WAC Insight 1

Air Travel Service Fundamentals & Airport Collaboration

Kirk Goodlet | Grand Hyatt Incheon | 3 September 2025

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Collaboration is the new leadership.

René Carayol

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Overview

- Evolution of airports
- Airport Planning
- Technology
- Sustainability
- Geopolitical and security shifts
- CX and Accessibility
- Real-World Use Case

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Evolving Landscape of Airport Planning

- **Growing Complexities:**
  - **Sustainability pressures**
    Carbon-neutral targets, renewable energy
  - **Rising passenger volumes**
    Pushing infrastructure to limits
  - **Security challenges**
    Evolving threats, biometric systems
  - **Geopolitical tensions**
    Stricter border controls, fortified designs

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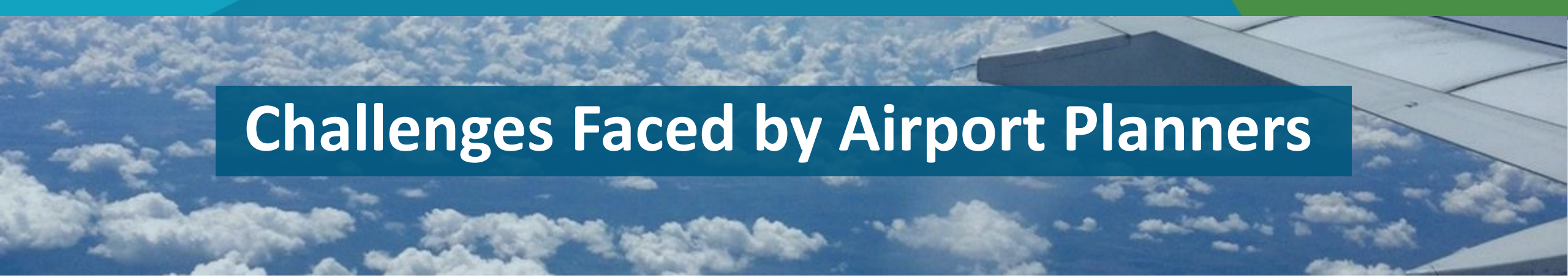

Challenges Faced by Airport Planners

- Land & space **constraints** – Urban encroachment
- Funding & economic **uncertainty** – Public-private investment balance
- Technological integration – Future-proofing and system compatibility
- Regulatory **complexity** – Navigating multi-level rules
- Stakeholder alignment – Airlines, governments, communities
- Passenger **expectations** – Seamless, efficient, comfortable journeys

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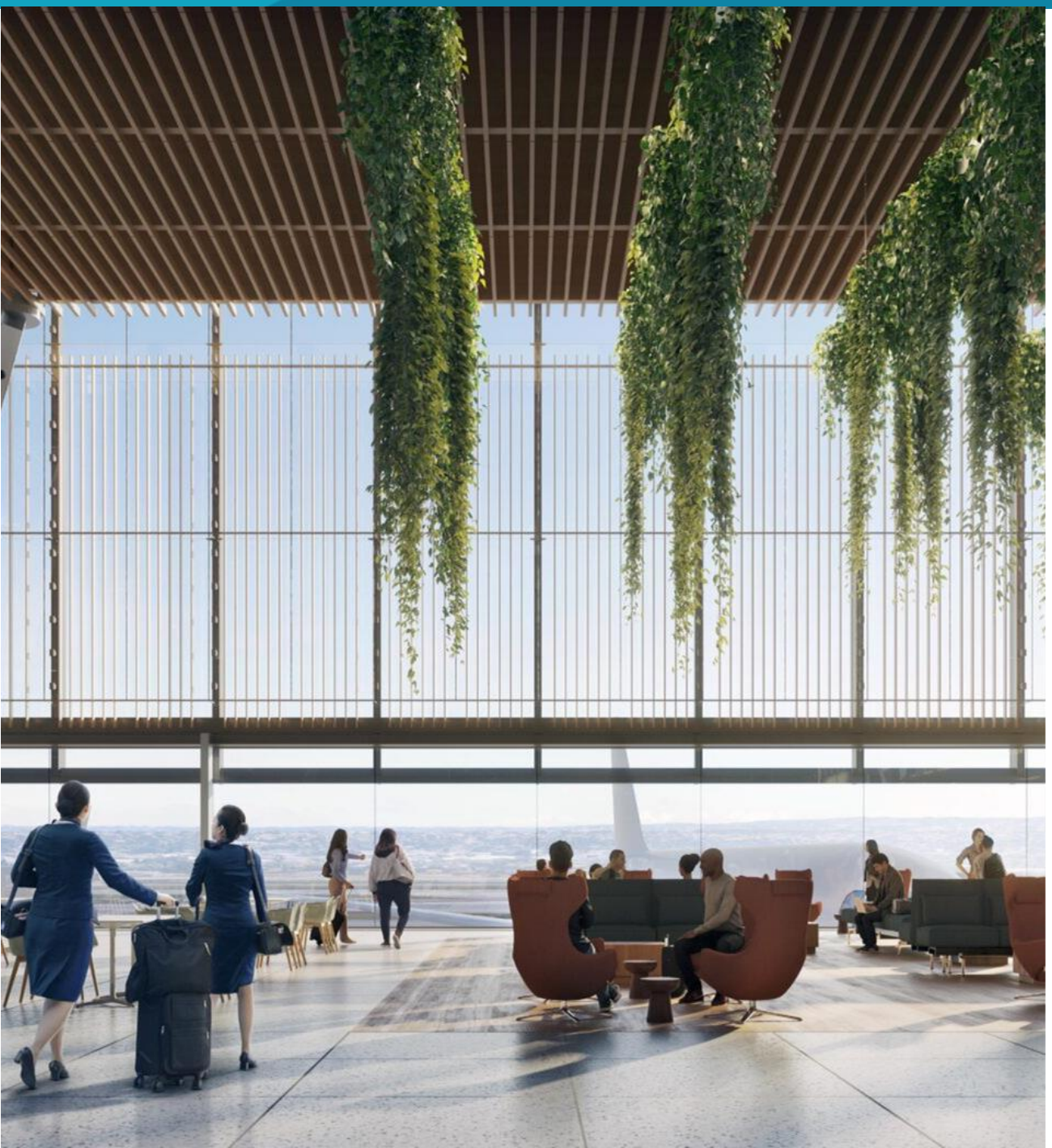

Strategic Directions for the Future

- Modular, flexible terminal designs
- Digital twin modeling for scenario planning
- Climate adaptation and green infrastructure
- Collaboration between aviation, rail, urban planning
- Data-driven decisions with AI and predictive analytics

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How Can Technology Impact Planning

Accelerates data-driven decision-making with AI and analytics

Enables real-time modeling and simulations

Enhances accuracy of demand forecasting and capacity planning

Integrates cross-platform data for holistic planning

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Technology's impact on planning processes

Emerging Technology Examples

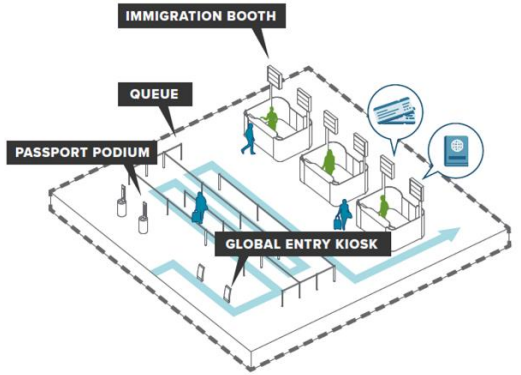
Automation and robotics

Biometrics and digital identity

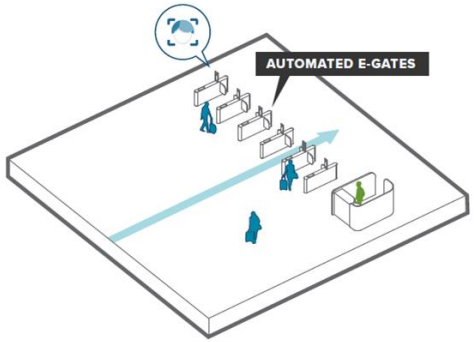
Virtual queues (QMS)

Evaluate and Mitigate the Impacts

- Understand upstream and downstream impacts to other facilities
- Design flexible spaces with blended boundaries
- Plan for robust IT systems to accommodate technology shift
- Coordinate with airlines, agencies, and other stakeholders



Old



New Way

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Stakeholder Engagement Through VR/3D Planning

- Immersive visualization for terminal and airside layouts
- Helps stakeholders experience designs before construction
- Improves communication and feedback during early stages
- Reduces costly design changes by enabling early issue detection

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Smart Airport Infrastructure

- IoT sensors for monitoring facilities, passenger flows, and security systems
- Predictive maintenance optimization for cost savings
- Autonomous vehicles for airside and landside operations
- Integrated energy management systems for sustainability and carbon reduction

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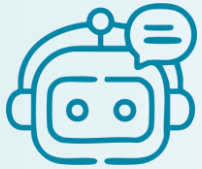
Enhancing CX with technology

Customer Experience
Seamless, intuitive interactions across all touchpoints

Passenger Experience
Real-time updates, frictionless security, personalized services

Employee Experience
Digital tools that improve workflow and reduce stress



Integration of AI chatbots, mobile self-service, and predictive analytics

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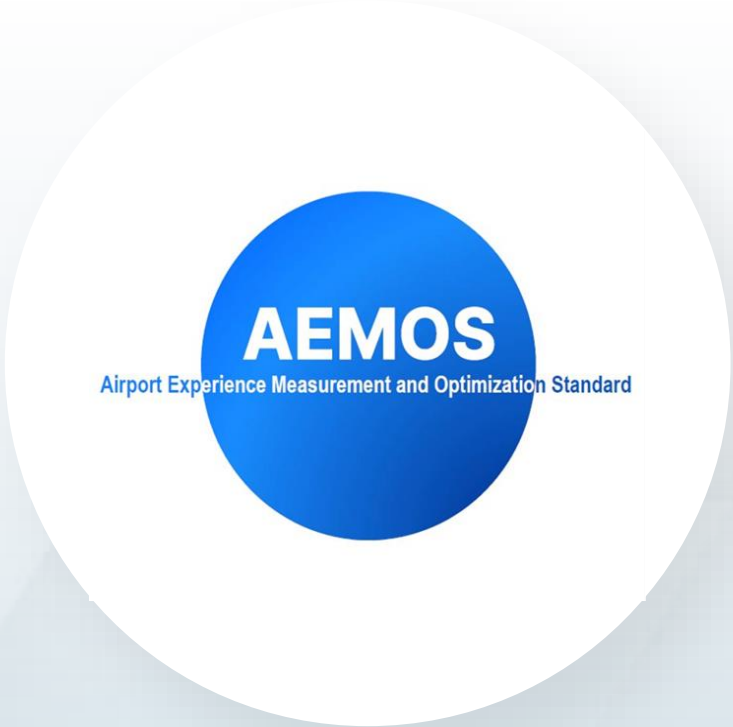
Real-World Use Case:
AEMOS and Collaboration in Action



What is AEMOS?

Airport Experience Measurement and Optimization Standard

- Emerged out of ACI-World Facilitation and Services Standing Committee (WFSSC)
  - **Passenger Processing Benchmark Task Force**
- Task Force led by Incheon Airport (ICN) and supported by Istanbul (IST) and Bangalore (BLR)
  - Members and alignment from airports across regions

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What problem does AEMOS help solve?

There are many airports worldwide, each of which has unique characteristics. While they are interested in learning from one another, they often lack comparable methods and data.

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What about planning resources like the *Airport Development Reference Manual* (ADRM)?

- Provides standardized global guidelines for airport planning and design
- Ensures compliance with ICAO standards and best practices
- Facilitates consistency across planning, design, and operations
- Helps align stakeholders on technical requirements and growth projections

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Real-World Use Case: AEMOS

AEMOS
Airport Experience Measurement and Optimization Standard

Airport Health Check

Develop Action Plan

- Optimize staffing
- Increase capacity
- Reduce wait times/queues

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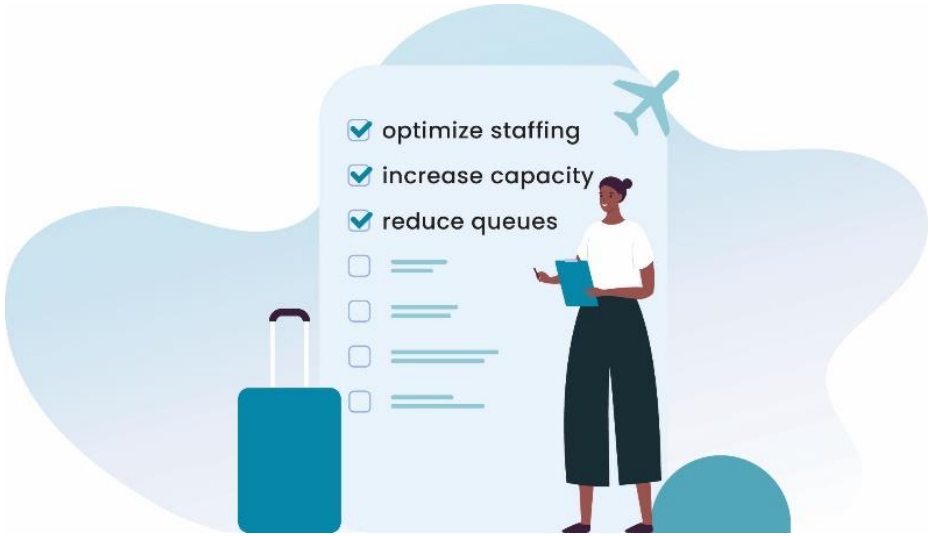
Airport Experience Measurement

Airport Health Check

Investigate wait times and resource operations across the entire airport on a specific day and present the investigation results as performance indicators.

Optimization



Action Plan

Optimization Plan is developed through analyses of different operational scenarios while Comparative reports can drive optimization on an industry-wide scale.

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Contents of AEMOS

AEM

AEMOS
Airport Experience Measurement and Optimization Standard

Optimization

Measurement Planning

Measurement Execution

Health Check Report

Simulation and optimal scenario search

	Non QMS*	QMS
Target Time Segment		
Target Touch Point		
Frequency of Measurement		
Target Date Selection	●	●
Measurement Hours	●	
Size of Passenger Sample	●	
Time Measurement Method	●	
Performance Indicator	●	●
Optimization Report	●	●

auto data collect

*QMS: Queuing Management Systems

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Benefits of the Methodology

Stimulate Stakeholder Cooperation

- Compare their performance with similarly sized airports → identify potential bottlenecks
- Support internal investment decision process
- Facilitate the stakeholder cooperation such as government relations

Enhancing Economic Value and Safety

- Quantify the opportunity cost of time for business and leisure
- Passenger processing facility investment optimization
- Decrease the queuing time at high congestion areas such as security check points → potential security risk

Continuous Collaboration Between Airports

- Share best practices for congestion mitigation measures using information platform
- Exchange of knowledge and experience among members
- Reduce security and health risks associated with extended wait times

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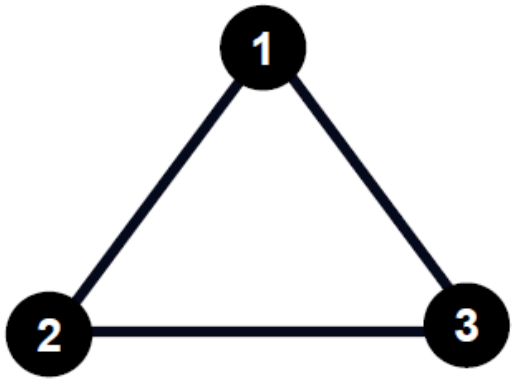
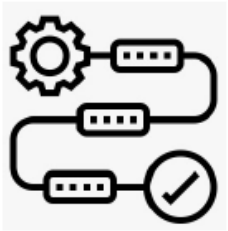
Objectives of Task Force

Standardized methodology development



Information exchange platform **Collaboration among members**

TF



Methodology Development

Methodology

Member airports

Measured time

- Measured time
- Best practices

ACI Information Platform

PI by touchpoint

Best practice

- PIs
- Best practices

Collaborations

Implement the improvements

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AEMOS Phase Goals

3 **Establish industry benchmarks**

Industry Average

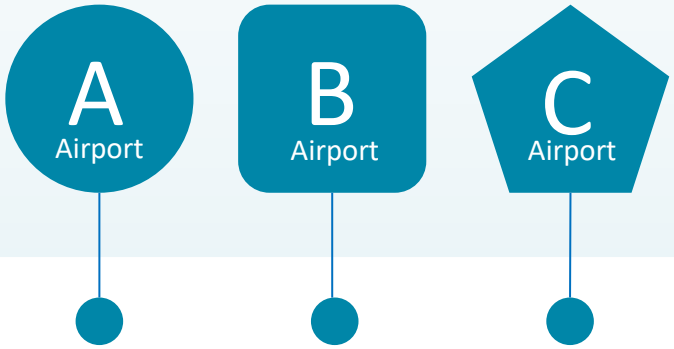
Standard

2 **Information exchange between airports (Comparative Report)**

Comparable to each other

Peer Group KPI

1 **Solve Airport's own problems**
Performance Indicator (KPI)
Optimization plan (Simulation)



KPI Optimization

Measurement

Wait time & Capacity

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This initiative can even support revisions to incredibly important ICAO annexes

Annex 9: Facilitation

60 minutes for departure, 45 min of disembarkation ➡ without consideration of airport size

Annex 17: Security

No mentioning about security checkpoint processing time

Can be revised based on real-world case of measured time

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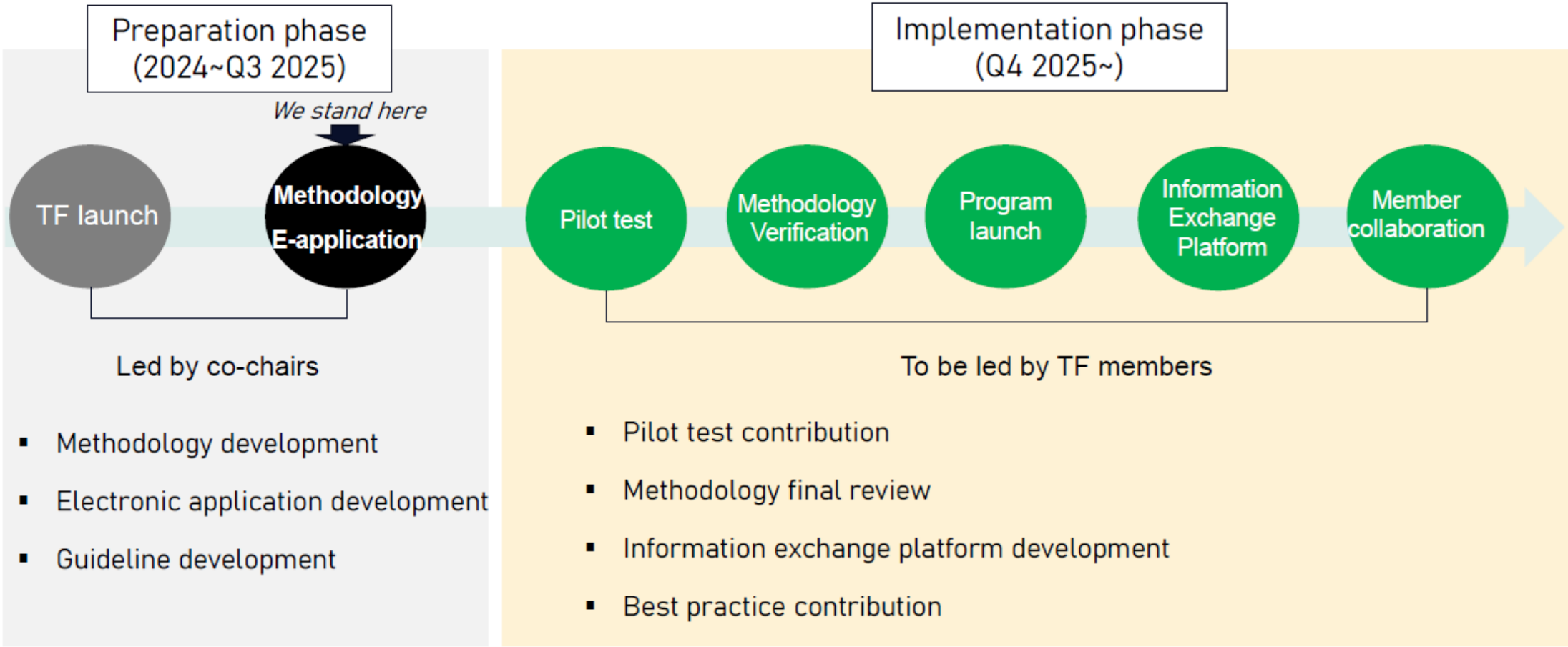
Where We Are


Preparation phase
(2024~Q3 2025)
Implementation phase
(Q4 2025~)
We stand here
TF launch
Methodology
E-application
Pilot test
Methodology
Verification
Program
launch
Information
Exchange
Platform
Member
collaboration
Led by co-chairs
To be led by TF members
Methodology development
Electronic application development
Guideline development
Pilot test contribution
Methodology final review
Information exchange platform development
Best practice contribution

Time Measured Pilot Test

- Pilot starts October 2025
- Both QMS and Non QMS airports can join the initiative
- Findings from the pilot test will become important feedback for the methodology for the final version
- Currently 11 airports have been registered
  - Incheon, Dubai, Istanbul, Narita, Bangkok, Ho Chi Minh, Jakarta, Bahrain, Bangalore, Montevideo and Barbados

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Want to participate and contribute?

Application Form

AEMOS Application Form

- This survey form is intended solely for the **pilot testing of AEMOS** and will be used exclusively for the purpose of refining the methodology and conducting internal testing within the task force (TF).
- The information provided herein is required for the development of a **template to be used by survey agents.**
- Upon completion of this form, **additional details** necessary for template creation **will be sent to the respondent(to email).**
- This pilot will focus on the **departure passenger touch-point**

Please provide your information *

e.g.)
name : Joseph Park
organization : Incheon International airport corporation
departement : Terminal Operation
position : 000 manager
email address : 0000@airport.kr

Airport Name & Code? *
e.g.) Incheon Airport, ICN

Target Terminal Name? *
e.g.) T1

Target Survey Year? *
- 2025
- 2026

Do you have a preferred target survey period? *
- Anytime during the year
- Summer season (From Last Sunday of March to Last Saturday of October)
- Winter season(From Last Sunday of October to Last Saturday of March)

Basic Information

- Airport Name (Code)
- Terminal Name
- Survey Year
- Terminal Category
  - Terminal Passenger Size
  - Terminal Transfer Ratio: OD/Hub
- Passenger Show-up Time
- Touch-Point & Service-Point
- Service-Point Mapping

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Calls to Action

- Data sharing is essential to designing better facilities, services, and experiences at airports
- AEMOS and the methodology developed by ICN in partnership with the TF is laying the foundation on which airport planners and operators can build.
- Get in touch if your airport is interested in participating in the TF pilot testing

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THANK YOU

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