



ICAO

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First Meeting of the APAC Project 30/10 Task Force

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Agenda Item 2: States Challenges and Implementation Plan

PROJECT 30/10: OPERATIONAL PERSPECTIVES ON NETWORK CAPACITY, SAFETY, AND HUMAN PERFORMANCE

(Presented by IFATCA)

SUMMARY

This paper presents IFATCA's views on the implementation of Project 30/10. While IFATCA supports initiatives aimed at increasing airspace capacity, the Federation believes Project 30/10 should be approached as a network capacity enhancement programme rather than solely a separation reduction initiative. Capacity gains can only be realized when reduced separation standards are supported by harmonized traffic flows, adequate staffing, modern CNS/ATM capabilities, robust safety assessments, effective training, and strong coordination across sectors, FIRs, and regions.

1. INTRODUCTION

1.1 The Asia-Pacific Region continues to experience significant growth in air traffic demand, requiring initiatives that enhance the efficiency and capacity of the air navigation system while maintaining high levels of safety

1.2 IFATCA supports the objectives of Project 30/10 and recognizes its potential to contribute to improved airspace utilization and operational performance across the region.

1.3 However, the implementation of reduced separation standards should be considered as part of a broader ATM system transformation rather than as a stand-alone airspace initiative. Capacity, safety, human performance, operational procedures, and technical capabilities remain closely interconnected.

1.4 IFATCA considers Project 30/10 to be fundamentally a network performance initiative. The successful realization of its objectives will depend not only on the application of reduced separation standards but also on the ability of the ATM system to manage increased traffic flows across interconnected sectors, FIRs, terminal areas, and regions. Accordingly, Project 30/10 should be viewed as a network capacity enhancement programme rather than solely a separation reduction initiative.

2. DISCUSSION

Capacity and Controller Workload

2.1 While reduced separation minima may increase the theoretical capacity of an airspace, they do not necessarily reduce controller workload. ICAO Doc 9971 recognizes that sector capacity is fundamentally linked to the number of aircraft that controllers can safely manage within a given period

of time. Accordingly, Project 30/10 should be viewed as a network capacity enhancement programme rather than solely a separation reduction initiative.

2.2 As traffic density increases, controllers may experience greater monitoring requirements, increased tactical interventions, higher coordination demands, and more complex conflict detection activities. While reduced separation may increase theoretical sector capacity, it also increases operational complexity.

2.3 In a reduced separation environment, a single conflict resolution action may have consequences for multiple aircraft within the traffic stream, increasing controller cognitive workload and reducing operational flexibility. Consequently, sectors may reach their human performance limits before reaching their theoretical airspace capacity limits. Therefore, workload and sector complexity should remain key considerations throughout Project 30/10 implementation.

2.4 Where traffic demand increases significantly during peak periods, airspace sectorization may require review, including the activation of additional sectors and the provision of appropriately qualified personnel to maintain safe and manageable workload levels.

2.5 Reduced separation also provides less tactical buffer to absorb routine operational variations such as weather deviations, pilot response delays, or aircraft performance differences, increasing the likelihood of tactical interventions and reducing the anticipated efficiency benefits.

Network-Wide Flow Management and Coordination

2.6 The effectiveness of reduced separation standards depends not only on individual sectors but on the performance of the wider ATM network. Project 30/10 can only deliver sustainable capacity benefits when operational procedures, separation standards, and traffic management measures are implemented in a harmonized manner across sectors, FIRs, and regions.

2.7 Capacity improvements achieved in one sector may provide limited operational benefit if adjacent sectors, FIRs, terminal areas, or downstream airspace continue to operate under existing constraints. Closely spaced aircraft may arrive at sector boundaries or transfer-of-control points in compressed traffic streams, creating workload spikes and capacity bottlenecks for receiving sectors if adequate sequencing measures are not in place.

2.8 Harmonized transfer conditions between neighbouring ATS units are therefore essential. States and ANSPs should review and update Letters of Agreement (LoAs), coordination procedures, and transfer parameters to support seamless operations across FIR boundaries.

2.9 IFATCA considers collaborative traffic flow management to be a key enabler of Project 30/10. As traffic density increases, controllers require greater predictability of traffic flows in order to safely manage workload and sector complexity. Traffic flow management measures should therefore support not only strategic planning but also tactical traffic stream management, ensuring that traffic is appropriately regulated upstream before sectors approach capacity limits.

CNS/ATM Capability and Automation

2.10 Successful implementation of reduced separation operations requires supporting technological capabilities. As separation minima decrease and traffic density increases, controllers become increasingly dependent on surveillance accuracy, data exchange, automation support, and system reliability to maintain situational awareness and safely manage traffic flows.

2.11 Modern CNS/ATM systems, surveillance capabilities, and safety nets provide essential safeguards in higher-density traffic environments. Reliable data communications, including Controller-

Pilot Data Link Communications (CPDLC), can reduce voice frequency congestion and support the efficient delivery of clearances, while surveillance systems and ADS-C reporting capabilities must provide sufficiently accurate and timely position information to support reduced separation operations.

2.12 In addition, automated safety nets and conflict detection tools should be appropriately tuned to support closely spaced traffic operations. Excessive nuisance or false alerts may increase controller workload and contribute to alarm fatigue, reducing the effectiveness of these safety-critical systems.

2.13 Automation solutions that support flight data exchange, electronic coordination, and information sharing can reduce routine coordination workload, minimize human error, and improve operational efficiency.

2.14 Reduced separation operations rely heavily on the continued availability of supporting CNS/ATM infrastructure and automation. Therefore, Project 30/10 should also consider the operational implications of system degradation or equipment failures.

2.15 Clear contingency procedures should be established to ensure a safe transition to conventional separation standards when required. Particular consideration should be given to managing traffic flows during periods of degraded operations, as restoring larger separation minima within a densely occupied airspace may significantly increase controller workload and operational complexity.

Training and Competency

2.16 While reduced separation standards increase the capacity available within the ATM system, they do not necessarily result in continuously high traffic intensity. Traffic demand may vary significantly throughout the day, with the greatest operational challenges occurring during peak traffic periods. Controllers should therefore be prepared to safely manage periods of elevated traffic demand when the additional capacity enabled by Project 30/10 is most likely to be utilized.

2.17 Training should address not only the application of reduced separation standards but also the human performance challenges associated with managing higher traffic volumes and increased tactical workload. Training programmes should also reflect realistic traffic loads, peak demand periods, abnormal situations, and coordination requirements associated with reduced separation operations.

2.18 Controllers should be exposed to operational disruptions such as weather deviations, emergency descents, communication failures, surveillance degradation, and other contingency situations. Opportunities should also be provided to practice degraded operations, including the safe transition from reduced separation operations to conventional separation standards when operational conditions require it.

2.19 Supervisors, flow management personnel, and operational support staff should receive appropriate training to ensure a common understanding of the new operational environment, associated contingency procedures and how to conduct effective upstream and downstream traffic management and coordination.

Safety Assessment

2.20 IFATCA strongly emphasizes that any reduction in separation minima should be preceded by comprehensive safety assessments conducted in accordance with ICAO Safety Management principles. Safety assessments should evaluate not only the safety of reduced separation operations under normal conditions, but also the ability of the ATM system to safely manage abnormal, degraded, and contingency situations.

2.21 Such assessments should consider human performance, controller workload, traffic complexity, sector interactions, traffic flow dynamics, technical failures, communication disruptions, surveillance degradation, weather impacts, and other operational factors that may affect system performance. Particular attention should be given to the cumulative effects of increased traffic density and reduced operational margins on controller decision-making and situational awareness.

2.22 As reduced separation operations provide less tactical buffer to absorb operational variations, safety assessments should demonstrate that adequate mitigations, contingency procedures, staffing arrangements, and supporting technologies are available to maintain an acceptable level of safety during both normal and degraded operations.

Positive Safety Culture as Critical Enabler for Project 30/10

2.23 IFATCA believes that a positive safety culture is a fundamental enabler for the successful implementation of Project 30/10. As separation margins decrease and operational complexity increases, organizations become increasingly dependent on the ability of operational personnel to identify hazards, report occurrences, and share operational lessons in a timely and transparent manner.

2.24 The successful implementation of reduced separation operations requires an environment in which controllers, supervisors, and operational personnel can report hazards, operational concerns, and separation-related occurrences without fear of inappropriate blame for honest mistakes. Such reporting is essential to identifying emerging risks, validating safety assumptions, and continuously improving operational procedures as experience with reduced separation operations grows.

2.25 Project 30/10 should therefore be supported by a strong Positive Safety Culture framework that promotes learning rather than blame. Open communication and the sharing of operational experiences between sectors, FIRs, ANSPs, and regions will be essential to identifying systemic issues, improving resilience, and ensuring that safety improvements keep pace with increasing operational demands.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) recognize the importance of considering controller workload, human performance, and operational complexity when implementing Project 30/10;
- c) emphasize the need for harmonized implementation across sectors, FIRs, and regions to maximize network-wide benefits; and
- d) discuss any relevant matters as appropriate.

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