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EXECUTIVE COMMITTEE

Agenda Item 13: Aviation Security – Policy

STRENGTHENING AVIATION SECURITY EQUIPMENT TESTING AND CERTIFICATION PROCESSES

(Presented by Airports Council International (ACI), and co-sponsored by Brazil, Jordan and the United Arab Emirates)

EXECUTIVE SUMMARY

The evolution of aviation security threats and screening technologies requires a more harmonized, efficient, and globally coordinated approach to the testing and certification of security equipment. Advanced systems such as Computed Tomography (CT), Security Scanners (SSc), Explosive Trace Detection (ETD) and Liquid Explosive Detection Systems (LEDS) have significantly improved threat detection capabilities. However, the certification process underpinning some of these technologies has not kept pace, slowing their deployment for security outcomes and operational efficiency.

Airports have made substantial investments in next-generation equipment, driven by promises of improved detection, operational efficiency, and a better passenger experience. In the UK alone, the mandate of CT technology was funded by airports at cost of over 5 billion USD in overall investment. Yet, in many cases, these benefits have not materialized due to fragmented and duplicative certification frameworks. Whereas the European Civil Aviation Conference (ECAC) has achieved some regional alignment, global mutual recognition or sharing of testing results remains limited. Certification remains with national authorities but is based on ECAC or TSA standards, resulting in capacity bottlenecks and extended timelines for approval. This lack of global coordination creates inefficiencies, drives up equipment costs, and undermines airport confidence in the return on investment. In some cases, airports have borne the costs of deploying advanced technology only to see its functionality restricted.

To address these challenges, ICAO and its Member States should promote the facilitation of bilateral and multilateral agreements for mutual recognition of security equipment certification. This includes supporting multi-stakeholder coordination to improve transparency, streamline testing methodologies, and incorporate operational perspectives from airports–while remaining cognizant of sensitive security testing and certification procedural confidentiality.

[1] English, Arabic, Chinese, French, Russian and Spanish versions provided by ACI

Action: The Assembly is invited to: a) Request that ICAO encourages its Member States and relevant international organizations to pursue strengthened cooperation through bilateral and multilateral arrangements to improve information sharing mechanisms, and testing and certification capabilities for security equipment, addressing the evolving global aviation security threat picture. b) Adopt the amendments to Resolution A41-18: "*Consolidated statement on continuing ICAO policies related to aviation security*" proposed in Appendix A and in line with ICAO's Global Aviation Security Plan (GASeP)	
Strategic Goals:	This working paper relates to Strategic Goal *Every Flight is Safe and Secure*
Financial implications:	Potential additional costs to States for expanding testing capacity and associated resources. Lack of harmonization leads to inefficiencies and duplicative processes, increasing overall system costs. Airports have borne the financial burden of deploying mandated screening technologies. Delays in certification hinder return on investment and may result in higher costs passed on to passengers. Improved coordination can reduce long-term costs and support more efficient use of public and private resources.
References:	Second Edition - *Global Aviation Security Plan* (ICAO Doc 10118)

1. INTRODUCTION

1.1 The threat posed by liquid explosives to international civil aviation came widely recognized in August 2006, following a foiled terrorist plot targeting flights from the United Kingdom to North America. In response, global restrictions on liquids, aerosols and gels (LAGs) were introduced as an immediate security measure. Although these restrictions were originally intended as temporary, they have remained in place pending the widespread deployment of effective detection technologies.

1.2 Over the past decade, the Transportation Security Administration (TSA) and European Civil Aviation Conference (ECAC) have been the two primary organizations leading the testing of screening equipment, and when equipment achieves the required standard, it is passed on to their State authorities to stamp certification. Their efforts have helped counter evolving threats and improve screening processes at airports worldwide. As a result, the global aviation security system has become more secure and reliable globally.

1.3 Over the past decade, airports have made significant investments in next-generation screening technologies such as Computed Tomography (CT) technology with automated explosive detection capabilities. These technologies were not only expected to enhance threat detection but also enable risk-based policy changes. Indeed, several States adopted progressive measures allowing increased quantities of LAGs in cabin baggage. This marked one of the most positive advancements in security screening since 2006, reducing operational bottlenecks and improving the passenger experience.

1.4 However, in 2024, several States reinstated LAGs restrictions citing precautionary concerns linked to a temporary technical issue. Despite the rationale, the abrupt shift triggered frustration among airports regarding the global testing and certification regime. Airports that had invested heavily in modern

equipment found themselves unable to deliver the promised improvements to passengers. In the end, the operational and financial burden placed on airports was passed along to travellers, who once again faced the inconvenience of liquid restrictions.

1.5 Testing and certification of security equipment are distinct yet interconnected processes. Testing involves the technical evaluation of equipment to determine whether it meets defined performance detection standards under simulated conditions. This phase is typically conducted in controlled environments by specialized laboratories or authorized bodies. In contrast, certification is the formal approval granted by regulatory authorities after verifying that the equipment complies with all applicable standards. Testing provides the data, and certification is the regulatory decision that authorizes the equipment's deployment in live airport environments. The disconnection of these functions is currently leading to delays in the deployment of next-generation technology at airports.

2. DISCUSSION

2.1 The transition from conventional X-ray systems to CT-based screening represents the most significant evolution in aviation security screening. Many States have mandated this upgrade, prompting multi-billion-dollar investments in equipment, infrastructure, and personnel training. In addition to strengthening security, CT systems offer the potential to improve efficiency and reduce passenger stress by allowing travellers to leave standard electronic devices and LAGs in their cabin baggage while also easing restrictions related to LAG volumes.

2.2 While significant technological progress has been achieved, the current approach to testing and certifying security screening equipment faces structural challenges. Airports and stakeholders across the ecosystem have expressed a growing need for:

2.2.1 Increased visibility into testing criteria and processes to support better alignment and predictability;
2.2.2 Broader geographic participation to reflect the testing and certification capabilities of additional Member States;
2.2.3 More streamlined approaches to minimize the need for repeated testing of the same equipment across different jurisdictions;
2.2.4 Expanded testing infrastructure and human resources to keep pace with the complexity and volume of new technologies;
2.2.5 Greater adaptability to enable timely integration of software upgrades and algorithm improvements.

2.3 Efforts already underway by several testing and certifying bodies and stakeholders have made commendable progress in these areas, and continued collaboration will be essential to sustain momentum and meet future demands.

2.4 The issues associated with fragmented testing and certification approaches are contributing to increased equipment costs to airports and delayed rollouts. Airports often bear the downstream impact, including inflated list prices and upgrade fees, while also facing reputational risk when deployment is delayed. Addressing these issues through more coordinated and mutually recognized processes can alleviate these pressures and support more efficient implementation.

2.5 ECAC and the TSA conduct most security equipment testing activities. Both organizations have made important contributions to enhancing aviation security through rigorous evaluation protocols. In recognition of the growing need for coordination, six States formed the Technology Alignment Group (TAG). TAG is

widely regarded as a constructive step toward streamlining and aligning testing methodologies and fostering convergence across systems. While TAG has made notable progress, its role focuses on technical evaluation and does not extend to certification, which remains the responsibility of individual authorities. For airports, TAG represents a positive step towards testing, hoping for positive industry outcomes that benefit both airport operators and travellers. Continued cooperation between TAG participants and other States promotes strengthening global alignment without compromising the integrity of national oversight frameworks.

2.6 ACI and its member airports are prepared to further support testing and certification by contributing real-world operational insights gained through actual deployments. Airports can provide valuable data on detection, false alarm rates, screener adaptability, performance under live conditions, and the impact on the passenger experience.

3. NEXT STEPS

3.1 To address emerging threats and pace of innovation, ACI invites the Assembly and its Member States to support the development of a more effective and globally coordinated testing and certification process through bilateral and multilateral cooperation and include the following elements:

3.1.1 Establishing collaboration between States, industry stakeholders, and Original Equipment Manufacturers (OEMs) to share information, align processes, and guide improvements.
3.1.2 Facilitate transparent dialogue to avoid duplication of testing processes while ensuring protection of sensitive security information.
3.1.3 Consider the establishment of a coordination mechanisms to enhance collaboration and reduce duplication in testing and certification activities.
3.1.4 Support investment in global testing capacity, including consideration of qualified private-sector laboratories, to help accelerate the approval of new technologies.
3.1.5 Actively involve airport operators and other relevant stakeholders in the development and validation of testing protocols to ensure operational realities are considered.
3.1.6 Ensure that testing protocols reflect real-world operating conditions, helping to confirm that certified equipment is suitable for deployment in live airport environments.

4. CONCLUSION

4.1 Airports are the primary users of screening equipment and serve as the environments where this equipment must perform reliably and efficiently. Certification processes must keep pace with technological advancements to ensure that operations remain secure, efficient, and passenger focused.

4.2 ICAO has an important role to play in helping Member States enhance collaboration, promote mutual recognition, and modernize certification frameworks. Advancing these efforts will help ensure that aviation security is resilient, responsive, and aligned with the evolving global risk context.

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APPENDIX A

Suggested Amendments to Resolution A41-18: *Consolidated statement on continuing ICAO policies related to aviation security*, Appendix C: *Implementation of technical security measures*

1. Addition to the Preamble

"*Recognizing* that aviation security technologies must be deployed in a manner that aligns certification outcomes with operational need,"

2. Addition to the Operative Clauses

Under "The Assembly:", add:

"Urges Member States and relevant entities to collaborate and improve procedures for the certification of security equipment, aiming to reduce delays and eliminate fragmentation, thereby enhancing global aviation security.

3. Addition to the Operative Clauses

Under "15. Requests ICAO to", add:

"encourage States and stakeholders to pursue strengthened cooperation through bilateral or multilateral arrangements, as appropriate, in order to improve information sharing mechanisms, and testing capabilities and certification for security equipment, addressing the evolving global aviation security threat picture.

— END —