الهيئة العامة للطيران المدني
CIVIL AVIATION AUTHORITY
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AIRSPACE OPTIMIZATION AT THE INTERFACE BETWEEN THE MIDDLE EAST AND ASIA PACIFIC REGIONS

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Presentation Overview

01 Introduction

02 Why We Need to Improve

03 Oman Airspace Strategic Project

04 OMAN AIRSPACE STRATEGIC PROJECT : (Phase 0,1,2,3)

05 Stakeholder Engagement

06 FUA/FRA Concept

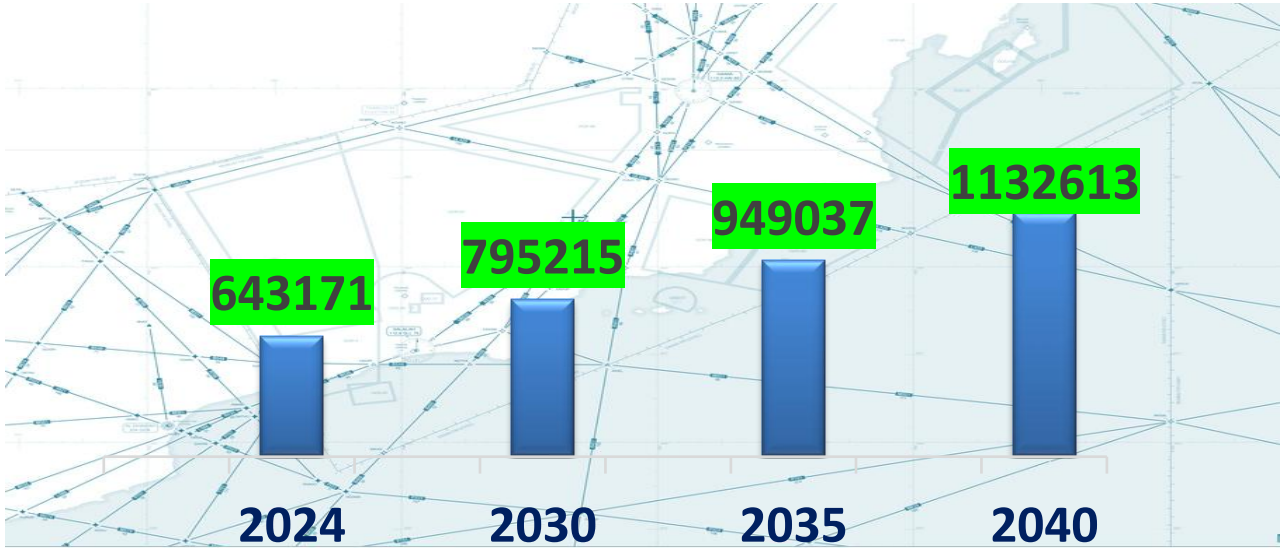
Introduction:

The initiative to optimize airspace at the interface between the Middle East and Asia-Pacific regions builds upon the real, existing challenges faced by both regions.

Why We Need to Improve :

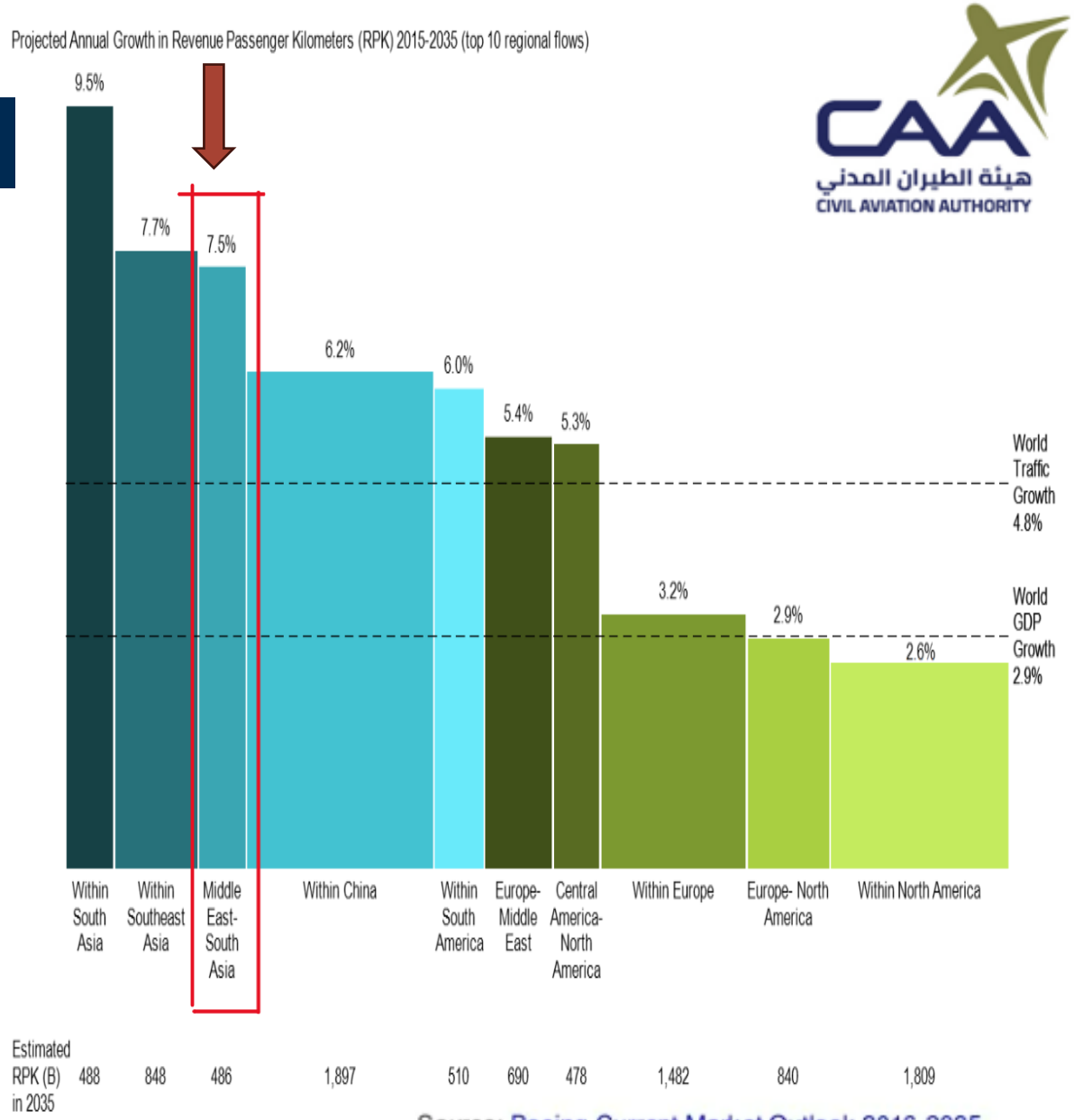
1. Global Traffic Growth :

Growing air traffic demand from booming aviation markets in the Middle East and Asia Pacific.



FORCAST OF MUSCAT FIR TRAFFIC

MIDDIL EAST CAGR 3.6 %



Why We Need to Improve :

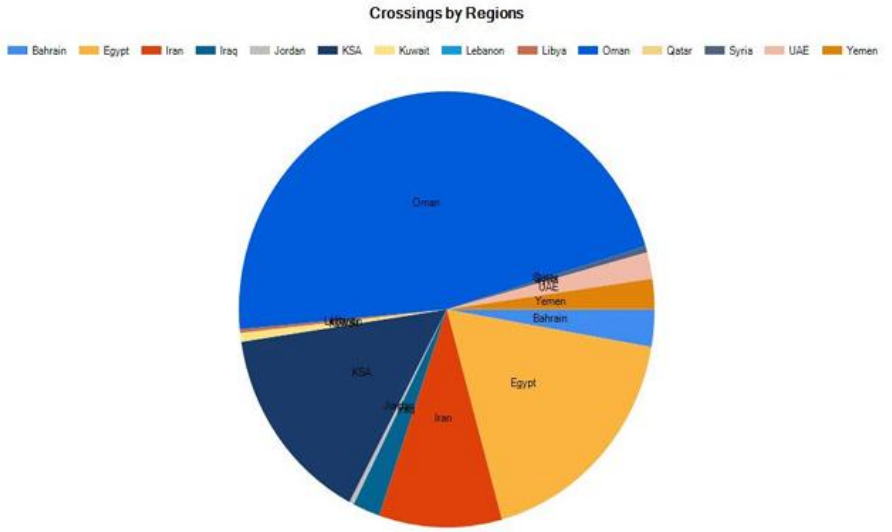
2. Reducing fuel consumption and CO2 emissions

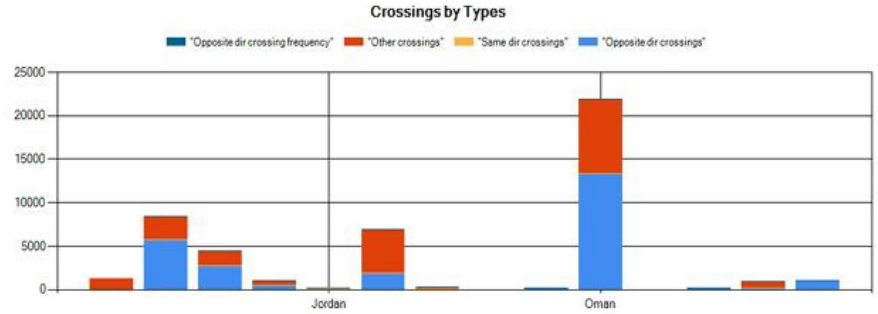
3. FUA,FRA,ATFM ,PBN Concept

4. Current infrastructure and get benefit of the technology

5. Safety Challenges

MIDRMA's 2024 analysis has determined that Muscat FIR remains the most complex and congested FIR in the ICAO Middle East RVSM airspace.





5.1 (PBN / LHD / HOTSPOTS)

Traffic Growth put pressure on the current ATC structures capacity. Route structure limitations, Congested traffic area (Hotspots) Large Height Deviation (LHD)

5.2 ROUTE NETWORK (Minimum Route Longitudinal Separation)

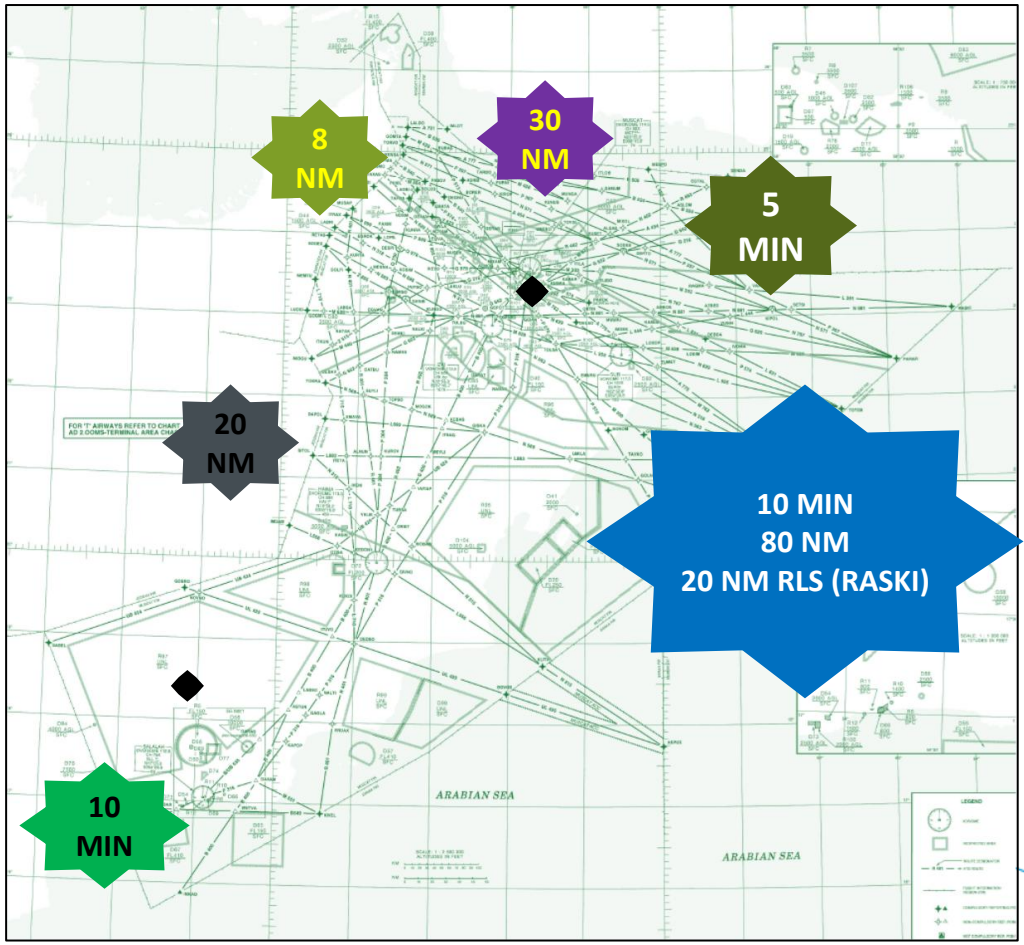
Internal

- *5 NM Enroute;*

  At Interface (FIR Boundary 43 transfer points)

- *8 NM UAE*
- *20 NM Jeddah*
- *10 MIN Tehran*
- *5 min (30NM) Karachi*
- *10 min-50 NM (RNAV10) –*

  20 NM (RLS) Mumbai
- *10 min Yemen*



5.3 AUTOMATED LABEL HANDOVER (OLDI/AIDC)

UAE ***- OLDI Implemented***

SAUDI ARABIA ***- OLDI Plans established***
Pending implementation

PAKISTAN ***- AIDC Plans established***
Pending implementation

INDIA ***- AIDC Plans established***
Pending implementation

IRAN ***- AIDC/OLDI Plans established***
Pending implementation

YEMEN – Process to be negotiated

Solution:

OMAN AIRSPACE STRATEGIC PROJECT

المشروع الإستراتيجي للمجال الجوي العماني

Objectives:

Airspace Enhancement
To align with Global and Regional developments

ATM Technology
Deployment of latest technologies and equipment

Flexible Use of Airspace (FUA)
Civil military cooperation to improve airspace utilization

Free Route Airspace (FRA)
Adopt flexibility for airline operators to access destinations through shorter routes

CO2 Emissions
To reduce the impact of harmful carbon fuel emissions

OMAN AIRSPACE STRATEGIC PROJECT : (Phase 0)

Gap analysis to define the requirements- Completed

* Analytical study of the infrastructure of the Omani airspace

- Detailed study of the airspace-northern sector
- Detailed study of the airspace-eastern sector
- Detailed study of the airspace-southern sector .

OMAN AIRSPACE STRATEGIC PROJECT. Phase 2,3,4

Phase 1. Information gathering

Gather all the necessary information on the reference scenario and the operational concept to be validated aligned with FTS following these activities:

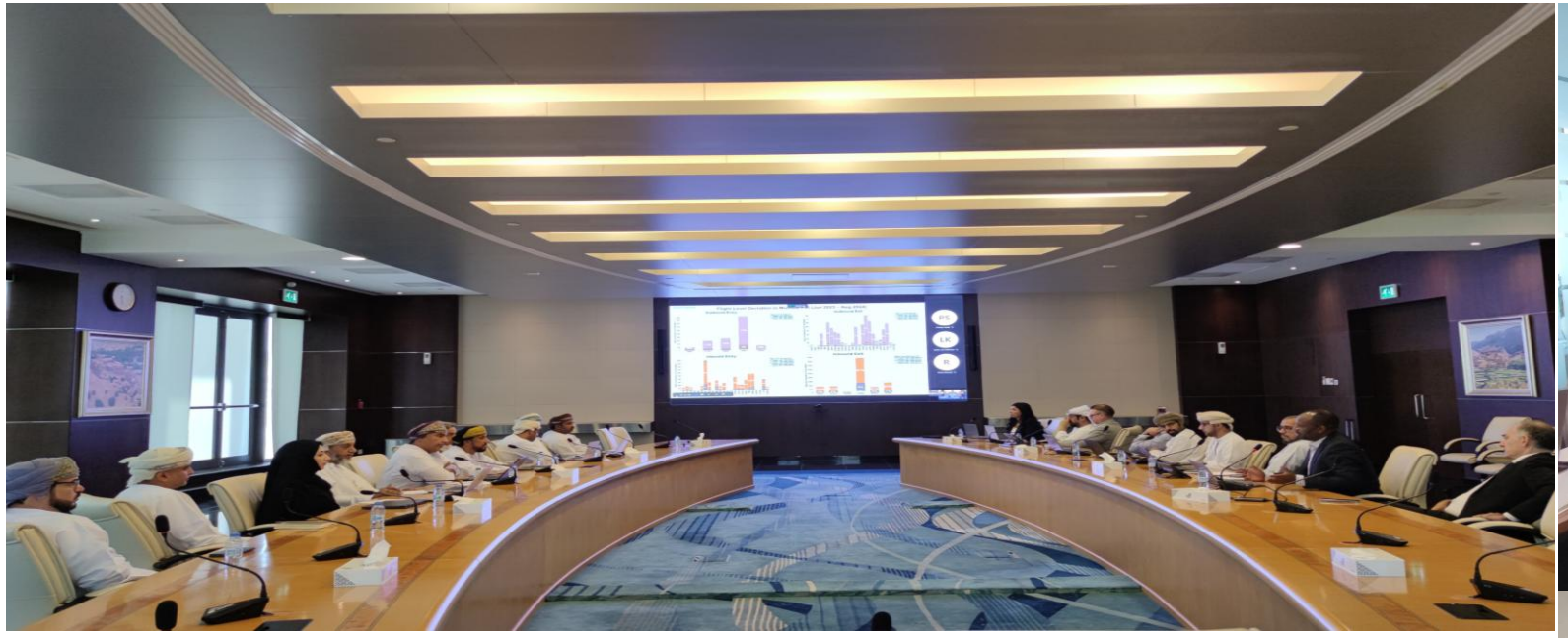
Phase 2. Real Time Simulation

- Analysis of the ATM scenario to be validated
- Generation of the validation plan
- Preparation and execution of validation RTM case
- Generation of the validation report and presentation results

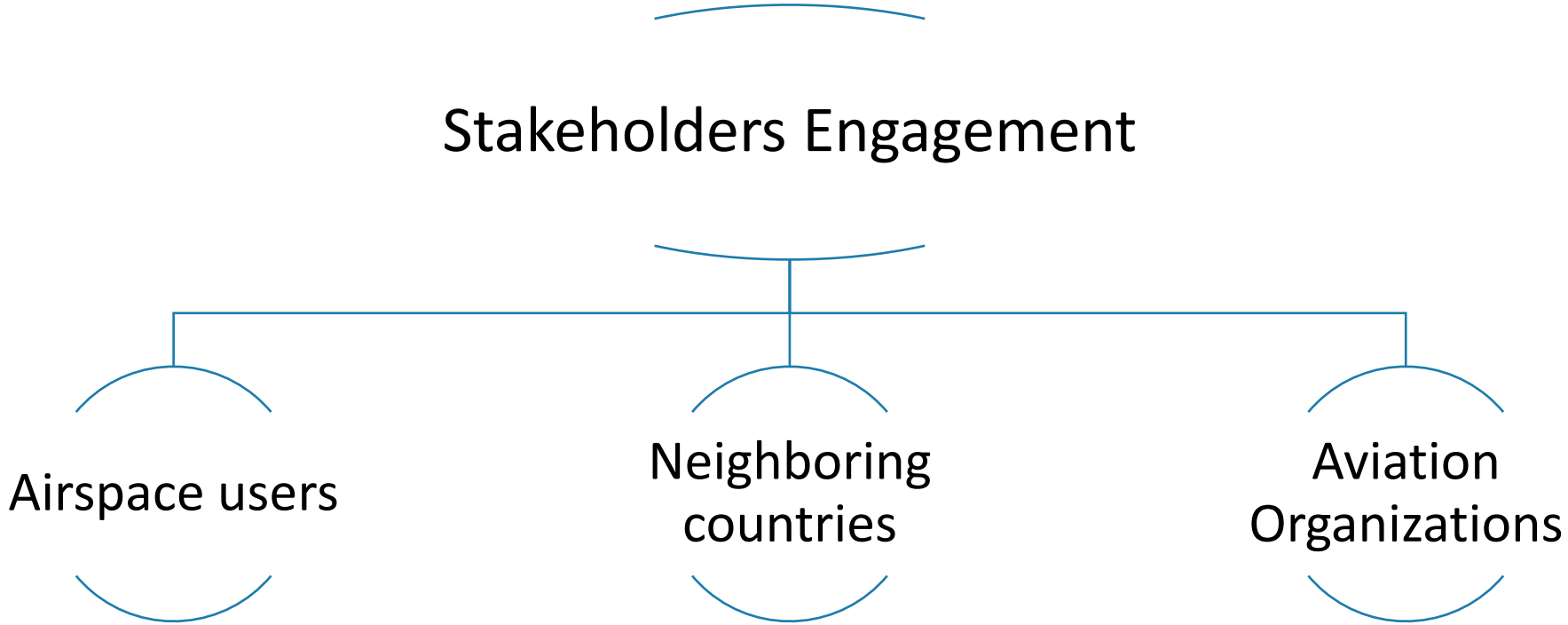
Phase 3. Changes on the designs

In the case that changes will be needed due RTS outputs, review of the conceptual designs and concept will be carried out.

OMAN AIRSPACE STRATEGIC PROJECT: Stakeholder Engagement



OMAN AIRSPACE STRATEGIC PROJECT: Stakeholder Engagement



Stakeholder Engagement: Airspace Users

Airspace Users

- Airlines

- **12 airline companies have been selected to participate in ongoing consultation engagements for the project.**
- **11 consultation meeting with Airlines in 2025.**

Main points of discussion

- **Optimum levels**
- **Optimum Routs**
- **Safety cases**
- **Future growth**
- **Suggestions**
- **Expect the future changes**

Stakeholder Engagement: Neighboring countries

Expected tentative timeline:

- **Over July/August 2025 it is expected to coordinate the neighboring initiatives with the objective to optimize the ENR airspace and find common improvements in the operations**
- **The new airspace conceptual design will be developed in parallel, with an intensive definition activity during Q3-Q4 2025 that needs to be coordinated**

Main topic/information discussions and Oman CAA needs (if available):

- **Route Structure: Airspace initiatives (ENR modifications, Volumes definition, Separation improvements…) and identified inefficiencies.**
- **Free-route (FRA) plans for ENR and potential PRD areas use changes for FUA improvements**
- **Current capacity for ATC sectors in the FIR boundary**
- **Automation implementations or upgrades planned within the ACC (ADS-B, ATM, Technological considerations: PBN…)**
- **Coordination Procedures: Potential amendments to the Letters of agreement (LoAs) between Muscat FIR and Neighboring stets.**
- **Traffic projections with Muscat FIR border or expected changes on the current traffic flows (New airports, airline route openings…)**
- **Proposal for Joint Action and Nomination of technical points of contact.**

FUA/FRA Concept

- **On 26–27 November 2024, OCAA delivered a comprehensive overview of the Flexible Use of Airspace (FUA) concept as part of a joint civil-military collaboration with the Royal Air Force of Oman and DGAN.**

- **The workshop concluded with strong appreciation from all participants and a collective commitment to enhancing air navigation services with in MCT FIR.**

- **The next step includes the establishment of a High-level civil-military aviation cooperation policy board (CMAB) to oversee and support the implementation of FUA and FRA concepts**

Thank You