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GUIDANCE ON PROMOTING SUSTAINABILITY IN AIRPORT SECURITY OPERATIONS

By ACI Asia-Pacific & Middle East
Regional Aviation Security Committee (RASC)

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Introduction

Sustainable development means the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainability is more than just about the environment, other aspects such as the economy and society should also be taken into consideration. The United Nations' Sustainable Development Goals (SDGs), which were adopted in 2015 as a global framework, also seek to promote sustainable development through the three interconnected dimensions**: environmental**, **social** and **economic.**

Over the past years, more and more airport operators have recognized the importance of sustainability and implemented various initiatives and plans in the aim to achieve a more sustainable growth and development as a business. Each function within an airport has a role to play, no matter big or small, in contributing to the organization-wide sustainability goals and objectives. The airport security function is of no exception.

Traditionally, the focus and priority for majority of the airports in relation to aviation security have always been about safeguarding the airports and passengers and staff from acts of unlawful interference, so the concept of "sustainability in security operations" is something that has seldom been discussed and examined in the past.

In this regard, the ACI Asia-Pacific & Middle East Regional Aviation Security Committee (RASC) developed this guidance document to help airports start thinking what practical measures can be applied to make airport security operations more sustainable and how the security function can play a bigger role in contributing to the airport-wide sustainability goals. The measures are divided into environmental, social and economic aspects.

Nevertheless, the measures listed in the document are not intended to be exhaustive and serve as examples only. Given the different airport types and local circumstances across the region, the practices may not be relevant and applicable to every single airport. The main purpose of the document is rather to raise awareness and provide suggestions to airports on how to make security operations more sustainable. However, it is also important to note that security should always take precedence if necessary, and that the sustainability measures should only be implemented if security performance and compliance are not affected.

Environmental Sustainability in Airport Security Operations

Sub-category	Example of measures
Reducing waste in airport security	Paper ❖ Increase the use of tablet devices for security reporting, quality control and audit-related activities. ❖ Adopt cloud-based solutions for documentation and filing. ❖ Increase the use of digital signages at security checkpoint to minimize paper posters. ❖ Increase the use of aluminum signage, which is lightweight, durable, and can be easily recycled. ❖ Increase the use of digital platform to deliver security information to staff and passengers. Prohibited items ❖ Donate confiscated prohibited items to charity or communities in need. ❖ Conduct regular auctions for confiscated prohibited items. ❖ Provide postal services for passengers at the security checkpoint to ship back items that are not allowed to be carried in-flight. Consumables ❖ Ensure that consumables regularly used in security operations (e.g. ETD swabs, STEBs and gloves) are biodegradable. ❖ Use biodegradable or recycled materials for temporary airport pass. Water & water bottles

	❖ Provide collection stations at security checkpoint for plastic bottles recycling. ❖ Provide drinking water fountains for passengers after the security checkpoint. Item recycling ❖ Encourage proper recycling and disposal of work uniforms and corporate workwear.
Energy saving in airport security	Screening equipment ❖ Establish ways to monitor energy consumption of various screening equipment. ❖ Work with relevant stakeholders to try to flatten out the peak at security checkpoint in the aim to maximize energy efficiency of security equipment. ❖ Ensure proper machinery maintenance to extend the lifespan of x-ray equipment. ❖ Turn screening equipment off if they are not in active use for an extended period. ❖ Consider adopting non-equipment-based solutions, if applicable, to perform certain security functions (e.g. use of K-9 for explosives screening instead of ETD). ❖ Consider adopting centralised image processing (CIP) to maximum the use of screening equipment and reduce the number of security lanes. CCTV ❖ Install CCTV with wider and better viewing angles to reduce the total number of cameras needed. ❖ Apply motion detection or stand-by function, if available, to reduce memory storage and electricity usage. Lighting ❖ Use LED light bulbs.

	❖ Conduct lux level analysis to assess if lighting for certain areas within the airport can be reduced or dimmed without compromising security and passenger experience. ❖ Turn the lights off in areas that are not in active use (mostly applicable for small or regional airport with little traffic).
Reducing use of fossil fuels in airport security	Patrolling and surveillance ❖ Adopt more environment-friendly methods for airside and perimeter patrolling to reduce the reliance on the use of fossil fuels (e.g. using electric vehicles or drones for surveillance subject to local rules and regulations). Perimeter fencing ❖ Install solar-powered Perimeter Intrusion Detection System (PIDS). ❖ Use solar-powered perimeter lighting.
Environmental management in airport security	Carbon emission and waste monitoring ❖ Work with the environment department of the airport to measure and monitor carbon footprint generated by the various security equipment and security operations. ❖ Establish monitoring mechanism for waste produced by security operations (e.g. paper, prohibited items, consumables and water). Green procurement ❖ Adopt green procurement concept to ensure purchased equipment, products and services for security operations are causing minimal environmental impacts. ❖ Take into account the concept of "circular economy", which means procuring products made with materials that can be recycled or reused for zero landfill.

	Supplier management ❖ Ensure that all security-related entities, such as equipment manufacturers, suppliers, sub-contractors and external service providers, are taking an environmentally sustainable approach towards their businesses.

Social Sustainability in Airport Security Operations

Airport Security Social Sustainability

Sub-category	Example of measures
Workforce-related	Fatigue management ❖ Ensure x-ray screeners are rotated every 20 minutes to avoid fatigue and deterioration of performance. ❖ Consider ways to reduce the need of pat down and other physical intervention by screeners (e.g. advance communication with passengers on divestment requirement). ❖ Consider granting special "stress leave" to staff who encounter stress-related illness and injuries. ❖ Leverage advanced technologies to relieve pressure and fatigue faced by screeners (e.g. APIDS could potentially help screeners in looking for prohibited items).

Health & hygiene

- ❖ Ensure radiation emission from x-ray equipment, especially the new advanced screening equipment, does not pose health risks to the operators.
- ❖ Ensure all x-ray machines meet the international and national safety standards of radiation emission.
- ❖ Provide regular health checks for security staff.
- ❖ Provide sufficient hygiene-related measures to make security staff feel comfortable and safe at work (e.g. PPE, mask, cleaning and hand sanitizer).
- ❖ Provide necessary support to staff who face emotional or physical tension at work.

Workplace ambience

- ❖ Provide adequate facilities for security staff to rest and relax.
- ❖ Ensure all working stations are appropriately lit to avoid eyestrain for staff (e.g. hold baggage screening room).
- ❖ Minimize impacts on the physical working conditions resulted from the adoption of advanced screening equipment (e.g. CT machine are usually bigger, noisier and generate more heat).

Pay and conditions

- ❖ Ensure, to the extent possible, that salary is aligned with the amount of workload and responsibilities.
- ❖ Provide additional incentives to high performers (e.g. additional pension contribution, rewards and bonuses).
- ❖ Invest in reskilling of security personnel to meet the need of jobs redesigned to integrate future requirements and evolutions.
- ❖ Establish a clear career path for the airport security profession to increase motivation for existing staff and make the sector more attractive to new entrants.

	❖ Try to bring consistency to workers' qualifications, training, and expectations, which could facilitate a fair career progression and skills transferability. Diversity, equity and inclusion (DEI) ❖ Be committed to fostering, cultivating and preserving a culture of diversity, equity and inclusion among its security workforce. Culture ❖ Develop and promote a robust security culture throughout the airport by embedding a security mindset into everyone in the organization. ❖ Develop and build workforce pride and professionalism among the screeners. ❖ Foster a culture of empathy and compassion within the security workforce.
Passenger- related	Passenger communication ❖ Provide advanced information on security requirements prior to their arrival at the airport, in the aim to reduce passengers' stress level (e,g via email, SMS or phone app notification). ❖ Ensure sufficient signages and notices on divestment requirements are provided at the airport to smoothen the screening process for passengers. ❖ Consider leveraging Artificial Intelligence (A.I.) technology to assist passengers with language difficulties in understanding the screening procedures and requirements. ❖ Display real-time security wait times to relieve stress and improve the passenger experience. Passengers with disabilities or reduced mobility

	❖ Provide special security lanes for persons with reduced mobility or disabilities to facilitate their journey. These lanes should be sufficient in size for wheelchair users. ❖ Develop special screening procedures for persons with reduced mobility or disabilities, on condition that security must always take precedence over the special procedures. ❖ Ensure specific training is given to security staff so that the accessibility needs of passengers with disabilities are considered and any aid equipment is adequately handled. ❖ Work with relevant stakeholders, such as airlines, to ensure passengers with reduced mobility or disabilities are made aware of the security processes in advance of travel. Passengers with hidden disabilities ❖ Raise awareness and provide training to frontline staff in handling passengers with hidden disabilities, such as mental health and autism, who may find it uncomfortable when going through the screening process.
Community- related	Local employment ❖ Ensure a certain percentage of security positions are given to local communities or ethnic minorities if applicable. ❖ Organize job fairs in nearby local communities on a regular basis. Community engagement ❖ Engage local political parties or groups to better understand how the airport can play a role in contributing the development and growth of the communities. ❖ Organise promotional activities/campaigns at schools to educate and raise public awareness on the importance of aviation security. ❖ Donate confiscated prohibited items (or lost items) to local communities in need. However, careful management is needed to ensure the items donated are in good conditions.

	Supplier management
	❖ Try to monitor and assure that all security-related suppliers are taking a social sustainable approach towards their businesses.
	❖ Monitor and work closely with all related-security suppliers to ensure modern slavery and human trafficking are not taking place anywhere along the supply chain.

Economic Sustainability in Airport Security Operations

Sub-category	Example of measures
Increasing revenue in airport security	Additional security services ❖ Provide additional security services as required (e.g. additional gate screening required by respective authority or airline). ❖ Provide a paid scheme to allow passengers to use fast track lane at security checkpoint. Such service can be purchased by either in advance or at the airport on the day of travel. ❖ Provide VIP or CIP services (e.g. escorting and personal protection). ❖ Provide contracted security services for events or activities held at the airport (e.g. media control, crowd management and meet and greet service).

	❖ Offer postal services for valuable personal items confiscated at security checkpoint. ❖ Offer priority processing services for new airport pass application or renewal. Advertisement ❖ Explore advertisement opportunities with suppliers without compromising security standards (e.g. on security trays, STEBs and at back of the airport pass). Security training services ❖ Explore business opportunities for proving security training services to external or oversea parties. ❖ Review regularly the pricing strategy to ensure training services offered to third parties are competitive and within market range. Consultancy services ❖ Provide consultancy services to third parties or other airports, (e.g. peer review services, operations management, and design and planning). Equipment Hiring/leasing/re-selling ❖ Explore opportunity to sell or lease security equipment to new airlines, tenants and other stakeholders in need. ❖ Explore business opportunity to share x-ray images for training purposes, in compliance with privacy regulations. ❖ Provide additional CCTV and surveillance services to airlines, tenants and other stakeholders in need. ❖ Sell used machinery and equipment to developing or less developed countries, instead of scrapping them directly when they are still functionable.

Cost saving in airport security	Short-term cost saving
	❖ Reduce the use of paper in all security-related processes to minimise printing cost (e.g. using digital signages or QR codes at security checkpoint to communicate security information).
	❖ Adopt cloud-based solutions to minimise the associated cost for physical documents storage and filing (e.g. incident reports).
	❖ Replace face-to-face security trainings with online learning, provided that the quality is not compromised.
	❖ Reduce the use of energy in security operations (refer to the sub-category of "energy saving" in the environmental sustainability section).
	❖ Implement effective roster management for staff, which could involve scheduling, tracking employee availability, managing shifts, and handling leave requests, to maximise resource utilization and efficiency.
	❖ Consider temporary or partial closure of the security checkpoint if there is no passenger traffic (this is mostly relevant for small or regional airports with little traffic volume).
	❖ Consider outsourcing certain non-core security functions to 3rd party service providers to minimise cost.
	Long-term cost saving
	❖ Promote and increase the use of automation and advanced technologies in security operations in order to increase efficiency and save cost in the long- term (e.g. autonomous patrolling vehicle, smart CCTV, artificial intelligence & machine learning).
	❖ Consider adopting the concept of centralised image processing (CIP) for both cabin and hold baggage screening to maximise utilisation of resources.
	❖ Work with the respective security regulator to promote the implementation of One-stop Security (OSS) to save cost for transfer screening and allocate resources to other priority areas.
	❖ Consider using centralised security checkpoint model instead of gate screening model.
	❖ Partner with private sectors and governments to further invest in research and development to ensure the continued development of technology to support the digital transformation of the aviation security industry.

Infrastructure sustainability in airport security	**Security by design** ❖ Consider and incorporate security concerns the early stage of planning and design for new or renovation of existing infrastructure at airports. The adoption of this "security by design" concept can significantly save resources in future operations and maintenance. **Future-proofing infrastructure** ❖ Ensure infrastructure and terminal design can support One-stop Security (OSS) should it be implemented in the future (e.g. segregation of passengers). ❖ Ensure infrastructure and terminal design can support end-to-end biometric journey for the passengers in the future. **Spacing** ❖ Work with relevant stakeholders to achieve an optimal balance of space between security checkpoint and retailing areas. ❖ Explore ways to reduce the number of screening lanes in the security checkpoint without compromising security standard (e.g. centralised image processing). A right-sizing checkpoint could potentially increase the space for non-aeronautical revenue activities.
Supporting the growth of **local economy**	**Job creation** ❖ Develop partnership with local universities and public institutions for talent recruitment. ❖ Create new airport security roles in view of the evolving security landscape (e.g. cybersecurity expert, counter-drone expert). ❖ Consider outsourcing non-core security functions to local companies. ❖ Foster local employment (refer to the sub-category of "local employment" category under social sustainability section). **Local sourcing** ❖ Consider acquiring supplies or materials from local manufacturers or from local indigenous communities if applicable (e.g. uniform and tensile barriers).

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