PBN & Airspace
ICAO PBN Symposium

The Airbus ATM performance provider

Paul-Franck BIJOU - VP Customer Affairs
October 2012
Introduction

• our job is all about PERFORMANCE, and good cooperation with ATC

• A successful PBN implementation =

  Efficient trajectory

  +

  High rate of ATC clearance
2 examples of successful implementation of PBN to ease airspace situation

1. Abu Dhabi
2. Vagar (Faroe Islands)
**Objectives:** fuel savings / Optimised descent profile (i.e. CDO)

**Context:**
- 5 entry WPT, 2 parallel (independent) runways
- Wide variety of aircraft types: A320 family, A330/A340 family, B777 and B777F
- RNAV 1 STARs, RNP AR (0.3 and 0.2NM) approaches

**Benefits expected and provided:**

- **Optimization and better repeatability of the trajectories**
- **Less pilot to controller communications**
  No need for speed constraints communication (already coded in the Nav Database), No vectoring, Clearance very early in the approach (i.e. when reaching entry WPT)
- **Improved segregation** (lateral and vertical) between departures and arrivals, thanks to more precise routes and altitude constraints
PBN in OMAA
Existing STARs to ILS
PBN in OMAA
New STARs to RNAV(RNP)
PBN in OMAA
Tracks Compared

- Simple:
  - 1 track for all arrivals
  - ATC on the job training
  - ATFM & conops

NM Saved: 15 NM miles from BOXAK
Achievements in Abu Dhabi Airspace

- RNAV 1 STARs and RNP AR approaches published in UAE AIP in July 2012
- Several Validation and demonstration flights
- Training of Etihad crews started in September 2012
- ATC controllers trained to support RNP operations
- Entry into operation planned in Oct/Nov 2012
2 examples of successful implementation of PBN to ease airspace situation

1. Abu Dhabi
2. Vagar (Faroes Islands)
RNP AR 0.1 in Vagar

Project

- Introducing the A319 in Vagar with RNP AR 0.1:
  - A challenging airport
  - Tough weather
  - High level of diversions

Objectives

- Improve regularity
- Raise the level of safety
- Reduce track miles and optimize the profitability of the aircraft operation
RNP AR 0.1 in Vagar

Curved Paths: runway alignment in final

- Conventional approaches in Vagar: **not aligned with runway axis**
- In poor weather conditions, difficult for pilots

![Diagram showing Antenna, Approach beam, Tricky manual manoeuvre required = pilot workload, Visual acquisition](image)
RNP AR 0.1 in Vagar

Curved Paths: runway alignment in final

- Conventional approaches in Vagar: not aligned with runway axis.
- In poor weather conditions, difficult for pilots.
Achievements in Vagar

RNP AR 0.1:
✓ Most diversions avoided thanks to lower Minima
✓ Runway alignment in Final
✓ Reduced Distance & Flight Time

- Miles saving 12.4 NM
- Time saving 5 min
- Fuel savings # 200 kg per approach
Conclusion: PBN optimizes airspace

• Reduces required number of radio transmissions

• Improved predictability

• Fewer diversions

1 major condition though:

ATC must have a good concept of operations.
Thank You !