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IMPLEMENTATION OF (SIMULTANEOUS INDEPENDENT) TRIPLE RUNWAY OPERATIONS (TRO) AT İSTANBUL AIRPORT

(Presented by Türkiye)

EXECUTIVE SUMMARY

This information paper presents the implementation of (Simultaneous Independent) Triple Runway Operations (TRO) at İstanbul Airport, a first in Europe, which enables simultaneous independent landings and take-offs on three runways.

The TRO project, which covered safety analysis studies, airspace/instrument flight procedure designs, real-time simulations, and training activities, took approximately three years to complete and was officially launched on 17 April 2025.

<i>Strategic Goals:</i>	This information paper relates to Strategic Goals <i>Every Flight is Safe and Secure; Aviation Delivers Seamless, Accessible, and Reliable Mobility for All; and Aviation Is Environmentally Sustainable.</i>
<i>Financial implications:</i>	Not applicable.
<i>References:</i>	Annex 11, <i>Air Traffic Services</i> Doc 4444, <i>Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM)</i> Doc 8168, <i>Procedures for Air Navigation Services — Aircraft Operations (PANS-OPS), Volume II — Construction of Visual and Instrument Flight Procedures</i> Doc 9643, <i>Manual on Simultaneous Operations on Parallel or Near-Parallel Instrument Runways (SOIR)</i> Concept of Operations, (2023) <i>TRO at İstanbul Airport</i> Safety Risk Assessment Report, (2024) <i>TRO at İstanbul Airport</i>

1. INTRODUCTION

1.1 İstanbul Airport (Simultaneous Independent) Triple Runway Operations Project were initiated by Türkiye in August 2022 and it was completed in collaboration with the Turkish Civil Aviation Authority (Turkish CAA), General Directorate of State Airports Administration (DHMI - Turkish ANSP and Airport Management), EUROCONTROL and Turkish Airlines.

1.2 With Triple Runway Operations, first in Europe, simultaneous landings on 3 runways (34L-35R-36 / 16R-17L-18) and simultaneous take-offs from 3 runways (34L-35L-36 / 16R-17R-18) are now possible.

1.3 TRO project at İstanbul Airport also covers the new planned runways (RWY01/19) and it is anticipated that with the commissioning of the new runways, the efficiency of air traffic operations will increase in all aspects. Thus, any combination of three out of the four RWY's can be used in TRO.

2. ABOUT THE PROJECT

2.1 Although some similar applications exist at USA Airports, there is no regulation determined and published by the International Civil Aviation Organization (ICAO) for Triple Simultaneous Independent Runway Operations. Therefore; in order to implement TRO at İstanbul Airport a Safety Analysis Study was carried by DHMI and EUROCONTROL in collaboration with Turkish CAA and Turkish Airlines.

2.2 First of all, the "Concept of Operations (CONOPS)" document, which determines the application principles of Triple Independent Parallel Runway Operations, was prepared, and then the Safety Analysis studies were initiated.

2.3 Under the guidance of EUROCONTROL Experts, a comprehensive Safety Analysis Study was conducted with the data obtained from the workshops organized with the participation of Air Traffic Controllers, Pilots and Safety Experts from Turkish CAA, DHMI and Turkish Airlines. In this context; a dedicated real-time simulation was conducted to validate the critical hazards and mitigations outlined in the Safety Risk Assessment Report.

2.4 In light of the data obtained as a result of the Safety Analysis Study, studies for the necessary airspace arrangements were completed with the participation of Turkish CAA, DHMI and Turkish Airlines representatives.

2.5 Finally, real-time simulations for the validation of new airspace structure and training activities of Air Traffic Controllers (Classroom and simulator training in order to familiarize with the new concept) were conducted.

2.6 Triple Runway Operations at İstanbul Airport was commenced on April 17, 2025, and are being successfully executed.

3. CONCLUSION

3.1 Triple Runway Operations at İstanbul Airport enables effective dynamic capacity management and minimizes operational delays, thus improves fuel savings and flight efficiencies. It means

faster operations for airlines, fewer delays for passengers, and reduced carbon emissions for the environment.

3.2 Triple Runway Operations at İstanbul Airport also optimises traffic management across European airspace, making it faster, safer, and more efficient.

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