The Hong Kong International Airport (HKIA) at north Lantau, which opened for commercial operations in 1998, is a vital component of Hong Kong’s economy, serving both tourism and commerce. Its strategic position in Asia has made it an important regional trans-shipment centre, passenger hub and gateway to other Chinese cities.

The airport has two runways and operates around-the-clock. In 2018, the airport handled about 74.7 million passengers and 5.1 million tonnes of cargo. The airport has been further developed in stages to cater for increasing air traffic demand. The West Apron Expansion, which includes an addition of 28 parking stands, has been fully operational since 2015. The HK$10-billion Midfield Concourse (MFC), as well as its auxiliary facilities, were completed in end-2015. Located to the west of Terminal 1 and between the two existing runways, the 5-storey MFC with a total floor area reaching 105 000 square metres, provides 20 parking stands and connects with Terminal 1 via an extension of the Automated People Mover system.

Administration: There are over 120 airlines operating over 1 100 passenger and cargo flights every day, providing services between Hong Kong and over 220 destinations worldwide.

The Civil Aviation Department (CAD) is responsible for the provision of air traffic control services, certification of Hong Kong registered aircraft, monitoring of airlines on their compliance with bilateral Air Services Agreements, the regulation of general civil aviation activities and overseeing the safety and security of airport operations. The Airport Authority Hong Kong (AAHK) is required to ensure the operations of the HKIA comply with the safety and security requirements of CAD in order to obtain an Aerodrome Licence from CAD for operating the Airport.

Runways and Parking Aprons: The south and the north runways are both 3 800 metres in length and 60 metres wide enabling them to accommodate A380 aircraft. The south runway is equipped with a Category II Precision Approach, while the north runway has the higher Category IIIA rating, which allows pilots to land in only 200-metre visibility. The handling capacity of the two runways has increased to 68 aircraft movements an hour in 2015.

At present there are 77 frontal stands, 42 remote stands and 43 cargo stands. Among them, eight frontal stands are capable of accommodating the A380. With the completion of the Midfield Development, the aircraft handling capability of the HKIA can further increase.

Passenger Facilities: The HKIA is one of the most accessible airports in operation today. Despite its size, the passenger terminals are designed for maximum convenience. A simple layout and effective signage, moving walkways and the automated people mover allow quick and easy movement throughout the buildings. Facilities for the disabled are provided up to statutory requirements and code of practice. The airport is also served by a complete transport system operational round-the-clock. The fully integrated ground transportation centre is conveniently located adjacent to the passenger terminals. It provides immediate access to and from the airport express train as well as other public transport services such as buses, coaches, hotel limousines and taxis.

Baggage and Ramp Handling: Quality ramp handling services are provided by Hong Kong Airport Services Limited, Jardine Air Terminal Services Limited, and SATS Hong Kong Limited. Their services include handling of mail and passenger baggage, transportation of cargo, aerobridge operations and the operation of passenger stairways. The airport has an advanced baggage handling system (BHS), the main section of which is located in the basement level of the passenger terminal, and a separate remote transfer facility at the western end of the main concourse for handling of tight connection transfer bags. The BHS processes departure, arrival and transfer bags and utilises a conveyor of more than 34 kilometres long. Bar coding and RFID scanners read the standard International Air Transport Association (IATA) baggage labels and route bags to their destinations. Majority of the arrival bags are conveyed to 12 reclaim carousels within 20 to 40 minutes from aircraft landing.

Air Cargo: HKIA handled 5.1 million tonnes of cargo in 2018. The airport currently has five first-tier cargo operators. The Hong Kong Air Cargo Terminals Limited operates the SuperTerminal 1, one of the world’s largest air cargo handling facilities. Occupying a total floor area of about 395 000 square metres, the terminal’s handling capacity is 3.5 million tonnes of freight a year. The second service provider is Asia Airfreight Terminal Company Limited, whose facilities have a combined handling capacity of about 1.5 million tonnes a year. DHL’s 3.5-hectare Central Asia Hub at HKIA could handle more than 35 000 parcels and 40 000 documents per hour. The 11-hectre Cathay Pacific Cargo Terminal with a designed throughput of 2.6 million tonnes a year has been put into full operation in October 2013. In addition, with a total land area of about 2 hectares, Hong Kong Post’s Air Mail Centre handles 700 000 items of mail every day.

Aircraft Maintenance Services: Hong Kong Aircraft Engineering Company (HAECO) and China Aircraft Services Limited (CASL) provide both line and base-maintenance
services and Pan Asia Pacific Aviation Services Limited (PAPAS) provides line maintenance services.

Line maintenance services include routine servicing of aircraft performed during normal turnaround periods and regularly scheduled layover periods. Base maintenance covers all airframe maintenance services and, for this, HAECO has three hangars with 18 maintenance positions capable of accommodating a wide range of commercial aircraft types, with adjoining support workshops. CASL has a hangar which could accommodate one wide-body and one narrow-body aircraft at the same time with adjoining support workshops.

**Air Traffic Control Services:** With the new Air Traffic Management System (ATMS) fully commissioned in November 2016, all of the eight major systems in East ATC Centre (E-ATCC) and North ATC Tower have been put in operational use.

The new ATC System is designed to meet the latest international safety standards and ATC operational requirements. With an enhanced capacity and state-of-the-art system design, the new ATC system can handle the projected air traffic growth, including that to be brought about by the development of the three runway system at the airport.

**Satellite-based Communications, Navigation, Surveillance/ Air Traffic Management (CNS/ATM) Systems:** To comply with the Global Implementation Plan, extensive studies and trials on certain CNS/ATM system elements have been conducted by CAD. Currently some CNS/ATM services have been implemented at HKIA to enhance ATC operational efficiency and flight safety. These include:

- Digital-Automatic Terminal Information Service (D-ATIS);
- Digital-Meteorological Information for Aircraft in Flight (D-VOLMET);
- delivery of Pre-Departure Clearance (PDC) Two-way Datalink Service;
- Aeronautical Telecommunication Network (ATN) and Air Traffic Services Message Handling System (AMHS) operations with Macao and Bangkok;
- Air Traffic Services Inter-facility Data Communication (AIDC) Guangzhou ATCC, Sanya Area Control Centre (ACC), Manila ACC and Taipei ACC;
- Advanced Surface Movement Guidance and Control System (A-SMGCS) for enhanced surveillance of aircraft and vehicle movements on the airfield; and
- Arrival Manager (AMAN) System which assist the air traffic controllers in the planning for an optimum landing sequence and more efficient use of airspace.

**Automatic Dependent Surveillance – Broadcast (ADS-B), Ground-Based Augmentation System (GBAS):** In order to derive the most benefit from the new aviation technologies, CAD has implemented the Automatic Dependent Surveillance – Broadcast (ADS-B) within the Hong Kong FIR. CAD commissioned eight ADS-B ground stations for the surveillance for both high-level and low-level flying aircraft and helicopters within the Hong Kong FIR. In addition, an ADS-B data analysis system was developed to monitor and analyse data from ADS-B equipped aircraft, for enhancing the aviation safety within the Hong Kong FIR.

Ground-Based Augmentation System (GBAS) supports an extensive implementation of Performance Based Navigation on more efficient use of airspace. CAD has been working closely with Lands Department in establishing a territory-wide satellite positioning database since 2012 and collaborating with neighbouring States in the Asia and Pacific Regions to assess ionospheric effect on GBAS performance as well as its optimal installation locations. CAD successfully conducted the GBAS trial at the HKIA in end 2018.

**Collaborative Decision Making (CDM):** Collaborative Decision Making (CDM) is a joint government/industry project aiming to enhance efficiency in air traffic operations through real-time information exchange among aviation community stakeholders. CAD has rolled out a Phase 1 CDM service in both desktop PC and mobile versions in July 2013, which was well received by the industry. To cope with the continuous growth of air traffic movements, AAHK launched the Phase 2 CDM system and new pre-departure procedures in July 2017. The system and new procedures will enhance the on-time performance of departure flights and overall airport efficiency.

**Weather Services for Aviation:** The Airport Meteorological Office (AMO) of the Hong Kong Observatory (HKO) provides weather services for the aviation community in accordance with the standards and recommended practices of the International Civil Aviation Organization (ICAO) and World Meteorological Organization (WMO). The AMO makes routine and special weather observations and provides aerodrome forecasts and landing forecasts for the HKIA. It issues aerodrome warnings on thunderstorms, strong surface winds, tsunami, and other hazardous weather and events for protection of personnel, aerodrome facilities and aircraft on the ground. It also issues significant weather information on thunderstorms, tropical cyclones, turbulence, icing, volcanic ash and other hazardous weather which may affect aviation safety within Hong Kong FIR. To enhance the safety of aircraft landing and taking off from HKIA, the AMO issues alerts of low-level windshear and turbulence. It also provides tailored weather information over and near the airport to support ATM operation and operates the Airport Thunderstorm and Lightning Alerting System (ATLAS) to support the Red Lightning Warning at the airport. For service delivery, the HKO operates a web-based information service through which airlines and pilots can retrieve the latest meteorological information and flight documentation including weather forecasts for departure, destination and alternate aerodromes, forecast charts of en-route significant weather, wind and temperature data, lightning location information, weather radar and satellite images, as well as information on strong convective weather near the airport.

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The Observatory also provides an Electronic Flight Bag (EFB) application, MyFlightWx, for pilots to assimilate flight specific weather information in the cockpit. Apart from serving local aviation community, as the backup centre of the Asian Aviation Meteorological Centre, advisory products are also made available for nearby aviation meteorological units.

**Rescue and Fire Fighting Services:** Such services within the airport are provided by the Airport Fire Contingent of the Fire Services Department. The contingent has a strength of about 260 uniformed members, operating two airside fire stations and two sea rescue berths for 24-hour emergency services. It is equipped with 14 fire appliances which can respond to incidents occurred at any point of operational runways within two minutes in optimum conditions of visibility and surface conditions, satisfying the relevant recommendation of the International Civil Aviation Organization. Two high capacity Command Boats, supported by eight speed boats, form the core of sea rescue operations.

**Developments at the Airport:** Airport business is the management of flows: the flows of passengers, cargo and information. To sustain the growth of flows, HKIA continues to expand its connections to new sources of passengers and cargo. This means improving the network to the rapidly-growing markets in Mainland China, in particular the Pearl River Delta region (PRD).

About 550 and 500 round trips are made every day by coaches and cross-boundary limousines respectively to link HKIA with over 110 PRD cities and towns. Passengers expecting point-to-point transport services could use cross-boundary limousine for their PRD destinations.

Meanwhile, the SkyPier recorded over 80 daily ferry trips to nine PRD ports, namely: Shekou and Fuyong of Shenzhen, Maritime Ferry Terminal and Taipa of Macau, Humen of Dongguan, Zhongshan, Zuhai, Nansha and Lianhuashan of Guangzhou. Passengers of both directions can bypass customs and immigration formalities at HKIA and save transit time. To further streamline the travelling process at the border, HKIA has launched an upstream check-in service at Shekou, Fuyong, Humen of Dongguan, Zhongshan, Zuhai and Maritime Ferry Terminal and Taipa of Macau for sea-air passengers. Passengers can obtain their boarding passes and check-in their baggage before arriving at HKIA. The provision of cross-boundary coach, limousine and ferry services has transformed HKIA into a truly multi-modal transportation hub combining air, sea and land transport. It is also a significant step forward in HKIA’s integration with the Mainland Chinese market.

**Air Services:** The operation of scheduled air services to and from Hong Kong are facilitated by Air Services Agreements between Hong Kong and its aviation partners. Since the opening of HKIA, the Hong Kong Special Administrative Region Government has firmly and proactively implemented a policy of progressive liberalisation of air services to promote consumer choice and competition and to provide airlines of Hong Kong and its aviation partners with opportunities for service expansion.

**Commercial Aviation, Recreational Flying and the Government Flying Service:** Cathay Pacific Airways Limited operates 70 B777 (including 51 B777-300ER), 32 A330, 36 A350 aircraft and 21 B747 freighters providing direct services throughout Asia, Australasia, Europe, the Middle East, North and South America and South Africa. Hong Kong Dragon Airlines Limited operates 26 A330, 15 A320 and eight A321 aircraft to provide direct passenger services in the region. AHK Air Hong Kong Limited operates direct all-cargo services with 10 A300-600 between Hong Kong and various destinations in Asia. Hong Kong Express Airways Limited operates 13 A320 aircraft and 11 A321 aircraft for direct passenger services to Saipan, the Mainland and various destinations in Asia. Hong Kong Airlines Limited operates 21 A330, 12 A320 aircraft, six A350 aircraft to provide direct passenger services to Australasia, the Mainland, North America and various cities in Asia. Hong Kong Air Cargo Carrier Limited operates direct all-cargo services with five A330 freighters to the Mainland, Turkey and destinations in Asia. TAG Aviation Asia Limited operates one Gulfstream G450 aircraft for non-scheduled passenger services. Sky Shuttle Helicopters Limited operates two AW139 helicopters for passenger charters between Hong Kong and Macau. Heliservices (Hong Kong) Limited operates three MD900 helicopters for local passenger charters and aerial works.

The Hong Kong Business Aviation Centre (BAC) is located within the confines of the airport and has its own terminal and facilities. It provides a full range of services for executive aircraft, including ground handling, baggage handling, fuelling, security and flight planning. Designated spaces are also provided at the BAC for private aircraft.

The Hong Kong Aviation Club conducts recreational flying in Hong Kong, undertakes flying training for private pilots and provides facilities for private owners.

The Government Flying Service provides short and long range search and rescue services, police support, medical evacuation as well as flights for other Government purposes. The fleet comprises six EC175 helicopters, three AS332 helicopters, four EC155 helicopters, one Z-242L aircraft, one Diamond DA 42 NG aircraft and two Bombardier Challenger 605 aircraft.