59th CONFERENCE OF DIRECTORS GENERAL OF CIVIL AVIATION ASIA AND PACIFIC REGIONS

Cebu, Philippines
14 to 18 October 2024

AGENDA ITEM 5: AVIATION SECURITY AND FACILITATION

INCREASING IMPORTANCE OF SECURITY BY DESIGN FOR AIRPORTS

(Presented by Airports Council International)

INFORMATION PAPER

SUMMARY

Global passenger traffic is expected to double over the next 20 years and significant investment in airport infrastructure will be needed to cope with the increase, especially for Asia-Pacific. A number of new airport expansion projects in the region are already under, or soon to commence, construction.

In view of this anticipated growth, the concept of security-by-design has become ever more important. This paper will highlight some common airport design-related challenges in security and reiterate how important it is for States to ensure security considerations are adequately addressed as early as in the design phrase of any new airport infrastructure. The paper will also highlight ACI's recent initiatives in promoting security-by-design in the region.

INCREASING IMPORTANCE OF SECURITY BY DESIGN FOR AIRPORTS

1. INTRODUCTION

1.1 Global passenger traffic is expected to double over the next 20 years and Asia-Pacific is anticipated to be the fastest growing market among all other regions.

1.2 With the expected growth in passenger traffic, significant investments in airport infrastructure are needed to cope with the traffic increase, especially for airports in the Asia-Pacific region. Based on a study conducted by ACI, over half of the forecasted capital expenditure needed in the next two decades on airport infrastructure developments will come from countries in Asia-Pacific, nearing to about US 1.3 trillion dollar[1], which is more than all the other regions combined.

1.3 A number of new airports in Asia-Pacific are already well under construction, such as Noida International Airport in India, U-Tapao International Airport in Thailand, Western Sydney International Airport in Australia and Long Thanh International Airport in Vietnam. Besides, there are many more airport expansion projects in the region that are soon going to start construction in the next few years.

1.4 In view of this, ACI believes that it is timely to highlight the concept of security-by-design and reiterate how important it is for airports if aviation security considerations can be taken into account as early as in the design and drawing phase of the projects before the start of construction. If the design is made right at the first place, it could significantly help airports improve effectiveness and efficiency in daily operations and aviation security.

2. DISCUSSION

OPERATIONAL CHALLENGES RELATED TO AIRPORT DESIGN

2.1 Security-by-design is a concept that refers to the integration of security concerns into design and planning process of new airport infrastructure. The importance of the concept has well been recognised by ICAO through Annex 17 Standard 3.2.4, which requires Members States to ensure that airport design requirements for security measures are integrated into the design and construction of new facilities and alterations to existing facilities at airports.

2.2 However, in practice, aviation security elements are often not comprehensively considered and integrated at the early stage in airport master planning. In some rare cases, security experts are not even consulted in the design and planning stage, causing security requirements to be neglected or outweighed by other considerations.

2.3 Currently, more and more airports in Asia-Pacific are facing difficulties to upkeep security operations due to the limitation of physical infrastructure, many of which were first designed and constructed in the 1970s and 1980s. A lot of airports in the region have reached or will soon be reaching capacity limit, especially the passenger and staff security checkpoints. The constraint in physical capacity and space could significantly hinder airports' ability to expand or upgrade their screening equipment and systems.

2.4 Moreover, the traditional airport layout and design may no longer keep up with the rapid industry evolvement, such as the evolvement in technology, threat and risk landscape, passenger expectation and more. For example, the old design of terminal frontage area is not catered for the growing need for landside protection or hostile vehicle mitigation. Another example is that certain terminal design does not support the implementation of One-stop Security due to the mixing of

[1] ACI Global Outlook of Airport Capital Expenditure (June 2021)

departing and arriving passengers without extensive infrastructural modifications.

ACI'S INITIATIVES IN PROMOTING SECURITY-BY-DESIGN

2.5 With the expected growth in airport infrastructure development, it is critical for States to work together with the airports to ensure AVSEC elements to be adequately considered in design phase in order to minimize the operational challenges highlighted in the previous section.

2.6 The ACI Asia-Pacific & Middle East Regional Aviation Security Committee[2] is working on developing simple guidance by compiling the key AVSEC considerations in relation to airport design. The aim is to provide airport security managers, especially those in the developing countries, a reference on what should be considered when they are consulted by their design and planning team for any upcoming infrastructure projects.

2.7 Despite the fact that the drafting work is still ongoing, some major design considerations by each critical security area of airport are listed in the table below in bullet format. ACI is willing to share the document via the ICAO APAC Regional Aviation Security Coordination Forum (RASCF) once it is finalized.

<u>High-level principles (applicable across all critical security areas)</u>

- Risk assessment
- Long-term capacity
- Technology integration
- Balance of security & facilitation
- Regulatory compliance requirements
- Flexibility & resilience
- Human factors & ergonomics
- Budget
- Cybersecurity
- Requirements by relevant stakeholders

Critical security area	Considerations
Passenger security checkpoint	• Centralized or decentralized checkpoint • Space • Technology integration (e.g. CT, body scanner, ATRS) • Requirements for passengers with special needs
Hold baggage screening system	• Levels of security (e.g. 5 levels or 4 levels) • Resolution procedures for suspicious bags • Availability of separate search room • Oversize baggage screening procedure • Remote screening facilities for tight connection • Offsite screening
Staff security checkpoint	• Space • Numbers and location of the checkpoint • Staff screening requirements • Identity verification requirements • Technology integration
Airport perimeter	• Double fencing requirements • Lighting • Technology integration (e.g. PIDS) • Natural surveillance

[2] The committee is a technical group comprised of security experts from airport operators in the region.

	• Exclusion zone • Emergency gate location • Patrol road design
Front-of-house/terminal frontage	• Stand-off distance • Road access for different modes of transport • Drop-off, pick up & parking location • Hostile vehicle mitigation (e.g. bollard, chicanes) • Lighting, surveillance & CCTV • Landscaping
Terminal building	• Blast protection • Passenger flow design & management • Access & egress (e.g. evacuation routes) • Lighting, surveillance & CCTV • Public viewing area (e.g. terrace) • Minimization of hiding spots
Cargo facility	• Separation of in-& out-bound cargo • Space for screening equipment • Demarcation of zones (e.g. staging area for screened cargo) • Ergonomics • Areas for canine screening
Airside access point	• Minimization of airport access points • Adequate space for staff & vehicle screening • Hostile vehicle mitigation • Lighting, surveillance & CCTV • Road design • Advanced access control system integration

3. ACTION BY THE CONFERENCE

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

— END —