

# Air Traffic Flow Management Seminar ICAO Asia Pacific

## ATFM in EUROPE

1st October 2013

*Brian Flynn  
Head Performance, Forecasting, Relations  
Directorate Network Management  
EUROCONTROL*

# ATFM in Europe - 2013

- **From ATFM to Network Management**
- **Bridging the gap between ATFM and ATC, and between today and tomorrow (SESAR)**
- **ATFM: A performance driven system, capacity, flight efficiency, cost effectiveness**
- **Interoperability and global ATFM**

# European Aviation

- 40 ANSPs,
- A business of 9 bn EUR with some 57,000 staff and 16,900 are air traffic controllers.
- 9, 5 million flights and on peak days, 33.000 flights. 2020 forecast 17 million flights yearly and 50,000 flights on busy days.
- European airspace : 10,8 million km<sup>2</sup>, 60 control centres- fragmentation of airspace.

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# EU Aviation Policy

- **Single Market**
  - The aviation [market](#) liberalised through measures adopted at EU level which covered air carrier licensing, market access and fares.
- **External Aviation**
  - More coordinated EU [external aviation](#) policy
- **Single European Sky**
  - Airspace congestion and strain on airport capacity. [Single European Sky](#) (SES), launched in 2004. A second package SES II, followed in 2009, greater emphasis on environment and cost efficiency.
- **SESAR**
  - The technology required for the future Single Sky is provided through the air traffic management research programme [SESAR](#), - modernise infrastructure and raise efficiency by optimising capacity.

# Single European Sky – SES - ATM

- Reform ATM in Europe.
  - de-fragment the European airspace,
  - reduce delays,
  - increase safety standards
  - increase flight efficiency to reduce the aviation environmental footprint
  - reduce costs related to service provision

# Single European Sky II

- **The Performance Scheme:** EU-wide performance targets for each reporting period in areas of capacity, environment, safety and cost efficiency.
- **The Functional Airspace Blocks ;** de-fragment the airspace and obtain the operational efficiency gains through such strategies as common procurement, training and optimisation of air traffic controllers (ATCs) resources.
- **The Network Manager ;** centralised function at EU level to carry out the management of the ATM network functions (airspace design, flow management) and management of scarce resources(transponder code allocations,radio frequencies).
- **The Charging Regulation** on the en-route charging system lays down a legal framework of transparent reporting of en-route charges and costs' components of the Member States. It also defines a legal basis for financing, through the charging system, of the "Common Projects" in the context of the deployment of SESAR.

# The Network Manager

- 4 main functions :
  - Manage and operate ATFM.
  - Route Network Design
  - Central function for Frequency Allocation
  - Coordinate improvement of SSR Code Allocation, and
  - Provide support for Crisis Management.
- In addition to the functions above, the Network Manager shall "*contribute to the deployment of SESAR according to the European ATM Master Plan.*"
- Network Management Board, representatives of ANSPs, airspace users, the military, and airport operators.
- Strategic and Operational Plans for the Network.
- Subject to the provisions of the Performance Scheme and contributes to improvements in the 4 Key performance Areas, therein : Safety, Cost-Efficiency, Environment and Capacity.



# ATFCM Structure in Europe

## One single Flow Management System over Europe

41 States

1750 Sectors & 64 enroute centres

1348 Aircraft Operators

450 Airports

61 FMPs

## Network Operations

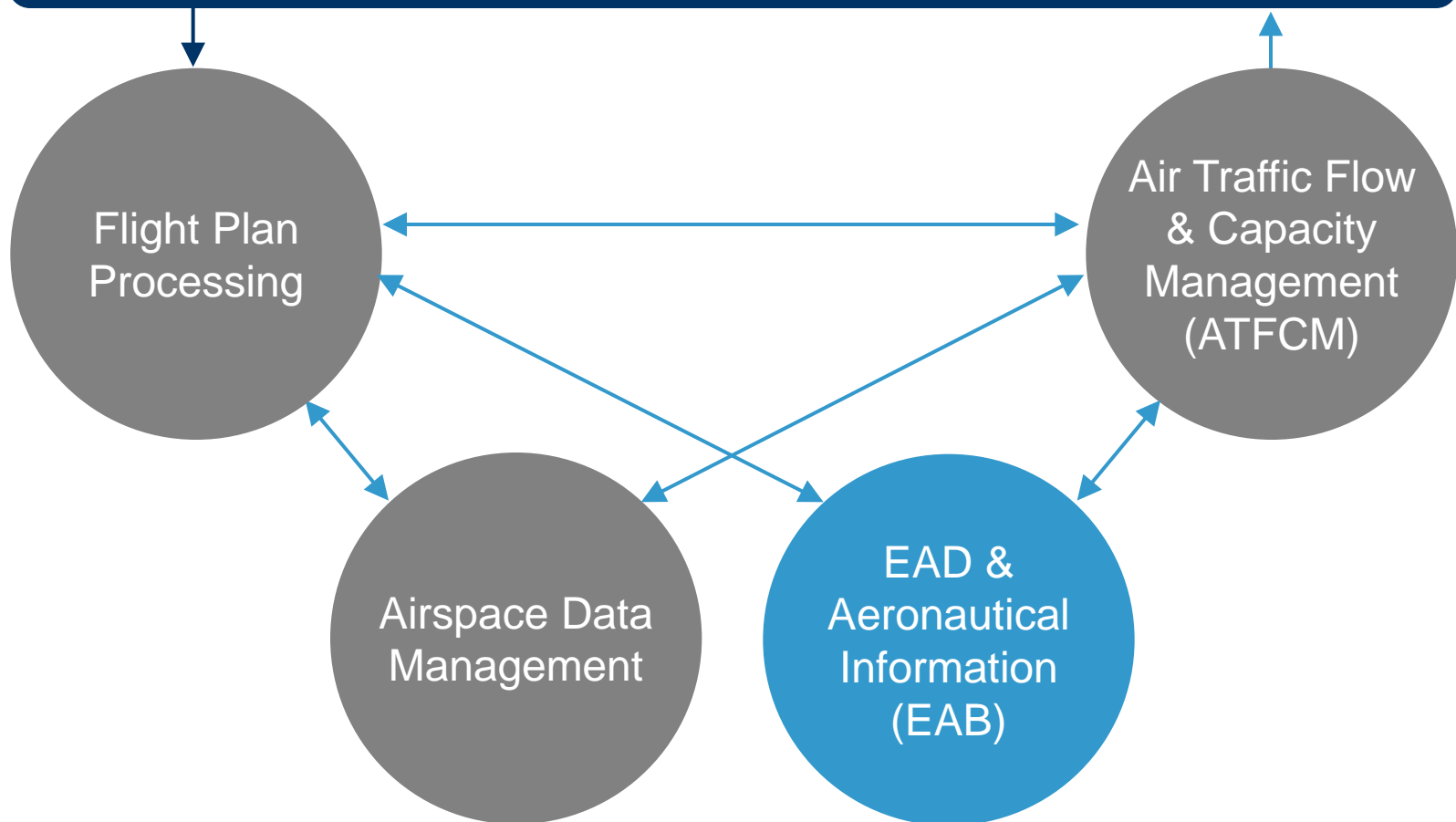
+4,000 connected end-users

Peaks +33,000 Flights a day

10,000,000 Flights a year

# Network Operations Services

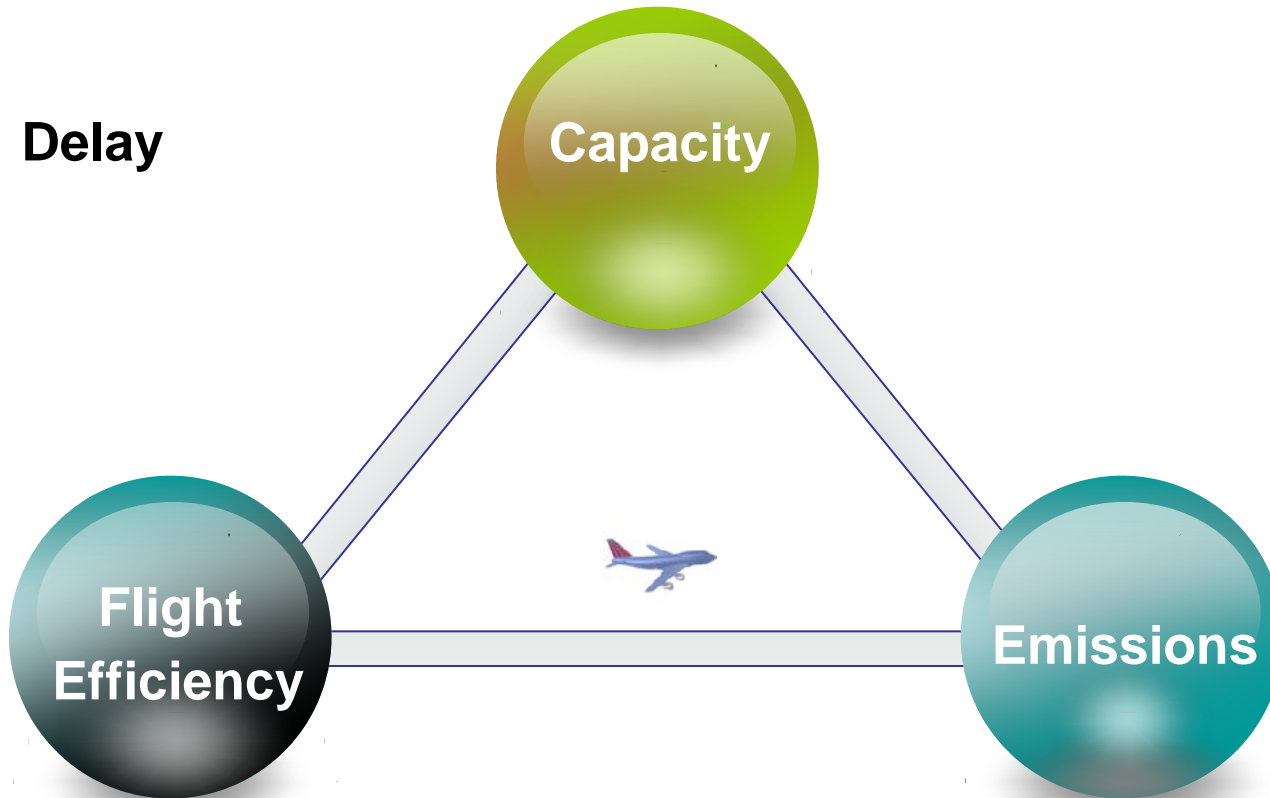
## ATFM : an integrated ATM system



# From ATFM to Network Management



**Delay**



# The Network Concept – ATM without borders

- Consolidate operations across the network
- Identify critical areas
- Devise solutions independent of borders
- Detailed shared knowledge of operational situation
- Route network and Airspace design
- Centralised ATFCM function
- Data base of infrastructure and traffic demand
- Network crisis management
- Agreed plans – Strategy Plan, Performance Plan, Operations Plan
- Performance monitoring, reporting and oversight

# Conclusions

- A network management approach requires
  - Institutional and regulatory arrangements
  - Strong governance inclusive of all regulatory and operational stakeholders
  - Cooperative decision making processes in which decisions are made based on a constant interaction and consultation with Member States, operational stakeholders (ANSPs, airspace users and airports) and other actors
  - Clear performance objectives and targets for all parties including the Network Manager
- Network Management can build the partnership to achieve long term performance (safety, capacity, environment and cost efficiency)

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## Bridging the gap

- SESAR will deliver around 2020. How do we manage 2013 to 2019?
- Entry counts to Occupancy
- STAM: Short term ATFM measures
- CTOT (ground delay) to TTO/TTA
- Predictability
- Airport and network integration

# ATFM in Europe - 2013

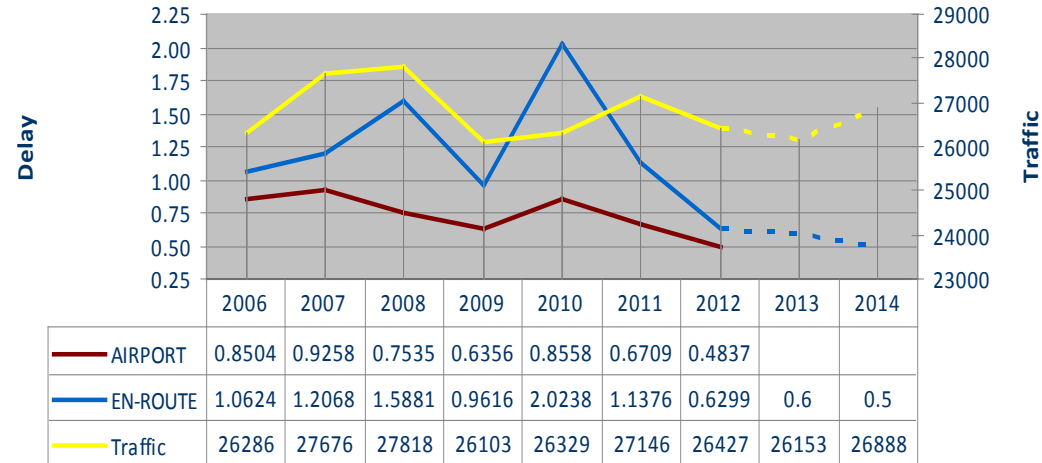
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# 2012 Capacity / delay - results

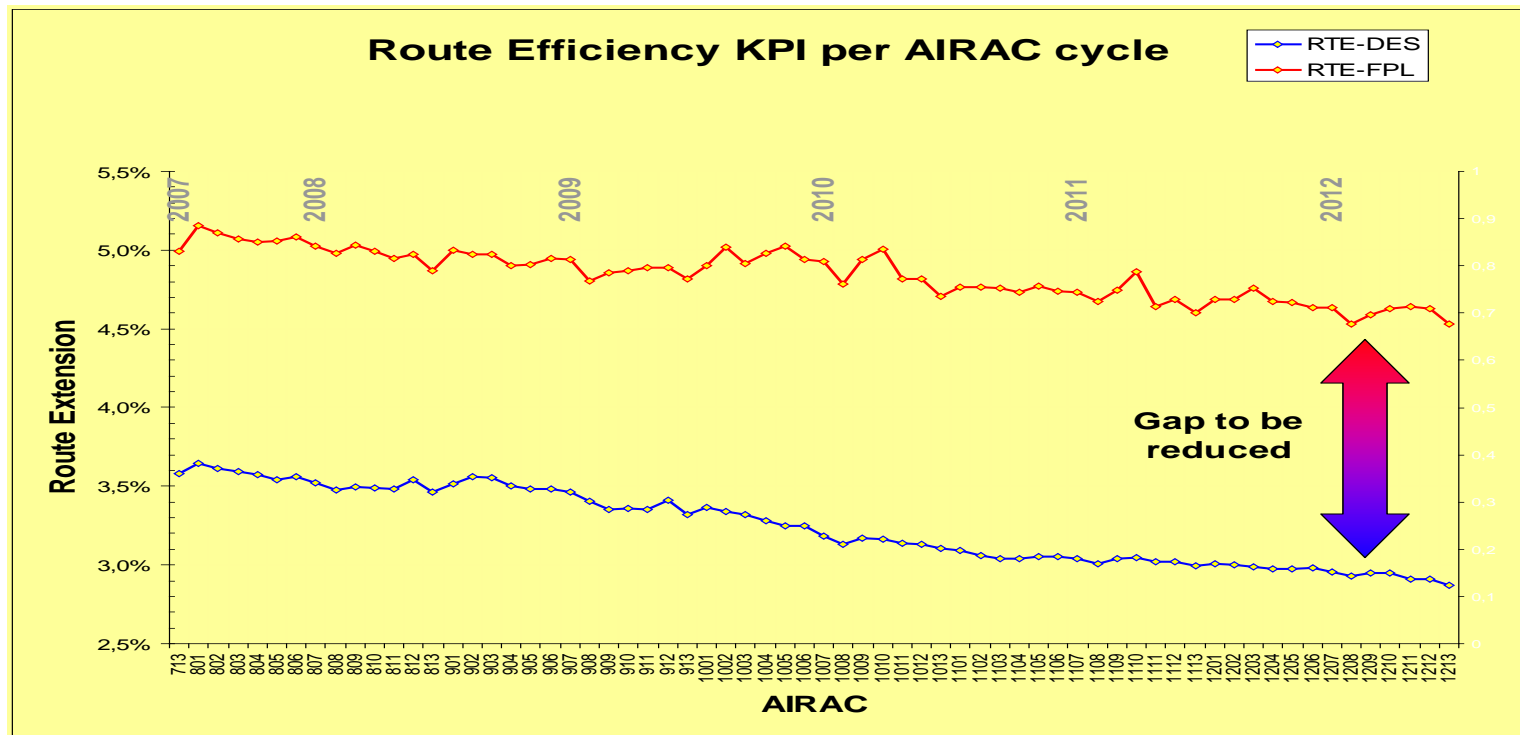
- 6% network capacity increase
- Achieved en-route delay interim target (0.7 mins)
  - En-route ATFM delay per flight of 0.63 mins
  - 0.57 mins excl. disruption
- Successful event coordination
- Airport ATFM delay lowest level for years (0.48 minutes per flight)

ATFM delay (mins) per flight 2006-2014

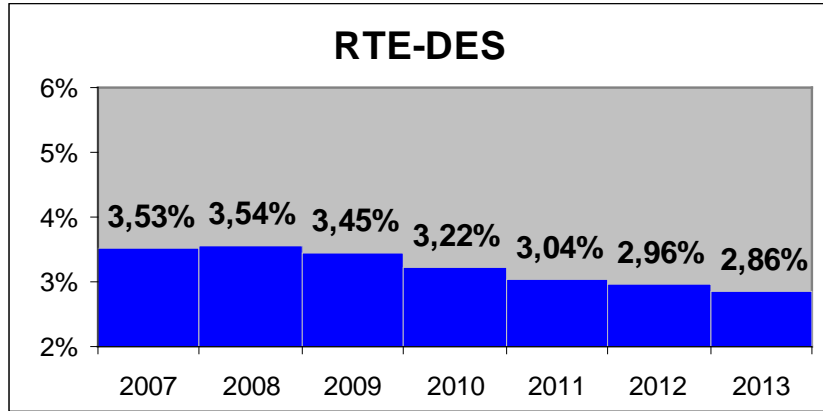


# Flight efficiency

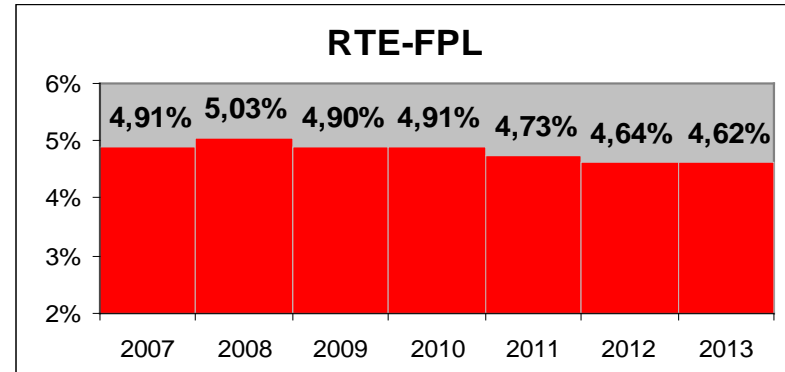
- Positive trend for both route extension indicators
- Need to reduce the gap between the two
- NM actions with airspace users to improve flight efficiency



# Flight efficiency evolution



Target 2013: +2.85%



Target 2013: +4.4%

## Network Manager Added Value - NMPP

- Managing planned network disruptions
- Delay sharing for benefit of network
- Reduce any individual AO delays > 30mins
- Mitigate WX delays
- Reduce ATFCM measures
- Target weekend delays
- Crisis and unplanned major disruptions management

NM  
objectives

10% delay reduction attributable to NM efforts

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# Interoperability and Global ATFM

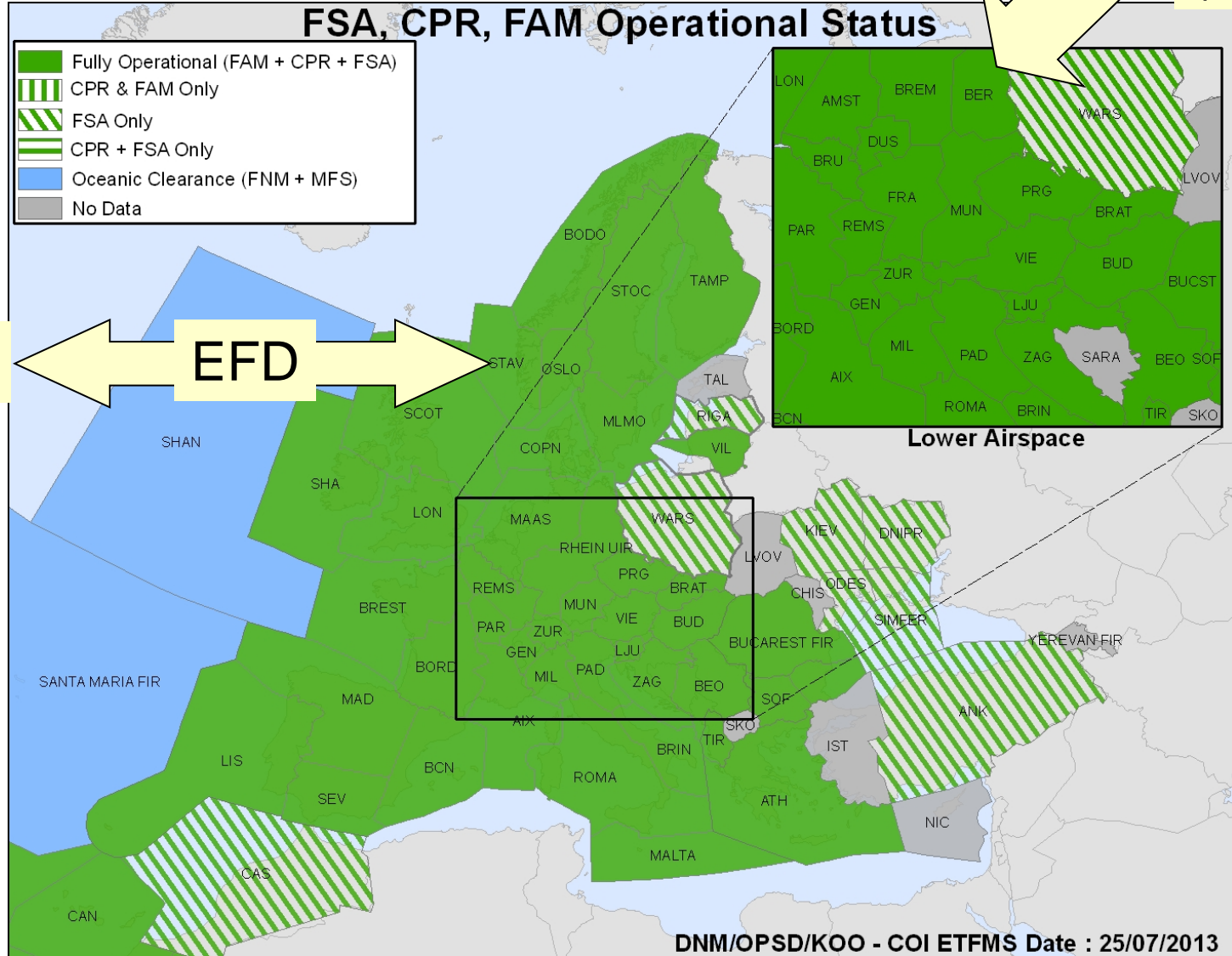
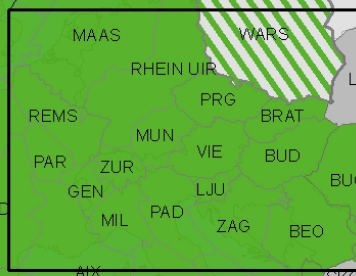
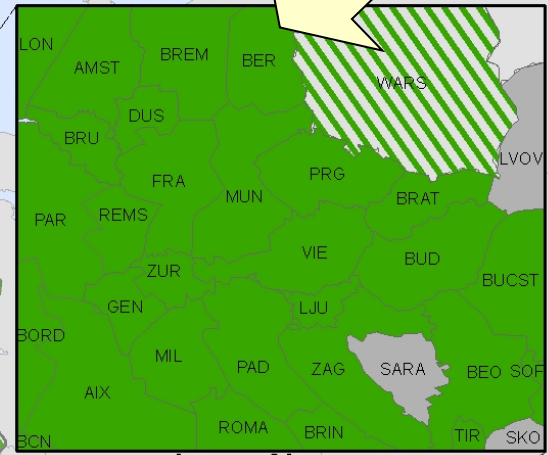
- ATFM and some aspects of capacity management cannot be restricted to the area of one State because of their far-reaching effects on the flow of air traffic elsewhere. (ICAO FASID Doc 7754)
- Aviation is global, ATM is not!
- Security
- Natural Hazards

APR  
(ACARS)

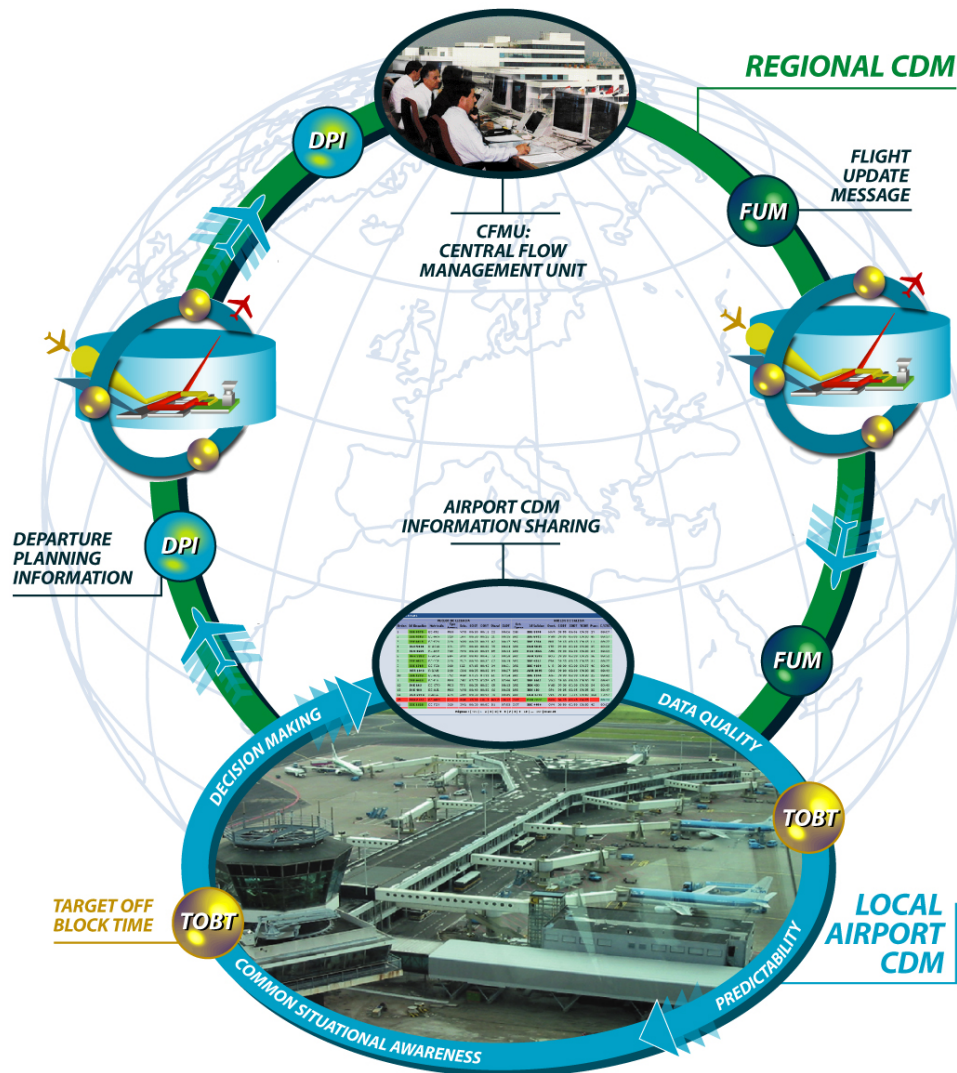
### FSA, CPR, FAM Operational Status

- Fully Operational (FAM + CPR + FSA)
- CPR & FAM Only
- FSA Only
- CPR + FSA Only
- Oceanic Clearance (FNM + MFS)
- No Data

FAA ← EFD →

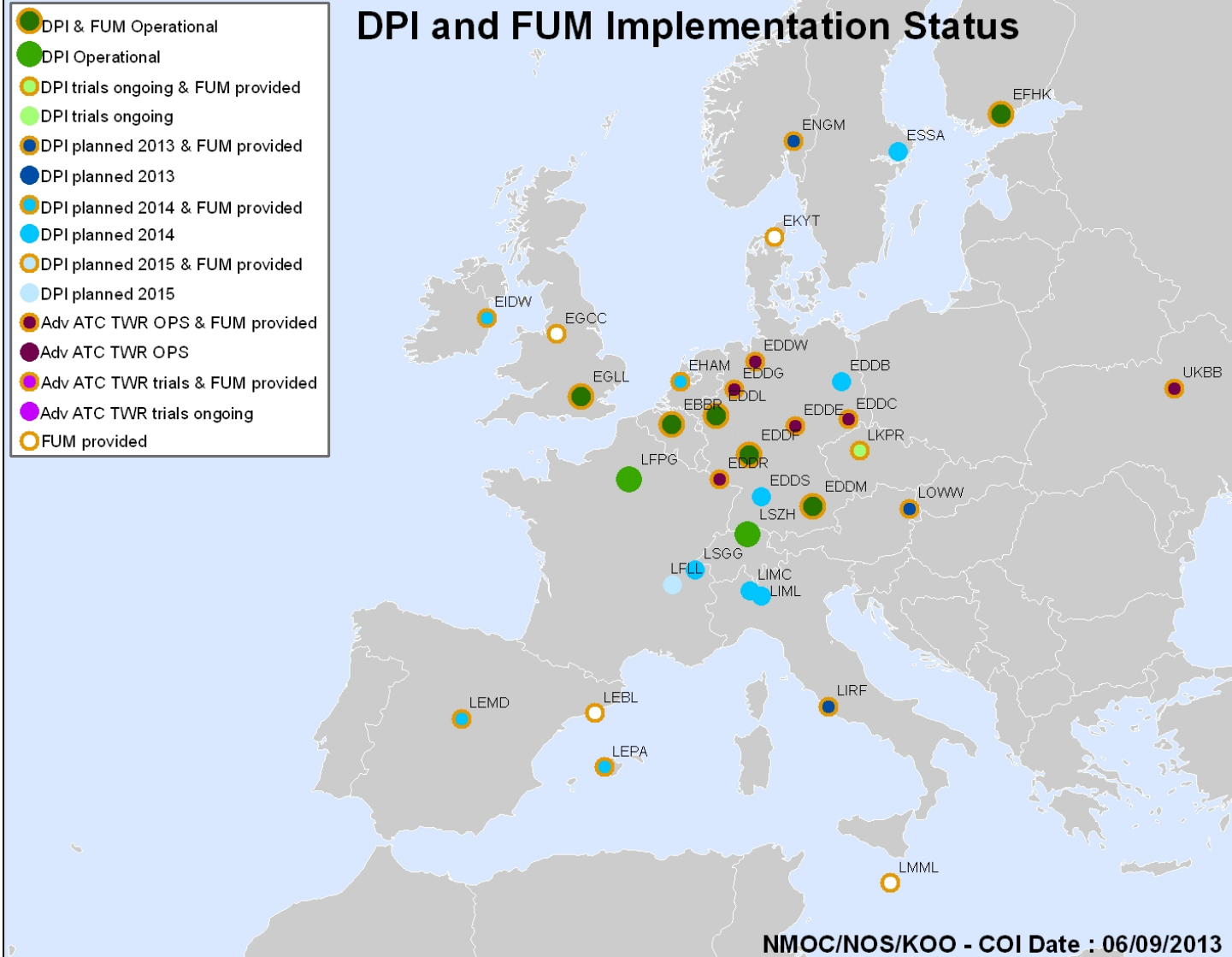


# Optimising Airport Operations





# Linking the airport and the network



# Network Operations Portal



**CFMU NOP**  
Network Operations Portal

08:15 14/08/2009  
09 UTC

TARGET DATE: 14/08/2009

SEARCH

Username:

PREFERENCES HELP

Resources

Post-Operations

Tactical

PreTactical

Strategic

## Contingency

The status of the CFMU operations is **NORMAL**.  
[CFMU Contingency Plan](#)  
This document addresses the contingency procedure to be carried out in the event of a long term failure of CFMU systems.

## ANM

Valid on 14/08/2009  
Last Released 14/08/2009 08:10

## AIM

Description	Released On
TAXI TIME EGGW	14/08/2009 07:08
TAXI TIME EGGW	14/08/2009 07:00
TAXI TIME EGKK	14/08/2009 05:18
TAXI TIME EHAM	14/08/2009 05:14

[More](#)

## CRAM

Route

Go

[Displayfull CRAM](#)

## RAD

The objective of the RAD is to facilitate flight planning, in order to improve ATFCM, while allowing aircraft operators flight planning flexibility. The RAD is updated on a AIRAC cycle-basis following a structured and standard process.

[RAD Homepage](#)

0908 - 30 July 2009

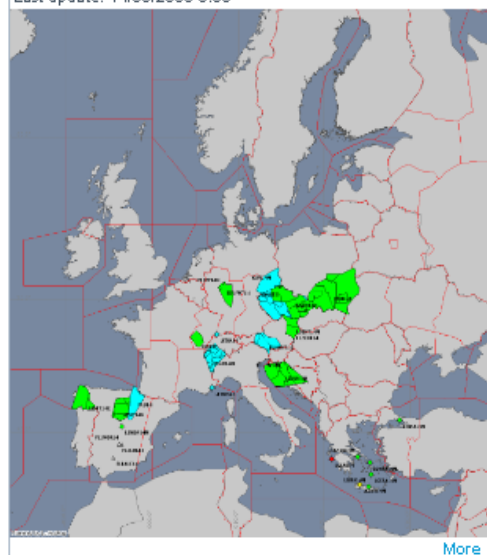
0909 - 27 August 2009

## ATFCM Events

Occurrence	Event	ACCs
Axis Management	14/04/2009 - 31/12/2009	EDMM, EDUU, LAAA, LBSR...
Axis Management	14/04/2009 - 31/12/2009	EDMM, EDUU, LAAA, LBSR...

## ATFCM Network Situation

Last update: 14/08/2009 8:00



[More](#)

## ATFCM Situation Data

Last update: 14/08/2009 8:13:00

### Flights

Total	24908
Landed	4365 (18 %)
Airborne	3855 (16 %)
Expected	16688 (67 %)

### Delays (in minutes)

Cumulated	21606.0
Average/Flight	0.8
En-route	11022.0 (51 %)

## Network Headline News

[More](#)

## Calendar

August 2009

Mon	Tue	Wed	Thu	Fri	Sat	Sun
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

[More](#)

## Flights

You are not authorised to see Flights

## Measures

You are not authorised to see Measures

## Airspace Data

You are not authorised to see Airspaces

## IFPLV

Support  
[Structured Editor](#) [Free Editor](#)

- *CONCLUSION: The ASTER should operate in partnership with the ATS providers and aircraft operators. It cannot be a directive organisation as the other partners have regulatory (safety and economic) regimes to live within, and different stakeholder/shareholder expectations.*