



AFI FRA PMT5 and UPR WS , OCTOBER 2024, NAIROBI

FREE ROUTE AIRSPACE

TRAINING PROGRAM OUTLINE

Presented by AFI FRA PMT



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OVERVIEW

- INTRODUCTION
- BENEFITS
- OPERATIONAL PROCEDURES
- AIRSPACE STRUCTURE AND DESIGN
- TECHNOLOGY AND INFRASTRUCTURE
- SAFETY MANAGEMENT
- REGULATORY AND LEGAL FRAMEWORK
- CASE STUDY AND BEST PRACTICES
- SIMULATION AND PRACTICAL EXERCISES
- CONTINUOUS IMPROVEMENT
- DELIVERY METHODS
- EVALUATION AND CERTIFICATION



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INTRODUCTION TO FRA

Definition and Principles

- Overview of FRA concepts and historical development
- Definition of FRA
- AFI CONOPS

Comparism

- ATS routes
- DRO/DRA
- FRA

Visual infographics and group discussions

- Segment Depiction

Time: 2h



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OBJECTIVES AND REQUIREMENTS



AIRLINE

Optimize Trajectories



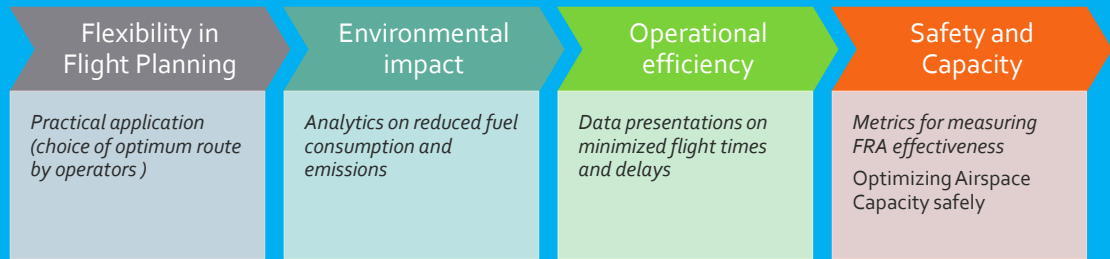
ANSP

Airspace and Route Network Optimization



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BENEFITS

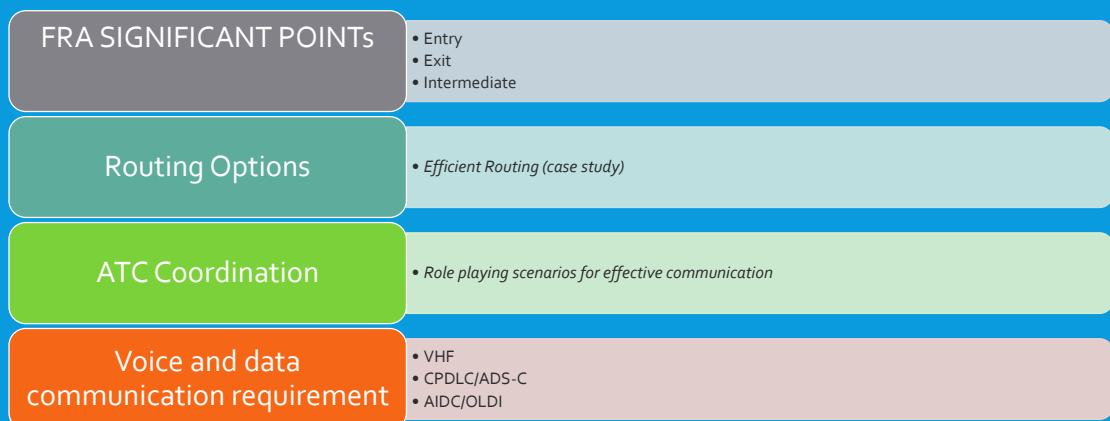


Time: 2h



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OPERATIONAL PROCEDURES



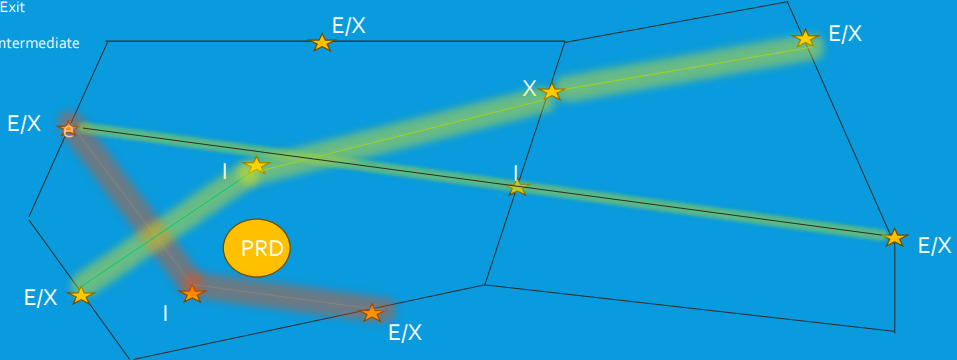
Time: 1h



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ROUTE SEGMENT

- E-Entry
- X-Exit
- I-Intermediate



Time: 30min



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AIRSPACE STRUCTURE



Segmentation
exercise

*Simulated
airspace
exercises*



ANSP
Coordination

*Collaborative
planning
sessions with
real-world
examples*



Integration

*Discussions with
ANSP
representatives*

Time: 2h



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TECHNOLOGY AND INFRASTRUCTURE

Navigation systems

Hands-on demos of
ground and satellite
systems

Communication

Voice and data
communication
requirement
AMHS
AIDC

Surveillance Tools

RADAR

ADS-B
ADS-C

Presentations on conflict
detection technologies.

CD/R
• MTCA
• STCA
• MONA
• ACAS II
• APWS

Time: 2h



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SAFETY MANAGEMENT

Risk Assessment

- *Interactive exercises using real scenarios*

Collision Avoidance

Simulated training on avoidance techniques

Incident Reporting

Training on incident reporting tools

Time: 2h



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REGULATORY FRAMEWORK

ICAO Standards

Teaching international standards with case law

Doc 4444 , Doc 9854, SESAR CONOPS,

Compliance exercises

Quizzes on ICAO regulations and regional challenges

AIP Changes

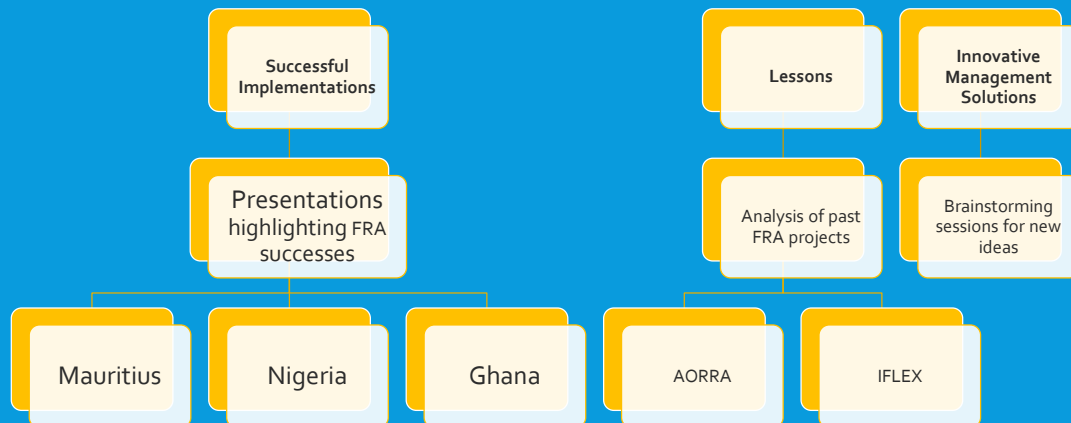
Updates on relevant changes in the Aeronautical Information Publication

Time: 2h



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CASE STUDY AND BEST PRACTICES



Time: 2h



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SIMULATION AND PRACTICAL EXERCISES

ATCO Responsibilities

- *Clarification of roles during FRA operations*

Interactive Simulations

- *: Flight simulations to practice FRA scenarios*

Conflict detection

- *Training on safety nets and degraded mode operations*

Time: 2h



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CONTINUOUS IMPROVEMENT AND ADAPTATION



Feedback Mechanisms

Development of structured feedback forms.

- Airlines
- ANSPs



Performance Monitoring

Data analysis for tracking improvements.



Research Initiatives

Collaborations for ongoing research in FRA capabilities.

Time: 2h



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DELIVERY METHOD



Blended Learning

Combination of in-person workshops, webinars, and self-study



Refresher Course

Annual updates on technology and regulations



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EVALUATION AND CERTIFICATION

Assessments

Written exams,
practical assessments,
and simulations.

Continuous
Professional
Development

Professional
Development:
Opportunities for
further specialization.



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QUESTIONS



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THANK YOU

