.120(b)	<u>LVTO with an RVR below 150 m:</u> The operator approved for LVTOs with an RVR below 150 m should ensure that the FSTD/flight training is carried out in an FSTD. This training should include the use of any special procedures and equipment.	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>LVTO with an RVR below 150 m:</u> The operator should ensure that a flight crew member has completed a check before conducting LVTOs in RVRs of less than 150 m. The check should require the execution of: (1) at least one LVTO in the minimum approved visibility; (2) at least one rejected take-off at minimum approved RVR in an aircraft or FSTD. For pilots with previous experience with an EU operator of LVTOs in RVRs of less than 150 m, the check may be replaced by successful completion of the FSTD and/or flight training.	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SA CAT I, CAT II, SA CAT II and CAT III initial training and checking (FC <u>with no</u> previous LVO experience with an EU operator)						
SPA.LVO.120(b)	<u>Ground training:</u> The ground training should include at least the following: (i) characteristics and limitations of different types of approach aids; (ii) characteristics of the visual aids; (iii) characteristics of fog; (iv) operational capabilities and limitations of airborne systems to include symbology used on HUD/HUDLS or equivalent display systems, if appropriate; (v) effects of precipitation, ice accretion, low level wind shear and turbulence; (vi) the effect of specific aircraft/system malfunctions; (vii) the use and limitations of RVR assessment systems; (viii) principles of obstacle clearance requirements;	SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(ix) the recognition of failure of ground equipment or in satellite approaches, the loss of signal in space and the action to be taken in the event of such failures; (x) procedures to be followed and precautions to be taken with regard to surface movement during operations when the RVR is 400 m or less and any additional procedures required for take-off in conditions below 150 m; (xi) the significance of DHs based upon radio altimeters and the effect of terrain profile in the approach area on radio altimeter readings and on automatic approach/landing systems. This applies also to other devices capable of providing equivalent information; (xii) the effect of the pre-threshold terrain and LSAA on airborne landing systems; (xiii) the significance of alert height, if applicable, and action in the event of any failure above and below the alert height; (xiv) qualification requirements for pilots to obtain and retain approval to conduct LVOs; (xv) the importance of correct seating and eye position; and (xvi) the significance of LVPs or equivalent procedures.					
SPA.LVO.120(b)	<u>Phase one of FSTD training and/or flight training:</u> The training should include at least the following: (A) approaches with engine failures at various stages of the approach; (B) approaches with critical equipment failures, such as electrical systems, auto-flight systems, ground or airborne approach aids and status monitors; (C) approaches where failures of auto-flight or flight guidance systems, including HUDLS or equivalent display systems, require either: (a) reversion to manual control for landing or go-around; or (b) reversion to manual control or a downgraded automatic mode control for go-around from the DH or below, including those which may result in contact with the runway. This should include aircraft handling if, during a CAT III fail-passive approach, a fault causes autopilot to disconnect at or below the DH when the last reported RVR is 300 m or less;	SA CAT I, CAT II, SA CAT II, CAT III	- Check also that the objectives of the training are clearly stated and meet the criteria of para (a)(2)(iii) of AMC2 SPA.LVO.120(b).		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(D) failures of systems that will result in excessive lateral or vertical deviation both above and below the DH in the minimum visual conditions for the operation; (E) incapacitation procedures appropriate to low-visibility approach operations; and (F) failures and procedures applicable to the specific aircraft type.					
SPA.LVO.120(b)	<u>Phase two of FSTD training and/or flight training:</u> The training should include at least the following: (A) the required checks for satisfactory functioning of equipment, both on the ground and in flight; (B) the use of HUD/HUDLS or equivalent display systems during all phases of flight, if applicable; (C) approach using the appropriate flight guidance, autopilots, and control systems installed on the aircraft to the appropriate DH and transition to visual flight and landing; (D) approach with all engines operating using the appropriate flight guidance, autopilots and control systems installed on the aircraft, including HUD/HUDLS or equivalent display systems, down to the appropriate DH followed by a missed approach, all without external visual reference; (E) where appropriate, approaches using autopilot to provide automatic flare, hover, landing and roll-out; and (F) where appropriate, approaches using approved HUD/HUDLS or equivalent display system to touchdown.	SA CAT I, CAT II, SA CAT II, CAT III	- Check also that the objectives of the training are clearly stated and meet the criteria of para (a)(2)(i) of AMC2 SPA.LVO.120(b).		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>FSTD training and/or flight:</u> FSTD training should include: (A) for approaches flown using HUDLS or equivalent display systems, a minimum of eight approaches ; (B) otherwise, a minimum of six approaches .	SA CAT I, CAT II, SA CAT II, CAT III	- Check that the operator's procedure allows the possibility of additional approaches to achieve the required proficiency.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>FSTD training and/or flight training:</u> For aircraft for which no FSTDs representing the specific aircraft are available, operators should ensure that the flight training phase specific to the visual scenarios of low-	SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	visibility approach operations is conducted in a specifically approved FSTD. Such training should include a minimum of four approaches . Thereafter, type-specific training should be conducted in the aircraft.				☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Check:</u> The check should comprise the completion of the following exercises in an aircraft or FSTD: (i) Low-visibility approaches in simulated instrument flight conditions down to the applicable DH, using the flight guidance system. Standard procedures of crew coordination (task sharing, call-out procedures, mutual surveillance, information exchange and support) should be observed. For CAT III operations, the operator should use an FSTD approved for this purpose; (ii) Go-around after approaches as in the FSTD/aircraft training at any point between 500 ft above ground level (AGL) and on reaching the DH; and (iii) Landing(s) with visual reference established at the DH following an instrument approach. Depending on the specific flight guidance system, an automatic landing should be performed.	SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>LIFUS (when applicable):</u> The check should comprise the completion of the following exercises in an aircraft or FSTD: (i) For low-visibility approach operations using a manual landing: (A) if a HUDLS or equivalent display system is used to touchdown, four landings , or if the required FSTD training was conducted in an FSTD qualified for zero flight-time training (ZFTT), two landings ; (B) otherwise, three landings , or if the required FSTD training was conducted in an FSTD qualified for ZFTT, one landing; (ii) For low-visibility operations using autoland: (A) if the required FSTD training was conducted in an FSTD qualified for ZFTT, one landing , or none if the flight crew member successfully completed a type rating based on ZFTT;	SA CAT I, CAT II, SA CAT II, CAT III	- Check that the operator's procedure allows the possibility of additional landings to achieve the required proficiency.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(B) otherwise, two landings .					
SA CAT I, CAT II, SA CAT II and CAT III initial training and checking (FC <u>with</u> previous LVO experience with an EU operator, when changing to an aircraft for which a new class or type rating is required, within the same operator)						
SPA.LVO.120(b)	<u>Ground training:</u> The content of the ground course should cover all the elements of the ground course for FC with no LVO experience, taking into account the flight crew member's existing knowledge of low-visibility approach operations.	SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>FSTD and/or flight training:</u> The content of the FSTD and/or flight training should cover all the elements of the related course for FC with no LVO experience. If the FC's previous experience of low-visibility approach operations is on a type where the following were the same or similar: (i) the technology used in the flight guidance and flight control system; (ii) operating procedures; (iii) handling characteristics; and (iv) the use of HUD/HUDLS or equivalent display systems, then the flight crew member may complete an abbreviated course of FSTD and/or flight training.	SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Abbreviated course of FSTD and/or flight training:</u> Such an abbreviated course should: - meet the objectives of the related course for FC with no experience and - include at least the following number of landings: (A) if a HUDLS or an equivalent display system is utilised to touchdown, four approaches including a landing at the lowest approved RVR and a go-around; or (B) otherwise, two approaches including a landing at the lowest approved RVR and a go-around.	SA CAT I, CAT II, SA CAT II, CAT III	- Check that the operator's procedure allows the possibility of additional approaches to achieve the required proficiency.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
SA CAT I, CAT II, SA CAT II and CAT III initial training and checking (FC <u>with</u> previous LVO experience with an EU operator, when joining another operator)						
SPA.LVO.120(b)	<u>Ground training:</u> The content of the ground course should cover all the elements of the ground course for FC with no LVO experience, taking into account the flight crew member's existing knowledge of low-visibility approach operations.	SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>FSTD and/or flight training:</u> The content of the FSTD and/or flight training should cover all the elements of the related course for FC with no LVO experience. If the FC's previous experience of low-visibility approach operations is on the same aircraft type and variant, or on a different type or variant where the following were the same or similar: (i) the technology used in the flight guidance and flight control system; (ii) operating procedures; (iii) handling characteristics; and (iv) the use of HUD/HUDLS or equivalent display systems, then the flight crew member may complete an abbreviated course of FSTD and/or flight training.	SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Abbreviated course of FSTD and/or flight training:</u> Such an abbreviated course should: - meet the objectives of the related course for FC with no experience and - include at least the following number of landings: (A) if a HUDLS or an equivalent display system is utilised to touchdown, four approaches including a landing at the lowest approved RVR and a go-around; or (B) otherwise, two approaches including a landing at the lowest approved RVR and a go-around.	SA CAT I, CAT II, SA CAT II, CAT III	- Check that the operator's procedure allows the possibility of additional approaches to achieve the required proficiency.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>LIFUS :</u>	SA CAT I, CAT II, SA			☐ N/A	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	Practice in approaches during LIFUS as required for FC with no experience unless the flight crew member's previous experience of low-visibility approach operations is on the same aircraft type and variant.	CAT II, CAT III			☐ C ☐ NC ☐ R ☐ N/R	
EFVS initial training and checking (for FC with no previous experience with an EU operator)						
SPA.LVO.120(b)	<u>Ground training :</u> The ground training should include at least the following: (i) characteristics and limitations of HUDs/HUDLSs or equivalent display systems including information presentation and symbology; (ii) EFVS sensor performance, sensor limitations, scene interpretation, visual anomalies and other visual effects; (iii) EFVS display, control, modes, features, symbology, annunciations and associated systems and components; (iv) the interpretation of EFVS imagery; (v) the interpretation of approach and runway lighting systems and display characteristics when using EFVS; (vi) weather associated with low-visibility conditions and its effect on EFVS performance; (vii) pre-flight planning and selection of suitable aerodromes and approach procedures; (viii) principles of obstacle clearance requirements; (ix) the use and limitations of RVR assessment systems; (x) normal, abnormal and emergency procedures for EFVS operations; (xi) the effect of specific aircraft/system malfunctions; (xii) procedures to be followed and precautions to be taken with regard to surface movement during operations when the RVR is 400 m or less; (xiii) for EFVS-L, the effect of the pre-threshold terrain and LSAA on airborne landing systems; (xiv) human factors aspects of EFVS operations; (xv) qualification requirements for pilots to obtain and retain approval for EFVS operations; and (xvi) the significance of LVPs or equivalent procedures when operating below RVR 550 m.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Phase one of FSTD and/or flight training:</u>	EFVS			☐ N/A	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	Phase one of the training should include the following exercises: (A) the required checks for satisfactory functioning of equipment, both on the ground and in flight; (B) the use of HUD/HUDLS or equivalent display systems during all phases of flight; (C) approach using the EFVSs installed on the aircraft to the appropriate DH and transition to visual flight and landing; (D) approach with all engines operating using the EFVS, down to the appropriate DH followed by a missed approach, all without external visual reference; (E) where appropriate, approaches using approved EFVS to touchdown.				☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Phase two of FSTD and/or flight training:</u> Phase two of the training should include the following exercises: (A) approaches with engine failures at various stages of the approach; (B) approaches with failures of the EFVS at various stages of the approach, including failures between the DH and the height below which an approach should not be continued if natural visual reference is not acquired, requiring either: (a) reversion to head-down displays to control missed approach; or (b) reversion to flight with no, or downgraded, guidance to control missed approaches from the DH or below, including those which may result in a touchdown on the runway; (C) incapacitation procedures appropriate to EFVS operations; and (D) failures and procedures applicable to the specific EFVS installation and aircraft type.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>FSTD and/or flight training:</u> FSTD training should include a minimum of eight approaches . If a flight crew member is to be authorised to operate as pilot flying and pilot monitoring during EFVS operations, then	EFVS	- Check that the operator's procedure allows the possibility of additional approaches to achieve the required proficiency.		☐ N/A ☐ C ☐ NC	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	the flight crew member should complete the required FSTD training for each operating capacity.				☐ R ☐ N/R	
SPA.LVO.120(b)	<u>LIFUS (if applicable):</u> LIFUS should include practice in approaches as follows: (i) if EFVS is used to touchdown, four landings ; or (ii) otherwise, three landings .	EFVS	- Check that the operator's procedure allows the possibility of additional landings to achieve the required proficiency.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
EFVS initial training and checking (FC <u>with</u> previous LVO experience with an EU operator, when changing to an aircraft for which a new class or type rating is required, within the same operator)						
SPA.LVO.120(b)	<u>Ground training:</u> The content of the ground course should cover all the elements of the ground course for FC with no EFVS experience, taking into account the flight crew member's existing knowledge of low-visibility approach operations.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>FSTD and/or flight training:</u> The content of the FSTD and/or flight training should cover all the elements of the related course for FC with no EFVS experience. If the FC's previous experience of low-visibility approach operations is on a type where the following were the same or similar: (i) the technology used in the EFVS sensor, flight guidance and flight control system; (ii) operating procedures; and (iii) handling characteristics; and (then the flight crew member may complete an abbreviated course of FSTD and/or flight training.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Abbreviated course of FSTD and/or flight training:</u> Such an abbreviated course should:	EFVS	- Check that the operator's procedure allows the possibility of additional approaches to achieve the required proficiency.		☐ N/A ☐ C	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	- meet the objectives of the related course for FC with no EFVS experience and - include at least the following number of landings: (A) for EFVS to touchdown, four approaches including a landing at the lowest approved RVR and a go-around; - or (B) otherwise, two approaches including a landing at the lowest approved RVR and a go-around.				☐ NC ☐ R ☐ N/R	
EFVS initial training and checking (FC <u>with</u> previous LVO experience with an EU operator, when joining another operator)						
SPA.LVO.120(b)	<u>Ground training:</u> The content of the ground course should cover all the elements of the ground course for FC with no EFVS experience, taking into account the flight crew member's existing knowledge of low-visibility approach operations.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>FSTD and/or flight training:</u> The content of the FSTD and/or flight training should cover all the elements of the related course for FC with no EFVS experience. If the FC's previous experience of low-visibility approach is on the same aircraft type and variant with the same EFVS or on a different type or different EFVS where the following were the same or similar: (i) the technology used in the EFVS sensor, flight guidance and flight control system; (ii) operating procedures; and (iii) handling characteristics; and (then the flight crew member may complete an abbreviated course of FSTD and/or flight training.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Abbreviated course of FSTD and/or flight training:</u> Such an abbreviated course should: - meet the objectives of the related course for FC with no EFVS experience and - include at least the following number of landings:	EFVS	- Check that the operator's procedure allows the possibility of additional approaches to achieve the required proficiency.		☐ N/A ☐ C ☐ NC	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(A) for EFVS to touchdown, four approaches including a landing at the lowest approved RVR and a go-around; or (B) otherwise, two approaches including a landing at the lowest approved RVR and a go-around.				☐ R ☐ N/R	
SPA.LVO.120(b)	<u>LIFUS:</u> LIFUS should include practice in approaches as follows: (i) if EFVS is used to touchdown, four landings ; or (ii) otherwise, three landings ; unless the flight crew member's previous experience of low-visibility approach operations is on the same aircraft type and variant.	EFVS	- Check that the operator's procedure allows the possibility of additional landings to achieve the required proficiency.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Recurrent checking/Differences training						
SPA.LVO.120(b)	<u>Recurrent checking for LVTO :</u> The operator should ensure that the pilots' competence to perform LVTOs for which they are authorised is checked by completing at least the following exercises: (1) One or more low-visibility rejected take-off at minimum approved RVR at least once over the period between two operator proficiency checks or once at every periodic demonstration of competence or, for an ATQP operator, at each required operator proficiency check or alternatively at each required LOE. (2) Pilots authorised for LVTO operations in an RVR of less than 150 m should additionally conduct at least one LVTO in the minimum approved visibility at each required operator proficiency check or periodic demonstration of competence.	LVTO			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Recurrent checking for SA CAT I, CAT II, SA CAT II, CAT III :</u> The operator should ensure that the pilots' competence to perform LVOs for which they are authorised is checked by completing at least the following exercises: (1) One or more low-visibility approaches in simulated instrument flight conditions down to a point between 500 ft AGL and the threshold (e.g. applicable DH), followed by go-around, at each required operator proficiency check or periodic demonstration of competence; and	SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(2) One or more low-visibility approach and landings with visual reference established at the DH at each required operator proficiency check or periodic demonstration of competence.					
SPA.LVO.120(b)	<u>Recurrent checking for CAT III:</u> Pilots authorised to conduct CAT III operations on aircraft with a fail-passive autoland system, or HUDLS or equivalent, should complete a missed approach at least once over the period of three consecutive OPCs or demonstrations of competence as the result of an equipment failure at or below the DH when the last reported RVR was less than 300 m. For ATQP operators, pilots authorised to conduct CAT III operations on aircraft with a fail-passive autoland system, or HUDLS or equivalent, should complete a missed approach at least once every two OPCs or LOE (a period of about 2 years).	CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Use of FSTD for recurrent checking I:</u> CAT III approach operations should be conducted in an FSTD. Other exercises may be conducted in an FSTD or aircraft.	LVTO, SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Differences training for LVTO, SA CAT I, CAT II, SA CAT II, CAT III:</u> A differences training or familiarisation should be provided to FC when not already authorized for the related LVO, or whenever there is a change to any of the following: (1) the technology used in the flight guidance and flight control system; (2) the operating procedures including: (i) fail-passive/fail-operational; (ii) alert height; (iii) manual landing or automatic landing; (iv) operations with DH or no DH operations; (3) the handling characteristics; (4) the use of HUD/HUDLS or equivalent display systems; (5) the use of EFVS.	LVTO, SA CAT I, CAT II, SA CAT II, CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
SPA.LVO.120(b)	<u>Recurrent checking for EFVS :</u> The operator should ensure that the pilots' competence to perform EFVS operations is checked at each required demonstration of competence or OPC by performing at least two approaches of which one should be flown without natural vision, to the height below which an approach should not be continued if natural visual reference is not acquired.	EFVS	- Check that the operator's procedure allows the possibility of additional approaches to achieve the required proficiency.		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Recurrent checking for EFVS :</u> If a flight crew member is authorised to operate as pilot flying and pilot monitoring during EFVS operations, then the flight crew member should complete the required number of approaches in each operating capacity.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.120(b)	<u>Differences training for EFVS :</u> (a) A differences training or familiarisation should be provided to FC whenever there is a change to any of the following: (1) the technology used in the EFVS sensor, flight guidance and flight control system; (2) the operating procedures; (3) the handling characteristics; (b) The differences training should: (1) meet the objectives of the appropriate initial training course; (2) take into account the flight crew members' previous experience; and (3) take into account the operational suitability data established in accordance with Regulation (EU) No 748/2012.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Operating procedures						
General						
SPA.LVO.105(c)	Prior to commencing an LVO, the pilot-in-command/commander should be satisfied that: (a) the status of visual and non-visual facilities is as required; (b) if LVPs are required for such operations, LVPs are in effect; and	ALL	- Check that these conditions are reflected in the operator's procedures.		☐ N/A ☐ C ☐ NC	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(c) the flight crew members are appropriately qualified.				☐ R ☐ N/R	
SPA.LVO.105(c)	Operating procedures should be established for all types of LVOs and operations with operational credits for which an operator is seeking approval. The operating procedures should: (1) be consistent with the AFM; (2) be appropriate to the technology and equipment to be used; (3) specify the duties and responsibilities of each flight crew member in each relevant phase of flight; (4) ensure that flight crew workload is managed to facilitate effective decision-making and monitoring of the aircraft; and (5) minimise, as much as practical, the deviation from normal procedures used for routine operations (non-LVOs).	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.105(c)	Operating procedures should include: (1) the required checks for the satisfactory functioning of the aircraft equipment, both before departure and in flight; (2) the correct seating and eye position; (3) determination of aerodrome operating minima; (4) the increment to be added to minima for use by pilots-in-command/commanders who are new to the aircraft type, if applicable; (5) the effect on aerodrome operating minima of temporarily failed or downgraded ground equipment; (6) the effect on aerodrome operating minima of the failure or change of the status of any aircraft systems; (7) when the LVPs at the aerodrome are required. LVPs are required: (i) for low-visibility flight approach operations; (ii) for LVTOs with RVR less than 400 m. (8) a requirement for an 'approaching minima' call-out to prevent inadvertent descent below the DA/H; (9) the requirement for height call-outs below 200 ft to be based on the use of a radio altimeter or other device capable of providing equivalent performance, if applicable; (10) the required visual references;	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(11) the action to be taken in the event of loss of the required visual references; and (12) the maximum allowable flight path deviations and action to be taken in the event that such deviations occur.					
SPA.LVO.105(c)	Operations procedures should be included in the operator's operations manual	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
CAT II						
SPA.LVO.105(c)	The following should apply: (a) The flight crew should consist of at least two pilots. (b) The approach should be flown using a certified system as identified in the AFM. (c) If the approach is flown using autopilot, for a manual landing the autopilot should remain engaged until after the pilot has achieved visual reference. (d) All height call-outs below 200 ft above the runway threshold elevation should be determined by the use of a radio altimeter or other device capable of providing equivalent performance. (e) The DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance, if so determined by the aircraft certification process. (f) At DH, the following visual references should be distinctly visible and identifiable to the pilot: (1) a segment of at least three consecutive lights, which are the centre line of the approach lights or TDZ lights or runway centre line lights or edge lights or a combination of these; and (2) a visual reference that should include a lateral element of the ground pattern, such as an approach lighting crossbar, or the landing threshold, or a barrette of the TDZ lighting unless the operation is conducted using a HUD or an equivalent system to touchdown.	CAT II			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
CAT III						
SPA.LVO.105(c)	The following should apply: (a) The flight crew should consist of at least two pilots. (b) The approach should be flown using a certified system as identified in the AFM. (c) All height call-outs below 200 ft above the runway threshold elevation should be determined by the use of a radio altimeter or other device capable of providing equivalent performance. (d) For operations in which a DH is used, the DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance, if so determined by the aircraft certification process. (e) At DH, the following visual references should be distinctly visible and identifiable to the pilot: (1) for operations conducted either with fail-passive flight control systems or with the use of an approved HUD or equivalent display system: a segment of at least three consecutive lights, which are the centre line of the approach lights, or TDZ lights, or runway centre line lights, or runway edge lights, or a combination of these; and (2) for operations conducted either with fail-operational flight control systems or with a fail-operational hybrid landing system using a DH: at least one centre line light to be attained and maintained by the pilot. (f) For operations with no DH, there is no specification for visual reference with the runway prior to touchdown.	CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SA CAT I						
SPA.LVO.105(c)	The following should apply: (a) The approach should be flown using a certified system as identified in the AFM. (b) All height call-outs below 200 ft above the runway threshold elevation should be determined by the use of a radio altimeter or other device capable of providing equivalent performance. (c) The DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance, if so determined by the aircraft certification process.	SA CAT I			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(d) At DH the following visual references should be visible to the pilot: (1) a segment of at least three consecutive lights, which are the centre line of the approach lights, or TDZ lights, or runway centre line lights, or runway edge lights, or a combination of these; and (2) a visual reference that should include a lateral element of the ground pattern, such as an approach lighting crossbar, or the landing threshold, or a barrette of the TDZ lighting unless the operation is conducted utilising an approved HUD or an equivalent system usable down to 120 ft above the runway threshold.					
SA CAT II						
SPA.LVO.105(c)	The following should apply: (a) The flight crew should consist of at least two pilots. (b) The approach should be flown using a certified HUDLS or autoland system as identified in the AFM. (c) All height call-outs below 200 ft above the runway threshold elevation should be determined by the use of a radio altimeter or other device capable of providing equivalent performance. (d) The DH should be determined by the use of a radio altimeter or other device capable of providing equivalent performance, if so determined by the aircraft certification process. (e) At DH the visual references should be distinctly visible and identifiable to the pilot: (1) a segment of at least three consecutive lights, which are the centre line of the approach lights or TDZ lights, or runway centre line lights, or runway edge lights or a combination of these; (2) a visual reference that should include a lateral element of the ground pattern, such as an approach lighting crossbar, or the landing threshold, or a barrette of the TDZ lighting.	SA CAT II			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
EFVS						
SPA.LVO.105(c)	For EFVS operations to a runway, the following should apply: (a) The approach should be flown using a certified EFVS-A or EFVS-L as identified in the AFM.	EFVS			☐ N/A ☐ C ☐ NC	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(b) The pilot flying should use the EFVS throughout the approach. (c) In multi-pilot operations, the pilot monitoring should monitor the EFVS-derived information. (d) The approach between the final approach fix (FAF) and the DA/H should be flown using vertical flight path guidance mode (e.g. flight director) (e) The approach may be continued below the DA/H provided that the pilot can identify on the EFVS image either: (1) the approach light system; or (2) both of the following: (i) the runway threshold identified by the beginning of the runway landing surface, the threshold lights or the runway end identifier lights; and (ii) the TDZ identified by the TDZ lights, the TDZ runway markings or the runway edge lights. (f) Unless the aircraft is equipped with a certified EFVS-L, a missed approach should be executed promptly if the required visual reference is not distinctly visible and identifiable to the pilot without reliance on the EFVS by the following height above the threshold: (1) the height below which an approach should not be continued if natural visual reference is not acquired by the crew as stated in the AFM; or (2) if the AFM does not specify such a height, 100 ft.				☐ R ☐ N/R	
MEL amendment						
SPA.LVO.105(d)	The MEL should be amended, if applicable, to reflect the related intended LVO operations.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Maintenance programme						
SPA.LVO.105(e)	The maintenance programme should be amended, if applicable.	ALL			☐ N/A ☐ C	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
					☐ NC ☐ R ☐ N/R	
Suitability of aerodromes						
SPA.LVO.110	<u>Assessment of the suitability of aerodromes:</u> The assessment should cover the assessment of availability of: (1) suitable navigation facilities and associated instrument flight approach procedures; (2) suitable aerodrome operating procedures, including LVPs, and the compatibility with the intended aircraft operations; and (3) suitable runway and runway environment characteristics and facilities.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	<u>Methodology for the assessment of the suitability of aerodromes:</u> Assessment to be made using one or a combination of the following methods: - Assessment of previous operational data for the particular aerodrome - Desktop assessment of the: • Aerodrome data • Instrument flight procedure • Aircraft data and capability - Operational assessment: To be used if the suitability of the aerodrome for the intended operations could not be positively assessed by means of the other methods.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Assessment of previous operational data						
SPA.LVO.110	<u>Source of the data:</u> The data should come from: (1) the operator itself, or when not available; (2) the following entities: (i) the State of the aerodrome or the competent authority issuing the operator's LVO approval; (ii) the type certificate holder of the aircraft; or (iii) other operators.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
SPA.LVO.110	<u>Use of previous operational data:</u> Previous operational data should only be used if: (1) it concerns the same runway and there were no relevant changes to the runway and runway environment; (2) it is derived in accordance with Table 14 of AMC1 SPA.LVO.110 for the intended operation; and (3) there is no safety concern for such operation.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	<u>Crediting of previous operational data:</u> Previous operational data may be credited to an aircraft if it is from: (1) the same aircraft make and model, unless the credit from the same aircraft make and model is restricted by any of the following entities: (i) the State of the aerodrome or the competent authority issuing the operator's LVO approval; (ii) the type certificate holder of the aircraft; or (iii) other operators. or (2) another aircraft model, if stated in the AFM or additional data from the TC/STC holder.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Desktop assessment – aerodrome data, instrument flight procedure and aircraft data and capabilities						
SPA.LVO.110	<u>General:</u> The desktop assessment should correspond to the nature and complexity of the operation intended to be carried out and should take into account the hazards and associated risks inherent in these operations.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	<u>Data to be included:</u> The assessment should include the AFM or additional data from the TC/STC holder, instrument flight procedures and aerodrome data. Additional elements may need to be included in the assessment if stated by: (1) the AFM, or additional data from the TC/STC holder; or (2) the State of the aerodrome or AIP data; or	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(3) the competent authority issuing the operator's LVO approval.					
SPA.LVO.110	<u>Data to be included:</u> For landing systems, the runway or airport conditions should include as a minimum: (1) the approach path slope; (2) the runway elevation; (3) the type of xLS navigation means intended to be used; (4) the average slope of the LSAA; and (5) the ground profile under the approach path (pre-threshold terrain). The distance should be calculated from the published threshold. It should be 300 metres, unless otherwise stated by the AFM or additional data from the TC/STC holder, the State of the aerodrome or AIP data, or the competent authority issuing the operator's LVO approval.	CAT II, CAT III, SA CAT I, SA CAT II, EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	If the system used to perform an EFVS operation contains a flare cue, each aircraft type/equipment/runway combination should be verified before authorising the use of EFVS-L, on any runway with irregular pre-threshold terrain (not within the certification assumption for pre-threshold terrain), if the LSAA presents significant slope change.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	<u>Suitable instrument flight approach procedures:</u> (a) CAT II instrument approach operations should only be conducted using a CAT II IAP. (b) CAT III instrument approach operations should only be conducted using a CAT III IAP. (c) SA CAT I operations should only be conducted using a SA CAT I IAP or, if not available, a CAT I IAP that includes an OCH based on radio altimeter. (d) SA CAT II operations should only be conducted using a SA CAT II IAP or, if not available, a CAT II IAP. (e) EFVS operations should only be conducted using an IAP which is offset by a maximum of 3 degrees unless a different approach offset is stated in the AFM.	CAT II, CAT III, SA CAT I, SA CAT II, EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	<u>Suitable aerodrome : runway and runway environment - navigations facilities:</u> For CAT II instrument approach operations, a PA runway category II or category III should be used. The following visual aids should be available:	CAT II			☐ N/A ☐ C ☐ NC	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(1) category II approach lights; (2) standard runway markings; (3) category II runway lights.				☐ R ☐ N/R	
SPA.LVO.110	<u>Suitable aerodrome : runway and runway environment - navigations facilities:</u> For CAT III instrument approach operations, a PA runway category III should be used. The following visual aids should be available: (1) category III approach lights; (2) standard runway markings; (3) category III runway lights.	CAT III			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	<u>Suitable aerodrome : runway and runway environment - navigations facilities:</u> For SA CAT I operations: (1) where an ILS or MLS or GLS is used, it should not be promulgated with any restrictions affecting its usability and should not be offset from the extended centre line; (2) where an ILS or GLS is used, it should be at least the minimum ILS or GLS classification stated in the AFM and meet any of the required minimum performance parameters stated in the AFM; (3) the glide path angle is 3.0o; a steeper glide path, not exceeding 3.5 o and not exceeding the limits stated in the AFM, can be approved provided that an equivalent level of safety is achieved; and (4) runway markings, category I approach lights as well as runway edge lights, runway threshold lights, and runway end lights should be available.	SA CAT I			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	<u>Suitable aerodrome : runway and runway environment - navigations facilities:</u> For SA CAT II operations: (1) where an ILS or MLS or GLS is used, it should not be promulgated with any restrictions affecting its usability and should not be offset from the extended centre line; (2) where an ILS or GLS is used, the following applies: (i) if the AFM provides such data, the minimum ILS or GLS classification stated in the AFM; or (ii) when such data is not provided: (A) where an GLS is used, it should be certified to at least GAST-C and to the GBAS point D;	SA CAT II			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(B) where an ILS is used, it should be certified to at least class II/D/2; (3) the glide path angle is 3.0°; a steeper glide path, not exceeding 3.2°, can be approved provided that the operator demonstrates an equivalent level of safety; and (4) the following visual aids should be available: (i) standard runway markings, category I approach lights as well as runway edge lights, runway threshold lights and runway end lights; and (ii) for operations with an RVR of less than 400 m, centre line lights.					
SPA.LVO.110	<u>LVO data not available for an aerodrome:</u> When the operator wishing to use an aerodrome where its relevant data for the purpose of LVO is not provided or some data is not provided, the operator should develop procedures to collect or develop the necessary data. The procedure should be specific to the State of the aerodrome or the area of operation and should be approved by competent authority.	ALL			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Operational assessment						
	<u>Number of approaches and landings:</u> The process to determine the number of approaches and landings should be based on identified risks and agreed with the competent authority, and comprise the following steps: (1) Identify the risks related to the landing system (based on the AFM or additional data from the TC/STC holder) which may include limitations in the conditions during the operational assessment (e.g. to perform the assessment under a non-commercial flight). (2) Determine complexity of the runway based on: (i) a set of criteria based on the certification assumptions identified in the AFM or additional data from the TC/STC holder; (ii) availability and quality of runway data supporting the risk assessment; (iii) other known factors identified. (3) Scale the number of required approaches based on complexity.	CAT II, CAT III, SA CAT I, SA CAT II, EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	<u>Operational assessment:</u> When performing an operational assessment, the operator should verify each aircraft type and runway combination by	CAT II, CAT III, SA CAT			☐ N/A ☐ C	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	successfully completing the determined number of approaches and landings according to the process in point (1) below and the conditions determined in Table 15 of AMC1 SPA.LVO.110.	I, SA CAT II, EFVS			☐ NC ☐ R ☐ N/R	
SPA.LVO.110	Use of different variants of an aircraft type: If the operator has different variants of the same type of aircraft, utilising the same landing systems, the operator should show that the variants have satisfactory operational performance, but there is no need to conduct a full operational assessment for each variant/runway combination.	CAT II, CAT III, SA CAT I, SA CAT II, EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	Use of manufacturers simulation/verification if FSTD: The operator may replace partially or completely the approaches and landings to a particular runway, if approved by the competent authority, with: (1) simulations made by the aircraft manufacturer or approved design organisations, if the terrain is properly modelled in the simulation; (2) a verification using an FSTD, if the FSTD is suitable for the operational assessment.	CAT II, CAT III, SA CAT I, SA CAT II, EFVS	- Check that the operator has assessed the suitability of the FSTD to be used (see GM9 SPA.LVO.110 for criteria to determine the suitability of an FSTD): • Aircraft systems, • Pre-threshold and runway terrain • Navigation facilities and associated instrument flight approach procedures • Runway environment characteristics and facilities)		☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Additional verification of the suitability of runways for EFVS operations						
SPA.LVO.110	The assessment of the suitability of the aerodrome should include whether the approach and runway lights installed (notably incandescent or LED lights) are adequate for the EFVS equipment used by the operator.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	Additionally, the operator should assess obstacles for the following operations: (1) NPA procedures; (2) APV; (3) category I PA procedures on runways where an OFZ is not provided; and (4) approach procedures not designed in accordance with PANS-OPS or equivalent criteria.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	This assessment is conducted in order to determine whether: (1) obstacle protection can be ensured in the visual segment from DA/H to landing, without reliance on visual identification of obstacles or in the event of a balked landing; and (2) obstacle lights installed (notably incandescent or LED lights) are adequate for the EFVS equipment used by the operator.					
SPA.LVO.110	If the assessment determines that obstacle clearance cannot be ensured in the visual segment without reliance on visual identification of obstacles, the operator should not authorise EFVS operations to that runway or restrict the operation to the type and/or category of instrument approach operations where obstacle protection is ensured.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	If the assessment determines that obstacle protection is not assured in the event of a go-around initiated at any point prior to touchdown, the operator should not authorise the operation unless procedures to mitigate the risk of inadequate obstacle protection are developed and implemented.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
SPA.LVO.110	If the AFM stipulates specific requirements for approach procedures, the operational assessment should include a determination of whether these requirements can be met.	EFVS			☐ N/A ☐ C ☐ NC ☐ R ☐ N/R	
Reporting events of LVO						
ORO.GEN.160	- A reportable event should include: (1) significant deviations from the flight path not caused by flight crew input; (2) misleading information without flight deck alerts; (3) loss of airborne navigation equipment functions necessary for the operation;	ALL	- Check that the reporting procedures for LVO include this list of events.		☐ N/A ☐ C ☐ NC ☐ R	

Reference	Requirement	Applicability	Specific requirements/expectations	Eval. operator	Eval. CA	Description
	(4) loss of functions or facilities at the aerodrome necessary for the operation, including aerodrome operating procedures, ATC operation, navigation facilities, visual aids and electrical power supply; (5) loss of other functions related to external infrastructure necessary for the operation; and (6) any other event causing the approach or landing to be abandoned if occurring repeatedly. - The reports should be submitted to the aerodrome involved when relevant and in addition to the recipients prescribed in ORO.GEN.160(b).				☐ N/R	