



57th Conference of Directors General of Civil Aviation Asia and Pacific Regions

4 – 8 JULY 2022, INCHEON, REPUBLIC OF KOREA

**Agenda Item 4: Air Navigation
Advanced and Sustainable Technologies for
Supporting a Safe and Reliable Operation of the
Hong Kong International Airport and Its Expansion**

Presented by Hong Kong, China

Hong Kong International Airport (HKIA)



Opened in July 1998



71.3 million passengers in 2019



420,000 air traffic movements in 2019

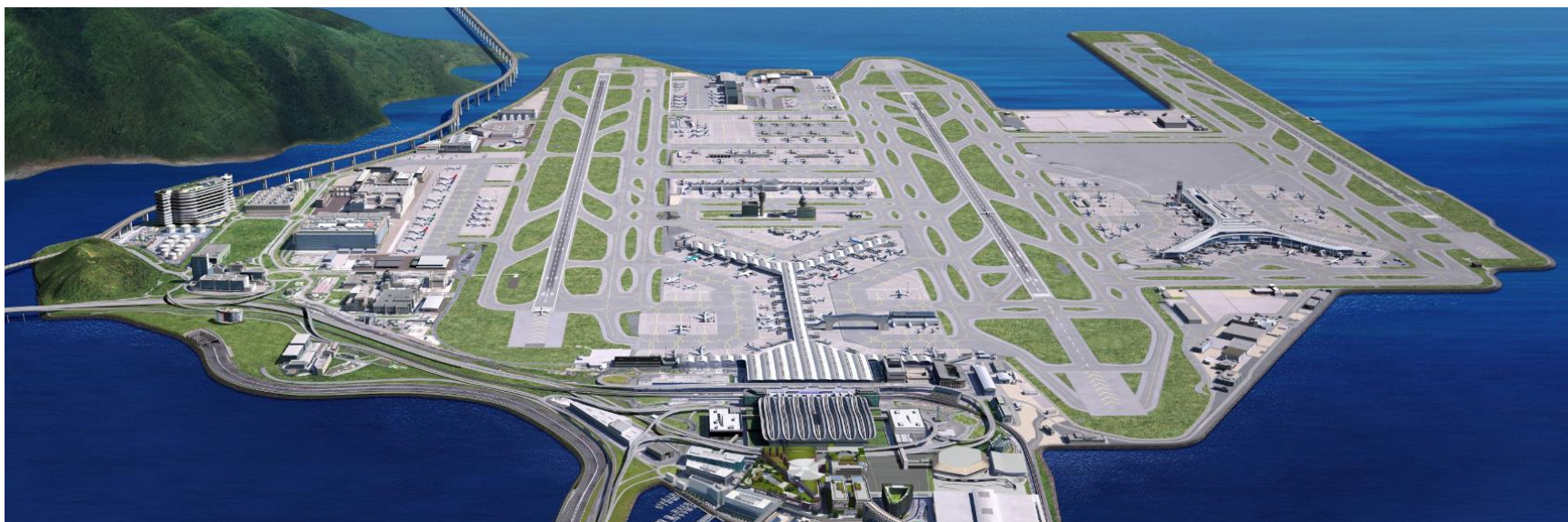


2019: 4.7 million tonnes

2020: 4.4 million tonnes

2021: 5.0 million tonnes

Expansion into Three Runway System

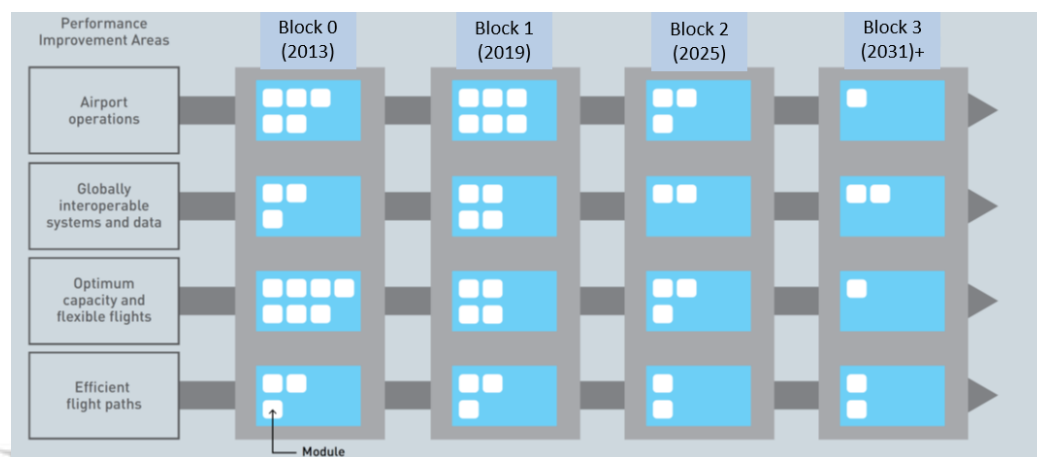


GLOBAL STRATEGIC

Provides high-level strategic directions for decision makers to drive the evolution of the global air navigation system towards a common agreed vision.

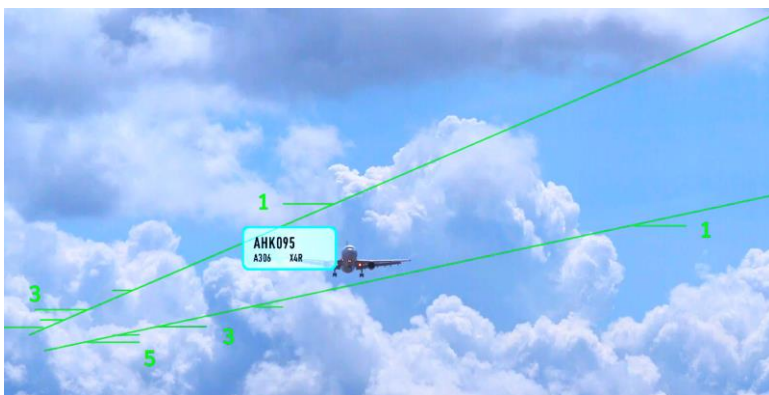


GANP DOCUMENT



ASBU Framework (Block 0 – 3) under GANP

Digital Tower and Apron at HKIA



Augmented flight information on an approach flight



Detection and labelling of an aircraft on taxiway



Enhanced visibility during night-time and low visibility

Digital Tower and Apron at HKIA

2022

Existing runway and new runway (Phase 1)

2024

Three Runway System (Phase 2)

2020

Trial at HKIA

- Integrated platform for both Digital Tower and Digital Apron
- More than 240 nos. of high-resolution cameras being installed at HKIA apron
- One of the largest scale implementation worldwide

High-resolution cameras on airfield



DTF display at ATC tower



Digital Tower Facility (DTF) showing an aircraft taxiing on Third Runway of the HKIA

Advanced Surveillance A-SMGCS and SMR at HKIA

- ❖ Advanced Surface Movement Guidance & Control System (A-SMGCS)
 - ✓ multi-lateralization technology
 - ✓ integration with signals from ADS-B & Surface Movement Radars (SMRs)



New SMR Tower at HKIA

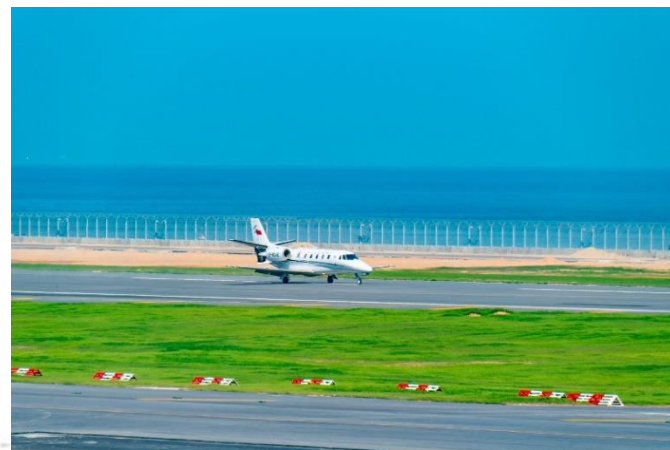


Advanced Instrument Landing System (ILS)

- ❖ Two sets of new ILS for the Third Runway
- ❖ Latest wide-aperture 32-element localizer antenna array
 - ✓ less stringent critical/sensitive areas
 - ✓ enhanced immunity to radio frequency interference
 - ✓ Flight Inspection Centre (FIC) of CAAC completed flight checks in compliance with ICAO requirements under pandemic and weather challenges



32-element wide-aperture localizer antenna array



FIC aircraft on Third Runway of HKIA

Advanced Control Tower Simulator (CTS)

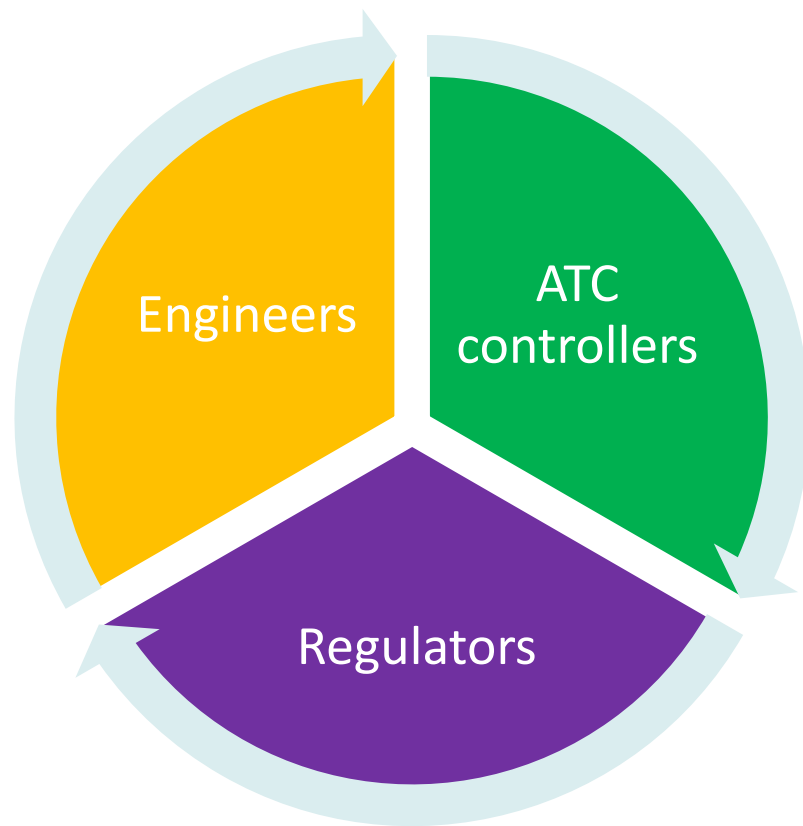
- ❖ new CTS with high-performance projection & image generation technologies
 - ✓ support simulated scenarios for Interim Two Runway System and Three Runway System operations
 - ✓ previous CTS upgraded and connected with new CTS to support training under twin-tower operational environment



New 360° CTS showing simulated aerodrome environment at ATC tower

Early Engagement of Stakeholders

- ❖ Hong Kong CAD has set up a dedicated task force at early stage of 3RS project to oversee planning, trials and implementation of advanced technologies
- ❖ Provides a platform for all stakeholders to discuss thoroughly on various aspects to ensure smooth and safe implementation



Need for Strengthening Regional Cooperation

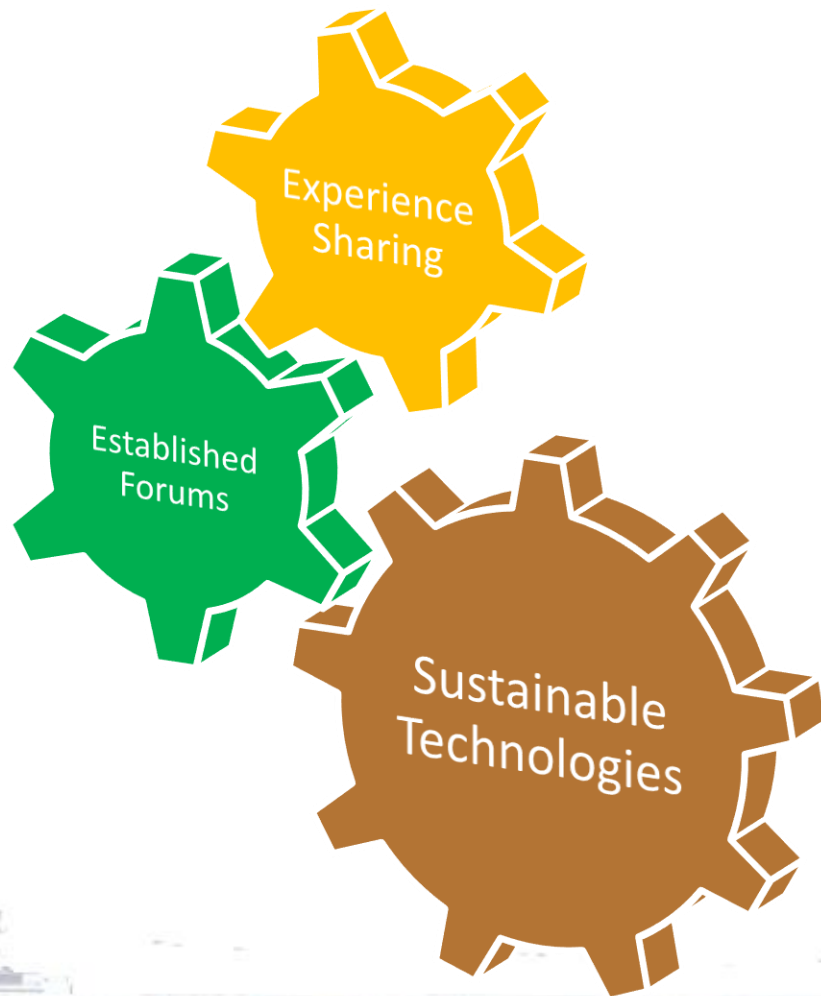
ICAO and International Organization

Civil Aviation Authorities



Air Navigation Service Providers

Industry Partners



Action by the Conference

The Conference is invited to :-

- a) note the information and experiences shared by Hong Kong, China in the application of advanced technologies; and
- b) encourage States/Administrations to continue with regional collaboration and the sharing of experiences in the use of advanced technologies for the safe, efficient and sustainable development of aviation.



Thank you



Committed to a Safe, Efficient and Sustainable Air Transport System

