



Runway safety

RELATED NPA/CRD 2018-14 — RMT.0703 (INCLUDING ALSO RMT.0704)

EXECUTIVE SUMMARY

The objective of this Opinion is to mitigate the safety risks associated with runway safety, from an aerodrome’s perspective, focusing mainly on the prevention of runway incursions and on runway surface condition assessment and reporting, but also addressing issues such as ground collisions, runway configuration, foreign object debris(FOD)-related occurrences as well as runway pavements maintenance.

This Opinion proposes amendments to existing organisation and operational requirements of Regulation (EU) No 139/2014, as well as the introduction of new ones, which are based on ICAO provisions contained mainly in International Civil Aviation Organization (ICAO) Annexes 14 and 15, recommendations contained in the European Action Plans for the Prevention of Runway Incursions and Excursions (EAPPRI, EAPPRE), as well as safety recommendations addressed to EASA by the Accident Investigation Boards of Norway and Sweden, and also safety recommendations which are not addressed to EASA. It also provides for alignment with ICAO Annex 14 Volume I ‘Aerodrome Design and Operations’ 8th Edition and ICAO Doc 9981 ‘Procedures for Air Navigation Services – Aerodromes’ 2nd Edition, as regards runway surface condition assessment and reporting which will be applicable worldwide by November 2020. Furthermore, the Opinion proposes consequential amendments to Regulation (EU) 2017/373 and Regulation (EU) No 923/2012.

In particular, the Opinion proposes amendments to the framework for the operation of vehicles at aerodromes, including the authorisation of drivers and the conformance of vehicles operating on the manoeuvring area with certain safety prerequisites, in order to ensure runway safety. Linked to this is also the proposal for a new requirement on communications, as well as a proposal for the control of pedestrians at the aerodrome. In addition, the Opinion proposes all the necessary requirements to support the application of the new Global Reporting Format (GRF) of runway surface conditions, including changes to the contents of METAR and SNOTAM forms and of the special air-report.

Moreover, new requirements are introduced regarding the handover of activities and the provision of relevant information, NOTAM origination, aerodrome snow plan, aerodrome maintenance, aircraft towing and FOD control programme, as well as changes to existing requirements related to surface movement guidance and control systems (SMGCS)

The proposed amendments are expected to improve safety by reducing the number of runway-safety-related occurrences from an aerodrome’s perspective. In addition, it is expected that some of the amendments will improve harmonisation as a result of the introduction of new common requirements that do not currently exist. The proposed amendments will ensure alignment of the current EU aerodrome regulatory framework with the relevant aerodrome-related ICAO provisions of Annexes 14 and 15, PANS-ATM and PANS-Aerodromes and support the rules proposed by Opinion No 02/2019 in regard to aeroplane performance requirements for commercial air transport operations.

Action area:	Runway Safety		
Affected rules:	Regulation (EU) No 139/2014 (Aerodromes Regulation), Regulation (EU) 2017/373 (ATM/ANS Regulation) and Regulation (EU) No 923/2012 (SERA)		
Affected stakeholders:	Aerodrome operators, aircraft operators, general aviation (GA), air navigation service providers (ANSPs), national aviation authorities		
Driver:	Safety	Rulemaking group:	No ^{RMT.0703} / Yes ^{RMT.0704}
Impact assessment:	Light	Rulemaking Procedure:	Standard

EASA rulemaking process milestones



14.9.2017 ^{RMT.0703}	17.12.2018	24.6.2019	2020/Q2	2020/Q2
13.9.2017 ^{RMT.0704}				



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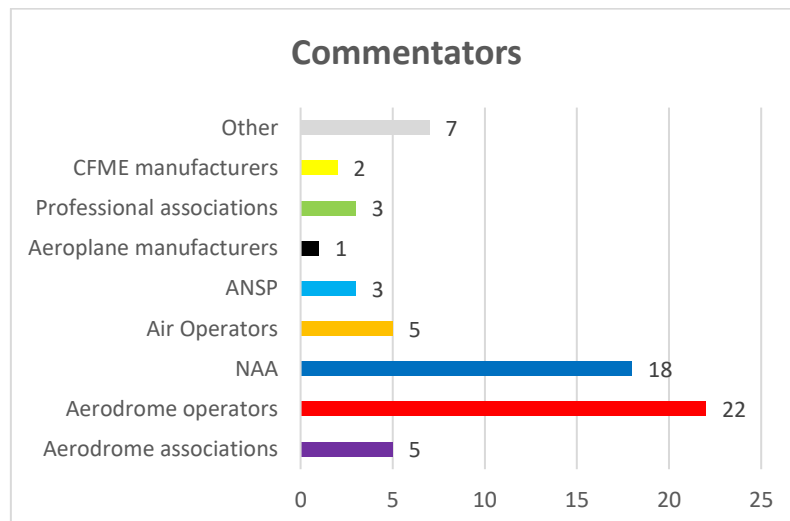
1. About this Opinion

1.1. How this Opinion was developed

The European Union Aviation Safety Agency (EASA) developed this Opinion in line with Regulation (EU) 2018/1139¹ ('Basic Regulation') and the Rulemaking Procedure².

This rulemaking activity is included in the latest European Plan for Aviation Safety (EPAS)³ under rulemaking task RMT.0703 and includes also the outcome of the work conducted under RMT.0704. The scope and timescales of the tasks were defined in the related ToR⁴.

The *draft* text of this Opinion has been developed by EASA with regard to RMT.0703, and is based on the input of Rulemaking Group (RMG) RMT.0704 in regard to runway surface condition assessment and reporting. All interested parties were consulted through NPA 2018-14. 1 785 comments were received from interested parties, including national aviation authorities (NAAs), aerodrome operators and aerodrome operators' associations, aeroplane manufacturers, air operators, ANSPs and aviation professional associations. A distribution of the commentators is shown in the graph below:



EASA has addressed and responded to the comments received on the NPA, while for the comments related to runway surface condition assessment and reporting, EASA reviewed the comments received during the public consultation with the support of Review Group (RG) RMT.0704. The comments

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 18-2015 of 15 December 2015 replacing Decision 01/2012 concerning the procedure to be applied by EASA for the issuing of opinions, certification specifications and guidance material (<http://www.easa.europa.eu/the-agency/management-board/decisions/easa-mb-decision-18-2015-rulemaking-procedure>).

³ https://www.easa.europa.eu/document-library/general-publications?publication_type%5B%5D=2467

⁴ <https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0703>
<https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0704>

received and EASA's responses to them are presented in Comment-Response Document (CRD) 2018-14⁵, and they are also summarised under Section 2.4 below.

The *final* text of this Opinion and the draft Regulations have been developed by EASA. In regard to the part that refers to the runway surface condition assessment and reporting, the draft Regulation is based on the input of Review Group (RG) RMT.0704.

The draft rule text proposed by EASA is published on the EASA website⁶.

The major milestones of this rulemaking activity are presented on the title page.

1.2. The next steps

This Opinion contains the proposed amendments to Regulation (EU) No 139/2014⁷, Regulation (EU) 2017/373⁸ and Regulation (EU) No 923/2012⁹ and their potential impacts. It is submitted to the European Commission, which will use it as a technical basis in order to prepare EU Regulations.

The Decisions that contain the related certification specifications (CS), acceptable means of compliance (AMC) and guidance material (GM) will be published by EASA when the related Regulations are adopted by the European Commission.

For information, EASA published the draft text for the related EASA Decisions that contain CS, AMC and GM. The final Decisions that amend the CS, AMC & GM will be published by EASA once the European Commission has adopted the Regulations.

⁵ <http://easa.europa.eu/document-library/comment-response-documents>

⁶ <http://easa.europa.eu/document-library/opinions>

⁷ 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/?qid=1560854264686&uri=CELEX:32014R0139>).

⁸ 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, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1560854370396&uri=CELEX:32017R0373>).

⁹ Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1560854463533&uri=CELEX:32012R0923>).

2. In summary — why and what

2.1. Why we need to change the rules — issue/rationale

Runway safety is one of the high-risk accident occurrence categories (global priorities) identified by ICAO. The reason is that although they continue to result in a relatively low number of fatalities, runway-safety-related accidents account for the majority of all accidents at global level.

At European level, this prioritisation is reflected in EPAS 2019-2023, where this issue is considered a strategic priority for EASA.

Due to the complexity of the issue of runway safety, the adoption of a multidisciplinary approach has been identified as the best way to address it. It has also been found that the occurrence categories relating to the issue of runway safety have a strong interface with the aerodrome domain, in terms of both aerodrome design and operational practices.

At ICAO level, material pertaining to certain aspects of runway safety exists. At European level, the EAPPRI and EAPPRE contain several recommendations with a view to mitigating the relevant risks. However, certain part of the ICAO material, as well as relevant recommendations have not been yet transposed into the EU aerodrome regulatory framework. Said ICAO material and recommendations mainly refer to the areas of vehicle operations, communications and other operational procedures, maintenance-related activities, as well as runway surface condition assessment and reporting.

Various occurrences having an impact on runway safety have taken place. Although there are no outstanding safety recommendations addressed to EASA^{10 11}, contributing factors that have been

¹⁰ Example safety recommendations which were addressed to other organisations and which are found to be relevant to this regulatory proposal with regard to the prevention of runway incursions, as they underline the safety risks that this proposal intends to address, include the following:

- ANSV-4/SA/4/14: 'ANSV reiterates the safety recommendation ANSV-5/2150-11/2/1/12. In particular, strongly recommends that, particularly on airports open to commercial air traffic, all vehicles intended to operate for any reason on a runway, regardless of whether they belong to public or private entities, are provided with radio equipment that can operate also on VHF channels used by TWR/AFI units, to allow personnel on board to listen to air-ground communications between the competent ATC unit and aircraft taking-off and landing.'
- ANSV-5/SA/5/14: 'ANSV recommends that all natural persons who, in their various capacities, need to operate on a runway, to perform specific activities, regardless of whether they are staff belonging to a public or private entity, achieve a specific qualification, which objectively demonstrates their ability to operate within a highly critical operational environment (i.e. the runway), where safety must be assured in an unconditional and disciplined manner. For the purposes of obtaining the aforementioned specific qualification, the aforementioned natural persons should: follow the same training courses and be subject to an examination carried out by ENAC; have a proven knowledge of the English language; have a knowledge of the standard phraseology used in air-ground communications, with particular reference to that of direct interest to aerodrome operations; be appropriately sensitised to the context of operational protection characterising a runway.'
- ANSV-7/SA/7/14: 'ANSV recommends to evaluate the need to equip all vehicles intended to operate on a runway with Mode S transponder, with the purpose to allow their complete integration with the A-SMGCS, at those aerodromes where the latter is already operational or where its implementation is foreseen.' (unofficial translation from the Italian language)
- LU-AC-2012/004: 'All communications associated with the operation of the runway should be conducted on the same frequency as utilized for the take-off and landing of aircraft and all communications associated with the operation of the taxiways should be conducted on a different designated frequency.'
- LU-AC-2012/005: 'All communications associated with the operation of the runway and the taxiways should be conducted in standard aviation English and in accordance with ICAO language requirements for air-ground radiotelephony communications.'

¹¹ With regard to the prevention of runway excursions, safety recommendations addressed to EASA include the following:



identified include, amongst others, the following:

- (a) use of different languages, on the same frequency, by the ATS unit for communication with vehicles and aircraft;
- (b) use of different frequencies for air traffic and vehicle traffic on the manoeuvring area, which lead to reduction of the situational awareness of the maintenance and inspection personnel working on the runway;
- (c) lack of supervision of the vehicle through the correct frequency;
- (d) vehicles not equipped with either radio or anti-collision lights nor transponder;
- (e) lack of appropriate training of the driver;
- (f) lack of coordination between the air traffic services provider and the aerodrome operator which contributed to the reduction of the situational awareness of the air traffic services personnel;
- (g) distraction of the driver during the job;
- (h) maps carried on the vehicle to be used by the driver did not clearly indicate the point where contact with the air traffic services should be made;
- (i) vehicle activities on the manoeuvring area of the aerodrome were not kept to the minimum;
- (j) insufficient lighting of towed aircraft;
- (k) inappropriate method of removing runway markings or bad condition of runway markings;
- (l) obscured view of the control tower to the runway;
- (m) invalidity of measurements of approved friction measuring devices; and
- (n) lack of a standardised method for assessing and reporting runway surface conditions.

Material for the mitigation of the contributing factors described above in relation to the prevention runway incursions may be found in various ICAO documents (e.g. ICAO Doc 9870 'Manual on the Prevention of Runway Incursions'), while the latest version of the EAPPRI contains relevant recommendations, such as:

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- Safety recommendation 2011/08T: 'In the investigated occurrences, the AIBN found that the aircraft braking coefficients were not in accordance with the measured and reported values, because validity ranges for friction measuring devices lack the necessary scientific basis. The various types of friction measuring devices measure different friction values when used on the same surface. None of the internationally approved friction measurements devices are reliable on all types of contaminations. In particular, moisture and less than 3 K dew point spread and loose/layered contaminations increase the friction measurement uncertainty. The AIBN recommends that ICAO, FAA, EASA and CAA Norway review and validate the permitted measuring (validity) ranges for approved friction measuring devices.'
 - Safety recommendation 2011/09T: 'The figures in the ICAO SNOWTAM table showing measured friction values are in hundredths (1/100) and independent of the type of friction measuring device that is used. AIP Norway describes the use of friction measuring devices in general and warns that the measurements are associated with such a high degree of uncertainty that the figures should not be reported to more than one decimal place (one tenth, 1/10). The figures from the SNOWTAM table are used in flight operations through the airlines "individual correlation curves/tables which further increases the uncertainty. Based on the above, the AIBN recommends that ICAO, FAA, EASA and CAA Norway consider revising the SNOWTAM table to reduce the degree of friction uncertainty.'
 - SWED-2017-005: 'The EASA is recommended to review the feasibility of changing the method of reporting from airports in terms of friction coefficients, so that measured values are reported as unreliable under certain conditions.'



- (a) promote the adoption of ‘sterile cab’ procedures to improve communications when on the manoeuvring area;
- (b) avoid the possibility of call-sign confusion, implement the use of full aircraft or vehicle call signs for all communications concerning runway operations;
- (c) avoid call-sign confusion at aerodromes, implement the introduction of discrete radio telephony (RTF) call signs to manoeuvring area vehicles;
- (d) assess the numbering policy for aerodrome vehicles and consider assignment of unique numbers or airside identification call signs for each airside vehicle (to reduce the risk of vehicle-related call-sign confusion);
- (e) enable the tracking of vehicle movements on the manoeuvring area, when possible;
- (f) ensure that all vehicles on the manoeuvring area are in radio contact with the appropriate air traffic control service, i.e. ground and/or the tower, either directly or through an escort;
- (g) carry out runway inspections in the opposite direction to runway movements;
- (h) working with ANSPs, avoid infringing lines of sight from the air traffic control tower: assess visibility restrictions from the tower, which have a potential impact on the ability to see the manoeuvring area — especially critical areas such as runway entry points;
- (i) aerodrome operators, in cooperation with ANSPs, should implement procedures in line with the standardised European rules of the air (SERA) in case of stop bar unserviceability;
- (j) ensure that a protected area map is used in manoeuvring area driver training and is present in all vehicles that are operated on the manoeuvring area;
- (k) ANSPs and aerodrome operators should implement procedures that ensure that significant aerodrome information which may affect operations on or near the runway, in addition to that found in notices to airmen (NOTAMs) and on the automatic terminal information service (ATIS), should be provided to manoeuvring area drivers and pilots in real time using radio communication; and
- (l) implement, monitor and ensure the use of the read-back procedure (also applicable to manoeuvring area drivers and other personnel who operate on the manoeuvring area).

On the other hand, with regard to the issue of runway excursion prevention, material for the prevention of runway excursions exists at ICAO level, while EAPPRE contains also similar recommendations, such as:

- (a) if provided, ensure that appropriate navigation aids (e.g. ILS, AGL, PAPIs), and surface markings are maintained in accordance with ICAO Standards and Recommended Practices (SARPs), to promote the accurate landing/touchdown point;
- (b) ensure that robust procedures are in place for calculating temporary reduced declared distances e.g. due to works in progress on the runway. When reduced declared distances are in effect, ensure that the temporary markings, lighting and signs accurately portray the reduced distances and that they are well communicated and transferred to States’ aeronautical information services (AIS) for publication; and



- (c) establish and implement one consistent method of contaminated runway surface condition assessment and reporting by the aerodrome operator for use by aircraft operators. Ensure the relation of this report to aircraft performance as published by aircraft manufacturers.

However, in one of the investigation reports, it is stated that one of the reasons that there is no sufficient guarantee for the implementation of all these recommendations, is the lack of regulatory value. The present regulatory proposal intends to address this gap.

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 proposal will contribute to the achievement of the overall objectives by addressing the issues outlined in Section 2.1.

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

- (a) reduce the number of runway-safety-related accidents and serious incidents involving runway incursions, but also other runway-safety-related events, such as runway confusion, ground collisions, runway excursions, from an aerodrome's point of view;
- (b) ensure an adequate framework for the safe use of vehicles within an aerodrome environment;
- (c) ensure the implementation of a holistic approach for the control of FOD at aerodromes;
- (d) ensure adequate maintenance for certain types of visual aids and, in some cases, provide visual aids as an additional mitigation measure;
- (e) ensure that certain runway safety defences are embedded in the corresponding aerodrome operational procedures and activities;
- (f) reduce the number of accidents and serious incidents where inappropriate runway surface condition assessment and reporting is a contributing factor;
- (g) ensure a standardised method of reporting the runway surface condition;
- (h) ensure that persons reporting the runway surface condition meet minimum training and competency requirements; and
- (i) ensure a harmonised methodology for specifying and setting the minimum friction level of the runways' surface.

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

This Opinion proposes the following amendments to Commission Regulation (EU) No 139/2014, Commission Regulation (EU) No 923/2012 and Commission Regulation (EU) 2017/373.

Commission Regulation (EU) No 139/2014

Annex I (Definitions)

The definitions of 'Aeronautical Information Circular (AIC)', 'Aeronautical Information Publication (AIP)', 'aeronautical information product', 'contaminated runway', 'data set', 'dry runway', 'foreign object debris (FOD)', 'lighting system reliability', 'Location Indicators', 'notice to airmen (NOTAM)', 'NOTAM code', 'runway condition assessment matrix (RCAM)', 'runway condition code (RWYCC)',



'runway condition report (RCR)', 'runway-end safety area (RESA)', 'runway-holding position', 'runway strip', 'runway surface condition(s)', 'runway surface condition descriptors', 'slippery wet runway', 'SNOWTAM', 'specially prepared winter runway' and 'wet runway' are added, because they are contained in the text of the proposed amendments to the Annexes to Regulation (EU) No 139/2014 and are identical to the corresponding definitions in ICAO Annexes 14 and 15, except the following:

- (a) The definition of the 'NOTAM code' is based on the title of ICAO Doc 8400.
- (b) The definition of the RWYCC (38b) is different from ICAO, because it does not describe the runway surface condition; instead, it quantifies the effect of the runway surface condition on available braking action and lateral control. The new definition does not have any effect on the implementation of the GRF.
- (c) The definition of the 'specially prepared winter runway' originates from CS-25.

Moreover, the definition of the 'terms of the certificate' (47) is revised to include the approval for aeroplane operations on specially prepared winter runways.

Annex II (Part-ADR-AR)

ADR.AR.C.030 is added. This rule is introduced because of the introduction of the language proficiency requirement that is proposed in ADR.OPS.B.025. The proposed rule foresees the approval of the method for the demonstration of compliance of language proficiency and the establishment of requirements for organisations that conduct language assessment by the competent authority, as in other domains.

Annex III (Part-ADR.OR)

ADR.OR.D.017 is revised. Following the comments received during the public consultation, this rule, which contains the overarching provisions for other training-related requirements in Regulation (EU) No 139/2014, is revised in order to avoid overlaps and inconsistencies with all other training-related provisions coexisting in the Regulation, and in order to improve readability. The proposed rule is based on the content of the current rule, enriched with the content of the proposals which had been included in the NPA, but which were related to specific training areas (i.e. vehicle training programme and training for NOTAM originators). Moreover, the amendment addresses an existing inconsistency where the use of assessors is foreseen for the implementation of the training programme, but not for the implementation of the proficiency check programme, although the two programmes are distinct, as foreseen in the relevant essential requirements of Annex VII to the Basic Regulation.

In addition, the proposed rule introduces the various types of training (recurrent, refresher and continuation), which are inseparable parts of a training programme itself, as well as the maximum intervals for the provision of recurrent and refresher training and the conduct of proficiency checks, thus ensuring legal certainty. The foreseen intervals are based on the content of the current guidance and the proposals that were consulted.

ADR.OR.D.035 is revised. The amendment of this rule is a consequence of the amendments proposed in other provisions. The amendment is necessary in order to include specific record-keeping periods and in order to ensure that certain records are maintained, due to the introduction of the rules regarding the authorisation of drivers, language proficiency, vehicle authorisation and vehicle maintenance.



Annex IV (Part-ADR.OPS)

ADR.OPS.A.057 is added. The new rule completes the regulatory framework for the origination and publication of NOTAM from an aerodrome's point of view. More specifically, Regulation (EU) No 139/2014 contains requirements for the coordination between an aerodrome operator and an AIS provider, while Opinion No 02/2018 proposes the amendment of Regulation (EU) 2017/373 in order to include provisions for the issuance of NOTAM by the AIS providers.

However, the regulatory framework does not include requirements for the origination of NOTAM by the aerodrome operator. This leads to an uncertainty as to when, for which reasons, and under which conditions, an aerodrome operator needs to originate a NOTAM, or abstain from its origination, something that eventually may affect safety.

The proposed rule is based on ICAO Annex 15 provisions, which are already included in the draft Annex VI to Regulation (EU) 2017/373, as proposed through Opinion No 02/2018. The solution of the adjusted reproduction of certain provisions, rather than simply referring to said Annex VI, is more appropriate. This is because not all provisions of said Annex VI contain requirements applicable to aerodrome operators acting as NOTAM originators, and because Annex VI contains NOTAM issuance requirements, which are not related to NOTAM origination. In this way, the regulatory gap is filled, while assuring certainty as to the responsibilities of the aerodrome operator when acting as NOTAM originator, thus minimising potential impact on the air navigation system.

ADR.OPS.A.060 is added. The rule specifies in which cases the aerodrome operator shall report the runway surface conditions to the air traffic services and AIS. The proposed rule is in line with the amended Standard 2.9.2 points (c), (d) and (e) of ICAO Annex 14 Amendment 13-B.

ADR.OPS.A.65 is added. The rule introduces the new method of reporting runway surface conditions using the runway condition codes and standardised terminology for the description of the surface contaminants. The rule is in line with Standard 2.9.5 included in ICAO Annex 14 Amendment 13-B. Nevertheless, the rule goes beyond ICAO requirements by including the descriptor 'SLIPPERY WET', which is linked to a runway whose surface friction characteristics are below the minimum standards, as well as the descriptor 'SPECIALLY PREPARED WINTER RUNWAY'. The latter has been taken from CS-25 and addresses cases where the runway is covered by compacted snow or ice, but has been specially treated to provide improved friction characteristics. Furthermore, the rule addresses also the following:

- (a) When the reporting of runway surface conditions shall commence and terminate in accordance with ICAO Doc 9981 'PANS-Aerodromes';
- (b) Prohibition of the dissemination of friction values to flight crews, because they cannot be used for the calculation of landing performance requirements, in accordance with ICAO Annex 14 Amendment 13-B Recommendation 2.9.8; and
- (c) The publication of NOTAM when the runway is slippery wet, in order to make aerodrome users aware that the condition of the runway surface is sub-standard, in accordance with ICAO Annex 14 Amendment 13-B Standards 2.9.9 and 2.9.10.



Appendices 1 and 2 are added. Appendix 1 is the NOTAM Format and Appendix 2 is the SNOWTAM Format; they are added for consistency and completeness.

ADR.OPS.B.003 is added. The rule intends to address the need to provide aerodrome personnel with updated information regarding the operational situations they may encounter at the handover of operational activities (e.g. at the start of their shift), so that they acquire a complete picture of their operational environment, thereby reducing the risk of an occurrence resulting from expectation bias. The rule introduces a widespread practice amongst all aviation domains, but also other professional domains, and is related to the need to communicate, in a reliable manner, task-related information.

Moreover, and in order to cover a similar need for the personnel of other organisations that operate or provide services at the aerodrome, the rule introduces an additional requirement for the aerodrome operator to provide aerodrome-related operational information to such organisations.

ADR.OPS.B.010 is revised. Following the comments received during the public consultation, all the training requirements of a horizontal nature are transferred to ADR.OR.D.017. This change does not introduce any additional requirement because the current content of ADR.OPS.B.010 in regard to the training of rescue and firefighting personnel is mirroring the requirements of ADR.OR.D.017. Furthermore, the rule requires the proficiency checks to be conducted every 12 months, in line with the existing guidance material.

ADR.OPS.B.016 is added. The rule addresses the need to mitigate FOD-related risks by applying an all-encompassing approach, thus going beyond the mere preventive maintenance approach that is currently embedded in the relevant Annex 14 provisions.

ADR.OPS.B.024 is added. The rule addresses the need to ensure that the authorisation of vehicle drivers operating on the movement area of an aerodrome is performed in a manner that advances runway safety, given the safety impact that vehicle operations may have. To this end, the proposed rule aims at the creation of a framework to control driving activities at an aerodrome, in a manner that:

- (a) establishes clear prerequisites for the authorisation of such persons to operate a vehicle on the movement area;
- (b) addresses the training needs of the drivers that normally operate at an aerodrome by establishing a relevant training context, taking also into account other significant interfacing issues (such as communication and language proficiency needs for those drivers operating on the manoeuvring area) and building upon existing material;
- (c) allows persons to temporarily enter an aerodrome and to operate in a safe manner; and
- (d) ensures legal certainty, enforceability and level playing field.

ADR.OPS.B.025 is replaced and the new title is 'Language proficiency'. This rule is linked to the proposed rule ADR.OPS.B.024, dealing with the authorisation of vehicle drivers. It details the requirements for the demonstration of language proficiency, including the language(s) and level(s) that drivers that operate on the manoeuvring area of an aerodrome would need to demonstrate for radio-communication purposes. The proposed rule builds on the regulatory framework that is applicable in other aviation domains, thus enabling the use of existing solutions and methods, and minimising the impact.



Moreover, based on the comments received during the public consultation, the content of safety recommendations, as well as the analysis of relevant occurrences, and with a view to improving the situational awareness of all actors, the proposed rule foresees demonstration of language proficiency in the English language, apart from any other language used for radio communication purposes with the air traffic services unit. To mitigate the potential impact from the introduction of this requirement and to facilitate compliance, a transition period is proposed.

ADR.OPS.B.026 is added. The new rule establishes a framework to control the vehicles intended to be operated at an aerodrome, in order to ensure the safety of operations. More specifically, the rule addresses the need to limit the number of vehicles to only those that are relevant and necessary for the aerodrome operations, in order to reduce the likelihood of occurrences. Moreover, it requires vehicles to be properly equipped (e.g. installation of radio if they are intended to be operated on the manoeuvring area or transponder or similar system if cooperative targets are needed on the manoeuvring area), and properly marked/lighted. In addition, the rule accommodates the occasional operation of vehicles that do not meet the above requirements. Furthermore, the rule allows an open-ended vehicle authorisation of vehicles subject to certain conditions, contains provisions for vehicles that need to temporarily enter and operate within the aerodrome, and addresses the problem of call-sign confusion.

ADR.OPS.B.027 is added. The new rule establishes the driving rules at an aerodrome, based on the content of ICAO Annexes 2 and 14, and ICAO Doc 4444 'PANS-ATM' provisions, as well as proposals expected to be included in Annex 11, along with recommendations of the EAPPRI.

ADR.OPS.B.028 is added. ICAO Annex 14 does not contain any specific requirements for aircraft towing, while Annex 2 deals with it from a different perspective. Nevertheless, a review of the occurrences indicated that there have been events that have resulted in accidents or serious incidents during towing operations, mainly related to lack of situational awareness, or lack of awareness of aircraft clearances by the personnel involved, or insufficient/improper lighting of towed aircraft during night operations. The proposed rule covers this regulatory gap from an aerodrome's perspective, by including provisions covering the elements that need to be addressed during such operations, in terms of routing, guidance, lighting, communication procedures and coordination of different actors, and measures that need to be taken in adverse weather or meteorological conditions.

ADR.OPS.B.030 is revised. The revised rule further expands the requirements for SMGCS to include the establishment of standard taxi routes and the operation of aircraft transponders on the ground. The proposed provision on standard taxi routes aims at enhancing safety, regularity and efficiency of operations and mirrors, from the aerodrome perspective, similar requirements for the air traffic services that are included in Opinion No 03/2018. The proposed provision regarding the use of aircraft transponders on the ground applies to aerodromes equipped with advanced SMGCS, and aims at ensuring the capability of the system to provide relevant surveillance data to the responsible unit(s) at the aerodrome.

ADR.OPS.B.031 is added. The new rule establishes the communication requirements between vehicle drivers and pedestrians, operating on the manoeuvring area, and air traffic services, in order to enhance situational awareness. The proposed rule takes into account existing provisions contained in Regulation (EU) No 923/2012 (SERA), the content of Opinion No 03/2018, and the need to avoid disruption of operations as much as possible. It requires the establishment of coordinated procedures for communication purposes between the aerodrome operator and the air traffic services unit in order



to address issues such as the language(s) to be used, frequencies, operation of pedestrians on the manoeuvring area, use of signals and other communication means in case of communication failures, and dissemination of significant aerodrome-related information through radio communication.

ADR.OPS.B.033 is added. The objective of the rule is to prevent further the runway/taxiway incursions and other occurrences that the presence of persons on the movement area may cause. This is to be accomplished by preventing the entry of unauthorised personnel in the movement area and other operational areas of the aerodrome, and by controlling the movement of pedestrians, including passengers, on the apron. Additionally, based on the provisions of PANS-ATM, the rule addresses cases where personnel need, for operational reasons, to enter on the manoeuvring area.

ADR.OPS.B.035 is revised. The existing rule does not explicitly detail the requirements for the aerodrome operator in regard to the operations in winter conditions. The revised rule establishes these obligations and is in compliance with ICAO Annex 14 and Annex 15 SARPs.

ADR.OPS.B.036 is added. The proposed rule affects mainly aerodromes that are subject to prolonged winter periods and their runways are continuously covered with compacted snow or ice. The new method proposed by ICAO does not allow any upgrade of RWYCC from 0 and 1 to 3. This limits the operation of aeroplanes on such runways, despite the fact that affected aerodromes and air operators have developed since many years robust procedures that ensure the safety of operations. The proposed rule is based on the existing practices and has the acceptance of aeroplane manufacturers. Furthermore, this issue is acknowledged by ICAO as well; therefore, changes based on the current EASA proposal are envisaged.

ADR.OPS.B.037 is added. The proposed rule refers to the obligation of the aerodrome operator to assess the runway surface condition and assign a RWYCC. The text originates from ICAO Annex 14 Standards and from provisions included in ICAO Doc 9981 'PANS – Aerodromes'.

ADR.OPS.B.080 is revised. The revised rule clarifies better the need for a mobile object (other than a vehicle) to be lighted at an aerodrome, and removes an inconsistency regarding the areas of the aerodrome to which the marking and lighting requirements for vehicles apply. The rule ensures also alignment with the provisions of ICAO Annex 14.

ADR.OPS.C.005 is revised to align with ICAO Annex 14 as well as to include aerodrome systems and equipment in the maintenance programme of the aerodrome. Furthermore, the rule introduces the requirement that the maintenance programme should follow human factors principles in accordance with ICAO Annex 14 and requires the availability of all necessary means for its implementation.

ADR.OPS.C.007 is added. The rule addresses the need for the maintenance of rescue and firefighting vehicles in accordance with the provisions of Annex 14. However, given the need to prevent occurrences that may be the result of inadequately maintained vehicles, the proposed rule covers also similar needs for other vehicles allowed to operate within an aerodrome. This requirement is also linked with the proposed requirement for the authorisation of vehicles, which addresses their serviceability.

ADR.OPS.C.010 is revised. The revision of the text aims at aligning the existing maintenance provisions with the relevant ICAO Annex 14 provisions with regard to pavement maintenance, and especially with regard to runway surface friction characteristics, in order to mitigate the risk of runway excursions, but also that arising from FOD presence.



The current content of ADR.OPS.C.015 is replaced for reasons mainly related to completeness and readability. More specifically, based on the relevant provisions of Annex 14, the rule addresses the need for the power supply systems of the aerodrome to be properly maintained, and introduces new requirements regarding the maintenance of the aerodrome lighting systems. In addition, the proposed rule introduces specific requirements for the maintenance of the aerodrome signs and markings.

Furthermore, the proposed provisions restrict activities around electrical systems when low-visibility procedures are in effect. Finally, the proposed rule incorporates the content of existing aerodrome design specifications (CS ADR-DSN.S.895) because their content is maintenance-related.

Commission Regulation (EU) No 923/2012

SERA.12005 is amended in order to include the requirement for the pilots to use the special air-report to provide information when the runway braking action encountered is not as good as reported to them. This amendment stems from ICAO Doc 4444 and is a key element for the implementation of the GRF, because the downgrade of the runway condition code depends heavily on the pilots' reports.

Commission Implementing Regulation (EU) 2017/373

ATS.OR.530 is added to ensure that when air traffic services are receiving special air-reports in regard to runway surface condition, they are communicated immediately to the aerodrome operator. This is a consequential change in ICAO Doc 4444 by the introduction of the GRF and is considered important for the implementation of the new method. This provision complements SERA.12005 and ensures a proper communication link between aerodrome operators, pilots and air traffic services.

The template of the METAR (Appendix 1) in Annex V is replaced by a new one where the information for runway surface conditions is deleted. This is a consequential change to ICAO Annex 3, following the introduction of the GRF.

In AIS.TR.330, point (b)(2) is deleted and transferred to point (a)(29). Currently, the publication of a NOTAM is not required for temporary closures of runways under (b)(2); however, it is considered safer as even in these cases, the publication of the NOTAM will increase pilots' situational awareness.

The SNOWTAM Format (Appendix 3a) in Annex VI is replaced to include in the runway condition descriptors the terms 'SLIPPERY WET' and 'SPECIALLY PREPARED WINTER RUNWAY'. Furthermore, it includes some changes in the reporting of snowbanks in order to avoid excessive SNOWTAM strings, as well as to correct some errors in the examples given.

2.4. What are the stakeholders' views — outcome of the consultation

Comments were submitted to all parts of the NPA and they were of a mixed nature, ranging from support to the proposed amendments, to proposals for changes or improvements and, in some cases, expressing disagreement. The majority of the commentators focused on the following topics:

Comments on the authorisation of vehicle drivers

There was a variety of comments to the proposed provisions. Some of the comments asked EASA to clarify a term that was used in the proposed text, an issue that was resolved through the provision of additional material.



Moreover, some comments focused on the use of the instructors and assessors and the use of technology for the provision of training, which has led to the amendment of the proposed material, in order to clarify the intent of the provisions, but also to unify proposed provisions with other existing material, in order to avoid repetitions and overlaps.

In addition, other comments focused in the proposed competent authority prior approval in regard to the provision of the required training by organisations other than the aerodrome operator, which has led to the amendment of the text. Some comments focused on the use of the term on-the-job training that was replaced, in order to avoid potential misunderstandings about the intent of the proposed material. Furthermore, there were comments in regard to the use of a common radio frequency as well as the language for communication purposes, which led to the amendment of the proposed text.

Finally, some comments focused on the proposed frequency of recurrent training and proficiency checks, which however were not accepted mainly for reasons related to legal certainty, level playing field, and the need to maintain an acceptable level of safety.

Comments on the origination of NOTAM

There was a diversity of the comments received with regard to the proposed provision regarding NOTAM origination, which is in accordance with the provisions of Annex 15 and complements the relevant EASA Opinion No 02/2018 that addresses the issuance of NOTAM. Apart from the comments which focused on specific issues, such as answering a question that had been posed to the stakeholders by EASA, or posing specific questions, or expressing support, or making suggestions to improve the text and the two formats that had been provided, it was noticed that there was a certain focus regarding the proposed rule structure, and the uncertainty about the responsibility for NOTAM origination, which seems to be related to the general issue of data origination, which has not been addressed yet.

Based on the comments received, certain parts of the text were incorporated in a different provision, in order to avoid repetitions, while other proposed provisions were amended. However, a certain number of comments have not been accepted because NOTAM origination requires clarity in terms of responsibilities and the actions to be accomplished by the originator, in order to prevent impact on the air navigation system.

Comments on the reporting of runway surface condition

There was a general support to the proposed rule, which is in line with ICAO Annex 14 provisions. Comments received in regard to the improvement of the text, as well as proposals to ensure consistency between the terms used in the SNOWTAM Form and the terms used to describe the runway surface conditions, have been generally accepted.

The main controversial issue was the reporting of runway surface conditions. The EASA proposal does not allow the reporting of friction measurement values. Some commentators expressed the view that this practice should be allowed. EASA does not share this view because friction measurement values are not correlated with aeroplane performance data; therefore, they cannot be used by the flight crews. Furthermore, proposals were not accepted because currently there are no performance standards for friction measuring devices to ensure accuracy and reliability of friction measurements on contaminated surfaces.



2.5. What are the expected benefits and drawbacks of the proposals

As explained, the proposals include measures to reduce the risk of runway safety events, including also specific measures for runway surface condition assessment and reporting. The proposals will have a positive safety impact because the measures will definitely increase runway safety. The proposed measures will entail additional administrative and training costs; however, this is considered negligible because these provisions clarify existing requirements and provide enough flexibility on how they should be implemented. With regard to the proposed language proficiency provisions, a transition period is proposed to mitigate the potential impact. Furthermore, the proposed requirements for the provision of the training, although they are very specific in some cases on the training areas to be covered, in order to ensure the same safety level and level playing field, they allow the provision of the training using different methods, which can reduce the training cost, without compromising the desired outcome. Another issue that needs to be mentioned is that although the proposed measures for runway surface condition assessment and reporting are based on the ICAO provisions, they had to be extended in order to allow uninterrupted operations on runways that are covered by compacted snow or ice for long periods of time. That was necessary because these aerodromes are located at remote areas where air travel is the only way of transportation and any disruptions would create high social and economic impact.

2.6. How we monitor and evaluate the rules

In order to evaluate the proposed rules, the following indicators will be monitored:

What to monitor	How to monitor	Who should monitor	How often to monitor
Number of serious incidents and accidents related to runway and taxiway incursions caused by vehicles and persons	ECR	EASA	On a recurrent basis
Number of serious incidents and accidents involving collisions of moving aircraft with vehicles and other objects, not related to runway or taxiway incursions	ECR	EASA	On a recurrent basis
Number of serious incidents and accidents and related to FOD	ECR	EASA	On a recurrent basis



Number of serious incidents and accidents related to runway confusion	ECR	EASA	On a recurrent basis
Number of accidents and serious incidents related to the runway surface condition	ECR	EASA	On a recurrent basis
Report from Member States aerodrome and airline operators concerning the validity of the new method	Surveys, interviews	NAAs	On a recurrent basis

Cologne, 24 June 2019

Patrick KY
Executive Director



3. References

3.1. Affected 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.
- Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010.
- 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.

3.2. Related 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'
- Executive Director Decision 2017/021/R of 8 December 2017 issuing Certification Specifications and Guidance Material for Aerodrome Design (CS ADR-DSN) – Issue 4
- Decision 2013/013/R of the Executive Director of the Agency of 17 July 2013 adopting Acceptable Means of Compliance and Guidance Material to Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 'Acceptable Means of Compliance and Guidance Material to the rules of the air'

3.3. Other reference documents

- ICAO Annex 14 to the Convention on International Civil Aviation, Aerodromes, Volume I – Aerodrome Design and Operations, 8th Edition, July 2018
- ICAO Doc 4444, 'Procedures for Air Navigation Services, Air Traffic Management', Sixteenth Edition, 2016
- ICAO Doc 9981 'Procedures for Air Navigation Services, PANS-Aerodromes', Second Edition, 2016
- ICAO Annex 6 to the Convention on International Civil Aviation, Operation of Aircraft, Part I – International Commercial Air Transport – Aeroplanes, 10th Edition, July 2016



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- ICAO State Letter AN 2/2.1.1-17/22 of 21 April 2017, 'Proposed amendment to Annex 15, new PANS-AIM and consequential amendments to Annexes 3, 4, 6, 9, 10, 11 and 14, PANS-ATM, PANS-OPS, PANS-ABC and PANS-Aerodromes'
 - ICAO State Letter AN 4/27 – 18/69 of 10 July 2018, 'Approval of Amendment 2 to the PANS – Aerodromes'
 - European Action Plan for the Prevention of Runway Incursions (EAPPRI), Released edition 3.0, November 2017
 - European Action Plan for the Prevention of Runway Excursions (EAPPRE), Released edition 1.0, January 2013
 - ICAO Circular 355 – 'Runway Surface Condition Assessment, Measurement and Reporting'
 - FAA AC 150/5200-30D, 29/7/2016 — 'Airport Field Condition Assessments and Winter Operations Safety'
 - FAA 150/5210-24, 09/30/2010 – 'Airport Foreign Object Debris Management'
 - ANSV – Agenzia Nazionale Per La Sicurezza Del Volo, Safety recommendations for the prevention of runway incursions, 26/09/2014
 - ICAO Doc 10004, Global Aviation Safety Plan, 2017-2019
 - ICAO Runway Safety Programme – Global Runway Safety Action Plan, November 2017
 - ICAO Safety Report 2017
 - SR NORW-2011-011 — Report SL 2011/10, Winter Operations, Friction Measurements and Conditions for Friction Predictions, Volume II – Main Report, May 2011
 - European Plan for Aviation Safety (EPAS) 2019-2023



4. Appendix

Appendix to Opinion No 03/2019 'Runway safety' — CRD 2018-14 [Separate document]

