



Australian Government
Civil Aviation Safety Authority

POLICY PROPOSAL

PP 2211AS



Proposed implementation of ICAO's Global Reporting Format



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Policy overview

The Global Reporting Format (GRF) is an International Civil Aviation Organisation (ICAO) initiative designed to address issues with the assessment, reporting and use of contaminated runways. These issues were identified following investigations and reviews conducted by the United States' Federal Aviation Administration (FAA) and ICAO's Friction Task Force.

The implementation of the GRF in Australia requires careful consideration due to the breadth of potential amendments across multiple rule parts (including those subject to significant recent change), the diversity of Australian aerodrome environments including certification and provision of air traffic control (ATC); and the nature of weather conditions relating to runway contamination.

The policy proposals contained in this document relate to the:

- definition of contaminated runway and associated terms
- standards associated with aerodrome serviceability inspections
- applicability of GRF standards to aerodrome operators
- triggers for runway surface condition inspections
- runway surface condition assessment process (including use of technical solutions)
- timely communication of runway condition reports (RCRs)
- introduction of SNOWTAMs
- promulgation of GRF implementation in the Aeronautical Information Publication (AIP)
- transition to/introduction of these standards.

Why are we consulting

As noted above, the implementation of the GRF within Australia has the potential to impact different sectors and operators differently and significantly. Prior to making such regulatory changes, CASA wishes to understand these potential impacts in detail.

CASA has developed these proposals in consultation with industry representatives under the auspices of the National Runway Safety Group (NRSRG) but further input is being sought from the wider industry.

We invite the aviation community to review these policy proposals in relation to their industry sector and to tell us about any concerns or challenges they envisage. We also invite industry to highlight any improvements that should be considered for these proposals or considered for future development of aerodrome safety standards.

This policy proposal summarises broad policy or broad action rather than specific wording. The exact wording of any subsequent standards will be addressed during legislative drafting and further consultation. An Exposure Draft of the amendment regulations will be made available in 2022/23 prior to any changes coming into effect.

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1 Reference material

1.1 Acronyms

The acronyms and abbreviations used in this policy proposal are listed in the table below.

Acronym	Description
AA	Airservices Australia
ADOP	Aerodrome Design and Operations Panel (ICAO)
AC	advisory circular
AIM	aeronautical information management
AIP	aeronautical information publication
ATC	air traffic control
ATIS	automatic terminal information service
ATM	air traffic management
ATS	air traffic service
CA/GRS	certified air/ground radio service
CAR	<i>Civil Aviation Regulations 1988</i>
CASA	Civil Aviation Safety Authority
CASR	<i>Civil Aviation Safety Regulations 1998</i>
CPDLC	controller-pilot data link communication
CS	certification specifications
EASA	European Union Aviation Safety Agency
FAA	<i>Federal Aviation Administration</i>
FAR	<i>Federal aviation regulations</i>
FTF	<i>Friction Task Force (ICAO)</i>
GRF	<i>global reporting format</i>
ICAO	<i>International Civil Aviation Organisation</i>
METAR	<i>aerodrome routine meteorological report</i>
MOS	manual of standards
MTOW	maximum take-off weight
NASP	national aviation safety plan
NRSG	national runway safety group
PANS	procedures for air navigation
PP	policy proposal document

Acronym	Description
RCAM	runway condition assessment matrix
RWYCC	runway condition code
RCR	runway condition report
SARP	standards and recommended practices
SMS	safety management system
SPECI	aerodrome special meteorological report
UNICOM	universal communications

1.2 References

Legislation

Legislation is available on the Federal Register of Legislation website <https://www.legislation.gov.au/>

Document	Title
Part 21	Certification and airworthiness requirements of aircraft and parts
Part 23	Airworthiness standards for aeroplanes in the normal, utility, acrobatic or commuter category
Part 25	Airworthiness standards for aeroplanes in the transport category
Part 139	Aerodromes
Part 91	General operating and flight rules
Part 91 MOS	Part 91 (General Operating and Flight Rules) Manual of Standards 2020
Part 121	Australian air transport operations—larger aeroplanes
Part 121 MOS	Part 121 (Australian Air Transport Operations—Larger Aeroplanes) Manual of Standards 2020
Part 135	Australian air transport operations—smaller aeroplanes
Part 135 MOS	Part 135 (Australian Air Transport Operations—Smaller Aeroplanes) Manual of Standards 2020
Part 139 MOS	Part 139 (Aerodromes) Manual of Standards
Part 172	Air traffic service providers
Part 175	Aeronautical information management

International Civil Aviation Organization documents

International Civil Aviation Organization (ICAO) documents are available for purchase from <http://store1.icao.int/>

Document	Title
Annex 3	Meteorological Service for International Air Navigation

Document	Title
Annex 6 Part I	Operation of Aircraft – International Commercial Air Transport – Aeroplanes
Annex 6 Part II	Operation of Aircraft – International General Aviation – Aeroplanes
Annex 8	Airworthiness of Aircraft
Annex 14 Volume I	Aerodromes
Annex 15	Aeronautical Information Services
PANS-Aerodromes	Procedures of Air Navigation Services – Aerodromes (Doc 9981)
PANS-AIM	Procedures of Air Navigation Services – Aeronautical Information Management (Doc 10066)
PANS-ATM	Procedures of Air Navigation Services – Air Traffic Management (Doc 4444)
Circular 355	Assessment, Measurement and Reporting of Runway Surface Conditions

Other technical references

Document	Title
FAA Order 1110.149	Takeoff/Landing Performance Assessment (TALPA) Aviation Rulemaking Committee (ARC)
Australian NASP	The Australian National Aviation Safety Plan 2021–2023
AIP Australia	Aeronautical Information Publication Australia

2 Introduction

2.1 Background

Following significant safety events overseas, the United States' Federal Aviation Administration (FAA) and the International Civil Aviation Organization (ICAO) investigated runway excursions involving runway contamination and found that shortfalls in the accuracy and timeliness of runway condition assessment and reporting methods were contributory factors. Further targeted research identified the need for a globally harmonised methodology for runway surface condition assessment and reporting.

In response, ICAO's Aerodrome Design and Operations Panel (ADOP) and their Friction Task Force (FTF) developed an improved global runway condition assessment and reporting format which consists of:

- a. an agreed set of criteria used in a consistent manner for runway surface condition assessment, aeroplane (performance) certification and operational performance calculation
- b. a unique runway condition code (RWYCC) linking the agreed set of criteria with the aeroplane landing and take-off performance table and related to the braking action experienced and eventually reported by flight crews.
- c. a standardised common terminology for runway surface condition description reported by the aerodrome operator's runway assessors, air traffic controllers and aeronautical information services for the use of aircraft operators, notably the flight crew.

The global reporting format (GRF) system involves the following four (4) sub-systems:

- a. The uniform assessment of the runway condition by trained aerodrome personnel and the issue of a standardised runway condition report (RCR) based on each third of the runway and using a coding matrix, known as the runway condition assessment matrix (RCAM).
- b. The provision of the RCR by Air Traffic Services (ATS) to end users through voice communications, controller-pilot data link communication (CPDLC), and voice or digital automatic terminal information service (ATIS).
- c. The provision of the RCR to end users in the form of a SNOWTAM.
- d. The use of the RCR by aircraft operators, in conjunction with aircraft manufacturer performance data, to determine if a landing or take-off can be conducted safely.

Australia's commitment to implementing the GRF has been formalised in the Australian National Aviation Safety Plan (NASP). Safety Enhancement Initiative (SEI) 1.4 contains 6 actions designed to mitigate contributory factors associated with runway safety accidents and incidents. Action 1.4.3 covers the implementation of GRF and reads:

"Establish requirements for a reporting format to assess and report runway surface conditions in accordance with the ICAO Global Reporting Format in Annex 14 Vol I."

The policy challenges to implementing the GRF within Australia include the:

- breadth of potential amendments across multiple rule parts
- recent significant change to aerodrome and flight operations regulation;
- diversity of Australian aerodrome environments including certification and provision of air traffic control (ATC)
- nature of weather conditions relating to runway contamination.

2.2 Existing regulatory structure

As noted above, the GRF's proposed changes impact on multiple rule parts and therefore, the existing regulatory framework consists of individual or clusters of requirements established in separate rule parts and Australia's Aeronautical Information Publication (AIP).

2.2.1 Meteorological reporting

Before the introduction of the GRF amendments, Annex 3 requirements for aerodrome routine meteorological reports (METAR) and aerodrome special meteorological reports (SPECI) included details of the state of the runway. These requirements were removed with the introduction of runway condition reports under the GRF.

However, under AIP GEN 3.5 section 11.19, these details were not included in METAR/SPECI reports in Australia. Therefore, no change is required.

The GRF amendments also introduced an Annex 3 requirement for a special aircraft observation report trigger when braking action is worse than that reported. Amendments to the AIP introduced this requirement from 8 September 2022.

2.2.2 Flight operations

Annex 6 related amendments supporting the GRF target landing performance considerations, runway surface condition definitions, and braking action reporting.

Currently, landing performance requirements are established under regulation 91.800 of CASR and section 25.02 of the Part 91 Manual of Standards (MOS) and further developed for specific air transport operations under regulation 121.240 of CASR and sections 9.10, 9.11, 9.13 of the Part 121 MOS, and regulation 135.350 of CASR and section 10.14 of the Part 135 MOS. These regulations and standards include the broad requirement to consider the landing weather forecast under Part 91 of CASR and specifically, the runway surface condition for air transport operations.

The requirements for Part 121 operators are presently distinguished using the terms *dry*, *wet* and *contaminated* which are defined in the CASR Dictionary. *Contaminated* is currently defined as greater than 25% of the runway surface area required for take-off or landing being covered with water or slush more than 3 mm deep, loose snow more than 20 mm deep and/or compacted snow or ice. *Dry* is defined as a runway having no visible moisture on its surface and *wet* being a runway surface that is neither contaminated nor dry.

Braking action reporting is as per the discussion above (see section 2.2.1).

2.2.3 Aircraft performance data

Annex 8 amendments supporting the GRF are limited to aeroplanes greater than 5 700 kg maximum take-off weight (MTOW) for which application for certification was submitted on or after 2 March 2019. These amendments added the requirement that take-off and landing performance data shall include the effect of runway surface conditions.

Australia's airworthiness standards, contained in Parts 21, 23 and 25 of CASR, establish a system that is built upon the airworthiness standards of the United States, through the federal aviation regulations (FARs), and the European Union, through the European Union Aviation Safety Agency's (EASA) certification specifications (CS).

2.2.4 Air Traffic Services

Amendments relating to ATS activities were made to the procedures for the ICAO Procedures of Air Navigation Services – Air Traffic Management (PANS-ATM) document. They relate to the content and phraseology of messages relating to runway surface conditions and braking action.

In consultation with relevant stakeholders, the AIP would be amended to reflect these changes with consequential amendments to be made to the manual of air traffic services (MATS). These changes are designed to utilise existing runway condition reporting processes with the addition of standardised RWYCC and RCR message formats.

2.2.5 Aeronautical information management

The ICAO GRF saw the introduction of a new and highly structured SNOWTAM format for the reporting of runway condition reports. Currently, NOTAM reporting is carried out under Part 175 of CASR with administration of data product specifications established by Airservices Australia.

Australia's NOTAM system does not currently support the introduction of the SNOWTAM format.

2.2.6 Aerodrome operations

The bulk of GRF-related amendments were contained in Annex 14, ICAO Procedures of Air Navigation Services – Aerodromes (PANS-Aerodromes) and Circular 355. They cover the monitoring and reporting of runway conditions in the standardised GRF format as well as standards and guidance on the maintenance and measurement of runway surface friction.

Part 139 of CASR and the Part 139 MOS contain standards relating to runway inspection and reporting but do not align with the inspection triggers under the GRF nor its runway condition reporting specifications (RWYCC, RCAM, RCR, etc.). Similarly, these regulations and standards contain requirements relating to runway surface friction maintenance and testing that are not fully aligned with ICAO's standards and recommended practices (SARPs) and guidance material.

3 Consultation

3.1 Consultation to date

In accordance with the ICAO established implementation action plan, CASA established an internal, cross-disciplinary implementation team consisting of members from:

- International Operations Section
- Aerodromes Section
- Air Traffic Management (ATM) System Standards Section (including aerodromes & Aeronautical information management (AIM))
- Safety Systems Section
- Risk Oversight Section
- Engagement, Communications & Safety Education Branch.

This team has met regularly to coordinate GRF-related activities including identifying regulatory gaps and reviewing relevant safety risk assessments impacted by the GRF.

The activities and results of this team were presented to the National Runway Safety Group (NRSNG) and in coordination with this group, an industry working group was established.

The NRSNG GRF working group consists of members from:

- CASA
- Airservices Australia
- Major airlines (Qantas, Virgin Australia, Jetstar)
- Airport operators (Sydney airport, Sydney Metro Airports)
- Industry associations (Australian Airports Association (AAA), Regional Aviation Association of Australia (RAAA), Australian Airline Pilots' Association (AusALPA))

The NRSNG GRF working group has been instrumental in the development of this policy proposal document.

CASA representatives have also provided industry presentations at the 10 March 2022 AAA Safety Forum, held in Brisbane, and the 1-3 June 2022 AAA OPS Swap, held in Sydney.

3.2 Future consultation activities

In addition to the formal consultation associated with this policy proposal, the NRSNG GRF working group, under the oversight of the full NRSNG, will continue to meet to discuss feedback received relating to this document, implementation activities and the development of regulatory proposals and amendments.

Additional industry stakeholders are welcome to contribute to the working group or the NRSNG. Interested persons can register this interest with their industry association, the NRSNG or directly with the working group by emailing GRF.Australia@casa.gov.au.

4 Regulatory challenges

The challenges presented by implementation of the GRF system stem from its intended strength, and standardisation. The GRF, as outlined by ICAO, is a set of activities, finely described that come together to form a robust system aimed at calculating and articulating runway surface conditions in a meaningful way. It relies on multiple industry participants working in specific ways to support the safe operation of aircraft on contaminated runways.

If one or more participants are not present or are unable to work in the way specified by the ICAO standards, then the functionality of the system is compromised. The following sections outline four specific characteristics of the Australian aviation industry that present challenges to the implementation of the GRF.

4.1 Diversity of aerodrome operations

Australia's aerodrome sector consists of over 300 certified aerodromes. These facilities include:

- large international airports, such as Sydney and Melbourne
- smaller international airports, such as Sunshine Coast and Cairns
- busy general aviation airports, such as Bankstown and Jandakot
- domestic/regional airports, such as Rockhampton and Karratha
- regional aerodromes, such as Dubbo and Mildura
- remote aerodromes, such as Horn Island and Gove

These aerodromes support all types of operations from day visual flight rule operations through to Category III instrument approaches. They accommodate aircraft from small recreational types through to super-heavy air transport aeroplanes. They consist of all weather, sealed surfaces with complex sensors, radio navigation aids and lighting systems; simple gravel runways; and everything in between.

The ownership and operating structures of these facilities are as varied as their physical layouts and characteristics. Some aerodromes are owned and/or managed by private companies whose primary business is airport management. They are staffed by a range of aviation professionals including teams dedicated to safe airside operations. Others are smaller companies and local government organisations whose primary business is not airport management with their teams having multiple responsibilities that include aerodrome inspection and reporting. Australian aerodromes may have personnel onsite 24 hours a day, through operational periods only or a little as a short visit twice a week.

The introduction of requirements for immediate reactionary inspections of runways in inclement weather may present a significant increase in resource requirements for aerodromes with minimal staff or significant runway surface areas.

4.2 Air traffic control tower availability

ATC tower services are a key component of the ICAO GRF model. The tower, either through the Automatic Terminal Information Service (ATIS) or voice communication, provides the current RCR to pilots in the vicinity of the aerodrome. However, in Australia, only 29 aerodromes are

serviced by an ATC tower and not all are serviced 24 hours a day. This leaves a gap in the ICAO GRF at most Australian certified aerodromes.

While some aerodromes are supported by a ground-based radio operator (e.g., CA/GRS, UNICOM) or may, when required, have a work safety officer monitoring aircraft activity, none of these services is currently tasked with providing runway condition information. For non-controlled aerodromes to fill this gap, numerous risk mitigations would be required with specific standards for training and competence as the minimum.

4.3 NOTAM system constraints

As noted above, Australia's existing NOTAM system is not capable of encoding and distributing SNOWTAMs in the format specified in the GRF amendments. A planned upgrade to the NOTAM system is currently underway with the new SNOWTAM specifications being considered. As such, structural changes the existing system will not be included in this proposal.

4.4 Environmental challenges

With respect to the conditions that impact on runway surface friction and safety of aircraft operations, Australia's weather is relatively benign. Snow and ice accumulation, which factors into the runway surface condition assessments in other countries, is not a significant issue for Australia's certified aerodromes.

5 Proposed policy amendments

This section describes the policy items, potential regulatory changes and the issues behind each of the proposed changes.

5.1 Contaminated Runway Definition

5.1.1 Reference(s):

- CASR Dictionary Part 1.

5.1.2 Background

The basis of operational requirements relating to contaminated runways is the definition of contaminated contained in the regulations. Under various rule parts, this definition is used to require specific actions and considerations in relation to landing and taking off.

The current CASR definition is:

contaminated: a runway is *contaminated* if more than 25% of the surface area required for a take-off or landing is covered by any of the following:

- water or slush more than 3 mm deep;
- loose snow more than 20 mm deep;
- compacted snow or ice.

5.1.3 Issue

Along with the introduction of the GRF processes and standards, ICAO revised the definition of *contaminated runway*. In line with ICAO practice, this definition is broad and designed to accommodate the implementation of the GRF's runway condition report detail.

The ICAO definition is:

"A runway is contaminated when 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 in the runway surface condition descriptors."

In practical terms, the ICAO definition provides flexibility for aircraft operators to consider aircraft requirements in the determination of the runway condition. This is supported by the greater level of detail provided in a standard RCR. Further, the list of contaminants in the existing definition does not align with the GRF structure in terms of clarity and specificity.

5.1.4 Proposed policy

The definition for contaminated runway be amended to:

A runway is contaminated when 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 following substances:

- compacted snow, being snow that has been compacted into a solid mass such that aeroplane tires, at operating pressures and loadings, will run on the surface without significant further compaction or rutting of the surface

- b. dry snow, being snow from which a snowball cannot readily be made
- c. frost consisting of ice crystals formed from airborne moisture on a surface whose temperature is below freezing and differing from ice in that the frost crystals grow independently and therefore have a more granular texture
- d. ice, being water that has frozen or compacted snow that has transitioned into ice, in cold and dry conditions
- e. slush, being 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, being water of depth greater than 3 mm including running water of depth greater than 3 mm
- g. wet ice, being ice with water on top of it or ice that is melting
- h. wet snow, being snow that contains enough water content to be able to make a well-compacted, solid snowball, but water will not squeeze out.

5.2 Serviceability inspection regime

5.2.1 Reference(s):

- Part 139 MOS Chapter 12 Division 1.

5.2.2 Background

To ensure ongoing serviceability of a certified aerodrome, the aerodrome operator is required to carry out inspections of the aerodrome according to a minimum schedule and following specific circumstances.

The minimum scheduled inspections are:

- a. each day that an air transport movement is scheduled
- or
- b. no less than twice per week (with 48 hours between inspections) for aerodromes with few or no scheduled air transport movements.

The circumstances triggering an inspection are:

- a. after a severe wind event, a severe storm or a period of heavy rainfall
- b. if a hazard to aircraft may be present on the manoeuvring area
- c. when requested in writing by CASA
- d. when requested by ATC (where applicable).

The scheduled inspection is to be undertaken before the first scheduled air transport movement or, if that movement occurs prior to first light, only safety critical elements of the inspection are to be carried out with the rest completed as soon as sufficient light is available.

5.2.3 Issue

Firstly, these provisions are not aligned with ICAO standards. Annex 14 section 2.9.3 establishes the requirement for larger aerodromes (code number 3 and 4) to carry out 2 inspections per day. It also details the need for inspections of runway surface conditions, but this standard is discussed below.

Secondly, the language of Part 139 MOS describes a serviceability inspection as a discrete event that covers the aerodrome from start to finish according to the schedule. This language is suitable for a small day-only aerodrome with limited traffic but can become restrictive to larger, more complex aerodromes with significant traffic.

In the latter case, aerodrome serviceability could be confirmed over multiple steps at different times of the day depending on environmental conditions, level of operations and runway in use. While the dispensation allowed for in section 12.02 (2) of the Part 139 MOS to complete safety critical elements separate to the remainder of the inspection, this allowance reinforces the notion that a “normal” inspection is a discrete task to be completed in full.

With respect to the reactionary inspections triggered by the circumstances set out in section 12.01 (1) of the Part 139 MOS, the language of this division requires a full aerodrome serviceability to be carried out. Yet, the trigger may be a localised problem (e.g., a bird strike on the runway) in which a targeted/limited activity is required.

5.2.4 Proposed policy

The confirmation of aerodrome serviceability is to be established within an outcome-based program that provides for discrete inspections for simple aerodromes and decoupled inspections for complex and/or busy aerodromes. The focus will be on providing sufficient confidence in aerodrome serviceability while scheduled air transport operations are being conducted.

The flexibility provided in a serviceability inspection program would enhance ongoing serviceability of aerodromes by focusing resources to those areas in need at any given time. It would also promote outcome-based thinking in aerodrome operators through designing systems to meet their needs and the needs of their users.

The new standard for proactive inspections would establish the requirement for aerodromes with scheduled air transport movements over a span of more than 8 hours to confirm the serviceability of the aerodrome’s facilities, environment and equipment (in line with section 12.03 of the Part 139 MOS) no less than twice per day. All other aerodromes would be required to confirm the serviceability of the aerodrome’s facilities, environment and equipment no less than once per day on days of scheduled air transport movements and no less than twice per week (with 48 hours between inspections) for aerodromes with minimal traffic. All inspections are to be carried out in conditions suitable to their inspection (e.g., at night for some aerodrome lighting systems).

Reactionary inspections would be retained as per the existing list with the language amended to set the requirement that only the aerodrome facilities, environment and/or equipment specific to the circumstances that triggered the inspection are to be inspected.

5.3 GRF applicability

5.3.1 Reference(s):

- Part 139 MOS section 12.01.

5.3.2 Background

As described in section 4.1 and 4.2, not all Australian certified aerodromes align with the ICAO GRF system model. Variations in aerodrome personnel availability and large numbers of non-controlled aerodromes being served by air transport operations are notable exceptions to the ICAO model.

5.3.3 Issue

In the first instance, the new requirement to conduct a runway inspection “whenever the runway surface conditions may have changed significantly due to meteorological conditions” will be a challenge for aerodromes without dedicated on-site aerodrome reporting personnel. Broad application of this standard will have significant resource implications on the industry.

For non-controlled aerodromes, the absence of ATC tower services will also require additional resources and potentially new capabilities for the aerodrome operator. Under existing standards, the communication of serviceability at non-controlled aerodromes is carried out using markers, markings and lights along with one or more NOTAMs, where appropriate. These systems are not capable of communicating the detail required of an RCR nor the dynamic nature of potential changes in conditions. While the details of potential solutions to this issue are addressed in subsequent sections, this section will propose an applicability standard that addresses the resource implications.

5.3.4 Proposed policy

The overall policy is based on mandatory application for a segment of the industry, mandatory consultation with voluntary opt-in for a portion of the rest and no requirement for the remainder.

Implementation of a runway surface condition assessment process would be mandatory for controlled aerodromes that are certified and service air transport operators.

For non-controlled aerodromes that are certified with regular air transport operations the mandatory requirement would be to consult with their stakeholders prior to making any decision to voluntarily implement a runway surface condition assessment process. The consultation process would establish the safety benefits, other benefits, and resource implications of implementing the GRF at their aerodrome.

The introduction of a runway surface condition assessment process, whether mandatory or voluntary, would be in accordance with the proposed policies below or the related policy finalised after the consultation process.

Aerodromes, including uncertified aerodromes, not servicing air transport operators would not be required to implement nor consult on the implementation of a GRF-based runway surface condition assessment process, but would be required to follow the serviceability inspection program outlined above.

5.4 Runway surface condition inspection triggers

5.4.1 Reference(s):

- Part 139 MOS section 12.01.

5.4.2 Background

As noted above, the trigger for a runway surface condition inspection is “whenever the runway surface conditions may have changed significantly due to meteorological conditions” (Annex 14 section 2.9.3). While this language is suitable for overarching international standards, clearer detail will be required for Part 139 MOS.

5.4.3 Issue

The imprecise language of “significantly” requires refinement to ensure aerodrome operators and aerodrome inspectors can reasonably determine in what conditions an inspection needs to be carried out. However, overly specific language may not be broadly applicable and adversely impact some aerodrome operators.

Additionally, the use of the words “whenever” and “may” create a broad ongoing obligation to monitor meteorological conditions for the potential impact on runway surface conditions. Again, a balance between flexibility and specification will need to be struck to ensure inspection conditions are consistent but not unnecessarily burdensome to some aerodromes.

5.4.4 Proposed policy

While controlled aerodromes are supported in these areas by ATC personnel monitoring the runway and receiving reports from aircraft, for consistency, a common inspection triggers are proposed for all aerodromes either required or electing to implement the GRF.

A trigger to monitor would be based on forecast weather conditions in the first instance and observed or reported conditions thereafter as well as the timing of scheduled air transport operations. The specific conditions triggering this monitoring would be aerodrome specific with the aerodrome operator to establish, through experience, documented trigger conditions (both forecast and observed). When in a monitoring posture, the aerodrome operator is to have personnel available to conduct a runway surface condition assessment in a timely manner.

A trigger to conduct a condition assessment would be based on observed conditions that, through experience, are reasonably likely to result in runway surface conditions different to the current RCR, if any. An additional assessment trigger, in line with ICAO SARPs and guidance material (GM), stemming from an aircraft reporting a braking action worse than the current RCR will also apply.

These triggers are to be documented in the aerodrome manual.

Given the flexible nature of these and the applicability policies outlined above, it is proposed that these triggers and the subsequent issue of runway condition reports may be limited to the:

- ATC tower operational hours for controlled aerodromes
- operational period agreed to during stakeholder consultation for non-controlled aerodromes.

5.5 Runway surface condition assessment process

5.5.1 Reference(s):

- Part 139 MOS section 12.03

5.5.2 Background

The standards and guidance material on the runway surface condition assessment detail the broad specifications of the assessment without requiring a specific technique or equipment to be used. These specifications include the assessment of runway thirds, contaminant types, depths and coverage calculations, the RWYCCs, RCAM and RCR formulation.

5.5.3 Issue

Serviceability inspection requirements are described in Part 139 MOS section 12.03 with a specific section on “surface conditions of the movement area”. This section would require amendment to, firstly, distinguish between broad serviceability inspection and specific runway surface condition assessments and, secondly, to incorporate the international GRF requirements for the latter.

There is also the question of whether to include the cold weather contaminants in the standards despite the low risk of such contaminants occurring at Australian aerodromes. Any presence of snow, slush and ice is rare and their occurrence at any existing certified aerodromes to the levels requiring reporting under the GRF is even rarer. However, this is only necessarily true for the current cohort of certified aerodromes in current conditions.

5.5.4 Proposed policy

Serviceability inspection requirements are described in Part 139 MOS section 12.03 with a specific section on “surface conditions of the movement area”. This section would be amended to, firstly, distinguish between broad serviceability inspection and specific runway surface condition assessments and, secondly, to incorporate the international GRF requirements for the latter. Runway surface condition assessment specification will only be applicable to aerodromes required or electing to implement the GRF.

The specifications in this revised section would reflect those found in ICAO SARPs and GM. They will also include all contaminants to ensure the regulations are applicable to any future certified aerodromes that may be affected by cold weather conditions.

Further guidance would be provided to support aerodromes conducting visual-inspection-based assessments in an appropriate advisory circular. Aerodromes seeking to implement a technical solution would be encouraged to consult with CASA prior to implementation.

5.6 Timely runway condition report communication

5.6.1 Reference(s):

- Part 139 MOS section 12.04.

5.6.2 Background

Aerodrome serviceability issues, as enumerated in Part 139 MOS section 12.04 or under a data product specification (DPS) issued under Part 175 of CASR, are communicated to aerodrome users via the NOTAM system. For controlled aerodromes, these issues must also be reported to ATC.

The ATC aspects of the GRF, as noted above, are to be incorporated into the AIP and MATS later in 2022. The following discussion is focused on the communication of RCR details to ATC or, in their absence, through a third party or directly to aerodrome users.

5.6.3 Issue

With respect to NOTAM triggers, there is potential for contradiction, omission or unnecessary overlap between the list maintained in Part 139 MOS and under the DPS that apply to aerodrome operators. Such issues have been raised in consultation activities between CASA and industry.

The more significant issue is the limited availability of ATC at Australia's certified aerodromes. This broad issue is addressed in the applicability discussion above, those aerodromes electing to implement GRF without ATC would require a mechanism to provide timely advice of runway conditions to incoming aircraft.

5.6.4 Proposed policy

For controlled aerodromes, the requirements for reporting of unserviceabilities to ATC would be expanded to include an RCR, as appropriate. ATC would then provide the RCR to operating aircraft in line with procedures included in the AIP. For periods outside of normally scheduled ATC operational hours that the aerodrome operator elects to provide runway surface condition assessments (see 5.3.4 above), the aerodrome operator would be required to establish a UNICOM service.

For non-controlled aerodromes that have an approved air-ground radio service, the aerodrome operator, as appropriate, would be required to provide the radio service provider with an RCR.. That service provider would, as appropriate provide the RCR to operating aircraft in accordance with amended standards and/or the AIP.

For non-controlled aerodromes that do not have an approved air-ground radio service, the aerodrome operator would be required to establish a UNICOM service.

The standards for UNICOM services would be amended to permit the transmission of runway surface conditions and both UNICOM and CA/GRS standards on the specifications of such messages would be established in line with ICAO requirements. The provision of service requirement for UNICOM would also be amended to permit limited-period UNICOM during GRF conditions only, with appropriate notification in AIP.

Due to the potential for issues between the respective requirements of Parts 139 and 175 of CASR, the Part 139 MOS NOTAM trigger list (subsection 12.04 (1)) would be removed and a reference to the Part 175 DPS added.

5.7 SNOWTAMs

5.7.1 Reference(s):

- Part 175 DPS.

5.7.2 Background

The new GRF standards broadened the requirements for the issue of and included a revised format for SNOWTAMs. The intent was to create a highly structured, machine-readable message format that would facilitate efficient communication of runway surface conditions to aircraft-based performance systems.

5.7.3 Issue

Australia's current National Aeronautical Information Processing System (NAIPS) cannot accommodate the new SNOWTAM format.

5.7.4 Proposed policy

Working with Airservices Australia, aerodrome operator DPS documents would be amended to include the RCR format as a specific message structure for use in a standard format NOTAM (in particular, item E).

Aerodrome operators would be provided extensive guidance on the formulation of an RCR in an advisory circular.

At some point in the future, CASA would work with Airservices to introduce a fully compliant SNOWTAM. At that point, CASA would make the necessary changes to aerodrome operator standards and guidance.

5.8 Promulgation of an Aerodrome's GRF Implementation

5.8.1 Reference(s):

- Part 175 DPS.

5.8.2 Background

The implementation of GRF is assumed in an international context. However, limited and voluntary implementation means that implementation of GRF at any particular aerodrome cannot be assumed.

5.8.3 Issue

The limited/voluntary implementation of GRF outlined above means that those aerodromes that have implemented the required systems, processes and provide the necessary resource will need to promulgate their status in the AIP.

5.8.4 Proposed policy

Aerodrome operators that have implemented procedures to undertake runway surface condition assessments and provide RCRs in accordance with GRF standards will be required to provide details in their aerodrome's AIP-ERSA entry.

Aircraft operators are to assume that runway surface condition assessments will not be undertaken and RCRs will not be provided at aerodromes without such detail included in their AIP-ERSA entry.

6 Impacts on industry

6.1 Aerodrome operators

The introduction of additional runway inspections will impact aerodrome operators in multiple ways. While the resources required to undertake the runway surface condition assessments may vary to being insignificant at some aerodromes due to environmental conditions and traffic levels, there is a resource impact to the establishment of any assessment program. These resources may be in the form of personnel time and unavailability as well as training, and procurement of a technical solution.

Establishment activities include:

- Organising, facilitating and documenting stakeholder consultation.
- Analysing training needs, identifying training providers and facilitating training.
- Identifying and scoping potential technical solutions as well as procuring technical equipment.
- Analysing environment conditions and developing processes and procedures in support of monitoring and assessment activities.

For non-controlled aerodromes that elect to provide a GRF service (see 5.3.4 above), additional work will be required to establish a UNICOM service including training, equipment procurement and development of procedures.

6.2 Air/ground radio service operators

While there may be additional work required during the consultation process, the final implementation will have minimal impact beyond minor training and procedural changes.

6.3 Airservices Australia

6.3.1 ATC operations

The proposed reporting requirements for ATC should require relatively small changes to operational documentation and procedures and minor effort for training and implementation. This is because regulatory standards already require ATC to provide information about the presence of water on a runway, a taxiway, or an apron, normally based on controller assessment of conditions on a runway. Controller assessment of conditions would be retained for wet and dry runway conditions. For contaminated runways, ATC would simply rely on information provided by the aerodrome operator. The difference between existing and proposed regulatory policy is the introduction of RWYCC reporting, reporting by runway thirds and a change to the order in which information is passed to aircraft.

6.3.2 NOTAM office procedures

Changes to adopt elements of a SNOTAM within the existing NOTAM structure and process should require relatively small changes to operational documentation and procedures and minor effort for training and implementation.

7 Implementation and transition

7.1 Implementation considerations

For aerodrome operators, the implementation of GRF may require:

- consultation with stakeholders
- amendment of their aerodrome manual
- development of appropriate GRF procedures
- reviewing and revising aerodrome reporting officer availability during monitoring periods
- procurement of equipment and/or technical systems
- training of aerodrome reporting officers in GRF techniques
- establishment of a UNICOM service
- training of UNICOM operators.

The expected timeframe required for an aerodrome operator to implement a GRF system is considered sufficient for other service providers to implement associated support systems, including staff training.

To ensure effective implementation at mandatory GRF aerodromes, a 6-month applicability date and a subsequent 12-month development period is proposed. This means that GRF may be implemented no sooner than 6 months from promulgation of any new regulations/standards and within the 12 months following this date, the aerodrome operator must have submitted to CASA all required material for approval of their GRF-based runway surface condition assessment system.

For non-controlled aerodromes with air transport operations, the mandatory consultation with stakeholders must be completed and a decision on whether to implement a GRF-based runway surface condition assessment process must be made within 12 months of the applicability date¹. For those aerodromes voluntarily implementing the process, their development period will be determined within their stakeholder consultation.

For aerodromes for which the implementation of a GRF-based runway surface condition assessment process becomes mandatory at a later date (e.g., the establishment of an ATC tower service), the aerodrome operator must submit to CASA all required material for approval of their GRF-based runway surface condition assessment system no less than 6 months prior to the expected date of entering the “mandatory” category.

7.2 Transitional considerations

As the GRF represents a potentially significant change to aerodrome operations it must be subject to approval by CASA. Therefore, any existing certified aerodrome that is required or elects to implement the GRF must submit evidence of their capacity and capability to provide RCR reports in accordance with a revised Part 139 MOS.

¹ The same date as the mandatory implementation deadline.

For aerodromes not yet certified, GRF implementation would be confirmed as part of the standard certification process.

All other related service providers would be required to be compliant with standards on the regulations applicability date. There would be no approval process for these service providers.

7.3 Closing date for comment

CASA will consider all comments received as part of this consultation process and will incorporate changes to the regulation as appropriate. Comments on the draft new policy should be submitted through the online response form by close of business 9 November 2022.