

CAAS

Civil Aviation Authority of Singapore



**WORLD CIVIL AVIATION
CHIEF EXECUTIVES FORUM**

Advancing Aviation: Building Our Future Together

8 - 10 APRIL 2019 | SINGAPORE

Welcome



Mr Kevin Shum is the Director-General of the Civil Aviation Authority of Singapore (CAAS). He is responsible for the development of Singapore as a sustainable aviation hub. He is also on the Executive Committee in the Civil Air Navigation Services Organization (CANSO), and the Chair of the Asia Pacific CANSO CEO Committee (APC3). He also has special interests in competitiveness, safety and productivity issues in the aviation sector, as well as the development of Unmanned Aerial Systems.

Dear friends and colleagues

A warm welcome to Singapore and the 7th World Civil Aviation Chief Executives Forum (WCACEF)!

When the Wright brothers flew off a grassy knoll at Kitty Hawk more than a hundred years ago, they probably never imagined that today, aircraft would carry more than 4 billion passengers a year, connecting and bringing together nations, cities, and societies around the world. We have been able to achieve this because of the global consensus to cooperate towards improving safety, promoting connectivity, and facilitating accessibility. Nowhere is this more apparent than in ICAO, which celebrates its 75th anniversary this year.

Yet for all this, aviation today stands at a cross-roads. We need to answer as a community, how we can further develop aviation. How can we, as leaders, navigate the challenges of technology as a disrupter and yet promote the benefits of technology as an enabler for the global good? It is our hope that this Forum will be an opportunity for us to review such issues from a fresh perspective, discuss our views openly, and strengthen our collective approach towards our common challenges.

At the same time, I do hope that you will have the opportunity to take some time out, enjoy Singapore's hospitality, and what we have to offer. I also hope to have the opportunity to catch up with old friends and forge new friendships.

Yours Sincerely

A handwritten signature in blue ink, appearing to read 'Kevin'.

Kevin Shum
Director-General
Civil Aviation Authority of Singapore



7th WCACEF Programme Overview

Day 1 : 8 April 2019, Monday

15:30 Social Programme: Sneak Preview of Jewel Changi Airport

*Jewel Changi Airport
78 Airport Boulevard, Singapore 819663*

18:00 Welcome Reception

*Spago Bar & Lounge
Level 57, Hotel Tower 2, Marina Bay Sands SkyPark, Singapore 018956*

20:30 End of Day 1

Day 2 : 9 April 2019, Tuesday

09:00 Forum Registration

*Singapore Aviation Academy (SAA)
1 Aviation Drive, Singapore 499867*

09:30 Opening Address

09:45 Keynote Address

**10:00 Launch of Aerodrome Simulator
Tea Break**

**10:45 Panel Discussion: Building One Aviation Future by Leveraging
Technology**

12:30 Lunch

14:00 WCACEF Executive Discussion

16:00 End of Forum at SAA

Day 2 : 9 April 2019, Tuesday (Cont'd)

19:00 Gala Dinner

*CHIJMES Hall
30 Victoria Street, Singapore 187996*

**20:00 Signing of Memorandum of Understanding on
Singapore-ICAO Developing Countries Training Programme**

21:30 End of Day 2

Day 3 : 10 April 2019, Wednesday

**10:00 Special Dialogue for ICAO Council and Directors-General of
Civil Aviation (Closed-door)**

*The Dutch Pavilion
Shangri-La Hotel, 22 Orange Grove Road, Singapore 258350*

11:30 Closing Lunch

*Waterfall Ristorante Italiano
Shangri-La Hotel, 22 Orange Grove Road, Singapore 258350*

14:00 Technical Programme 1: Unmanned Systems Asia Conference

*Changi Exhibition Centre
9 Aviation Park Road, Singapore 498760*

15:15 Tea Break

**15:45 Delegates may stay on (Technical Programme 1) or attend
Technical Programme 2**

16:00 Technical Programme 2: SMART Digital Tower at T2

*Changi Airport Terminal 2
60 Airport Boulevard, Singapore 819643*

17:00 End of 7th WCACEF Programme



Image courtesy of Changi Airport Group

Social Programme: Sneak Preview of Jewel Changi Airport

Designed by world-renowned architect Moshe Safdie, Jewel Changi Airport (Jewel) is a multi-dimensional lifestyle destination offering over 280 retail and dining options, an urban park and aviation facilities. It is seamlessly integrated with Changi Airport Terminals 1, 2 and 3, and houses a multimodal transport lounge dedicated for fly-cruise and fly-coach passengers.

Gain an exclusive preview of Jewel, and get a glimpse of some of its key features, such as the Forest Valley, a five-storey garden housing one of the largest indoor collections of plants in Singapore. The Canopy Park, a 14,000 square-metre attraction featuring unique offerings such as play attractions, gardens and walking trails, is also not to be missed. One of the key highlights of the park includes two unique and totally contrasting Canopy Mazes aimed at giving you a fun and memorable experience.



Image courtesy of Singapore Tourism Board

Welcome Reception

Hosted by Mr Edmund Cheng, Chairman, CAAS



Mr Edmund Cheng, Chairman of CAAS, is concurrently the Deputy Chairman of Wing Tai Holdings Limited. He has spearheaded Wing Tai's successful diversification from garment manufacturing, charting the Group's foray into the Asian property sector. Under his leadership, Wing Tai is reputed for innovative designs and quality delivery in all its residential and commercial developments in Singapore, Malaysia, Hong Kong and China.

About Spago

Located at Sands SkyPark at the 57th floor of Singapore's iconic Marina Bay Sands, Spago overlooks the Infinity Pool, and offers spectacular views of the city skyline.

Gather for a night of camaraderie, as we enjoy the delicacies specially curated by Spago, the first international offshoot of Chef Wolfgang Puck's renowned Beverly Hills restaurant. Chef Wolfgang has won the prestigious James Beard Foundation Award for Outstanding Chef of the Year multiple times.

Opening Address



Dr Lam Pin Min

Senior Minister of State, Ministry of Transport and Ministry of Health, Singapore

Dr Lam Pin Min has been the Senior Minister of State for Health and Transport since 1 May 2017. He was first elected as a Member of Parliament for the Ang Mo Kio Group Representation Constituency in the 2006 General Elections, and re-elected subsequently as a Member of Parliament for Sengkang West Single Member Constituency in 2011 and 2015. Prior to his current position, Dr Lam was trained as an Aviation Medicine Specialist and had obtained his postgraduate Diploma in Aviation Medicine from the Royal College of Physicians (London) in 1997. He served as a Flight Surgeon with the Republic of Singapore Air Force from 1995 to 2003. He also holds a Master of Medicine (Ophthalmology) from the National University of Singapore and is a fellow of the Royal College of Surgeons (Edinburgh).

Dr Lam will be delivering the opening address, focusing on the importance of leveraging technology and collaborating with other Member States and the International Civil Aviation Organization (ICAO) to collectively build a safe and reliable aviation future together.

Keynote Address



Dr Olumuyiwa Benard Aliu

President, International Civil Aviation Organization Council

Dr Olumuyiwa Benard Aliu is the 5th President of the ICAO Council, currently serving his second three-year term. Among many notable accomplishments since taking office, he has been recognised most widely for his diplomatic determination and leadership in forging global consensus on the Carbon Offsetting and Reduction Scheme for International Aviation market-based measure at ICAO's 39th Assembly in 2016. He has helped to refocus ICAO on the assistance and capacity building aspects of its mandate since taking office in 2014, under the No Country Left Behind initiative. President Aliu previously served as the Representative of Nigeria to ICAO, during which time he chaired many of the Council's major committees. More recently, he has been leading the Organization's increased focus and prioritisation on technological innovation and its critical importance to ensuring sustainable air transport progress in the years to come.



The enhanced Aerodrome Simulator provides an out-of-window 360° view to train controllers in maintaining situational awareness of air and ground traffic movements.

Launch of Aerodrome Simulator



The table-top trainer uses an interactive touch screen, speech recognition and computer graphics to allow instructors to conduct training and reviews in an intuitive manner.

The part-task trainers can be used to improve trainees' skillsets in targeted areas, as well as provide refresher training for emergency and abnormal situations.



From the out-of-window 360° view to part-task trainers and a table-top trainer, the enhanced Aerodrome Simulator (AS) aims to make training more effective by providing a more realistic environment, bridging the gap between the simulator and live operations.

With the enhanced AS, instructors are able to trigger a more comprehensive set of events and adjust training scenarios to train air traffic controllers in handling and resolving difficult situations.

Dr Lam Pin Min and Dr Olumuyiwa Benard Aliu will be launching the enhanced AS. Join us for a tour to get a glimpse of the new features of the AS, and see first-hand, how the part-task trainers and table-top trainer help to scaffold controllers' learning, allowing them to master basic skills at their own pace.

Panel Discussion: Building One Aviation Future by Leveraging Technology

The future of the aviation industry depends on its leadership and joint collaboration to overcome challenges. The successful use of technology can be an objective enabler for all States and regions to advance together. It could also be a disruptor and threat to global aviation if it is not appropriately managed.

Join us in the panel discussion to exchange views and ideas on how technological advancements can be leveraged in areas where artificial intelligence can be tapped upon to spur data-driven decision-making for aviation; how technological innovation can create new business models and enhance accessibility to markets; and how technology can help harmonise standards for enhanced, safe and secure air travel.



Mr Stephen Creamer
*Director, Air Navigation Bureau,
International Civil Aviation Organization*
Moderator

Mr Stephen Creamer is the Director of the Air Navigation Bureau (ANB) at ICAO since April 2015. He previously held a number of executive and managerial positions at the US Federal Aviation Administration (FAA) with 33 years of experience in air traffic and international aviation organisations. They include serving as FAA Regional Office Director for Europe, Africa and the

Middle East; and serving as a member of the ICAO Air Navigation Commission. Mr Creamer began his career in air traffic operations, eventually managing all Alaskan and North Pacific airspace, pioneering new airspace use techniques that improved capacity and access for all operators. More recently, his work has broadened to the international implementation of procedures and technology systems that improve aviation safety, with a careful eye toward retaining capacity and efficiency.



Mr Alexandre de Juniac
*Director General and CEO, International
Air Transport Association*
Panellist

Mr Alexandre de Juniac is the Director General and CEO of the International Air Transport Association (IATA) since September 2016. Prior to helming IATA, Mr de Juniac served as Chairman and CEO of Air France-KLM (2013–2016) and Chairman and CEO of Air France (2011–2013), where he successfully restructured the organisations to improve efficiency and strengthened

their performance. He has also served on the IATA Board of Governors from 2013 to 2016, as well as in senior positions in Thales and the French Government.



Mr Daniel K. Elwell
*Acting Administrator, Federal Aviation
Administration, United States*
Panellist

Mr Daniel K. Elwell is the Acting Administrator of FAA. He is responsible for the safety and efficiency of the largest aerospace system in the world – a system that operates more than 50,000 flights per day. He also oversees the FAA's multibillion-dollar NextGen air traffic control modernisation programme, as the U.S. shifts from ground-based radar to state-of-the-art satellite technology. Prior to serving as Acting Administrator, Mr

Elwell held various senior positions in both the private and public sectors, including Airlines for America, and Aerospace Industries Association.



Ms Poppy Khoza
Director of Civil Aviation, South African Civil Aviation Authority
Panellist

Ms Poppy Khoza is the Director of Civil Aviation at the South African Civil Aviation Authority (SACAA). She was reappointed in December 2018 for a second five-year term, and is the only woman to have occupied this position since the inception of the SACAA. Under her stewardship, South Africa increased its compliance rating, and did not attract any significant safety concern

in the 2017 ICAO USOAP audit. The SACAA also received the Best Performing Institution Transport Award on four occasions, making the SACAA the only entity to have received the accolade since its inception in 2014.



Mr José Ricardo Pataro Botelho de Queiroz
Director-President, National Civil Aviation Agency of Brazil
Panellist

Mr José Ricardo Pataro Botelho de Queiroz is the Director-President of the National Civil Aviation Agency of Brazil since March 2016. Prior to his current position, he was the alternate representative of the Brazilian Diplomatic Delegation in ICAO from 2012 to 2015,

where he participated in the drafting of the Tokyo Convention Protocol, especially in matters relating to the In-Flight Security Officer. He was also involved in making Brazil a part of the ICAO Public Key Directory, and drafted rules against acts of unlawful interference in civil aviation. Mr Botelho had also held various positions in the Brazilian Government.



Mr Patrick Ky
Executive Director, European Aviation Safety Agency
Panellist

Mr Patrick Ky is the Executive Director of the European Aviation Safety Agency (EASA). Since 2013, his mission is to further consolidate the role and responsibilities of the Agency and to make the European aviation regulatory system a reliable framework. Before EASA, he was in charge of the SESAR programme. He also held various positions in the French Civil Aviation

Authority, Eurocontrol, and European Commission. He has over 20 years of experience in civil aviation. Graduated at the Civil Aviation Engineering School in France, he holds degrees in economics from the University of Toulouse and the Massachusetts Institute of Technology.



Mr Yin Shijun
Chief Engineer, Civil Aviation Administration of China
Panellist

Mr Yin Shijun is the Chief Engineer of the Civil Aviation Administration of China (CAAC). He joined CAAC in 2006, working as the Deputy Director-General of the Aircraft Airworthiness Certification Department and took office as the Director-General of the same department in 2013. Mr Yin has rich working experience in the aviation industry. Right after graduation from

university in 1984, he started his career in the aviation industry with the Harbin Aviation Industry Group (HAIG), one of the most important manufacturers in China. He spent 22 years in HAIG, mainly covering the areas of airborne avionics, instruments maintenance, quality control and vocational engineering training. He also worked as the General Manager of China Flying Dragon General Aviation Company of HAIG.



WCACEF Executive Discussion

Co-developed by CAAS and
Singapore Management
University

In this interactive business simulation, we will navigate the challenges in global cooperation and harnessing new technology to reshape the aviation landscape. WCACEF Executive Discussion will get you thinking about the significant mutual benefits of collaboration, and experiencing new ways of working together to overcome emerging aviation challenges.

Session 1: Growing Aviation Capacity as One

Aviation capacity of different States are growing at different levels and pace. Differences in culture, capability, competency and availability of resources further hinder collaboration at a greater level. Look forward to a fruitful discussion and an interactive investment simulation focusing on how we can overcome differences and collaboratively invest in our aviation future by leveraging one another's expertise and resources.

Session 2: New Technology – Enabler or Disruptor

Technology is largely beneficial but there are obstacles in adoption. Participate in an interactive role-play simulation with your counterparts to find out how we can facilitate new technology adoption, regulate differently, work together to achieve exponential yields through inclusive solutions and advance aviation as one, ensuring that no country is left behind.



Image courtesy of Watabe Singapore

Gala Dinner

Hosted by Mr Khaw Boon Wan,
Coordinating Minister for Infrastructure and
Minister for Transport, Singapore



Mr Khaw Boon Wan was re-elected as a Member of Parliament in September 2015, and is currently the Coordinating Minister for Infrastructure and the Transport Minister. In his current appointment, he seeks to enhance public transport and make it possible for Singaporeans to embrace a car-lite lifestyle. Mr Khaw graduated from Australia under the Colombo Plan Scholarship.

Since graduation, he has devoted his entire life to public service. In October 2001, he entered politics and was elected as a Member of Parliament in the Tanjong Pagar Group Representation Constituency.

At the Gala Dinner, Mr Khaw, together with Dr Aliu, will sign a Memorandum of Understanding on the Singapore-ICAO Developing Countries Training Programme (DCTP), extending and expanding the DCTP for another three years from 2019 to 2022, where 330 fellowships and 10 scholarships will be provided.

About CHIJMES

CHIJMES was originally known as the Convent of the Holy Infant Jesus (CHIJ), a girl's school established in 1854 and ran by French Catholic nuns. Following the relocation of the school, the complex has been transformed into a unique lifestyle venue, offering a variety of food and beverage options and other contemporary activities. It is the second oldest building in Singapore, and was gazetted as a national monument in 1990. Bask in the rich heritage and enjoy the evening, as we bring to you a special performance by local artists.



Image courtesy of Waterfall Ristorante Italiano

Closing Lunch

Hosted by Mr Kevin Shum,
Director-General, CAAS

About Waterfall Ristorante Italiano

Enjoy lunch at Waterfall Ristorante Italiano, where Southern Italian classics will be served up with seasonal produce and sprinkles of la dolce vita. Situated in the Garden Wing of Shangri-La Hotel, the restaurant is surrounded by greenery and fresh flowers, and its colonial-era style interiors are designed to feel like home.

Technical Programme 1: Unmanned Systems Asia Conference

Look forward to engaging and insightful discussions centred around the future of unmanned aircraft system at the Unmanned Systems Asia Conference. Themed “Enabling the UAS Future”, the conference dives into the latest industry trends from business challenges and opportunities, regulations, unmanned traffic management, to one of the hottest topics in the industry – Urban Air Mobility. Connect with industry heavyweights from European Aviation Safety Agency, Airbus, Volocopter and more. In addition, explore the exhibition floor where leading industry players like Aselsan, Garuda Robotics, Israel Aerospace Industries, Kambyan Networks and Lockheed Martin will be showcasing their latest UAV innovations.



*Photo is for illustration purposes only.
Image courtesy of Volocopter.*



The SMART digital tower prototype is an example of how emerging technologies are being explored to streamline operational processes.

Technical Programme 2: SMART Digital Tower at T2

Visit the SMART Digital Tower at Changi Airport Terminal 2, and see first-hand, the smart digital tower prototype that CAAS is testing out. The smart digital tower, equipped with a range of assistive functionalities and features, is envisioned to enhance air traffic management and safety of runway and ground operations, as well as to increase operational efficiencies at Changi Airport. For example, the use of High-Definition cameras will increase visibility during hazy, low light and night conditions, while the multiple camera placements will allow better visual surveillance of aerodrome areas from different perspectives. Take the opportunity to also observe shadow operations of the smart tower prototype.

Sponsors

PLATINUM



Changi Airport Group (Singapore) Pte Ltd (CAG) was formed on 16 June 2009 and the corporatisation of Singapore Changi Airport followed on 1 July 2009. As the company managing Changi Airport and Seletar Airport, CAG undertakes key functions focusing on airport operations and management, air hub development, commercial activities and airport emergency services. With more than 590 awards/accolades, Changi has come a long way since its humble beginnings in 1981, when Terminal 1 first opened. CAG also invests in and manages foreign airports through its subsidiary Changi Airports International (CAI). CAI's objective is to build a quality portfolio of airport investments worldwide. Its key business activities include investments in airports, and the provision of consultancy and airport management services.

GOLD



NCS is a member of the Singtel Group and the leading information, communications and technology (ICT) service provider with presence in the Asia Pacific region. NCS delivers end-to-end ICT solutions to help governments and enterprises realise business value through digital transformation and the innovative use of technology. Our unique delivery capabilities include consulting, applications development, systems integration, outsourcing, infrastructure management and portal solutions. In addition, NCS provides digital services to organisations by enabling their applications using digital technologies, including social media, mobility, analytics, cloud, artificial intelligence and robotics.

SILVER



CATE is a wholly private owned company established since 2000, specialising in customisation design and development of equipment and systems for the airport; i.e. Airport Rescue Training Simulator, Airfield Lighting Control Monitoring system, Airport Rescue Management and Fire Alarm Monitoring System, and more. Upon full completion of each customised project development cycle, CATE provides complete maintenance service package to the clients, ensuring the optimum performance of the equipment for the entire system life cycle. CATE's engineers are equipped to fulfil project design, management, installation and maintenance requirements. All service staff are trained with knowledge of the equipment and systems developed by Chartered Asia. We prioritise customer service, and aim to provide the best systems and extensive support to our clients.



Certis is a leading advanced integrated security organisation that develops and delivers multi-disciplinary security and integrated services. As a unique specialist operations-technology outsourcing partner, Certis integrates advanced security, technology, facilities management, customer service and talent to build and operate bespoke solutions for complex, critical operations that extend beyond security. Our design-for-purpose solutions are led by an extensive track record of running operations and design thinking to drive operational efficiencies and deliver business-critical outcomes for our customers. Certis is headquartered in Singapore, with an international presence that extends to Australia, Hong Kong, Macau, China, Malaysia and the Middle East. We are a trusted partner committed to our clients' successes, delivered through our 34,000-strong global team.

Sponsors

SILVER



Rosenbauer is the world's leading and most technologically advanced fire truck manufacturer. With a history of over 150 years, the company is based in Leonding in Austria, and supplies firefighting and rescue vehicle to all corners of the world. In addition to the manufacturing, the company has wholly owned service and sales in every continent to ensure that customers are always taken care of. The renowned Panther has now reached over 1500 units in service and they are with multiple airports worldwide including Asia, where major hubs such as Changi, Kuala Lumpur and Hong Kong as well as China and Australasia operate them. The Asian centre is based in Singapore to support all of the vehicles operating in the region.



ST Engineering is a global technology, defence and engineering group specialising in the aerospace, electronics, land systems and marine sectors. The Group employs about 22,000 people across offices in Asia, the Americas, Europe and the Middle East, serving customers in the defence, government and commercial segments in more than 100 countries. With more than 500 smart city projects across 70 cities in its track record, the Group continues to help transform cities through its suite of Smart Mobility, Smart Security and Smart Environment solutions. Its aerospace sector provides integrated aerospace services and solutions through a global network of facilities and affiliates in the Americas, Asia Pacific and Europe, supporting a broad customer base comprising leading airlines, airfreight operators and armed forces.

BRONZE



CPG Consultants is a subsidiary of CPG Corporation, one of Asia's leading development professionals. Since 1833, we have contributed largely to the development and management of distinguished landmarks in Singapore. CPGairport is a multi-disciplinary airport planning and design division of CPG Consultants, and has been the principal consultants for the planning, design and development of world renowned Singapore Changi Airport and its Passenger Terminals 1, 2 and 3. Since then, we have partnered globally with clients, consultants and specialists on more than thirty airport projects. Our comprehensive services include master planning, terminal planning, architecture, engineering and review services, and our team of airport specialists brings with them over 30 years of specialist airport experience and a comprehensive range and depth of capabilities and skills.



Singapore Airlines, founded in 1972, is committed to the constant enhancement of the three main pillars of its brand promise: Service Excellence, Product Leadership and Network Connectivity. Initially operating a modest fleet of only 10 aircraft to 22 cities in 18 countries, Singapore Airlines has since grown to become a world-class international airline group, continuously expanding its fleet and network in both full-service and low-cost airline operations. In 2018, Singapore Airlines became the world's first airline to fly the Boeing 787-10. It also launched the world's longest commercial flights on the new Airbus A350-900ULR (ultra-long-range), with non-stop services between Singapore and New York and between Singapore and Los Angeles.

General Information



Transport Arrangements

Complimentary transport is arranged for official segments throughout the Forum. Please be at the designated pick-up points at the scheduled times.

Day 1

Social Programme: Sneak Preview of Jewel Changi Airport

14:30 Shangri-La Hotel → Jewel Changi Airport

15:00 SAA → Jewel Changi Airport

Welcome Reception

17:00 Jewel Changi Airport → Marina Bay Sands

17:15 Shangri-La Hotel → Marina Bay Sands

20:30 Marina Bay Sands → Shangri-La Hotel

Day 2

Forum at SAA

08:00 Shangri-La Hotel → SAA

16:00 SAA → Shangri-La Hotel

Gala Dinner

18:30 Shangri-La Hotel → CHIJMES Hall

21:30 CHIJMES Hall → Shangri-La Hotel

Day 3

Technical Programme 1: Unmanned Systems Asia Conference

12:45 Shangri-La Hotel → Changi Exhibition Centre

15:30 Changi Exhibition Centre → Shangri-La Hotel

16:30 Changi Exhibition Centre → Shangri-La Hotel

Technical Programme 2: SMART Digital Tower at T2

14:00 Shangri-La Hotel → Changi Airport Terminal 2

15:30 Changi Exhibition Centre → Changi Airport Terminal 2

16:00 Changi Exhibition Centre → Changi Airport Terminal 2

16:30 Changi Airport Terminal 2 → Shangri-La Hotel

17:00 Changi Airport Terminal 2 → Shangri-La Hotel



WIFI at SAA

Username: WCACEF2019

Password: Wcacef@2019

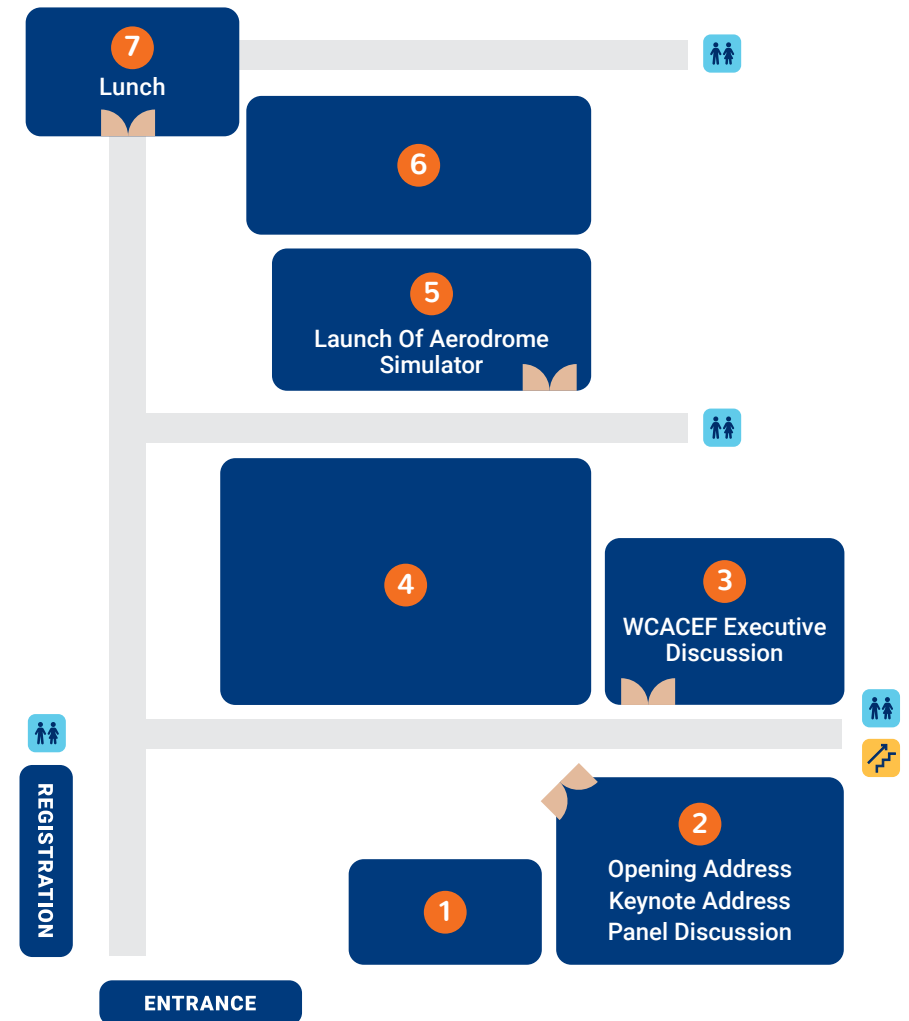


Dress Code

Day 1 – Smart casual, Day 2 – Coat with tie, Day 3 – Coat without tie

Programme updated as at 5 April 2019, and may be subject to changes.

Getting Around SAA



Legend

- 1 Changi Hall
- 2 Sim Kee Boon Auditorium
- 3 Kallang Hall
- 4 Courtyard
- 5 Aerodrome Simulator
- 6 Swimming Pool
- 7 Paya Lebar Hall

Image is not drawn to scale, and is for illustration purposes only.

NOTES

A series of 24 horizontal dotted lines spanning the width of the page, providing a template for handwritten notes.

