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Evolution of GREPECAS F3 Project: Adapting to Regional Realities

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Evolution of GREPECAS F3 Project: Adapting to Regional Realities

From A-CDM Implementation to Apron Management and SMGCS

Welcome everyone. Today we'll discuss the important evolution of the GREPECAS F3 Project, approved at GREPECAS/22 in Lima, which represents a fundamental shift from A-CDM implementation to focusing on Apron Management and Surface Movement Guidance Control Systems.

Agenda

- 1 Background and Context
- 2 Previous F3 Project Focus (A-CDM)
- 3 Regional Assessment Results
- 4 Understanding A-CDM Requirements
- 5 New Project Direction
- 6 Implementation Framework
- 7 Expected Benefits
- 8 Next Steps for NACC Region

Our discussion will cover why this change was necessary, what the new focus entails, and how this better serves the NACC region's actual needs.



Previous F3 Project Overview

Original Focus: A-CDM Implementation (2019-2024)

Objective: Implement Airport Collaborative Decision Making

Scope: Selected airports in CAR/SAM regions

Based on: European A-CDM model

Challenge: COVID -19 impact on traffic volumes

Status: Limited progress, requiring reassessment

The original F3 project was approved in 2019 with the goal of implementing A -CDM based on the European model. However, several factors led us to reassess this approach.

Regional Reality Assessment



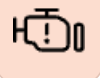
A-CDM's original definition addresses operational challenges specific to Europe



Designed to mitigate effects of Air Traffic Flow Management (ATFM) policies



Addresses take-off delay programs and slot restrictions



Critical Finding: These ATFM systems are NOT implemented in CARSAM region

The comprehensive survey conducted among Member States revealed that we were attempting to implement a solution designed for operational problems that don't exist in our region.



What is A-CDM According to ICAO?

ICAO Doc 9971 - Collaborative Air Traffic Flow Management:

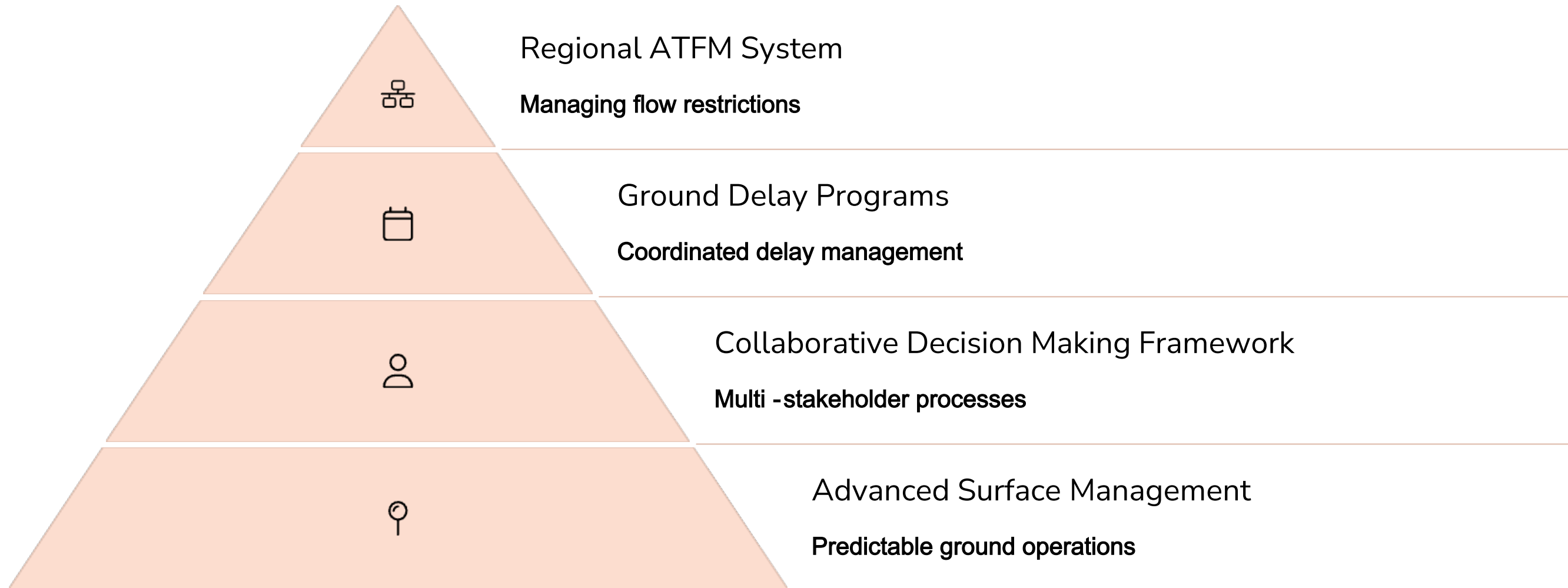
- A-CDM facilitates information sharing between airport stakeholders
- Supports collaborative decision -making processes
- Designed to work within Air Traffic Flow Management framework
- Key Principle: "Aircraft are held on ground rather than in flight" when delays are necessary

Regional Context:

Without ATFM systems, this principle doesn't apply

According to ICAO Doc 9971, A -CDM is fundamentally designed to support collaborative air traffic flow management. This document clearly shows A -CDM's dependence on existing ATFM infrastructure.

A-CDM Prerequisites Not Present



Regional Status: Items 1 -3 not implemented; Item 4 requires development

ICAO's own documentation makes clear that A -CDM requires sophisticated ATFM systems that simply don't exist in our region. We'd be implementing the solution before establishing the framework it's designed to support.

Fundamental Infrastructure Gaps



Apron Management Services

Limited implementation across region



Surface Surveillance Systems

Basic coverage at best



Predictable surface operations

Essential for collaboration



Regional coordination mechanisms

No centralized ATFM

Conclusion: Building advanced collaboration tools without basic infrastructure

Our assessment revealed that we lack the fundamental building blocks that make A -CDM effective. It's like trying to build the top floor of a building without laying the foundation.

ICAO Standards and Recommended Practices



Annex 14, Volume I,
Sections 9.5 and 9.8

Apron Management
requirements



PANS-Aerodromes (Doc
9981)

Surface movement procedures



Doc 9137, Part 8

Apron Management guidance



Doc 9476

SMGCS implementation



Doc 9430

A-SMGCS advanced systems

Strategy: Implement existing standards before advanced concepts

Rather than jumping to advanced concepts, we should focus on implementing the well -established ICAO standards that many of our airports haven't fully adopted yet.



New F3 Project Framework



"Paving the future A-CDM through implementation of Platform Management and SMGCS"



Strategic Dual Focus

- Apron Management Services - Immediate safety and efficiency gains
- Surface Movement Guidance and Control Systems - Technology foundation



Timeline

November 2024 - November 2028

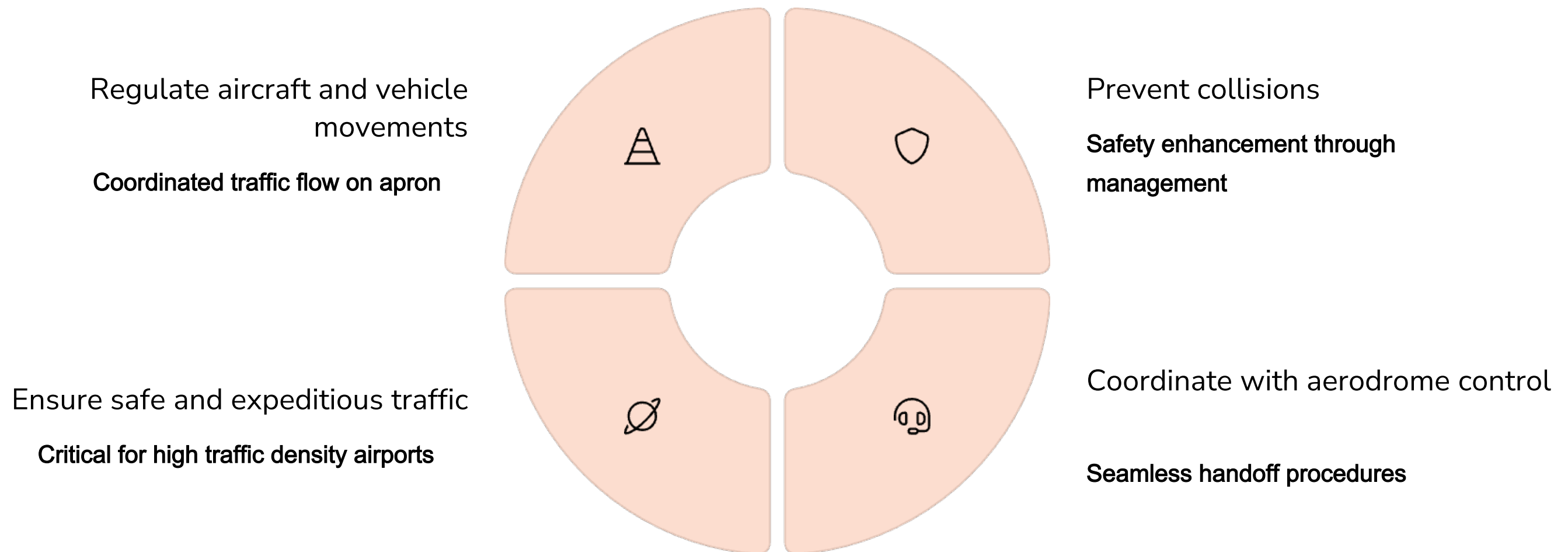


Philosophy

Build foundation first, then advanced systems

The new project acknowledges that proper apron management and surface surveillance are prerequisites for any future A-CDM implementation.

Apron Management Service Fundamentals



According to ICAO Annex 14, Apron Management Service is essential to regulate aircraft and vehicle movements on the apron.

Current Regional Status: Most airports operate under basic ATC coordination

Apron Management isn't a luxury - it's a fundamental safety service that becomes essential as airport operations grow in complexity.



Surface Movement Guidance and Control Systems

ICAO GANP ASBU Module SURF-B0/2

- Provides airport traffic situational awareness
- Position, identification and tracking of aircraft and vehicles
- Information independent of visibility conditions
- Foundation for capacity and safety improvements

Technology Options

- ADS-B
- Multilateration
- Surface Movement Radar

SMGCS provides the technological foundation for efficient surface operations. The ICAO Global Air Navigation Plan specifically identifies this as a key capability for modern airports.



Project Implementation Methodology

Phase 1 (2025): Comprehensive Assessment

- Current apron management situation evaluation
- Methodology for determining AMS necessity
- Priority ranking for both AMS and A -SMGCS implementation
- Baseline capacity and safety analysis

Focus

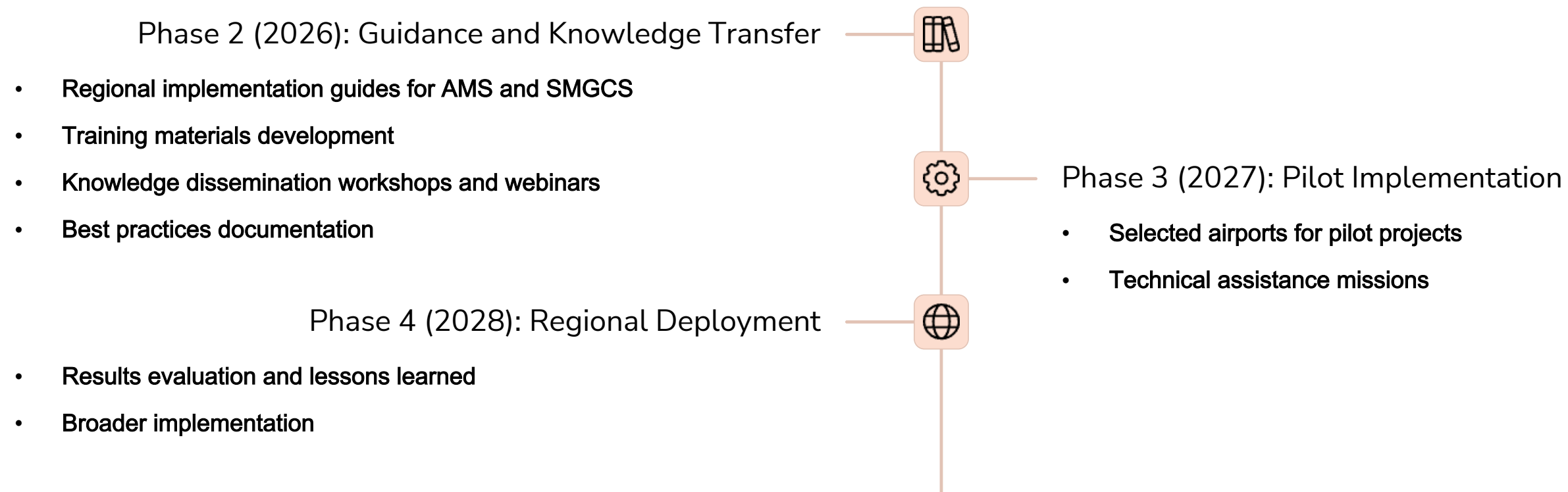
Understanding current state and requirements

We're taking a methodical approach, starting with thorough assessment to understand exactly what each airport needs based on volumes, complexity, and current capabilities.

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Project Implementation Methodology (Continued)



The phased approach ensures we build knowledge and capability systematically, learning from early implementations to improve guidance for the broader region.

Expected Operational Benefits

Safety Improvements

- Reduced apron incidents through dedicated management
- Enhanced conflict detection and prevention
- Improved situational awareness in all weather conditions
- Better emergency response coordination

Efficiency Gains

- Optimized surface traffic management
- Reduced taxi times and delays
- More predictable ground operations

These benefits directly address the operational challenges that airports in our region actually face, providing tangible improvements in safety and efficiency.

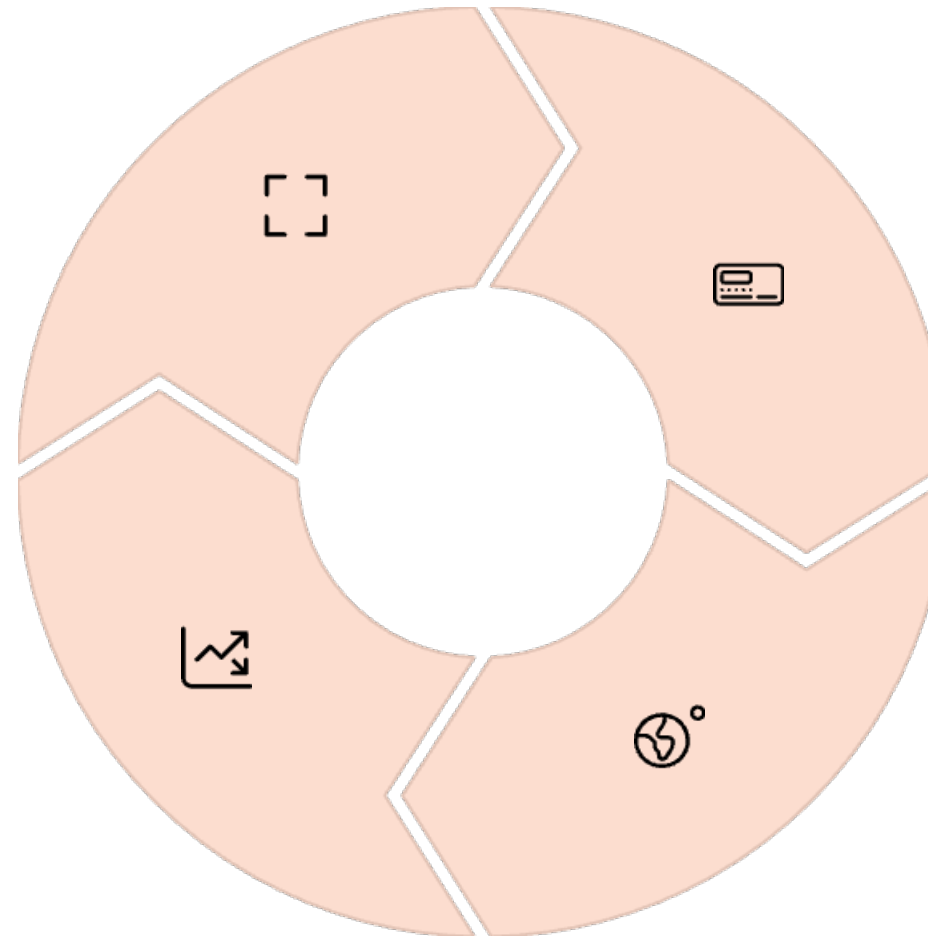
Capacity Enhancement Potential

Better utilization of existing infrastructure

Maximizing current apron and taxiway capacity

Support for growth

Accommodating increased traffic within current infrastructure



Reduced bottlenecks

Proactive management of ground traffic

Enhanced throughput

More operations without physical expansion

Scalable Implementation: Adaptable from major hubs to regional airports

One of the most compelling aspects of this approach is that it can significantly improve capacity using existing infrastructure more efficiently, avoiding costly expansion projects.

While specific airport examples require detailed case studies, industry experience consistently demonstrates significant operational benefits from proper apron management and surface surveillance implementation.

Technology Requirements and Options

Minimum Implementation

- ADS-B surveillance capability
- Basic apron management procedures
- Trained personnel and clear responsibilities

Enhanced Systems

- Multilateration for backup and enhanced coverage
- Surface Movement Radar where justified
- Integrated display and management systems

Advanced Implementation

- Automated conflict detection
- Route optimization systems
- Full A-SMGCS functionality

We're recommending a practical approach that allows airports to start with essential capabilities and build more advanced systems as traffic and resources justify the investment.



Integration and Coordination Requirements

Stakeholder Coordination

- Air Traffic Control integration and procedures
- Airport Operations Centers coordination
- Airline and ground handling integration
- Clear responsibility boundaries

Regulatory Compliance

- ICAO Annex 14 provisions implementation
- National regulatory framework alignment
- Regional harmonization through GREPECAS coordination

Success depends on proper integration with existing systems and clear coordination among all stakeholders. This isn't just a technology project - it's an operational transformation that requires buy-in from everyone involved.

Support and Resources Available



ICAO Regional Office Support

- Technical assistance missions for assessment and implementation
- Training program development and delivery
- Regional coordination and harmonization
- Best practices sharing among Member States

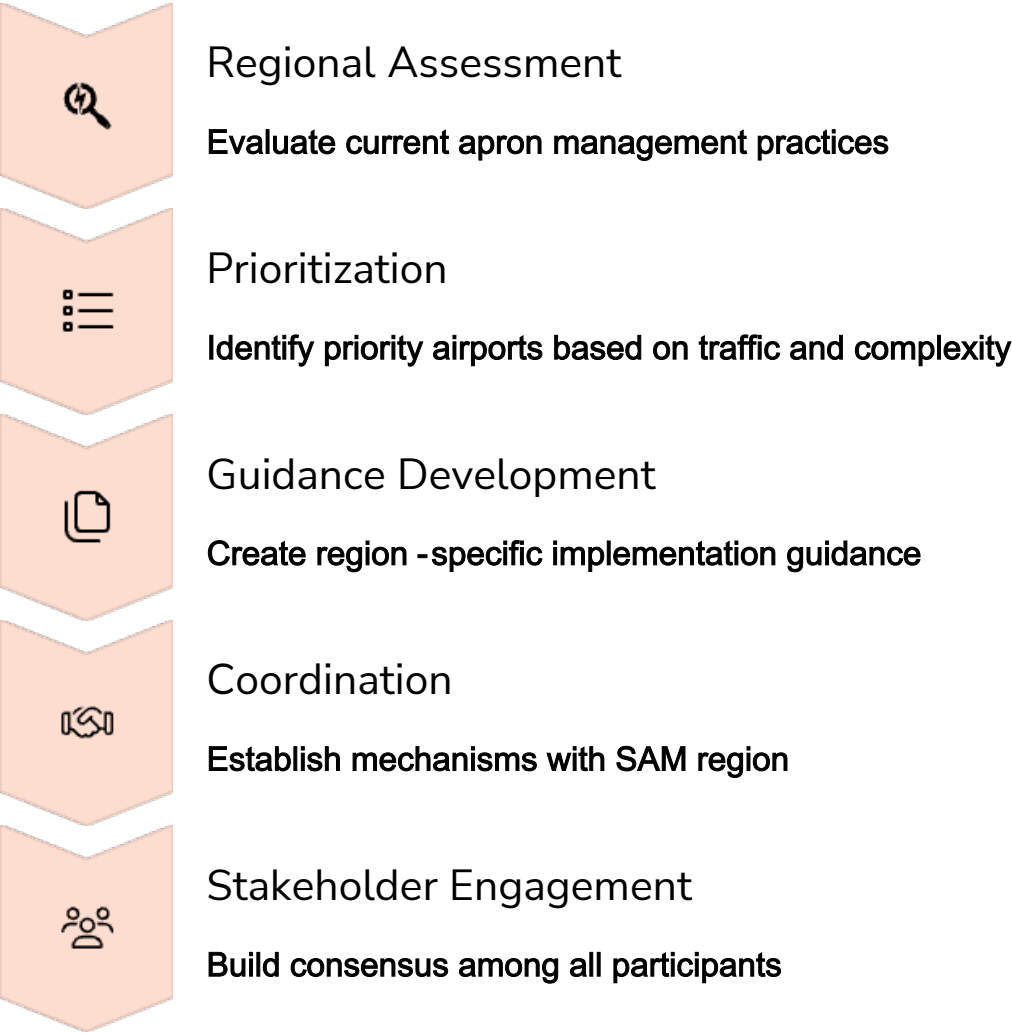


Industry and Technical Support

- Equipment supplier guidance and support
- Consulting services for implementation planning
- Regional expert networks and knowledge sharing

Airports and States won't be implementing these systems in isolation. There's substantial support available from ICAO, industry partners, and peer airports that have already begun this journey.

Next Steps for NACC Region



Immediate Actions (2025)

Medium -term Goals: Pilot implementations at selected airports, Training program establishment, Regional best practices development

The NACC region has an excellent opportunity to learn from the SAM region's experience while developing approaches tailored to its specific operational environment and needs.

Thank You

