

Draft Annex to draft Commission Delegated Regulation (EU) .../...amending Regulation (EU) No 139/2014 as regards requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council

(1). Annex I (Definitions for terms used in Annexes II to IV) to Commission Regulation (EU) No 139/2014 is amended as follows:

1. The following points (6a), (6b) and (6c) are inserted:

(6a) ‘Aeronautical Information Circular (AIC)’ means a notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters;

(6b) ‘aeronautical information product’ means aeronautical data and aeronautical information provided either as digital data sets or as a standardised presentation in paper or electronic media. Aeronautical information products include:

- AIP, including amendments and supplements;
- AIC;
- aeronautical charts;
- NOTAM; and
- digital data sets;

(6c) ‘Aeronautical Information Publication (AIP)’ means a publication issued by or with the authority of a Member State and containing aeronautical information of a lasting character essential to air navigation;

2. The following point (15a) is inserted:

(15a) ‘contaminated runway’ means a runway of which a significant portion of the runway surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the substances listed under the runway surface condition descriptors;

3. The following point (17a) is inserted:

(17a) ‘data set’ means an identifiable collection of data;

4. The following point (18a) is inserted:

(18a) ‘dry runway’ means a runway whose surface is free of visible moisture and not contaminated within the area intended to be used.

5. The following point (19a) is inserted:

- (19a) 'foreign object debris (FOD)' means an inanimate object within the movement area which has no operational or aeronautical function and which has the potential to be a hazard to aircraft operation;
6. The following points (24a) and (24b) are inserted:
- (24a) 'lighting system reliability' means the probability that the complete installation operates within the specified tolerances and the system is operationally usable;
- (24b) 'Location Indicators' means the latest effective edition of the 'Location Indicators' (Doc 7910), approved and published by the International Civil Aviation Organization;
7. The following points (34a) and (34b) are inserted:
- (34a) 'notice to airmen (NOTAM)' means a notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations;
- (34b) 'NOTAM code' means the NOTAM code contained in the latest effective edition of the 'Procedures for Air Navigation Services - ICAO Abbreviations and Codes' (PANS ABC - Doc 8400), approved and published by the International Civil Aviation Organization;
8. The following points (38a), (38b), (38c), (38d), (38e), (38f), (38g) and (38h) are inserted:
- (38a) 'runway condition assessment matrix (RCAM)' means a matrix that allows the assessment of the runway condition code (RWYCC), using associated procedures, from a set of observed runway surface conditions and pilot report of braking action;
- (38b) 'runway condition code (RWYCC)' means a number, to be used in the runway condition report (RCR), that describes the effect of the runway surface condition(s) on aeroplane deceleration performance and lateral control;
- (38c) 'runway condition report (RCR)' means a comprehensive standardised report relating to runway surface condition and its effect on the aeroplane landing and take-off performance;
- (38d) 'runway-end safety area (RESA)' means an area symmetrical about the runway centre line and adjacent to the end of the strip primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning the runway;
- (38e) 'runway-holding position' means a designated position intended to protect a runway, an obstacle limitation surface, or an ILS/MLS critical/sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorised by the aerodrome control tower;
- (38f) 'runway strip' means a defined area including the runway and stopway, if provided, intended to:
- (a) reduce the risk of damage to aircraft running off a runway; and

- (b) protect aircraft flying over it during take-off or landing operations;
- (38g) ‘runway surface condition(s)’ means a description of the condition(s) of the runway surface used in the RCR which establishes the basis for the determination of the RWYCC for aeroplane performance purposes;
- (38h) ‘runway surface condition descriptors’ means one of the following elements on the surface of the runway:
- (a) compacted snow: snow that has been compacted into a solid mass such that aeroplane tyres, at operating pressures and loadings, will run on the surface without significant further compaction or rutting of the surface;
 - (b) dry snow: snow from which a snowball cannot readily be made;
 - (c) frost: ice crystals formed from airborne moisture on a surface whose temperature is at or below freezing; frost differs from ice in that frost crystals grow independently and therefore, have a more granular texture;
 - (d) ice: water that has frozen or compacted snow that has transitioned into ice in cold and dry conditions;
 - (e) slush: snow that is so water-saturated that water will drain from it when a handful is picked up or will splatter if stepped on forcefully;
 - (f) standing water: water of depth greater than 3 mm;
 - (g) wet ice: ice with water on top of it or ice that is melting;
 - (h) wet snow: snow that contains enough water to be able to make a well-compacted, solid snowball, but water will not squeeze out;
9. The following points (41a), (41b) and (41c) are inserted:
- (41a) ‘slippery wet runway’ means a wet runway whose surface friction characteristics for a significant portion of it have been determined to be degraded;
- (41b) ‘SNOWTAM’ means a special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format¹;
- (41c) ‘specially prepared winter runway’ means a runway with a dry frozen surface of compacted snow and/or ice which has been treated with sand or grit or has been mechanically treated to improve runway friction;
- 10 Point (47) is replaced by the following:
- (47) terms of the certificate’ means the following:
- ICAO location indicator,
 - conditions to operate (VFR/IFR, day/night),
 - aeroplane operations on specially prepared winter runway(s),

¹ Applicable until 4 November 2020.

- runway — declared distances,
- runway type(s) and approaches provided,
- aerodrome reference code,
- scope of aircraft operations with higher aerodrome reference code letter,
- provision of apron management services (yes/no),
- rescue and firefighting level of protection;

11. The following point (49) is added:

- (49) ‘wet runway’ means a runway whose surface is covered by any visible dampness or water up to and including 3 mm deep within the area intended to be used.

(2). Annex II (Part-ADR.AR) to Commission Regulation (EU) No 139/2014 is amended as follows:

The following point ADR.AR.C.030 is inserted:

‘ADR.AR.C.030 Language proficiency requirements

The competent authority shall approve the assessment method for the demonstration of language proficiency and establish requirements for language assessment organisations according to ADR.OPS.B.025.’

(3). Annex III (Part-ADR.OR) to Commission Regulation (EU) No 139/2014 is amended as follows:

1. Point ADR.OR.D.017 is replaced by the following:

‘ADR.OR.D.017 Training and proficiency check programmes

(a) The aerodrome operator shall establish and implement a training programme for:

- (1) personnel involved in the operation, maintenance and management of the aerodrome; and
- (2) other personnel, including personnel of other organisations that operate or provide services at the aerodrome, allowed unescorted access to the movement area and other operational areas of the aerodrome;

to ensure their continued competence, and that they are aware of the rules and procedures relevant to operation of the aerodrome and the relationship of their functions and tasks to the aerodrome operation as a whole.

(b) The training programme referred to in (a) shall:

- (1) include, initial, recurrent, refresher and continuation training;
 - (2) be appropriate to the functions and tasks of the aerodrome operator's personnel concerned; and
 - (3) for the personnel referred to in (a)(2), include the applicable operational procedures and requirements of the aerodrome, as well as driving.
- (c) The aerodrome operator shall ensure that personnel referred to in point (a) have successfully completed the necessary initial training prior to being allowed:
- (1) to perform their duties unattended;
 - (2) unescorted access to the movement area and other operational areas of the aerodrome.

The initial training shall include theoretical and practical training of adequate duration and competence assessments of the personnel following the provision of the training.

- (d) Unless otherwise specified in this Part and Part-ADR.OPS, the aerodrome operator shall ensure that personnel referred to in point (c), successfully:
- (1) complete recurrent training, at intervals not exceeding 24 months since the completion of their initial training. If the recurrent training is undertaken within the last 3 calendar months of the interval, the new interval period shall be counted from the expiry date of the original interval;
 - (2) complete refresher training, prior to being assigned duties or allowed unescorted access to the movement area or other operational area of the aerodrome, when they are absent from their duties for a period not less than 3 and not more than 12 consecutive months. In case of absence beyond 12 consecutive months, such personnel shall undergo initial training in accordance with (c); and
 - (3) complete continuation training due to changes to their operating environment or assigned tasks, as necessary,

in order to continue to perform their duties unattended and being allowed unescorted access to the movement area and other operational areas of the aerodrome.

- (e) The aerodrome operator shall establish and implement a proficiency check programme to ensure that personnel referred to in point (a) have demonstrated their capabilities in the performance of their tasks, to ensure:
- (1) their continued competence; and

- (2) awareness of the rules and procedures relevant to their functions and tasks. Unless otherwise specified in this Part and Part-ADR.OPS, the aerodrome operator shall ensure that persons referred to in point (a) undergo proficiency checks at intervals not exceeding 24 months since the completion of their initial training.
 - (f) The aerodrome operator shall ensure that:
 - (1) adequately qualified and experienced instructors for the provision of training and assessors for the assessments and the proficiency checks are used; and
 - (2) suitable facilities, means and equipment are used for the provision of the training and, where necessary, for the conduct of the proficiency checks.
 - (g) The aerodrome operator shall establish and implement procedures for the implementation of the training and proficiency check programmes and shall:
 - (1) maintain appropriate qualification, training and proficiency check records to demonstrate compliance with this requirement;
 - (2) upon request, make such records available to its personnel concerned; and
 - (3) if a person is employed by another employer, upon request, make such records of that person available to that new employer.
2. In point ADR.OR.D.035, point (d), the following points (7) and (8) are added:
- (7) driving authorisations and, if appropriate, language proficiency certificates, for at least four years after the end of a person's employment, or the revocation or cancelation of a driving authorisation, or until this area of activity has been audited by the Competent Authority;
 - (8) vehicle authorisations and aerodrome operator's vehicle maintenance records, for at least four years after a vehicle is removed from operations, or until this area has been audited by the Competent Authority.

(4) Annex IV (Part-ADR.OPS) to Commission Regulation (EU) No 139/2014 is amended as follows:

1. The following point ADR.OPS.A.057 is added:

‘ADR.OPS.A.057 Origination of NOTAM

- (a) The aerodrome operator shall:
 - (1) establish and implement procedures to originate a NOTAM to be issued by the relevant aeronautical information services provider:

- (i) containing information on the establishment, condition, or change of any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel involved with flight operations;
 - (ii) whenever the information to be distributed is of a temporary nature and of short duration or when operationally significant permanent changes or temporary changes of long duration are made at short notice, except for extensive text and/or graphics;
 - (2) designate aerodrome personnel, who have successfully completed relevant training and demonstrated their competence, to originate NOTAM and provide relevant information to the aeronautical information service providers with which it has arrangements; and
 - (3) ensure that all other aerodrome personnel whose duties involve the use of NOTAM have successfully completed relevant training and demonstrated their competence to do so.
- (b) The aerodrome operator shall ensure that:
- (1) NOTAM is originated with sufficient lead time for the affected parties to take any required action, except in the case of unserviceability, release of radioactive material, toxic chemicals and other events that cannot be foreseen;
 - (2) a NOTAM notifying unserviceability of aids to air navigation, facilities or communication services provides an estimate of the unserviceability period or of the time at which restoration of service is expected;
 - (3) within three months from the issuance of a permanent NOTAM, the information contained in the NOTAM is included in the aeronautical information products affected;
 - (4) within three months from the issuance of a temporary NOTAM of long duration, the information contained in the NOTAM is included in an AIP supplement; and
 - (5) when a NOTAM with an estimated end of validity unexpectedly exceeds the three-month period, a replacement NOTAM is originated unless the condition is expected to last for a further period of more than three months; in that case, the aerodrome operator shall ensure that the information is published in an AIP supplement.
- (c) The aerodrome operator shall originate a NOTAM when it is necessary to provide the following information:
- (1) establishment of, closure of, or significant changes in the operation of aerodromes or heliports or runways;

- (2) establishment of, withdrawal of, or significant changes in the operation of the aerodrome services;
- (3) establishment of, withdrawal of, or significant changes in the operational capability of radio navigation and air-ground communication services for which the aerodrome operator is responsible; in all other cases, the aerodrome operator shall coordinate with the responsible organisation to ensure the timely origination of a NOTAM;
- (4) unavailability of backup and secondary systems, having a direct operational impact;
- (5) establishment of, withdrawal of, or significant changes to visual aids;
- (6) interruption of, or return to operation of, major components of aerodrome lighting systems;
- (7) establishment of, withdrawal of, or significant changes to procedures for air navigation services for which the aerodrome operator is responsible; in all other cases, the aerodrome operator shall coordinate with the responsible organisation to ensure the timely origination of a NOTAM;
- (8) occurrence or correction of major defects or impediments in the manoeuvring area;
- (9) changes to, and limitations on, the availability of fuel, oil and oxygen;
- (10) establishment of, withdrawal of, or return to, operation of hazard beacons marking obstacles to air navigation;
- (11) planned laser emissions, laser displays and search lights in the aerodrome surroundings, if pilots' night vision is likely to be impaired;
- (12) erecting or removal of, or changes to, obstacles to air navigation in the take-off/climb, missed approach, approach areas as well as on the runway strip;
- (13) changes in aerodrome/heliport rescue and firefighting category;
- (14) presence of, removal of, or significant changes in, hazardous conditions due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;
- (15) a runway or portion thereof is slippery wet;
- (16) a runway is not available due to runway marking works; or the time lag required for making the runway available, when the equipment used for such works can be removed, when necessary; and

- (17) presence of hazards that affect air navigation, including presence of wildlife, obstacles, displays and major events.
- (d) The aerodrome operator shall ensure that:
- (1) except as provided for in point (d)(4), each NOTAM it originates contains the applicable information in the order shown in the NOTAM Format of Appendix 1 to this Annex;
 - (2) NOTAM text is composed of the significations/uniform abbreviated phraseology assigned to the NOTAM Code, complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language;
 - (3) a NOTAM is originated in the English language or the national language, as agreed with the relevant aeronautical information services provider;
 - (4) Information concerning snow, slush, ice, frost, standing water or water associated with snow, slush, ice or frost on the movement area is disseminated by means of SNOWTAM and contains the information in the order shown in the SNOWTAM Format of Appendix 2 to this Annex;
 - (5) when an error has occurred in a NOTAM, a NOTAM is originated to replace or cancel the erroneous NOTAM;
 - (6) when a NOTAM is originated to cancel or replace a previous NOTAM:
 - (i) the series and number/year of the previous NOTAM are indicated; and
 - (ii) the location indicator and subject of both NOTAM are the same;
 - (7) a NOTAM is originated to cancel or replace only one NOTAM;
 - (8) each originated NOTAM deals with only one subject and one condition of the subject;
 - (9) each originated NOTAM is as brief as possible and compiled so that its meaning is clear without the need to refer to another document;
 - (10) an originated NOTAM containing permanent or temporary information of long duration includes appropriate references to the AIP or AIP supplement; and
 - (11) the ICAO location indicator included in the text of an originated NOTAM for the aerodrome is the one contained in the Location Indicators. A curtailed form of such indicators shall not be used.
- (e) The aerodrome operator shall, following the publication of a NOTAM that it has originated, review its content to ensure its accuracy, and ensure the dissemination

of the information to all relevant aerodrome personnel and organisations at the aerodrome.

- (f) The aerodrome operator shall maintain records:
 - (1) of the NOTAM it originated and those that were issued; and
 - (2) regarding the implementation of points (a)(2) and (3).

2. The following point ADR.OPS.A.060 is added:

ADR.OPS.A.060 Reporting of surface contaminants

The aerodrome operator shall report to the aeronautical information services and air traffic services units on matters of operational significance affecting aircraft and aerodrome operations on the movement area, particularly in respect of the presence of the following:

- (a) water;
- (b) snow;
- (c) slush;
- (d) ice;
- (e) frost;
- (f) anti-icing or de-icing liquid chemicals or other contaminants; and
- (g) snowbanks or drifts.

3. The following point ADR.OPS.A.065 is added:

ADR.OPS.A.065 Reporting of the runway surface condition

(a) The aerodrome operator shall report the runway surface condition over each third of the runway using a runway condition report (RCR). The report shall include a runway condition code (RWYCC) using numbers 0 to 6, the contaminant coverage and depth, and a description using the following terms:

- (1) COMPACTED SNOW;
- (2) DRY;
- (3) DRY SNOW;
- (4) DRY SNOW ON TOP OF COMPACTED SNOW;
- (5) DRY SNOW ON TOP OF ICE;

- (6) FROST;
 - (7) ICE;
 - (8) SLIPPERY WET;
 - (9) SLUSH;
 - (10) SPECIALLY PREPARED WINTER RUNWAY;
 - (11) STANDING WATER;
 - (12) WATER ON TOP OF COMPACTED SNOW;
 - (13) WET;
 - (14) WET ICE;
 - (15) WET SNOW;
 - (16) WET SNOW ON TOP OF COMPACTED SNOW;
 - (17) WET SNOW ON TOP OF ICE;
 - (18) CHEMICALLY TREATED;
 - (19) LOOSE SAND;
- (b) Reporting shall commence when a significant change in runway surface condition occurs due to water, snow, slush, ice or frost.
 - (c) Reporting of the runway surface condition shall continue to reflect significant changes until the runway is no longer contaminated. When this situation occurs, the aerodrome operator shall issue an RCR that states that the runway is wet or dry as appropriate.
 - (d) Friction measurements shall not be reported.
 - (e) When a paved runway or portion thereof is slippery wet, the aerodrome operator shall make such information available to the relevant aerodrome users. This shall be done by issuing a NOTAM and shall describe the location of the affected portion.
4. The following appendices 1 and 2 to Part-ADR.OPS.A are inserted:

‘Appendix 1
NOTAM FORMAT

Priority indicator		→							
Address									
<<≡									
Date and time of filing		→							
Originator's indicator		<<=(
Message series, number and identifier									
NOTAM containing new information NOTAMN (series and number/year)								
NOTAM replacing a previous NOTAM NOTAMR..... (series and number/year) (series and number/year of NOTAM to be replaced)								
NOTAM cancelling a previous NOTAM NOTAMC..... (series and number/year) (series and number/year of NOTAM to be cancelled)	<<≡							
Qualifiers									
	FIR	NOTAM Code	Traffic	Purpose	Scope	Lower limit	Upper limit	Coordinates, Radius	
Q)		Q							<<≡
Identification of ICAO location indicator in which the facility, airspace or condition reported on is located								A)	→
Period of validity									
From (date-time group)				B)					→
To (PERM or date-time group)				C)					EST* PERM* <<≡
Time schedule (if applicable)				D)					→
									<<≡
Text of NOTAM; Plain-language entry (using ICAO abbreviations)									
E)									
<<≡									
Lower limit				F)					→
Upper limit				G)) <<≡
Signature									

*Delete as appropriate

Appendix 2 SNOWTAM FORMAT

(COM heading)	(Priority indicator)	(Addresses)										<≡										
	(Date and time of filing)	(Originator's indicator)										<≡										
(Abbreviated heading)	(SWAA* SERIAL NUMBER)				(LOCATION INDICATOR)				DATE-TIME OF ASSESSMENT				(OPTIONAL GROUP)									
	S	W	*	*																		<≡(
SNOWTAM →		(Serial number) <≡																				
Aeroplane performance calculation section																						
(AERODROME LOCATION INDICATOR)																		M	A)	<≡		
(DATE/TIME OF ASSESSMENT (<i>Time of completion of assessment in UTC</i>))																		M	B)	→		
(LOWER RUNWAY DESIGNATION NUMBER)																		M	C)	→		
(RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)																		M	D)	// →		
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)																		C	E)	// →		
DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD																		C	F)	// →		
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH (Observed on each runway third, starting from threshold having the lower runway designation number)																		M	G)	//		
COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLIPPERY WET SLUSH SPECIALLY PREPARED WINTER RUNWAY STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE																				→		
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITIONS CODES APPLY, IF LESS THAN THE PUBLISHED WIDTH)																		O	H)	≡≡		
Situational awareness section																						
(REDUCED RUNWAY LENGTH, IF LESS THAN THE PUBLISHED LENGTH (m))																		O	I)	→		
(DRIFTING SNOW ON THE RUNWAY)																		O	J)	→		
(LOOSE SAND ON THE RUNWAY)																		O	K)	→		
(CHEMICAL TREATMENT ON RUNWAY)																		O	L)	→		
(SNOWBANKS ON THE RUNWAY) (If present, distance from runway centreline (m) followed by 'L', 'R' or 'LR' as applicable))																		O	M)	→		
(SNOWBANKS ON A TAXIWAY)																		O	N)	→		
(SNOWBANKS ADJACENT TO THE RUNWAY)																		O	O)	→		
(TAXIWAY CONDITIONS)																		O	P)	→		
(APRON CONDITIONS)																		O	R)	→		
(MEASURED FRICTION COEFFICIENT)																		O	S)	→		
(PLAIN-LANGUAGE REMARKS)																		O	T)) <<≡		
NOTES:																						

1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2 or otherwise applicable aerodrome identifier. 2. Information on other runways, repeat from B to H. 3. Information in the situational awareness section repeated for each runway, taxiway and apron. Repeat as applicable, when reported. 4. Words in brackets () not to be transmitted. 5. For letters A) to T), refer to the <i>Instructions for the completion of the SNOWTAM format, paragraph 1, item b).</i>	
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SIGNATURE OF ORIGINATOR (*not for transmission*)

5. The following point ADR.OPS.B.003 is inserted:

‘ADR.OPS.B.003 Handover of activities — provision of operational information

- (a) The aerodrome operator shall establish and implement procedures for the handover of operational activities between personnel involved in the operation and maintenance of the aerodrome to ensure that such incoming personnel are provided with operational information related to their tasks.
- (b) The aerodrome operator shall establish and implement procedures to provide organisations operating or providing services at the aerodrome, with aerodrome-related operational information that may affect the execution of the tasks of the personnel of such organisations.’

6. In point ADR.OPS.B.010, points (c), (d), (e) and (f) are replaced by the following:

- (c) The training programme shall be conducted in accordance with ADR.OR.D.017, except that:
 - (1) recurrent training shall include theoretical and continuous practical training; and
 - (2) proficiency checks shall be conducted at intervals not exceeding 12 months since the completion of the initial training.
- (d) The training of rescue and firefighting personnel shall be designed to impart fundamental knowledge and practical skills related to the execution of their duties.
- (e) Temporary reduction of the level of protection of the aerodrome’s rescue and firefighting service, due to unforeseen circumstances, shall not require prior approval by the Competent Authority.

7. The following point ADR.OPS.B.016 is inserted:

‘ADR.OPS.B.016 Foreign object debris control programme

- (a) The aerodrome operator shall establish and implement a foreign object debris (FOD) control programme and shall require organisations operating or providing services at the aerodrome to participate in this programme.
- (b) As part of the FOD control programme, the aerodrome operator shall:
 - (1) ensure personnel awareness and participation, and that such personnel have successfully completed relevant training and demonstrated their competence;

- (2) establish and implement measures to prevent generation of FOD;
- (3) establish and implement procedures to:
 - (i) detect FOD, including the monitoring and inspection of the movement area or adjacent areas in accordance with an inspection schedule and whenever such an inspection is required due to activities, weather phenomena, or occurrences that may have led to the generation of FOD;
 - (ii) promptly remove, contain, and dispose of FOD, and provide all relevant means necessary; and
 - (iii) notify, as soon as possible, aircraft operators in the case of identified aircraft parts; and
- (4) collect and analyse data and information to identify FOD sources and trends, and implement corrective and/or preventive measures to improve the effectiveness of the programme.

8. The following point ADR.OPS.B.024 is inserted:

‘ADR.OPS.B.024 Authorisation of vehicle drivers

- (a) Except as provided for in (d), the driving of a vehicle on any part of the movement area or other operational areas of an aerodrome shall require an authorisation issued to the driver by the operator of that aerodrome. The driving authorisation shall be issued to a person who:
 - (1) is allocated tasks that involve driving in such areas;
 - (2) holds a valid driving licence, and any other licence required for the operation of specialised vehicles;
 - (3) has successfully completed a relevant driving training programme and demonstrated his or her competence in accordance with (b);
 - (4) has demonstrated language proficiency in accordance with ADR.OPS.B.025, if that person intends to drive a vehicle on the manoeuvring area; and
 - (5) has received training by its employer on the use of the vehicle(s) intended to operate at the aerodrome.
- (b) The aerodrome operator shall establish and implement a driving training programme for drivers that operate on the apron or other operational areas, except the manoeuvring area, and for drivers that operate on the manoeuvring area. The training programme shall:

- (1) be appropriate to the characteristics and operation of the aerodrome, the driver's functions and tasks to be performed, and the areas of the aerodrome that drivers may be authorised to operate;
- (2) include:
 - (i) theoretical and practical training of adequate duration, at least in the following areas:
 - (A) regulatory framework and personal responsibilities;
 - (B) vehicle standards, aerodrome operational requirements and procedures;
 - (C) communications;
 - (D) radiotelephony, for drivers that operate in the manoeuvring area;
 - (E) human performance; and
 - (F) familiarisation with the operating environment; and
 - (ii) competence assessment of the drivers.
- (c) A driving authorisation issued in accordance with (a) shall specify the parts of the movement area or other operational areas on which the driver is allowed to drive and shall remain valid as long as:
 - (1) the requirements of (a)(1) and (a)(2) are met;
 - (2) the holder of the driving authorisation:
 - (i) undergoes and successfully completes training and proficiency checks in accordance with ADR.OR.D.017 (d) and (e); and
 - (ii) if applicable, continues to demonstrate the required language proficiency in accordance with ADR.OPS.B.025.
- (d) Notwithstanding (a), the aerodrome operator may permit a person to temporarily drive a vehicle on the movement area or other operational areas if:
 - (1) that person holds a valid driving licence, and any other licence required for the operation of specialised vehicles; and
 - (2) that vehicle is escorted by vehicle(s) driven by driver(s) authorised in accordance with (a).
- (e) The aerodrome operator shall:
 - (1) establish a system and implement procedures for:

- (i) issuing driving authorisations and temporarily permitting the driving of vehicles;
 - (ii) ensuring that drivers to whom a driving authorisation has been issued, continue to comply with (c)(1) and (c)(2); and
 - (iii) monitoring the compliance of drivers with any driving requirements applicable at the aerodrome and for taking appropriate action, including the suspension and revocation of driving authorisations or permissions to temporarily drive a vehicle; and
- (2) maintain relevant records.

9. Point ADR.OPS.B.25 is replaced by the following:

‘ADR.OPS.B.025 Language proficiency

- (a) A person required by ADR.OPS.B.024 to demonstrate language proficiency, shall demonstrate proficiency in:
 - (1) the English language; and
 - (2) any other language(s) used at the aerodrome for radio communication purposes with the air traffic services unit of the aerodrome;

at least at an operational level both in the use of phraseologies and in plain language, in accordance with (b).
- (b) The applicant shall demonstrate the ability to:
 - (1) communicate effectively in voice-only and in face-to-face situations;
 - (2) communicate on common and work-related topics with accuracy and clarity;
 - (3) use appropriate communicative strategies to exchange messages and to recognise and resolve misunderstandings in a general or work-related context;
 - (4) handle successfully the linguistic challenges presented by a complication or unexpected turn of events which occurs within the context of a routine work situation or communicative task with which they are otherwise familiar; and
 - (5) use a dialect or accent which is intelligible to the aeronautical community.
- (c) Language proficiency shall be demonstrated by a certificate issued by the organisation that conducted the assessment, attesting the language(s), the level(s) of proficiency, and the date of the assessment.
- (d) Except for persons who have demonstrated language proficiency at an expert level, the language proficiency shall re-assessed every:

- (1) four years from the date of the assessment, if the level demonstrated is operational level; or
 - (2) six years from the date of the assessment, if the level demonstrated is extended level.
- (e) The demonstration of language proficiency shall be done through a method of assessment approved by the competent authority, which shall contain:
- (1) the process by which an assessment is done;
 - (2) the qualifications of the assessors conducting assessments of language proficiency; and
 - (3) the appeal procedure.

Language assessment organisations shall comply with the requirements established by the competent authority according to ADR.AR.C.030.

- (f) The aerodrome operator shall make available language training to maintain the required level of language proficiency of its personnel.

10. The following point ADR.OPS.B.026 is inserted:

‘ADR.OPS.B.026 Authorisation of vehicles

- (a) Except as provided for in (e)(2), the operation of a vehicle on the movement area or other operational areas shall require an authorisation issued by the aerodrome operator. The authorisation may be issued if the vehicle is used in activities related to the operation of the aerodrome and:
- (1) is serviceable and fit for the intended operation;
 - (2) complies with the marking and lighting requirements of ADR.OPS.B.080;
 - (3) is equipped with a radio allowing two-way communication on the appropriate air traffic services frequency and any other frequency necessary, if it is intended to be operated on:
 - (i) the manoeuvring area; or
 - (ii) other operational areas where communication with the air traffic services unit or other operational units of the aerodrome is necessary; and
 - (4) is fitted with a transponder or other equipment that supports surveillance, if it is intended to be operated:
 - (i) on the manoeuvring area; and

- (ii) the aerodrome is equipped with a surface movement guidance and control system whose operation requires the use of a transponder or other equipment supporting surveillance fitted on the vehicles.
- (b) The aerodrome operator shall limit the number of vehicles authorised to operate on the movement area and other operational areas to the minimum number required for the safe and efficient operation of the aerodrome.
- (c) An authorisation issued in accordance with (a) shall:
 - (1) specify the parts of movement area or other operational areas where the vehicle may be operated; and
 - (2) remain valid as long as the requirements of (a) are met.
- (d) The aerodrome operator shall assign a call sign to a vehicle authorised in accordance with (a) to operate at the aerodrome, if that vehicle is required to be radio-equipped. The call sign assigned to a vehicle shall:
 - (1) not cause confusion regarding its identity;
 - (2) be appropriate to its function; and
 - (3) for vehicles that operate in the manoeuvring area, be coordinated with the air traffic services unit, and disseminated to the relevant organisations at the aerodrome.
- (e) Notwithstanding (a), the aerodrome operator may permit:
 - (1) a vehicle authorised in accordance with (a), which is not equipped with a radio required by (a)(3) and, if necessary, a transponder or other equipment supporting surveillance required by (a)(4), to be occasionally operated in the areas prescribed in (a)(3) and (a)(4), provided that:
 - (i) that vehicle is escorted, at all times, by an other vehicle (or other vehicles) meeting the requirement of (a)(3) and, if necessary, (a)(4);
 - (ii) the escorting vehicle(s) complies with the marking and lighting requirements of ADR.OPS.B.080; and
 - (iii) low-visibility procedures are not in effect, if the escorted vehicle is to be operated in the manoeuvring area;
 - (2) the temporary entry of a vehicle to the aerodrome and its operation on the movement area or other operational areas, subject to the following:
 - (i) a visual inspection of that vehicle determines that its condition does not endanger safety;

- (ii) that vehicle is escorted, at all times, by an other vehicle (or other vehicles) which:
 - (A) meet the requirement of (a)(3) and, if necessary, (a)(4), when operating in the areas prescribed in (a)(3) and (a)(4);
 - (B) comply with the marking and lighting requirements of ADR.OPS.B.080; and
 - (iii) low-visibility procedures are not in effect, if the vehicle is to be operated in the manoeuvring area,.
- (f) The aerodrome operator shall:
- (1) establish and implement procedures for:
 - (i) issuing vehicle authorisations and temporary permitting the entry to the aerodrome and operation of vehicles;
 - (ii) assigning call signs to vehicles; and
 - (iii) monitoring the compliance of vehicles with these provisions and for taking appropriate action, including the suspension and revocation of vehicle authorisations or permissions to temporarily operate a vehicle; and
 - (2) maintain relevant records.’

11. The following point ADR.OPS.B.027 is inserted:

‘ADR.OPS.B.027 Operation of vehicles

- (a) The driver of a vehicle on the manoeuvring area shall operate the vehicle:
 - (1) only as authorised by the air traffic services unit, and in accordance with the instructions issued by that unit;
 - (2) in compliance with all mandatory instructions conveyed by markings and signs unless otherwise authorised by the air traffic services unit; and
 - (3) in compliance with all mandatory instructions conveyed by lights.
- (b) The driver of a vehicle on the manoeuvring area shall operate the vehicle in accordance with the following:
 - (1) emergency vehicles that proceed to the assistance of an aircraft in distress shall be afforded priority over all other surface movement traffic; and

- (2) subject to the provisions of (b)(1):
 - (i) vehicles and vehicles towing aircraft shall give way to aircraft which are landing, taking off, or taxiing;
 - (ii) vehicles shall give way to other vehicles towing aircraft;
 - (iii) vehicles shall give way to other vehicles in accordance with the air traffic services unit instructions;
 - (iv) notwithstanding the provisions of (b)(2)(i);(ii) and (iii), vehicles and vehicles towing aircraft shall comply with the instructions issued by the air traffic services unit.

- (c) The driver of a radio-equipped vehicle, intending to operate or operating on the manoeuvring area, shall:
 - (1) establish satisfactory two-way radio communication with the air traffic services unit on the appropriate air traffic services frequency before entering the manoeuvring area, and maintain a continuous listening watch on the assigned frequency;
 - (2) before entering the manoeuvring area, obtain authorisation from the air traffic services unit and shall operate only as authorised by the air traffic services unit. Notwithstanding such an authorisation, entry to a runway or runway strip or change in the operation authorised, shall be subject to a further specific authorisation by the air traffic services unit;
 - (3) read back to the air traffic services personnel safety-related parts of the instructions which are transmitted by voice. Instructions to enter, hold short of, cross and operate on any runway, taxiway or runway strip shall always be read back; and
 - (4) read back to the air traffic services personnel or acknowledge instructions other than in (c)(3) in a manner to clearly indicate that they have been understood and shall be complied with.

- (d) The driver of a vehicle that is operating in the manoeuvring area, when in doubt as to the position of the vehicle with respect to the manoeuvring area, shall:
 - (1) notify the air traffic services unit of the circumstances, including the last known position;
 - (2) simultaneously, unless otherwise instructed by the air traffic services unit, vacate the runway, taxiway, or other part of the manoeuvring area, to a safe distance as expeditiously as possible; and then
 - (3) stop the vehicle.

- (e) The driver of a vehicle on the manoeuvring area:
 - (1) when operating a vehicle on the strip of a runway shall not, during the use of that runway for landing or take-off, approach the runway closer than the distance at which the runway-holding position or any road-holding positions have been established for that runway; and
 - (2) shall not during the use of a runway for landing or take-off, operate a vehicle on:
 - (i) the part of the runway strip extending beyond the runway ends of that runway;
 - (ii) the runway end safety areas of that runway; and
 - (iii) a clearway, if available, at a distance that would endanger an aircraft on the air.
- (f) The driver of a radio-equipped vehicle on the apron shall:
 - (1) if so required at the aerodrome, establish satisfactory two-way radio communication with the responsible unit designated by the aerodrome operator before entering the apron; and
 - (2) maintain a continuous listening watch on the assigned frequency.
- (g) The driver of a vehicle on the apron shall operate the vehicle in accordance with the following:
 - (1) only as authorised by the responsible unit designated by the aerodrome operator, and in accordance with the instructions issued by that unit;
 - (2) in compliance with all mandatory instructions conveyed by markings and signs unless otherwise authorised by the responsible unit designated by the aerodrome operator;
 - (3) in compliance with all mandatory instructions conveyed by lights;
 - (4) vehicles shall give way to an emergency vehicle, an aircraft taxiing, about to taxi, or being pushed or towed;
 - (5) vehicles shall give way to other vehicles in accordance with local regulations; and
 - (6) emergency vehicles responding to an emergency shall be given priority over all other surface movement.
- (h) The driver of a vehicle on the movement area and other operational areas shall:

- (1) operate the vehicle in accordance with the established speed limits and driving routes;
 - (2) not be engaged in disturbing or distracting activities while driving; and
 - (3) comply with the communication requirements and the operational procedures contained in the aerodrome manual.
- (i) The driver of a vehicle escorting another vehicle shall ensure that the driver of the escorted vehicle operates the vehicle in accordance with the instructions given.
 - (j) The driver of a vehicle shall park the vehicle only in areas designated by the aerodrome operator.
 - (k) The aerodrome operator shall establish and implement procedures to ensure that drivers that operate on the movement area and other operational areas comply with the above provisions.'

12. The following point ADR.OPS.B.028 is inserted:

'ADR.OPS.B.028 Aircraft towing

The aerodrome operator shall:

- (a) establish aircraft manoeuvring procedures and designate routes to be used during aircraft towing operations on the movement area, to ensure safety;
- (b) ensure the provision of adequate and appropriate guidance during towing operations;
- (c) ensure that towed aircraft display lights during towing operations, in accordance with the provisions of SERA.3215 of Regulation (EU) No 923/2012;
- (d) establish and implement procedures to ensure adequate communication and coordination between the organisation executing the towing operation, the apron management services unit, and the air traffic services unit, as appropriate to the towing operation; and
- (e) establish and implement procedures to ensure safety of towing operations in adverse weather or meteorological conditions, including by limiting or not permitting such operations.'

13. Point ADR.OPS.B.030 is replaced by the following:

'ADR.OPS.B.030 Surface movement guidance and control system

- (a) The aerodrome operator shall ensure that a surface movement guidance and control system is provided at the aerodrome.
- (b) *reserved*

- (c) *reserved*
- (d) *reserved*
- (e) *reserved*
- (f) As part of the surface movement guidance and control system, the aerodrome operator shall, in coordination with the air traffic services provider, assess the need to establish standard routes for taxiing aircraft on the aerodrome. Where standard routes are provided, the aerodrome operator shall:
 - (1) ensure that they are adequate and suitable for the aerodrome traffic, design and intended operations, and properly identified; and
 - (2) provide relevant information to the aeronautical information services provider for publication in the AIP.
- (g) Where the operation of the surface movement guidance and control system requires the use of a transponder by aircraft on the movement area, the aerodrome operator shall:
 - (1) in coordination with the air traffic services provider, determine relevant transponder operating procedures to be complied with by aircraft operators; and
 - (2) provide relevant information to the aeronautical information services provider for publication in the AIP.’

14. The following point ADR.OPS.B.031 is inserted:

‘ADR.OPS.B.031 Communications

- (a) Communication between vehicles and the air traffic services unit shall be in accordance with the applicable requirements of Section 14 of the Annex to the Regulation (EU) No 923/2012.
- (b) The aerodrome operator shall, in coordination with the air traffic services provider, establish communication procedures, including:
 - (1) the frequencies and the language(s) to be used for communication between the air traffic services unit and vehicles that intend to operate or are operating on the manoeuvring area;
 - (2) communication between the air traffic services unit and pedestrians that intend to operate or are operating on the manoeuvring area;
 - (3) dissemination of significant aerodrome-related information that may affect the safety of operations on the manoeuvring area, using radio communications; and

- (4) signals and other communication means, to be used, in all visibility conditions, in the case of radio communication failure between the air traffic services unit and vehicles or pedestrians on the manoeuvring area.'

15. The following point ADR.OPS.B.033 is inserted:

'ADR.OPS.B.033 Control of pedestrians

- (a) The aerodrome operator shall establish and implement procedures to:
 - (1) limit the access to the movement area and other operational areas only to persons whose duties require them to have access to such areas;
 - (2) ensure that such persons are allowed unescorted access to such areas only if they have received relevant training and demonstrated their competence; and
 - (3) control the movement of persons on the apron, and ensure that passengers embarking/disembarking an aircraft or need to walk to/from or across the apron:
 - (i) are escorted by trained and competent personnel;
 - (ii) do not interfere with stationary aircraft and ground servicing activities; and
 - (iii) are protected from operating aircraft, including the effects of their engines, as well as vehicular or other activities.
- (b) The aerodrome operator shall establish and implement procedures to ensure:
 - (1) the orderly and safe entry and operation in the manoeuvring area of personnel whose tasks involve access to this area without a vehicle; and
 - (2) that such personnel:
 - (i) are properly equipped, including with high-visibility clothing, orientation means, and means allowing two-way communication with the air traffic services unit and the respective unit of the aerodrome operator during such operations;
 - (ii) obtain authorisation from the air traffic services unit before entering the manoeuvring area. Notwithstanding such an authorisation, entry to a runway or runway strip or change in the operation authorised, shall be subject to a further specific authorisation by the air traffic services unit; and
 - (iii) do not enter the manoeuvring area when low-visibility procedures are in effect.'

16. Point ADR.OPS.B.035 is replaced by the following:

‘ADR.OPS.B.035 Operations in winter conditions

- (a) The aerodrome operator shall, when the aerodrome is expected to operate in conditions when snow, slush or ice may accumulate on the movement area, develop and implement a snow plan. As part of the snow plan, the aerodrome operator shall:
 - (1) have provisions for the use of materials to remove or to prevent the formation of ice and frost or to improve runway surface friction characteristics; and
 - (2) ensure, as far as reasonably practical, the removal of snow, slush or ice from the runways(s) in use and the other parts of the movement area which are intended to be used for the operation of aircraft.
- (b) The aerodrome operator shall provide for publication in the AIP information regarding:
 - (1) the availability of equipment for snow removal and snow and ice control operations;
 - (2) approval status, if applicable, regarding the use of specially prepared winter runways; and
 - (3) the type of materials in use for movement area surface treatment.’

16. The following point ADR.OPS.B.036 is inserted:

ADR.OPS.B.036 Operations on specially prepared winter runways

- (a) An aerodrome operator may, subject to the prior approval of the Competent Authority, use procedures for the operation of aeroplanes on specially prepared winter runways, when the contaminant type is compacted snow or ice. Specially prepared winter runways may be associated with primary RWYCC 4; however, if treatment does not justify a RWYCC 4, the normal downgrade procedure shall apply.
- (b) The aerodrome operator in order to obtain prior approval by the Competent Authority shall:
 - (1) establish procedures which include the following:
 - (i) the type of equipment and/or the type, the quality and the quantity of the material which are used to improve runway surface condition and method of application;
 - (ii) monitoring the meteorological parameters affecting the method;
 - (iii) management of loose contaminants; and

- (iv) assessment of the achieved results;
 - (2) obtain aeroplane data that relates to stopping performance on the runway with the special treatment from at least one aeroplane operator;
 - (3) analyse and process available braking action data recorded during landing of the aeroplane, in order to demonstrate the capability to establish runway conditions in accordance with a given RWYCC; and
 - (4) establish a maintenance programme that covers both preventive and corrective maintenance for equipment in use in order to achieve consistent performance.
- (c) The aerodrome operator shall establish and implement a programme to monitor the continuous effectiveness of the method. The programme shall use braking action reports from aeroplane data that shall be compared with the reported runway conditions.
- (d) The aerodrome operator shall review the performance of winter operations after the end of the winter period in order to identify necessity for:
- (1) additional training requirements;
 - (2) update of the procedures; and
 - (3) additional or different equipment and materials.

17. The following point ADR.OPS.B.037 is inserted:

ADR.OPS.B.037 Assessment of runway surface condition and assignment of runway condition code

The aerodrome operator, whenever the contaminants listed in ADR.OPS.A.060 points (a) to (e) are present on the surface of a runway, shall:

- (a) assign a RWYCC based on the type and depth of the contaminant and temperature;
- (b) inspect the runway whenever the runway surface condition may have changed due to meteorological conditions, assess the runway surface condition and assign a RWYCC;
- (c) use special air-reports to trigger reassessment of RWYCC.

18. Point ADR.OPS.B.080 is replaced by the following:

‘ADR.OPS.B.080 Marking and lighting of vehicles and other mobile objects

- (a) The aerodrome operator shall ensure that vehicles and other mobile objects, excluding aircraft, on the movement area of the aerodrome are:

- (1) marked by use of conspicuous colours, or display, at suitable locations, flags of appropriate size, chequered pattern and contrasting colours; and
- (2) lighted with low-intensity obstacle lights whose type and characteristics are appropriate to their function, if the vehicles and the aerodrome are used at night or in conditions of low visibility. The colour of the lights to be displayed shall be as follows:
 - (i) flashing blue for vehicles associated with emergency or security;
 - (ii) flashing yellow for other vehicles, including follow-me vehicles; and
 - (iii) fixed red for objects with limited mobility.
- (b) The aerodrome operator may exempt from (a) aircraft servicing equipment and vehicles used only on aprons.’

19. Point ADR.OPS.C.005 is replaced by the following:

‘ADR.OPS.C.005 Maintenance — General

- (a) The aerodrome operator shall establish and implement a maintenance programme, which includes preventive maintenance where appropriate, to maintain aerodrome facilities, systems and equipment necessary for the operation of the aerodrome in a condition which does not impair the safety, regularity or efficiency of air navigation. The design and implementation of the maintenance programme shall observe human factors principles.
- (b) The aerodrome operator shall ensure that appropriate and adequate means are provided for the effective implementation of the maintenance programme.’

20. The following point ADR.OPS.C.007 is inserted:

‘ADR.OPS.C.007 Maintenance of vehicles

- (a) The aerodrome operator shall establish and implement a maintenance programme, which includes preventive maintenance, observes human factors principles and covers:
 - (1) rescue and firefighting vehicles, to ensure effectiveness of the vehicles and their equipment and compliance with the specified response time throughout the life of the vehicle; and
 - (2) its other vehicles that operate on the movement area or other operational areas.
- (b) The aerodrome operator shall:

- (1) establish procedures to support the implementation of the maintenance programme required in accordance with (a);
 - (2) ensure that appropriate and adequate means and facilities are provided for its effective implementation; and
 - (3) keep maintenance records for each vehicle.
- (c) The aerodrome operator shall ensure that organisations that operate or provide services at the aerodrome:
- (1) maintain their vehicles that operate on the movement area or other operational areas, in accordance with an established maintenance programme, including preventive maintenance; and
 - (2) they keep relevant maintenance records.
- (d) The aerodrome operator shall ensure that unserviceable vehicles are not used for operations.

21. Point ADR.OPS.C.010 is replaced by the following:

ADR.OPS.C.010 Maintenance of pavements, other ground surfaces and drainage

- (a) The aerodrome operator shall inspect the surfaces of all movement areas including pavements (runways, taxiways and aprons), adjacent areas and drainage to regularly assess their condition as part of an aerodrome preventive and corrective maintenance programme.
- (b) The aerodrome operator shall:
 - (1) maintain the surfaces of all movement areas with the objective of avoiding and eliminating any FOD that might cause damage to aircraft or impair the operation of aircraft systems;
 - (2) maintain the surface of runways, taxiways and aprons in order to prevent the formation of harmful irregularities;
 - (3) maintain the runway in a condition so as to provide surface friction characteristics at or above the minimum standards;
 - (4) periodically inspect and document the runway surface friction characteristics for maintenance purposes. The frequency of these inspections shall be sufficient to determine the trend of the surface friction characteristics of the runway; and
 - (5) take corrective maintenance action to prevent when the runway surface friction characteristics for either the entire runway or a portion thereof, when uncontaminated, from falling below the minimum standards.

22. Point ADR.OPS.C.015 is replaced by the following:

‘ADR.OPS.C.015 Maintenance of visual aids and electrical systems

- (a) The aerodrome operator shall establish and implement a preventive and corrective maintenance programme to ensure the serviceability of the electrical systems and the availability of power supply to all necessary facilities of the aerodrome, in a manner that ensures the safety, regularity and efficiency of air navigation.
- (b) The aerodrome operator shall establish and implement a preventive and corrective maintenance programme to ensure the serviceability of the individual lights and the aerodrome’s lighting systems reliability, in a manner that ensures continuity of guidance to, and control of aircraft and vehicles, as follows:
 - (1) For a precision approach runway Category II or III, the system of preventive maintenance shall have as its objective that, during any period of Category II or III operations, all approach and runway lights are serviceable and that, in any event:
 - (i) at least:
 - (A) 95 % of the lights are serviceable in each of the following elements:
 - (a) precision approach Category II and III lighting system, the inner 450 m;
 - (b) runway centre line lights;
 - (c) runway threshold lights; and
 - (d) runway edge lights.
 - (B) 90 % of the lights are serviceable in the touchdown zone lights;
 - (C) 85 % of the lights are serviceable in the approach lighting system beyond 450 m; and
 - (D) 75 % of the lights are serviceable in the runway end lights;
 - (ii) the allowable percentage of unserviceable lights shall not be permitted in such a way as to alter the basic pattern of the lighting system; and
 - (iii) an unserviceable light shall not be permitted adjacent to another unserviceable light, except in a barrette or a crossbar where two adjacent unserviceable lights may be permitted.
 - (2) *Reserved*

- (3) For a stop bar provided at a runway-holding position used in conjunction with a runway intended for operations in runway visual range conditions less than a value of 550 m, the system of preventive maintenance shall have the following objectives:
 - (i) no more than two lights shall remain unserviceable; and
 - (ii) two adjacent lights shall not remain unserviceable unless the light spacing is significantly less than that required.
- (4) For a taxiway intended for use in runway visual range conditions less than a value of 550 m, the system of preventive maintenance shall have as its objective that no two adjacent taxiway centre line lights be unserviceable.
- (5) For a precision approach runway Category I, the system of preventive maintenance employed shall have as its objective that, during any period of Category I operations, all approach and runway lights are serviceable and that, in any event:
 - (i) at least 85 % of the lights are serviceable in each of the following:
 - (A) precision approach Category I lighting system;
 - (B) runway threshold lights;
 - (C) runway edge lights; and
 - (D) runway end lights; and
 - (ii) an unserviceable light shall not be permitted adjacent to another unserviceable light unless the light spacing is significantly less than that required.
- (6) For a runway meant for take-off in runway visual range conditions less than a value of 550 m, the system of preventive maintenance shall have as its objective that, during any period of operations, all runway lights are serviceable, and that, in any event:
 - (i) at least:
 - (A) 95 % of the lights are serviceable in the runway centre line lights (where provided) and in the runway edge lights; and
 - (B) 75 % of the lights are serviceable in the runway end lights; and
 - (ii) an unserviceable light shall not be permitted adjacent to another unserviceable light.
- (7) For a runway meant for take-off in runway visual range conditions of a value of 550 m or greater, the system of preventive maintenance shall have as its

objective that, during any period of operations, all runway lights are serviceable, and that, in any event:

- (i) at least 85 % of the lights are serviceable in the runway edge lights and runway end lights; and
 - (ii) an unserviceable light shall not be permitted adjacent to another unserviceable light.
- (8) For a runway equipped with visual approach slope indicator systems, the system of preventive maintenance shall have as its objective that, during any period of operations, all units are serviceable. A unit shall be considered unserviceable if the number of unserviceable lights is such that the unit does not provide the intended guidance to the aircraft.
- (c) For the purposes of (b), a light shall be deemed to be unserviceable if:
- (1) the main beam average intensity is less than 50 % of the value specified in the certification specifications issued by the Agency. For light units where the designed main beam average intensity is above the value specified in the certification specifications issued by the Agency, the 50 % value shall be related to that design value;
 - (2) the filter associated with the light(s) is missing, damaged, or the light does not produce the correct colour light beam.
- (d) The aerodrome operator shall establish and implement a preventive and corrective maintenance programme to ensure the serviceability and reliability of the system of markings and signs of the aerodrome, in a manner that ensures continuity of guidance to, and control of aircraft and vehicles.
- (e) The aerodrome operator shall ensure that when low-visibility procedures are in effect at the aerodrome, construction or maintenance activities do not take place in the proximity of aerodrome electrical systems.
- (f) The aerodrome operator shall ensure that:
- (1) the preventive maintenance programmes of (a), (b) and (d) include appropriate inspections and checks of the individual elements of each system, and of the system itself, which are conducted in accordance with established procedures, and at defined intervals, appropriate to the intended operation and system; and
 - (2) appropriate corrective actions are taken to rectify any identified defects.
- (g) The aerodrome operator shall maintain records of the relevant maintenance activities.