AIRPORTS COUNCIL INTERNATIONAL

AIRPORTS COUNCIL INTERNATIONAL

Total Airport Management

JOINT POSITION PAPER

November 2026



Introduction: Why TAM – and why now?

Passenger demand is stronger than ever – ACI Asia-Pacific & Middle East noted that airports in Asia-Pacific handled about 3.6 billion passengers in 2025, adding more than 175 million passengers from 2024, more than all other regions. The Middle East airports handled an estimated 468 million passengers in 2025, adding over 28 million passengers on a year-on-year basis[1]. Similarly, ACI EUROPE noted that 2025 saw an additional 100 million passengers across Europe[2], setting a new absolute record of 2.6 billion passengers, and 66 all-time daily traffic records set in summer 2026 alone, according to EUROCONTROL figures[3].

What can airports do to unlock latent capacity and ensure demand is met today – whilst meeting increasingly high expectations for excellent passenger experience?

Total Airport Management (TAM) offers one potential solution, as a holistic approach to synchronising airport operations and key processes in order to improve predictability, flexibility and efficiency – as well as a shorter and smoother recovery to normal operations from disruptions. Yet, transforming operations is not a simple – or easy – undertaking.

This brief publication explores how airports from across ACI EUROPE and ACI Asia-Pacific & Middle East's memberships joined forces to explore the future of TAM and identify opportunities to strengthen cooperation on this important topic. Through the TAM Experience Exchange, this publication documents the key lessons learned, benefits gained, and what is needed to bring TAM to more airports globally.

Discover why TAM could benefit your own operations through the key challenges – and possible solutions – observed within this group of experts.

Setting the scene – Why Total Airport Management?

From siloed operations to integrated airport ecosystem management

Although the concept of TAM is not new, it is gaining renewed prominence today as the future of airport operations management. As mentioned previously, airports are entering an increasingly complex operating environment, prompting them to revisit how they operate.

[1] ACI World Annual World Airport Traffic Report, 2026
[2] 2025 all about traffic resilience as Europe's airports welcomed an additional 100 million passengers | ACI EUROPE PRESS RELEASE
[3] EUROCONTROL Special Summer 2026 Flash Briefing

Resolving this challenge requires more than optimising individual flows. An airport is not a collection of independent processes; it must be seen as an ecosystem, where only a holistic approach can deliver optimal operational, financial, and environmental performance. Airports must become the orchestrators of a network of stakeholders managing aircraft movements, passenger, baggage, and cargo flows, landside accessibility, and even airport cities.

This creates a fundamental shift in the airport's role. Airport operators are increasingly moving from control to collaborative coordination. Rather than simply managing its own processes, the airport operator is the only party that can take on the role of facilitator of the entire ecosystem. This is the context in which TAM is gaining renewed relevance.

What is Total Airport Management and how do you achieve it?

Total Airport Management represents a holistic approach to managing airport operations. Rather than optimising individual processes or organisations in isolation, it seeks to understand and manage the relationships between them.

At its core, TAM is about creating a shared understanding of the airport system and enabling stakeholders to make better, more coordinated decisions across organisational boundaries. It connects longer-term operational forecasting and planning, real-time decision-making, and continuous improvement based on post-operations performance review.

TAM therefore represents a shift:

- From siloed optimisation → to ecosystem optimisation
- From reactive response → to proactive decision-making
- From organisational objectives → to shared airport performance
- From managing today's operation → to anticipating tomorrow's challenges

While TAM holds an important technological component, implementing tools will not bring a magical solution. The growing availability of data, predictive analytics, automation, and digital tools creates significant opportunities for airport management. However, technology alone does not create collaboration or better decision-making.

Airport experience shows that successful TAM implementation depends primarily on the human and organisational dimensions: governance, trust, culture, roles and responsibilities, stakeholder engagement, and clearly defined objectives. A sophisticated technology platform is of limited value if stakeholders do not trust the data it provides. An advanced Airport Operations Centre cannot deliver its intended value if the right decision-

makers are not present or lack the authority to act – and a common operational picture does not necessarily lead to a common decision if stakeholders interpret priorities and objectives differently.

Because of this important human and organisational component, no single TAM model applies universally. Every airport operates within a unique ecosystem of stakeholders, infrastructure, processes, regulatory requirements, traffic patterns, organisational structures and local constraints. The objective of this position paper and the exchange, hence, is not to propose one standardised model. Instead, it explores the principles and shares lessons learned that can help airports develop their own path towards TAM.

What is the TAM Experience Exchange?

To address the challenges listed above, ACI EUROPE and ACI Asia-Pacific & Middle East joined forces to improve passenger experience and promote a shift from reactive to proactive airport management through the TAM Experience Exchange. The first edition of the TAM Experience Exchange ('the Exchange') took place on 29-30 September 2026 in Brussels, Belgium.

The Exchange brought together nearly 40 airport professionals from around 20 different airport operators to share experiences, discuss lessons learned, explore the future of TAM, strengthen cooperation on this important topic and seek collaborative support through peer reviews to increase operational resilience and enhance processing efficiency.

TAM is a concept initially developed in Europe as a SESAR 2020 research project[4]; thus, European airports were already able to realise significant improvements in predictability, efficiency and sustainability thanks to the implementation of TAM building blocks (e.g. Airport - Collaborative Decision Making, Airport Operations Plan, Airport Operations Centre, etc.) in a synchronised and coordinated manner driven by European Regulation and a dedicated supporting vehicle called the SESAR Deployment Manager[5]. Other regions such as Asia-Pacific and Middle East have witnessed these improvements and started or plan to embark on a similar journey. Motivating factors are different, however:

[4] Total Airport Management | EUROCONTROL

[5] The SESAR Deployment Manager (SDM), established end 2014 under the oversight of the European Commission, is responsible for the coordination of the implementation of the most essential SESAR operational improvements through the concept of Common Projects. A Common Project is an extraction from the European ATM Master Plan, based on mature SESAR Solutions to be deployed in a synchronised and timely manner across Europe, translated into European Law. Whilst the European ATM Master Plan is indicative, a Common Project binds the Member States of the European Union and their operational stakeholders. For more information you can visit the website: www.sesardeploymentmanager.eu

in Europe it is mainly capacity constraints, environmental limits, cost pressure, regulations & policies and resilience, while in Asia-Pacific and the Middle East, the main triggers are rapid traffic growth, unpredicted and extreme weather conditions, strong focus on passenger experience, government-driven smart airport programs and hub ambitions. They also share common challenges, including rising traffic that demands efficiency, data and technology maturity, sustainability targets, disruption risk, and a joint response to passengers' expectations of a seamless journey.

The exchange concluded that the regions need to strengthen cooperation on TAM and related topics to build shared standards, trust, and capability that individual airports cannot achieve on their own. More specifically, this cooperation is expected to bring various advantages: operational (shared definitions, roles, and Key Performance Indicators; faster problem solving), strategic (a stronger joint voice), technology and innovation (interoperable systems, faster adoption of what works), sustainability and resilience (aligned decarbonisation paths, crisis preparedness) and passenger benefits (consistent service quality and smoother journeys across regions and better connectivity between regions).

Key challenges observed and best practice solutions

As part of the 2-day program, different breakout sessions were organised to facilitate a structured exchange of experiences between the different airports on four key topics, selected based on their relevance to make TAM successful: Operational Framework, Stakeholder involvement, Safety and Security Management, and Data & Tools. This section reports the main outcomes of these four breakout sessions. Each group comprised joint teams of experts from all three regions and can therefore be considered the joint position of the ACI EUROPE, ACI Asia & Pacific, and Middle East communities.

The operational framework

1. Implementation based on the local context and lessons learned

Given the inherent human and cultural component of TAM, implementing TAM as a concept requires considering the unique settings and context of each individual airport. The operational framework should therefore address the range of key challenges each airport faces.
Moreover, upcoming implementations can learn from the common pitfalls observed by airports that have already progressed on the journey. Typical pitfalls identified during the exchange were:

- Starting with technology procurement before understanding the operational needs and decision processes
- Assuming that more data automatically leads to better decisions
- Treating TAM as a compliance product rather than an essential part of an operational way of working that brings value to the airport ecosystem
- Focusing only on runway or airside capacity and overlooking terminal, passenger, baggage, security, border, ground-handling, and landside constraints
- Creating indicators without agreed thresholds, ownership, or a defined response
- Delaying implementation until all systems and stakeholders are fully integrated
- Having no TAM ambassadors who really understand what needs to be done

2. Starting from a concrete operational challenge with partners

It is important to first identify the operational challenges that span different airport processes and build an operational framework to address them. Ensure that the problem statement is clearly understood, and root causes are identified to envision the future operating model.

With TAM focusing on the ecosystem, a critical success factor is stakeholder engagement and confidence: airports simply cannot do this on their own. Airports need to involve operational stakeholders from the start and build the case around the value for each partner in getting involved. Moreover, for any collaborative operational framework to succeed, stakeholders must trust that the information and data they share will be used appropriately. The common understanding should be that shared operational data exists to improve collective decision-making, achieve operational objectives, and enhance network performance. It should never be perceived as a mechanism for assigning blame. Only in this no-blame environment can trust be built, which is fundamental to establishing a culture of transparency and collaboration that allows crucial information and data to be shared and a decision-making model to succeed.

3. Building on the benefits

Another critical element to consider is the workforce and the related costs. While it is often perceived differently, introducing TAM does not necessarily mean increasing manpower needs. Instead, organisations can also focus on developing new competencies, enhancing digital literacy, and upskilling existing personnel – evolving the workforce rather than adding additional functions. Future airport operations will increasingly depend on staff who can interpret data, participate in collaborative decision-making processes, and contribute effectively within integrated operational environments. As such, investment in capability development may deliver greater benefits than simply increasing resource numbers.

TAM initiatives have traditionally been viewed as concepts designed to improve the efficiency of the wider airspace and aviation network; however, airports themselves could become the focal point of operational optimisation. Conventionally, TAM – and in particular A-CDM as a concept – was developed to improve predictability, reduce delays, and enhance coordination between airports and the air traffic management network, ultimately benefiting overall airspace performance. However, as airports become increasingly complex and capacity-constrained, the same collaborative principles can be applied inwardly to optimise airport operations themselves: instead of viewing the airport as merely one node supporting the wider network, the airport can be treated as an integrated operational ecosystem where stakeholders collaborate to optimise gate utilisation, turnaround performance, passenger flows, landside operations, security processing, baggage handling, and resource allocation. These airport-level benefits can then naturally cascade to the wider network.

This shift in perspective is particularly relevant as airports face increasing pressure to accommodate traffic growth without proportional infrastructure expansion. By applying TAM principles within the airport environment, stakeholders can make better-informed decisions based on a common operational picture, improve the utilisation of existing assets, and increase overall operational resilience.

Conclusion

In summary, the operational framework for TAM should encourage collaboration, optimise resource utilisation, support future growth, build stakeholder trust, and focus on workforce capability enhancement. These principles provide the foundation for successful implementation across the aviation ecosystem – but only if a clear problem statement is defined.

Stakeholder involvement

The main objective of TAM is to create a shared operational picture that supports collaborative decision-making, with the primary goal of ensuring seamless, coordinated airport flows. This naturally requires a wide range of stakeholders to be involved (though this will vary from airport to airport and trigger the need for a tailored approach).

1. Partnerships enable TAM

The success of TAM is contingent upon the involvement of key ecosystem partners, and yet, stakeholder engagement remains one of the biggest challenges when it comes to TAM implementation. Airports often face difficulties securing commitment from airlines, ANSPs, government agencies, and other operational partners, particularly when priorities or commercial interests differ. Stakeholder interests and organisational power directly affect TAM feasibility. Key questions listed include:

- How to identify which stakeholders should be involved and at what level for an individual airport, as it is clear that there is no single stakeholder-engagement model – with the regulatory environment, airport size, ownership structure and local culture greatly influencing the best collaborative set-up
- How to engage government agencies, who can significantly influence airport performance but may be reluctant to commit to common service levels
- How to manage competing priorities such as passenger experience, capacity, cost, commercial interests, and compliance holistically
- How to sustain long-term stakeholder commitment and overcome resistance to change

2. Dynamic stakeholder involvement

Determine the level of stakeholder participation based on operational relevance and impact. Not all stakeholders need full engagement, though involvement should not be binary (in or out) but rather, dynamic: involvement can vary according to operational needs, traffic peaks, seasonality, or disruption levels.

Stakeholder mapping is a suggested way of working to determine the optimum collaboration mix, prioritising stakeholders with clear and imminent impact on capacity and seamless flows. Regular revision is recommended, as each stakeholder's impact evolves with changes in operational conditions. Mutual understanding of the motivation of various stakeholders is essential to manage and merge diverging interests and priorities. Governance frameworks, clear roles, and – where necessary – regulatory

mandates can support stakeholder participation. However, compliance alone does not create genuine collaboration; trust and shared objectives remain essential.

Different engagement models and formats may include formal committees or regulatory mandates to enable more structured coordination mechanisms, for example: daily operational briefings, weekly post-OPS review meetings, and strategic quarterly TAM Councils. Formal mechanisms such as Memorandum of Understanding (MoU), APOC charters, and data-sharing agreements can provide structure: long-term collaboration ultimately relies on transparency, relationships, and mutual confidence, built through effective collaboration rather than simply physical presence within an APOC.

Though the APOC serves the primary function of an operational coordination centre, it is also an organisational environment for collaboration, where day-to-day interactions and engagements between different stakeholders take place to facilitate higher collaboration. Informal workplace interactions and day-to-day cooperation are key elements of successful stakeholder engagement. The APOC therefore functions not only as an operational coordination centre, but also as a social and organisational environment for collaboration.

Authorities and regulators should be treated as strategic partners. Airports can strengthen engagement by sharing relevant operational information, demonstrating mutual benefits, and building relationships over time.

3. **Demonstrated value as the trigger, disruption as accelerator**

Stakeholders remain engaged when they clearly see operational benefits. Demonstrating improvements in efficiency, resilience, and decision-making helps overcome resistance and encourages participation. Moreover, major disruptions often demonstrate the value of collaborative decision-making. Stakeholders who experience the benefits of shared situational awareness and coordinated actions under disruptions are more likely to support TAM initiatives in the future.

Conclusion

Stakeholder engagement is the cornerstone of successful TAM implementation. While technology, governance, and operational processes are important, success ultimately depends on trust, relationships, leadership, and a shared commitment to airport-wide performance. Airports should therefore adopt structured stakeholder engagement and a deliberate change-management approach that combines clear governance, open information sharing, and flexible participation models adapted to local circumstances – rather than treating stakeholder participation as a technical implementation requirement. This will create a more resilient, collaborative, and passenger-focused airport ecosystem.

Safety and Security Management

1. TAM: not a threat, but a means to enhance safety and security performance

Safety and security must remain fundamental considerations throughout the development and implementation of any TAM initiative. While TAM aims to improve operational efficiency and optimise airport performance, efficiency gains should never come at the expense of safety or security outcomes. Instead, collaborative operational concepts should be viewed as enablers that can enhance safety and security performance through improved situational awareness, information sharing, and coordinated decision-making.

Airports' evolution towards TAM (and from reactive to proactive airport management) is driven by operational needs and the context in which they operate. However, in some regions there is also a regulatory framework that triggers focus on TAM. In Europe, for instance, there is an Implementing Regulation[6] that mandates large and very large airports (31 airports in total) to implement TAM initiatives to support the overall enhancement of the wider European airspace network. Within the same region, EASA acceptable means of compliance and guidance material (AMC/GM) further drives this evolution, supported by ACI EUROPE guidance material and SESAR solutions.

However, even when there is no regulatory framework directly leading towards TAM, implementation can affect the airport's certified management systems and might therefore be subject to regulatory oversight. Relevant EASA and ICAO aerodrome requirements include:

- **Management of Change** requiring assessment and approval of significant changes
- **Safety assessments** coordinated with affected stakeholders
- Demonstration of compliance through testing, documentation, inspections, and evidence
- Implementation of an **Information Security Management System (ISMS)**

2. An implementation framework beyond regulations

The impact of TAM on the ways of working requires a thorough safety assessment and risk evaluation process to safeguard compliance, safety, and security. Improvements in operational efficiency may influence established safety and security processes. Changes to turnaround times, sequencing procedures, resource allocation, or passenger flows can create unintended consequences if not properly evaluated.

[6] The **Common Project One** is established under **Commission Implementing Regulation (EU) 2021/116** to support the implementation of the European Air Traffic Management Master Plan.

Whenever significant operational processes, technologies, organisational responsibilities, or decision-making structures are introduced, a structured change management process becomes essential. This ensures that potential risks are identified, assessed, mitigated, and monitored before implementation.

Integrating multiple operational stakeholders within a TAM environment naturally increases complexity. Effective integration requires clearly defined roles, responsibilities, communication pathways, and escalation procedures. Without these safeguards, the intended benefits of collaboration may inadvertently introduce operational vulnerabilities.

Existing Safety Management Systems (SMS) already contain robust Change Management principles that provide a practical foundation for TAM implementation. By leveraging established SMS methodologies, organisations can avoid duplication of efforts while ensuring consistency with internationally recognised safety practices. Additionally, stakeholder participation mechanisms already embedded within SMS processes can support collaborative risk management activities.

3. Importance of Safety and (Information) Security Management

Regulatory compliance should be perceived as good business practice rather than an administrative burden. Successful TAM deployment requires:

- Structured management of change, as early as the initiation of implementation
- Safety (or safety-support) assessments to identify direct or indirect operational risks
- Security and information security assessments
- Early engagement with the Competent and Supervisory authorities

Conclusion

The implementation of TAM and its elements not only requires technological and operational integration but also strong safety, (information) security, compliance, and change management processes. Successful integration of these focus points depends on early onboarding in the implementation project (from initiation, not just before handover to operational use), broad stakeholder collaboration, robust governance, regulatory engagement, and a risk-based approach that enables innovation while maintaining aviation safety and (information) security.

Data and tools

1. Data as the fuel for TAM

On top of human and organisational components, tools are relevant enablers for TAM – and data exchange is the fuel that keeps the TAM engine running. Data sharing creates mutual benefits for all airport stakeholders. Each stakeholder can contribute valuable information while benefitting from access to relevant data, ultimately supporting smoother and more efficient airport operations. Improved access to information enables stakeholders to plan their operations and resource allocation more effectively, and supports predictive analysis and proactive decision making. Potential benefits may include improved gate and stand allocation, more efficient deployment of ground handling resources, and better on-time performance, to name a few. Moreover, data sharing fosters trust and collaboration across the airport ecosystem – provided that clear rules and responsibilities are in place.

2. Need for structured approach

While data sharing is often beneficial, integrated data sharing brings technical complexities and requires clear data governance. A structured approach is required to determine what data should be shared, for what purpose, and with which stakeholders. A common framework – for example, through a Memorandum of Understanding – can help to align stakeholders around shared objectives and principles, such as enhancing operational efficiency, increasing capacity, and improving the passenger experience.

The scope and level of data sharing should be driven by clearly defined business needs and the operational value of the exchanged information, rather than by aiming for an equal amount of data sharing among stakeholders. Airports can play a coordinating role by facilitating the dissemination of relevant operational information such as flight information to airlines, ground handlers, government agencies, and other stakeholders.

3. Convincing stakeholders to share data

Mindful that some data and information may be sensitive or create competition-related concerns, the data sharing structure should clearly define the level of access for each stakeholder. Different levels of data access should be established based on roles, responsibilities, and business needs. Data flows should be clearly mapped, including how information is exchanged between stakeholders and systems. A clear data governance framework should define responsibilities, access rights, ownership, and rules for the use and sharing of data.

Sustainable data sharing requires active stakeholder engagement and a sufficient level of trust among the parties involved. Successful data sharing is not primarily a question of

technology and platforms, but also of mindset, organisational culture, collaboration and trust. Some stakeholders with strong commercial interests, competitive considerations or confidentiality requirements may be reluctant to share data. To break down such silos, a pragmatic approach may be to start with a small number of stakeholders, first focusing on clearly defined use cases with measurable operational benefits. Demonstrating operational benefits can help build confidence and encourage further stakeholders who are not yet in the data sharing community.

Regulatory frameworks can facilitate data sharing, particularly where stakeholders may otherwise have limited incentives to make certain information available. However, regulators should primarily act as an enabler for effective data sharing rather than being a prerequisite for cooperation.

4. Architecture, platforms, and solutions

A suitable technical setup is required to support efficient and scalable data sharing between stakeholders. While off-the-shelf solutions are available, airports should consider the potential risks related to vendor dependency, interoperability, flexibility, and long-term service continuity. Off-the-shelf products can provide a starting point, but airport-specific configuration and integration remains necessary. Joint development and continuous improvement can also contribute to stronger stakeholder involvement, ownership, and collaboration. The choice of platforms and architecture should therefore be driven by business needs, scalability, interoperability, security, and long-term sustainability rather than by a specific technology or sourcing model.

5. End user involvement

Operational users should be involved from early development through workshops, prototyping, direct observation, testing, and iterative development. Close collaboration between operational stakeholders and IT teams helps ensure a common understanding of business needs, operational constraints, and technical limitations. Prototyping and iterative validation can help address usability, technical feasibility, operational impact, and change-management requirements before deployment. A user-centred approach can also strengthen user acceptance, ownership, and adoption of new data-sharing solutions.

Conclusion

Tools and their underlying data are critical enablers to TAM, unlocking the value of data. However, this requires a structured approach with stakeholders that could be formalised in a framework such as a Memorandum of Understanding, fostering the foundations for a trustworthy environment through data governance. Effective data sharing should be driven primarily by clear use cases and tangible stakeholder benefits, with regulatory frameworks playing a supporting role in enabling cooperation where incentives are limited.

Once data is available, the selection and implementation of tools should be driven by business needs and desired technological capabilities rather than by specific technologies. A clear architectural framework should be established, enabling a phased, user-centred approach in which tools and platforms are selected and implemented incrementally to scale the overall solution toward the desired end stage.

Conclusion & key takeaways

Total Airport Management is an airport-wide operating philosophy. It is not a checklist of systems or isolated improvement projects; rather, it helps airport partners manage the airport as one interconnected operational system and understand how decisions in one process affect other processes.

Its success depends on stakeholder collaboration that maintains strong safety and security governance, while ensuring that operational improvements contribute positively to overall system resilience and risk management performance.

Given its complexity and the ongoing evolution of the TAM concept, ACI EUROPE and ACI Asia-Pacific & Middle East will continue to support dialogue and exchanges among airports. Both organisations will jointly develop a TAM Guidebook by 2028, including a best-practice approach to managing the organisational and operational change associated with TAM implementation, and clear examples of TAM initiatives implemented at different airports.

The TAM Experience Exchange will become a recurring forum for collaboration among Europe, Asia-Pacific and the Middle East, providing airports with a neutral platform to advance and harmonise Total Airport Management.

Airports Council International Asia-Pacific & Middle East (ACI APAC & MID) is the voice of airports across Asia-Pacific and the Middle East, representing over 600 airport members in 40+ countries. Headquartered in Hong Kong, with a sub-regional office in Riyadh, Saudi Arabia, ACI APAC & MID works with airports, governments, regulators and industry partners to shape policies, strengthen airport capabilities, and advance sustainable aviation. Through its advocacy, thought leadership and capacity-building programmes, the organisation is committed to putting Asia-Pacific and Middle East airports at the forefront of global aviation by promoting environmental, social and economic development.
www.aci-asiapac.aero

ACI EUROPE is the European region of Airports Council International (ACI), the only worldwide professional association of airport operators. ACI EUROPE represents over **600 airports** in **55 European countries**. Our members facilitate over **95% of commercial air traffic** in Europe. Air transport supports **14 million jobs**, generating **€851 billion** in European economic activity (**5% of GDP**). In response to the Climate Emergency, in June 2019 our members committed to achieving Net Zero carbon emissions for operations under their control by 2050, without offsetting.
www.aci-europe.org

Contacts:

Mr. Philip KWOK
Senior Manager, Economics
ACI Asia-Pacific & Middle East
philip@aci-asiapac.aero

Ms. Badriyah Noordin
Senior Manager, Safety
ACI Asia-Pacific & Middle East
badriyah@aci-asiapac.aero

Barbora Smolikova
Airports Liaison Officer to SDM
ACI EUROPE
barbora.smolikova@aci-europe.org

Launched at **ACI Airports Innovate 2026**
Barcelona, Spain, 24 November 2026

