



All-weather operations

AMC & GM TO AERODROME RULES

RELATED NPA/CRD: 2018-06 (D) & OPINION No 02/2021 — RMT.0379

EXECUTIVE SUMMARY

The objective of this Decision is to support the modernisation of the European Union (EU) aviation regulatory framework applicable to all-weather operations (AWOs) in accordance with Regulation (EU) 2022/208, to ensure the highest level of safety while enabling efficiency gains based on the latest technological advancements.

This Decision amends Acceptable Means of Compliance (AMC) and Guidance Material (GM) to Regulation (EU) No 139/2014, related to the provision of aeronautical data, surface movement guidance and control systems (SMGCS) and low-visibility procedures (LVPs).

The amendments are expected to support the implementation of AWOs at aerodromes, by ensuring the availability of the necessary aerodrome infrastructure (including visual and non-visual aids), aeronautical information and procedures. The proposed amendments support also the operation of 'advanced aircraft' at aerodromes with less ground infrastructure, e.g. runway lighting, without reducing the safety level, because the lack of infrastructure is compensated by advanced on-board systems, such as enhanced flight vision systems (EFVSs). This consequently will improve accessibility to these aerodromes without the need for the aerodrome operators to invest in costly infrastructure. In addition, the amendments are expected to have a positive effect on the environment by allowing more aircraft to land in low-visibility conditions and by reducing the number of flights that need to divert if the visibility conditions at the destination aerodrome are not optimal.

Domain:	New technologies and concepts		
Related rules:	AMC & GM Regulation (EU) No 139/2014		
Affected stakeholders:	POA holders, air operators, ATOs, ADR operators and ATM/ANS providers		
Driver:	Safety	Rulemaking group:	Yes
Impact assessment:	Yes	Rulemaking Procedure:	Standard

EASA rulemaking procedure milestones

Start Terms of Reference	Public Consultation	Proposal to the Commission Opinion	Adoption by Commission Implementing Rules	Decision Certification Specifications, Acceptable Means of Compliance, Guidance Material
9.12.2015	13.7.2018	27.5.2021	15.12.2021	6.7.2022



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1. About this Decision

The European Union Aviation Safety Agency (EASA) developed Decision 2022/013/R in line with Regulation (EU) 2018/1139¹ (the ‘Basic Regulation’) and the Rulemaking Procedure².

This Rulemaking Task (RMT).0379 is included in Volume II of the [European Plan for Aviation Safety \(EPAS\) for 2022-2026](#). The scope and timescales of the task were defined in the related Terms of Reference ([ToR](#)) for RMT.0379.

EASA developed the *draft* text of this Decision based on the input of Rulemaking Group (RMG) RMT.0379. The draft text was consulted through Notice of Proposed Amendment (NPA) [2018-06 \(D\)](#), which included proposed amendments to Commission Regulation (EU) No 139/2014³ and its Acceptable Means of Compliance (AMC) and Guidance Material (GM), as well as to the CS and GM of CS-ADR-DSN.

In total, EASA received 209 comments on NPA 2018-06 (D) from national competent authorities (NCAs), aerodrome operators including aerodrome associations, air navigation service providers (ANSPs) including EUROCONTROL, aircraft and equipment manufacturers, as well as individuals.

EASA reviewed the comments received during the public consultation. The comments received and EASA’s responses to them were presented in Comment-Response Document (CRD) [2018-06 \(D\)](#). Based on the input from the consultation, EASA published Opinion No 02/2021⁴. The Opinion was addressed to the European Commission, which adopted Delegated Regulation (EU) 2022/208⁵ based on the Opinion.

EASA developed the *final* text of this Decision with the AMC and GM based on the input received during the consultation of the NPA and on that of RMG RMT.0379, and published the Decision on the Official Publication⁶ of EASA.

The major milestones of this RMT are presented on the cover page.

¹ Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1535612134845&uri=CELEX:32018R1139>).

² EASA is bound to follow a structured rulemaking process as required by Article 115(1) of Regulation (EU) 2018/1139. Such a process has been adopted by the EASA Management Board (MB) and is referred to as the ‘Rulemaking Procedure’. See MB Decision No 01-2022 of 2 May 2022 on the procedure to be applied by EASA for the issuing of opinions, certification specifications and other detailed specifications, acceptable means of compliance and guidance material (‘Rulemaking Procedure’), and repealing Management Board Decision No 18-2015 (<https://www.easa.europa.eu/the-agency/management-board/decisions/easa-mb-decision-no-01-2022-rulemaking-procedure-repealing-mb>).

³ Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 44, 14.2.2014, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014R0139&qid=1656591251354>).

⁴ <https://www.easa.europa.eu/downloads/128172/en>

⁵ Commission Delegated Regulation (EU) 2022/208 of 14 December 2021 amending Regulation (EU) No 139/2014 as regards the requirements for all-weather operations (OJ L 35, 17.2.2022, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022R0208&qid=1656591603800>).

⁶ <https://www.easa.europa.eu/official-publication>



2. In summary — why and what

2.1. Why we need to amend the AMC and GM — issue/rationale

The existing AMC and GM related to AWOs, i.e. the ones on LVPs and surface movement guidance and control systems (SMGCS), are based on standard ICAO precision approach categories (CAT I/II/III) of operations and:

- do not sufficiently address technological advancements;
- do not fully support new operational concepts (i.e. special authorisation (SA) Category I/II approach operations);
- do not fully support the implementation of the concept of operational credits introduced in ICAO Annex 6 in relation to the aerodrome requirements;
- are not completely consistent across the different domains, notably the air operations and aerodrome domain, obstructing thus the use of the full potential of certified products and systems or not allowing for the mitigation of the absence of ground infrastructure with advanced on-board systems that provide a similar or even better overall safety level; and
- have been drafted without a consistent cross-domain hazard identification and risk assessment which should provide a guarantee that all safety risks have been identified, properly addressed, and mitigated across all affected domains.

2.2. What we want to achieve — objectives

The overall objectives of the EASA system are defined in Article 1 of the Basic Regulation. This Decision will contribute to achieving the overall objectives by addressing the issues described in Section 2.1.

The specific objectives of this Decision are, therefore, to:

- support the safe, efficient and consistent implementation of AWOs in EU, based on common operational concepts;
- foster safety and efficiency gains that new technologies and operational concepts offer; and
- promote harmonisation with ICAO Standards and Recommended Practices (SARPs).

2.3. How we want to achieve it — overview of the amendments

Overview

The amendments to the relevant AMC and GM:

- complete existing provisions for standard operations by considering not only the physical characteristics and visual aids of the aerodrome but the non-visual aids as well;
- enable the use of new technologies and provide operational flexibility beyond the limits of standard operations; and
- support harmonisation with the ICAO SARPs.



2.3.1 Annex I (Definitions for terms used in Annexes II to IV)

The new *GM1 Annex I Definitions* has been introduced. The GM contains the definitions for the terms used in the AMC and GM in order to ensure a consistent understanding and use of terms which are not included in the Regulation. For the time being, the GM contains the definitions of enhanced flight vision system 200 (EFVS 200), EFVS-A, EFVS-L, obstacle clearance height (OCH), special authorisation category I (SA CAT I) operation and special authorisation category II (SA CAT II) operation.

2.3.2 Annex II (Part-ADR.AR)

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

The model for the terms of the aerodrome certificate which are attached to it, is revised in order to include EFVS 200, EFVS-A and EFVS-L approach operations, SA CAT I, SA CAT II and the consolidation of the former precision approach categories IIIA, IIIB and IIIC into a single precision approach category III.

GM2 ADR.AR.C.035(e) Issuance of certificates

This GM has been developed following the review of the comments received during the NPA consultation in order to address EFVS 200 operation. Since this type of approach operation is conducted at heights and RVR values falling outside the LVPs, it was not appropriate to address them under LVPs; therefore, it was decided that it should be under the issuance of certificates to provide guidance to the NCAs on how to approve the runways for such operations.

2.3.3 Annex IV (Part-ADR.OPS)

GM1 ADR.OPS.A.070 Information on the aerodrome lighting system

The GM explains briefly the effect of LED lights on the use of the EFVS.

GM1 ADR.OPS.A.075 Charts

The GM provides the link with Regulation (EU) 2017/373 which contains the requirements for the aeronautical charts.

AMC1 ADR.OPS.A.085 Information on visual segment surface (VSS) penetration

The penetration of the VSS may have an impact on EFVS operation; therefore, this information is important and should be included in the AIP. The AMC is based on Amendment 1 to PANS-AIM and describes the information that needs to be sent to the AIS provider for promulgation in Section AD 2.25 of the AIP. In relation to this, Opinion No 03/2022⁷ already proposes a similar change to Regulation (EU) 2017/373 to update the content/structure of the AIP by incorporating Section AD 2.25, where such information may be accommodated. Furthermore, the information concerning the obstacles that penetrate the VSS should be included in point AD 2.10 of the AIP.

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

The GM refers to PANS-OPS Volume II for further information on the VSS criteria and dimensions.

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

This AMC amends AMC1 ADR.OPS.B.030 as follows, due to the change of the implementing rule:

⁷ <https://www.easa.europa.eu/document-library/opinions/opinion-no-032022>

- Point (a) remains unchanged; however, the numbering has been changed.
- Points (b), (c) and (e) have been deleted as they have been transferred to the respective implementing rule because they have been considered essential for the implementation of an SMGCS.
- Point (d) has been transferred to the new AMC1 ADR.OPS.B.030(a)(3) without any change in the content.

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

The content of the GM has been transferred from point (a) of the former GM1 ADR.OPS.B.030 without any change in the content.

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

See AMC1 ADR.OPS.B.030(a) explanation.

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

The GM contains point (b) and (c) of the former GM1 ADR.OPS.B.030 which has been deleted due to the change to the implementing rule.

Low-visibility procedures — general

New AMC and GM to ADR.OPS.B.045 have been developed to include all the information that can be used by aerodrome operators to support operations with operational credits in LVPs, instead of amending the certification specifications in CS ADR-DSN. Currently, Regulation (EU) No 139/2014 requires the aerodrome to be certified in accordance with specific organisational and operational requirements, and the type of operations which are conducted at the aerodrome are based solely on the specifications in CS ADR-DSN which address physical characteristics and visual aids. The certification specifications in CS ADR-DSN do not consider the need for appropriate non-visual aids and MET equipment which are required to support certain types of operations. To overcome this lack of specifications for non-visual aids and MET equipment, EASA initially proposed to develop new certification specifications for non-visual aids and MET equipment and to review certain specifications in CS ADR-DSN. However, technical specifications for MET equipment were introduced in Regulation (EU) 2017/373 and EASA initiated RMT.0161 'Conformity assessment' which will establish the regulatory framework for the certification/declaration of ATM/ANS systems and constituents and safety-related aerodrome equipment, and therefore it was decided not to address them under this RMT. Furthermore, since the certification specifications in CS ADR-DSN aim to support the 'basic' aircraft which conduct standard operations, it was decided not to change the current certification specifications, but to provide in AMC and GM all the information that can be used by aerodrome operators to support operations with operational credits.

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

The AMC specifies the means to support low-visibility take-offs (LVTOs) with a reduced visual range (RVR) of less than 125m. The content of the AMC is based on air operators' needs and is aligned with Regulation (EU) 2021/2237⁸ to enable AWOs.

⁸ Commission Implementing Regulation (EU) 2021/2237 of 15 December 2021 amending Regulation (EU) No 965/2012 as regards the requirements for all-weather operations and for flight crew training and checking (OJ L 450, 16.12.2021, p 21) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R2237&qid=1656082047773>).

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

The GM makes reference to CS ADR-DSN.M.690 as regards the specifications for the required runway centre line lights.

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

The AMC specifies the means to support different types of operations. Points (a) and (b) address standard CAT II/III operations and there is no difference with the current practices. Point (c) addresses SA CAT I approach operation which is an operation with an operational credit. Important to note is the fact that because the DH is 150 ft, the OCH is based on a radio altimeter; therefore, a precision approach terrain chart or an electronic terrain and obstacle chart is needed, similar to CAT II/III runways. Furthermore, for the same reason, an OFZ is needed. The performance of the non-visual aids are aligned with air operators' needs. Point (d) addresses SA CAT II approach operations. In addition, CS ADR-DSN contains specifications for the switch-over times of the different elements of the runway lighting system for CAT I and CAT II/III runways. CAT II/III runways have stricter switch-over times compared to CAT I runways; however, because the DH is within the range of CAT II operations, it is considered reasonable to align the switch-over times for runway edge, threshold and end lights to 1 sec, to ensure that adequate visual guidance is available.

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

The AMC specifies the means to support EFVS approach and landing operations. Its content has been aligned with the relevant AMC for air operations in order to ensure a consistent approach.

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

The AMC has been revised because points (a) and (b) of the current AMC have been transferred to the implementing rule. Furthermore, the remaining part has been updated in order to provide in more detail what is needed when LVPs are in effect.

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

While LVPs need specific measures that need to be taken, their extent depends largely on the local conditions at the aerodromes where they apply. The AMC lists the most important elements that need to be considered when developing LVPs.

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

The AMC lists the most common failures of equipment (visual and non-visual aids) which need to be reported and their effect on flight operations.

2.4. What are the benefits and drawbacks of the amendments

Regarding the AMC and GM adopted with this Decision, the regulatory impact assessment (RIA) for all types of operations can be found in NPA 2018-06. This assessment has been reviewed. It is still valid and up to date. For information, refer to the RIA included in NPA 2018-06.

3. References

3.1. Related EU regulations

- Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 44, 14.2.2014, p. 1)
- Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p. 1)
- Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (OJ L 62, 8.3.2017)

3.2. Related EASA decisions

- Decision 2014/012/R of the Executive Director of the Agency of 27 February 2014 adopting Acceptable Means of Compliance and Guidance Material to Regulation (EU) No 139/2014 'AMC/GM for Aerodromes — Initial Issue'

3.3. Other reference documents

- ICAO Annex 4 — Aeronautical Charts (11th Edition, July 2009)
- ICAO Annex 6 – Operation of Aircraft – Part I (11th Edition, July 2018)
- ICAO Annex 14 Vol. I – Aerodromes (8th Edition, July 2018)
- ICAO Annex 15 – Aeronautical Information Services (16th Edition, July 2018)
- ICAO Doc 4444 – Procedures for Air Navigation Services – Air Traffic Management (16th Edition, 2016)
- ICAO Doc 9365 – Manual of All-Weather Operations (4th Edition, 2017)
- ICAO Doc 9830 – Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual – 1st Edition, 2004
- ICAO EUR Doc 013 – European Guidance Material on All-Weather Operations at aerodromes (5th Edition, September 2016)

