

# Seventh Meeting of the Aerodromes Safety, Planning and Implementation Group

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*ASPIG/7 (Riyadh, Saudi Arabia, 6-10 April 2025)*



## Global Reporting Format (GRF) Implementation in the MID Region

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## Presentation Overview

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Reminder : Global reporting  
Format Methodology

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GRF Implementation  
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## 01

Reminder :  
Global reporting  
Format  
Methodology

- Runway Safety: A global safety priority
- Runway excursions: highest risk category
  - Top contributing factor: Poor braking action
  - Leading factor: Contaminated Runway
- Mitigation by ICAO's Global Reporting Format (GRF)
  - World-wide implementation agreed
  - Applicability date: **5 November 2020** extended to **4 November 2021** (Ref: **SL AN 2/33-20/73**)



# Why GRF ?

- Accurate reporting on runway surface conditions at the appropriate time.
- Runway Condition Report (RCR) will be used by the flight Crew to calculate the operational performance of the aeroplane during landing and take-off.
- Reduce the risk related to Runway Excursion.

## GRF: Runway Condition Report (RCR)



A **standardized common terminology and phraseology** for the description of runway surface conditions that can be **objectively** used by aerodrome operator inspection personnel, air traffic controllers, aircraft operators and flight crew.

## GRF: Stakeholder responsibilities



- **Aerodrome operators** assess the runway surface conditions, including contaminants, for each third of the runway length, and report them by means of a uniform runway condition report (RCR).
- **Aeronautical information services (AIS)** provide the information received in the RCR to end users (SNOWTAM).
- **Air traffic services (ATS)** convey the information received via the RCR and/or special air-reports (AIREP) to end users (voice communications, ATIS, CPDLC).
- **Aircraft operators** utilize the information in conjunction with the performance data provided by the aircraft manufacturers to determine if landing or take-off operations can be conducted safely and provide runway braking action special air-reports (AIREP).

# 01

## Reminder : Global reporting Format Methodology

Table II-1-5. Runway condition assessment matrix (RCAM)

Runway condition assessment matrix (RCAM)			
Runway condition code	Assessment criteria	Downgrade assessment criteria	
	Runway surface description	Aeroplane deceleration or directional control observation	Pilot report of runway braking action
6	• DRY	—	—
5	<ul style="list-style-type: none"> <li>• FROST</li> <li>• WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth)</li> </ul> <p><i>Up to and including 3 mm depth:</i></p> <ul style="list-style-type: none"> <li>• SLUSH</li> <li>• DRY SNOW</li> <li>• WET SNOW</li> </ul>	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD
4	<p><i>−15°C and Lower outside air temperature:</i></p> <ul style="list-style-type: none"> <li>• COMPACTED SNOW</li> </ul>	Braking deceleration OR directional control is between Good and Medium.	GOOD TO MEDIUM
3	<ul style="list-style-type: none"> <li>• WET ("slippery wet" runway)</li> <li>• DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW</li> </ul> <p><i>More than 3 mm depth:</i></p> <ul style="list-style-type: none"> <li>• DRY SNOW</li> <li>• WET SNOW</li> </ul> <p><i>Higher than −15°C outside air temperature<sup>1</sup>:</i></p> <ul style="list-style-type: none"> <li>• COMPACTED SNOW</li> </ul>	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM
2	<p><i>More than 3 mm depth of water or slush:</i></p> <ul style="list-style-type: none"> <li>• STANDING WATER</li> <li>• SLUSH</li> </ul>	Braking deceleration OR directional control is between Medium and Poor.	MEDIUM TO POOR
1	• ICE <sup>2</sup>	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	POOR
0	<ul style="list-style-type: none"> <li>• WET ICE <sup>2</sup></li> <li>• WATER ON TOP OF COMPACTED SNOW <sup>2</sup></li> <li>• DRY SNOW or WET SNOW ON TOP OF ICE <sup>2</sup></li> </ul>	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	LESS THAN POOR

## RCAM: Runway Condition Assessment Matrix



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## RCAM : Two Scenarios faced by Airports



- Airports exposed to snow and ice to be fully prepared to use the global reporting format (fully equipped, fully trained).



- Airports are not be exposed to snow and ice and thereby have no need to use the full global reporting format **other than for Wet/Water conditions;**





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## RCAM: Runway Condition Assessment Matrix

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	Runway surface description	Aeroplane deceleration or directional control observation	Pilot report of runway braking action
6	• DRY	---	---
5	• FROST • WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth)  Up to and including 3 mm depth: • SLUSH • DRY SNOW • WET SNOW	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD
4	-15°C and Lower outside air temperature: • COMPACTED SNOW	Braking deceleration OR directional control is between Good and Medium.	GOOD TO MEDIUM
3	• WET ("slippery wet" runway) • DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW More than 3 mm depth: • DRY SNOW • WET SNOW Higher than -15°C outside air temperature <sup>1</sup> : • COMPACTED SNOW	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM
2	More than 3 mm depth of water or slush: • STANDING WATER • SLUSH	Braking deceleration OR directional control is between Medium and Poor.	MEDIUM TO POOR
1	• ICE <sup>2</sup>	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	POOR
0	• WET ICE <sup>2</sup> • WATER ON TOP OF COMPACTED SNOW <sup>2</sup> • DRY SNOW or WET SNOW ON TOP OF ICE <sup>2</sup>	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	LESS THAN POOR

RCAM — WET and DRY only (based on PANS-Aerodromes (Doc 9981))

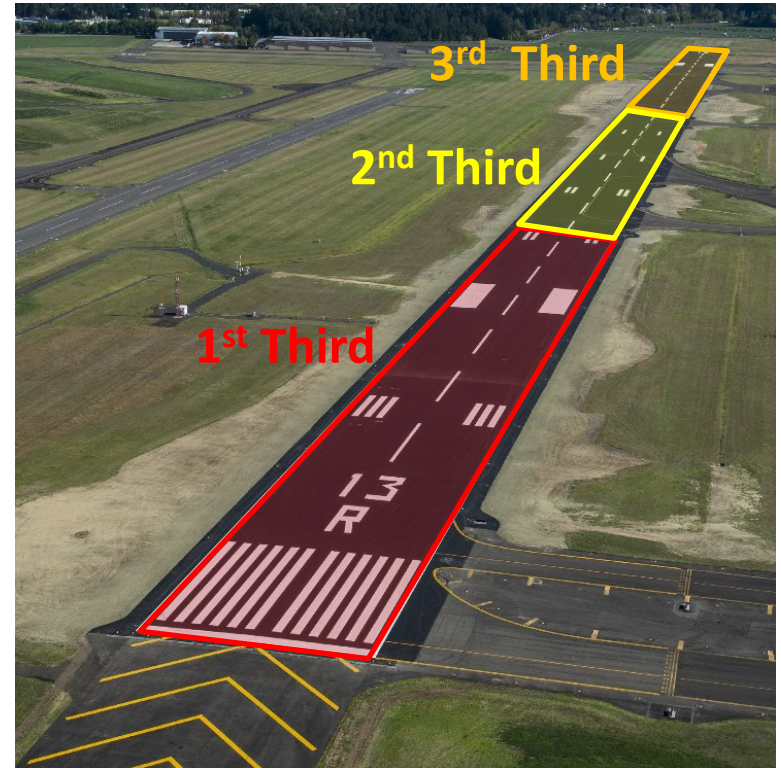
Runway condition assessment matrix (RCAM)			
Runway condition code	Assessment criteria	Downgrade assessment criteria	
	Runway surface description	Aeroplane deceleration or directional control observation	Pilot report of runway braking action
6	• DRY	---	---
5	• WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth)	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD
4		Braking deceleration OR directional control is between Good and Medium.	GOOD TO MEDIUM
3	• WET ("slippery wet" runway)	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM
2	More than 3 mm depth of water or slush: • STANDING WATER	Braking deceleration OR directional control is between Medium and Poor.	MEDIUM TO POOR
1		Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	POOR
0		Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	LESS THAN POOR

Table II-1-5. Runway condition assessment matrix (RCAM)

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Runway condition code	Assessment criteria	Downgrade assessment criteria	
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6	• DRY	---	---
5	<ul style="list-style-type: none"> <li>• FROST</li> <li>• WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth)</li> </ul> <p>Up to and including 3 mm depth:</p> <ul style="list-style-type: none"> <li>• SLUSH</li> <li>• DRY SNOW</li> <li>• WET SNOW</li> </ul>	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD
4	<p>~15°C and Lower outside air temperature:</p> <ul style="list-style-type: none"> <li>• COMPACTED SNOW</li> </ul>	Braking deceleration OR directional control is between Good and Medium.	GOOD TO MEDIUM
3	<ul style="list-style-type: none"> <li>• WET ('slippery wet' runway)</li> <li>• DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW</li> </ul> <p>More than 3 mm depth:</p> <ul style="list-style-type: none"> <li>• DRY SNOW</li> <li>• WET SNOW</li> </ul> <p>Higher than ~15°C outside air temperature:</p> <ul style="list-style-type: none"> <li>• COMPACTED SNOW</li> </ul>	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM
2	<p>More than 3 mm depth of water or slush:</p> <ul style="list-style-type: none"> <li>• STANDING WATER</li> <li>• SLUSH</li> </ul>	Braking deceleration OR directional control is between Medium and Poor.	MEDIUM TO POOR
1	• ICE <sup>2</sup>	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	POOR
0	<ul style="list-style-type: none"> <li>• WET ICE <sup>2</sup></li> <li>• WATER ON TOP OF COMPACTED SNOW <sup>2</sup></li> <li>• DRY SNOW or WET SNOW ON TOP OF ICE <sup>2</sup></li> </ul>	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	LESS THAN POOR

- **Aeroplane Deceleration or Directional Control Observation**
- **Pilot report on braking action/ special air-report (AIREP)**
- An assigned RWYCC 5, 4, 3 or 2 shall not be upgraded.
- An assigned RWYCC 1 or 0 can be upgraded.
- Upgrading of RWYCC 1 or 0 using the appropriate procedures shall not be permitted to go beyond a RWYCC 3.

- For each third of the runway length the Airport Operator assesses the:
  - % coverage of the contaminant
  - Depth of the contaminant
  - Type of the contaminant





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# GRF in Practice

5	<ul style="list-style-type: none"><li>• FROST</li><li>• WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth)</li></ul> <p><b>Up to and including 3 mm depth:</b></p> <ul style="list-style-type: none"><li>• SLUSH</li><li>• DRY SNOW</li><li>• WET SNOW</li></ul>	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD	60
4	<p><b>-15°C and Lower outside air temperature:</b></p> <ul style="list-style-type: none"><li>• COMPACTED SNOW</li></ul>	Braking deceleration OR directional control is between Good and Medium.	GOOD MEDIUM	
3	<ul style="list-style-type: none"><li>• WET ("slippery wet" runway)</li><li>• DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW</li></ul> <p><b>More than 3 mm depth:</b></p> <ul style="list-style-type: none"><li>• DRY SNOW</li><li>• WET SNOW</li></ul> <p><b>Higher than -15°C outside air temperature:</b></p> <ul style="list-style-type: none"><li>• COMPACTED SNOW</li></ul>	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM	
2	<p><b>More than 3 mm depth of water or slush:</b></p> <ul style="list-style-type: none"><li>• STANDING WATER</li><li>• SLUSH</li></ul>	Braking deceleration OR directional control is between Medium and Poor.	MEDIUM POOR	27

# GRF in Practice

5	<ul style="list-style-type: none"> <li>• FROST</li> <li>• WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth)</li> </ul> <p><b>Up to and including 3 mm depth:</b></p> <ul style="list-style-type: none"> <li>• SLUSH</li> <li>• DRY SNOW</li> <li>• WET SNOW</li> </ul>	Braking deceleration is normal for the wheel braking effort applied and directional control is normal.	GOOD	60	<b>90% Coverage</b>
4	<p><b>-15°C and Lower outside air temperature:</b></p> <ul style="list-style-type: none"> <li>• COMPACTED SNOW</li> </ul>	Braking deceleration OR directional control is between Good and Medium	GOOD MEDIUM		<b>80% Coverage</b>
3	<ul style="list-style-type: none"> <li>• WET ("slippery wet" runway)</li> <li>• DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW</li> </ul> <p><b>More than 3 mm depth:</b></p> <ul style="list-style-type: none"> <li>• DRY SNOW</li> <li>• WET SNOW</li> </ul> <p><b>Higher than -15°C outside air temperature:</b></p> <ul style="list-style-type: none"> <li>• COMPACTED SNOW</li> </ul>	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM		<b>70% Coverage</b>
2	<p><b>More than 3 mm depth of water or slush:</b></p> <ul style="list-style-type: none"> <li>• STANDING WATER</li> <li>• SLUSH</li> </ul>	Braking deceleration OR directional control is between Medium and Poor	MEDIUM POOR	27	



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# GRF in Practice

5	<ul style="list-style-type: none"><li>• FROST</li><li>• WET (The runway surface is covered by any visible dampness or water up to and including 3 mm depth)</li></ul> <p><b>Up to and including 3 mm depth:</b></p> <ul style="list-style-type: none"><li>• SLUSH</li><li>• DRY SNOW</li><li>• WET SNOW</li></ul>	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	GOOD	60 <b>3</b>
4	<p><b>-15°C and Lower outside air temperature:</b></p> <ul style="list-style-type: none"><li>• COMPACTED SNOW</li></ul>	Braking deceleration OR directional control is between Good and Medium	GOOD MEDIUM	<b>2</b>
3	<p>• WET ("slippery wet" runway)</p> <ul style="list-style-type: none"><li>• DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW</li></ul> <p><b>More than 3 mm depth:</b></p> <ul style="list-style-type: none"><li>• DRY SNOW</li><li>• WET SNOW</li></ul> <p><b>Higher than -15°C outside air temperature:</b></p> <ul style="list-style-type: none"><li>• COMPACTED SNOW</li></ul>	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	MEDIUM	<b>2</b>
2	<p><b>More than 3 mm depth of water or slush:</b></p> <ul style="list-style-type: none"><li>• STANDING WATER</li><li>• SLUSH</li></ul>	Braking deceleration OR directional control is between Medium and Poor	MEDIUM POOR	27 <b>2</b>

**RWYCC**  
**3/2/2**



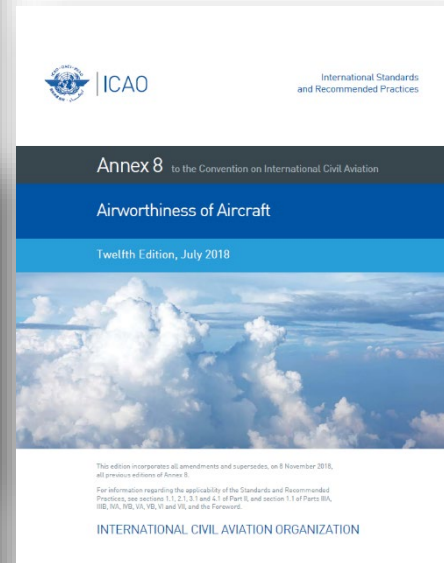
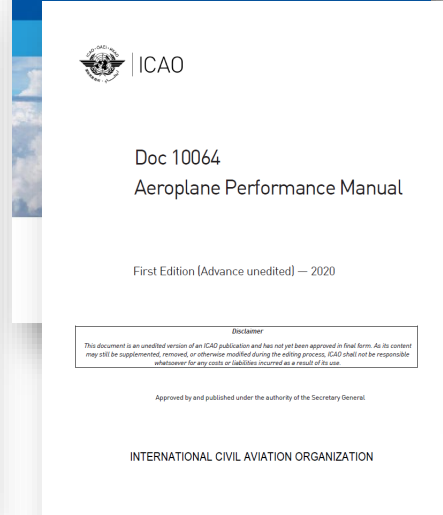
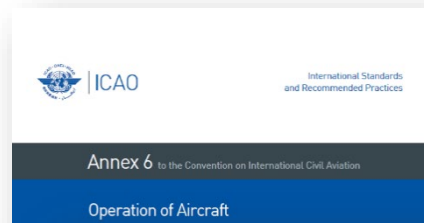
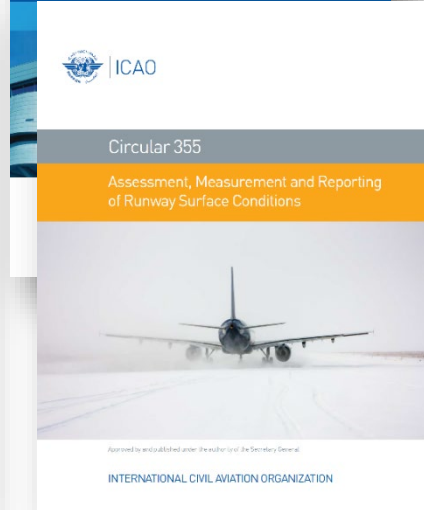
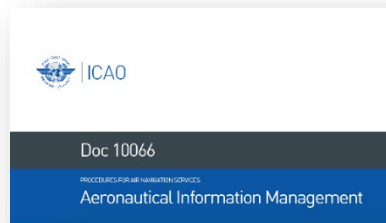
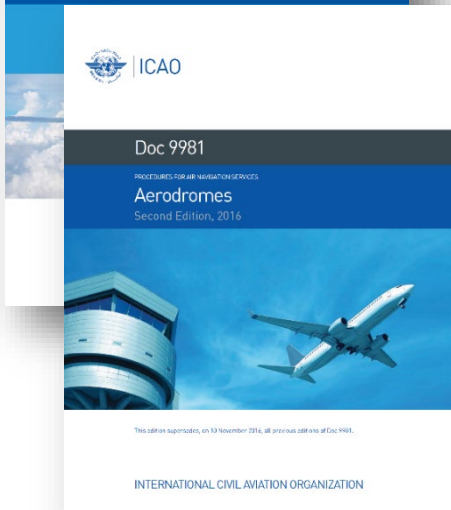
- The RCR consists of two sections:
  - **Aeroplane take-off and landing performance calculations;** and
  - **Situational awareness** of the surface conditions on the runway, taxiways and aprons.



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# ICAO Provisions on GRF





02  
Current  
MID region  
Conclusion  
on GRF  
Implementation

***PIRG-RASG CONCLUSION 1/2: MID REGION GRF  
IMPLEMENTATION ACTION PLAN***

*That, States be urged to:*

- a) nominate a National GRF implementation Focal Point to coordinate the implementation activities at the National level;*
- b) provide the ICAO MID Office with the contact details of their nominated GRF Focal Points by end of February 2021; and*
- c) provide regular progress reports/updates on the subject to the ICAO MID Office using the MID Region GRF Implementation Plan Template/Milestones at **Appendix 3.2C**.*

## 03

Action by the  
meeting:

The meeting may wish to agree on the following Draft Conclusion replacing and superseding the previous related PIRG-RASG Conclusion 1/2 :

***DRAFT CONCLUSION 7/4: GRF IMPLEMENTATION  
MONITORING ACROSS THE MID REGION***

*That, recognizing the importance of monitoring the harmonized implementation of the ICAO Global Reporting Format (GRF), and considering the guidance outlined in **Appendix A**, States are urged to report to the ICAO MID Regional Office, **by Q3 of the current Year**, on the status of implementation of their Aerodromes GRF Deployment Plans, utilizing the standardized reporting template provided in **Appendix B**.*

# 04 MID Region GRF Implementation Challenges and Milestones



## States Updates



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Thank You!

## ACTION MILESTONES FOR THE ESTABLISHMENT AND IMPLEMENTATION OF THE ICAO GLOBAL REPORTING FORMAT METHODOLOGY

(to be tailored/customized and detailed by each State)

[STATE NAME]

[State focal point name: xxxxxxxxx]

[State focal point email address: xxxxxxxxx]

Milestone ID	ACTION	ENTITY RESPONSIBLE	TARGET DATE <sup>1</sup>	EFFECTIVE DATE	REMARKS
GRF 1	Review ICAO provisions and guidance and other Organisations guidance (see below)	CAA	31/01/2021		
GRF 2	Designate a focal point to coordinate implementation activities at the national level	CAA	31/01/2021		
GRF 3	Identify concerned focal points in each entity (CAA, Airport, ANSP, Aircraft operators – include BA, GA and military as applicable)	CAA, Airports, ANSP, Aircraft operators	31/01/2021		
GRF 4	Establish an Implementation Coordination Team including staff from the identified stakeholder entities (as appropriate)	CAA	15/01/2021		
GRF 5	Coordinate and support the conduct the initial training for the CAA, Airports, ANSP and Aircraft Operators' personnel (e.g. ICAO/ACI/IATA online courses, national awareness workshop, etc.)	CAA	15/02/2021		
GRF 6	Identify regulations, standards, procedures and guidance material to be developed/amended	National Focal Point and the Implementation Coordination Team	15/02/2021		

<sup>1</sup> Target dates are indicative only and should be replaced by realistic dates determined by individual State

Milestone ID	ACTION	ENTITY RESPONSIBLE	TARGET DATE <sup>1</sup>	EFFECTIVE DATE	REMARKS
<b>GRF 7</b>	Develop a detailed national implementation plan and safety risk assessment. Each entity should also establish its specific implementation plan and safety risk assessment.	CAA, Airports, ANSP, Aircraft operators	<b>28/02/2021</b>		
<b>GRF 8</b>	Identify the necessary means and resources for the implementation (human, financial and material resources)	National Focal Point and the Implementation Coordination Team	<b>28/02/2021</b>		
<b>GRF 9</b>	Coordinate with Airport Runway Safety Teams	Airports	<b>28/02/2021</b>		
<b>GRF 10</b>	Develop and promulgate regulations and standards	CAA	<b>30/03/2021</b>		
<b>GRF 11</b>	Develop procedures and guidance material (translate if required)	National Focal Point and the Implementation Coordination Team	<b>15/04/2021</b>		
<b>GRF 12</b>	Provide the necessary means and resources for the implementation (human, financial and material resources)	CAA, Airports, ANSP, Aircraft operators	<b>31/05/2021</b>		
<b>GRF 13</b>	Conduct On-the-Job Training (OJT) on the implementation	CAA, Airports, ANSP, Aircraft operators	<b>30/06/2021</b>		
<b>GRF 14</b>	Perform tests/trials prior to the effective implementation	All	<b>31/07/2021</b>		
<b>GRF 15</b>	Applicability date for the new methodology for assessing and reporting runway surface conditions	All	<b>4/11/2021</b>		

**Notes:** ICAO Runway Safety Go-Team Assistance Missions are available to support States and Airports. ACI APEX Safety Reviews are also available to support Airports.

**References:**

- ICAO GRF web site <https://www.icao.int/safety/Pages/GRF.aspx>

ICAO Region	State	Airport name	Location indicator (ICAO code)	AD-GR Deployed (Y=Yes, N=No)	Date of implementation (DD/MM/YYYY)	CAR Latest GRF Deployment Check Date (DD/MM/YYYY)	Is the Airports planning GRF Deployment (Y=Yes, N=No)	Estimated AD-GR Deployment Date (DD/MM/YYYY)	Effective AD-GR Deployment Date (DD/MM/YYYY)
MED	QATAR	Hamad International	OTBD						
MED	QATAR	Qatar International	OTBD						