ACI WORLD REPORT

News and events from the voice of the world’s airports

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ACI’s Regional Offices

ACI North America
Washington, DC
USA

ACI Latin America and Caribbean
Panama City
Republic of Panama

ACI Africa
Casablanca
Morocco

ACI Europe
Brussels
Belgium

ACI Asia-Pacific
Hong Kong
China
THE TRINITY FORUM 2018
THE GLOBAL AIRPORT COMMERCIAL REVENUES CONFERENCE
31 October – 1 November 2018 • Shanghai, China

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Message from Angela Gittens
Director General, ACI World

Addressing the latest cutting edge thinking in infrastructure finance and airport economics

From one horizon to another, airports have made the world a smaller place. As a critical component of the international transportation system, our industry continues to contribute to the economic and social well-being development of local, national and regional economies. Airports connect people, places, goods and services. It is incumbent on governments and regulators to see airports as the important strategic assets they are if they want them to achieve the benefits they can bring to passengers and shippers.

We are already experiencing the strong growth of air service demand and forecast that it will continue in the foreseeable future, assuming that our sector can make the significant infrastructure investments needed worldwide. This, in turn, possesses economic and financial challenges for
the sector since airports need to be able to secure sufficient funding to cover their aeronautical costs and finance their development in the long run while remaining competitive in the air service market in this era of airline dominance.

Airports Council International (ACI) World will host its 10th Annual Airport Economics & Finance Conference & Exhibition in London on 9–11 April, organized in cooperation with the World Bank. The conference meets at a time of concern over the rise of economic protection inclinations in advanced economies but also a time of seemingly irrepressible growth in global trade and air transport demand. Air transport demand continues to post annual growth rates in excess of 6%.

The upcoming conference will stimulate discussion on how airports meet their financial challenges in the face of this unusual combination of buoyancy and uncertainty. It is the only global conclave that covers the breadth of the airport financial discipline while mining the depth of the most pressing issues of the day. This year, given the threats to some of the fundamentals of airport finance, the conference will examine how airports can operate under the ownership and management models that best fit their specific circumstances—either as a stand-alone entity or as part of a network.

The conference will be a stimulating mix of high-level presentations and panel discussions from industry leaders, investors, decision-makers and airport professionals. As always, the Economics & Finance Conference seeks to promote an economically sustainable airport industry for all members, large or small, in every region of the world, for the benefit of governments, taxpayers, the flying public and shippers.

We also have the data to see how we are doing in achieving this goal. At the Conference, we will release the new ACI Economics Report and the ACI Airport Key Performance Indicators, both publications eagerly awaited by industry leaders, investors, decision-makers and airport professionals.

ACI World will continue to support enhancements to the global aviation frameworks of laws, policies and priorities by identifying and addressing legislative gaps as well as strengthening the mechanism that govern how airport activities are carried out.

I invite you to join me for this ultimate debate on the future of airports which will allow you to meet and learn from an exhaustive roster of global experts.

Angela Gittens
Brussels Airport: Innovation and enhanced passenger experience

By Arnaud Feist, CEO, Brussels Airport Company
With an extensive network of 238 direct passenger and cargo connections worldwide, Brussels Airport puts the heart of Europe within easy reach of worldwide destinations. With almost 25 million passengers in 2017, the airport hopes to set a new record this year.

In recent years, the Brussels Airport name has largely been associated with the terrorist attacks of March 2016. This coordinated attack at the airport and in central Brussels caused shock waves across the entire country, and in particular amongst airport employees and passengers. However, thanks to the unshakable strength of our airport family, Brussels Airport was quickly back on its feet.

That same year, CEO Arnaud Feist presented the Brussels Airport Vision 2040, which aims to prepare the airport for the growth that is anticipated over the next 25 years. The airport expects to increase passenger numbers in line with long-term market growth in Europe, anticipating an average of 3.8% annually for the next two decades. Cargo transport is expected to increase by 4.7% annually.

**Passenger experience through the European capital**

Brussels Airport wishes to provide passengers a unique airport experience, by not only making the passenger screening and boarding process as smooth as possible but also by offering a special sense of place.

With the construction of the Connector building and the refurbishment of the Pier B shopping and leisure zone, Brussels Airport will immerse passengers in the country’s culture one last time before they board their aircraft by offering an array of traditional Belgian flavours, identities and icons. This cultural immersion includes the exhibition of typical regional products, such as chocolate and beer, and our world-famous comic strip heroes, such as the Smurfs and Tintin. This makes Brussels Airport one of the most fun and tasteful airports around, for children of all ages!

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**Did you know?**

Brussels Airport is the largest chocolate outlet in the world. Two tons of chocolate are sold every day. That is a total of 1.5 kilos per minute or more than 800 tons per year.

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**New piers and other runway use**

Looking to the future, Brussels Airport plans to further enhance its infrastructure by 2040. Among other plans, Brussels Airport has identified the opportunity to develop the new Pier A West during the 2020s. This development
will accommodate up to 13 additional widebody aircrafts and bringing passengers to the next level of comfort.

Together with its industry partners, Brussels Airport plans to optimize the capacity of the airfield and airspace systems, enabling a progressive increase of peak runway system capacity from the current 74 hourly movements to 84 in 2020 and up to 93 in 2040.

**Did you know?**

*Within Europe, the growth potential is greatest for medium-sized hubs like Brussels Airport, which has not yet achieved its full potential. Capacity can still grow by 25%.*

---

**Redevelopment of the cargo zone**

The Brussels Airport 2040 Strategic Vision redesigns and refurbishes the cargo zone as a modern logistics platform in order to further support key sectors in our economy, such as pharmaceuticals or biotechnology. The success of these sectors at Brussels Airport is closely linked to an active airport community and an innovative logistics chain.

Investment in the renewed cargo zone is already starting this year with the redevelopment of existing handling facilities that have direct access to the tarmac and the construction of 50,000 square metres of brand new office and storage space. This zone will accommodate those companies that transport, package
and store freight. Among other things, this new infrastructure will be particularly suited to the handling of high-quality and temperature-sensitive goods.

**Did you know?**

*Brussels Airport is the world leader in the transportation of pharmaceutical goods. In 2017, the transport of these delicate products increased by 18% at the airport. The increase was 2% worldwide.*

**Easy mobility**

The ambitious development of Brussels Airport is attracting more and more companies outside of aviation. Deloitte Belgium moved last year to
a state-of-the-art office building at the airport. KPMG and Microsoft, among many more, will do so by the end of this 2018. This movement is in line with global trends that are increasingly showing that companies choose to house their offices at or near airports because of easy mobility. Within its Vision 2040, Brussels Airport is set on an ambitious development of a prestigious and modern business district.

This business district also includes a further development of the intermodal transport hub Brussels Airport already has for its region. The airport is working actively with different public transport companies to increase direct connections to the airport and to further develop the airport as an intermodal hub for the entire region. More trains, buses and a new tram line are on the agenda.

By 2040, the airport intends for 50% of passengers and airport employees to travel to Brussels Airport by public transport or bicycle. By merging these transport modes at one strategic location, Brussels Airport is actively contributing to improved mobility around Brussels.

The Brussels Airport Vision 2040 unlocks the potential of an additional 10,000 jobs over the next five years and will add a total of 60,000 jobs by 2040. It is crucial that this growth is achieved via a balanced approach that considers both the economic development of the airport and as well as the environmental sustainability.

This year, World Business Partners, Airport Members and delegates are invited to celebrate the 28th ACI World Annual General Assembly and 28th ACI EUROPE General Assembly, Congress and Exhibition in Brussels, Belgium hosted by Brussels Airport on 18–20 June 2018. Find more information on the conference programme here.
CONGRATULATIONS
YOUR PASSENGERS HAVE SPOKEN


The annual ASQ Awards recognize and reward the best airports in the world according to ACI’s ASQ passenger satisfaction survey. They represent the highest possible accolade for airport operators and are an opportunity to celebrate the commitment of airports worldwide to continuously improving the passenger experience.

For more information or to see the 2017 ASQ Award recipients, visit aci.aero/ASQ-awards.
2017 ASQ Award Winners
Best Airport by Region
(over 2 million passengers per year)

Africa

1ST PLACE
Casablanca (CMN)

2ND PLACE
Mauritius (MRU)

3RD PLACE
Durban (DUR)

Asia-Pacific

1ST PLACE (TIE)
Delhi (DEL)
Mumbai (BOM)

2ND PLACE (TIE)
Beijing (PEK)
Denpasar (DPS)
Haikou (HAK)
Shanghai Pudong (PVG)

3RD PLACE
Sanya (SYX)

Middle East

1ST PLACE
Abu Dhabi (AUH)

2ND PLACE (TIE)
Amman (AMM)
Medina (MED)

3RD PLACE
Dubai (DXB)
### Europe

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<th>Place</th>
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<td>1ST PLACE</td>
<td>Sochi (AER)</td>
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<td>2ND PLACE (TIE)</td>
<td>Malta (MLA)</td>
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<td>Moscow Sheremetyevo (SVO)</td>
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<td></td>
<td>Porto (OPO)</td>
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<tr>
<td>3RD PLACE (TIE)</td>
<td>Rome Fiumicino (FCO)</td>
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<td>Zurich (ZRH)</td>
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### North America

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<tr>
<td>1ST PLACE (TIE)</td>
<td>Indianapolis (IND)</td>
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<td></td>
<td>Jacksonville (JAX)</td>
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<tr>
<td>2ND PLACE (TIE)</td>
<td>El Paso (ELP)</td>
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<td>Toronto Billy Bishop (YTZ)</td>
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### Latin America-Caribbean

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<td>1ST PLACE</td>
<td>Guayaquil (GYE)</td>
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<td>2ND PLACE</td>
<td>Los Cabos (SJD)</td>
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<tr>
<td>3RD PLACE (TIE)</td>
<td>Nassau (NAS)</td>
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<td>Punta Cana (PUJ)</td>
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## Best Airport by Size

**ASQ Awards**

### (2–5 million passengers per year)

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<th>Place</th>
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<tr>
<td>1&lt;sup&gt;ST&lt;/sup&gt; PLACE</td>
<td>Lucknow (LKO)</td>
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<tr>
<td>2&lt;sup&gt;ND&lt;/sup&gt; PLACE</td>
<td>Guayaquil (GYE)</td>
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<tr>
<td>3&lt;sup&gt;RD&lt;/sup&gt; PLACE</td>
<td>Bandung (BDO)</td>
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### (5–15 million passengers per year)

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<td>Hyderabad (HYD)</td>
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<td>2&lt;sup&gt;ND&lt;/sup&gt; PLACE (TIE)</td>
<td>Balikpapan (BPN)</td>
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<td>3&lt;sup&gt;RD&lt;/sup&gt; PLACE (TIE)</td>
<td>Hohhot (HET)</td>
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<tr>
<td>3&lt;sup&gt;RD&lt;/sup&gt; PLACE (TIE)</td>
<td>Cochin (COK)</td>
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<td>Kolkata (CCU)</td>
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<td>Pune (PNQ)</td>
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### (15–25 million passengers per year)

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<td>1&lt;sup&gt;ST&lt;/sup&gt; PLACE (TIE)</td>
<td>Denpasar (DPS)</td>
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<td>Haikou (HAK)</td>
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<td></td>
<td>Sanya (SYX)</td>
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<td>2&lt;sup&gt;ND&lt;/sup&gt; PLACE</td>
<td>Bangalore (BLR)</td>
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<tr>
<td>3&lt;sup&gt;RD&lt;/sup&gt; PLACE (TIE)</td>
<td>Chennai (MAA)</td>
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<td>Surabaya (SUB)</td>
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### (25–40 million passengers per year)

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<td>Chongqing (CKG)</td>
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<td>2&lt;sup&gt;ND&lt;/sup&gt; PLACE</td>
<td>Seoul Gimpo (GMP)</td>
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<tr>
<td>3&lt;sup&gt;RD&lt;/sup&gt; PLACE</td>
<td>Tokyo Narita (NRT)</td>
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### (Over 40 million passengers per year)

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<td>1&lt;sup&gt;ST&lt;/sup&gt; PLACE (TIE)</td>
<td>Delhi (DEL)</td>
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<td>Mumbai (BOM)</td>
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<tr>
<td>2&lt;sup&gt;ND&lt;/sup&gt; PLACE (TIE)</td>
<td>Beijing (PEK)</td>
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<td>Shanghai Pudong (PVG)</td>
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<tr>
<td>3&lt;sup&gt;RD&lt;/sup&gt; PLACE</td>
<td>Taipei Taoyuan (TPE)</td>
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</table>
Best Airport by Region
(under 2 million passengers per year)

North America
Portland Maine (PWM)

Europe
Murcia (MJV)

Latin America-Caribbean
Mazatlan (MZT)

Asia-Pacific
Indore (IDR)

Africa
George (GRJ)
## Best Airport by Size and Region

### Asia-Pacific

<table>
<thead>
<tr>
<th>Passenger Volume</th>
<th>Airport</th>
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<tbody>
<tr>
<td>2–5 million passengers per year</td>
<td>Lucknow (LKO)</td>
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<tr>
<td>5–15 million passengers per year</td>
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<td>Chongqing (CKG)</td>
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<tr>
<td>Over 40 million passengers per year</td>
<td>Mumbai (BOM)</td>
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### Europe

<table>
<thead>
<tr>
<th>Passenger Volume</th>
<th>Airport</th>
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<tr>
<td>2–5 million passengers per year</td>
<td>Newcastle (NCL)</td>
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<tr>
<td>5–15 million passengers per year</td>
<td>Sochi (AER)</td>
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<tr>
<td>15–25 million passengers per year</td>
<td>Athens (ATH)</td>
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<tr>
<td>25–40 million passengers per year</td>
<td>Moscow Sheremetyevo (SVO)</td>
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<tr>
<td>Over 40 million passengers per year</td>
<td>Rome Fiumicino (FCO)</td>
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### Latin America-Caribbean

<table>
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<tr>
<th>Passenger Volume</th>
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<td>2–5 million passengers per year</td>
<td>Guayaquil (GYE)</td>
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<tr>
<td>5–15 million passengers per year</td>
<td>Punta Cana (PUJ)</td>
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### Middle East

<table>
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<tr>
<th>Passenger Volume</th>
<th>Airport</th>
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<tbody>
<tr>
<td>5–15 million passengers per year</td>
<td>Medina (MED)</td>
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</table>
## Most Improved Airport by Region

### North America

<table>
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<tr>
<th>Passengers per Year</th>
<th>Airport</th>
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<tbody>
<tr>
<td>2–5 million</td>
<td>Ottawa (YOW)</td>
</tr>
<tr>
<td>5–15 million</td>
<td>Indianapolis (IND)</td>
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<tr>
<td>15–25 million</td>
<td>Tampa (TPA)</td>
</tr>
<tr>
<td>25–40 million</td>
<td>Minneapolis (MSP)</td>
</tr>
<tr>
<td>Over 40 million</td>
<td>Toronto Pearson (YYZ)</td>
</tr>
</tbody>
</table>

### Europe

- Zagreb (ZAG)
- Dubai (DXB)

### Asia-Pacific

- Ahmedabad (AMD)

### Africa

- Nairobi (NBO)

### Latin America-Caribbean

- Belo Horizonte (CNF)

### Middle East

- Cleveland (CLE)
APEX: Its success and maintaining sustainable growth

By Danny Boutin, Senior Manager, APEX Programmes, ACI World
Since its inception in 2012, ACI’s APEX in Safety programme has built a reputation among airports as providing the most adequate exercise to enhance Operational Safety Management (OSM).

Based on the overall success of the APEX in Safety programme with 80 reviews conducted to date, this led to the initiative of the APEX in Security programme. Launched in October 2017 during the 27th ACI Africa/World Annual General Assembly, Conference & Exhibition, the programme is rapidly gaining recognition among members and industry stakeholders.

**Airport Excellence Programmes**

The Airport Excellence (APEX) Programme is offered as part of an ACI Member service. The programme includes a weeklong assessment, where all aspects of OSM are covered by airport peers who identify gaps and vulnerabilities and provide recommendations.

With industry partners such as the International Civil Aviation Organization (ICAO), European Commission, World Bank, African Development Bank, the U.S. Federal Aviation Administration (FAA) and the European Aviation Safety Agency (EASA), APEX is positioning itself as a powerful resource for airports looking to enhance their safety and/or security standards.

**Safety and security initiatives**

Over the last three years, the pool of safety assessors has more than tripled its size counting in at 250. To date, the APEX in Security programme contains a total of 50 assessors only six months after its initial launch. However, it is important to note that ACI World’s capabilities...
APEX

within each region and its success is thanks to the large collaboration of volunteer airports. Their expertise has allowed for the growth of the programme. APEX encourages Airport Members to join the APEX Partners which calls for airport staff to donate time and join in on various missions, improving the overall safety of the world’s airports.

ACI Airport Members

APEX offers various subject matter expertise to ACI Airport Members. Originating from reviews based on the ICAO Annex 14 and ACI Best Practices, the programme now offers European Certification Regulation (EASA) capabilities as well as, reviews can be tailored to any Member needs – ranging from Safety Management Systems (SMS) to airfield maintenance focus for example. The same principle applies to the APEX in Security programme as the ICAO Annex 17 and European Commission Regulation can be applied to the scope of a mission.
More to come for APEX

With the increasing pressure to enhance safety and security in airports in all regions of the world, it is essential to highlight that for APEX to continue its success airports need to continue sharing and contributing to the overall goal of improving airport standards. All airports can benefit and contribute in building a community within ACI’s Member Airports.

The community of airports and its expertise is a powerful tool. ACI World encourages airports to join in all areas where they feel added value could be provided.

To learn more about the APEX Programmes, to join or to host a review, contact Danny Boutin, Senior Manager APEX Programmes at dboutin@aci.aero or apex@aci.aero.
The 37th ACI World Safety and Technical Standing Committee Meeting was held in Quito, Ecuador from 6–8 February 2018. Representatives from ACI Member Airports, ACI Regional offices, World Business Partners and ACI World all participated.

The committee discussed strategic plans for 2018–2020 and how to align these with ACI World’s objectives. Ten projects were identified which will deliver the strategic objectives of the committee. Members discussed a wide range of topics including:

- airport master planning;
- airspace constraints;
- Performance Based Navigation (PBN);
- airport capacity;
- land use planning;
- airside green policy;
- cyber security issues for airside operations;
- airport capacity measurement; and,
- drones.
Zurich Airport also joined the meeting by phone and shared their experiences on green initiatives using an Aircraft Ground Energy System simulator.

Regional Committee Members provided updates on incident trends, lessons learned and their regional developments. They also collectively drafted policy papers and guidance materials on subjects pertaining to Airport Collaborative Decision Making, Aerodrome Certification, Airspace and Ground Capacity Management. Safety Management Systems, Pavement Management Systems, Wildlife Hazard Management were also discussed.

On day two, attendees were split into different working groups on Safety Data Collection, Ground Handling, Wildlife Hazard Management, Drones, Airport Collaborative Decision Making (A-CDM) and Airfield Maintenance. The working groups reported on the actions initiated with timelines dedicated to developing ACI World’s policy and guidelines.

Updates were provided during the ICAO panel meetings represented by ACI World and its Member Airports concerning:

- aerodrome design and operations;
- visual aids;
- rescue a fire fighting;
- airport pavement;
- runway friction;
- airport master planning;
- safety management;
- wildlife hazard management;
- obstacle limitation surfaces;
- navigation;
- remotely piloted aircraft systems;
- runway safety;
- the ICAO global air navigation plan; and
- the global aviation plan.

Take aways from the recent ICAO Global Air Navigation Industry Symposium and Safety and Air Navigation Implementation Symposium were also shared. Potential papers presented by ACI World during the upcoming ICAO Air Navigation Conference in October 2018 were also discussed.

In a separate session, Member Airports shared their first hand experiences for challenges faced during disabled aircraft removal, checking the efficacy of airport emergency readiness through emergency exercises and new industry standards on airport enterprise management center.

ACI World and its Members would like to thank Quiport for hosting the a successful meeting.

For more information please contact rcraman@aci.aero.
Safety initiatives of the Airports Authority of Trinidad and Tobago

By Hazel Christopher, Duty Manager, Airport Authority of Trinidad and Tobago and Giselle Best, Duty Manager, Airport Authority of Trinidad and Tobago
Hazel has 22 years of experience in various facets of Airport Operations. As the chair of the local Airport Emergency Committee, which reviews and amends the airport emergency plan, she has planned several emergency exercises for the Airports Authority of Trinidad and Tobago. Being a qualified National Inspector (Security), she is part of the quality assurance team that audits and inspects the activities of the airside stakeholders. Hazel is also instrumental in the implementation of the airport’s Safety Management System (SMS).

Giselle has 15 years of experience in Airport Operations. She has developed and implemented the Airside Vehicle Operations Programme. She also conducts training on safe and appropriate behaviours to certify drivers operating on the movement area of the aerodrome. Being a qualified National Inspector (Security), she is part of the quality assurance team that audits and inspects the activities of the airside stakeholders. Giselle is also instrumental in the implementation of the airport’s Safety Management System (SMS).

The Airports Authority of Trinidad and Tobago (“the Authority”) is committed to developing, implementing, maintaining and improving its strategies and processes to ensure all aviation activities at its airports meet the highest levels of safety.

As aerodromes restructured and directed their focus on maximizing non-aeronautical revenue to successfully compete in a highly competitive industry, new production levels were required to sustain and improve operations. This new drive brought about the need to implement safety initiatives that will increase stakeholder confidence, and satisfy
regulatory and legal requirements.

The Airport Operations Division, being the driver of the Safety Management System (SMS), has implemented the following safety initiatives:

- **Establishment of the Safety Committee and the Safety Action Group;**
- **Airside Vehicle Operations Programme;**
- **Foreign Object Damage Management; and**
- **Bird and Wildlife Management.**

**SMS Implementation**

The Safety Action Group identifies hazards and assesses the risks to airside operations. Recommended mitigations are made to the Safety Committee.

**The Safety Committee**

This committee ensures that appropriate resources are allocated to achieve the established safety performance. It is responsible for:

- **Reviewing the recommended mitigations and implementing those considered feasible in a timely manner;**
- **Monitoring and measuring the effectiveness of the SMS implementation plan.**

**Airside Vehicle Operations Programme**

A new initiative, currently in its implementation phase, which seeks to formally certify vehicles and drivers operating on the airside. It comprises an Airside Vehicle Operations Programme (AVOP) manual, which contains information pertaining to:

- **driver and vehicle certification;**
- **driving rules and regulations for aprons, runways and taxiways; and**
- **training.**

**FOD Management Programme**

This programme addresses the strategies required to mitigate the adverse effects of FOD to people, aircraft and aerodrome facilities. It outlines the control measures based on the four principles of an effective FOD Management System:

- **prevention;**
- **detection; and**
- **removal and evaluation.**

It further encourages a positive safety culture within the Authority, with the intent to influence
stakeholders at both our airports to adopt a proactive and cooperative approach to foreign object debris.

The Authority effectively communicates the existence of the FOD Management Programme to employees and stakeholders through:

- Airport Safety Management/Operations and FOD Committee meetings;
- Employee induction and FOD sensitization programmes;
- FOD signs and posters;
- Quarterly FOD walks;
- An established FOD policy; and
- Airside Driving and Vehicle Certification Programme.

Bird and Wildlife Management

Another robust programme, developed and implemented by the Airport Operations Division actively manages bird and wildlife on the aerodrome through:

- Habitat modification;
- The use of active and passive deterrents, e.g. pyrotechnics and spikes;
- Daily bird patrols, recording the location of birds, numbers, weather and reporting the presence of birds to the Air Traffic Control Unit; and,
- Harassment techniques, e.g. vehicle horns.

The Airports Authority of Trinidad and Tobago, through its Airport Operations Division, continues to closely monitor and keep abreast of international safety best practices that can be adapted to its airports. The aim is to maintain, reinforce and improve our safety culture within the Authority and amongst all stakeholders.

Attend courses hosted at the Airports Authority Aviation Security Training Centre in Port of Spain, Trinidad and Tobago
The Global ACI-ICAO Airport Management Professional Accreditation Programme (AMPAP) is an executive development programme for airport executives worldwide. The primary focus is to develop airport managers through a six-course curriculum that covers all functional areas of the airport business in key areas. AMPAP encourages participants to share best managerial practices in an interactive, cross cultural environment while establishing a global network of contacts.

Look out for 2018 Gateway course venues

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202 accredited airports

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38 in Asia-Pacific

8 in Latin America & Caribbean

10 in Africa

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Or 39.6% of global air passenger traffic.

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An index for assessing national progress in controlling discharges of aircraft deicers to the environment

By Dean Mericas, Aviation Environmental Technical Leader, Mead & Hunt, Inc.
In 2012, the Voluntary Pollution Reduction Programme, a collaboration between aviation trade associations in the United States, committed to establishing and achieving a national goal for reducing the discharge of aircraft deicers through the use of Pollution Reduction Technologies (PRT). These reduce the amounts of chemicals needed for deicing, collect and dispose of run-off containing deicers or enhance the effectiveness of source reduction and collection efforts.

The Programme faced a major challenge in measuring progress on a national basis. The performance of PRTs varies from airport to airport, as well as from year to year at each airport depending on weather, traffic and other factors. Data availability and continuity across airports was also identified as a significant constraint.

To address these obstacles, an approach was developed to measure the relative capacity to manage and reduce deicing discharges as an index, where increases in the index value reflect decreases in relative amounts of deicers discharged and environmental risk. This approach is similar in philosophy to environmental indices such as the Index of Biotic Integrity and USEPA's DRASTIC index.

The Biochemical Oxygen Demand (BOD) Management Capacity Index uses a numerical scoring system to quantify the aggregate capacity of PRTs used by both aircraft operators and airports to manage Biochemical Oxygen Demand. PRTs are scored according to their relative influence in reducing deicer discharges and their extent of use. Higher Index values indicate a greater capacity to manage BOD. Weighting factors balance the effect of differences in the scale of deicing operations among airports on the Index. The result is a robust indicator of the industry’s BOD management capacity, independent of year-to-year variations in weather and operations.

PRT deployment at U.S. airports representing approximately 83% of total national aircraft deicer usage was used to calculate the national BMC Index values at the ends of the 2004–2005 and 2016–2017 deicing seasons, which marked the start and end of the Programme. The table shows a 36% improvement in the national level Index values over that period.

**BOD Management Capacity Index Values and Relative Improvement**

<table>
<thead>
<tr>
<th>Deicing Season</th>
<th>BOD Management Capacity Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004–2005</td>
<td>3,342</td>
</tr>
<tr>
<td>2016–2017</td>
<td>4,534</td>
</tr>
<tr>
<td>Relative Improvement:</td>
<td>36%</td>
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</tbody>
</table>

ACI-NA is considering how the Index might be used to measure or even motivate future PRT implementation or generate other benefits to the industry. For example, the concept could be adapted to setting and tracking progress in meeting ACI-NA's environmental goals related to deicing. With that recognition, one of the ACI-NA Water Quality Working Group’s goals for 2018 is to develop and facilitate a strategy for members to carry forward and further develop the concept of the BMC Index to provide continuing benefits to the airports community.
What to expect during this year’s ACI–World Bank Annual Symposium and Conference

By Dr. Charles E. Schlumberger, Lead Air Transport Specialist, World Bank Group
The strong uptake of the global air transport sector, which started a few years ago, seems to accelerate each year. In 2017, global revenue passenger kilometres (RPK) increased by 7.6%, well above of the global 10-year average pace (5.5%). Even the freight sector has finally taken off, as industry-wide freight ton kilometres (FTK) rose by 9.0% in 2017. With passenger traffic across the world’s airports surpassing the 8 billion passenger mark in 2017, Airports Council International (ACI) World predicts this figure to double by 2032. Even though air transportation may not continue indefinitely with this growth, one can already see how many airports, even smaller in design, struggle with capacity and required infrastructure investments. Given that many states are faced with competing financing requirements in various sectors, many airports must turn to private sources for financing. Private financing can be challenging, especially for smaller airports or airports in regions where so called Public Private Partnerships (PPP) are not common.

Given this challenging background, the 4th ACI–World Bank Annual Symposium and Conference will once again take stock of the current environment of PPPs and try to apply principles of best practices in concrete case studies with experienced and renowned experts. The objective is that participants gain a rapid insight on the essentials of analyzing and presenting airport PPPs by discussing real cases that could lead to success stories. A special focus this year will be on traffic forecasting, an essential ingredient for any successful airport PPP project.

The two-day conference will take a hard look at current industry risks such as debt, oil prices or political stability. Furthermore, a second interesting topic will be airport competition issues and the question of the value of airport slots. In addition to various networking opportunities and an exhibition, an exclusive gala dinner will celebrate the 10th anniversary of the ACI Annual Airport Economics & Finance — truly an event that no airport executive should miss!

Learn more on how to enhance your career in economics and finance with the ACI World Airport Finance Diploma.
In 2001, the Airport Traffic Think Tank (at3) was created as an informal international forum for airport specialists to exchange technical views and expertise on air transport demand, traffic analysis, forecasting techniques, airport economics, statistics, consumer behaviour and other related topics of common interest.

In 2013, the topic of formalizing the relationship of at3 with ACI World was discussed at the annual meeting in Toulouse, France.

By 2014, at3 became an official sub-committee of the ACI World Economics Standing Committee. Tangible outputs include industry best practices and guidance material as well as standards regarding airport traffic statistics, forecasting and other related topics in airport economics. As such, at3 plays an important advisory role on technical issues that are of relevance to ACI World.

With members located in various regions throughout the world, most of at3’s activities occur at a distance through an online forum and other communication platforms. Every spring, members meet in person for a two-day symposium to discuss topics of common interest through plenary sessions and an array of presentations.

The next at3 meeting will take place on 3–4 May 2018 in Hamburg, Germany. There are no fees or dues required for membership. The prerequisites are that the member be recognized in an area of expertise mentioned above and that the member be employed by an ACI member airport operator. Travel expenses to yearly meetings
are to be covered by individual participating members.

Members of at3 will also participate in the joint ACI–World Bank Annual Aviation Symposium on 9 April 2018, which precedes the 10th Airport Economics and Finance Conference. The symposium creates an interactive forum of discussion for senior representatives from airports, investment banks and financial institutions. Topics will include the latest thinking in public-private partnerships along with an overview of airport traffic forecasting under uncertain conditions, a key ingredient to any due diligence exercise. This joint symposium will be a great opportunity to hear directly from practitioners from major airport operators and for ACI to present the latest World Airport Traffic Forecasts (WATF) 2017–2040. For more information, visit the conference website and programme.

If you are interested in becoming an active member in the group, please send your contact details (e.g., full name, title, organization, phone and email) to at3@aci.aero.

Please also provide a short biographical text that describes your activities related to airport traffic statistics, economics and/or forecasting.

Thomas Thessen
Chair, at3
Chief Traffic Forecaster, Copenhagen Airports

Tom Leuckx
Vice Chair, at3
Traffic Forecasting Manager, Brussels Airport Company

Patrick Lucas
Secretary, at3
Head, Airport Business Analytics
ACI World
ACI World launches beacon registry

By Serge Yonke Nguewo, Senior Manager, Facilitation and IT, ACI World
In today’s age of the connected traveller, more people rely on their mobile phones than ever before as part of their travel experience. An unfamiliar airport can be confusing to even the most seasoned traveller, with its multiple terminals, piers, halls and specific internal transit systems to navigate in a timely manner and still making a tight connection.

Airports have recognized the opportunity to use mobile technology to help passengers as well providing an efficient communication tool during times of service disruption.

Mobile apps can give passengers more control of their journey and enable real-time communication of flight information. By coupling mobile apps with beacon technology, airports, airlines and terminal operators can push contextual and location-based messages to passengers focused around where they are located in the airport. This enables richer and more targeted information to be provided to passengers — where and when they need it.

**The potential benefits of Beacon Technology**

A beacon is a small device that broadcasts a short-range Bluetooth signal that can be detected by apps on mobile devices in close proximity. Contrary to popular belief, beacons do not store any information; rather they deliver information about the location so that the app can respond to the user.

Beacons have potential for major growth within airports. They broadcast in different zones and can be used by airport tenants, including airlines and retailers to:

- highlight retail and food opportunities;
- promote special offers;
- provide critical information about gate changes; and
- communicate departure delays.

Among all this, beacon technology also forms a grid to deliver turn-by-turn directions to understand how passengers are moving through an airport. For a passenger who is navigating multiple terminals on a tight connection this kind of application can make or break their journey. For more information on digital technologies in airports, download the *Airport Digital Transformation: Best Practices*. 
<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>2018 AIRPORTS@WORK CONFERENCE (ENVIRONMENT, SECURITY, OPERATIONS &amp; INFORMATION TECHNOLOGY)</td>
<td>12–15 March 2018</td>
<td>New Orleans, LA</td>
</tr>
<tr>
<td>ACI 10TH ANNUAL AIRPORT ECONOMICS &amp; FINANCE CONFERENCE &amp; EXHIBITION</td>
<td>9–11 April 2018</td>
<td>London, UK</td>
</tr>
<tr>
<td>ACI AFRICA REGIONAL ASSEMBLY, CONFERENCE AND EXHIBITION</td>
<td>13–17 April 2018</td>
<td>Lagos, Nigeria</td>
</tr>
<tr>
<td>ACI ASIA-PACIFIC REGIONAL ASSEMBLY CONFERENCE &amp; EXHIBITION</td>
<td>23–25 April 2018</td>
<td>Narita, Japan</td>
</tr>
<tr>
<td>ACI-NA LEGAL AFFAIRS SPRING CONFERENCE</td>
<td>2–5 May 2018</td>
<td>San Francisco, CA</td>
</tr>
<tr>
<td>ACI-NA JUMPSTART® AIR SERVICE DEVELOPMENT PROGRAM</td>
<td>3–6 June 2018</td>
<td>Cleveland, OH</td>
</tr>
<tr>
<td>ACI-NA BUSINESS OF AIRPORTS CONFERENCE</td>
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</tr>
<tr>
<td>28TH ACI WORLD ANNUAL GENERAL ASSEMBLY AND 28TH ACI EUROPE GENERAL ASSEMBLY, CONGRESS AND EXHIBITION</td>
<td>18–20 June 2018</td>
<td>Brussels, Belgium</td>
</tr>
</tbody>
</table>

For a full listing of ACI events, please visit [www.aci.aero/events](http://www.aci.aero/events).
SAVE THE DATE

13th ACI Asia-Pacific Regional Assembly, Conference & Exhibition

April 23-25, 2018
Narita, Japan

For further inquiries
www.aci-asiapac.aero | events@aci-asiapacific.aero
Key events and courses

Highlighted events and training
March—June 2018

- **ACI-NA BUSINESS OF AIRPORTS CONFERENCE**
  11—13 June 2018
  Portland, OR

- **ACI-NA JUMPSTART® AIR SERVICE DEVELOPMENT PROGRAM**
  3—6 June 2018
  Cleveland, OH

- **WILDLIFE HAZARD AND PREVENTION MANAGEMENT**
  16—18 April 2018
  Port of Spain, Trinidad and Tobago

- **2018 AIRPORTS@WORK CONFERENCE (ENVIRONMENT, SECURITY, OPERATIONS & INFORMATION TECHNOLOGY)**
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  2—5 May 2018
  San Francisco, CA

- **AIRPORT REVENUE GENERATION**
  16—20 April 2018
  San Francisco, United States

- **ACI 10TH ANNUAL AIRPORT ECONOMICS & FINANCE CONFERENCE & EXHIBITION**
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  London, UK

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- **28TH ACI WORLD ANNUAL GENERAL ASSEMBLY AND 28TH ACI EUROPE GENERAL ASSEMBLY, CONGRESS AND EXHIBITION**
  18—20 June 2018
  Brussels, Belgium

*This course can be taken as an elective for the Airport Management Professional Accreditation Programme.*
Training calendar

Security

ACI-ICAO MANAGEMENT OF AIRPORT SECURITY
16—20 April 2018  Johannesburg, South Africa

BEHAVIOURAL ANALYSIS: PASSENGER SCREENING AND INSIDER THREAT MANAGEMENT
23—27 April 2018  Nairobi, Kenya

Safety

CERTIFICATE IN AIRSIDE SAFETY — E-LEARNING
7—11 May 2018  Nairobi, Kenya

CERTIFICATE IN AIRSIDE SAFETY AND OPERATIONS
7—11 May 2018  Montego Bay, Jamaica

GSN 1 - SAFETY MANAGEMENT SYSTEMS
7—11 May 2018  Nairobi, Kenya

GSN 2 - AIRSIDE SAFETY AND OPERATIONS
7—11 May 2018  Montego Bay, Jamaica

AIRPORT SAFETY MANAGEMENT SYSTEMS IMPLEMENTATION FOR US AIRPORTS*
14—18 May 2018  Lihue, Hawaii

Customer Experience

DEVELOPING A CUSTOMER SERVICE CULTURE AT AIRPORTS*
22—26 April 2018  Abu Dhabi, UAE

PASSENGERS WITH REDUCED MOBILITY WORKSHOP
23—25 April 2018  Athens, Greece

ACCOMMODATING PASSENGERS WITH DISABILITIES (APD) WORKSHOP
14—16 May 2018  San Francisco, United States
Economics

**AIRPORT REVENUE GENERATION***
16—20 April 2018  San Francisco, United States

**AIRPORT FINANCIAL MANAGEMENT**
29 April—3 May 2018  Abu Dhabi, UAE

**ACI/ICAO USER CHARGES***
14—18 May 2018  Montreal, Canada

Leadership & Management

**AIRPORT HR MANAGEMENT***
16—20 April 2018  Bucharest, Romania

**AIRPORT COMMUNICATIONS AND PUBLIC RELATIONS***
7—11 May 2018  Bucharest, Romania

**DIPLOMA IN LEADERSHIP ESSENTIALS**
— E-LEARNING

Operational & Technical

**AIRPORT OPERATIONS DIPLOMA PROGRAMME** — E-LEARNING

**ADVANCED AIRPORT OPERATIONS**
16—20 April 2018  Kuala Lumpur, Malaysia

*Can be taken as an elective for the Airport Management Professional Accreditation Programme (AMPAP)

** Course availability and dates subject to change. Please visit our website for the most up-to-date information: www.aci.aero/Global–Training

For additional information please contact us at training@aci.aero
Global Training

ACI Global Training photo gallery

GSN 4 - Working with Annex 14, 10-14 December 2017, Muharraq, Bahrain

Airport Business Analytics, 11-13 December 2017, Athens, Greece
ACI DNA Seminar: ACI/ICAO Aerodrome Certification*, 22-26 January 2018, Nadi, Fiji

Accommodating Passengers with Disabilities (APD) Workshop, 15-17 January 2018, Port of Spain, Trinidad and Tobago

ACI DNA Seminar: ACI/ICAO Aerodrome Certification*, 22-26 January 2018, Nadi, Fiji