FRA Workshop

30 September 2024

Free Route Airspace

➢ "A specified airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate (published or unpublished) significant points, without reference to the ATS route network, subject to airspace availability. Within this airspace, flights remain subject to air traffic control."

  o Close to User preferred trajectory
  o FPL not restricted to fixed routes
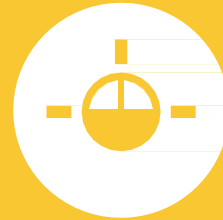 o Fuel/CO2 reduction (+ time related maintenance)

WHY FRA

Benefits

CO_2 Emissions	Airspace Capacity, Efficiency	Safety

CO_2 Emissions

- Reduces flight distance, Flying time
- Reduces Fuel consumption means reduction in CO_2 Emissions
- Reduces Operating costs for airlines

Airspace Capacity, Efficiency

- More availability of routes
- Higher traffic volumes flying OPT FLs
- Optimises Routes
- Delay reduction
- Maximize capacity

Safety

- Reduced complexity and error-prone manual intervention in the flight planning process
- Improved and predictable operations accounting for Adv Weather avoidance

IATA

FRA Implementation

Step-by-step method | or Big Bang Approach

- **Time-Based FRA Options**
  - **Permanent FRA Operations:**
    Full-time availability for consistent operations.
  - **Limited FRA Availability:**
    Implement during off-peak hours or as part of phased testing.

- **Designated FRA Airspace Sectors**
  - **Full FIR Implementation:**
    Extend FRA across all sectors of the FIR for comprehensive coverage.
  - **Targeted Sectors:**
    Implement in specific airspace sectors initially, based on operational demand.

- **FRA in Different Flight Level Bands**
  - **Full Flight Level Range:**
    Enable FRA across all flight levels.
  - **Selective Flight Levels:**
    Begin with higher or lower FL bands, particularly those above FL310.

- **DRO as a Precursor to FRA:**
  DRO offers a series of direct routes between predefined waypoints that can be flight planned (not tactical). This allows ANSPs to:
  - Study operational impacts.
  - Collect data and gain experience with dynamic routing concepts.

IATA

FRA Implementation

Step-by-step method | or Big Bang Approach

- UPR as a Precursor to FRA:
  Before transitioning fully to FRA, UPR provides a valuable intermediary step. It allows ANSPs and AUs to benefit from more efficient routing without the full operational shift required for FRA

- Key Benefits of UPR Implementation:
  - UPR helps introduce the concept of dynamic routing, allowing aircraft to choose the best route based on weather conditions, airspace availability, and aircraft performance.
  - Optimized UPR routing can significantly reduce fuel consumption, minimize delays, and lower emissions even before FRA is fully in place.
  - UPR provides ANSPs with an opportunity to collect operational data and refine their systems in preparation for FRA implementation.

Flexible Use of Airspace (FUA) as an Enabler for FRA

States are encouraged to implement FUA in order to accommodate both Civil and Military requirements, allowing for both military critical missions and civil air transport to utilise the airspace equitably and fly most efficient routes through otherwise segregated airspace.

Maximized Airspace Availability:

- Reduces permanent restrictions, enabling more direct routing in FRA.

Dynamic Airspace Management:

- any necessary airspace segregation should be temporary, based on real -time usage within a specific period.

Improved Predictability:

- Enhances operational efficiency for civil aviation through flexible route options.

IATA

IATA recommendations for the success of Free Route Airspace concept

➢ Urge ANSPs to expedite the upgrade of ATC systems with capabilities such as tracking, route adherence monitoring, 4D Medium Term Conflict Detection, automated coordination between FIRs, to ensure safe FRA operations.

➢ Provide appropriate training to ATC personnel to acquire the skills necessary to properly conduct FRA operations

➢ Encourage cross-border FRA implementation for real operational and environmental benefits,

➢ Enable airspace users to access timely information, such as the portion of airspace available for FRA operations and its associated applicable time,

Thank You