International Civil Aviation Organization

Eleventh Meeting of the South China Sea Traffic Flow Review Group (SCSTFRG/12)

Bangkok Thailand, 11 – 12 November 2024

Agenda Item 3: Review of the Existing Traffic Flow Route Structures in SCS Airspace and Identifying Priorities

Establishing a Coordinated Rerouting Framework in the South China Sea Area

(Presented by China)

SUMMARY

This paper addresses the challenges posed by frequent rerouting demands in the South China Sea area due to adverse weather conditions such as typhoons. The current system of individually requesting rerouting approval from each FIR along a route often leads to delays and inefficiencies. To address these issues, this paper proposes a collaborative rerouting framework that simplifies rerouting requests for both pre-departure and airborne adjustments. By establishing pre-agreed rerouting corridors and implementing streamlined approval processes, this framework aims to enhance operational flexibility, improve response times, and ensure a safer and more efficient airspace environment for all stakeholders.

1. INTRODUCTION

1.1 The South China Sea is a critical airspace corridor within Southeast Asia, characterized by high traffic density and a complex network of FIRs managed by multiple States/Administrations. This area frequently experiences severe weather events, particularly during the typhoon season, which necessitates both pre-departure and en-route rerouting to ensure flight safety and efficiency. However, the current approach to rerouting—where individual clearance is required from each FIR along the affected route—often leads to delays, bottlenecks, and increased workload for both pilots and air traffic controllers.

1.2 In recent years, demand for rerouting has grown substantially, driven by both increasing traffic volumes and the need to accommodate weather-related deviations more effectively. A collaborative rerouting framework would facilitate quicker, safer rerouting options, reducing the impact of delays on flight operations and improving regional air traffic management resilience.

1.3 This paper proposes a coordinated approach to rerouting, focusing on pre-designated rerouting corridors, notification-based rerouting procedures, and a shared situational awareness platform. By adopting these measures, the South China Sea area can better accommodate the needs of its diverse stakeholders and ensure more consistent traffic flow during challenging weather conditions..

2. DISCUSSION

<u>Establishing Pre-Designated Rerouting Corridors</u>

2.1 One of the primary challenges in rerouting during adverse weather events is the lack of pre-agreed rerouting corridors. By establishing a network of pre-designated corridors across the South China Sea, aircraft can be rerouted promptly without requiring individual clearance from each FIR along the route.

2.2 Key Features of the Proposed Rerouting Corridors:

- **Standardized Routes:** Designating specific routes that aircraft can use during weather-related events, with pre-defined waypoints and flight level blocks to minimize the risk of conflict.

- **Flexible Entry/Exit Points:** Allowing for flexible entry and exit points based on real-time weather conditions to provide maximum flexibility for rerouting.

- **Simplified Coordination:** Agreement from FIRs along these corridors to accept rerouted traffic within set parameters, reducing the need for step-by-step clearance.

2.3 Recommendation: Exchange contact information during this meeting to facilitate follow-up discussions. Each States/Administrations can initially identify potential rerouting corridors within their respective jurisdictions based on local traffic patterns, weather impact areas, and airspace constraints. A comprehensive set of regional rerouting corridors can then be coordinated at the next meeting or another suitable occasions.

Implementing Notification-Based Rerouting Procedures

2.4 A notification-based rerouting approach could transform the existing "approval-first" system into a more efficient "notification-only" system for specific corridors during high-demand periods.

2.5 Notification-Based Mechanism:

- **Pre-Approved Conditions:** Set parameters, such as wind speed, or typhoon proximity, under which the notification-based rerouting system can be activated.

- **Notification:** Once rerouting is deemed necessary, a notification will be sent to all impacted FIRs via phone call, email, or a shared platform, allowing rerouting without requiring immediate approval.

- **Pre-Departure and En-Route Application:** This mechanism could apply to both pre-departure rerouting at the point of origin and en-route adjustments during adverse weather, minimizing waiting times and delays.

2.6 Recommendation: Establish criteria and a procedure for activating the notification-based rerouting system. Include parameters for when the system should revert to standard approval-based processes once normal conditions resume.

Enhanced Situational Awareness Through a Shared Platform

2.7 A central challenge in coordinating rerouting across multiple FIRs is maintaining real-time situational awareness. Implementing a shared situational awareness platform would

allow air traffic controllers in neighboring FIRs to view and track rerouting decisions, ensuring a coordinated approach and reducing potential conflicts.

2.8 Platform Features:

- Real-Time Rerouting Information: Provide updated information on active reroutes, corridor availability, and weather impacts to air traffic controllers in all FIRs along the affected route.

- **Integrated Communication:** Allow for quick communication between FIRs to resolve conflicts or adjust reroutes as necessary, supporting efficient and effective decision-making.

- **Traffic Impact Analysis:** Enable ATC to assess potential impacts on traffic flow, ensuring that rerouting decisions do not inadvertently create bottlenecks or delays elsewhere in the region.

2.9 Recommendation: In the short term, consider utilizing related group's upcoming potential platform or other commercial platforms to support coordinated rerouting decisions. For the long term, exploring the development of a dedicated, secure web-based platform accessible to ATC across all FIRs in the South China Sea would be beneficial. This platform could eventually integrate real-time weather data, traffic flow updates, and rerouting information to facilitate efficient, coordinated decision-making during rerouting events.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) support the establishment of pre-designated rerouting corridors and a notification-based rerouting system for the South China Sea area;

c) Consider engaging with the related group to incorporate rerouting needs specific to the South China Sea area in the development of its upcoming platform to enhance real-time coordination and decision-making;

d) discuss any relevant matters as appropriate.

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