

CANSO ACADEMY:

APPLYING RUNWAY SAFETY RECOMMENDATIONS FROM THE GAPPRI REPORT

Key Take Aways for ANSPs

Thursday 7 November

14:00-15:30 CET

MODERATOR



John Wennes

Safety Programme Manager

CANSO

VALIDATED BY:

CANSO



IN COOPERATION WITH:



COORDINATED BY:



CANSO

Global Action Plan for the Prevention of Runway Incursions

Part I - Recommendations

Part II - Guidance and Explanatory Material



EDITION DATE: AUGUST 2024

GLOBAL ACTION PLAN FOR THE PREVENTION OF RUNWAY INCURSIONS (GAPPRI)

Today's presentation

- Background of development of GAPPRI
- Overview of recommendations applicable to ANSPs
- Making use of GAPPRI
- Next steps
- Questions



PRESENTERS



John Wennes

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Manager
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James Lewis

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Anthony Acfield

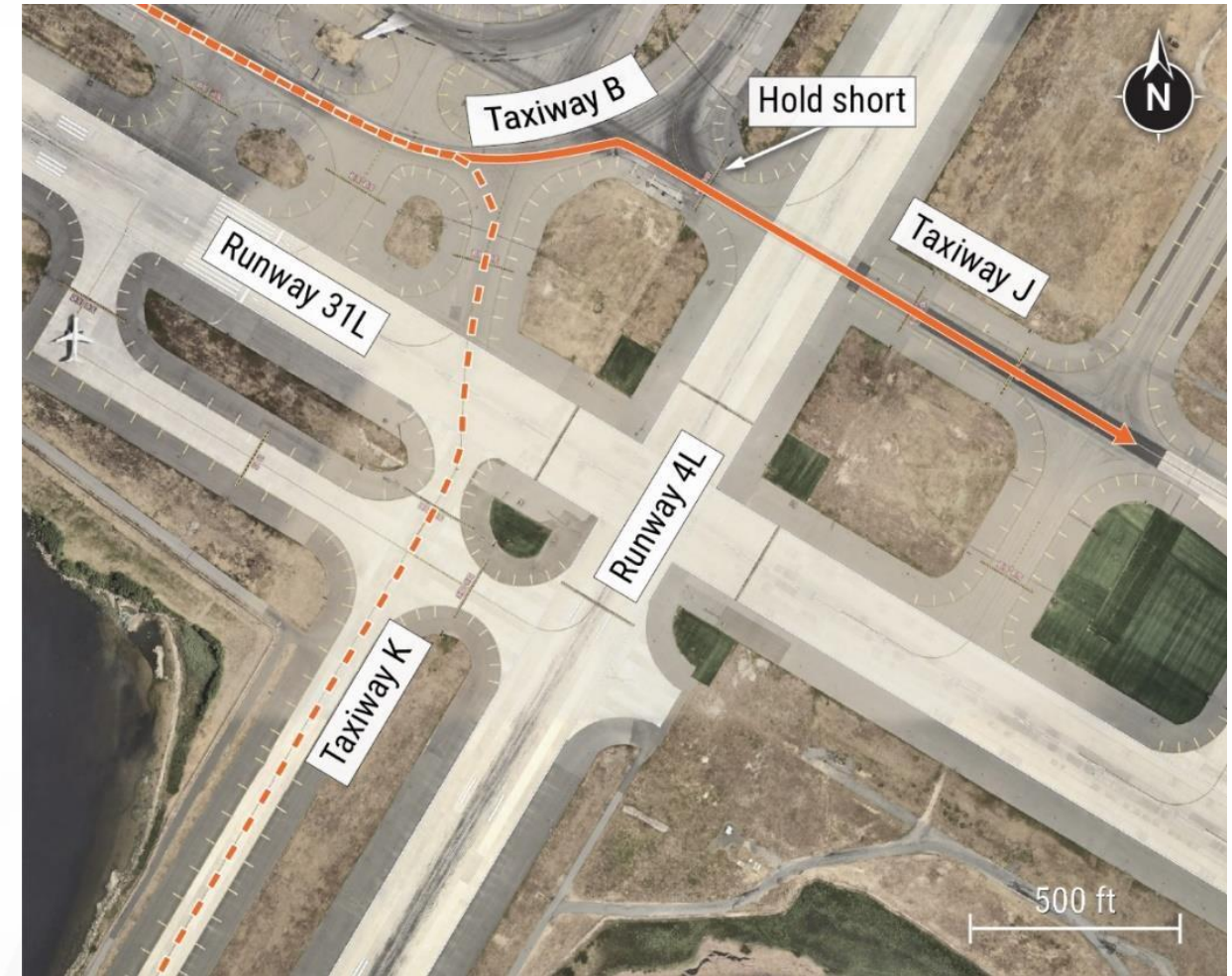
Director of Aerodrome
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RUNWAY INCURSION EXAMPLE INCIDENT

RUNWAY INCURSION EXAMPLE INCIDENT

B772 / B739, New York JFK USA, 2023

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RUNWAY INCURSION EXAMPLE INCIDENT

B772 / B739, New York JFK USA, 2023

The **Probable Cause** of the conflict was determined as *"the American Airlines flight 106 crew's surface navigation error due to distractions caused by their performance of concurrent operational tasks during taxi, which resulted in a loss of situational awareness"*.

Three **Contributory Factors** were also identified as follows:

- The air traffic control tower team's non-detection of the 777 crew's deviation from taxi instructions while performing concurrent operational tasks;
- The timing of the Runway Status Light System, which activated too late to prevent the 777 crew from crossing the runway hold short line;
- American Airlines' lack of adequate risk controls to prevent concurrent flight crew tasks from leading to distraction, loss of situational awareness and deviation from an authorised taxi clearance.



PRESENTER



James Lewis

Senior Aviation Consultant

Think Research

BACKGROUND TO GAPPRI

GAPPRI BACKGROUND

- ❑ Multifaceted group of stakeholders and subject matter experts
- ❑ Worked for a year collaborating and comparing best practices
- ❑ 127 Recommendations across six groups
- ❑ 33 focused on ANSPs



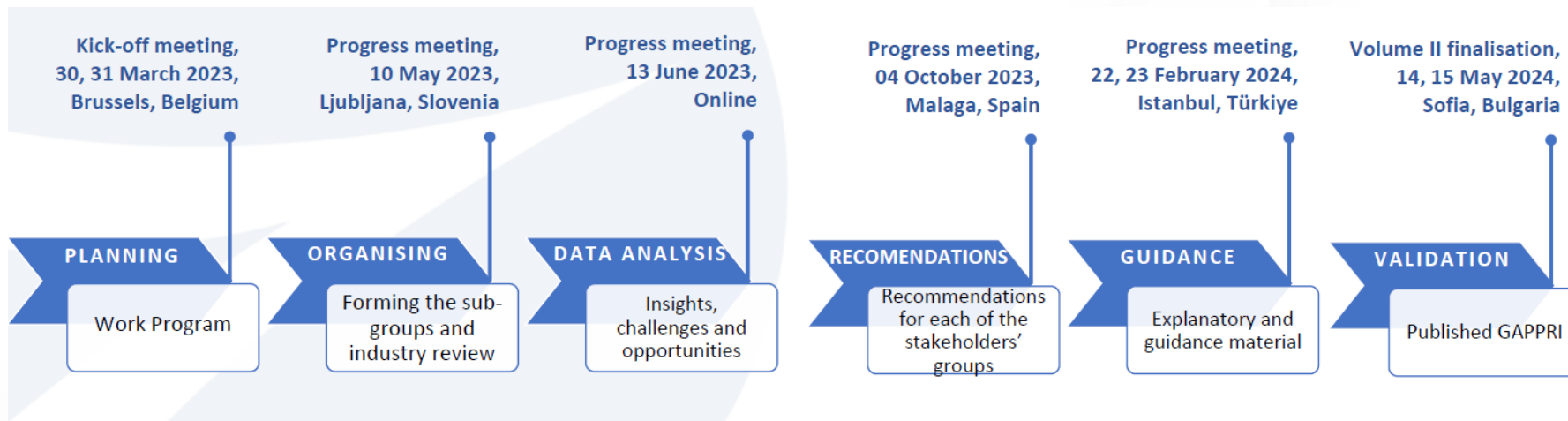
GAPPRI BACKGROUND

GAPPRI Volume I

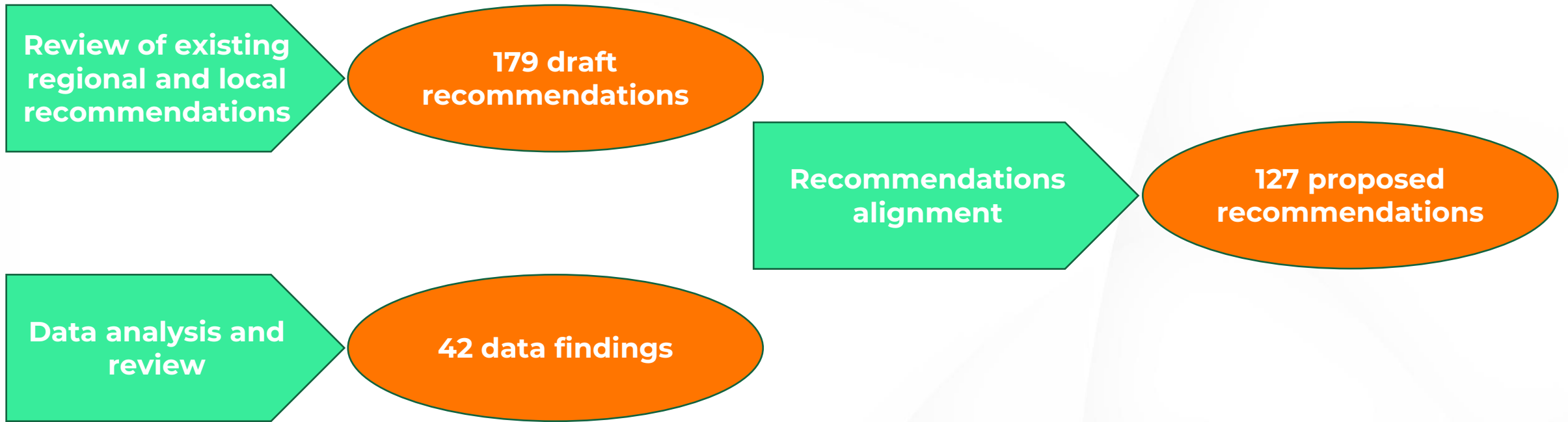
- ❑ Published in December 2023.
- ❑ A set of **synchronised, consensus-based** recommendations.
- ❑ Best practices and interventions **beyond simple regulatory compliance**.
- ❑ **Addressing both the risk and the resilience**.
- ❑ A robust roadmap **for different time horizons**.

GAPPRI Volume II

- ❑ Published in August 2024
- ❑ Guidance and Explanatory Materials (GEMs)
- ❑ Gives **practical information** on how to implement best practices and interventions
- ❑ **Provides resources and additional information**.



THE PROCESS



INPUTS

Existing recommendations and best practices

- ❑ EAPPRI 3.0
- ❑ US FAA
- ❑ Partners: ACI, IATA, CAN SO
- ❑ Airlines
- ❑ Airport Operators
- ❑ ANSPs
- ❑ Flight Safety Foundation – Learning from all operations principles and approaches

Data Review

- ❑ Two global data sets:
 - Analysis global 6-year sample of 68 accidents and serious incidents.
 - IATA IDX – Runway incursions Jan 2020 – Dec 2022
- ❑ Two regional data sets:
 - FAA risk and data analysis
 - Eurocontrol (2013-2021) 362 European incidents of severity A and B
- ❑ Various data sources by the participating partners

GAPPRI ANSP RECOMMENDATIONS

ANSP Categories

- [ANSP 1-9] - Safety management and support for runway safety teams
- [ANSP 10-16] - Safe runway operations communications
- [ANSP 17] - Aeronautical information
- [ANSP 18-26] - Supporting pilot workload and pressures management
- [ANSP 27-31] - Enhanced procedures for safe runway operations
- [ANSP 32-33] - Enhanced technology for safe runway operations

GUIDANCE AND EXPLANATORY MATERIALS

1

Recommendation

2

Why/What: why should this recommendation be followed?

3

How: What can be done to implement this recommendation?

4

Reference: What reference material provides more information?

PRESENTER



Tzvetomir Blajev

Director Europe and Global Operational Safety

Flight Safety Foundation

ANSP RECOMMENDATIONS

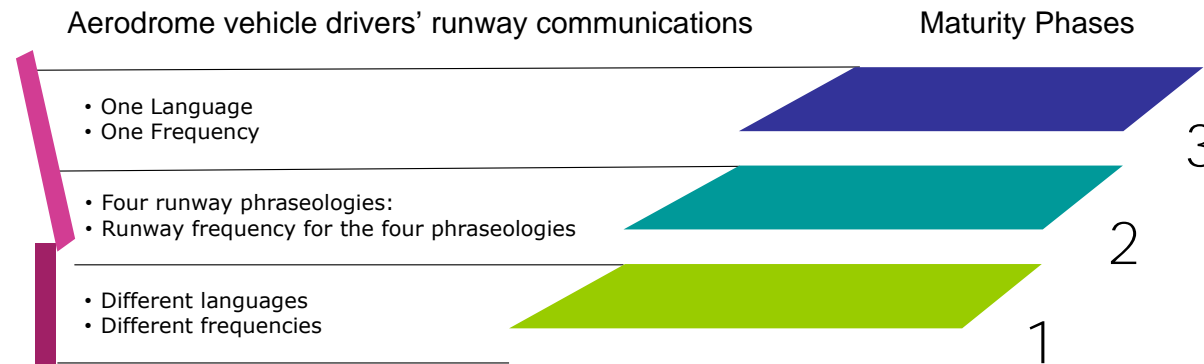


PHASED PLAN TOWARDS TRIPLE ONE

Recommendation ANSP10

Develop and implement a phased plan for use of one frequency and English language for all communication associated to the operation of a runway. The phased plan should aim at improving the shared situational awareness of all front-line operators and should include realistic and practicable measures that provide adequate level of safety for each of its phases.

Assisting Traffic Awareness



* (1) Entry/Cross, (2) On the Runway, (3) Vacate, (4) Hold short of the Runway

4-4-SAFETY

1. Runway Entering or Crossing

Driver: (call sign) (Holding Point / position) REQUEST CROSS / ENTER RUNWAY (number) [FOR INSPECTION]

ATC: (call sign) CROSS / ENTER RUNWAY (number) [REPORT VACATED]

ATC: (call sign) NEGATIVE, HOLD SHORT OF (position)

Driver: CROSSING / ENTERING RUNWAY (number) (call sign)

2. Operations on Runway

Driver: (call sign) ON RUNWAY (number)

ATC: (call sign) ROGER, ON RUNWAY (number)

3. Vacating Runway

ATC (call sign) [IMMEDIATELY] VACATE RUNWAY (number), [REPORT VACATED]

Driver: [IMMEDIATELY] VACATING RUNWAY (number) WILCO (call sign)

Driver: RUNWAY (number) VACATED (call sign)

4. Hold Short of the Runway

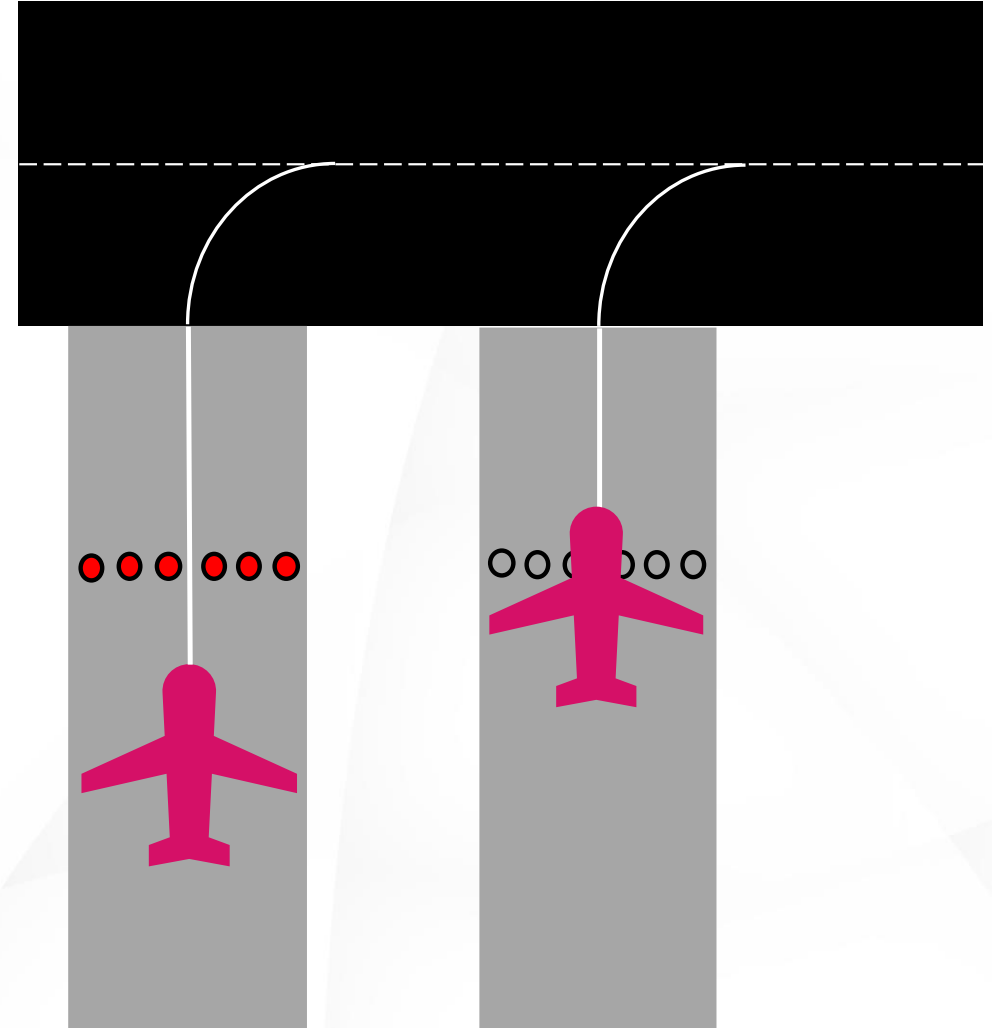
ATC (call sign) HOLD SHORT OF (position)

Driver: HOLDING SHORT OF (position) (call sign).

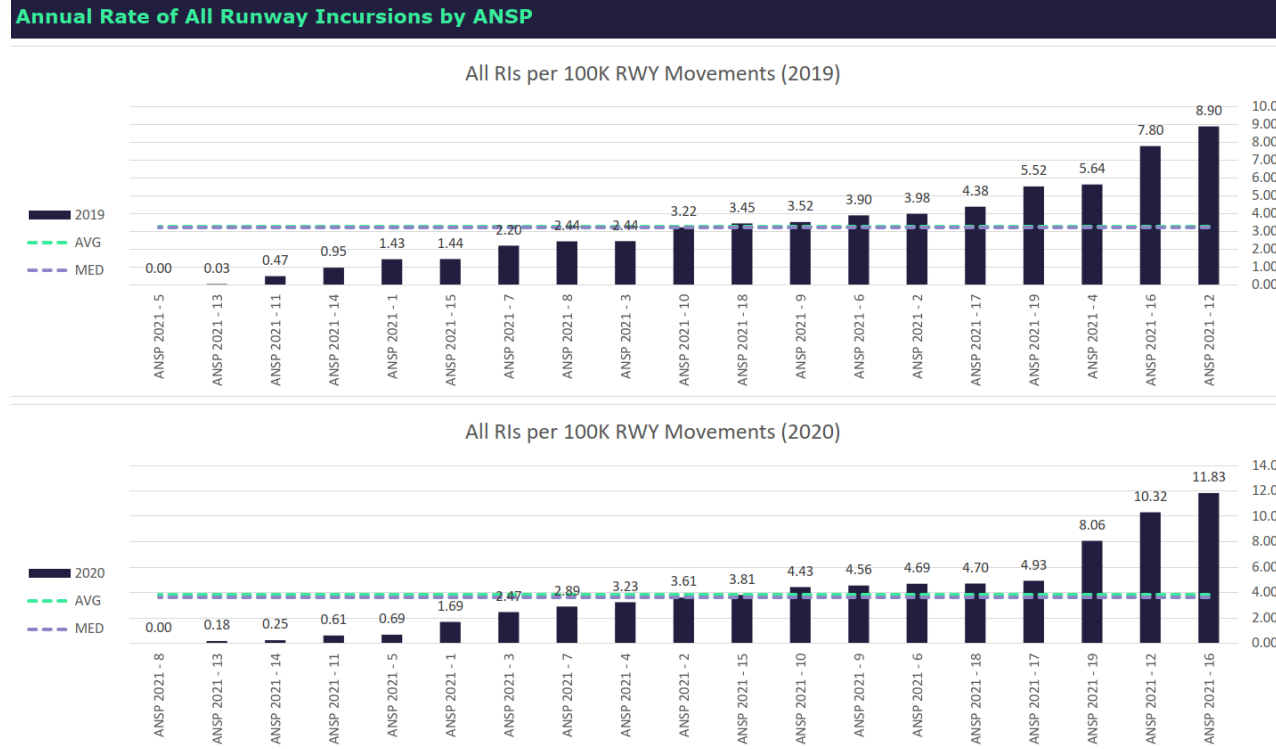
ADVANCED TECHNOLOGIES

Recommendation ANSP28

- a. In cooperation with Aerodrome Operators implement H24 stop bars operation or other lighting systems (e.g. ARIWS) at all active runway holding positions providing an equivalent level of safety commensurate with the level, complexity of the operations and the potential risk of runway incursion.
- b. Ensure that stop bars at runway holding position are controlled by the controller in charge of the runway operations on that runway (Aerodrome controller).
- c. In cooperation with Aerodrome Operators, implement procedures, in line with the applicable Regulations to be followed in case of stop bar unserviceability.



USE OF SAFMAPS ANALYSIS BARRIER MODEL



Effectiveness of 24h “active stopbar handling”

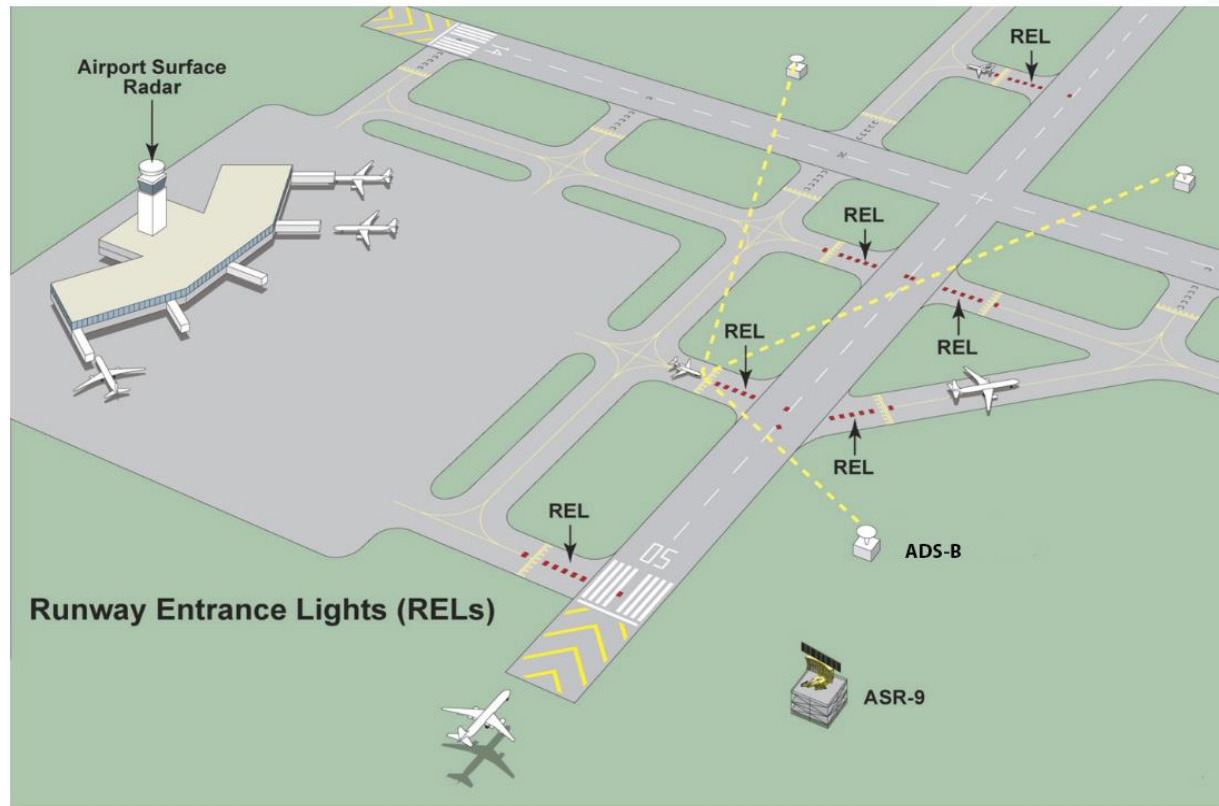
-----: 8 RWYIncs / 100000 IFR Dep @ mixed traffic/ high GA
 24H: 0,7 RWYIncs / 100000 IFR Dep @ mixed traffic

ADVANCED TECHNOLOGIES

Recommendation ANSP32

Consider the implementation of runway safety nets and emerging technologies that can improve situational awareness of front-line operators.

Runway status lights/RIPSA



Runway Incursion Prevention through Situational Awareness (RIPSA)

GAPPRI BROADER ATTENTION

Recommendations in the other sections, i.e. aerodrome or R&D, that ANSPs should pay attention to:

- **ADRI1** - Establish **leading and lagging runway safety performance indicators**
- **ADRI3** - Define **driver training program requirements**. Periodically assess formal manoeuvring area driver permits, training and refresher programmes (including practical training and proficiency checks) against driver training requirements.
- **REG3** - Ensure that the content of **training materials** for pilots, air traffic controllers and drivers working in the manoeuvring area includes runway incursion prevention measures and awareness.
- **REG4 b.** - Conduct periodic reviews of the **effectiveness** of methods whereby **temporary closures or repairs to runways and taxiways**, and associated safety-critical infrastructure (e.g., lighting and signage) are promulgated to aircraft operators.
- **R&D7** - Research **visual aids** on the **airport surface** regarding **ATC clearance** or impediments.

PRESENTER



Anthony Acfield

Director of Aerodrome Operations (Coordination)

Airservices Australia

MAKING USE OF GAPPRI

HOW TO MAKE USE OF GAPPRI

Perform a Gap Analysis

- With the release of GAPPRI volumes I & II now is the perfect time to conduct a Gap Analysis of the recommendations to your operations.
- First engage with the other relevant stakeholders at your airports. **Don't try to do things alone!**
- Encourage each organization to conduct their own gap analysis
- Then re-group to discuss findings.
- If your airport has a runway safety team then this forum could be suitable to discuss the outputs.



SIMPLE GAPPRI GAP ANALYSIS TOOL



Download GAPPRI Gap Analysis Tool – Developed in collaboration with IATA



CANSO NXGN SMS WG

GAPPRI Recommendations - Gap Analysis Tool v1.0



This tool summarizes the Global Action Plan for the Prevention of Runway Incursion recommendations for ANSPs and facilitates the completion of a gap analysis against your own Standard Operating Procedures and Safety Management System.

Populate the table on the '**Recommendations**' tab to undertake the gap analysis. You can add a cross reference to your own local procedure/manual/exposition reference. Refresh the table (right click 'Refresh') on the '**Summary**' tab to see a summary of which recommendations you have implemented and any gaps.

Call to Action: For any recommendations where a gap is identified, develop and implement a plan to address these gaps based on your organizational capability and risk appetite.

For feedback or questions on the tool, contact us:

safety@canso.org

DETAILED GAPPRI GAP ANALYSIS

Based on Level of Conformance and Status of Action

Fully conform

Partially conform
No further action (not applicable)

Partially conform
No further action (not agreed)

Partially conform
Further action in progress

Partially conform
Further action to be taken

Do not conform
No further action (not applicable)

Do not conform
No further action (not agreed)

Do not conform
Further action in progress

Do not conform
Further action to be taken

DETAILED GAPPRI GAP ANALYSIS

	Fully Conform	Partially conform No further action (not applicable)	Partially conform No further action (not agreed)	Partially conform Further action in progress	Partially conform Further action to be taken	Do not conform No further action (not applicable)	Do not conform No further action (not agreed)	Do not conform Further action in progress	Do not conform Further action to be taken
SAFETY MANAGEMENT AND SUPPORT FOR RUNWAY SAFETY TEAMS									
ANSP1	X								
ANSP2		X							
ANSP3					X				
ANSP4			X						
ANSP5								X	
ANSP6							X		
ANSP7				X					
ANSP8		X							
ANSP9		X							
SAFE RUNWAY OPERATIONS COMMUNICATIONS									
ANSP10					X				
ANSP11					X				
ANSP12			X						
ANSP13	X								
ANSP14	X								
ANSP15		X							
ANSP16	X								
AERONAUTICAL INFORMATION									
ANSP17			X						

	Fully Conform	Partially conform No further action (not applicable)	Partially conform No further action (not agreed)	Partially conform Further action in progress	Partially conform Further action to be taken	Do not conform No further action (not applicable)	Do not conform No further action (not agreed)	Do not conform Further action in progress	Do not conform Further action to be taken
SUPPORTING PILOT WORKLOAD AND PRESSURES MANAGEMENT									
ANSP18		X							
ANSP19								X	
ANSP20					X				
ANSP21				X					
ANSP22			X						
ANSP23	X								
ANSP24	X								
ANSP25		X							
ANSP26	X								
ENHANCED PROCEDURES FOR SAFE RUNWAY OPERATIONS									
ANSP27						X			
ANSP28					X				
ANSP29									X
ANSP30							X		
ANSP31		X							
ENHANCED TECHNOLOGY FOR SAFE RUNWAY OPERATIONS									
ANSP32		X							
ANSP33		X							

NEXT STEPS



CANSO RUNWAY SAFETY CHECKLIST GAP ANALYSIS

Making use of RSMC

- The CANSO runway safety checklist (RSMC) was created to be a tool for ANSPs and airports to review their runway safety.
- CANSO RSMC covers wider aspects in runway safety including runway incursion, runway excursion / unstable approach, organizational aspects, and Local Runway Safety Teams.
- The format is a set of questions that can ideally be used as part of collaborative engagement between stakeholders at a specific airport (e.g. Local Runway Safety Team).
- In the development of GAPPRI the airport safety subgroup reviewed the checklist to see if there were insights that could be fed into GAPPRI recommendations.
- Following the release of GAPPRI, we have now reversed the process to see if there are additional questions that should be added to the checklist.

Download the RSMC



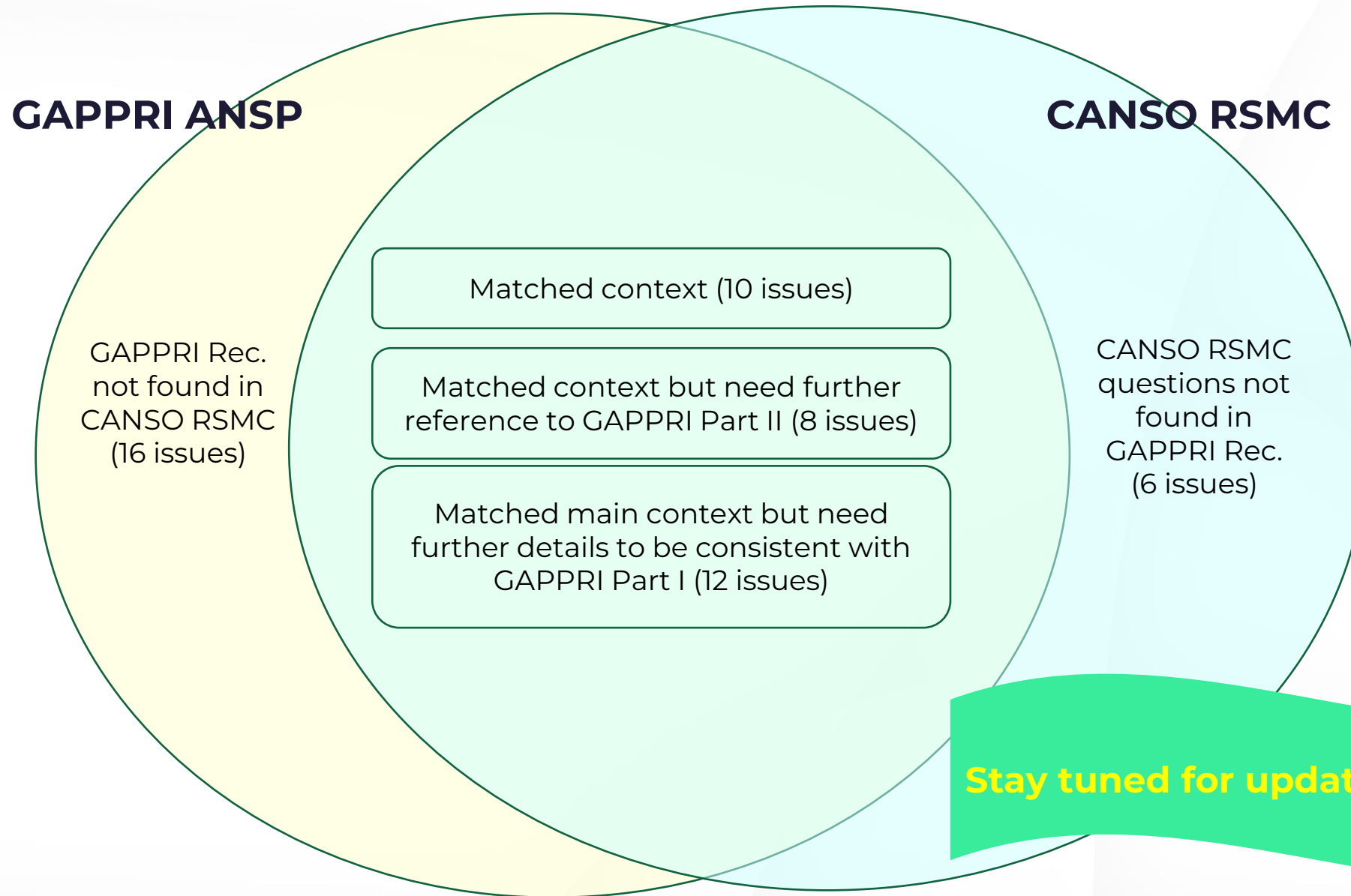
Clean RSMC

CANSO RUNWAY SAFETY CHECKLIST



Questions	Y/N/NA	How can you improve this?
LOCAL RUNWAY SAFETY TEAM		
1a	Is there a Local Runway Safety Team (LRST) at your location?	
1b	If No for 1a, is runway safety formally included in the aerodrome safety management system?	
1c	Which stakeholders and roles participate in the LRST or similar forum?	
1d	How frequently does the LRST or similar forum meet to discuss runway safety issues? (e.g. monthly, quarterly, ad-hoc)	
2a	Does the LRST (or equivalent forum) have the following responsibilities?	
i	Local runway safety occurrences	
ii	Airport works (Planned/Ongoing)	
iii	Aerodrome signage, markings and lights	
iv	Low visibility operations	
v	FOD management	
RUNWAY INCURSION		
33	Do you use any procedures that may lead to pilot/driver confusion or expectation and a subsequent runway safety occurrence? For example do you regularly use runways for taxi?	
34	Do you have control of/use of/procedures for ground lighting that may influence runway safety? (E.g. Stop bars, crossing lit stop bars, lit versus unlit runways and taxiways)	
35a	Do you use Capacity Enhancing Procedures at your aerodrome?	
i	Conditional clearances	
ii	Intersection departures	
iii	Multiple line-ups	
iv	Other Procedures	
35b	If Yes to Q35a, have you considered any potential hazards associated with these procedures when used individually or in combination and developed appropriate mitigation strategies?	
36	If there are Low Visibility Operational procedures at your aerodrome, was your ANSP involved in their development and/or in the regular review of the procedures? Have the procedures been reviewed recently?	

CANSO RSMC WITH GAPPRI COMPARISON



IATA ANNUAL SAFETY REPORT



CANSO



Executive Summary



**Interactive Safety
Report**



**Recommendations for
Accidents Prevention**



**References, Definitions
and Sources**



ACKNOWLEDGEMENTS & QUESTIONS



Federal Aviation
Administration



AIRPORTS COUNCIL
INTERNATIONAL



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QUESTIONS AND ANSWERS

ACKNOWLEDGEMENTS



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THANK YOU

