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AGENDA ITEM 5: AVIATION SECURITY AND FACILITATION

OPERATIONAL CHALLENGES IN AIRPORT SECURITY AMID RAPID TRAFFIC GROWTH

Presented by Airports Council International (ACI)

INFORMATION PAPER

SUMMARY

Asia-Pacific is expected to see strong passenger traffic growth over the coming decades. This growth will inevitably place increasing pressure on airports, particularly in relation to security operations.

This paper highlights several key security-related operational challenges commonly observed at airports across Asia-Pacific amid rapid traffic growth. States and administrations are encouraged to work closely with airport operators and provide appropriate support to address these challenges in support of the continued aviation development across the region.

OPERATIONAL CHALLENGES IN AIRPORT SECURITY AMID RAPID TRAFFIC GROWTH

1. INTRODUCTION

1.1 Global passenger traffic is expected to grow at a 3% compound annual growth rate (CAGR) through to 2054[1], reaching 23.2 billion total passengers. Asia-Pacific (APAC) is forecasted to grow at a faster pace at 3.6%, and account for about 43% of global traffic by 2054.

1.2 However, this sustained growth will place increasing pressure on airports, particularly on security operations. Many airports across the Asia-Pacific region are already operating under capacity constraints, where demand continues to outpace operational capacity.

1.3 To better understand the key security-related operational challenges and priorities facing APAC airports, ACI has been working closely with its members to monitor regional developments in airport security.

1.4 Although Asia-Pacific is highly diverse and security conditions vary considerably across countries, the ACI's Regional Aviation Security Committee (RASC)[2] has, drawing on its latest study, identified four major operational challenges in security that are common among APAC airports:

- Addressing evolving security threats;
- Advanced technology adoption for smaller airports;
- Screener recruitment and training; and
- Infrastructure design limitations

1.5 ACI would also encourage States/Administrations to work closely with the airports and provide appropriate support to address these four challenges, which are further elaborated in the subsequent sections of this paper.

2. ADDRESSING EVOLVING SECURITY THREATS

2.1 Threat landscape today largely differs from that of the 1980s and 1990s, when acts of unlawful interference were mostly limited to aircraft hijackings or sabotage using explosives and firearms. Over time, perpetrators have continuously altered their tactics to exploit the industry's weak points, resulting in a far more complex risk environment.

2.2 In regional context, data published by ACI consistently highlights that some emerging security threats are particularly challenging for airports to protect against and mitigate. These include cyber-attacks, drone attacks, insider threats and landside attacks.

2.3 Recent ACI survey[3] results show that some of these newer concerns are no longer merely hypothetical for the region. For example, nearly half of the respondent airports reported previous attempts of cyber-attacks against their systems, and a portion of which led to operational disruptions to a certain extent. Likewise, the number of unauthorized drone intrusions at airports has increased over the years[4]. Of those incidents, nearly one in five led to partial suspension of operations.

2.4 It is widely expected that these threats will continue to evolve, increasing in

1 ACI World Airport Traffic Forecasts 2025-2054
2 The committee is a technical group comprised of 46 airport operator members in the region
3 A survey conducted by ACI in Apr 2026 includes a sample size of 37 airport operators in APAC region
4 A survey conducted by ACI in Apr 2025 includes a sample size of 31 airport operators in the APAC region

sophistication and frequency. This underscores the need for airports to proactively strengthen preparedness and resilience going forward.

3. ADVANCED TECHNOLOGY ADOPTION FOR SMALLER AIRPORTS

3.1 Airports in Asia-Pacific have continued to invest heavily in passenger screening technologies to improve operational effectiveness and efficiency. For example, Singapore Changi Airport and South Korea Jeju Airport were among the first in the world to upgrade their security checkpoints by deploying advanced Computed Tomography (CT) machine for cabin baggage, alongside body scanners.

3.2 According to a study by ACI[5], the number of CT machines and body scanners expected to be deployed by 2028 at major international airports in the region will increase by 112% and 71% respectively.

3.3 However, this rapid technological adoption is predominantly concentrated in the well-resourced airports only. Many smaller airports, especially those in less developed countries, continue to face major barriers to adoption. Cost is the primary challenge, as a single CT machine can cost up to 10 times more than a conventional X-ray system. Besides, adoption is further limited by infrastructure constraints, since many existing terminals lack the required floor space and floor-load capacity to accommodate these heavier and bulkier machines.

3.4 In response to this, ACI over the years has been putting more effort in helping the less-resourced airports upkeep equivalent security outcomes without relying solely on the deployment of technologies.

4. SCREENER RECRUITMENT AND TRAINING

4.1 Despite advances in screening technology, human expertise remains fundamental to airport security. The emphasis on people and the need to develop human factors is underlined as one of the key global strategic priorities in the ICAO Global Aviation Security Plan (GASeP). However, from an operational workforce perspective, two challenges are commonly observed across the APAC region at the moment.

4.2 First, although passenger traffic has largely recovered from the pandemic, screener levels have not yet caught up at many airports. Another ACI regional survey[6] found that around two-thirds of respondent airports still report a shortage of frontline screeners, with shortfalls ranging from approximately 5% to 20%.

4.3 Second, airports need to ensure that screeners' competency keeps pace with ongoing technology upgrades. When transitioning to more sophisticated systems, frontline screeners will have to adapt to more advanced skill sets, such as interpreting three-dimensional and multi-layered images with greater precision. These requirements in general create a much higher level of operational complexity than conventional machines.

5. INFRASTRUCTURE DESIGN LIMITATIONS

5.1 In view of the growing traffic, an increasing number of airports in Asia-Pacific are facing space and capacity constraints that limit their ability to expand or upgrade their security infrastructure. In addition, some traditional airport layouts and designs may no longer keep up with the changing security requirements. For example, older terminal frontage layouts are often not designed for effective landside protection and hostile vehicle mitigation. Similarly, some terminal designs do not accommodate One-stop Security due to a lack of physical segregation between departing and arriving passengers. This limitation hinders implementation of a practice that could greatly benefit transfer passengers, particularly at major hub airports.

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5 A study conducted by ACI in Nov 2025 includes a sample size of 39 capital airports in the APAC region
6 A survey conducted by ACI in Apr 2026 includes a sample size of 37 airport operators in the APAC region

5.2 With more airports being planned, built or expanded across the region, a security-by-design approach is becoming increasingly crucial. Integrating security requirements into initial architectural planning phases helps airports improve long-term operational efficiency and avoid costly retrofitting.

5.3 As highlighted in action item (60/28) of the last DGCA in Sendai, it is vital for States to collaborate with airports and relevant stakeholders to ensure security considerations are adequately integrated into the upfront design of new airports and the refurbishment of existing airport infrastructure.

6. ACTION BY THE CONFERENCE

6.1 The Conference is invited to note the information contained in this Paper.

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