



ICAO

*International Civil Aviation Organization***Ninth Meeting of the Aerodromes Operations and Planning Sub-Group (AOP/SG/9)***Bangkok, Thailand, 30 June to 4 July 2025***Agenda Item 4: Provision of AOP in the Asia/Pacific Region****– Certification and Operations of Aerodromes****AERODROME LICENSING FOR THE THREE-RUNWAY SYSTEM
OF THE HONG KONG INTERNATIONAL AIRPORT***(Presented by Hong Kong, China)***SUMMARY**

Following a rigorous aerodrome licensing process by the Civil Aviation Department of Hong Kong, China, the Hong Kong International Airport officially completed the transition from Two-Runway System to Three-Runway System on 28 November 2024. This paper shares Hong Kong, China's experience and best practices in the aerodrome licensing process for this mega airfield expansion project involving the reconfiguration of runway and associated taxiway systems, which took place adjacent to live airfield areas of an operational airport.

1. INTRODUCTION

1.1 On 28 November 2024, the Hong Kong International Airport (HKIA) officially completed the transition from a Two-Runway System (2RS) to a Three-Runway System (3RS), marking a significant milestone in its development. The eight-year construction project began in 2016 and was executed in two major phases. The first phase involved land reclamation and the subsequent construction of the new North Runway (i.e. the third runway), along with associated taxiways and corresponding facilities, which commenced operations in 2022 (see Figure 1). The project then entered the second phase, which involved the closure of the Centre Runway (i.e. the former North Runway under 2RS) for reconfiguration, during which the HKIA was operated under an Interim Two-Runway System (I-2RS) (i.e. with the new North Runway and the South Runway in operation, see Figure 1). The reconfiguration works covered regrading and extending the runway, constructing new taxiway systems, and installing new facilities and equipment to support the commissioning of 3RS (see Figure 2).

1.2 As the regulator responsible for overseeing aerodrome safety and security of the HKIA, the Civil Aviation Department (CAD) of Hong Kong, China has been working closely with the Airport Authority Hong Kong (AAHK), the aerodrome operator of the HKIA, since the onset of this mega project, to ensure that all new aerodrome facilities and operational procedures complied with ICAO Annex 14 Volume I and local aerodrome licensing requirements.

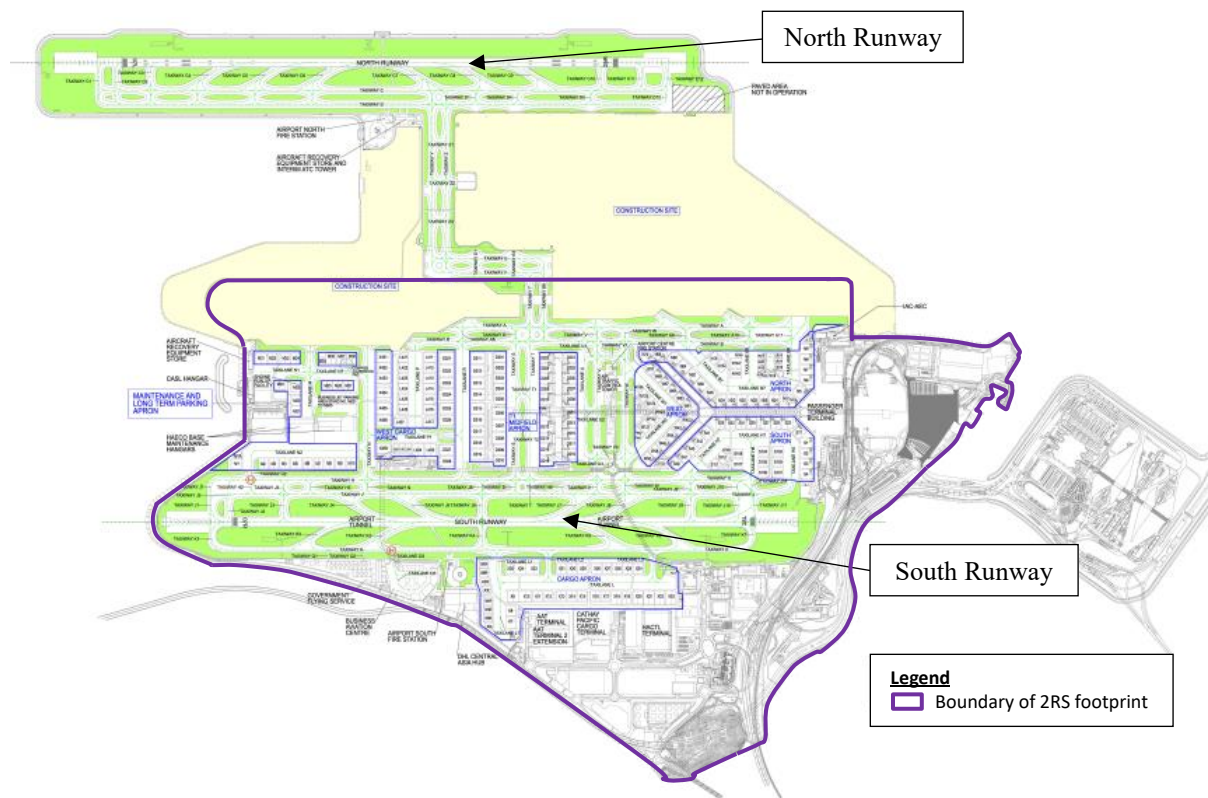


Figure 1 – Aerodrome Layout Plan of the HKIA (I-2RS Stage)

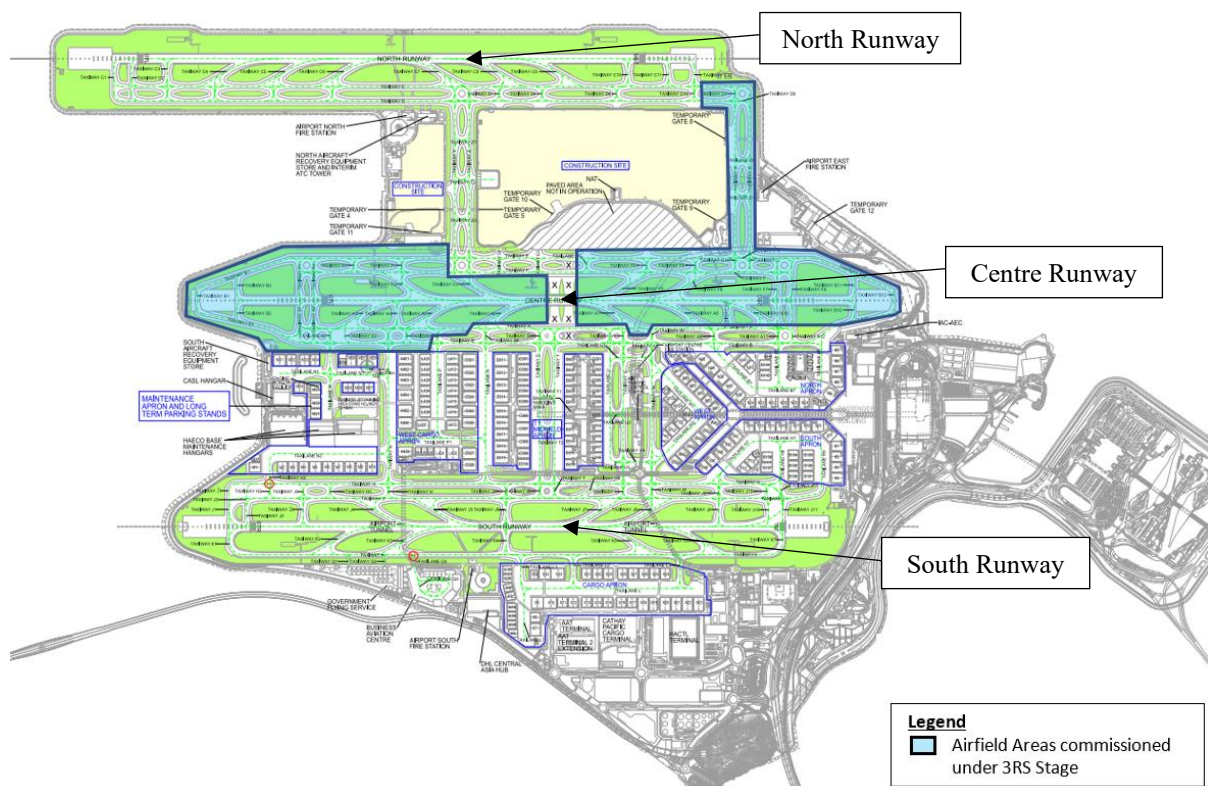


Figure 2 – Aerodrome Layout Plan of the HKIA (3RS Stage)

2. DISCUSSION

Aerodrome Licensing Regime of Hong Kong, China

2.1 Under the current regulatory regime in Hong Kong, China, the Director-General of Civil Aviation (DGCA) is empowered by the Chief Executive of Hong Kong Special Administrative Region to grant aerodrome licences upon his satisfaction, amongst other criteria, that the aerodrome is safe for use by aircraft. To support this function, the CAD developed the Aerodrome Licensing Requirements Document (ALRD), which comprehensively incorporates both ICAO and local requirements. On one hand, it contains the relevant Standards and Recommended Practices from ICAO Annex 14 Volume I and associated guidance materials. On the other, local requirements such as organization structure and staffing of the aerodrome licence holder, and training requirement for aerodrome operating staff etc. are also included in the ALRD. Periodic updates to the ALRD are made to reflect the latest amendments to ICAO's documents and incorporate additional or updated local requirements when warranted.

2.2 The regime also includes a robust program of year-round audits and inspections to meticulously and continuously assess the AAHK's compliance with the prescribed requirements and verify the ongoing suitability of the HKIA for safe and secure aircraft operations. Since the first issuance of aerodrome licence to the AAHK in 1998, the CAD has been conducting regular oversight activities to ensure that a renewed aerodrome licence is only granted when the AAHK satisfactorily meets all regulatory requirements.

Regulatory Oversight Activities on Aerodrome Operations Under I-2RS Stage

2.3 Following CAD's thorough assessment of the new aerodrome facilities and operational procedures for supporting I-2RS operations, which confirmed full compliance with the requirements in ALRD, a renewed aerodrome licence covering I-2RS operations was issued to the AAHK on 31 May 2022. Upon receipt of this renewed aerodrome licence, the AAHK carried out a series of intensive operational drills and commenced flight operation familiarization at the new I-2RS airfield areas to ensure their operational readiness for seamless integration with existing areas. The new North Runway and associated taxiway systems were commissioned in November 2022, after which CAD expanded its regulatory oversight to encompass these new operational areas and all associated procedures while the 3RS entered the second phase.

2.4 The subsequent reconfiguration works of the Centre Runway and associated taxiways were inevitably in close proximity to parts of the aerodrome with ongoing live operations while HKIA operated under I-2RS. To ensure that potential safety hazards and operational risks arising from these construction activities were being effectively identified, mitigated and managed by the AAHK, the CAD exercised rigorous regulatory oversight which included continuous monitoring and assessment of construction impacts on live aerodrome operations. Furthermore, the CAD provided targeted regulatory advice across critical domains, including aerodrome operations, airfield maintenance, airport emergency planning, and airport safety management system, through regular and structured review meetings with the AAHK and relevant airport stakeholders. This collaborative approach maintained uncompromised safety and operational integrity throughout the construction period.

Aerodrome Licensing Assessment for 3RS

2.5 The commissioning of new facilities to support 3RS operations required the AAHK to demonstrate full compliance with ALRD requirements before the granting of another renewed aerodrome licence by the CAD. This was achieved through close coordination and an iterative review process between both parties, ensuring that all technical and regulatory requirements were effectively addressed.

2.6 From the early stages of the project, the AAHK submitted extensive documentation for CAD's review, such as design drawings, relevant manual amendments and aerodrome layout plans. This early stage of regulatory engagement proved instrumental in timely identifying potential areas for improvement, facilitating continuous refinements and enhancements. The finalised submissions, incorporating all necessary revisions, were complemented by as-built drawings and comprehensive test reports. These documents, combined with detailed ALRD-based compliance checklists, formed the evidentiary foundation for CAD's structured licensing assessments.

2.7 Apart from documentation review, the CAD established a regime of monthly pre-licensing site visits to the 3RS construction site beginning in December 2022 (i.e. approximately 2 years prior to the planned 3RS transition). These site visits, which fostered effective communication between the CAD and the AAHK, enabled timely monitoring of construction progress, allowed potential issues to be identified and addressed at the outset. This proactive approach ensured prompt corrective actions, preventing accumulation of deviations or deficiencies leading to significant consequences with compliance issues while verifying AAHK's consistent adherence to the required quality standards throughout construction.

2.8 In parallel, a series of specialized working groups and taskforces at different levels were established across key disciplines for aerodrome licensing including airfield pavements, aeronautical ground lightings (AGLs) and rescue and fire-fighting services. These multidisciplinary forums enabled regular progress updates and discussions between the AAHK, the CAD and relevant stakeholders. The exchanges within these forums facilitated well-informed and timely decision-making processes, enabling swift resolution of issues while balancing the diverse considerations and priorities of the parties involved.

2.9 As the reconfiguration of Centre Runway and construction of new taxiway systems approached completion, the CAD made advance planning and commenced comprehensive on-site licensing inspections from April 2024 (i.e. approximately 7 months prior to the planned transition to 3RS operations). These inspections were carried out by phases, initially focusing on assessing the reconfigured Centre Runway's readiness from aerodrome licensing perspectives to support the safe conduct of flight check in August 2024. The scope was then extended to the associated taxiway systems and equipment. This phased approach not only ensured that the new infrastructure met the standards necessary for the safe operations of the HKIA, but also allowed for the prioritization of inspection activities to align with ongoing preparation works and operational readiness objectives.

Transition to 3RS Operations

2.10 The final phase of transition of the HKIA to 3RS operations was planned for 28 November 2024. Given the complex nature of integrating the newly constructed, yet non-operational new airfield areas with the existing live operational areas of the HKIA, the AAHK was required to submit a comprehensive and detailed transition plan to the CAD several months in advance of the planned transition. The transition plan outlined their phased approach to seamlessly connect the operational areas with the new 3RS airfield areas and included, inter alia, the works details and schedule of a series of tie-in works related to AGL, markings, signs and system changeover works. These activities were strategically scheduled over a couple of weeks including some to be carried out shortly before and on the planned date of commissioning 3RS operations to ensure minimal operational disruption. The CAD's assessment on the transition plan was guided by the overriding principle that the safety and integrity of airport operations must not be compromised throughout the entire transition.

2.11 With the concerted efforts of the CAD, the AAHK and relevant stakeholders in effectively completing the necessary aerodrome licensing process and transition activities, the Centre Runway and associated taxiway systems were commissioned on 28 November 2024, marking the successful commencement of 3RS operations at the HKIA. This milestone signifies a critical

achievement in the execution of this mega airfield expansion project, reaffirming Hong Kong, China's dedication to maintaining the position of the HKIA as a global aviation hub, consistently upholding the highest standards of safety, efficiency and operational excellence.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) share experience and best practices regarding certification of new aerodrome facilities at respective airports, including the challenges and complexities encountered when certifying new aerodrome facilities at an operational airport.

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