



*International Civil Aviation Organization*

**ICAO**

**The Fifth Meeting of the South Asia, Indian Ocean and Southeast Asia ATM Coordination Group (SAIOSEACG/5)**

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## **Agenda Item 5: ATS Route Development**

### **PROGRESS UPDATE ON THE ESTABLISHMENT OF A1 PARALLEL ROUTES** (Presented by China and Hong Kong China)

#### **SUMMARY**

This paper presents Route A1 facing unprecedented challenges in terms of capacity, operational complexity and safety margins. The establishment of parallel routes on A1 has become a shared concern among States and administrations along the route, and a broad regional consensus has gradually been achieved through SAIOSEACG, SCSTFRG, as well as multilateral and bilateral coordination mechanisms. This paper outlines the background and necessity for the implementation of A1 parallel routes, reviews progress achieved to date, presents the proposed arrangement within Sanya FIR, analyses the remaining challenges, and proposes the way forward.

## **1. INTRODUCTION**

1.1 Route A1 is one of the most important trunks ATS routes in the South China Sea Priority Area 1, playing an indispensable role in connecting major aviation hubs in Southeast Asia and Northeast Asia. Following the full recovery of international air transport after the pandemic, traffic demand on A1 has increased rapidly and, in some periods—particularly during nighttime peak hours—has even exceeded historical peak levels. Capacity constraints, intensified bidirectional flows and rising operational complexity on A1 have highlighted the urgent need for a systematic optimization of the route structure.

1.2 In recent years, a notable trend has emerged in the Asia-Pacific region: medium- and long-haul international traffic between major Southeast Asian cities such as Ha Noi, Da Nang and Bangkok, and key Northeast Asian hubs including Shanghai, Seoul and Tokyo, has grown significantly. Driven by restored tourism, strengthened economic exchanges and airline network restructuring, traffic demand on A1 has become increasingly concentrated not only in volume but also in time. This concentration of high-density bidirectional flows has substantially increased conflict potential and route complexity, indicating that the existing single-route structure can no longer sustainably accommodate future demand.

1.3 In addition to traffic growth, the operational environment has become more complex. During adverse weather events such as tropical cyclones affecting the Manila and Ho Chi Minh FIRs, Route A1 frequently serves as a critical re-routing corridor. For example, during Tropical Cyclone “Doksuri” from 25 to 30 November 2025, a large number of flights originally planned to operate via routes L642/M771/N892/L625 within the Manila and Sanya FIRs were re-routed onto A1. As a result, traffic volume in Sanya FIR increased significantly and became highly concentrated on A1. Statistical analysis shows that, compared with the November average, the daily total traffic in Sanya FIR

increased by approximately 15%, while daily traffic on A1 increased by about 37%. In terms of hourly peaks, the Sanya FIR increased by approximately 21%, whereas A1 increased by about 46%. These figures clearly demonstrate that the challenges faced by A1 are multidimensional, encompassing not only capacity constraints but also operational safety and system resilience. Therefore, the establishment of parallel routes on A1 is a critical measure to enhance safety margins and overall operational efficiency.

## 2. DISCUSSION

### Progress to Date

2.1 *Consensus on the Establishment of Parallel Routes.* States and administrations along Route A1 have reached a clear consensus on the necessity of establishing parallel routes. During the SCSTFRG/13, a side meeting was convened among representatives of Cambodia, China, Hong Kong China, Lao PDR, Thailand and Viet Nam, focusing on the establishment of parallel unidirectional routes intended to replace the existing bidirectional ATS Route A1 and its connecting route from Cambodia. The participants engaged in detailed discussions on various technical matters, including navigation specifications, route structure, traffic flow organisation, FLAS/FLOS, FIR boundary points, route spacing requirements and other related matters. Consensus was reached on the configuration of the parallel routes, with the northern route designated for westbound traffic and the southern route designated for eastbound traffic. The meeting further agreed to expedite preparatory work on the implementation. Tentatively the commencement of trial implementation is aimed in 2027.

2.2 The parallel routes connecting ATS Route A1 within Hong Kong FIR have been established since June 2020. Hong Kong, China is collaborating closely with CAAC ATMB and Sanya ACC to establish new transfer of control (TOC) points upon confirmation of the segment of the parallel routes to replace ATC Route A1 within Sanya FIR.

### Proposed Arrangement within Sanya FIR

2.3 *Parallel Route Design.* Following the implementation of A1 parallel routes, the proposed arrangement within the Sanya FIR is as follows:

- The southern route will be a newly established route between New Waypoint 1 (N16° 39' 54" E109° 35' 58" , near ITBAM) and IKELA, accommodating west-to-east traffic under the right-hand rule;
- The northern route will be a newly established route between BUNTA and New Waypoint 2 (N18° 51' 31" E112° 04' 33" ) , running generally parallel to the southern route and accommodating east-to-west traffic under the right-hand rule;  
  
(The coordinates are preliminary calculated, there may be changes. )
- The lateral spacing between the two parallel routes will be approximately 15 NM.

2.4 This arrangement preserves route continuity and pilot familiarity to the greatest extent possible, while achieving spatial segregation of opposite-direction traffic and providing a structural enhancement to operational safety margins.

2.5 *Navigation Specification.* It is proposed that the A1 parallel routes adopt the RNAV 2 navigation specification. RNAV 2 equipage is already widely available among aircraft currently operating on A1, which supports the feasibility of this proposal and ensures that implementation costs remain manageable.

### Outstanding Challenges

2.6 *Allocation of Flight Levels.* The lateral spacing between parallel routes will directly influence the allocation and utilisation of flight levels. Where lateral spacing is relatively narrow, the primary benefit lies in enhanced safety and reduced conflict risk. However, if flight level structures are not optimised accordingly, the overall capacity gains may be limited, and demand–capacity imbalances could persist in the future. Therefore, flight level allocation strategies should be examined in parallel with the implementation of parallel routes.

2.7 *Adjustment of Existing Operational Procedures.* The implementation of A1 parallel routes will necessitate adjustments to certain existing operational procedures to ensure smooth integration. The A1 route may serve as an alternative route in the event of an interruption to air traffic control services in adjacent airspace /air route.

2.8 These arrangements require further regional coordination and refinement based on actual operational experience.

### Way Forward

2.9 *Enhancement of Coordination and Communication.* Given the range of operational and technical issues that may arise during implementation, reliance on annual meetings alone may be insufficient. It is therefore recommended to strengthen communication and coordination to effectively address any implementation issues.

2.10 *Engagement with Stakeholders.* The ultimate objective of implementing A1 parallel routes is to better serve airlines and other operational stakeholders. Active engagement with IATA, airlines and other relevant stakeholders is encouraged, in order to gather feedback and continuously optimise the operational arrangements, thereby enhancing the overall level of air traffic services.

## **3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) encourage all relevant States/Administrations to provide progress updates on this item;
- c) discuss any relevant matters as appropriate.