

EASA Regulations on GRF implementation

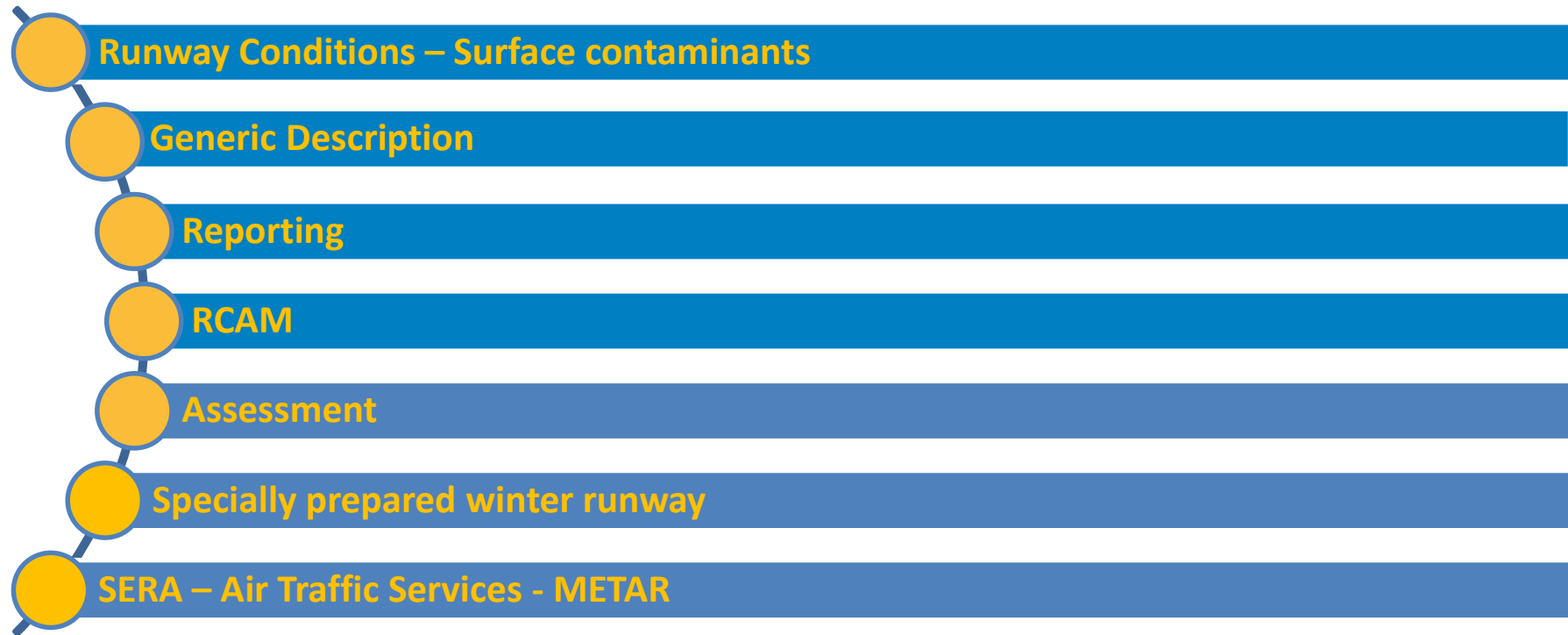
(ADR – ATM/ANS – SERA – MET)

Vasileios STEFANIOROS – EASA
GRF Webinar - 10 March 2021

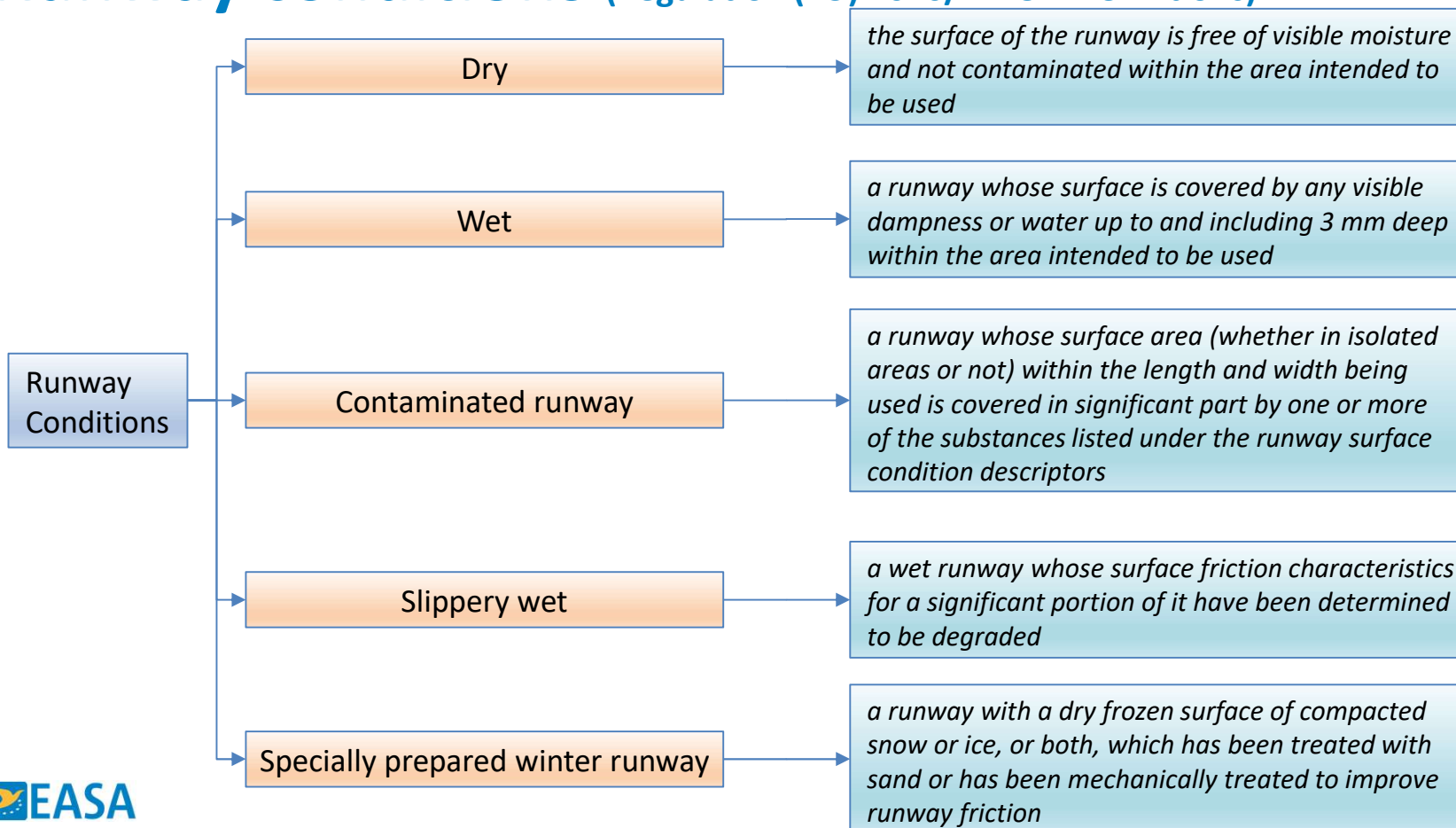
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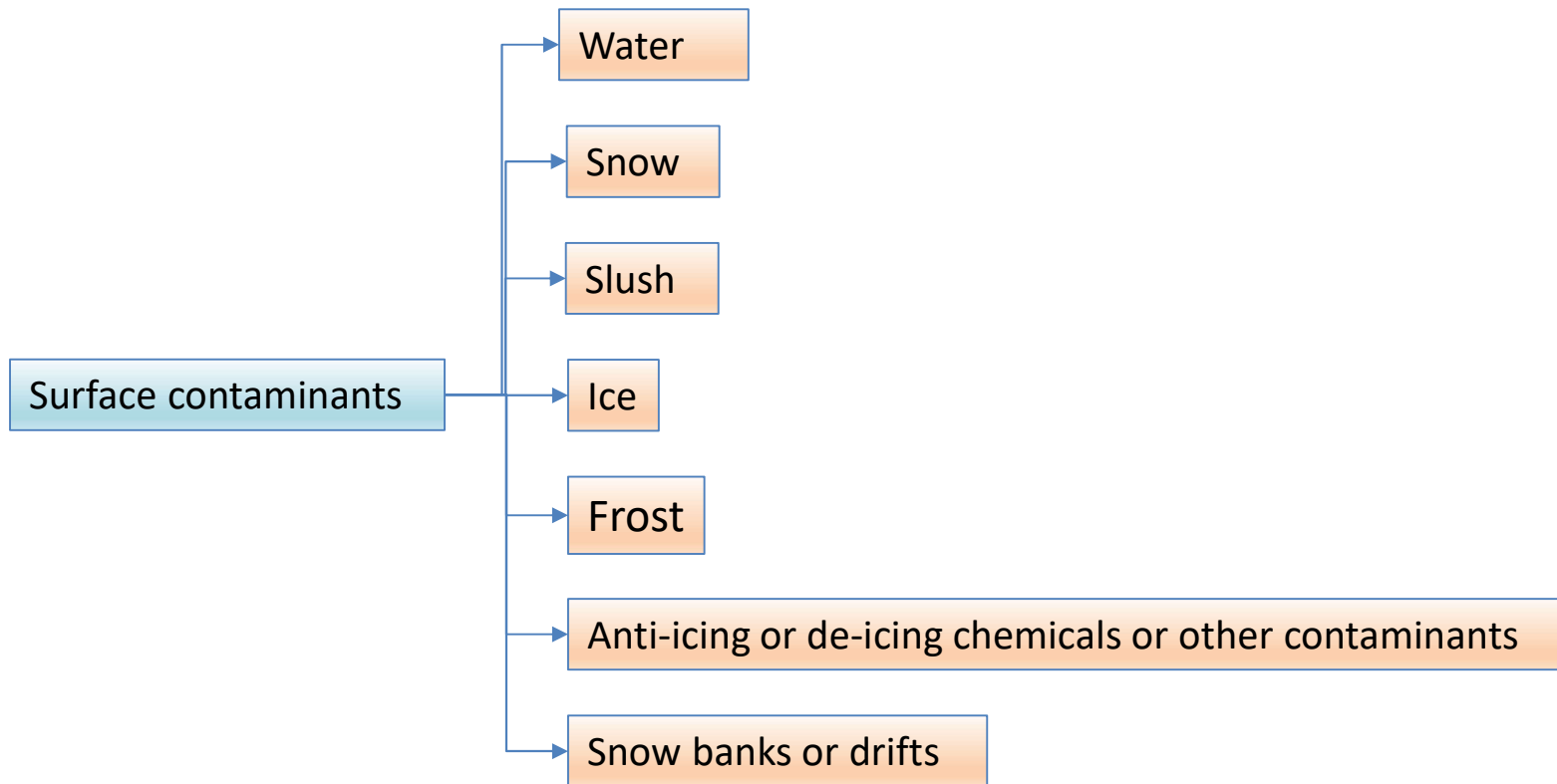
Overview



Runway conditions (Regulation (EU) 2020/2148 – Definitions)



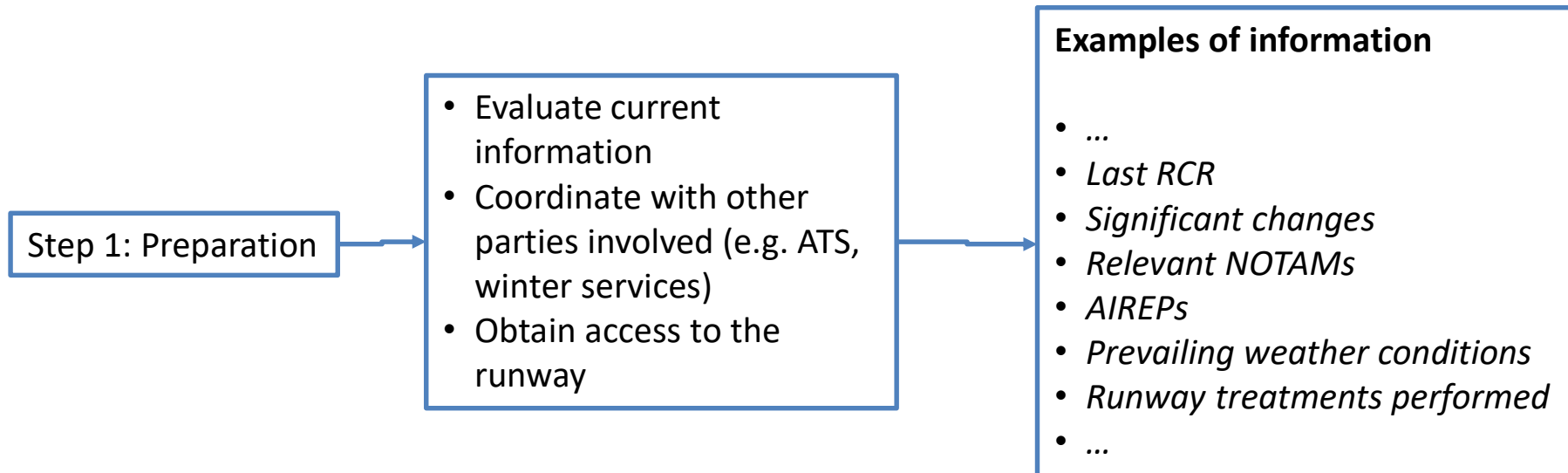
Surface contaminants (Regulation (EU) 2020/2148 – ADR.OPS.A.060)



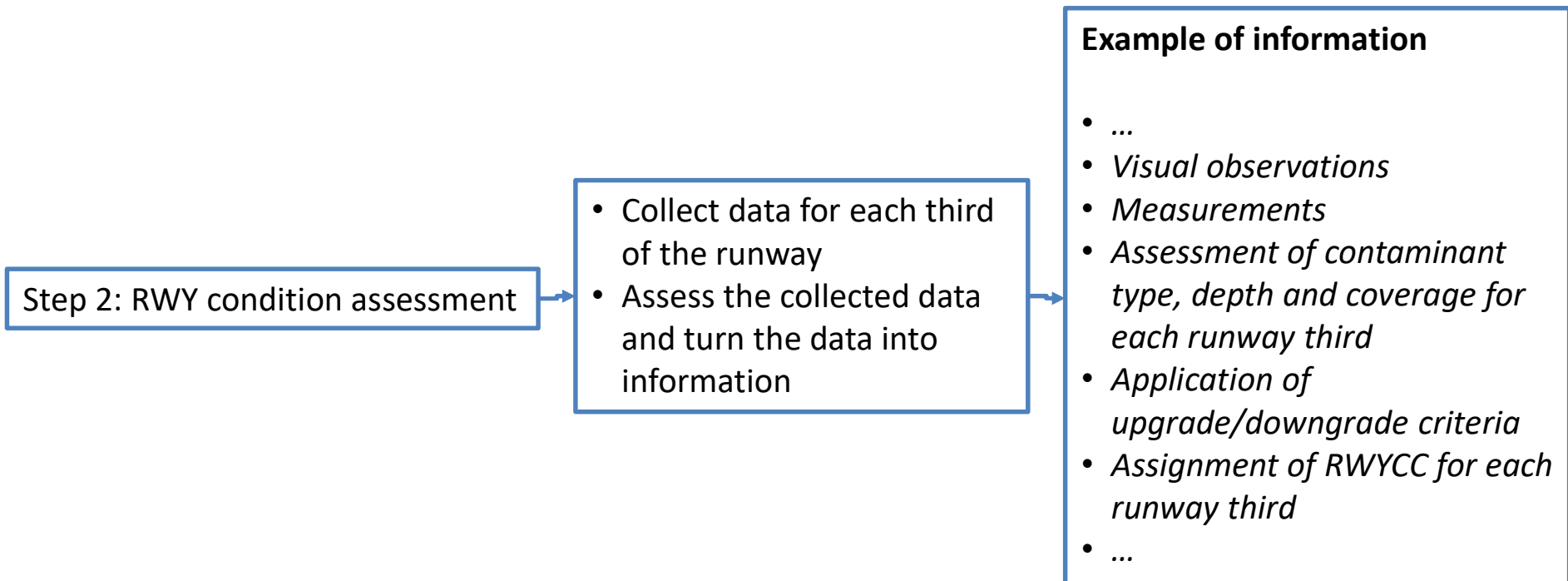
Generic Description

- The process is divided in 4 Steps
 - Step 1: Preparation
 - Step 2: Runway Condition Assessment (Aeroplane performance)
 - Step 3: Additional Assessments (Situational awareness section)
 - Step 4: Reporting

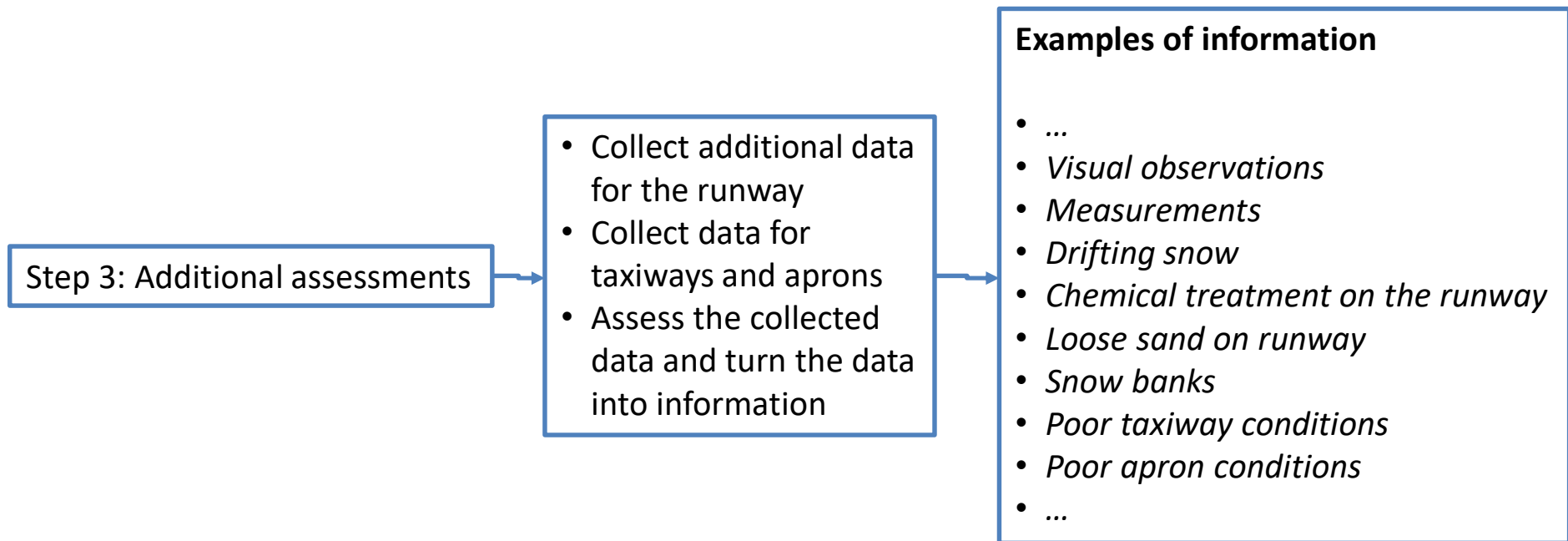
Step 1: Preparation



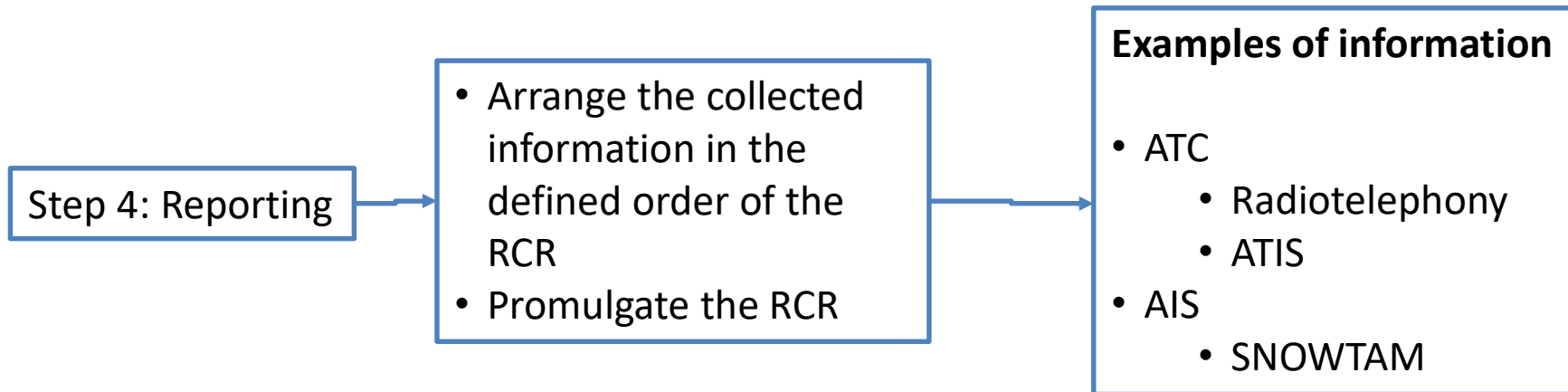
Step 2: RWY condition assessment



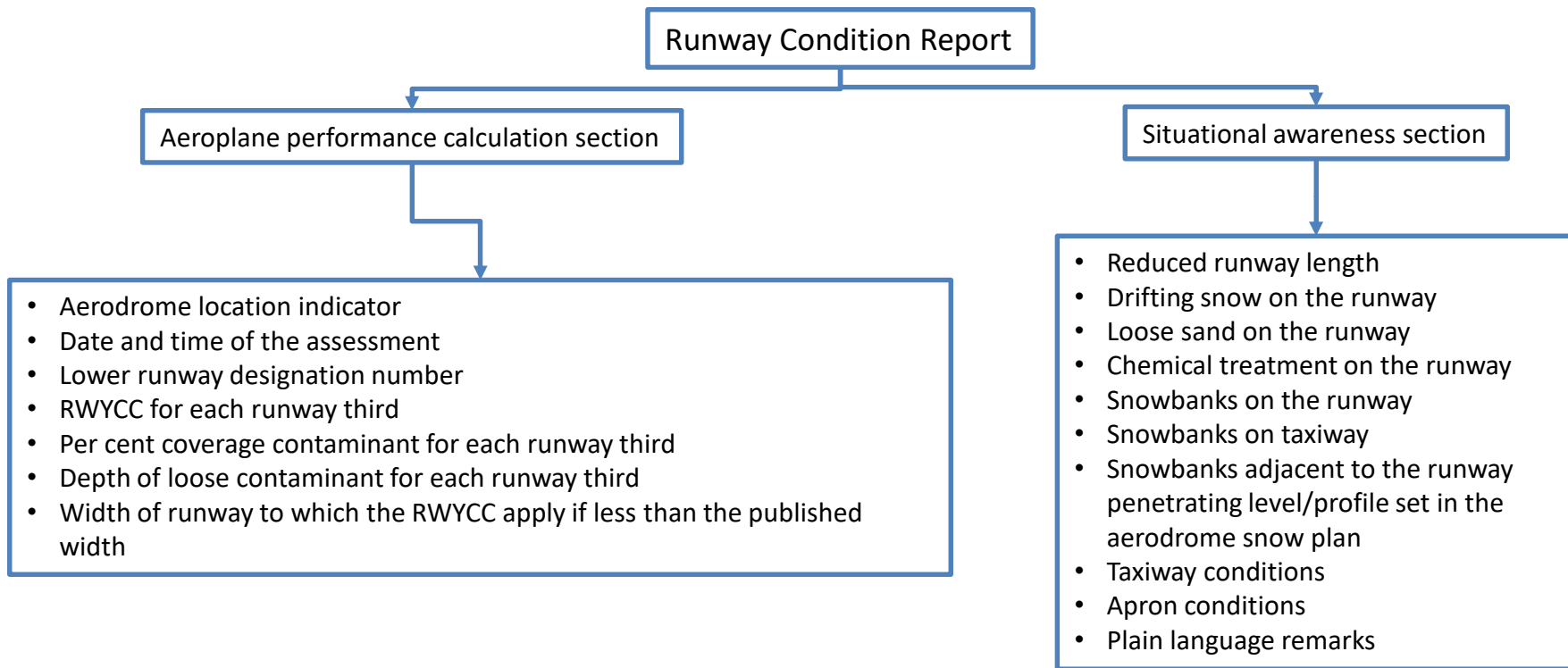
Step 3: Additional assessments



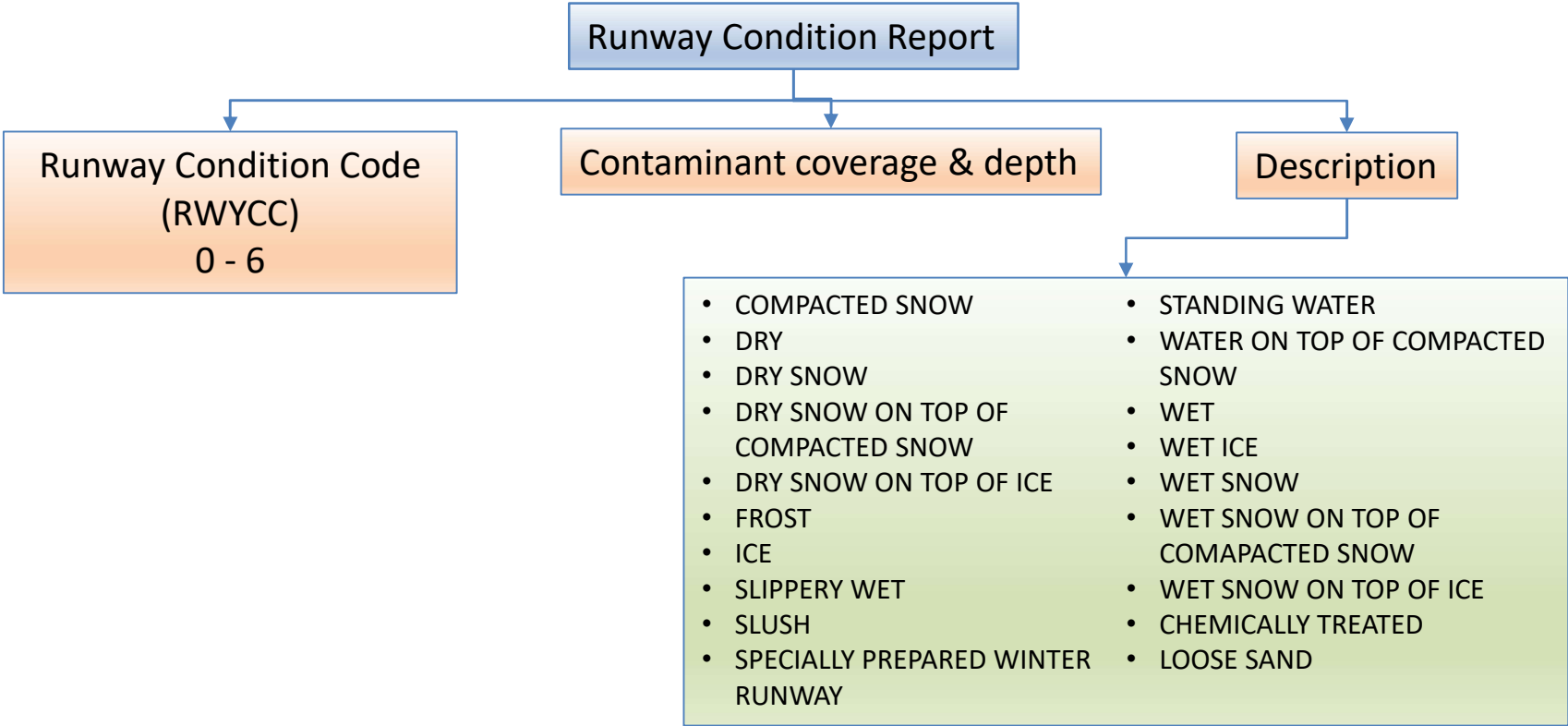
Step 4: Reporting



Reporting

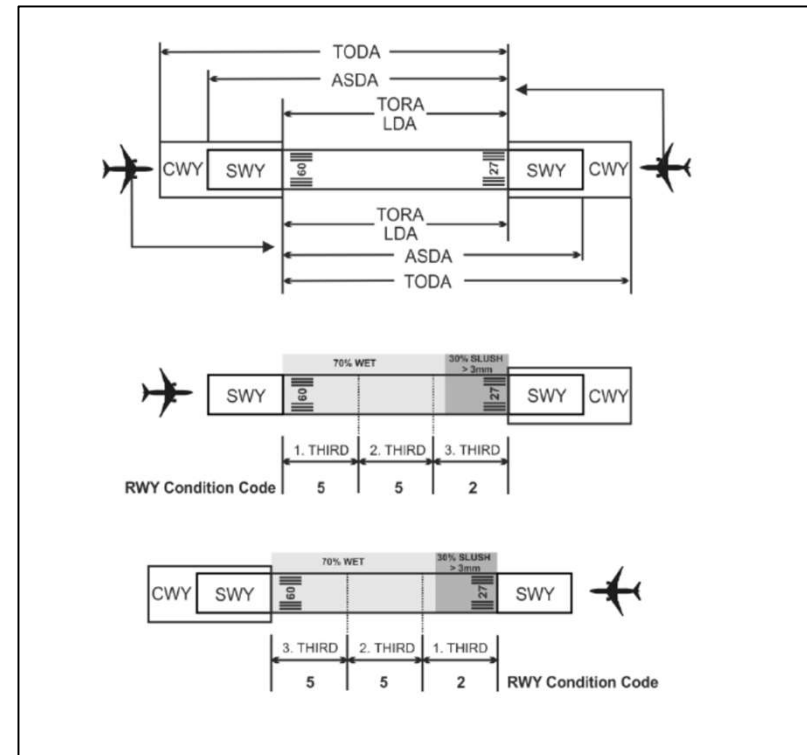


Reporting (Regulation (EU) 2020/2148 – ADR.OPS.A.065)



Reporting (Regulation (EU) 2020/2148 – ADR.OPS.A.065)

- Aerodromes with multiple runways
 - RCR includes all runways, in case at least one runway is contaminated
- Dissemination of information by ATS
 - **Always** start from the landing runway designation
- Friction measurements are **not** reported



Reporting (Regulation (EU) 2020/2148 – ADR.OPS.A.065)

- Significant changes that trigger a new RCR
 - change in the RWYCC
 - change in the contaminant type
 - change in reportable contaminant coverage
 - change in contaminant depth
 - other information

Reporting (Regulation (EU) 2020/2148 – ADR.OPS.A.065)

→ Reported percentage of coverage for contaminants

Assessed per cent	Reported per cent
10 - 25	25
26 - 50	50
51 - 75	75
76 - 100	100

Reporting (Regulation (EU) 2020/2148 – ADR.OPS.A.065)

→ Depth assessments for contaminants

Contaminant	Valid values to be reported	Significant change
STANDING WATER	04, then assessed value	3 mm
SLUSH	03, then assessed value	3 mm
WET SNOW	03, then assessed value	5 mm
DRY SNOW	03, then assessed value	20 mm

Assessment – RCAM (Regulation (EU) 2020/2148 – ADR.OPS.B.037)

Runway Condition Assessment Matrix			
Assessment Criteria		Downgrade Assessment Criteria	
RWYCC	Runway surface description	Aeroplane deceleration or directional control observation	Special air report of runway braking action
6	DRY	-	-
5	<ul style="list-style-type: none"> • FROST • WET Up to and including 3 mm depth <ul style="list-style-type: none"> • SLUSH • DRY SNOW • WET SNOW 	Braking deceleration is normal for the wheel braking effort AND directional control is normal	GOOD
4	<ul style="list-style-type: none"> • SPECIALLY PREPARED WINTER RUNWAY (not in ICAO) -15°C and lower outside temperature <ul style="list-style-type: none"> • COMPACTED SNOW 	Braking deceleration OR directional control is between good and medium	GOOD TO MEDIUM

Assessment – RCAM (Regulation (EU) 2020/2148 – ADR.OPS.B.037)

Runway Condition Assessment Matrix			
	Assessment Criteria	Downgrade Assessment Criteria	
RWYCC	Runway surface description	Aeroplane deceleration or directional control observation	Special air report of runway braking action
3	<ul style="list-style-type: none"> • SLIPPERY WET • DRY SNOW or WET SNOW (any depth) ON TOP OF COMPACTED SNOW <p>More than 3 mm depth</p> <ul style="list-style-type: none"> • DRY SNOW • WET SNOW <p>Higher than -15°C outside air temperature</p> <ul style="list-style-type: none"> • COMPACTED SNOW 	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced	MEDIUM
2	<p>More than 3 mm</p> <ul style="list-style-type: none"> • STANDING WATER • SLUSH 	Braking deceleration OR directional control is between medium and poor	MEDIUM TO POOR

Assessment – RCAM (Regulation (EU) 2020/2148 – ADR.OPS.B.037)

Runway Condition Assessment Matrix			
	Assessment Criteria	Downgrade Assessment Criteria	
RWYCC	Runway surface description	Aeroplane deceleration or directional control observation	Special air report of runway braking action
1	<ul style="list-style-type: none"> • ICE 	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"> • WET ICE • WATER ON TOP OF COMPACTED SNOW • DRY SNOW or WET SNOW ON TOP OF ICE 	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain	LESS THAN POOR

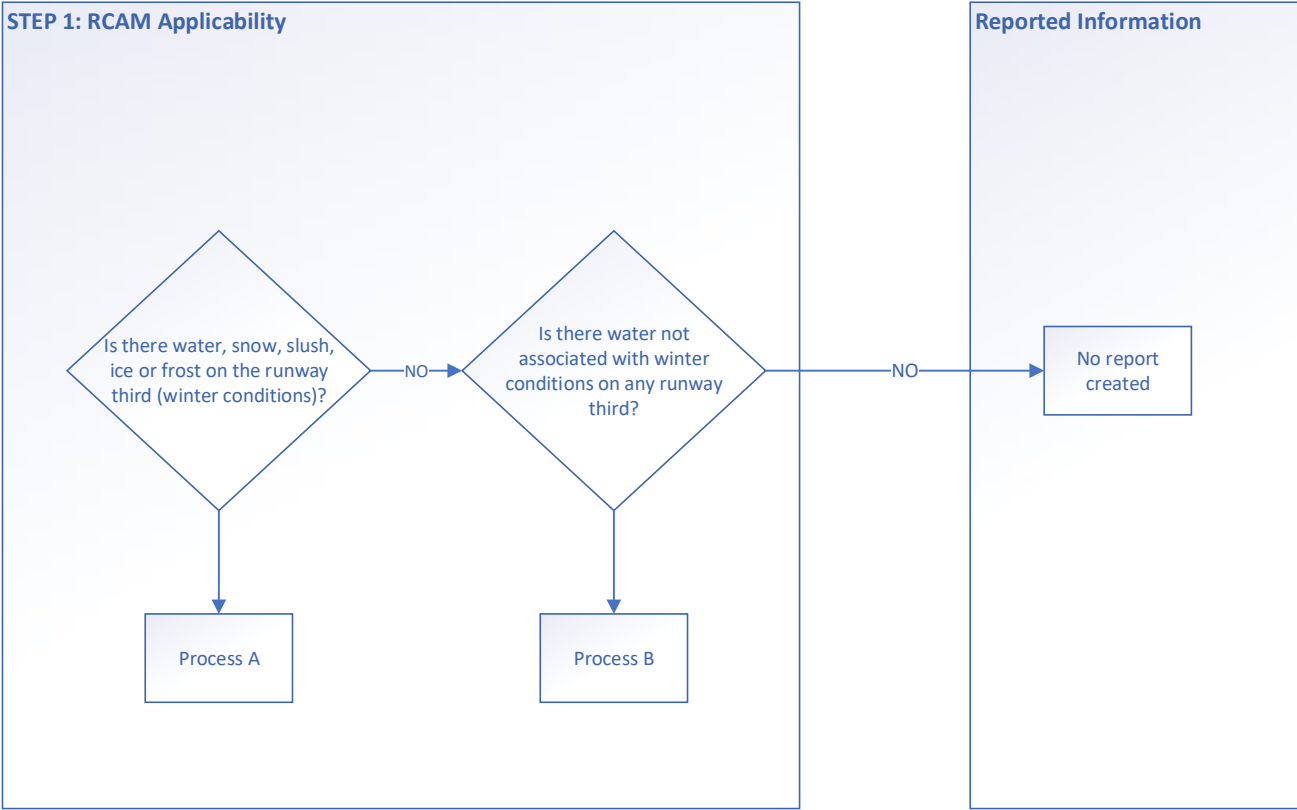
Assessment – RCAM – Simplified (Regulation (EU) 2020/2148 – ADR.OPS.B.037)

Runway Condition Assessment Matrix			
Assessment Criteria		Downgrade Assessment Criteria	
RWYCC	Runway surface description	Aeroplane deceleration or directional control observation	Special air report of runway braking action
6	DRY	-	-
5	<ul style="list-style-type: none"> 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 AND directional control is normal	GOOD
4		Braking deceleration OR directional control is between good and medium	GOOD TO MEDIUM
3	<ul style="list-style-type: none"> SLIPPERY WET 	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced	MEDIUM

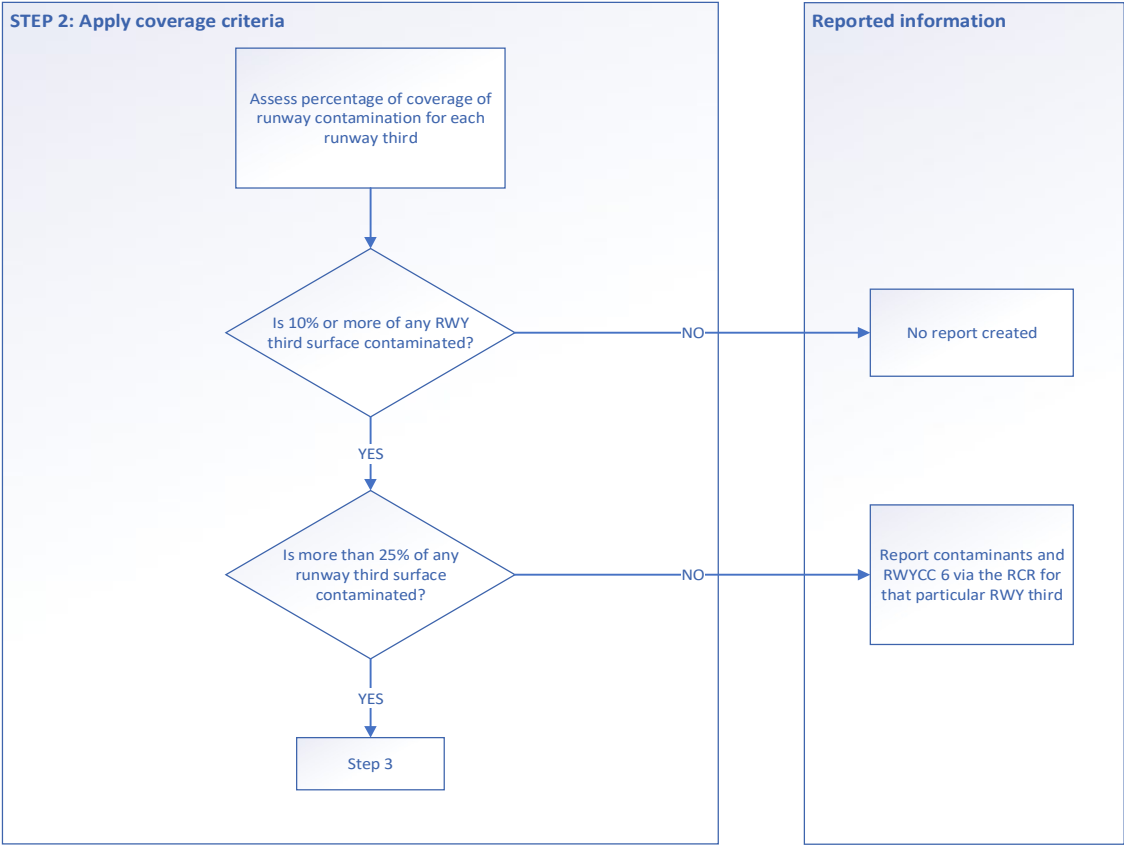
Assessment – RCAM – Simplified (Regulation (EU) 2020/2148 – ADR.OPS.B.037)

Runway Condition Assessment Matrix			
Assessment Criteria		Downgrade Assessment Criteria	
RWYCC	Runway surface description	Aeroplane deceleration or directional control observation	Special air report of runway braking action
2	More than 3 mm: <ul style="list-style-type: none"> 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

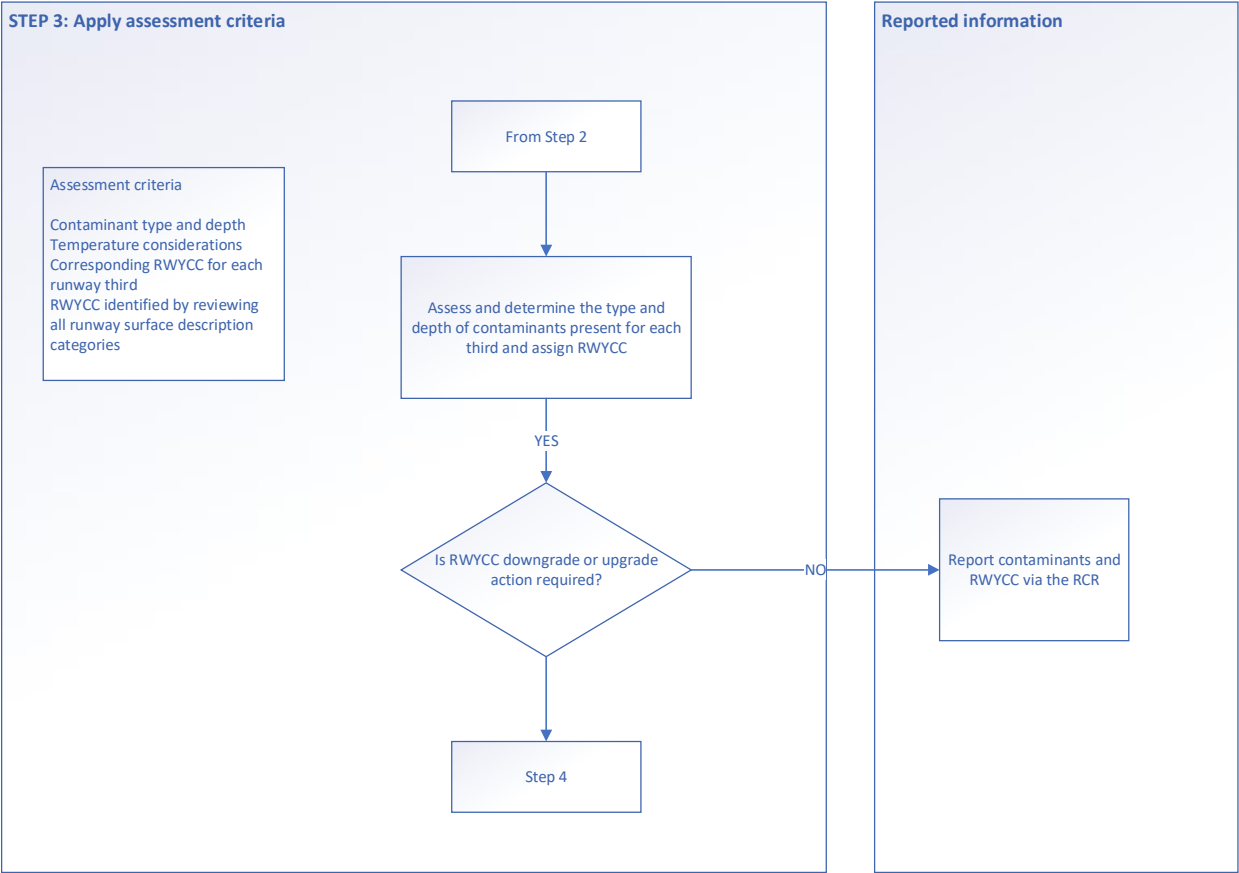
RCAM process (Regulation (EU) 2020/2148 – ADR.OPS.B.037)



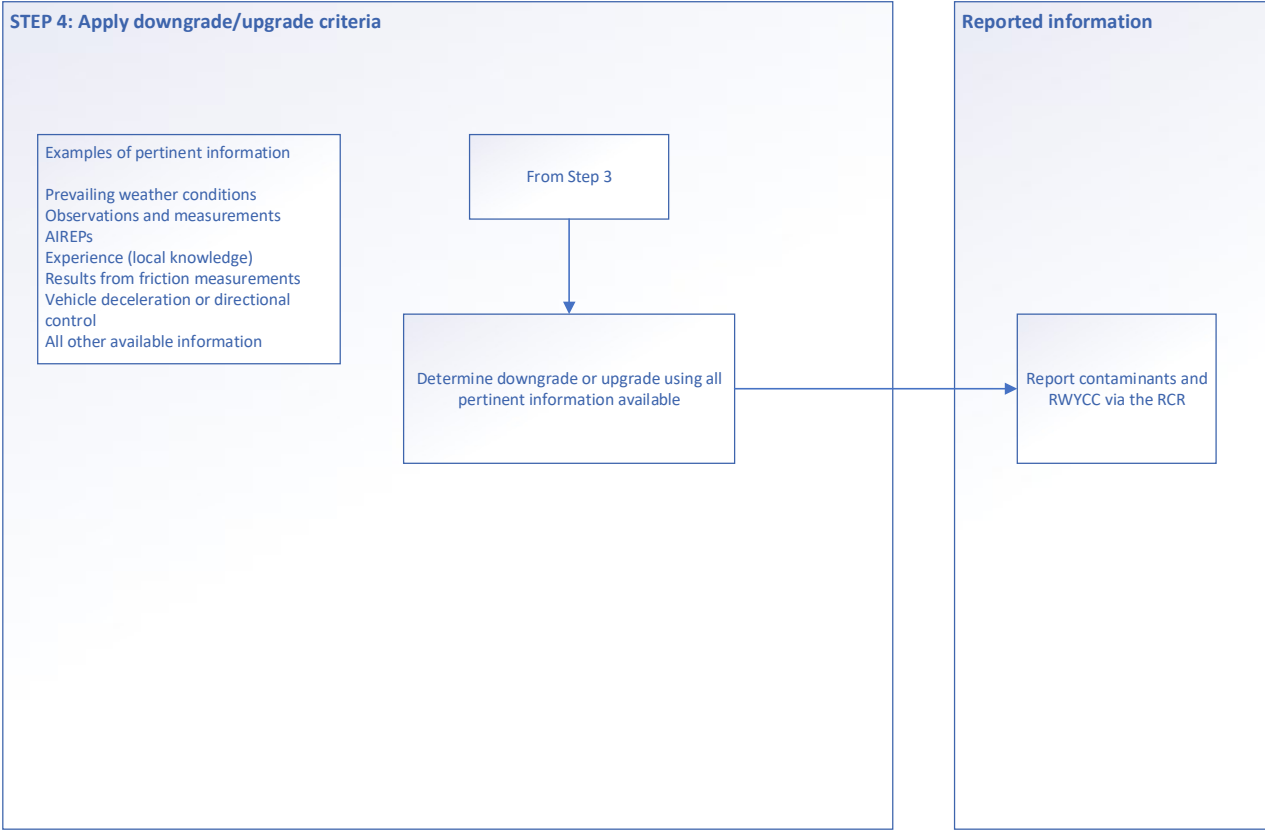
RCAM – Process A (Regulation (EU) 2020/2148 – ADR.OPS.B.037)



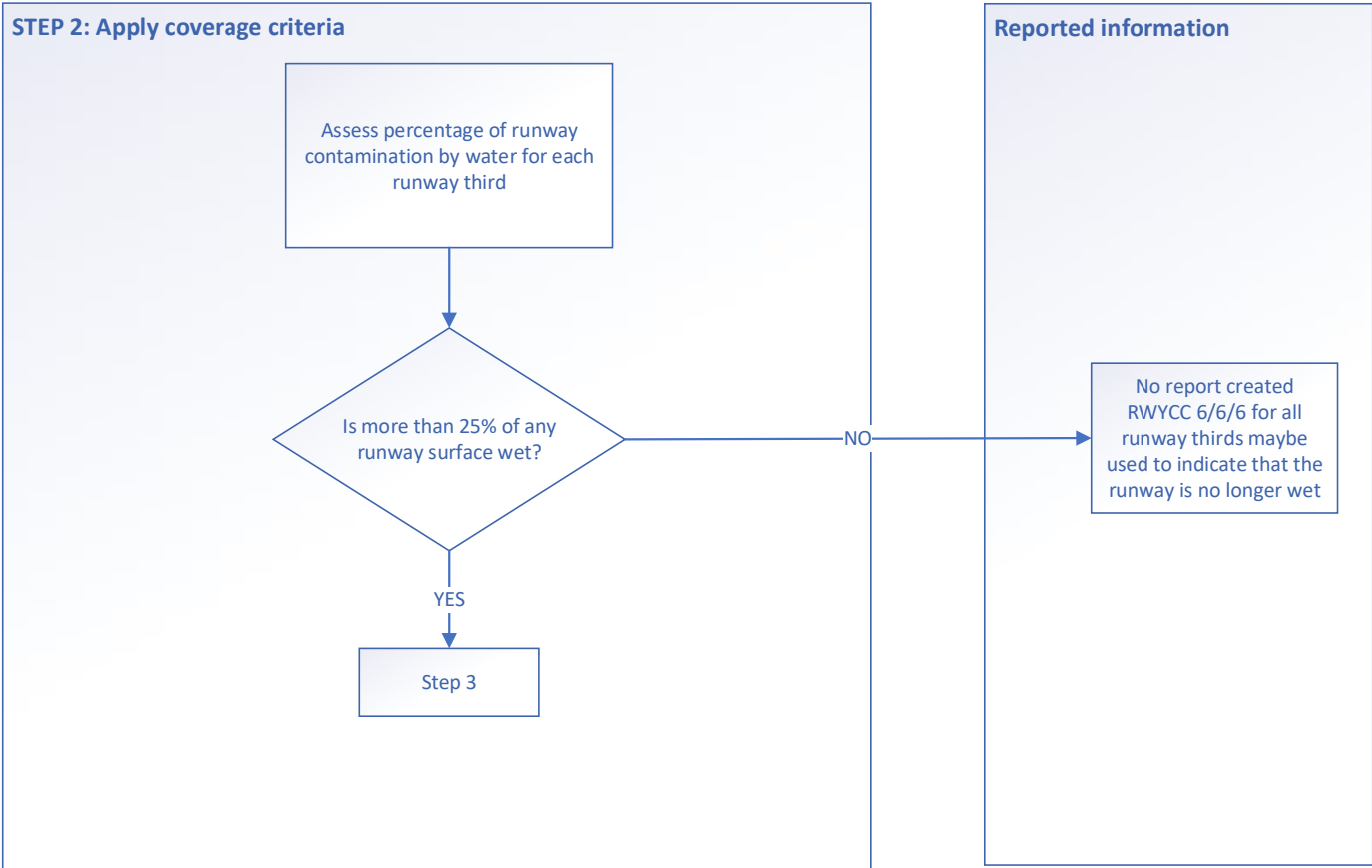
RCAM – Process A (Regulation (EU) 2020/2148 – ADR.OPS.B.037)



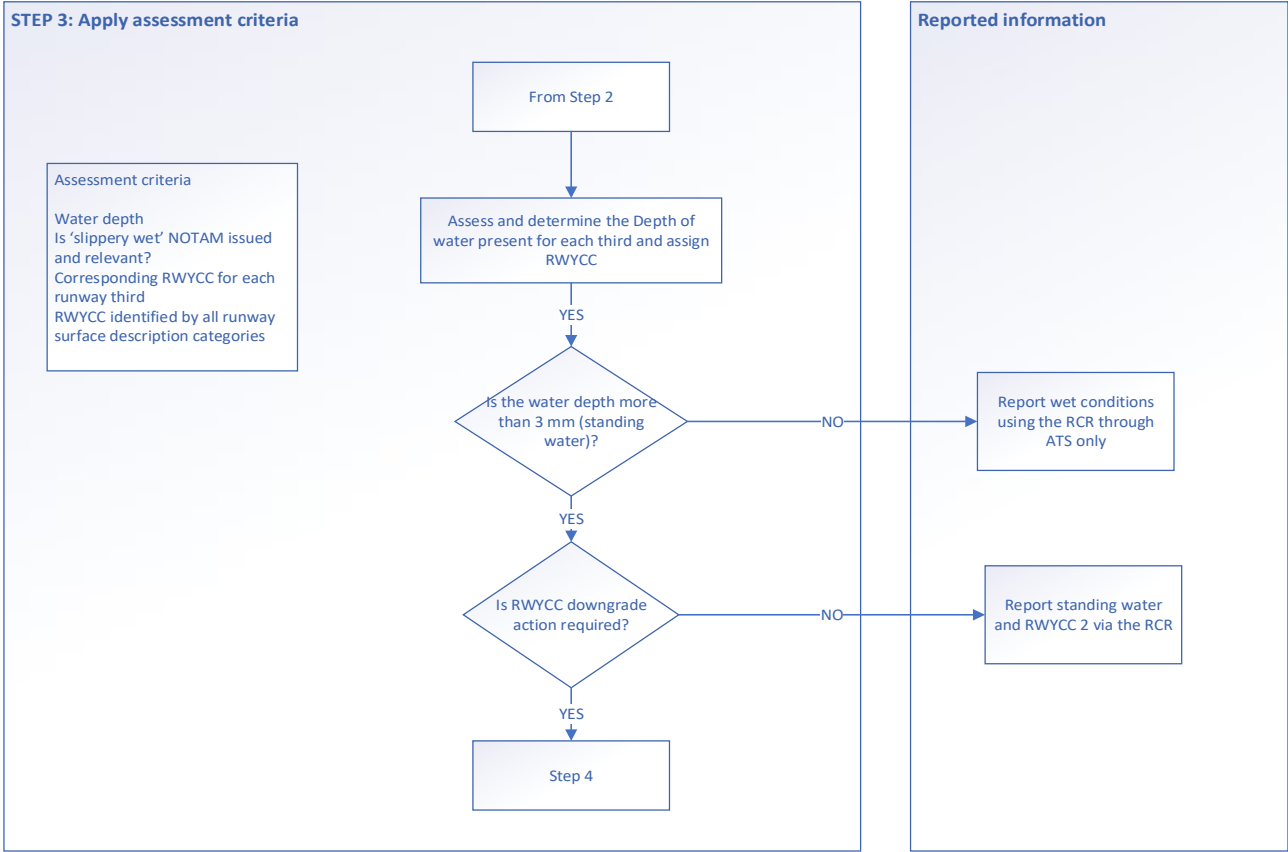
RCAM – Process A (Regulation (EU) 2020/2148 – ADR.OPS.B.037)



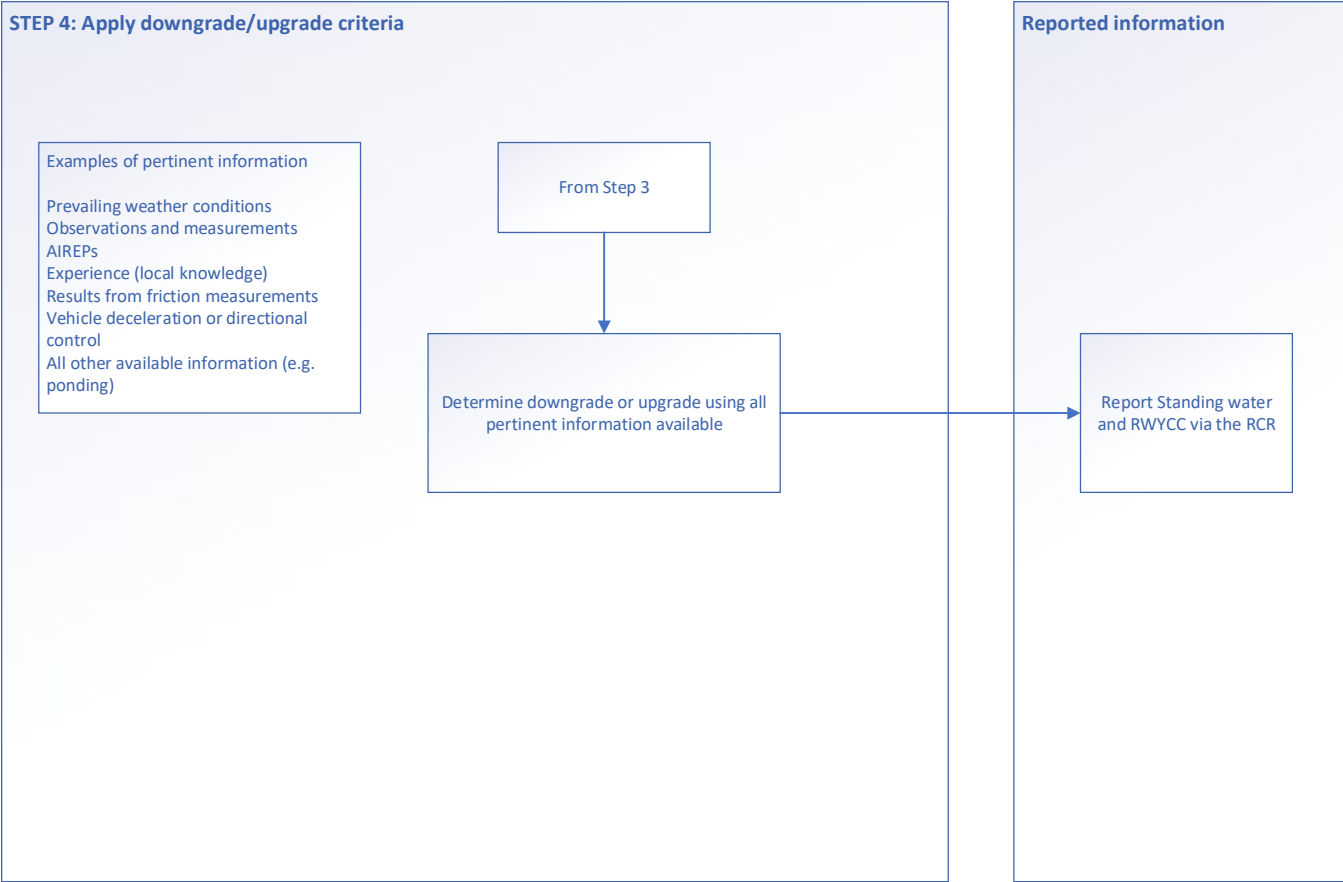
RCAM – Process B (Regulation (EU) 2020/2148 – ADR.OPS.B.037)



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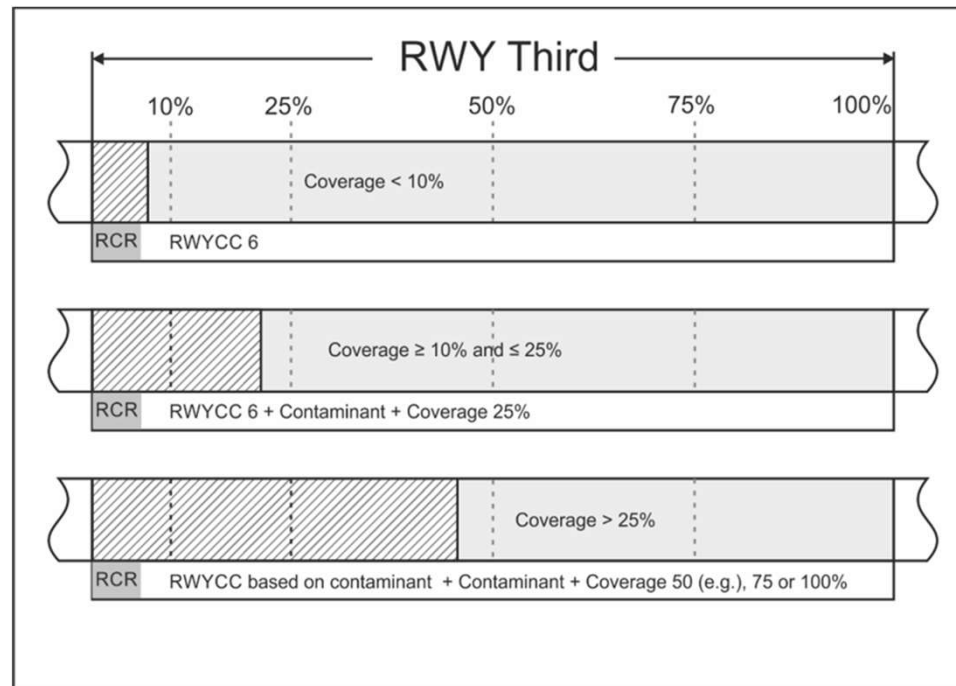


RCAM – Process B (Regulation (EU) 2020/2148 – ADR.OPS.B.037)



Assessment (Regulation (EU) 2020/2148 – ADR.OPS.B.037)

→ Single contaminant



Assessment (Regulation (EU) 2020/2148 – ADR.OPS.B.037)

→ Multiple contaminants

- If coverage is more than 25%, but no single contaminant covers more than 25% of any runway third, the RWYCC is based on the contaminant that will most likely be encountered by the aeroplane and its likely effect on the aeroplane performance.
- Typically this is the most widespread contaminant

Assessment – Upgrade/Downgrade (Regulation (EU) 2020/2148 – ADR.OPS.B.037)

- RWYCC 5 4 3 or 2 **cannot** be upgraded
- RWYCC 1 or 0 **cannot** be upgraded beyond RWYCC 3
 - only supported by assessments
 - frequent assessments to ensure that runway surface condition does not deteriorate below the assigned code
- Downgrade should be done by considering all available means of assessing runway slipperiness, including special air reports

Assessment - Use of special air reports (Regulation (EU) 2020/2148 – ADR.OPS.B.037)

- Special air reports trigger:
 - re-assessment of runway surface condition if RWYCC 2 or better has been reported and two consecutive special air reports of POOR runway braking action are received
 - re-assessment of runway surface condition and possible suspension of operations on the runway when one pilot has reported a LESS THAN POOR runway braking action

Specially prepared winter runway (Regulation (EU) 2020/2148 – ADR.OPS.B.036)

- Not included in ICAO
- EU specific:
 - accommodates operations on runways which are covered for very long periods with compacted snow or ice
 - associated primarily with RWYCC 4
 - requires prior approval by the Competent Authority, subject to certain conditions

Specially prepared winter runway (Regulation (EU) 2020/2148 – ADR.OPS.B.036)

→ Conditions

- establishment of specific procedures
 - surface treatment
 - monitoring meteorological parameters
 - management of loose contaminants
 - assessment of achieved results
- collection and analysis of aeroplane stopping performance data to demonstrate the capability to establish runway condition code in accordance with a given RWYCC
- Maintenance programme of equipment used to achieve consistent performance

Specially prepared winter runway (Regulation (EU) 2020/2148 – ADR.OPS.B.036)

→ Conditions

- programme to monitor the continuous effectiveness of the procedure
 - use of braking action reports from aeroplane data which are compared with the reported runway conditions
- evaluation of winter operations after the end of the winter period in order to identify necessity for:
 - additional training requirements
 - update of the procedures
 - additional or different equipment and material

SERA (Regulation (EU) 2020/469)

- SERA.12005 Special aircraft observations
 - The runway braking action encountered is not as good as reported
- AMC1 SERA.14001 General
 - Adaptation of 1.1.11 Aerodrome information in accordance with GRF

Air Traffic Services - METAR

- Regulation (EU) 2020/469
 - ATS.OR.520 Information on aerodrome conditions and the operational status of associated facilities
 - ATS.OR.530 Forwarding of braking action information
 - If an air traffic services provider receives by a voice communication a special air-report concerning braking action which does not correspond to what was reported, it shall inform without delay the appropriate aerodrome operator
 - Removal of runway surface information from the METAR format

Thank you very much for your attention

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Acronyms and Abbreviations

AIREP	Air Report
AIS	Aeronautical Information Service
ATC	Air Traffic Control
ATS	Air Traffic Service
ATM/ANS	Air Traffic Management/Air Navigation Services
MET	Meteorological Services
METAR	Meteorological Terminal Air Report
NOTAM	Notice To Airmen
RCAM	Runway Condition Assessment Matrix
RCR	Runway Condition Report
RWYCC	Runway Condition Code
SERA	Standardised European Rules of the Air
SNOWTAM	A special series NOTAM given in a standard format, which provides a surface condition report notifying the presence or cessation of conditions due to snow, ice, slush, frost or water, associated with snow, slush, ice, or frost on the movement area