

**Draft Acceptable Means of Compliance (AMC) and Guidance Material (GM)
to Commission Regulation (EU) No 139/2014**

(RMT.0379)

The AMC and GM to Commission Regulation (EU) No 139/2014 are amended as follows:

The text of the amendment is arranged to show deleted text, new or amended text as shown below:

- (a) deleted text is ~~struck through~~;
- (b) new or amended text is highlighted in blue;
- (c) an ellipsis '(...)' indicates that the rest of the text is unchanged.

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ANNEX III — PART-ADR.OR

PART ORGANISATION REQUIREMENTS

SUBPART C — ADDITIONAL AERODROME OPERATOR RESPONSIBILITIES (ADR.OR.C)

GM1 ADR.AR.C.035(e) Issuance of certificates

MODEL FOR THE TERMS OF THE CERTIFICATE TO BE ATTACHED TO THE CERTIFICATES

[...]

⁵ To be specified: approval of the runway for non-instrument, instrument, non-precision approach. In case of precision approach(es), it is to be indicated, which of the following precision approach(-es) is (are) approved:

- Approach with EFVS with RVR less than 550 m;
- Standard category I;
- ~~Lower than standard category I;~~
- Special authorisation category I;
- Precision approach category II;
- ~~Other than standard category II;~~
- Special authorisation category II;
- Precision approach category III.
- ~~Precision approach category III-A;~~
- ~~Precision approach category III-B;~~
- ~~Precision approach category III-C.~~

ANNEX IV — PART-ADR.OPS

PART OPERATIONS REQUIREMENTS — AERODROMES

SUBPART A – AERODROME DATA (ADR.OPS.A)

GM1 ADR.OPS.A.086 Information on the aerodrome lighting system

GENERAL

EFVS technology relies on the infrared heat signature provided by incandescent lights and their replacement with LED lights might make the use of EFVS not possible. The information is important to aircraft operators to assess the suitability of the runway in order to conduct operations with operational credits.

GM1 ADR.OPS.A.085 Information on visual segment surface (VSS) penetration

GENERAL

Criteria related to the VSS are contained in PANS-OPS Volume II, paragraph 5.4.6, Part I – Section 4, Chapter 5.

SUBPART B — AERODROME OPERATIONAL SERVICES, EQUIPMENT AND INSTALLATIONS (ADR.OPS.B)

AMC1 ADR.OPS.B.030(a) Surface movement guidance and control system

GENERAL PARAMETERS TO BE CONSIDERED FOR THE DESIGN AND OPERATION OF A SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM

- (a) A surface movement guidance and control system should take into account:
- (1a) the density of air traffic;
 - (2b) the visibility conditions under which operations are intended;
 - (3c) the need for pilot orientation;
 - (4d) the complexity of the aerodrome layout; and
 - (5e) movements of vehicles.
- ~~(b) The surface movement guidance and control system should be designed to assist in the prevention of inadvertent incursions of aircraft and vehicles onto an active runway;~~
- ~~(c) The system should be designed to assist in the prevention of collisions between aircraft, and between aircraft and vehicles or objects, on any part of the movement area.~~
- ~~(d) Where a surface movement guidance and control system is provided by selective switching of stop bars and taxiway centre line lights, the following requirements should be met:~~
- ~~(1) taxiway routes which are indicated by illuminated taxiway centre line lights should be capable of being terminated by an illuminated stop bar;~~
 - ~~(2) the control circuits should be so arranged that when a stop bar located ahead of an aircraft is illuminated, the appropriate section of taxiway centre line lights beyond it is suppressed; and~~
 - ~~(3) the taxiway centre line lights are activated ahead of an aircraft when the stop bar is suppressed.~~
- ~~(e) The aerodrome operator should develop the surface movement guidance and control system (SMGCS) procedures in cooperation with the aerodrome air traffic services provider.~~

GM1 ADR.OPS.B.030(a) Surface movement guidance and control system

GENERAL

The SMGCS is an appropriate combination of visual aids, non-visual aids, procedures, control, regulation and information facilities. Systems range from the very simple at small aerodromes, with light traffic operating in good visibility conditions, to the complex systems necessary at large aerodromes with heavy traffic operating in low-visibility conditions. The system selected for an aerodrome will be appropriate to the operational environment in which the aerodrome will operate.

AMC1 ADR.OPS.B.030(a)(3) Surface movement guidance and control system

USE OF VISUAL AIDS FOR SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM

Where an SMGCS is provided by selective switching of stop bars and taxiway centre line lights, the following should apply:

- (a) taxiway routes which are indicated by illuminated taxiway centre line lights are capable of being terminated by an illuminated stop bar;
- (b) the control circuits are so arranged, that when a stop bar located ahead of an aircraft is illuminated, the appropriate section of taxiway centre line lights beyond it is suppressed; and
- (c) the taxiway centre line lights are activated ahead of an aircraft when the stop bar is suppressed.

GM1 ADR.OPS.B.030(a)(3) Surface movement guidance and control system

SURFACE MOVEMENT RADAR AND OTHER SURVEILLANCE EQUIPMENT

- (a) Surface movement radar or any other suitable surveillance equipment for the manoeuvring area is used at an aerodrome intended for use in runway visual range (RVR) conditions less than a value of 350 m.
- (b) Surface movement radar or any other suitable surveillance equipment for the manoeuvring area may also be used at an aerodrome other than that in (a), when the traffic density and operating conditions are such that regularity of traffic flow cannot be maintained by alternative procedures and facilities.

~~**GM1 ADR.OPS.B.030—Surface movement guidance and control system**~~

~~**GENERAL**~~

- ~~(a) The SMGCS system should comprise an appropriate combination of visual aids, non-visual aids, procedures, control, regulation, management and information facilities. Systems range from the very simple at small aerodromes, with light traffic operating in good visibility conditions, to the complex systems necessary at large aerodromes with heavy traffic operating in low visibility~~

~~conditions. The system selected for an aerodrome will be appropriate to the operational environment in which that aerodrome will operate.~~

- ~~(b) Surface movement radar for the manoeuvring area could be provided at an aerodrome intended for use in runway visual range conditions less than a value of 350 m.~~
- ~~(c) Surface movement radar for the manoeuvring area could be provided at an aerodrome other than that in (b) above when traffic density and operating conditions are such that regularity of traffic flow cannot be maintained by alternative procedures and facilities.~~

AMC1 ADR.OPS.B.045(a)(1) Low-visibility procedures

LVTOS WITH AN RVR LESS THAN 125 m

In addition to the low-visibility procedures which are required for LVTOS, the following should also apply to LVTOS with an RVR less than 125 m:

- (1) If an ILS signal is used for lateral guidance, the ILS localiser signal meets the requirements for category III operations including the availability of a standby transmitter; and
- (2) If an ILS signal is used, the low-visibility procedures should include protection of the ILS sensitive area.

GM1 ADR.OPS.B.045(a)(1) Low-visibility procedures

RUNWAY CENTRE LINE LIGHTS

Refer to CS ADR-DSN.M.690 in regard to the required runway centre line lights.

AMC1 ADR.OPS.B.045(a)(2) Low-visibility procedures

SUITABILITY OF RUNWAYS — APPROACH AND LANDING OPERATIONS

- (a) CAT II instrument approach operations should be authorised on a precision approach category II or III runway, using a CAT II instrument approach procedure.
- (b) CAT III instrument approach operations should be authorised on a precision approach category III runway, using a CAT III instrument approach procedure.
- (c) SA CAT I approach operations should be allowed in accordance with the following:
 - (1) the runway is precision approach category I and an obstacle free zone (OFZ) is established;
 - (2) a CAT I instrument approach procedure that includes an obstacle clearance height (OCH) based on radio altimeter, is used;
 - (3) where an ILS/MLS is used, it is not promulgated with any restrictions affecting its usability and is not offset from the extended runway centre line;
 - (4) the ILS classification is published in the aeronautical information publication (AIP);
 - (5) the glide path angle is 3.0°;
 - (6) the pre-threshold terrain is surveyed and assessed as suitable with regard to the usability of radio altimeter or other device capable of providing equivalent performance and autoland systems.

- (d) SA CAT II approach operations should be allowed in accordance with the following:
- (1) the runway is at least a precision approach category I and an obstacle free zone (OFZ) is established, and for operations with an RVR of less than 400 m, runway centre line lights are installed;
 - (2) a CAT II instrument approach procedure is used;
 - (3) where an ILS/MLS is used, it is not promulgated with any restrictions affecting its usability and is not offset from the extended runway centre line;
 - (4) where an ILS is used, it should be certified to class II/D/3;
 - (5) the pre-threshold terrain is surveyed and assessed as suitable with regard to the usability of the radio altimeter or other device capable of providing equivalent performance and autoland systems.

AMC1 ADR.OPS.B.045(a)(3) Low-visibility procedures

SUITABILITY OF RUNWAYS FOR EFVS APPROACH AND LANDING OPERATIONS

- (a) A runway should be suitable for EFVS Approach and EFVS 200 operations with a published $DH \geq 200$ ft and $RVR \geq 550$ m, when:
- (1) is served by a straight-in instrument approach procedure designed in accordance with ICAO PANS-OPS Volume II; and
 - (i) the instrument approach procedure does not require the visual identification of obstacles;
 - (ii) for EFVS 200, the final approach track is off-set by a maximum of 3 degrees from the extended centreline of the runway and intercepts the centreline at the threshold;
 - (2) the visual segment surface is not penetrated by obstacles or an OFZ is established.
- (b) A runway should be suitable for EFVS approach operations with a published $DH \geq 200$ ft and $RVR < 550$ m when in addition to point (a), suitable low visibility procedures are in place and:
- (1) TDZ RVR is available; and
 - (2) Switch-over time is less than 1 second
- (c) A runway should be suitable for EFVS landing operation, when in addition to point (b), the following charts are published in the AIP:
- (1) Aerodrome Obstacle Chart – ICAO Type A; and
 - (2) Precision Approach Terrain Chart – ICAO
- (d) A runway should be suitable for EFVS Approach, EFVS200 and EFVS Landing operations if it has been promulgated as suitable by the state of the aerodrome for operations with published DH less than 200ft.

AMC1 ADR.OPS.B.045(b) Low-visibility operations procedures

GENERAL

- ~~(a) The aerodrome operator should, in collaboration with air traffic services provider and the provider of apron management services, if applicable, establish procedures for low visibility~~

~~operations when lower than Standard Category I, other than Standard Category II, Category II and III approaches and low visibility take-offs are conducted.~~

~~(b) When low visibility procedures (LVP) are in effect, the aerodrome operator should make available to aeronautical information services and/or air traffic services, as appropriate, information on the status of the aerodrome facilities.~~

~~(ca) The aerodrome operator should establish and implement procedures to ensure that w~~When low visibility procedures (LVPs) are in effect;

(1) persons and vehicles operating on an apron ~~are~~ should be restricted to the essential minimum;

(2) construction or maintenance activities in the proximity of aerodrome electrical systems and on the manoeuvring area should be restricted;

(3) worksites should be appropriately marked and lighted in accordance with AMC3 ADR.OPS.B.070 and AMC4 ADR.OPS.B.070;

(4) the critical and sensitive areas of the non-visual aids which are essential for low-visibility operations should be safeguarded.

(b) The aerodrome operator should establish low-visibility taxi routes.

~~(d) The procedures to be established by the aerodrome operator to ensure safe aerodrome operations during low visibility conditions should cover the following subjects:~~

~~(1) physical characteristics of the runway environment, including pre-threshold, approach and departure areas;~~

~~(2) obstacle limitation surfaces;~~

~~(3) surveillance and maintenance of visual aids;~~

~~(4) safeguarding of non-visual aids essential to low-visibility procedures;~~

~~(5) secondary power supplies;~~

~~(6) movement area safety;~~

~~(7) RFFS.~~

AMC2 ADR.OPS.B.045(b) Low-visibility procedures

CRITERIA FOR THE PREPARATION OF LVPs

When establishing the criteria for the preparation of LVPs, the aerodrome operator should consider:

(a) the aerodrome layout and its complexity;

(b) the location of the control tower;

(c) the facilities and equipment available; and

(d) the density of traffic.

AMC1 ADR.OPS.045(c) Low-visibility procedures

EQUIPMENT FAILURES TO BE REPORTED AND EXPECTED EFFECTS ON FLIGHT OPERATIONS

The following equipment failures should be reported if the system is degraded or unserviceable or if backup procedures cannot provide the same level of service:

EQUIPMENT FAILURE TO BE REPORTED — LOW-VISIBILITY DEPARTURE OPERATIONS		
SYSTEM CONSIDERED	FAILURE TO BE REPORTED	EXPECTED EFFECT ON FLIGHT OPERATIONS
ILS (Where used for guided take-off)	ILS localiser downgraded to CAT II	No take-off guidance. Guided take-off not permitted
	ILS localiser downgraded to CAT I	No take-off guidance. Guided take-off not permitted
	ILS out of service	No take-off guidance. Guided take-off not permitted
MLS (Where used for guided take-off)	MLS downgraded to CAT II	No take-off guidance. Guided take-off not permitted
	MLS downgraded to CAT I	No take-off guidance. Guided take-off not permitted
	MLS out of service	No take-off guidance. Guided take-off not permitted
GBAS (Where used for guided take-off)	GBAS downgraded to CAT II	No take-off guidance. Guided take-off not permitted
	GBAS downgraded to CAT I	No take-off guidance. Guided take-off not permitted
	GBAS out of service	No take-off guidance. Guided take-off not permitted
RVR	Touchdown RVR system unserviceable	Restrictions depending on flight operation rules
	Other RVR systems unserviceable	Restrictions depending on flight operation rules
LIGHTING SYSTEMS	Runway lighting unserviceable	Restrictions depending on flight operation rules
	Standby power supply unserviceable	Restrictions depending on flight operation rules
	Runway centre line lighting unserviceable	Restrictions depending on flight operation rules
	Runway edge lighting unserviceable	Restrictions depending on flight operation rules
	Taxiway lighting system unserviceable	Restrictions depending on flight operation rules
ANCILLARY	Stop bars unserviceable	No effect if runway protection is ensured by other means
	Ceilometer unserviceable	No effect
	Anemometer unserviceable	No effect

		No effect if other sources are available; otherwise restrictions depending on flight operation rules
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EQUIPMENT FAILURE TO BE REPORTED — APPROACH AND LANDING OPERATIONS		
SYSTEM CONSIDERED	FAILURE TO BE REPORTED	EXPECTED EFFECT ON FLIGHT OPERATIONS
ILS	ILS downgraded to CAT II	Flight operations limited to CAT II
	ILS downgraded to CAT I	Flight operations limited to CAT I
	ILS out of service	Restricted to non-precision approach (or other precision approach aid if available)
	Outer marker unserviceable	No limitation if replaced by published equivalent position; otherwise, restricted to non-precision approach
Glide path out of service		Restricted to non-precision approach (e.g. localiser only)
MLS	MLS downgraded to CAT II	Flight operations limited to CAT II
	MLS downgraded to CAT I	Flight operations limited to CAT I
	MLS out of service	Restricted to non-precision approach (or other precision approach aid if available)
GBAS	GBAS downgraded to CAT II	Flight operations limited to CAT II
	GBAS downgraded to CAT I	Flight operations limited to CAT I
	GBAS out of service	Restricted to non-precision approach (or other precision approach aid if available)
DME	DME (as alternative to marker beacons) unserviceable	No limitation if replaced by published equivalent position; otherwise restricted to non-precision
RVR	Touchdown RVR system unserviceable	Restriction depending on flight operation rules
	Other RVR systems unserviceable	Restriction depending on flight operation rules
LIGHTING SYSTEMS	Approach lighting unserviceable	Restriction depending on flight operation rules
	Runway lighting unserviceable	Restriction depending on flight operation rules
	Standby power supply unserviceable	Restriction depending on flight operation rules
	Runway centre line lighting unserviceable	Restriction depending on flight operation rules

	<p>Runway edge lighting unserviceable</p> <p>TDZ lighting unserviceable</p> <p>Taxiway lighting system unserviceable</p>	<p>Restriction depending on flight operation rules</p> <p>Restriction depending on flight operation rules</p> <p>Restriction depending on flight operation rules</p>
ANCILLARY	<p>Stop bars unserviceable</p> <p>Ceilometer unserviceable</p> <p>Anemometer unserviceable</p>	<p>No effect if runway protection is ensured by other means</p> <p>No effect</p> <p>No effect if other sources are available; otherwise, restriction depending on flight operation rules</p>

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