AIRPORTS COUNCIL INTERNATIONAL

ACI Policy Handbook

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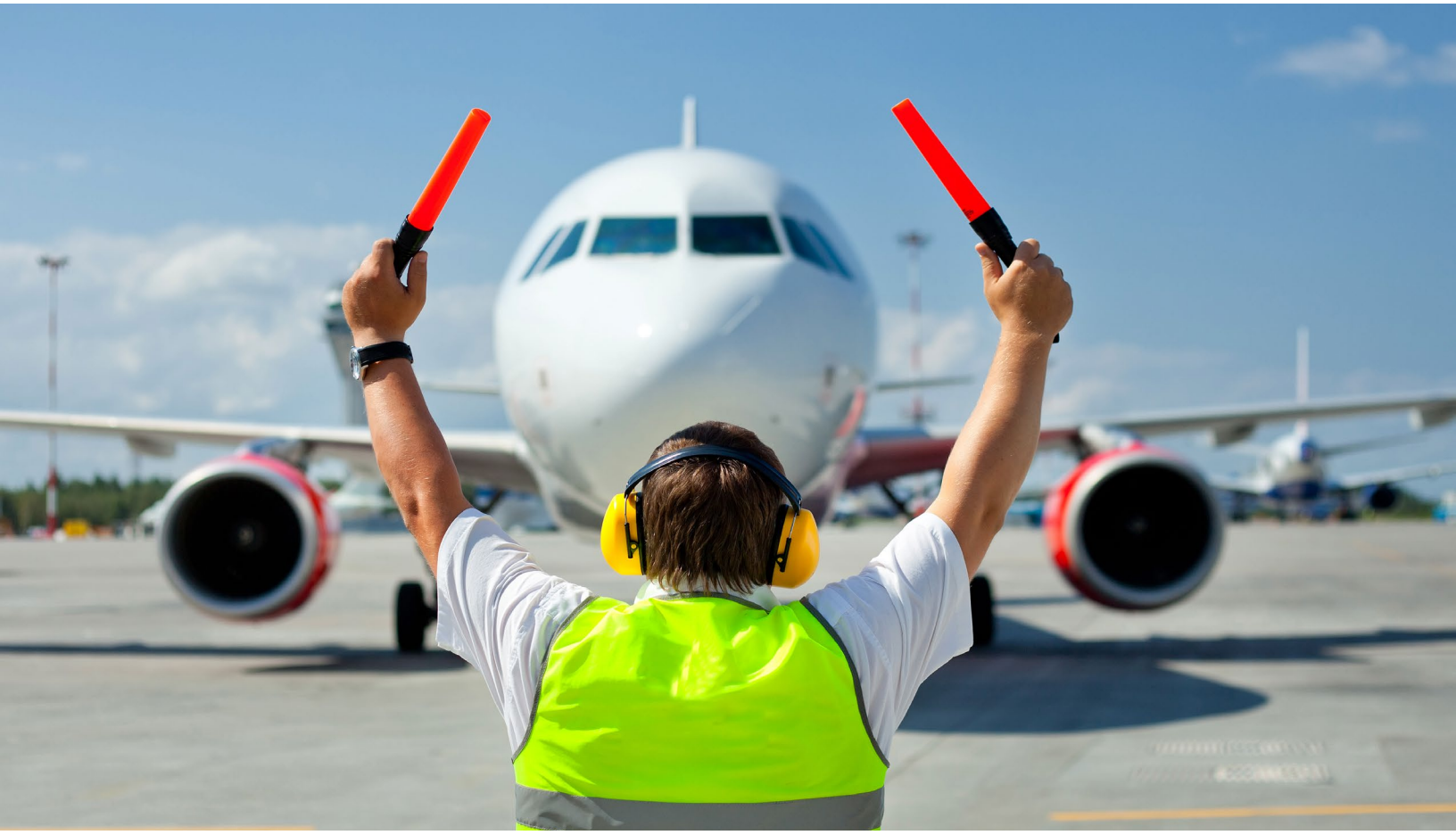

Airports Council International (ACI) advances the collective interests of and acts as the voice of the world's airports and the communities they serve and promotes professional excellence in airport management and operations.

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ACI Policy Handbook
Tenth Edition 2020

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Introduction

The ACI Policy Handbook contains the current policies of the organization, for use by the staff of Airports Council International (ACI) World and the Regional Offices, and by ACI representatives at international meetings.

In the absence of regulatory requirements, these policies identify actions and strategies that can help ensure sustainable, long-term growth. In this respect, the policies should be regarded as being in the self-interest of the industry and should not need enforcement.

The following extracts from the ACI By-laws (2015) explain the framework for ACI Policies:

> *2.1.3 ACI World is responsible for liaison with other worldwide organizations and for worldwide policy and coordination between the members of ACI.*
>
> *5.1.1 The Governing Board shall determine the worldwide policies of ACI, which shall be implemented by the Executive Committee, and the Director General in accordance with this by-law and the decisions of the General Assembly.*
>
> *11.1.2 The General Assembly may perform the following duties, always subject to the requirements set out at Section 11.8.4 of this by-law:*
>
> *(a) Approve the worldwide policies of ACI after their adoption by the Governing Board.*

Organization and membership of ACI World

ACI World is the international association of the world's airports—the "voice of the world's airports". It is a non-profit organization and fosters cooperation among its member airports and with other partners in world aviation, including the International Civil Aviation Organization (ICAO) and the International Air Transport Association (IATA). Through such cooperation, ACI makes a significant contribution to providing the travelling public with an air transport system that is safe, secure, efficient and environmentally compatible.

ACI presents the collective positions of its membership, which are established through committees, endorsed by the ACI Governing Board, and reflects the common interests of the airport community. ACI has an observer status with ICAO and, a consultative status with the United Nations Economic and Social Council (UN/ECOSOC).

As of January 2020, provisional figures show that ACI serves 668 members, operating 1,979 airports in 176 countries.

ACI has the following mission:

ACI advances the collective interests of and acts as the voice of the world's airports and the communities they serve and promotes professional excellence in airport management and operations.

ACI has the following purposes and roles:

a) Maximize the contributions of airports to maintaining and developing a safe, secure and viable aviation industry in a responsible and sustainable manner
b) Promote cooperation among all segments of the aviation industry and their stakeholders, as well as with governments, and regional and international organizations
c) Influence international, regional and national legislation, rules, policies, standards and practices, based on established policies representing airports' interests and priorities
d) Advance the development of the aviation system by enhancing public awareness of the economic and social importance of air travel and airport development
e) Provide leadership in airport operations and management through the development of global technical standards and/or recommended practices
f) Maximize cooperation and mutual assistance among airports
g) Provide members with industry knowledge, advice, and assistance, and foster professional excellence in airport management and operations
h) Build ACI's worldwide organizational capacity and resources to serve all members effectively and efficiently.

Source – Articles of Continuance of ACI under Canada Not-for-profit Corporations Act.

ACI World Standing Committees

ACI has six Standing Committees which prepare policies in their specific areas of competence:

The *Airport Information Technology Standing Committee*, which covers information and communications technology infrastructure at airports; common use and self-service environments; Flight Information Display Systems (FIDS); Machine Readable Travel Documents (MRTDs); Advance Passenger Information (API); and Radio Frequency Identification (RFID) Systems.

The *Economics Standing Committee*, which covers airport charging systems; security, noise and passenger service charges; consultation with users; development of revenues from concessions; peak pricing; currency considerations; financial statistics; airport financing and ownership; State taxation; the impact on airports of airline deregulation and consolidation; air service agreements; competition between air transport and other modes of high-speed transport; collection of passenger and cargo traffic statistics; forecasts of future air traffic; and trends in airport privatization.

The *Environment Standing Committee*, which covers noise certification standards and procedures of jet aircraft, propeller aircraft and helicopters; noise-related operating restrictions; engine emissions and air pollution; land-use planning in the vicinity of airports; Auxiliary Power Units (APU) and engine ground testing noise; use of chemicals for anti-icing and de-icing; firefighting training facilities, fuel storage and spillage; site remediation; storm water management; waste management; natural resources management; and environmental management systems.

The *Facilitation and Airport Services Standing Committee*, which covers facilitation of passengers and their baggage, freight and mail; quality of service at airports (standards and measurement); automated services for passengers and baggage; use of information technology, automated systems and telecommunications to support business and operational processes at airports; surface access to airports and intermodal issues; measures to combat drug trafficking; slot allocation and schedule coordination; and the inter-relationship between facilitation and security.

The *Security Standing Committee*, which covers airside and landside security; measures related to access control; aviation security technology; the inter-relationship between security and facilitation; security implications of code sharing; employee background investigations; security awareness programmes for the public; cargo security; and security in airport design.

The *Safety and Technical Standing Committee*, which covers airport planning and development; airspace and airport capacity and congestion; future air navigation systems; physical characteristics of runways, taxiways and aprons; visual aids for navigation; operational safety including airport equipment and installations; apron (ramp) safety and aerodrome vehicle operation; aerodrome emergency planning; rescue and firefighting; dangerous goods; the removal of disabled aircraft; aircraft/airport compatibility issues, including the impact of new large aircraft (NLA); and safety management systems.

Any questions about ACI policies should be addressed to the secretary of each ACI World Standing Committee and Sub-Committee, as listed below:

Airport Information Technology Standing Committee
Billy Shallow | Director, Innovation and Technology | bshallow@aci.aero

Economics Standing Committee
Patrick Lucas | Vice President Economics | plucas@aci.aero

Statistics and Forecasting Sub-Committee
Janik Gagne | Senior Director, Economic Analysis and Statistical Services | jgagne@aci.aero

Environment Standing Committee
Juliana Scavuzzi | Senior Director, Sustainability, Environmental Protection and Legal Affairs | jscavuzzi@aci.aero

Facilitation and Services Standing Committee
Jean-Sebastien Pard | Director, Facilitation and Passenger Services | jpard@aci.aero

Security Standing Committee
Nina Brooks | Vice President – Security, Facilitation and Innovation | nbrooks@aci.aero

Safety and Technical Standing Committee
Thomas Romig | Vice President – Safety and Operations | tromig@aci.aero

1 Sustainability

Airports need permission to operate and grow, not only from regulatory authorities but also from the local and broader communities they serve. Under the principle of sustainability, defined herein, airports can work towards gaining their license to expand and operate by balancing the economic, environmental and social costs with the innumerable benefits of their development and operations in a manner deemed acceptable to their key stakeholders, including shareholders (airport owners), staff, passengers, business partners and suppliers, regulators and other public agencies, nearby residents, and other community representatives.

Policy

Airports should be developed and operated sustainably, based on operational safety, quality and efficiency, by:

- creating long-term added value to the airport organization, the aviation industry, and the local, regional and global economies
- striving to avoid, minimize or mitigate environmental impacts and the use of non-renewable resources
- enhancing the living and working conditions for employees, partners and customers, as well as contributing to the social development and equity of local and broader communities
- ensuring comprehensive and consistent engagement with partners, authorities and neighbours.

Comments

The three pillars of sustainability are economic viability, social equity and environmental protection. Achieving a balance between the costs and benefits of each pillar provides overarching principles that should guide the development and operation of an airport. Traditional aviation pre-requisites of safety and security can be considered integral to these economic and/or social pillars.

Communication and community engagement provide the pathway to link sustainability efforts with developing community acceptance and an airport's permission to grow. Comprehensive reporting guidance to document and make an airport's sustainability accomplishments and progress transparent to all its stakeholders are available, for example, from the Global Reporting Initiative (GRI) framework and the GRI's Airport Operator Sector Supplement (AOSS).

2 Airport Economics

This chapter outlines the general economic situation of airports. Competition is a key driver of the airport business. Accordingly, economic oversight frameworks should be proportionate to and reflective of the market situation of airports. Similarly, airport operators should enjoy full flexibility in determining airport charges allowing the sustainable operations and development of airport infrastructure and services.

ACI's main position is that enabling airports to develop targeted pricing strategies and adjusting till regimes and management models to meet their competitive and market situations results in setting airport charges at the appropriate level, induces cost efficiencies and allows innovations. Providing the right incentives to investors is also key to creating fertile grounds for much needed investments in airport development.

2.1 Competition: A key driver of airport economics

Policy
Competition is a key driver of the airport business. Airports compete on all aspects of their business—from aeronautical business to on-site and off-site commercial activities. The result is a competitive and dynamic airport market. Competition, rather than regulation, should be sought as it is the best way to deliver outcomes in the best interest of consumers.

Comments
In the past, airports used to be regarded as monopolistic infrastructure providers, even though airport competition has long been a reality, for instance between airports located in the same catchment area.

The competitive dynamic of the airport industry has been rapidly growing. Airports are now facing a strong multi-faceted competition as they compete for airline services and capacity, for passengers, and for commercial activities.

Airlines are making full and extensive use of the freedom they have flying between airports and switching away from airports when they deem that economic conditions are not right. These dynamics are evident at the individual route level or base level—where airlines put airports in competition against each other when considering adding new services and/or increasing capacity. Three trends can also be clearly observed: first, super-connector airports driving away traffic from long-established hubs; second, the development of multi-hub strategies by the largest airlines and airline groups; and third, the increasing of direct routes resulting in hub bypass enabled by new generation aircraft. Airports are therefore competing both to defend existing routes, bases and hub operations but also to win additional air services.

Competition for passengers is also intense, as the ability of passengers to switch to alternative airports or to other modes of transport exposes individual airports to greater competitive pressures. Both point-to-point and transfer passengers have the ability to switch between airports. Point-to-point passengers can switch in a variety of ways. For instance, passengers can switch to other airports in their departing region and/or in the destination region; passengers may consider substituting one destination for a different destination (for instance, North American holidaymakers may be flexible in choosing between sunny resorts in, say, the Dominican Republic, Jamaica or Mexico, and; passengers may, especially for certain types of short- and medium-haul travel, substitute air travel for other transport modes. Transfer passengers have all these switching possibilities but, in addition, are also able to choose between connections at different hub airports. At the end of the day,

passengers to a large extent base their decision on price grounds. Price elasticity of demand, though different for various markets and distance, is reflective of such viewpoint.

The digitization of the economy is also changing consumer behaviour and reshaping the dynamic of competition for airports' activities. Digital multi-modal travel search engines provide consumers with information about access to alternative airports or alternative travel modes, increasing cross-mode substitution for air travel. For commercial activities, the rise of e-commerce is especially challenging, as airport retail activities are in direct competition with online retailers whereby consumers can directly compare prices from stores and buy goods online and get these directly delivered home—without considering airport security restrictions—if prices are more attractive online. Similarly, more advertising platforms are now competing with airports' traditional advertising space. Sharing economy models, especially in ground transportation and real estate—such as ride hailing and hospitality brokerage services (Uber and Airbnb, for instance)—are also major disruptors for the traditional airport commercial revenue streams, such as car parking, car rentals and airport-site hotels.

Such intense competitive trends are shaping the dynamics of the airport industry in the interest of consumers.

2.2 Liberalization and traffic growth

Policy
Airports have a natural incentive to attract and grow traffic. Increasing traffic both defrays the costs of providing aeronautical facilities and services to airlines and accentuates the generation of commercial revenues. Consequently, airports support the liberalization of air transport as it contributes to the growth of air transport on a sound and stable economic basis and fosters local as well as global socio-economic development.

Comments
Airport costs are largely fixed, partly as a result of investment in infrastructure and also because of associated operating costs, including those on safety and security, which vary little with scale of traffic. This gives airports a natural incentive to attract traffic to defray those costs, an incentive which has been accentuated by the growing importance of commercial revenues. Airports are indeed two-sided businesses, engaging in a commercial relationship with both airlines and passengers. The profitability of an airport is therefore crucially dependent on traffic volume as revenues increase in proportion to passenger numbers while costs increase more slowly because of its predominantly fixed nature, thereby delivering an increased efficiency. Therefore, if there is an economic regulatory framework for air transport in place, it should recognize the strong and natural incentive of airports to grow traffic.

The liberalization of air transport, i.e., the relaxation of the rules and regulations governing air carrier ownership and control, market and airport access, and approval of airfares, capacities, frequencies and service levels by aviation oversight authorities, is a condition for airport traffic growth. The liberalization of air transport benefits consumers by opening markets, bringing airfares down, fostering competition between various airlines models, and increasing routes and frequencies. Air transport liberalization benefits airports of all sizes: a more liberalized environment enables airlines to fly to secondary airports and capture previously untapped demand. The resulting traffic is essential to improve secondary airports' profitability, and the improved connectivity enables socio-economic development. Allowing air services to and from multiple airports enables greater choice thereby catering to consumer preferences.

As such, airports favour the adoption of more liberal air transport policies on bilateral, regional and multilateral basis as they are a key contributor to accompanying the growth of airport traffic.

2.3 Taxation on airport business and civil aviation

Policy
The proliferation of various taxes and duties on airports, passengers and air transport, as well as disproportionate or unwarranted airport concession fees and rents to governments, represent an impediment to air transport. Only justifiable, equitable and non-discriminatory taxes on airports, passengers and air transport are acceptable, as they otherwise engender a negative economic impact hindering the sustainable development of airports and of air transport.

Comments
Airports and aviation are major drivers of global economic development. As such, air transport is already a significant contributor to local and national tax authorities around the world via passenger duties, domestic value-added tax (VAT), customs or immigration and other miscellaneous levies. In fact, air transport fully funds its infrastructure operation and development through user charges and in addition is subject to taxes, contributing directly to State coffers—a substantial financial inflow as compared to other modes of transport.

High tax burden limits the potential economic benefits of air transport. Many governments across the globe view air transport as a luxury for the wealthy, despite a radical decrease in the real cost of air travel over the last decades. Taxation discourages demand for air transport, which in turn limits connectivity. The high tax burdens in some countries prevent them to fully unlock the economic benefits that air transport can bring to today's globalized society. Empirically, several studies have demonstrated the actual negative impact of the air transport-related tax on the national economy, whereby the benefits from the raised taxation revenue rarely outweigh the toll and may even result in reduced overall income from taxation due to consequential reductions in expenditure from fewer travellers and shippers. Consequently, ACI only approves of justifiable, equitable and non-discriminatory taxes and duties on airports, passengers and air transport. Any revenue generated levied on taxes applied to airports, passengers and air transport specifically should be earmarked for the aviation sector.

Additionally, the airport industry is particularly concerned by the intentional confounding of taxes and user charges. While the latter are designed specifically to recover the cost of providing airport facilities and services to users, the former do not follow the same principle but rather increase cost of travel in an arbitrary manner and may pose a risk on the development of air transport and the associated economic benefits. Confounding the general public about the difference between legitimate user charges and taxes harms the global aviation community.

A related area of concern is the disproportionate or unwarranted amount of concession fees or airport rents sought by governments, in certain cases of airport privatizations, for the right to operate, maintain and develop airport facilities. These are detrimental to the full development of air services at these airports and result in lowering the benefits of aviation for the local and business communities. Furthermore, governments are often not providing any aviation-related service in return for these concession fees. This is effectively an additional tax on travel.

Eliminating disproportionate or unwarranted concession fees or airport rents will lower the cost of air transport costs and foster the economic benefits highlighted above, including additional direct and indirect jobs, enhanced connectivity, and facilitated investments and business opportunities. A higher level of economic activity will bring additional revenues to governments via regular tax receipts (e.g., via corporate taxes) and therefore will more than offset the direct benefit from the concession fee or airport rent itself.

2.4 Objectives of economic oversight

Policy
Economic oversight of airport operators should strive to deliver positive outcomes for citizens and end users and subsequently be strictly tailored to the ability of an airport operator to use its market power, if any. Economic oversight of airport charges should be focused on ensuring non-discrimination in charges, protecting the interests of consumers, and assuring timely and proper investments in capacity.

Ultimately, a proportionate economic regulatory framework should facilitate and incentivize commercial agreements between airports and airlines in a flexible manner.

Comments
There is no "one size fits all" approach to the economic oversight of airport charges. While there is a tendency, in some jurisdictions, to maintain or introduce intrusive and rigid regulatory processes determining the level of airport charges, ACI's position is that market constraints and airports' market situations are the best determinants of airport charges. As airports are competing for airline services, passengers and non-aeronautical activities with the objective to grow their business, they are strongly disincentivized to price themselves out of market. Therefore, intrusive and heavy-handed economic oversight frameworks are often unnecessary.

The economic oversight of airports should be applied at an optimal level to safeguard the long-term interests of the travelling public in a non-discriminatory manner. Economic oversight should be proportionate to airports' market power, if any, noting that in most cases competition laws provide comprehensive and sufficient sets of provisions to ensure consumer protection.

The application of other forms of economic regulation should only be applied if the airport has been demonstrated to possess significant market power and the ability to use that power in the setting of airport charges. In such cases, regulatory interventions should be kept to a minimum and need to be cost-effective. Interventions should also take full stock of airlines' countervailing power. The rise and prevalence of the low-cost carrier business model, presence of dominant carriers, formation of oligopolistic airline alliances, and holding of large portfolios of grandfathered airport slots are giving airlines significant countervailing power which must be assessed by regulators.

Finally, the direct and indirect cost of regulation should not outweigh its benefits. ACI recognizes that, for instance, light-handed regulatory models have proven to be successful in ensuring the sustainable growth of air traffic and airport activities and are fit for purpose in relation to States' responsibilities of maintaining economic oversight.

2.5 Responsibilities of the economic oversight authorities

Policy
Economic oversight implies responsibilities towards consumers, but also towards regulated entities. Regulators have notably the responsibility to ensure that airport operators are able to recover their full costs, including capital costs, and are able to finance their development.

Comments
The roles and responsibilities of economic oversight authorities have changed over time. Taking stock of the competitive dynamics of the airport business, there has been an increasing trend to give regulators a consumer-focused rather than a price-determination focused mission.

If economic oversight authorities have a responsibility towards consumers, they also have a responsibility towards the regulated entities. Notably, economic oversight should ensure that airport operators are able to recover their full costs of providing infrastructure and services, including capital costs, through user charges. Economic oversight should be free of any counter-economic distortions, such as the arbitrary imposition of a till regime. For instance, the enforcement of a single till regime within the economic oversight framework is unfair towards airport operators as it requires them to subsidize airline operations through artificially lowered airport charges using profits from the commercial business of the airport.

The responsibility to ensure that regulated entities can adequately finance and remunerate their investments is of paramount importance in a context of traffic growth, whereby airports have to develop their infrastructure to accommodate existing and future demand.

As regards regulators' responsibility towards consumers, ACI's Airport Service Quality (ASQ) programme is an industry initiative fit for the oversight of service quality provided to passengers and consumers as it allows to closely monitor service quality levels at airports. ASQ has become a valuable monitoring tool for airport service quality for both airport operators and aviation oversight authorities worldwide.[1]

ACI recommends that ASQ be recognized by regulators as a valid and relevant passenger experience monitoring tool responsive to the needs of the airport community and of aviation oversight authorities. As market forces are driving service quality at airports, ACI is vigorously opposing penalty systems related to quality of service objectives by which the level of airport charges would vary based on pre-determined service level targets achievement.

2.6 Pricing strategy

Policy
Airports levy an array of charges on users and passengers to fund the provision, operation and development of airport facilities and services. Airports should be free to develop and tailor the structure and level of airport charges to their specific circumstances and to develop targeted pricing strategies that meet their competitive and market situations.

[1] The ASQ Departure programme monitors customer experience and service quality for: overall satisfaction, access, arrival, check-in, passport ID, security, wayfinding and facilities, applying 35 key performance indicators (KPIs) including overall satisfaction. The ASQ Arrival programme monitors customer experience and service quality for: overall satisfaction and experience, deboarding, immigration, baggage claim, customs, and infrastructure applying 36 KPIs.

Comments
Airport charges are a vital component of the sustainability of airport operations and development as they enable operators to manage and plan for infrastructure that meets today's and tomorrow's demand for air transport.

Aircraft operators typically pay charges for the use of airside infrastructure (including runways, taxiways, aprons, parking stands and airbridges) at airports. These charges are usually based on an aircraft weight formula. Meanwhile, passengers typically pay charges for the use of passenger-processing facilities, including terminals, ground access to terminals and security services. Passenger-related charges are accrued on a per-passenger basis. Finally, a transfer charge may be levied on passengers transferring to other aircraft.

Many airports have moved toward using charging systems that aim at accommodating and satisfying airline customers through rebalancing aircraft-related and passenger-related charges. This move is taking place in a context of increased competition and capacity constraints and congestion, especially at many of the world's major airport hubs.

In addition, market-based charging strategies are effective in alleviating capacity bottlenecks and in allocating capacity where it is in short supply. Accordingly, airport operators should have the ability to adjust airport charges to the time and/or situation of use of the facility or service concerned, for instance though peak/off-peak charges to distribute traffic more evenly, de-peak their operations, and recognize the economic value of using the airport at its most demanded time. ACI notes that airlines are enacting the equivalent of airport charges 'peak pricing' through increased fares for the subset of passengers who are willing to pay extra for regular and convenient departure/arrival times.

Targeted and focused pricing strategies are also effective in enabling traffic growth. For instance, incentivizing airline clients to open new routes, grow their operations or increase frequencies though the provision of commercial incentives such as rebates and discounts has been effective in developing traffic. It exemplifies the competitive dynamics of the airport industry, whereby airlines are putting airports in competition with each other and allocate their fleets to the airport where they receive the best offer.

Finally, environmental charges (noise and emissions-related charges) are also a crucial tool for ensuring the green development of airports and for incentivizing environmentally sustainable airline operations at airports, as appropriate. Depending on their specific circumstances, airports should incentivize airline users to use quieter or less polluting aircraft and expedite airline fleet renewal through targeted pricing strategies using noise and emissions charges. Local communities more frequently expect airports to use pricing to incentivize airlines to operate quieter aircraft or aircraft that emit fewer harmful pollutants for local air quality.

2.7 Commercial agreements

Policy
Commercial agreements between airport operators and airlines, that typically ensure lower airport charges in return for airline commitments to deliver additional traffic, can be an effective way of determining airport charges.

Comments
While there are several approaches to economic oversight (from the application of competition law to the intrusive and inflexible price-cap determination), there is no "one size fits all" approach. ACI is particularly concerned with the imposition of extremely rigid building blocks regimes, whereby the allowed return of the airport operator is determined *ex-ante* on the value of its asset base (the so-called RAB-WACC approach) in certain jurisdictions. Such complex and costly regulatory models are at odds with the market situation and the specific circumstances of the airports.

Airports have been recognized as businesses in their own rights, with two-sided activities that evolve in a competitive environment. In such context, commercial agreements between an airport operator and its airline clients create an opportunity to establish mature, pragmatic and mutually beneficial relations between both parties. Commercial agreements are indeed a normal and efficient way for parties to agree how to work together in a vertical value chain in a non-discriminatory manner.

Commercial dynamics can additionally limit or neutralize regulatory risk by enabling sound agreements with users and, therefore, reduce financing costs and potentially limit the level of borrowing required to finance airport projects. It is false to think that a commercial agreement is by default discriminatory against the airlines which have not subscribed to it if this agreement is open to all potential customers subject to available infrastructure.

For the aviation sector, airport-airline agreements are an effective way to enable traffic growth by ensuring lower airport charges in return for airline commitments to deliver additional traffic. Subject to normal antitrust laws, commercial agreements should be fostered through light-handed economic oversight frameworks.

2.8 Recovery of airport costs through charges

Policy
The level of airport charges needs to be sufficient to cover the costs of operating the airport plus the long-term capital investment required to meet the current and anticipated demand. In the long term, the level of airport charges should be related to the full economic costs of aeronautical operations and development, including a reasonable and sufficient return on assets and the development of appropriate reserves to deal with unforeseen adverse circumstances.

Comments
ACI supports the long-standing provision in the ICAO policies on charges, by which the cost to be allocated in determining the cost basis for airport charges is the full cost of providing the airport and its ancillary services, including appropriate amounts for cost of capital and depreciation of assets, as well as the costs of maintenance, operation, management and administration (Section II, paragraph 2 of ICAO Doc 9082 — *Policies on Charges*, Ninth Edition).

Over the long term, airport charges should therefore be set by airport operators at a level allowing to cover operating expenditures and also capital costs to finance investments required to accommodate not only existing air traffic but also future demand. Airport charges should ensure that airports are economically viable, i.e., they can sustain their operations. They should additionally be adequate for attracting investors in airport development projects. Consistent with this long-term goal, airport charges may fluctuate in the short term depending on the market situation of the airport, for instance to ration demand and signal the need of airport investments at congested airports.

Specifically, investments in airports should be incentivized by providing certainty that cost of capital can be covered throughout the entire period of investment amortization. In case of private investments in airports, clear and stable legal frameworks are instrumental in providing certainty to investors, e.g., by ensuring that airport revenue sources are treated in a clear and predictable manner—through a pre-determined minimum level of airport charges, recognizing the critical link between airport charges and airport capacity investments, and reflecting the risk-reward trade-off that investors take on their ability to earn a return on the capital invested both in the aeronautical and the commercial sides of the business.

2.9 Dual till approach to charges determination

Policy
Dual till approaches in the determination of airport charges generate cost efficiencies and foster innovations on the commercial side of the airport business.

Comments
The practice of computing airport charges under a single till approach (or a residual approach), i.e., including non-aeronautical costs and revenues in the cost basis for the calculation of airport charges in order to artificially lower them, is contrary to an economically sound determination of airport charges. The single till approach is indeed contrary to the objectives of the recovery of airport costs through charges, which would require airport charges to cover the full costs of the services provided to airline users. It also acts as a disincentive in the development of non-aeronautical activities.

Such single till accounting method was born of a longstanding convention to support aircraft operators at the expense of infrastructure providers. Nevertheless, many economists, airport operators and a growing number of regulators agree that this method introduces price distortions and an artificial constraint which results in market inefficiencies for both airport operators and their airline customers.

Conversely, a dual till approach (or compensatory approach), by which the aeronautical charges are based on the cost of providing aeronautical services while non-aeronautical costs and revenues are accounted for separately, better serves the interests of airlines, passengers, local communities, and the airport itself. A dual till approach provides strong incentives on the airport operator to run the most efficient aeronautical business in order to keep costs low to airline users and enhance its competitive position. It additionally induces commercial innovations as it not only offers a proper allocation of risks of airports' commercial ventures to the airport—protecting airlines from the risk of financing the development of commercial, retail and other non-aeronautical facilities—but also a proper allocation of the reward as well, thereby incentivizing innovative investments.

A forward-looking approach to the airport business and national policies that shift away from the single till accounting method are more attractive to investors in airports, providing clear pricing signals about aeronautical costs and enable airport operators to earn sufficient revenues on the aeronautical business to attract private financing for investments in airport development.

Achieving environmental ambitions also requires that the market sends the correct price signals to consumers. The dual till ensures that airport users pay for the full internal costs of the infrastructure that they benefit from. Economic principles recognise that efficiency and welfare is maximized when users of infrastructure (in this case) pay for the full costs incurred in providing these facilities and services. This ensures that the correct price signal is provided in the market for the use of air transport infrastructure.

2.10 Transparency and consultation with airlines on airport charges

Policy
Consultation with airline users is an important element in the development of airport user charges. All parties involved have a responsibility to engage actively and constructively in the consultation process, as reciprocity is a key enabler for success. Both airport operators and their users should be committed to share relevant information with each other.

Airport operators should always retain their autonomy to set charges, considering, to the maximum extent possible, feedback provided by airlines during the consultation process.

Comments
The aim of a consultation is to reach a consensus with users on airport charges whenever possible. As such, consultation is not synonymous with negotiation. However, there is no legal obligation to enter into agreement with airlines and airport operators are always entitled to introduce charges even without agreement. Rather, the airport should always retain its autonomy to set charges, considering, to the maximum extent possible, constructive feedback provided by airlines.

Airport operators should inform and consult airline users and operators on matters having an impact on the user charges, with a degree of transparency proportionate to the market power, if any, and market situation of the airport. Transparency applies equally to both airport operators and users. Airlines should notably provide transparent information on their business plans at the airport, on traffic and fleet forecasts, and on operational plans and needs. Similarly, airport operators should provide general information on the airport, its traffic, and its aeronautical costs and revenues in order to justify changes in the level of charges. Airports should share information with airlines about large capital expenditure financed by airport charges for new higher quality facilities, additional capacity creation, or for compliance with new regulatory provisions, in advance of a final decision on the expenditure.

Striking the balance between the multiple and diversified requests of airlines customers and aligning these with the airport's strategic, commercial and operational objectives to offer an adequate service to passengers and airlines is often a challenge. Therefore, it is misleading to think that an airport operator can always meet all the requests of all the airlines at the same time: it will remain more theoretical, rather than practical. While agreements between airports and airlines are desirable, airport operators should always retain their autonomy to set charges in case where an agreement is not reached. Airport operators should be the sole and final decision-makers in the domains of user charges and the overall airport business, since they are independently responsible for the management of their airports, and have a long-term responsibility—which is not shared with airlines—encompassing the interests of passengers as well as local and business communities and an array of other airport stakeholders.

For practical purposes, the ACI recommended practices on transparency and consultation, which are aspirational and not prescriptive, aim at providing guidance of global relevance on processes leading to setting airport charges.

2.11 Airport management models

Policy
Airport owners should be free to determine the appropriate management models, namely single airport, airport systems and airport networks, that are best suited to meet public policy and commercial strategic objectives.

Airport network operators should be given full flexibility to determine the most appropriate charging system that allows them to recover their costs, generate returns, and ensure the sustainable operation of the smaller airports in the networks.

Comments
Multiple models of airport management prevail in the industry and are adopted by airport operators depending on their specific circumstances, and a wide body of evidence demonstrates that the airport management model is just one among many factors in determining airport performance. For this reason, airports should be permitted to operate under a wide range of management models such as single-airport, airport systems and airport networks to serve their specific missions, business needs and local circumstances. ACI does not prescribe any particular management model.

Airport networks are one of the prominent forms of developing and operating airport facilities and services, i.e., the operation of all or some airports within a country as a group, under a single ownership, management and control structure. Under the airport network approach, several organizational models are found, but in most cases, they share a common feature: costs and revenues are pooled at the network level and the network is considered a single business entity. It ensures sustainable funding of smaller airports, with the profits of higher-throughput airports compensating for the net losses of smaller airports: cross-subsidies from larger to smaller airports are used to keep the smaller airports operational, especially when they cannot count on public funding. Therefore, opting for a network approach often enables significant benefits and, depending on local circumstances, is instrumental for safety, for local and socioeconomic development, and for generating positive business conditions and opportunities for airlines.

It should be noted that networks are common to many businesses and industries in the air transport ecosystem. For instance, airlines organize their routes and destinations in networks aimed at ensuring connectivity and profitability—the expression "network airlines" reflects the spirit of this model. Some airlines, nonetheless, struggle to achieve profitability on some routes. They use super profits earned on some routes to subsidize the losses on other routes. In other words, passengers on some routes are paying airfares higher than their fair share of the cost of travelling provided by the airlines; and surpluses cross-subsidize passengers on the loss-making routes.

Accordingly, airport network operators should be given the flexibility to determine the most appropriate charging system for recovering their costs, generating returns and ensuring sustainable operation of the smaller airports in the networks.

2.12 Continuous investments in the airport sector and private sector participation

Policy
Considering the global need to finance new airport infrastructure, airports should be permitted to operate under a range of ownership models and States have the responsibility to incentivize continuous investments in the airport sector.

ACI has a neutral position on airport ownership. If government spending cannot be relied upon, there is increasing recognition and ample evidence of the value created by private investment in airports around the world. Private investments in airports can be incentivized through stable, predictable and consistent legal frameworks, the ability to recover costs and generate a return throughout the contractual period, and the application of a dual till arrangement.

Comments
Airports should be permitted to operate under a range of ownership models. Types of ownership and participation of private capital vary from airport to airport depending on local circumstances. Each ownership model should guarantee flexibility to airport operators in developing both the aeronautical and non-aeronautical sides of the business to achieve a reasonable return on investment.

Considering strong growth in air traffic, many airports are near, at, or even exceeding their design capacities, causing congestion, lower levels of service and frustrated demand. Existing airport infrastructure cannot handle expected growth in many parts of the world. While the delivery of sound and reliable airport infrastructure is an important factor of economic growth, the allocation of funds for infrastructure projects is however insufficient to cope with the projected increase in demand.

ACI has a neutral position on airport ownership and does not suggest that airport privatization is the only suitable policy choice. There is, however, a global need to finance new airport infrastructure to meet future demand; and, if government spending cannot be relied upon as it has been in the past, there is increasing recognition and ample evidence of the value created by private investment in airports around the world.

Given the large variety of social and economic circumstances, needs and objectives across the globe, different privatization models have their merits. That said, positive lessons can be learned from accomplished and ongoing privatization projects, especially when they are subject to stable, consistent and proportionate economic oversight. As the private sector takes significant risk associated with developing airports, it requires reasonable return on investment. More generally, the decision of private parties on whether to engage in an airport project is guided by a set of right incentives, encompassing stable, predictable and consistent legal framework, the ability to recover costs throughout the contractual period and the dual till arrangement. Similar to the other facets of competition experienced by airports, competition for finance is an additional factor to consider: a wide array of industries, including various types of infrastructure, are contending in attracting money. As such, remaining a competitive industry is essential for attracting investment much needed for its progressive development.

3 Facilitation and Services

ACI's objective in the area of facilitation and services is to ensure that airport processes and infrastructure are able to meet the demand of the future, preparing airports for increasing process complexity and irregularity of operations while providing excellent customer experience. The four main pillars are:

1. Advocate with decision makers
2. Ensure that partners' programmes bring benefits to airports
3. Help airport benchmark and recognize leaders
4. Issue guidance and provide capacity building.

3.1 Quality of service

Policy
Service quality should be a key component in an airport's business strategy and operations management.

Comments
Service quality strives to align the different interests of the airport and the passenger to generate value for both the company and the customer. Airport operators should monitor a wide range of qualitative and quantitative factors related to airport service quality and the passenger experience at airports, according to the needs of users and the characteristics of the airport with the objective of improving the services delivered. In order to develop a seamless airport service with agreed minimum service standards, airports operators must consolidate their existing cooperation with all other organizations and agencies which have a guardian role for service delivery. Airport operators should adopt clear passenger service propositions based on the continued development of existing and new passenger services aiming to improve passengers' experience and the generation of additional revenues. An agreed minimum service level needs to be defined locally in order to determine the ability to process passengers at the time required. Airports should define their service quality targets as part of their business strategy and strategic directions while agreeing to service quality target scores for perceived service quality indicators defined and agreed to with the partners involved.

Policy
There cannot be a "one size fits all" approach when it comes to Service Level Agreements (SLAs). As such, there should not be a standard SLA model to be applied to all airports and airlines. Conversely, airport operators should have the autonomy to decide whether engaging in SLAs is appropriate and tailored to their specific situations.

Comments
The ICAO guidance material in the Airport Economics Manual (Doc 9562) indicates that an SLA is a tool by which airports and aircraft operators define the level of service and the terms of engagement or rules that will govern the airport/users relationship on the agreed services (para 3.7 refers) and provides additional guidance material describing the objectives, characteristics, implementation aspects and the various possible forms of an SLA (Appendix 2 refers).

There cannot be a "one size fits all" approach when it comes to SLAs. While SLAs can be an appropriate tool to define the expected level of services between airlines and service providers (such as ground handlers, in-flight caterers, jet fuel providers, etc.), they are not necessarily responsive to the needs of airport operators, which are by nature asset-intensive customer-centric infrastructure providers.

In several instances, indicators related to the availability of facilities, services and equipment that may be contained in airport-airlines SLAs are impacted by factors outside of the control of the airport operator. Most notably, early or late arrival of aircraft may have a significant effect onto the airport operator availability of facilities, services and equipment. Nonetheless, early or late arrivals are hardly caused by the airport operator under scrutiny but are rather inputted to airline operation, origin airport operation and air traffic control (ATC), or other sources.

3.2 Airport capacity

Policy
While airport operators are best placed to lead and coordinate the planning and provision of capacity to users, airlines shall make full and effective use of available infrastructure so that critical capacity is not wasted.

Comments
Considering the strong growth in air traffic, many airports are near, at, or even exceeding their design capacities, causing congestion, lower levels of service and frustrated demand. Existing airport infrastructure cannot handle expected growth. This is what the industry refers to as capacity crunch. There are several indicators testifying to the capacity crunch, among which is the growing number of schedule-facilitated and slot-coordinated airports. Another indicator is that over the last couple of decades, despite new technology, scheduled flight times, i.e., how long an airline estimates it will take to complete a journey, have increased by as much as 50 per cent, representing allowances for longer taxiing times at those airports that have become more congested.

Given the complexities involved in planning, getting approvals, financing and constructing new infrastructure, by the time the new infrastructure is ready for use, its traffic could easily be twice what it was when the project was conceived. This predicament of constant infrastructure shortage has negative economic consequences for the national economies as well as for the key industry stakeholders.

As such, it is of paramount importance to ensure that airlines are making full and effective use of available infrastructure so that critical capacity is not wasted, particularly at the world's most capacity constrained airports. Allocation efficiency should be improved with measures to reduce airlines overbidding for slots.

Optimizing and enhancing airport capacity requires aligned incentives for all stakeholders (airports, airlines, ATC authorities and regulators) to increase capacity and provide optimal levels of service. Airport operators are best placed to lead and coordinate these processes of continuous improvement. The delivery of sound and reliable airport infrastructure is an important factor of economic growth.

3.3 Airport slot allocation

Policy
As the Worldwide Airport Slot Guidelines (WASG) serve as a minimum common denominator for the aviation stakeholders to allocate airport slots, airport operators wish to promote the greatest possible efficiency in the use of their infrastructure, which implies the allocation of slots to the airlines that make best use of them.

Comments
An airport slot is a specific timeframe within which an aircraft can land or take off at an airport. Where the demand for slots at a particular airport exceeds the available supply, the airport can be considered 'capacity-constrained', at which time, a 'slot allocation' process is implemented.

Slot allocation policy at global level–incorporated in the Worldwide Slot Guidelines (WSG)–has been defined and administered by airlines and slot coordinators for more than 40 years. This reflected the make-up of the industry when the guidelines were first set in 1974. Airports and airlines were predominantly state-owned, and slots were also considered a public asset.

The management of airport capacity and slot allocation is essential to ensure efficient access to airports' infrastructure and resources. ACI works with governments and regulators to ensure that, when facing congestion, airports play a leading role in the definition of their capacity, its allocation to airlines, and in monitoring its effective use.

As airports have evolved over the years and now play a much more dynamic and business-focused role in the aviation industry, and in particular are funding and financing much-needed capacity development, airport operators have a keen interest in ensuring that slots are effectively use by airlines as planned. There should no capacity wastage in order to drive the most optimal use of existing resource.

Consequently, airport operators, airlines and facilitators/slot coordinators agreed in June 2019 on a reform of the governance of the WSG. These will be renamed Worldwide Airport Slot Guidelines (WASG) and will serve as a minimum common denominator for the aviation stakeholders to allocate airport slots. In this context, ACI supports any measure that can improve the efficient use of limited airport capacity to the benefit of the community, airlines and airports.

States and/or regions may establish their own regulations governing some of these issues. Those regulations have precedence over the policies, principles and processes of the WSG and the WASG. In such cases, States and/or regions should consult the airport industry to ensure that regulations meet their specific circumstances, give equal weight to the interests of airlines and airports so airport slots can be allocated to serve the consumer, and finally, consider upgrades to the current slot allocation system as well as alternative methods to allocate slots.

3.4 Maximum clearance times at international airports

Policy
Airports, cooperating closely with government agencies and airlines, should aim towards a maximum passenger processing time of 45 minutes or less for normal arriving passengers.

Comments
ACI supports Recommended Practice 3.40 in ICAO Annex 9, which calls for a goal for clearance within 45 minutes from disembarkation, for all arriving passengers requiring not more than normal inspection, regardless of aircraft size and scheduled arrival time. This goal is important to the efficiency of international air transport.

Passengers should be provided with information concerning the entry requirements of customs, immigration and other authorities, so that clearance procedures are not unnecessarily delayed. Airport operators, airlines and control authorities should take every opportunity to ensure that this information is readily available and brought to the attention of passengers, leveraging technology available to move many process "off-airports" in locations that best suits the customers.

Refer to paragraph 3.14 herein for off-airport processes.

Policy
Airports, cooperating closely with government agencies and airlines, should aim towards a maximum passenger processing time of 60 minutes or less for normal departing passengers.

Comments
ACI supports Recommended Practice 3.37 in ICAO Annex 9, which calls for the setting of a goal 60 minutes for completion of departure formalities for departing international passengers. The total time should be calculated from the passenger's arrival at the first processing point at the airport (self-service kiosk, check-in desk, baggage drop-off point, security control or other control) to the scheduled time of flight departure.

3.5 Illicit trade

Policy
Airports should cooperate with customs administrations to deter and interdict illicit trade and other contraband.

Comments
Airports are the starting point for many meaningful journeys and interactions between families and friends. Unfortunately, airports can also provide a platform for persons of ill intent to conduct unlawful activities such as crime, smuggling and terrorism. This is why the aviation industry is playing a role in the fight to deter and interdict illicit trade and contraband, recognizing the important role staff can play in identifying and reporting suspicious activities.

Airport operators can assist Border Control, Customs administrations, airlines and other stakeholders in order to play an important role in the deterrence and interdiction of illicit trade, i.e., human trafficking, illegal wildlife trade and narcotics. The measures taken against illicit trading should be integrated into a seamless arrivals process, not to cause undue delays to baggage delivery and loading. A good relationship, reinforced by memorandums of understanding, guidelines or other instruments agreed at the local level may help in the determination of each stakeholder's roles and responsibilities and the resolution of any problems.

There is progress in breaking down silos between aviation security (covered under ICAO Annex 17) and border security (covered under ICAO Annex 9). Indeed, there is merit in national authorities sharing information and intelligence on a range of threats so that resources, efforts and equipment are not duplicated. ACI supports the establishment of partnerships between government agencies, airports and industry stakeholders to agree on initiatives of mutual interest and deliver them jointly. Their goal should be to enhance national security and facilitation programmes, while achieving a more efficient use of airport space, government resources and passengers' time at airports. Encouragement is therefore given to consider the deployment of single touchpoints, which address different stakeholder requirements, therefore reducing the number of overall touchpoints needed to process passengers for departures and for airlines to improve the quality of identity authentication controls during online check-in to remove the need for manual identity checks within the airport infrastructure. Moreover, integration of biometrics and identification (ID) platforms with the airport systems increasingly optimizes security of the processes while promoting a better passenger experience.

Furthermore, behaviour analysis programmes should be integrated and run in cooperation by border agencies, aviation security and law enforcement authorities to optimize passenger processing and usage of existing infrastructure. ACI member airports have reported successes when introducing these programmes.

Refer to Chapter 7 on Security, paragraph 7.16, herein on ACI's position on the role of security screeners in detection of illegal wildlife.

For further information, see the ACI Combatting Human Trafficking and Illegal Wildlife Trafficking guidance documents.

3.6 Baggage delivery on arrival

Policy
Airport operators should strive to deliver passenger baggage in a timely manner, taking into consideration agreed SLAs with airlines and/or ground handlers and industry standards.

Comments
In order to improve baggage delivery, ACI recommends that:

- the baggage delivery system feed points be located as close as possible to the aircraft
- wide, fast and reliable baggage belts, conveyors and baggage transporters be employed
- the design of baggage delivery areas allows for flexibility and expansion.

ACI also recommends that the appropriate authority should jointly establish and monitor performance requirements with the airport operators (including key performance indicators) for baggage delivery at each terminal, and that performance records should be exchanged between airports, airlines and/or ground handlers. Information regarding the delivery status should be made available to passengers using the appropriate flight information displays.

Refer to paragraph 3.14 herein for additional policies regarding baggage drop-off facilities.

3.7 Dual channel system of inspecting inbound baggage

Policy
The dual channel system (or other selective process) should be introduced and made available where legally allowed under government-defined requirements and local circumstances.

Comments
The merits of the dual channel or other selective process system of customs clearance and quarantine inspection based on risk management, have been well proven at many airports around the world, and the system should be implemented in all countries in order to speed up passenger flow. Guidelines should be drawn up for the most appropriate design of dual channel facilities which offer customs administrations the maximum surveillance possibilities of passengers awaiting their checked baggage (Standard 3.49, ICAO Annex 9).

3.8 Simplification of procedures for inbound passengers on international flights

Policy
The inspection of arriving passengers on international flights should be limited to travel document examination, provided that a sufficient number of immigration officers and/or Automated Border Control facilities be made available and visa waiver arrangements be extended to the maximum number of countries possible.

Comments
States should not require any information in writing (e.g., a disembarkation card) supplementary to or in repetition of that presented in their identity documents, from temporary visitors travelling by air, or from operators on their behalf. Identity documents should be machine readable and document readers be used to capture relevant information. At the local level, airport and airline consultative bodies, such as facilitation or airline operators' committees, should jointly work together to simplify the arrivals process. Governments should be encouraged to use a digital approach to capture any additional information that may be required over and above identity information to help with the facilitation of passengers.

Irrespective of national rules, regulations and procedures, States should provide necessary government inspection services (personnel and/or automated systems) free of charge at all international terminals, at any time, in response to reasonable commercial demand.

Where appropriate, separate immigration channels should be established for nationals and foreigners in order to speed the flow of passengers through controls and minimize congestion. Where appropriate, separate immigration channels should be made available to persons with disabilities and families travelling with children. Furthermore, in order to speed up the immigration process, automated border control (ABC) gates and/or kiosks integrating the use of biometrics should be made available to use by various nationalities (where appropriate), rather than for registered passengers or nationals only.

ACI supports ICAO Annex 9, Standard 3.43, which states that the public authorities "shall expeditiously accept passengers and crew for examination as to their admissibility into the State". However, ACI believes that a clarification should be added to the Standard, stating that the provision is intended to ensure that arriving passengers are not held on aircraft due to a lack of clearance capacity on the part of public authorities.

ACI supports ICAO Annex 9, Standard 6.21, which states that "Contracting States shall make arrangements for a sufficient number of control channels so that clearance of inbound passengers and crew may be obtained with the least possible delay. Additional channel(s) shall be available if possible, to which cases needing further examination may be directed without delaying the main flow of passengers".

Policy
Where there is a requirement to undertake routine quarantine and health inspections on arriving passengers, these should be designed and implemented efficiently.

Comments
Quarantine and health inspection checks should be integrated into a seamless arrivals process, not cause undue delay to inbound passengers and, where possible, be temporary procedures, particularly regarding response to health emergencies and pandemic outbreaks.

3.9 Simplifying outbound passport and customs controls

Policy
Where there is a requirement to undertake routine quarantine and health inspections on arriving passengers, these should be designed and implemented efficiently.

Comments
Elimination of emigration and customs controls at departures, with due regard to security considerations, would facilitate the movement of passengers and their baggage and permit the simplification of layout and routings within airport terminals. If departing passengers have to present their travel documents, their movement can be facilitated with the use of separate channels for nationals and aliens.

In order to streamline passport checks and other emigration controls, it is recommended to encourage government agencies to deploy solutions to anticipate actions and/or use existing information to be more effective. Whether out of the airport or before the border control booth, every action performed upstream can positively influence the processing time.

Passengers presenting themselves at the border have different profiles (nationals, foreigners travelling with a visa or foreigners in a visa waiver programme). To facilitate the processing of all these types of passengers, it is encouraged to have a better use of automation, self-service and digital approaches to streamline the way they cross the border.

3.10 Signage

Policy
Directional signage for passengers should be easy to understand, clearly visible, and made accessible to people with disabilities.

Comments
Airports should consider integrating existing sign systems, such as the ICAO system described in ICAO Doc 9636 — *International Signs to Provide Guidance to Persons at Airports and Marine Terminals*, into their existing branding identity. Airports should also enhance the value of pictographic information by restricting its use to items of major importance to the passengers, including persons with disabilities.

3.11 Accessible airport facilities for persons with disabilities

Policy
Airport facilities must be accessible to persons with disabilities, including those with reduced mobility and with invisible or hidden disabilities.

Comments
Aviation, like all other transport modes, recognizes this growing passenger segment. Persons with disabilities, including those with reduced mobility and with invisible or hidden disabilities, have the same international rights as other citizens, such as accessibility and the full and effective participation and inclusion in society, including freedom of movement and freedom of choice (UN Convention on the Rights of Persons with Disabilities, articles 3 c) and 3 f). Persons with disabilities should have opportunities for air travel comparable to those available to able-bodied citizens.

The needs of persons with disabilities, determined in accordance with national and international requirements and recommendations, should be borne in mind by architects and engineers responsible for designing new structures or modifying existing ones, and by those responsible for operating airports, with a view to the provision of suitable means to ensure easy and comfortable access to all facilities by passengers with disabilities, at a suitable level of quality of service.

All procedures forming part of the journey of air travel, including check-in, immigration and customs, security clearance, embarkation and debarkation, departure, air carriage, and arrival should be made accessible for persons with disabilities in order to facilitate clearance and air transportation of such persons in a dignified manner.

ACI World Annual General Assembly (WAGA) adopted in April 2019 a Resolution which affirms airports' commitment to accessibility of their facilities for passengers with disabilities. The Resolution brings the attention of all airports to this critical issue and urges the implementation of best practices that meet or exceed regulatory requirements.

More detailed recommendations are contained in ACI Airports & Persons with Disabilities Handbook (Fifth Edition 2018).

3.12 Airport handling arrangements

Policy
Airport operators should retain the right to approve ground handling services at their facilities.

Comments
ACI supports ICAO Annex 9, Recommended Practice 6.5, which states that aircraft operators should be permitted to choose how and by whom their ground handling operations should be carried out. While agreeing with this RP, ACI wishes to point out that airport operators must retain the right to set limits on the number of Ground Handling Services Providers (GHSPs) and self-handling airlines at their facilities.

The uncontrolled proliferation of handling agents and equipment could create check-in area and ramp congestion and safety and security hazards.

If an airline is not allowed or does not wish to provide its own services, it should ideally have more than one choice of GHSP available.

ACI supports free and fair competition between GHSPs, so as to give a choice to airlines, provided that space at the airport allows. If the airport operator itself provides handling services, it should also compete on a non-discriminatory basis.

For additional policy related to safety of ground handling, please refer to paragraph 5.21 herein.

To take account of the different situations at airports, and in line with ICAO Doc 9082 — *Policies on Charges for Airports and Air Navigation Services*, ACI maintains that equal treatment for all user airlines implies that a concession fee should be charged on all providers of ground handling services, including the local carrier when it provides such services to other carriers.

3.13 Landside transportation and inter-modality

Policy
Ground transportation arrangements to, from, between and within airports are vital to all users and should be planned and operated in a coordinated manner with the various bodies involved.

Comments
As airports grow and develop to meet the increasing demand for air transport, it is essential for surface access facilities and services to respond to this rise in demand. Airports should be linked in an efficient and user-friendly manner to the markets which they serve. Such facilities and services may include public transport access by road, rail and any other applicable modes, as well as private transport, including private vehicles, transportation network companies, rental cars, taxis, ride hailing services, courtesy buses and commercial vehicles.

A balance should be struck between the needs of all airport users, bearing in mind the local pattern of traffic needs, resources and priorities.

Information on public transport services, including fares and schedules, should be readily available to arriving and departing travellers. Where fares are charged, in order to expedite the service, arrangements should be made enabling travellers to purchase tickets before boarding.

Transportation within airport terminals is as important as transport to and from them. Where the distance between airport terminals, car parks, car rental facilities and public transport services is significant, transport connections should be considered, including the possibility of installing people-mover systems or autonomous vehicles. Because of the need to maintain frequent and regular transport schedules within airports (between terminals), and because international connecting passengers often do not possess local currency, such transport should be provided without direct charge to travellers.

There should be full consultation at the earliest possible stage between the airport operator, transportation agencies and operators involved in surface access to the airport, such as local transport authorities, municipalities and licensing authorities, to encourage increased coordination in the planning of surface access and the provision of relevant information to passengers.

3.14 Off-airport check-in and baggage drop-off facilities

Policy
ACI concurs with ICAO Recommended Practice 6.16 which states that governments should allow the provision of off-airport check-in facilities, with due regard to the necessary security precautions and border control requirements.

Comments
ACI believes that governments, airlines, airport operators and other relevant stakeholders should actively consider how off-airport facilities can be developed, taking into account the facilitation of baggage transportation to and from the airport. Some of the most likely off-airport locations are railway stations, hotels and airline city-centre terminals.

There is a growing number of industry third party service providers that are not directly linked to the airports and the airlines. Identity and security requirements between bags and travellers need to be addressed. Considering this situation, there is a potential difference of risk and perhaps security clearance for the person picking up the luggage, and certain conditions over the handling of luggage, etc.

Technology will also enable to move many processes "off-airport" to a location that best suits the customer. Processes can be both physical and virtual, such as baggage drop off or collection, and automated or mobile clearances. By using reliable and trustable digital identity, activities that historically required a manual check could now occur as a digital process. There are many benefits including convenience for customers, better use of infrastructure, as well as fewer crowds and processes at the airport to better security.

3.15 National and Airport Facilitation Committees

Policy
State authorities should establish a National Air Transport Facilitation Committee and Airport Facilitation Committees, as required, in accordance with ICAO Annex 9, Standard 8.19.

Comments
Appendices 11 and 12 to ICAO Annex 9 set out guidelines for the establishment and operation of Airport Facilitation and National Facilitation Programme Committees. Airport operators should take the leading role in convening and conducting meetings of Airport Facilitation Committees.

Governments should consult with airport operators, control authorities and groups representing airport users, at the earliest possible stage, whenever new government-mandated procedures require changes in facilities, including changes of layout within existing facilities.

3.16 Business continuity management

Policy
Airport Business Continuity Management Plans should contain appropriate measures to mitigate against, prepare for, respond to and recover from any types of disruptions and unforeseen events, and return to normal operations quickly and efficiently.

Comments
Business Continuity Management focusses on building and improving organizational resilience and the capacity to recover quickly and effectively from any type of disruptions, whatever its size or cause. It involves identifying and safeguarding key products and services, and the most urgent activities that underpin their production and delivery.

The potential for events to disrupt normal business operations at airports creates the need for robust plans that help airport operators mitigate against, prepare for, respond to and recover from such events. Effective business continuity strategies will safeguard passengers and the airport community, enable the delivery of services to customers, sustain commercial revenue streams and protect infrastructure. Plans and approach to business continuity management should be fully tailored to the circumstances of events and the needs of individual airports.

In 2019, ACI launched the Airport Business Continuity Handbook (First Edition) to provide general guidelines to help airport operators maintain the flow of passengers and goods in the event of an emergency or other operational disruption.

Refer to Chapter 5, paragraph 5.24 herein for additional details regarding the airport's role in disaster management.

3.17 Identity management and biometrics

Policy
The implementation of identity management based on biometrics at airports should aim to simplify, streamline and enhance the complete passenger travel process, including border controls and security, while reducing costs.

Comments
With the increasing need for secure personal identification in the travel industry, airport operators are in the forefront of efforts to apply biometric technology to passenger facilitation in order to provide end to end solutions compliant with privacy rules at all touchpoints, especially check-in, self-service bag drop and boarding processes.

In order to enhance the airport experience for passengers and improve the efficiency and security of identification processes, innovative identity management solutions are key in developing paperless travel experience where passengers can fly safely and securely only using their biometric data. Biometric data are key to combine fast paperless identification and massive adoption. This will be achieved using a trusted digital identity platform connected to all touchpoints across the end-to-end journey, including departure, transfers and arrivals, and where possible including the return trip. Physical touchpoints are either combined, removed or transferred off the airport premises as much as possible by sharing a single set of passenger identity information among authorized stakeholders, in accordance with data privacy rules.

As biometrics are potentially to become the token for the passenger journey within the airport, the level of trust in such technology must be high. Indeed, it is of the utmost importance that biometric system/equipment/process cannot be fooled by a fraudster so matching threshold should be high. At the same time, biometrics is set to facilitate the journey and decrease processing times. The right balance between facilitation and security will be key and should be discussed between the various stakeholders and international bodies.

Respecting data privacy will be a key success factor for a wide adaption of biometrics use by the passengers. In this regard and in addition to a transparent communication of how it intends to be used, it is of upmost importance to give the choice to the passengers. Some travellers may want to have their biometrics saved centrally to fully enjoy the benefits of a pure biometric journey; others may have concerns about a central and/or long-term biometric storage while still wanting to use the biometrics.

Airport members are encouraged to use ICAO biometrics standards in their passenger process touchpoints in order to increase security and alleviate congestion, as well as increase customer satisfaction. ACI supports the rollout of ICAO's internationally standardized biometric travel document programme, which uses face recognition as the primary biometric for machine-assisted identity confirmation. In addition, as optional secondary biometric and increase anti spoofing capabilities, either fingerprint or iris may be added to the e-passport.

ACI encourages ICAO and governments to continue to promote the use of the ICAO globally interoperable biometric standards and the use of the globally interoperable data formats for the three biometrics specified above.

It is equally important that border control agencies and other stakeholders promote the use of digital identity verification systems, installation of ICAO-compliant document-reading systems, as well as biometric capture and authentication systems at airport border control points to assist in identifying the rightful holders of travel documents.

Cargo facilitation

3.18 Government inspection services for cargo

Policy
Government inspection services for cargo should be available and adequate to facilitate the expeditious clearance of cargo consignments in accordance with ICAO Annex 9, Standard 4.1.

Comments
International air cargo hub operations have evolved into a 24-hour per day, 7-day per week business, and the air cargo industry is catering for increasingly time-sensitive shipments. The just-in-time concept has given rise to the need for fast, cost-effective and seamless transport chains. Moreover, the rapid growth of traffic in perishable cargo creates a requirement for the streamlining of procedures, not only for the physical handling of goods, but also for the timely inspection and release of cargo. Governments should move to enhance the speed advantage of air cargo by making available government inspection services whenever they are needed.

ACI believes that compatibility must exist between the requirements of the relevant government inspection agencies at the origin and destination of a consignment.

3.19 Maximum clearance time for arriving cargo

Policy
Maximum clearance times for different categories of cargo should be established by the customs authorities, in consultation with airports and airlines, and should meet or better the recommended performance standards in ICAO Annex 9, Chapter 4, Section C.

Comments
ACI supports ICAO Annex 9, Recommended Practice 4.31, which establishes a target customs clearance time of three hours for arriving general cargo not requiring examination, from the time proper documentation or a legally acceptable electronic equivalent is presented. In line with ICAO Annex 9, Standards 4.27 to 4.29, shipments such as perishable goods, live animals, personal effects and low-value goods should be cleared promptly on arrival. As provided under ICAO Annex 9, Recommended Practice 4.30, goods imported by authorized persons who have demonstrated compliance with customs regulations and who supply advance information should be released immediately on arrival.

ACI recommends that physical examination of cargo by customs should always be based on targeting and risk assessment criteria.

3.20 Cargo handling times and other indicators of performance and quality of service

Policy
Airports should monitor the performance of the cargo operations on its ramp areas in order to implement a continuous improvement process.

Comments
In order to monitor an airport's performance and gain knowledge of where corrective action may be necessary, spot checks or periodical surveys should be carried out by recording the times of: on-block-time of inbound aircraft, shipment check-in completed (time when goods and documents are available for action by consignee or his agent), entry procedure initiated (application for clearance filed with the customs and other control authorities, customs clearance completed, and collection of goods.

ACI recommends more extensive use of unit load devices (ULDs) to reduce staff injuries and handling time, prevent damage, eliminate the incidence of missing cargo, and contribute to airport capacity.

Airports should take a leading role in measuring and monitoring the performance of airport cargo facilities and services. The airport should, in collaboration with tenants and operators through a local committee, continuously assess processes and compliance so that areas of concern can be addressed or planned for through future development. Elements such as fast processing (average dwell time), high space utilization (e.g., tons of cargo handled per year per square meter of warehouse space), low manpower requirements (e.g., tons of cargo handled per year per employee) and effective ramp control (e.g., a written plan or agreement between stakeholders to coordinate all ramp movements) should be among the criteria used for assessing economic and efficient cargo handling.

3.21 Cargo facility planning

Policy
Airports should ensure that the future needs of air cargo are adequately covered in facility development plans.

Comments
Airport operators should review the present and future demand for facilities and the space available at their airport prior to deciding how to accommodate aircraft operators' needs within their facility planning, possibly including cargo operations with new large aircraft.

Airport operators may find it advantageous to develop "common use" facilities for use by several airlines or a neutral handling agent, in view of the diminishing space available at many airports for the construction of exclusive-use facilities. Common use facilities permit greater utilization of buildings, ramps and handling areas, and may provide better economic justification for the construction of advanced handling systems, etc; however, existing principles of competition must be adhered to.

3.22 Mail handling

Policy
Airports should facilitate, as far as practicable, the safe, efficient and secure processing and storage of air mail consignments.

Comments
ACI recommends that airport operators should be flexible with regard to the needs of postal authorities, other mail operators and airlines for warehouse space and systems, and controlled access to apron areas for the handling of air mail.

4 Airport Information Technology

4.1 General

Policy
The role of the airport operator should be to promote and implement standardized shared solutions and systems. Centralized management of these systems by the airport operator is recommended wherever possible, with appropriate cybersecurity safeguards.

Comments
Information Technology (IT) plays a vital role in the operation of airports and the facilitation of traffic, passenger experience and security. The role of the airport operator is to coordinate development of automated systems. In most cases, airport operators are also involved in or responsible for their provision and operation.

The airport operator should also ensure that the necessary communications infrastructure is provided, and that all necessary systems and procedures can be installed and operated. It is essential that information exchange between airports, air carriers, ground handling service providers, air navigation service providers (ANSPs) and local, regional, national or supranational authorities is coordinated and agreed upon, taking into account the technological solutions cybersecurity measures and standards best suited to each particular situation, and in accordance with international standards.

4.2 Information technology infrastructure at airports

4.2.1 Policy

The role of the airport operator should be to promote and implement standardized shared infrastructure. Centralized management of these systems by the airport operator is recommended wherever possible.

Comments
Centralized management of this IT infrastructure by the airport operator is recommended.

In the light of technological developments, cost factors and the dynamic nature of airport tenants, it is recommended to equip facilities with information and data communication systems provided by the airport operator. This approach enables current and future users of the facility to use information systems and communicate with local and/or remote computers and databases in a coordinated manner, without having to re-invest in new infrastructure when there is a change of tenants or changes in airport infrastructure. Such systems should be based on international standards, including cybersecurity standards and recommended practices.

4.2.2 Policy

All data processing and communication activities and requirements at an airport which affect airport management and operations should be coordinated and/or approved by the airport operator.

Comments
The development and installation of shared use data communications systems at an airport should be the result of careful coordination between all parties involved (users, suppliers, operators) in order to achieve the most cost-effective and operationally-desirable technical and functional solutions for all airport users and customers.

Airport operators should develop standards and install a general multi-purpose infrastructure, in order to avoid heterogeneous and incompatible operations and information. These systems should include, but may not be limited to, shared cabling infrastructure, local area networks (LANs), wide area networks (WANs), wireless technologies, radio-frequency-based technologies and cellular technologies.

In environments where a shared common use IT infrastructure is installed, it is necessary to have adequate IT security procedures and operational contingency planning.

The aviation operating environment is by nature very sensitive to problems affecting their operational efficiency. In addition, the fact that various different partners will utilize IT infrastructure, often simultaneously, requires that careful attention be paid to IT security–both physical and logical–as well as general IT operational availability.

IT Service Level Agreements should include standardized, agreed-upon security aspects, as well as the establishment of a contingency plan which takes into consideration airline and airport operational levels under different contingency situations.

4.2.3 Policy

Airports should provide Wireless Fidelity (Wi-Fi) in a secure and resilient manner.

Comments
With the objective to protect passenger personal information privacy and other personal data, passengers are advised to NOT use sensitive website requiring personal information.

4.3 Systems and procedures — Common use environment

Policy
In order to ensure optimal, economic use of airport physical infrastructure, the airport operator should promote and prioritize the use of common use systems wherever possible and justifiable.

Comments
The airport operator should discourage the use of dedicated systems, wherever clearly defined benefits can be achieved from applying economies of scale for the provider and users of the facilities, thus avoiding unnecessary and costly capital investments in airport and IT infrastructure.

Common use systems provide various benefits for both the airport and airline, including standardized, cost-efficient operations, maintenance and optimization of airport infrastructure. These aspects produce economies of scale for the provider and user of the facilities, avoiding unnecessary and costly capital investments in airport infrastructure. Economies of scale can be realized by applying a "one to many" vs. "one to one" approach, where it is more cost effective to distribute the initial investment and recurring costs amongst the users of IT infrastructure as opposed to investing in and maintaining different IT solutions.

The airport operator should take a leading role in promoting these systems to the airlines and other potential airport stakeholders.

Given the different options, both technical and contractual, for the commissioning of these systems, it is important that the airport stakeholders work in partnership to define the most adequate options for a particular airport environment, in line with IATA and ICAO standards.

In any airport terminal, dedicated equipment for departure control systems can waste scarce resources and confuse passengers. In such circumstances, the installation of shared-use equipment for the terminal may have conclusive advantages.

Where possible, automated local departure control systems should be utilized in order to ensure a reliable, auditable record of passenger check in and aircraft boarding.

The airport operator should promote the use of these systems for each airline and provide an airport-based system for those companies which do not have access to such systems, especially in cases where common-use equipment is in use.

Common Use Passenger Processing Systems (CUPPS) Recommended Practice (ACI RP 500A07), developed as the evolution of IATA's CUTE RP 1797, with ACI, A4A and IATA support, provides airports the benefits included in its six foundational principles:

1. applications should run on any platform
2. CUPPS facilitates rather than mandates business processes
3. the CUPPS platform will have minimum, defined functionality
4. affordability
5. serviceability
6. predictability.

For further information, refer to www.cupps.aero and www.aci.aero.

4.4 Common use wireless infrastructure at airports

Policy
Airport operators should control the proliferation of independent wireless local area networks (WLANs) on the airport premises.

Comments
In order to avoid potential security and control deficiencies, duplication of investment, disturbance and interference, a "shared-use" approach is essential.

Airport operators should coordinate and manage the development and implementation of an integrated WLAN service infrastructure.

Companies operating at airports are increasingly demanding the installation of WLAN (also referred to as Wi-Fi) access points to optimize their activities. At the same time, airlines are increasingly demanding wireless ground-to-air and gate-to-cockpit applications. Furthermore, mobile telephony operators and wireless internet service providers (WISPs) are demanding the installation of WLAN access points at airports. WLAN services offer many current and potentially promising new applications for passengers and airport staff. The implementation of WLAN infrastructure allows different service providers to deliver this service to potential users.

However, airport operators should control the proliferation of independent WLAN installations on the airport premises. There is a risk of security and control deficiencies, potential operational disturbance and radio frequency interference as well as duplication of investment. Thus, the airport community should adopt a common use policy enabling a service provider or tenant to offer services on the WLAN infrastructure at the airport.

Due to the security and operational requirements of the WLAN, the airport operator should undertake the professional management (itself or via a third party) of this wireless environment/infrastructure that ultimately services both the tenants and public.

When developing WLAN services, a 'neutral' infrastructure should be implemented. There must be clear rules how the services can be offered and installed. A multi-service provider environment should be realized via a common portal for public access.

Airport, airlines and other airport stakeholders are increasingly using WLANs in support of critical operational requirements for services such as baggage reconciliation and mobile check in. It is important that these critical functions are given priority access over less critical services such as public Internet access. Therefore, the design, implementation, and management of the WLAN must consider multiple aspects of performance and security.

The airport operator, which has final responsibility for the consistency of different services, should coordinate and manage the wireless environment professionally. This can be achieved through a single infrastructure or a combination of different infrastructures of which the technical installation is evaluated and coordinated by the airport.

Airport operators should constantly evaluate competing technologies, so as to maintain low costs and increase capacity in line with demand, for the benefit of all tenants, concessionaires and others.

4.5 Cargo automation

Policy
Airport operators should promote automation to improve facilitation in international cargo.

Comments
The role of the airport operator should be to promote and implement standardized shared solutions.

In view of the proliferation of computer-based systems for the handling of cargo at airports, the objective of airports should be the usage of standardized common systems. However, it is recognized that this may not be easily achievable in the foreseeable future. ACI also advocates, where applicable, the development of integrated airport systems covering all modes of transport at an airport, including sea, road and rail.

There is an acknowledged need for standardization in the development of new systems. For example, RFID standards for cargo information must be defined at three levels: consolidated unit cargo, home airway bill and house airway bill, in order to facilitate automation for cargo movement. There is also a need to establish interface requirements between existing and planned systems to facilitate information and traffic flows between a port system, its local cargo community, clearance authorities where appropriate, and ultimately systems at other ports. The role of the airport operator in this respect should be to coordinate system development, even if the airport operator does not provide itself the cargo system.

A successful system enables airports, as well as other airport stakeholders, to achieve a more efficient use of physical capacity by virtue of a faster throughput of international cargo. This makes air cargo more competitive in comparison with other modes and leads to the deferment of capital-intensive alternatives.

4.6 Flight information display systems (FIDS)

Policy
Flight information display systems (FIDS) should be carefully tailored to the airport environment and should be as simple and clear as possible.

Comments
Centralized management of these systems by the airport operator is recommended.

ACI generally favours standardization, but believes that the form, degree of detail and location of displays should depend to a great extent on the architectural design of the terminal and on the centralization (or decentralization) of particular operations.

It is important to standardize the presentation, i.e., the order of the various items of information, and to adopt and use standard abbreviations, designations and remarks. The systems should be as simple, clear and direct as possible.

All airport stakeholders involved in the operation of flights, including airlines and ANSPs, should provide on a timely and rapidly updated basis the relevant information on flights, including last-minute changes, to the terminal operator responsible for the operation of the flight information display system. The terminal operator should be responsible for establishing the list of data elements needed for this operation and the means of communicating them.

The displayed flight numbers should be preceded by the airline prefix codes as they appear on airline timetables, passenger tickets and boarding passes. In airport terminals used by only one airline, the airline prefix can be omitted. Where the national language is not written in the roman alphabet, provision should be made for repetition of the display information in the relevant characters and/or numerals. It is recommended to display flight information in English as well as the national language.

The use of flashing signals and colours should be kept to a minimum. Flashing signals should be restricted to the "remarks" column and to information which requires passenger action. Slow scrolling (upwards, downwards or sideways) should be done in such a way that the passenger notices that more information is available. Different colours should be used logically, to highlight data elements which are important for passenger action (e.g. gate/time). A maximum of four to five colours should be used.

Airport FIDS may use various methods of displaying code-share flights. ACI recommends that, wherever possible, the preferred method should be to display the code-share flight numbers successively on a single line of a display monitor, or on two lines at the most.

Such flight numbers can be alternated, wiped or scrolled, and each flight number should be displayed for sufficient time to be clearly legible to all passengers. Given also that the "cycle time" should not be excessive, a maximum of two or three flight numbers per display line is suggested. An alternative method which may be found useful is to reserve a separate monitor for the display of code share flights only, with reference in the main display.

Similar recommendations can also apply to the following systems:

1. BIDS — Baggage Information Display Systems
2. CIDS — Check-In Information Display Systems
3. GIDS — Gate Information Display Systems.

4.7 Machine readable travel documents (MRTDs)

Policy
ACI supports the worldwide issuance of machine readable travel documents (MRTDs), in accordance with ICAO/ISO standards, as recommended in ICAO Annex 9.

Comments
Airport should implement systems that take advantage of MRTD technology.

In order to automate and expedite the clearance of passengers through government controls with increased security, an ICAO group (on which ACI is represented) has adopted and continues to improve worldwide standards for machine readable passports, machine readable visas, machine readable official travel documents and machine readable crew member certificates, including biometric ID.

It also urges the installation of automated document readers linked to border control systems at international airports, thus enhancing security and obtaining the intended efficiency of automated controls. Even States which do not issue MRTDs can benefit from installing automated arrival controls for the inspection of the MRTDs of foreigners.

4.8 Advance passenger information (API)

Policy
ACI supports advance passenger information (API) collection.

Comments
The use of document-reading devices to capture the information in the machine readable travel document should be encouraged. The collection of this data should take place in a manner which avoids extra handling or passenger processing time or the creation of congestion at the airport. Airport operators should encourage and facilitate collection of this data offsite, using web technology whenever possible.

ACI supports the collection, prior to passenger departure, of internationally standardized API data (in accordance with World Customs Organization/IATA guidelines, as amended by ICAO) for transmission to the destination government authorities, in order to expedite the clearance of passengers by immigration and customs authorities.

4.9 Radio frequency detection infrastructure (RFID, Bluetooth, NFC and others)

Policy
Airport operators should coordinate and manage the development and implementation of radio frequency detection infrastructure.

Comments
Airport operators are concerned about the possible proliferation of independent radio frequency detection equipment, infrastructure and related networks (radio frequency detection installations) on the airport premises. In order to avoid potential security deficiencies, duplication of investment and interference, a "shared-use" approach is essential.

Companies operating at airports are increasingly demanding the installation of radio frequency detection equipment and infrastructure to optimize their activities. Radio frequency detection-based services offer many current and potentially promising new applications for all stakeholders.

However, airport operators are concerned about the proliferation of independent radio frequency detection installations on the airport premises. There is a risk of duplication of investment, of over-usage of valuable space through the proliferation of detection equipment in frequently used areas as well as the potential for operational disturbance through radio frequency interference or security infringement. Thus, the airport community should adopt a 'shared-use' policy enabling a stakeholder to offer services on the basis of a single infrastructure provided by the airport.

Due to the operational requirements of infrastructure, such as network and equipment used by the detection devices, the airport operator needs to be responsible for the professional management of such infrastructures. The airport should also establish a procedure to approve and register all radio frequency detection-based applications and hardware.

The parties concerned should consider if the airport should take the role of installing and maintaining a common use infrastructure. There should be clear rules as to how the services can be offered and installed.

The airport operator, which has final responsibility for the consistency of different services, should coordinate and, if necessary, manage the radio frequency detection environment. This can be achieved through the implementation of a single infrastructure or a combination of multiple infrastructures of which the technical installation is evaluated and coordinated by the airport. In addition, airport operators should constantly evaluate competing technologies, so as to maintain low costs and increase capacity in line with demand, for the benefit of all tenants, concessionaires and others.

Airports request that stakeholders wishing to install radio frequency detection systems consult and coordinate with the relevant airports services on the costs and design of the systems to be implemented. Costs should either be entirely borne by the stakeholders or on a cost sharing model between the various project stakeholders. For example, the airports are within their rights to charge a rental fee to the airport stakeholders on usage of airport facilities and infrastructure.

Examples of such radio frequency technologies are:

1. RFID
2. NFC
3. Bluetooth (including Bluetooth Low Energy used for Beacons*)

* Terminal beacons are Bluetooth low energy devices that broadcast their location to nearby portable electronic devices. The technology enables smartphones, tablets and other devices to perform actions when in close proximity to a beacon. A beacon uses Bluetooth proximity sensing to transmit a universally unique identifier picked up by a

compatible application or operating system. The identifier can be used to determine the device's physical location or trigger a location-based action on the device such as a check-in on social media or a push notification.

4.10 Biometric document identification systems

Policy
ACI supports the worldwide use of ICAO's internationally standardized globally interoperable biometric system for MRTDs which uses face as the primary interoperable biometric for machine-assisted identity confirmation with an MRTD.

Comments
ACI recognizes the benefits of using biometrics to confirm personal identity for border control, airport passenger processing and airport access control, to improve security, efficiency and facilitation. Identity can be verified using a biometric of the individual against reference data securely recorded on an MRTD, a "smart card", or stored in a database. These methods, together with APP/API, can enhance security, speed up clearance and alleviate congestion and delays at airports.

An optional secondary biometric, either fingerprint or iris, may be added to the MRTD. ICAO's standard MRTD and biometric specifications are published in ICAO Doc 9303.

The ICAO "toolbox" contains highly developed standardized specifications for MRTDs, in particular those for: ID, credit card-size cards, biometrics, and their use in confirming a person's identity and facilitating inspection. The specifications also offer significant advantages for other uses at airports such as airport access control, ID cards for airport personnel and crew members, passenger processing, and lookout checking systems. The specifications also cover security features, data presentation and recording formats and standardized placement of technologies for data storage on documents which encourage standardization and global interoperability.

ACI encourages ICAO and governments to continue to promote the use of the ICAO globally interoperable biometric for MRTDs and the use of the globally interoperable data formats for the three biometrics specified in the ICAO Standard (face, fingerprint and iris). Also important is the promotion of the installation of ICAO compliant document reading systems and biometric capture and authentication systems at airport border control points to assist in identifying the rightful holders of MRTDs. Data privacy concerns should be taken into account in implementing biometric identification systems.

4.11 Baggage handling automation

Policy
The "licence plate" concept should be normalized by airlines, airports and handling agents.

Comments
The licence plate concept–Baggage Source Message (BSM)–includes a coded baggage tag (bar code and/or RFID) with a unique number, which can be read automatically and transmitted electronically by means of standardized messages between airlines, airports and handling agents. It enables these parties to provide higher quality baggage sorting and handling services. Passenger/baggage reconciliation applications (reference ICAO Annex 17) can also use the same data elements.

This concept is being put into practice by airlines, airports and handling agents, with major consequences for investment by airports in baggage systems. It is essential that any changes in the concept and definition of the licence plate are compatible with equipment at airports, so that airport investment is not wasted.

Airport operators should improve the quality and efficiency of baggage processing to bring considerable benefits for passengers, airlines and airports. The concept should be adopted by as many airlines, airports and handling agents as possible within the shortest possible timescale.

Airports should adopt the use of business messaging standard to improve real time communication between parties. This communication standard is essential to support interoperability of airport baggage systems and, consequently, to provide a secure and reliable communication for a better baggage tracking.

4.12 Airport-airline data processing and electronic data interchange (EDI)

Policy
All systems which use aircraft movement information, as well as security systems, should obtain the same information from common and verifiable data sources, obtaining real-time updates as changes occur.

Comments
In order to maximize the benefit from new technology, the airport community has a need to share certain data relating to flights, including flight schedules and updates, airport facility allocation (such as aircraft stands, gates, check-in desks and baggage belts), including real-time updates, aircraft details, actual times, delays and aircraft load data. Most such exchanges are currently implemented by technically obsolete means. In order to ensure optimal airport resource allocation, cover all security requirements in and around the airport environment, and ensure orderly airport passenger flows and customer service, it is essential to establish safe and reliable information exchange between the partners.

To meet the ever-growing requirements for on-time, real-time information, it is important that airport operators take a leading role and guide concentrated efforts to ensure the maximum level of integration between all informational and operational systems, ensuring data integrity and delivery within the airport environment. In this respect, Airport Operational Data Bases (AODBs) provide a powerful and practical solution for the centralization of airport information and should be considered as a single repository for all aircraft movement information–planned and real-time.

A standard format for such messages exists, complying as far as possible with UN/EDIFACT definitions. Other standards are also being introduced, such as XML and other web-based techniques (Airport Community Recommended Information Services (ACRIS)).

Aviation Information Data Exchange (AIDX) Interface Recommended Practice (ACI RP 501A09), developed in conjunction with IATA and A4A, describes the interface specifications and standards by which airlines, airports and other participants can exchange flight-related information within or between their systems, using defined XML schemas. It ensures that the Data Receiver obtains the correct flight information in a timely and reliable manner.

Additional information can be found in www.cupps.aero and www.aci.aero.

4.13 Self-service check-in kiosk and bag drop

Policy
ACI recommends a common-use approach in developing and implementing self-service check-in kiosk and bag drop infrastructure.

Comments
Airport operators should avoid proliferation of airline-dedicated self-service kiosk and bag drop to reduce floor space requirements. To make optimum use of available floor space and kiosk capacity, and to offer passengers greater ease of use and airlines an integrated self-service environment, a common use approach is essential in developing and implementing self-service check-in kiosk and bag drop infrastructure.

Airport operators should promote and recommend that airlines develop and implement off-site check in solutions for their customers. This type of implementation should allow airport operators to save floor space and optimize passenger processing.

Nevertheless, airlines are increasingly demanding the installation of self-service kiosks and bag drop at airports. Self-service check-in kiosk and bag drop can reduce the time required to process passengers, increase passenger choice, and assist airlines and airport operators in dealing with increasing passenger volumes. The implementation of self-service check-in kiosks and bag drop allows airports and airlines to increase their check-in capacity without investing in new facilities.

It is therefore recommended that a common use policy is adopted by the airport community when a self-service check-in kiosk and bag drop infrastructure is implemented with CUSS, web check-in and ACRIS Web Services.

ACI recommends that suppliers of CUSS kiosks should design and certificate their products according to CUSS technical standards maintained by IATA on behalf of the industry. This will ensure both interoperability and a competitive market for the procurement of CUSS kiosks, with a choice of suppliers.

4.14 Surveillance and access control

Policy
Airports should give careful consideration to the security requirements when planning and implementing new facilities or enhancements to existing facilities. Where appropriate, airports should use technology to optimize the effectiveness of security measures.

Comments
Airport operators should take a leading role in the implementation of automated security systems, in close collaboration with the entities responsible for airport security. The implementation of CCTV, access control, fire detection and building management systems in particular must take into account security requirements and any infrastructure modifications which are being planned or executed, so as to optimize airport security.

In addition, planning should take into consideration the interactivity and integration of security and other airport systems and how the different security systems complement each other, in order to provide a maximum level of security. As an example, baggage screening technology can be complemented by CCTV technology to provide a process that covers security requirements for both content screening and handling of baggage in the airport

environment. Close coordination between IT and physical security is necessary. The integration of different security systems gives the security authorities a powerful tool for monitoring the airport environment centrally, capturing events, setting thresholds to highlight contingency situations (alarms) and providing centralized recording of all events according to criteria pre-defined by the security authorities.

Wherever possible, the implementation of these systems should be centrally coordinated and managed to maximize economies of scale, ensure adhesion to airport and/or government-defined requirements and policies, as well as to ensure a uniform level of service.

Even if the airport operator is not the provider or is not involved in the coordination or implementation of the systems, its role should take into account complementary needs such as flight and resource allocation information as well as communications infrastructure which may be required.

4.15 Airport websites

Policy
The airport should harness the power of the internet and the use of airport websites as a means to communicate and interact with the travelling public.

Comments
Airport websites provide an attractive and practical solution to the diffusion of airport information and various transactional activities. The natural attraction of flight information generates a high level of visits by local and international users alike.

Airport operators should consider website content in such a manner that the airport environment is adequately represented, working closely with all airport partners to ensure consistent, up-to-date and compatible content for informational as well as commercial purposes, taking into account both local and international site visitors.

As for other airport-specific systems, the airport operator should take a leading role or direct responsibility for the definition, development and management of the airport website, applying technological standards and ensuring the highest level of security.

Airport operators should consider a responsive design approach to best accommodate website accessibility from smartphones, tablets and other types of such devices.

4.16 E-business

Policy
Airport operators should recognize the significance of Electronic Business or e-Business, which encompasses all forms of business activity which can be facilitated by electronic information technology. It includes Electronic Commerce (e-Commerce) and Collaborative Commerce (c-Commerce).

Comments
E-Business is reshaping the economy and changing the very notion of business itself. Airport operators should recognize and promote the transformational power of e-Business and accelerate adoption of e-Business principles. E-Business encompasses all forms of business activity, which can be facilitated by electronic information technologies, including marketing, supply chain management, research, product positioning and on-line customer support.

E-Commerce is a sub-set of e-Business, using electronic information technologies to conduct business transactions. C-Commerce is another sub-set of e-Business, which can enhance the productivity of teams using web-based document management, workflow and project productivity tools.

Many airports have public Internet sites, but most are first-generation sites, i.e., not e-Commerce-enabled, involving simple one-way communications from the airport to the general public. By gaining transactional capability, a website can provide sufficient income to become a profit centre rather than a cost centre. It can also provide responses to queries from airport customers and stakeholders. Additionally, many airports have an internal Intranet, a closed site with access given only to airport employees, used to improve internal collaboration, including management of important documents and critical workflow. Airports also use Extranets, to provide an e-Commerce workspace for airport trading partners. The synthesis of Internet, Intranet and Extranet is sometimes known as an Enterprise Portal.

Business to Consumer (B2C)
Airports are not only using the e-Business model to improve transactional efficiencies, but also to enhance and/or exploit new business opportunities. Examples include offering travel services, currency exchange, retail shopping, car parking, and other premier services. Airports should allocate resources to facilitating e-Business development and will benefit by better protecting existing revenue and by tapping into new income streams.

Business to Business (B2B)
Some major airports are embracing new B2B models. Airports now can move core commercial transactions on-line, to streamline procurement and selling processes. Airports can develop their own applications or capitalize on efficient, collaborative e-Business "hubs", which organize complex business processes between multiple internal and external participants into a virtual commerce community or marketplace.

Business process owners should play a key role in the development of an airport's e-Business strategy and the management of technology. The Business Units of the airport, rather than IT professionals, should manage the content of the website and exercise dynamic control of the information included.

4.17 Aviation Community Recommended Information Services (ACRIS)

Policy
It is recommended that when an airport, airline or associated service provider plans to exchange information between two or more IT solutions, Aviation Community Recommended Information Services (ACRIS) web services should be applied.

Comments
ACRIS is an initiative of the ACI World Airport IT Standing Committee (WAITSC), which founded the ACRIS Working Group in 2009. The vision of ACRIS is to become the global industry standard for aviation data and information exchange. The mission of ACRIS is to provide airports and all partners in the aviation industry with a common language allowing for accurate and swift exchange of data and information.

ACRIS includes agreed ways for information to be shared between partners including:

- an industry agreed language
- how data is defined and shared
- how it is used.

These agreed methods and standards support closer and simpler cooperation throughout the industry. This leads to better efficiency in managing growth when capacity and resources are under pressure. These standards will also help to reduce costs and increase revenue.

Improving the flow and exchange of information brings real benefits for partners in the aviation industry, including:

- cost reduction
- improved collaboration
- common use of systems
- swifter adoption and sharing of new ideas and innovation.

These benefits ultimately promote a seamless travel experience for passengers.

4.18 Airport digital transformation

4.18.1 Policy

It is recommended that airport operators should be prepared to adopt digital transformation.

Comments
Digital transformation is not only about technology; it is about business transformation in a digital world.

Digital transformation is the implementation of new technologies and the integration with existing technologies, processes and services to deliver a better experience to the passengers and customers.

4.18.2 Policy

It is recommended that airports should benefit from the use of "Big Data".

Comments
Big Data is high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making and process automation.

4.18.3 Policy

It is recommended that airport operators should maximise the use of Internet of Things (IoT).

Comments
IoT is a system of interrelated computing devices, mechanical and digital machines, objects, animals or persons that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

4.19 Cybersecurity

4.19.1 Policy

It is recommended that airports, if in need to identify existing and new cybersecurity threats, increase their awareness of security issues, conduct robust risk assessments on their systems and networks, and improve the security of their infrastructure through the implementation of best practices.

Comments
Cybersecurity is the summary of measures taken to protect a computer or computer system (as on the Internet) against unauthorized access or attack. Cybersecurity is a concern for all businesses, including airports and the broader aviation industry, as a result of the increasing number of attacks on information systems globally and the growing level of sophistication of those attacks.

4.19.2 Policy

It is recommended to have a Cybersecurity Policy, which is a set of information-security principles necessary to achieve the cybersecurity objectives set by the Airport Governance Committee.

Comments
These principles are often based on general references such as the ISO/IEC 27000 family, which are based on relevant laws, regulations from supervisory bodies, external standards and good practices.

4.19.3 Policy

It is recommended to comply with local/regional cybersecurity directives that safeguard information technology and computer systems with the purpose of forcing companies and organizations to protect their systems and information from cyberattacks.

4.19.4 Policy

It is recommended to comply with the cybersecurity aspects of the European Union (EU) General Data Protection Regulation (GDPR).

Comments
The GDPR applies to all EU member states, as well as any companies operating elsewhere that market or provide services to people in the EU.

5 Airport Planning, Design, Operation and Safety

This chapter outlines ACI policies related to airport planning, design, operation and safety. Safety is ACI's top priority.

5.1 Aerodrome regulation

Policy
Safety regulation should be evidence-based using data that reflects the current performance of aircraft. Where regulation is determined to be required, ACI supports the development of performance-based regulation and believes that regulations should not be written in an excessively prescriptive manner. Aerodrome operators should have the flexibility to mitigate risk in different ways, applying a safety assessment process consistent with Safety Management Systems (SMS) practices.

5.2 Certification of aerodromes

Policy
ACI supports the principles for certification of aerodromes put forward by ICAO in Annex 14 and in Doc 9981 — *Procedures for Air Navigation Services (PANS) – Aerodromes*, which require aerodromes used for international operations to be certified for safety purposes.

5.3 Safety Management System (SMS)

Policy
ACI supports the ICAO Standard which requires States to ensure that the operators of all aerodromes used for international operations implement a Safety Management System (SMS), with the goal of continuously improving their safety performance. Aerodrome operators are required to establish an SMS, including an audit process, covering all safety-critical operations under its control or oversight. ACI supports the principle of a "just culture" to encourage reporting.

Comments
Sources of information to assist with the introduction of SMS include ICAO Annex 19, the ICAO Safety Management Manual and national regulations where they are available. In addition, the ACI Safety Management Systems Handbook is specifically adapted to the aerodrome-operator domain, describing the components of an airport SMS and offering guidance in the planning, implementation and operation of an SMS, and detailed information on how to carry out the necessary SMS processes.

5.4 Safety data collection

Policy
ACI believes that airports should use a formal Safety Data Collection Process (SDCP) to capture, store, aggregate and enable analysis of safety data. The effective management of safety is highly dependent on the availability of safety information, both reactive and proactive.

Comment
In 2018, ACI World launched a global airport safety data collection programme, requesting airports to submit data. This would be the only worldwide safety data-gathering exercise covering airports. It facilitates in capturing safety data through well-defined common metrics across participating airports. Data is confidential and will never be disclosed, except in aggregated form. This global approach allows identification of hazards, risks and trends that are beyond the view of a single service provider. Such data is fundamental for determining priorities and to support the interests of the airport industry with international regulatory bodies and stakeholders.

5.5 Safety buffers used in aerodrome design specifications

Policy
ACI supports the reduction of safety buffers in ICAO Annex 14, where they can be shown to be in excess of safety requirements, e.g., reduced runway and taxiway dimensions applicable from November 2018 and reduced taxiway separation applicable from November 2016. Design standards should be data-driven and based on hazard analysis that takes into account the probability and severity of all foreseeable hazards.

Comments
Reduction of buffers should maximize opportunities for space-constrained airports to accommodate larger aircraft, minimize the need for operational restrictions and reduce the cost of construction of new and the expansion of existing airports. As in ACI General Assembly Resolution No. 6 of 2015, the basis of such efforts will be the study of relevant safety data, thereby aiming to obtain consensus across the industry and among regulators to amend Annex 14. The focus should be on managing risk to as low as reasonably practicable (ALARP) to prevent accidents, fatalities, injuries or significant damage.

The definition of ICAO aerodrome reference code letters (based on wingspan and outer main gear span) should only be changed in exceptional situations based on a regulatory impact assessment because a change may result in aerodromes designed to a code letter specification becoming non-compliant with the same code.

5.6 Consultation with aircraft manufacturers on the accommodation of new aircraft types

Policy
ACI believes that aircraft manufacturers should consult with ACI and airport operators on their plans for new aircraft designs and operational characteristics, giving details at the earliest stage possible of the characteristics of the new aircraft. Manufacturers and airlines should take account of dimensions and characteristics of proposed new aircraft which may be critical for airports, including length, fin height, wheelbase, outer main gear wheel span, outer engine span, jet blast, approach/landing speeds, noise levels, RFF requirements, weight, aircraft classification number (ACN/ACR), seating capacity and ground power, and handling requirements.

ACI considers that New Large Aircraft (NLA) should not be planned to exceed Code F wingspan (80 metres) or a length of 80 metres, since larger wingspans and lengths may prove prohibitively expensive and difficult to integrate into existing airports.

Aircraft manufacturers should also design all future aircraft types and derivatives to avoid greater stress to pavements than current aircraft create.

In accordance with the ICAO principle that "users shall ultimately bear their full and fair share of the cost of providing the airport" (see ICAO Doc 9082), the cost of modifications to airports to accommodate new aircraft types should be recovered from airport users (see also the Economics chapter herein).

Comments
Accommodation of new aircraft types may be made under aircraft type-specific approval, as described in Chapter 4 of ICAO Doc 9981 — *Procedures for Air Navigation Services (PANS) – Aerodromes*, whereby the characteristics of the critical aircraft for the airport, together with standard safety buffers are used to design the airfield layout, possibly using dedicated taxi routes for the critical aircraft.

5.7 Airport and airspace capacity

Policy
ACI believes that technical and operational means should be developed to improve airport and airspace capacity at existing facilities, in addition to the building of new airport capacity where economically justifiable.

ACI supports closer cooperation with ANSPs and governmental agencies in control of airspace which should improve airspace capacity and quality of service, by fully exploiting the capability of aircraft systems. Airspace capacity should keep pace with airport capacity.

ACI supports the ICAO concept of Aviation System Block Upgrades described in the ICAO Global Air Navigation Plan and, particularly, Performance Improvement Area 1: Airport Operations, which includes:

- ACDM — Improved Airport Operations through Airport CDM
- APTA — Optimization of Approach Procedures including vertical guidance
- WAKE — Increased Runway Throughput through Optimized Wake Turbulence Separation
- RSEQ — Improved Traffic Flow through Sequencing (AMAN/DMAN)
- SURF — Safety and Efficiency of Surface Operations (A-SMGCS).

Comment
ACDM is the component over which airport operators are likely to have the most control (policy under paragraph 5.8 on A-CDM). However, the other components are also of great importance to maximize efficiency and throughput of the system, and airport operators can influence them through discussion with their ANSP.

As regards WAKE, ACI supports efforts to reduce aircraft separation on approach and departure while maintaining safety. Runway occupancy times should be minimized by optimizing runway and taxiway infrastructure, such as determining the optimal location of rapid exit and access taxiways and their lighting and marking.

As regards RSEQ, ACI supports the use of arrival managers (AMAN) and departure managers (DMAN), which are tools to manage arrivals and departures in order to maximize runway capacity. AMAN/DMAN are also essential for future benefits in terms of efficiency, environment and safety aspects. Time-based separation may be adopted to sequence departing and arriving flights efficiently, regardless of wind conditions.

As regards SURF, ACI supports the development and implementation of Advanced Surface Movement Guidance and Control Systems (A-SMGCS) to bring airport capacity during instrument meteorological conditions as close as possible to the capacity achieved during visual meteorological conditions, without prejudice to safety standards.

ACI supports development of better models, tools and procedures, and considers that a useful measure of the performance of airports or airspace management can be derived from a careful assessment of delay information.

5.8 Airport Collaborative Decision Making (A-CDM) and Implementation of Total Airport Management (TAM)

Policy
ACI supports the implementation of Airport Collaborative Decision Making (A-CDM) and further evolutions that incorporate passenger, baggage and cargo processes. ACI is of the view that A-CDM should be extended to Total Airport Management (TAM), which takes a holistic view of airport performance management, integrating all stakeholders including the ATM network, local ATM, passenger terminal operations, service providers, passenger and baggage management and ground transportation. All stakeholders are integrated into a coherent planning and collaborative decision-making process using shared Information, data and capabilities.

The benefits accruing from implementation of A-CDM and TAM will vary according to the type and intensity of operation.

Comments
A-CDM is easiest to implement at airports that have an effective Airport Operations Plan (AOP) and an Airport Operational Data Base (AODB) giving a common view of flight data. It is also desirable to have an Airport Operations Centre (APOC) to facilitate stakeholders to work together. As part of the A-CDM process, target off-block time (TOBT) must be updated during the turnaround, based on the progress of ground handling activities. It is desirable to include information from passenger, baggage and cargo processes, including any delays at security, immigration and customs which may affect passenger flow. The benefits accruing from implementation of A-CDM and progress towards TAM will vary according to the type and intensity of operation. A focus on the predictability and punctuality of arrivals has been found to be of benefit at congested airports.

5.9 Performance Based Navigation (PBN) and navigation aids

Policy
ACI supports ICAO's Performance Based Navigation (PBN) concept, and the ICAO resolution on State PBN implementation plans. Airport operators must be involved in the development of any new or modified Standard Instrument Departures (SIDs) and Standard Terminal Arrival Routes (STARs), and local communities should be consulted on any such proposal.

ACI also supports the implementation of Ground Based Augmentation System (GBAS) Landing Systems.

Comments
Aircraft operators, ANSPs and airport operators should collaborate on the design of such new routes and procedures. ACI is working with ICAO, IATA, the Civil Air Navigation Services Organisation (CANSO) and other organizations to promote the introduction and

use of PBN approaches and departures. The introduction of a Ground Based Augmentation System (GBAS) at the airport may assist in the implementation of PBN.

A GBAS is a facility that enables the provision of Category I Precision Approaches. GLS has provided several benefits to operators over the conventional ILS approaches. A single installation at an airport can provide several ILS-like landing procedures to multiple runways at around the cost of a single ILS. Current GBAS installations provide Category I (CAT-I) precision approach service, and ongoing work is targeted at providing GBAS Approach Service operations in what used to be called ILS CAT-III minima for low visibility operations.

5.10 Drones and airports

Policy
ACI believes that while unauthorized drones are a major issue for airports with the potential to cause significant disruption, authorized drone operations should be facilitated, as they offer many potential benefits for the different stakeholders (airside operations, aircraft maintenance, surveillance, etc.). However, every impact of those drone operations on safety, security, efficiency or capacity of airports shall be carefully assessed and mitigated.

ACI supports the development of national civil aviation regulations for the operation of drones that will ensure their safe and secure use for the civil aviation community and society as a whole, as well as controlling the risks presented by unauthorized drones. ICAO should promote international harmonization of regulations for drones, since the safety of air transport operations is involved.

At airports where the airport operator itself desires to use drones to assist airport operations, such as for inspections, ACI calls for the introduction of suitable regulations to permit such use.

While ACI welcomes Remotely Piloted Aircraft Systems (RPAS) carrying out international operations under instrument flight rules (IFR) as new entrants into the aviation system, it is of the view that their operations at commercial airports alongside piloted aircraft should not necessitate any major changes in the airport infrastructure.

ACI also welcomes the concept of "Urban Air Mobility" since it may improve connectivity to airports, although the impact on the airport must be managed.

Comments
ACI is working with international organizations to coordinate policy and alert all stakeholders to the safety and security risks of operating drones in the vicinity of airports.

The technology associated with RPAS operations at airports is not yet readily available or licensed, and ACI is assisting ICAO to develop suitable international regulations.

5.11 Obstacle Limitation Surfaces (OLS), and effect on aircraft operations of real estate development

Policy
Obstacle limitation surfaces (OLS) should be protected by regulation and enforcement action. Temporary penetration of the OLS, such as by cranes, during development may be permitted by the airport operator, subject to a safety case.

All proposed new buildings, structures and changes of landscaping in the vicinity of aerodromes should be evaluated for their effect on the safety and efficiency of aircraft operations, including, but not limited to, aerodynamic, optical, electromagnetic and obstruction effects.

Comments
Aerodrome operators should be consulted on all development planning applications, both inside and outside the airport boundary, which have the potential to conflict with the airport's OLS.

This evaluation should be carried out by the airport operator, together with the ANSP, at the expense of the developer. ILS and radar reflection problems should also be evaluated.

5.12 Runway end safety areas and arresting systems

Policy
ACI endorses the Standard in ICAO Annex 14 that a runway end safety area (RESA) must extend 90 metres beyond the end of a runway strip (for code number 3 or 4 runways), which corresponds to 150 metres beyond a runway end or stop way.

Where it is not possible to comply with the ICAO Standard of 90 metres, or compliance is achieved but a particular risk exists, alternative solutions may include providing an arresting system or other equivalent mitigating measures.

Comment
A focus on stabilized approaches has been demonstrated to reduce the likelihood of runway excursions, thus ACI supports following guidance on stabilized approaches produced by various organizations such as CANSO, the Flight Safety Foundation (FSF) and IATA.

5.13 Runway safety teams

Policy
ACI supports the need for a Runway Safety Team (RST) at every airport, which should be established, coordinated and led by the aerodrome operator.

Comments
Runway safety, especially the prevention of runway incursions and runway excursions as well as prevention of foreign object debris (FOD) and wildlife hazards, is a key priority for aerodrome operators, aircraft operators and ANSPs.

For further information see the ACI Runway Safety Handbook and the ICAO Runway Safety Team Handbook.

5.14 Contaminated runways — Friction measurement and reporting

Policy
The normal coefficient of friction of a runway surface must be measured and maintained above the minimum friction level determined by the State.

When a runway is contaminated, ACI supports the use of the ICAO Global Reporting Format, the new international standard method of runway condition assessment and reporting, adopted in 2016 for applicability in November 2020.

5.15 Runway de-icing products

Policy
ACI supports the use of pavement de-icing products that respect safety and environmental standards, while minimising any effect on aircraft systems such as corrosion and carbon brake oxidation. The minimum quantity necessary to ensure safety should be used.

Comments
For further information, see the ACI Briefing Note on Pavement De-icing Products (PDP) and Carbon Brake Catalytic Oxidation (CBCO).

5.16 Runway inspections

Policy
Airport operators should comply with ICAO Annex 14 Standards and Recommended Practices (SARPs) for movement area inspections.

Comments
ACI also supports the statement in ICAO Doc 9981 — *Procedures for Air Navigation Services (PANS) - Aerodromes*, Part 2 that the frequency of aerodrome inspections should be commensurate with the level of risk identified in the aerodrome SMS, the volume of traffic and the scope of the inspection.

5.17 Control of foreign object debris (FOD)

Policy
Aerodrome operators should ensure that active measures are taken to keep airside areas clear of loose objects and debris, in order to protect aircraft against damage and, in particular, the risks of ingestion of debris by aircraft engines and damage to aircraft tires.

Comments
ACI recommends that regular consultation should take place with the Airside Safety Committee to obtain widespread support for FOD prevention measures and that a written FOD Management Programme should be established setting out the practices and procedures required to prevent FOD. It is recommended to collect and measure the amount of FOD found on the airside at regular intervals, determine its origin, and take appropriate improvement measures. Records should be kept of all incidents where damage has occurred due to FOD and the follow-up measures taken by all parties concerned.

5.18 Wildlife management at airports — Operational aspects

Policy
Airports should have a Wildlife Hazard Management Plan that is based on a wildlife risk assessment. The Plan should include reference to the resources and their training required to meet the plan objectives (see ACI Wildlife Hazard Management Handbook).

Comments
Some elements of wildlife hazard to the safety of aviation will always remain, despite dissuasive environmental measures. See chapter on airports and the environment hereto. Aerodrome operators therefore need to take operational steps to manage these hazards in a humane and responsible manner.

5.19 Apron safety

Policy
Apron areas must be designed and managed to safely accommodate passenger, personnel and aircraft movements, as well as demanding and complex ground handling activities, under time and space constraints. Apron planning and design integrating these constraints and operational requirements is critical.

Comments
For further policy recommendations, refer to the ACI Apron Safety Handbook.

5.20 Airside vehicle and driver permits

Policy
Airport operators should establish an airside vehicle and driver permit system governing all vehicles and mobile equipment operations on the airside. In addition, airport operators should establish a programme to ensure that everyone working on the airside receives appropriate safety and security training, which highlights the hazards and risks associated with working airside.

Comments
Aerodrome operators should establish a system for monitoring and enforcing airside driving regulations. They should encourage voluntary, non-punitive reporting, reserving penalties for more serious, deliberate or repeated infringements.

All workers who are required to operate vehicles or equipment airside should be trained and issued with an airside driving permit (ADP) to demonstrate the necessary level of competence. In addition, drivers required to operate on the manoeuvring area should undertake specific training including radio telecommunication procedures and demonstrate their competence. The aerodrome operator may delegate training and testing of drivers on the aprons to other parties, including airlines and handling agents subject to standards determined by the airport operator (including audits of third-party programmes) and subject to the aerodrome operator remaining as the issuer of all ADPs.

All vehicles used on the airside should display an airside vehicle permit (AVP) issued by the airport operator. The aerodrome operator should ensure that vehicles are safe for intended use and regularly maintained, through an oversight process.

5.21 Ground handling

Policy
Airport operators should actively manage all organizations operating airside through contracts, licenses or concession agreements, as appropriate and in accordance with the airport operators' business model. Agreements should detail and govern the relationship between the airport operator and the service provider and, at a minimum, cover aspects such as scope of services provided, safety management, security, environmental requirements, equipment requirements, insurance and liability, performance standards for safety and service delivery, adherence to local rules, regulations and permit requirements, and cost recovery.

Ground handling service providers (GHSPs) operating at an airport should develop and maintain an SMS that is commensurate to their operations on the airport and consistent with the airport operator's SMS.

In addition, the airport operator's SMS should monitor and provide safety oversight of activities and services conducted, as defined in the ground handling license provided to the ground handling service provider.

Comments
The ACI Ground Handling Policy Paper of 2016 contains ACI's general policy, while the Guidance to Members – Ground Handling Service Provider Agreement (2018) template and the ACI Apron Safety Handbook contain further information on ground handling issues.

Airports and GHSPs are moving towards electric ground handling equipment/vehicles. This requires additional airport infrastructure such as new charging points, parking locations, etc. ACI is of the view that where the GHSP wants to introduce electric vehicles, it should coordinate in advance with the airport operator and obtain necessary approvals.

ACI is also aware of autonomous and partly autonomous GSE research, development and trials in progress, and considers that robust safety assessments are needed before such vehicles are introduced on a permanent basis.

For additional policy related to facilitation and competition in ground handling refer to Chapter 3. Facilitation and Services, para. 3.20 herein.

5.22 Disabled aircraft removal

Policy
The safe and timely removal of any disabled aircraft and speedy return of the movement area to fully operational status is vital, especially at a single-runway airport. The prime responsibility is that of the aircraft operator, thus the aerodrome operator should request a copy of every aircraft operator's disabled aircraft removal plan, prior to the latter commencing regular operations at the airport. Airport operators should require aircraft operators to sign a damage waiver, including wording that in case of non-reply by the aircraft operator within a defined period after the incident, the aerodrome operator has the right to take measures to move the disabled aircraft.

The aerodrome operator should also establish a "reserve plan" in the case that the aircraft operator cannot be contacted or does not respond. The plan should identify key parties, their responsibilities and the lines of communication.

Comments
The aerodrome operator should require every aircraft operator to provide a plan for removal of disabled aircraft on or adjacent to the movement area, designating a coordinator from the aircraft operator to implement the plan. This aircraft operator's plan should be agreed by the aerodrome operator. The aerodrome operator should maintain and constantly update its database of relevant contacts in aircraft operators' operations centres.

ACI is of the view that the aerodrome operator can play a lead role in the preparation of an incident site for enabling removal operations, in coordination with the concerned aircraft operator, as per the disabled aircraft removal plan. Airports can establish a cost-recovery mechanism along with other commercial agreements for the recovery operations.

The ICAO Airport Services Manual, Part 5 provides information on the removal of a disabled aircraft. ACI supports these provisions.

5.23 Aerodrome emergency planning

Policy
ACI fully endorses the ICAO requirement to conduct a full-scale emergency exercise at intervals not exceeding two years, with partial exercises in the intervening year and exercises which may involve night time and poor visibility conditions as well as table-top exercises to ensure that any deficiencies have been corrected.

Comments
ACI advocates that regular training drills with individual agencies be undertaken, several times a year, and that a full-scale exercise embracing the critical elements of the emergency plan be held at intervals not exceeding two years, with the participation of all relevant agencies.

ACI agrees with ICAO Annex 14 that the emergency plan should be commensurate with the airport's traffic.

5.24 Dangerous goods

Policy
Aerodrome emergency response plans should contain appropriate contingency measures for handling incidents involving dangerous goods, including contact details within airlines, in case of incidents or accidents. Airports should liaise with airlines and handlers to ensure that they are providing adequate facilities and training to deal with the spillage of dangerous substances. Procedures should be developed for dealing with situations in which the presence of dangerous goods is detected by security staff.

Comments
The transportation of properly-documented and packed consignments of dangerous goods is regulated by ICAO Doc 9284 — *Technical Instructions for the Safe Transport of Dangerous Goods by Air*.

5.25 Airport role in disaster management

Policy
Airports should include disaster relief operations in the situations covered in their Emergency Response and Business Continuity Plans, along with an assessment of the risk of different types of disasters occurring in the area of the airport.

Airports should plan to be able to provide additional "surge" capacity such as the ability to handle larger aircraft than normal, overflow areas for aircraft parking, storage space for goods, security measures, personnel, equipment and logistics capability.

5.26 Optional systems to enhance airport safety and capacity

Policy
ACI encourages airports to consider the possibility of equipping their airport with systems which are not required by regulations, but which may have the potential to increase the level of safety. Any evaluation should include an assessment of risk and hazard, as well as a cost/benefit analysis based on local conditions.

6 Environment

This chapter outlines the elements and aspects of environmental stewardship of airports. It is structured in three main sections: environmental management systems, environmental aspects and support issues.

Environment is one of the main pillars that support the principle of sustainability introduced in the first chapter of this policy handbook. Furthermore, limiting or mitigating environmental impacts is increasingly recognized as the very fundamental for communities and societies to give permission for the aviation sector to operate and grow.

While an airport operator may not have the authority to regulate or control all entities at an airport, it should work to engage, guide and influence airport stakeholders, local communities and authorities to reduce airport-wide environmental footprint.

Airport environmental stewardship is generally very local in nature and, therefore, dependent on the unique factors that make up the location of each airport. At the same time, some environmental issues are global in nature, such as climate change. Independent of their local or global impact, airport environmental management is an important issue in all regions of the world, making the sharing of good practices at national, regional and international levels an important tool for airports to improve their environmental stewardship.

6.1 Environmental Management Systems (EMS)

Policy
Airports should adopt a systematic approach to environmental management by means of an Environmental Management System (EMS). Where appropriate, a best practice is for airports to seek wider recognition by certification of their EMS, individual infrastructure or accreditation of specific environmental programmes.

Comments
Systematic environmental management is key to understanding and managing environmental aspects and impacts from the development and operation of airports, and for ensuring support from the top to bottom of the airport organizational structure.

A range of standards and recognition frameworks are in place to support environmental management. This includes ISO 14001 (Environmental Management System) or EMAS (Environmental Management Audit Scheme) and others.

Environmental aspects

6.2 Noise

Policy
Airports should strive to minimize or mitigate the adverse effects of aircraft noise on communities.

Comments
Aircraft noise near most airports is an environmental issue with a very high perceptible impact on local communities and, most likely, generates local public opposition to the operation and development of an airport.

The response of a community to aircraft noise is complicated, as it is not always solely related to physical noise levels. Other factors, such as community perception, attitude and expectations, can influence how people react to noise and aviation activities. Communications and community engagement are particularly important for an airport managing its noise impacts.

Desirable outcomes in aircraft noise mitigation can only be made with the close collaboration and cooperation between all relevant stakeholders, including airports, ANSPs, aircraft operators and the communities surrounding the airports.

ICAO provides some guidance to manage aircraft noise on an airport-by-airport cases, based on the specificities of airport situation, in Doc 9829 — *Guidance on the Balanced Approach to Aircraft Noise Management*. Furthermore, ICAO Doc 9184 — *Airport Planning Manual*, Part 2 - Land Use and Environmental Control provides some guidance on the use of tools to minimize, control or prevent the impact of aircraft noise in the vicinity of airports. In addition, there are a wide range of national, regional and local policies, frameworks and regulations relating to aircraft noise in the vicinity of airports.

6.3 Local air quality (LAQ)

Policy
Airports should assess and understand emissions from all airport-related sources, their contribution to the local air quality and their effect on compliance with local air quality regulations.

Airports should take the lead in working with stakeholders to adopt measures to reduce emissions from aircraft, ground support, airport infrastructure and landside access traffic.

Comments
The development and operation of an airport cause gaseous and particulate emissions from different sources, including aircraft, ground support equipment, airport infrastructure and landside access traffic.

Emissions standards refer to the performance of individual pollution sources or vehicles, so it is the polluter who owns and uses the equipment that must comply. LAQ refers to the resultant pollutant concentrations at any downstream location. LAQ standards or regulations are generally imposed by a regional authority to protect health and the environment.

An airport will usually be only one of a number of contributors to LAQ, so an airport operator will need to understand the relative contributions of airport, airport-related and other emissions sources. An airport operator can monitor, manage and mitigate its own emissions and work with aviation partners to reduce their emissions.

For assessment and evaluation of airport local air quality issues, comprehensive guidance is available from ICAO Doc 9889 — *Airport Air Quality Manual*.

6.4 Greenhouse gas emissions and climate change

Policy
Airports should assess, minimize and mitigate greenhouse gas emissions under their direct control, while guiding and influencing other aviation stakeholders at the airport to assess, minimize and mitigate theirs. Ultimately, an airport operator should try to achieve zero emissions, net or carbon neutrality as interim to zero emissions.

Comments
Climate change is a global issue and needs global action. An airport operator may start by addressing emissions sources under its direct control (Scopes 1 and 2, according to the World Resource Institute (WRI) Greenhouse Gas Protocol and ACI Guidance Manual: Airport Greenhouse Gas Emissions Management), and progress to providing guidance and seeking to influence other airport-related (Scope 3) emissions. Achieving carbon neutrality (Scopes 1 and 2) as an interim to zero emissions will require reducing emissions and possibly purchasing off-setting certificates for unavoidable, residual emissions.

The global airport industry's framework for addressing greenhouse gas emissions and its management is the ACI Airport Carbon Accreditation Programme.

6.5 Energy and resources

Policy
Airports should minimize energy consumption across its infrastructure and operations, especially the consumption of energy derived from polluting sources. Airports should move towards low-carbon, less polluting energy sources with a goal to generate, use or store energy from renewable sources that have significantly reduced or no environmental impact.

Comments
Airports use significant amounts of energy to power their operations and facilities. As energy utilities are often a significant operational cost factor for airport campuses, airport operators will enjoy environmental, financial, and possibly reputational benefits by reducing energy consumption, especially from polluting sources, and increasing the use of renewable energy. Generating renewable energy on site also has the potential to reduce up-stream demand-side electric capital infrastructure costs (e.g., substations and transmission/ distribution lines), particularly for capacity-constrained facilities.

Additional guidance can be found in the ISO 50001 Energy Management certification and related systems.

6.6 Solid waste and circular economy

Policy
Airports should promote the culture of avoiding solid waste generation and, where possible, extracting value from remaining waste with the goal of sending zero waste to landfills.

Ultimately, an airport operator should consider incorporating the principles of circular economy in its operation.

Comments
The waste hierarchy is to avoid, reduce, reuse and recycle waste, with the goal of eliminating the waste going to landfills. Value may be recovered, e.g., by recycling valuable materials or by converting waste to energy, biofuels or compost.

With principle of circular economy where the complete life cycle of materials and products is considered with a focus on system- or society-wide benefits that go beyond the traditional waste management concept, resources should have longer lifespans made possible through alternative business models. In addition, these business models are integrated into other stakeholders' business models extracting the maximum value of a product before it is recovered or regenerated.

6.7 Water

Policy
Airports should work to minimize the use of potable water to process wastewater (de-icing and sewage) in the most efficient way possible, to reuse treated water, and to manage the quantity and quality of storm water run-off.

Comments
Potable water is a precious resource, increasingly scarce in many regions. Measures to reduce consumption of potable water can improve the resilience of an airport by reducing its dependence and associated costs and regulatory obligations on a scare commodity.

Sewage treatment can be conducted on site or by local municipal facilities. Treated water could be directed to non-potable water uses.

Certain types of wastewater are unique to airports, such as aircraft toilet sewage, aircraft maintenance wastewater, and aircraft and pavement de-icing products.

Storm water management should avoid the pollution or contamination of surface and underground water bodies. In most jurisdictions, the quality and quantity of water flowing from an airport site (via streams, pipes or seepage) are subject to strict regulation and monitoring. This includes controlling flow to receiving waters and avoiding excessive impermeable surfaces and run-off contamination.

6.8 Land, soil, habitat and biodiversity

Policy
Airports should preserve and enhance the land, soil, water bodies and habitat on and near their properties to preserve the ecology and biodiversity, but without compromising the safety of aircraft operations.

Comments
This management will require finding a balance between sometimes conflicting requirements, such as the use of chemicals in essential airport processes such as firefighting and de-icing that are known to be ecologically harmful. Soil and water quality and native and endemic wildlife should be preserved and enhanced while avoiding and managing wildlife and other hazards to aviation. Landscaping practices should prevent erosion and suppress dust while minimizing the need for irrigation. Operations must avoid soil contamination and contaminated sites should be cleaned.

6.9 Spills, releases and other incidents

Policy
Airports should evaluate environmental risks from their operation and adopt prevention and intervention mechanisms to avoid, reduce or mitigate environmental damage to water, soil and air caused by incidents.

Comments
Based on thorough risk assessments, priority should be given to proactive prevention through appropriate facility design and operational practices, rather than reactive cleaning up after an event.

Responses are usually provided by fire services or technical units to contain emissions or effluents and reduce the chance of secondary incidents, such as a fire starting from a fuel spill.

Environmental support issues

6.10 Monitoring and reporting

Policy
Airports should monitor their ecological footprint and its inputs, outputs and impacts, and provide the information for planning and managing purposes, as well as a basis for comprehensive disclosure and reporting.

Comments
Measuring and monitoring is essential to be able to plan, control and assess environmental activities and measures. Under a regulated regime, compliance monitoring and reporting of emissions, pollutant concentrations, noise and the like will be required. For voluntary actions, reporting would be tailored for stakeholders and the wider public using the most appropriate range of available communication channels.

Comprehensive reporting guidance is available from ISO 14001 and 50001 and other channels such as the Global Reporting Initiative (GRI).

6.11 Training and information sharing

Policy
Airports should improve environmental awareness, training and sharing of information within the airport and among airports worldwide.

Comments
Staff training and promoting awareness are key in multiplying efforts to reduce adverse environmental impacts from airports and aviation.

Sharing of information among airports worldwide helps dissemination of best practices to better understand the scope and variety of environmental issues and thus provide an additional platform for ecological innovation.

6.12 Stakeholder engagement

Policy
Airports should promote understanding, cooperation and collaboration with aviation stakeholders, especially the community at large.

Comments
Communication, along with stakeholder and community engagement, is key to linking sustainability efforts with community acceptance and permission to operate and to grow.

7 Security at Airports

7.1 General

Policy
ACI considers aviation security a top priority for its airport members, along with the stakeholders involved as well as the public both travelling and visiting airports.

ACI strongly condemns all acts of unlawful interference with civil aviation wherever they may occur, and by whomever they may be perpetrated, particularly where they result in the loss of life, injury or the abduction of passengers, crew members, ground personnel, airport visitors and others.

ACI calls on all stakeholders to continue their efforts to mitigate such unlawful acts, in particular, by complying fully with the specifications of Annex 17 to the Chicago Convention.

Policy
Aviation security measures should be risk-based and outcome-focused. When no longer relevant, they should be downgraded or removed.

Comments
Threats are not static, and risks evolve over time. Regulators should review the security measures in place and assess whether they are relevant. Risk can be defined as the probability of an act of unlawful interference being successfully carried out on a specific target, based on an assessment of threat vulnerability and consequences. Security measures should be based on risk globally, nationally and locally.

Measures should be introduced in cooperation with airport and other industry stakeholders to ensure that they are appropriate for the local environment. Aviation security measures may have an adverse effect and unintended consequences on system capacity, safety and facilitation. Proposed requirements made by governments should be realistic and different mitigations options should be discussed with industry prior to implementation.

Flexibility should be given to stakeholders to adapt security measures to their local environment in response to a changing risk. This is more difficult to do when national regulations are prescriptive, i.e., when they go into a high level of detail. Therefore, ACI supports the development of "outcomes-focused" regulations which describe the objective to be achieved and let industry determine how to reach that objective.

7.2 States' responsibility for aviation security

7.2.1 Policy

States have the unequivocal responsibility to protect their citizens from acts of terrorism or other acts of unlawful interference against civil aviation.

It is the responsibility of States to undertake national threat and risk assessments. The level of threat should be kept under review at all times.

The cost of aviation security should be borne by the State.

Comments
ACI endorses ICAO resolutions on aviation security and will continue to cooperate to the maximum extent possible with ICAO and other international organizations in this area. ACI fully supports ICAO's programme of universal, mandatory security audits of States' aviation security programmes and of airport compliance with Annex 17.

While some States do contribute substantial sums towards the cost of aviation security, many do not. The "user-pays" principle is often used as a reason by such governments, but this is often shown to be inconsistent with the same government's approach to protecting other forms of public transport or the protection of public buildings and monuments.

When measures to enhance security at airports are funded through a tax or charge on the passenger, they should be directly related to the cost of the security service provided.

7.2.2 Policy

ACI urges relevant government agencies to share intelligence with each other and, when such intelligence concerns a threat to civil aviation, to share threat information promptly with the airport operators concerned.

Comments
Procedures and points of contact should be established for the regular sharing of information between airport operators and intelligence agencies, civil aviation authorities and law enforcement agencies.

7.2.3 Policy

When foreign regulations call for more stringent security measures to be introduced at airports, such measures should be developed in full consultation and coordination with the State, airport operators and airlines concerned and other relevant entities.

Comments
Some measures affecting existing bilateral aviation agreements cause legal difficulties because of their extra-territorial applicability. In advance of enacting measures applying at foreign airports, prior consultation with the State, airport and airline operators concerned can help avoid some of the complications arising from extra measures.

The risk assessments underpinning these extra measures should be reviewed on a continuing basis to ensure they do not remain in force unnecessarily. This requires regular consultation among all parties involved in international civil aviation, including airport operators, the airlines and the appropriate State agencies.

7.3 Behaviour detection

Policy
Airports should consider implementing a behaviour detection programme and training for staff, to help identify suspicious behaviour.

Behaviour detection techniques should not be based on race nor religion but based on an objective set of indicators such as unusual behaviours, travel plans, baggage and documentation.

Comments
Aviation security measures have traditionally focused on detecting weapons and similar prohibited items rather than on identifying persons with malicious intent that could jeopardize the safety of civil aviation. There is growing recognition of the importance of the need for security staff, law enforcement personnel and airport staff in general to be more conscious of the behaviour of persons around them.

Behaviour is a complementary layer of security to physical detection of items. Contrary to physical detection, it does not run the risk of being outdated by new terrorist capabilities and plans.

Unless a specific behaviour detection programme is adopted with dedicated staff, it may be useful to include behaviour detection and questioning techniques in the training of security staff as well as general knowledge about suspicious behaviours and vigilance for all airport staff.

Persons who arouse suspicion through their behaviour or after being questioned should be subjected, together with their baggage, to more detailed inspection or to referral to law enforcement authorities. Reporting mechanisms should be established and suspicious behaviour should be reported to the relevant authority. Feedback should be provided to encourage reporting of suspicious behaviour.

Behaviour detection programmes tend to bring benefits to overall security and not to the strictest definition of aviation security, i.e., terrorism and acts of unlawful interference. Many of the suspicious behaviours identified tend to be related to illegal activities such as trafficking or theft. Therefore, behaviour detection should be integrated and based on solid cooperation between various authorities and stakeholders at the airport.

7.4 Risk-based differentiation

Policy
States should allow airports to apply different levels of screening to different passengers and their belongings, based on the risk that they pose.

Risk-based passenger differentiation can be used to determine persons eligible for enhanced screening or expedited screening. Such processes should ultimately aim to facilitate the movement of passengers who, through appropriate risk assessment, are deemed to pose a low security risk, in order to focus security resources on higher risk passengers.

Comments
Risk-based differentiation can be defined as the application of different security measures proportionate to the assessed risk posed by a passenger. Risk-based differentiation should not be mistaken for profiling as it does not discriminate against specific populations, ethnicities or religions.

Taking a risk-based approach to security is a well-known concept, e.g., States require the detection of non-metallic items on passengers and in baggage. However, with some exceptions, this focus on risk has not been brought to the level of the person.

The Smart Security Management Group coordinated by ACI encourages wider adoption of risk-based differentiation practices. This should be done through a series of incremental steps that can build global confidence in the use of differentiation and facilitate exchange of

information between partners. Indeed, the adoption of differentiation techniques at an airport, particularly for expedited screening, may lead to concerns from foreign partners receiving flights from this airport.

Therefore, depending on their objectives, stakeholders may consider starting with the application of differentiated screening to higher risk passengers (which may not require regulatory change) before extending it to lower risk passengers (which may require regulatory change).

7.5 Measures relating to disruptive persons

Policy
Airports should ensure that procedures are established for dealing with disruptive persons (usually requiring law enforcement), that staff are trained appropriately and that these procedures are practiced.

Airports should consider notifying airline and law enforcement personnel when they observe a person who appears to be physically abusive or disruptive and may pose a threat to others.

Comments
Unruly behaviours can have severe consequences, particularly in confined spaces such as aircraft. Therefore, airports are places where potentially unruly behaviours can be identified early, managed and, if need be, reported. This extends not just to airport operators but also to airport concessionaires such as restaurants and bars. With more and more steps being automated or self-service, the security checkpoint is often the first point of interaction between a traveller and an air transport stakeholder.

In the absence of specific State regulations, airports may want to consider ICAO's levels of threat:

Level 1 — Disruptive behaviour (verbal)
Level 2 — Physically abusive behaviour
Level 3 — Life-threatening behaviour (or display of a weapon)
Level 4 (applicable to airlines only) — Attempted or actual breach of the flight crew compartment.

7.6 Public awareness of security

Policy
The understanding and cooperation of the travelling public contributes to effective aviation security. The travelling public should be encouraged to report suspicious activity or items.

Comments
Passengers can help themselves and those of the civil aviation industry by understanding the general approach adopted by governments to prevent acts of unlawful interference. They should be made aware that they should remain vigilant and report suspicious behaviours or activities. Public awareness programmes by States and the air transport industry are needed to assist passengers to comply with aviation security requirements, including:

- to be familiar with items that may not be carried in baggage
- to abide by specific requirements such as liquid, aerosol and gel restrictions
- not to leave their baggage unattended
- to report suspicious behaviour.

A mechanism, such as a telephone number, should be publicized to facilitate the reporting of suspicious behaviour or items.

7.7 Security culture

Policy
Airports should consider implementing good security culture practices which support and maintain a risk-resilient organization and help mitigate against both internal and external threats.

Airports should establish a strong security culture, including vigilance and reporting of suspicious behaviour, for all persons working in the airport environment.

Note
Further information on security culture can be found in the ACI Landside Security Handbook.

7.8 One-stop security

Policy
Where it makes sense for them, airports should consider adopting a one-stop security process. By eliminating redundant transfer security screening, one-stop security can speed the flow of transfer passengers and baggage at connecting airports without impacting security. To achieve one-stop security, authorities should actively engage with like-minded States to reach recognition of equivalence arrangements. Such arrangements should be based on equivalence of security measures and not identical measures.

Comments
One-stop security—the concept whereby a passenger and their baggage undergo security screening only once, even on a journey involving multiple airport transfers—can bring strong benefits to airport operators. Airports should determine whether one-stop security makes sense for them, based on a cost-benefit analysis. While it provides strong benefits, it also requires infrastructure changes such as the segregation of one-stop security passengers from other arriving passengers, which may also require a dedicated customs/immigration area.

Airports should initiate the process by providing to their authorities a list of States with which to start one-stop security discussions. The authority should engage with these States and start a process to assess whether security measures are equivalent to each other. Equivalence does not mean identical security measures and it should be assessed on the basis of security outcomes. Recognition of equivalence can be agreed on a unilateral, bilateral or multilateral basis and cover passengers and cabin baggage and/or hold baggage and/or cargo.

7.9 Innovation

Policy
States and the industry should continuously and jointly develop and adopt better technologies, processes, policies and human factors, along with an appropriate regulatory framework to foster innovation and address new security threats to civil aviation.

Comments
States should combine resources in a cooperative manner to share information, research and development costs for explosive detection technology and other technologies to enhance current systems of screening passengers and baggage. ACI advocates innovation in security screening to enhance detection capability, increase efficiency and improve the passenger experience, all of which should consider and encompass technology as well as human factors and processes.

States should help foster aviation security innovation by making regulation less prescriptive, conducting impact assessments, consulting with industry, allowing for new technology trials, and reviewing the way technology is certified and approved for use.

ICAO should help foster aviation security innovation by agreeing on alternative means of compliance with ICAO Annex 17 SARPs, i.e., by allowing national regulation to be different in character from the SARPs but achieve by other means the same objectives.

7.10 Landside security

Policy
Airports should agree on definitions, scope, responsibility and accountability for landside security measures with their appropriate regulatory authorities.

Effective landside security should consider infrastructure and airport design features with the goal of mitigating the risk from attack, harm to personnel or disruption of airport operations.

Screening people before they enter the airport terminal may create new vulnerabilities, such as queues and crowds inside or outside terminal buildings. Based on their risk assessments, airports may prefer to use continuous random or targeted checks at the airport entrance.

For further information, refer to the ACI Landside Security Handbook.

7.11 Insider threat

Policy
States should establish outcomes-focused regulations to address the wide range of insider threats facing airports that allow for a combination of methods to meet the overall objective. Airports should develop a multi-layered approach to the insider threat, including effective personnel security measures such as pre-employment vetting, frequent background checks, and a positive security culture environment, along with physical measures such as access control and screening of persons other than passengers. No single measure is able in itself to prevent an attack, and staff are often more aware than passengers of ways to circumvent processes. Therefore, States and airports should be careful not to rely and spend all their resources on one visible security control such as 100 per cent staff screening.

Comments
There are many types of insider threats facing airports, from radicalized individuals seeking mass casualties to disgruntled employees aiming for sabotage and revenge. Therefore, ACI recommends a multi-layered approach that can help address this wide range of threats. Airports should ensure that measures are based on risk assessments to determine their effectiveness.

Further information regarding insider threat can be found in the ACI Addressing Insider Threat Handbook.

7.12 Malicious use of drones

Policy
The highest authority for enforcement activities and initiating anti-drone measures is the relevant national authority, e.g., the Civil Aviation Authority and local law enforcement agencies.

Airport operators should initiate dialogue with their national authorities and local law enforcement agencies on a coordinated and risk-based approach to drone disruptions, taking into account the impact on aircraft operations and available mitigations including anti-drone measures.

Comments
States should conduct risk assessments on a regular basis to assess the threat level posed by drones, and have a process for informing airport operators, ANSPs and aircraft operators of the assessed threat level and the required or recommended actions to mitigate the malicious use of drones.

Security risks associated with drones fall into two broad categories: use of drones to attack an aircraft in flight, and use of drones as weapons to attack targets on the ground, which may include aviation-related targets (aircraft, airports) or non-aviation targets (crowds, events). Attacks on aviation targets whether on the ground or airborne are considered by ICAO as "acts of unlawful interference" to civil aviation and are covered by the provisions of ICAO Annex 17.

A concept of operations should be drawn up in advance, stating how a sighting or detection will be classified, what action will be taken, and by whom. Counter-drone measures include:

a) surveillance/detection systems and procedures
b) suppression/neutralization systems and procedures.

For more details, refer to the ACI Advisory Bulletin on Airport Preparedness — Drone related disruption to aircraft operations (2019).

7.13 Chemical/biological/radiological threats

Policy
ACI supports coordination between States, including emergency measures and risk assessments to determine the level of measures required to address chemical threats.

Threats must be understood, and the risk defined in more detail before suitable counter measures can be proposed and discussed. For example, chemical/biological/radiological threats are different, the quantity required to carry out an attack depends on the type of substance and method of attack, and on the duration of the exposure.

ACI supports the need to increase screeners' awareness on this topic, particularly on the need to reject suspicious items for further examination. Restrictions or controls on the carriage of powders should not be at the detriment of the focus on prohibited items including explosives.

7.14 Security adaptation for small airports

Policy
Smaller airports with international operations should be allowed to adopt alternative measures to comply with regulations. Such alternatives should include "low-tech" methods and innovative techniques, e.g., to detect explosives.

Comments
Alternative measures may be different in nature but should meet the same ultimate objective as international standards and national regulations, i.e., they should not result in a lower security outcome, particularly if the small airport has direct operations to a large international airport.

The classification of airports as "smaller airports" should be determined by States based on the basis of risk and not on airport size alone, as airports with relatively few passengers or a small surface area may receive large aircraft. States may use to classify small airports in relation to a matrix of conditions, including the size of the largest aircraft operating at the airport.

Although technology is an important factor in applying security measures, States should not only rely on the technology itself, particularly because all States may not be able to afford the technology that is made available to them.

7.15 Unauthorized airport disruptions from activism

Policy
Airports should consider implementing standard operating procedures and protocols to address possible disruptions to airport operations due to activism. Protocols and procedures should include a series of guidelines ranging from irregular operations planning during disruptions to returning to service action.

Airports should prioritize the safety and security of passengers and visitors utilizing terminal facilities during disruptions. Airports and key stakeholders such as law enforcement are responsible to prevent or minimize disruptions to air traffic and ensure the safety of passengers and visitors in their facilities. All-hazards guidelines should be developed through ongoing dialogue and address operational disruptions including irregular operations and activism.

Comments
Airports are large public spaces that may be seen as national symbols and classified as critical infrastructure. Activism and the use of airport property to stage demonstrations and protests have disrupted airport operations in different parts of the world, and this trend is likely to increase. Airports should be prepared to respond appropriately, in cooperation with local law enforcement, and have plans in place to resume operations quickly afterwards.

To assist member airports, ACI has developed the following guidance:

- The Landside Security Handbook (2018) focuses on the publicly accessible part of airports. It provides best practices in addressing disruptions on the landside area of airports and provides detailed information on emergency planning, response to ongoing situations and recovery after disruptions.

- The Airport Business Continuity Management Handbook (2019) provides guidance to help airports mitigate against, prepare for, respond to and recover from potential events that may disrupt normal business operations, including social/civil unrest situations.

7.16 Detection of illegal wildlife

Policy
The detection of illegal wildlife trade, alongside contraband, is a natural role of customs and border control authorities. Security screeners' primary responsibility is to look for clearly defined security prohibited items that can be a threat to aviation, including concealed improvised explosive devices (IEDs). ACI is not favourable to increasing the responsibility of screeners to identify contraband because it risks diverting their attention from their primary security responsibility and could impact their ability to identify aviation security threats.

Comments
To help counter the threat of illegal wildlife trade transiting through airports, operators should encourage staff and screeners to report unusual items, other than security prohibited items, to police or border control if they raise suspicion. Having a strong security culture, raising awareness of all staff, and deploying behaviour analysis programmes can all play a role. Airports may also work with police or border control authorities to help intercept specific contraband, including illegal wildlife, on the basis of intelligence. Finally, research into algorithms that can identify certain types of wildlife is to be encouraged. However, funding and responsibility for wildlife screening will need to be discussed.

8 Emergency Medical Services, Hygiene and Sanitation at Airports

8.1 Emergency medical services at airports

Policy
Emergency medical services should be provided for passengers and other persons, and arrangements should be made for supportive medical facilities, locally and regionally, in accordance with the World Health Organization's (WHO) International Health Regulations.

Comments
As regards to medical services required for major airport emergencies, ACI advocates that the Aerodrome Emergency Plan should contain details of all these arrangements, and that regular training drills be carried out with the external agencies concerned, as well as a full-scale emergency exercise at intervals not exceeding two years.

Also refer to Section 5.23, Aerodrome Emergency Planning, herein.

8.2 Hygiene and sanitation at airports

Policy
Although airport operators in many countries are not responsible for sanitation programmes at airports, ACI recognizes the need to maintain high standards of hygiene.

Comments
Health inspection at airports should be undertaken by the competent local health administration, in cooperation with airport operators and the airport tenants and users involved. Procedures for the procurement, preparation, handling, storage and delivery of food and water supplies intended for consumption, both at airports and on board aircraft, and for the removal and safe disposal of waste materials should not unnecessarily interfere with airport ground operations nor should they inconvenience passengers, e.g., by delaying their embarkation or disembarkation.

8.3 Public health and animal and plant quarantine measures

Policy
Governments require adequate space and facilities to be made available at international airports for the administration of public health and animal and plant quarantine measures, in respect of aircraft, passengers, crew, baggage, cargo, mail and stores. The necessary space and facilities, as well as staffing, should be provided at government expense and not at the expense of the airport operator.

Comments
ACI supports ICAO SARPs 6.35 and 6.37 with regards to available access to appropriate facilities for administration and maintenance of public health, including human, animal and plant quarantine at international airports.

8.4 Communicable diseases

Policy
As regards provision for the management of any outbreak of communicable disease in which airports are involved, ACI supports the guidelines set out by the WHO in the International Health Regulations.

Comments
In accordance with the WHO International Health Regulation guidelines, airport operators, in communication with all other parties involved, should prepare a section of their emergency plan to cover the management of outbreaks of communicable disease involving the airport.

As stated in the *Airport Preparedness Guidelines for Outbreaks of Communicable Disease*, issued by ACI and ICAO, revision April 2009, the responsibility for management of the risk of communicable diseases at airports rests primarily with the local/regional/national public health authority and the relevant airport operator. It is recommended that airports and national health authorities work together to achieve greater predictability and international coordination of preparedness measures, as the key to success in reducing the risk of spread of any communicable disease.