EUROCONTROL

GMA RIYADH
Global Ministerial Aviation Summit
المؤتمر الوزاري العالمي للطيران المدني

Session 3: EUROCONTROL ATFM

Connecting the Network to Deliver Improved Performance

Joe SULTANA
Director Network Manager, EUROCONTROL
Riyadh, 29 August 2016

The Network Manager

EUROCONTROL nominated Single European Sky Network Manager July 2011

- **optimise European ATM Network's operations** with ANSPs and airports

- ensure that **European ATM meets the performance targets** set by EC for SES

- provide a consolidated and **coordinated approach to all planning** and operational activities of the Network

- enable and **deliver added operational performance** (capacity, delay reduction, environment, flight efficiency, minimum emissions, ops safety, cost-effectiveness)
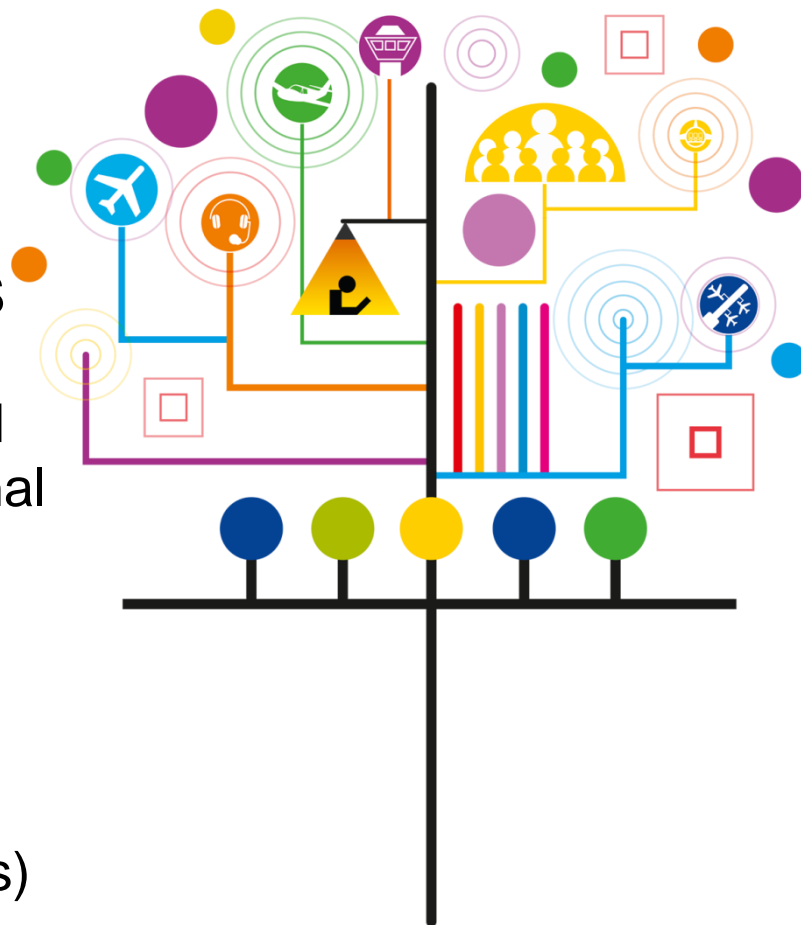
Connecting the network for improved performance

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THE NETWORK MANAGER IN 2015
CONNECTING THE NETWORK TO DELIVER **IMPROVED PERFORMANCE**

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THE NETWORK

2.27		MILLION PASSENGERS PER DAY
27,000		FLIGHTS PER DAY
1,940		AIRCRAFT OPERATORS
520		AIRPORTS
68		CONTROL CENTERS
43		EU / NON-EU STATES

ATFM DELAY TARGET SET FOR RP2:

0.5 MINUTE
PER FLIGHT

2015
0.73 MINUTE
PER FLIGHT

AIRSPACE DESIGN & CAPACITY PLANNING
WE WORK WITH ALL OUR STAKEHOLDERS TO TACKLE BOTTLENECKS, TO CREATE AN EFFICIENT, FLEXIBLE AND DYNAMIC AIRSPACE STRUCTURE AND TO EXTRACT MAXIMUM CAPACITY FROM THE NETWORK

OPERATIONS CENTRE
· KEEPING THE NETWORK RUNNING 24/7
· REDUCING DELAYS
· CIVIL-MILITARY COORDINATION
· WORKING TO REDUCE WEATHER IMPACT AT >40% (IT IS A MAJOR CONTRIBUTOR TO ATFM DELAYS)

ENVIRONMENT
MINIMISING FUEL BURN AND EMISSIONS

AIRPORTS IN THE NETWORK
AIRPORT COLLABORATIVE DECISION MAKING
AIRPORTS WORK BETTER WHEN ALL SERVICES, FROM ATC TO BAGGAGE-HANDLING, ARE CONNECTED WITH EACH OTHER AND THE NETWORK

MANAGE SCARCE RESOURCES
ENHANCED FREQUENCY MANAGEMENT PROCEDURES & TOOLS TO REDUCE TIME & COST OF SATISFYING NEW FREQUENCY REQUESTS

NETWORK PLANNING
· NETWORK STRATEGIC PLAN
· NETWORK PERFORMANCE PLAN
· NETWORK OPERATIONS PLAN

CRISIS MANAGEMENT
WE COORDINATE THE MANAGEMENT OF RESPONSES TO ANY CRISIS WHICH IMPACTS ON AVIATION IN EUROPE

SAFETY
· MITIGATING THE TOP 5 OPERATIONAL SAFETY ISSUES IN THE NETWORK
· SUPPORTING SAFE OPERATIONS ACROSS EUROPE

DATA SHARING
AERONAUTICAL SERVICES
· PROVIDING INFORMATION FOR THE FLIGHT: FROM AIRSPACE CLOSURES TO WEATHER
· B2B WEB SERVICES REQUESTS REACH 1 MILLION PER DAY

FLOW MANAGEMENT SINCE 1995
WE MANAGE SURGES IN AIR TRAFFIC SO AS TO MINIMISE IMPACT ON THE NETWORK. FLOW MANAGEMENT MINIMISES FUEL BURN AND EMISSIONS BY HOLDING AIRCRAFT ON THE GROUND SO AS TO AVOID CONGESTION IN THE AIR

20 MIO
MINUTES

SAVED SINCE NM CREATION

FLIGHT EFFICIENCY
WE OFFER AIRCRAFT OPERATORS THE MOST EFFICIENT ROUTES

30,000 TONS OF FUEL
1.7 MIO TONS OF CO$_2$
84 MIO NAUTICAL MILES

SAVED SINCE NM CREATION

SAVINGS
GOOD FOR THE ENVIRONMENT !

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Long Term Global Traffic Forecast

RPK traffic by airline domicile (billions)

	% of 2014 world RPK	20-year growth	% of 2034 world RPK
Asia-Pacific	29%	5.7%	36%
Europe	25%	3.6%	21%
North America	25%	2.5%	17%
Middle East	9%	6.7%	13%
Latin America	5%	5.2%	6%
CIS	4%	4.9%	4%
Africa	3%	5.3%	3%

2014 traffic
2015-2034 traffic

20-year world annual traffic growth 4.6%
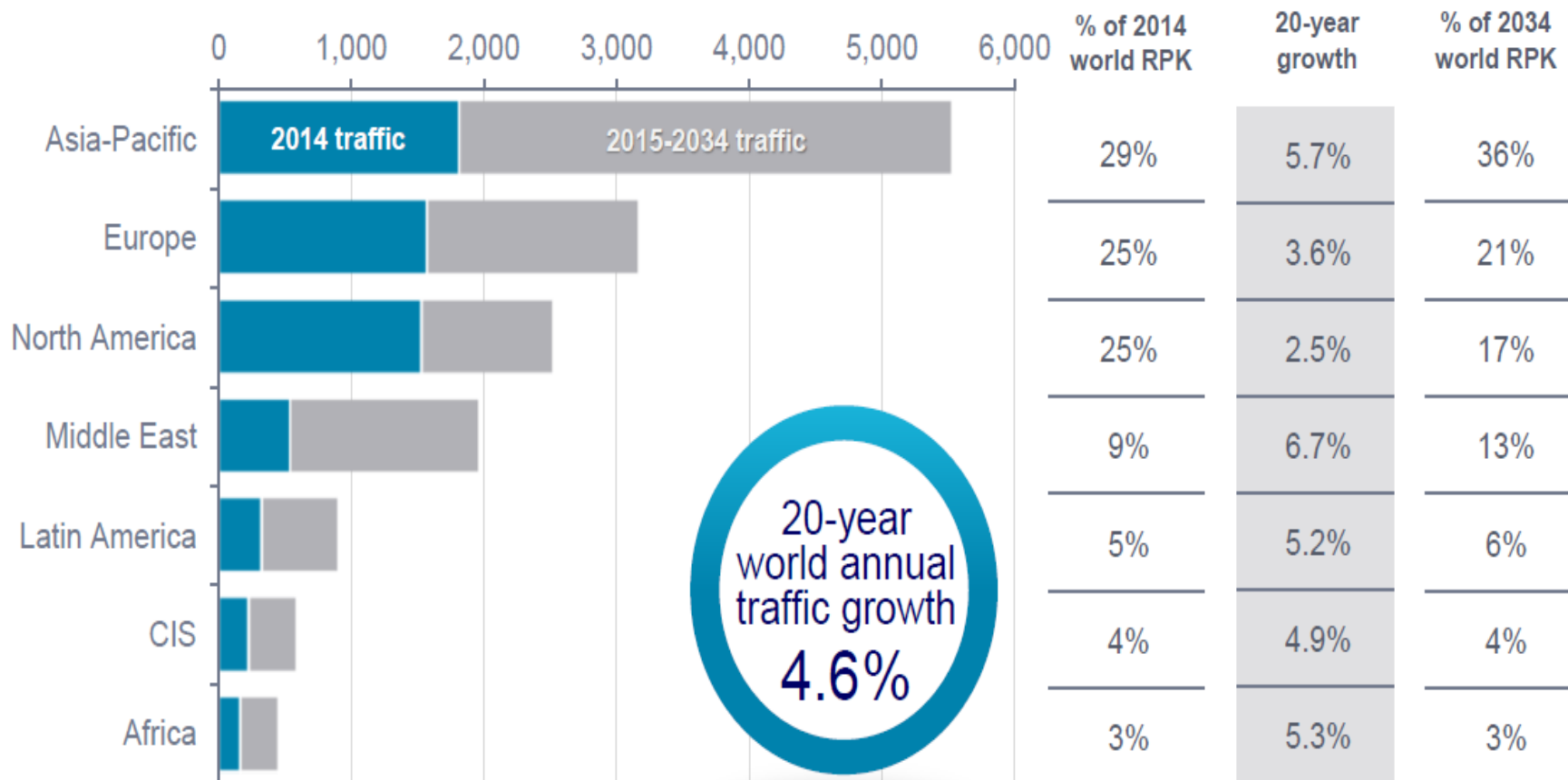
Source: Airbus GMF2015

Air Traffic Flow Management (ATFM) Philosophy

ATFM is an enabler of air traffic management (ATM) efficiency and effectiveness. It contributes to the safety, efficiency, cost-effectiveness, and environmental sustainability of an ATM system. It is also a major enabler of global interoperability of the air transport industry.

Over time, two threads of events are going to appear simultaneously:

- local ATFM implementations conducted worldwide are going to shape a global ATFM; and
- standardized ATFM processes will be implemented globally.

Doc 9971 Manual on Collaborative Air Traffic Flow Management

Increasing importance of external traffic flows 2015 - Daily Flights in European NM Area

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- Improved connectivity & interoperability required
- Predictability & capacity optimisation
- Disruption planning & management

Far East 285

Very significant growth expected
- Gulf
- SE Asia
- China
- Russia

NAM/SAM 1533

Russian Fed & *STAN 1383

NM area internal traffic 25862

Middle East 151

Southern MED 843

Africa 334

Gulf 652

Asia 292

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IATA view on ATFM
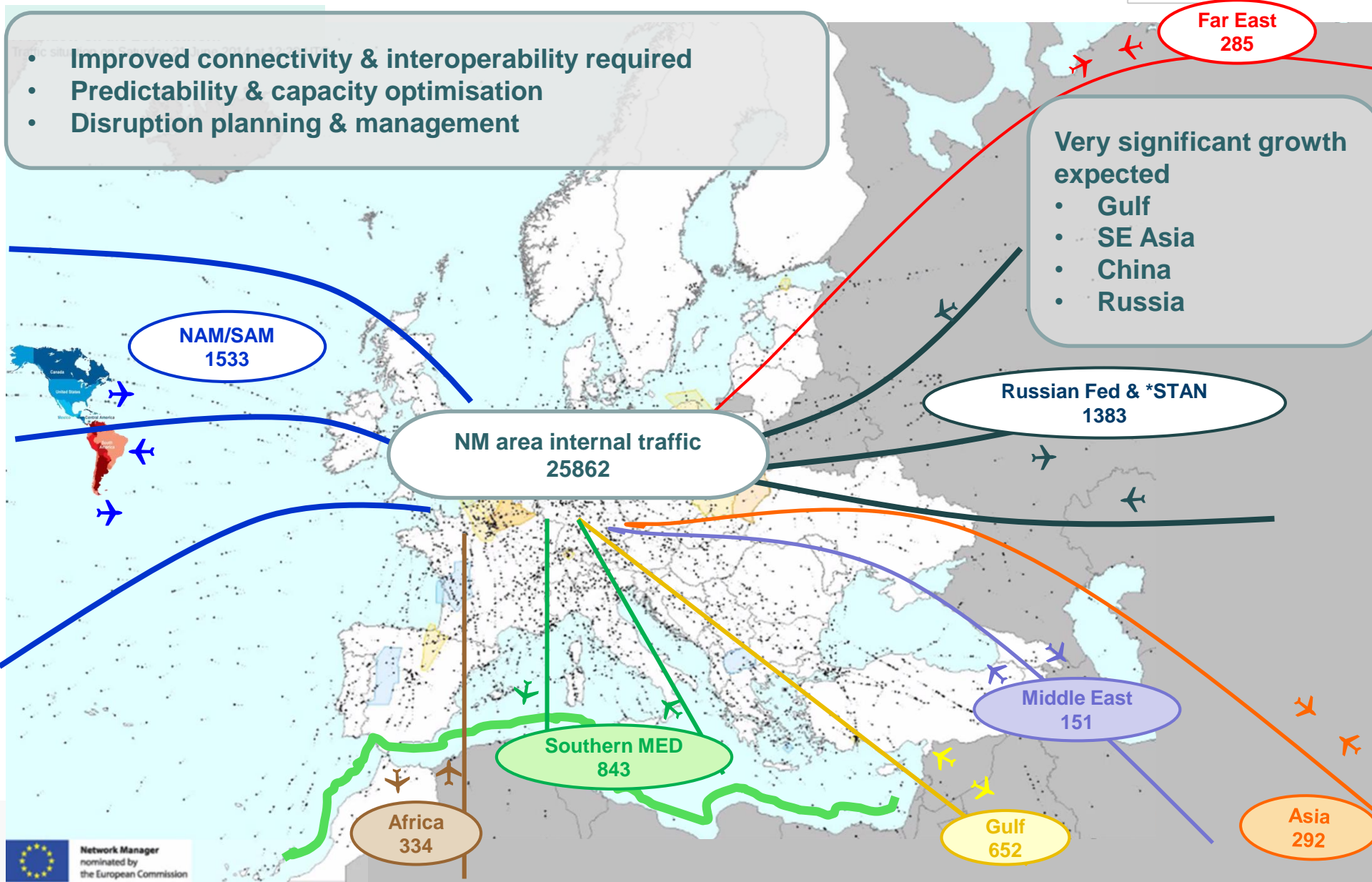
- Currently flow management initiatives are often implemented on an individual country by country basis with no consideration of the cumulative 'knock-on' impact on adjacent airspaces, and ultimately on flights using those airspaces.

- It is critical that States work together collaboratively to implement cross-border ATFM procedures that consider the whole of the flight route.

https://www.iata.org/about/worldwide/asia_pacific/Pages/ATFM-second-phase.aspx

EUROCONTROL Vision for ATFM (1)

- ATFM can only be effective if it covers a logical ATM region

- Sub-regional / regional ATFM must contribute to global ATFM

- ATFM must be supported by precise and accurate airspace data and flight plans

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EUROCONTROL Vision for ATFM (2)

- Centralised data sharing - airspace, flight plan and flight data

- Distributed CDM - ATFM is collaborative process

- Central network function – planning, coordination, optimisation

- Contingency and robustness (>1 site)

- Expandable

- Scope from operations planning to performance monitoring

- Technology allows a mix of centralised and decentralised functions and systems

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Why Global ATFM?

- Increasing intercontinental traffic

- Need for ATFM stability and predictability >> data exchange

- ATFM Equity

- Regional and global strategic planning

- Disruption and crisis management

FOR INFORMATION PURPOSES ONLY
NOT FOR OPERATIONAL USE

CLOSURES AND WARNINGS
Latest update - 29 JUL 2016

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Legend

- Closed Routes
- Officially Closed Areas
- ATS Routes Area Closure
- Airspace for which a warning is issued
- FIR/UIR

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EASA SIB 2014-21R1
ICAO Letter (EUR/NAT 15-0420.TEC)
LF AIC 01/16
FAA NOTAM SFAR 113

ATS Routes area closure
NOTAM K3280/16

Area closed by
UK NOTAM A1048/16
UK NOTAM A1049/16

ATS Routes area closure
NOTAM V1848/16

EASA SIB 2015-16R2
EG AIP ENR 1-1
UK AIC 02/15
LE SUP 38/16
UK NOTAMs A1776-A1778, A1785

Crimea peninsula
closed by AIP AMDT
SFC/UNL

Interception of offenders by
the air force is mandatory
action NOTAM A0024/11
SFC/UNL

ATS Route is
not available
NOTAM A1561/14

EASA SIB (Ref:2014-25R1)
ICAO Letter (AN 13/4.3)
LF AIC 01/16
EG AIP ENR 1-1
FAA NOTAM SFAR 114
ED NOTAM B1065/16
LT NOTAM A1561/14

EASA SIB (Ref: 2015-22)
ICAO Letter (AN 13/4.3 Open - 15/75)
FDC NOTAM A0024/15
FDC NOTAM A0030/15

Area closed by
LT NOTAM A2312/16
LT NOTAM A2313/16
LT NOTAM A2315/16
LT NOTAM A2316/16

IMPORTANT NOTE:
Due to contradictory information being published
under the Libyan designator, please refer to EAD
which is publishing only NOTAMs issued by
the UN recognized authority.

EASA SIB (Ref:2014-23R1)
ICAO Letter (AN 13/4.3)
LF AIC 01/16
EG AIP ENR 1-1
FAA NOTAM SFAR112
ED NOTAM B0916/16
HE NOTAM A0166/16
HL NOTAM A0032/16
HL NOTAM A0036/16
HL NOTAM A0033/16
HL NOTAM A0034/16
HL NOTAM A0037/16
HL NOTAM A0048/16
HL NOTAM A0035/16
HL NOTAM A0038/16
HL NOTAM A0039/16
HL NOTAM A0040/16
LG NOTAM A1117/16
LI NOTAM W1012/16
LI NOTAM A3523/16
LM NOTAM A0379/16
LO NOTAM A1538/16

ATS Routes area closure
NOTAM A0126/15

EASA SIB (Ref:2014-24R2)
ICAO EB 2015/15
LF AIC 01/16
EG AIP ENR 1-1
FAA NOTAM SFAR 77

EASA SIB (Ref:2014-30R2)
EG AIP ENR 1-1
FAA NOTAM A0009/16
ED NOTAM B1122/16

The vision for Global ATFM
A set of interlinked operational ATFM regions

The key to predictability –
Local to Regional to Global – Interoperable - Sharing

ATC, Airport activations, Surveillance updates – Radar, ADSB,….

Local, regional and cross regional ATFM Measures

Traffic Demand: Schedules, flight plans

"Supply" information: Capacities, Events, Weather, Disruptions

Airspace Digital Infrastructure: Airports, points, routes, FIR, ACC, sectors

Global ATFM Concept – why?

What is Global ATFM Concept?

- Globally Interoperable Systems and Data – exchange of flight data with regions which generate the traffic flows

- ATFM coordination mechanisms with these regions

- Extension of network collaborative management and dynamic capacity balancing beyond current areas of application of ATFM

NM Objectives

- Looking to ensuring **exchange of flight plan and flight data** of all traffic entering and leaving the European Network area

- Ensuring that **expert links are established** with major traffic for coordination of traffic flows and routes in the planning phase

- Ensuring that **ops links** with neighboring ANSPs in adjacent regions are **activated in cases of disruptions and crises**
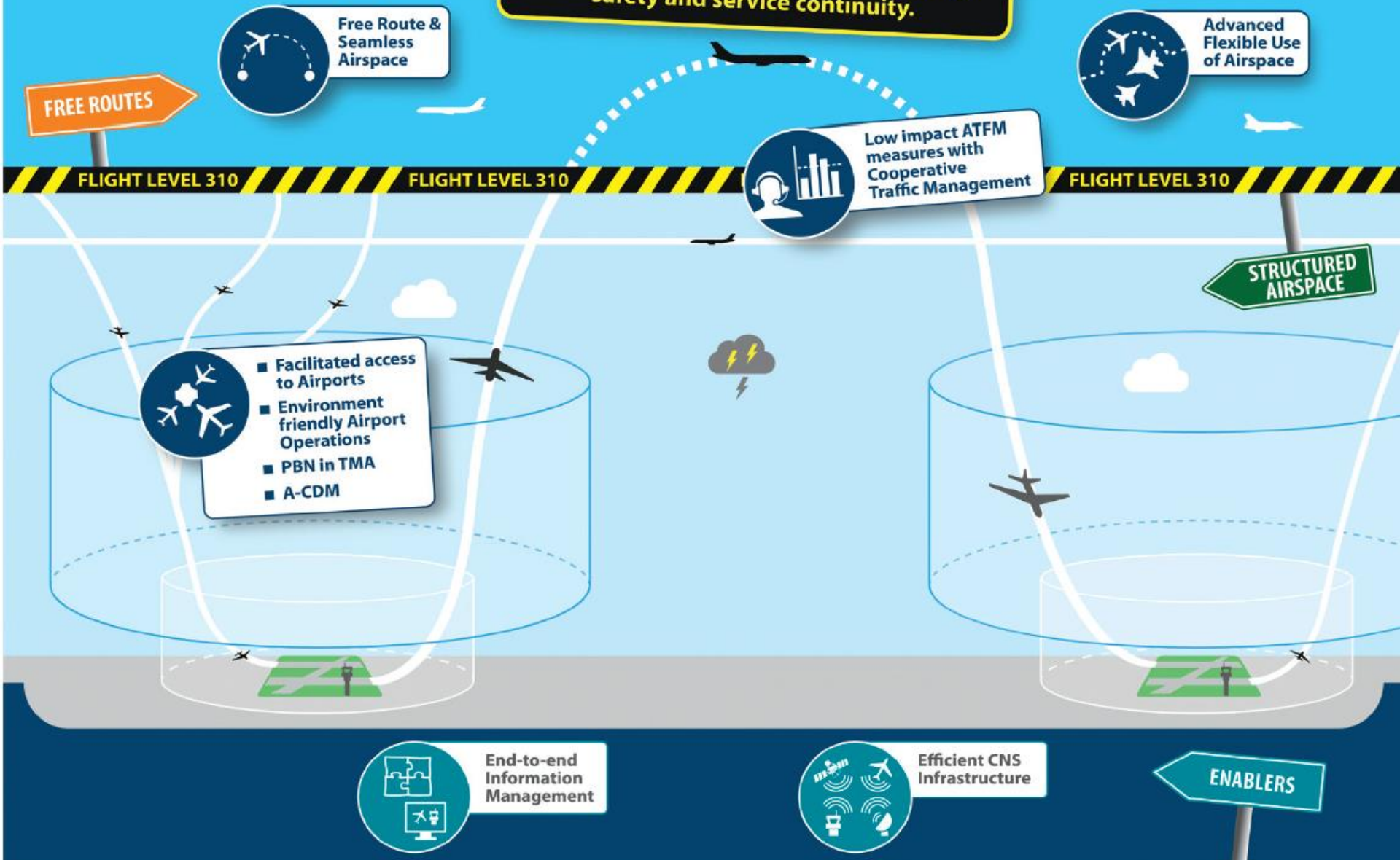
Extended IFPS ATFM Prototype area

Current NM area +
KSA (OE)
Bahrain (OB)
UAE (OM)
Egypt (HE)
Kuwait (OK)
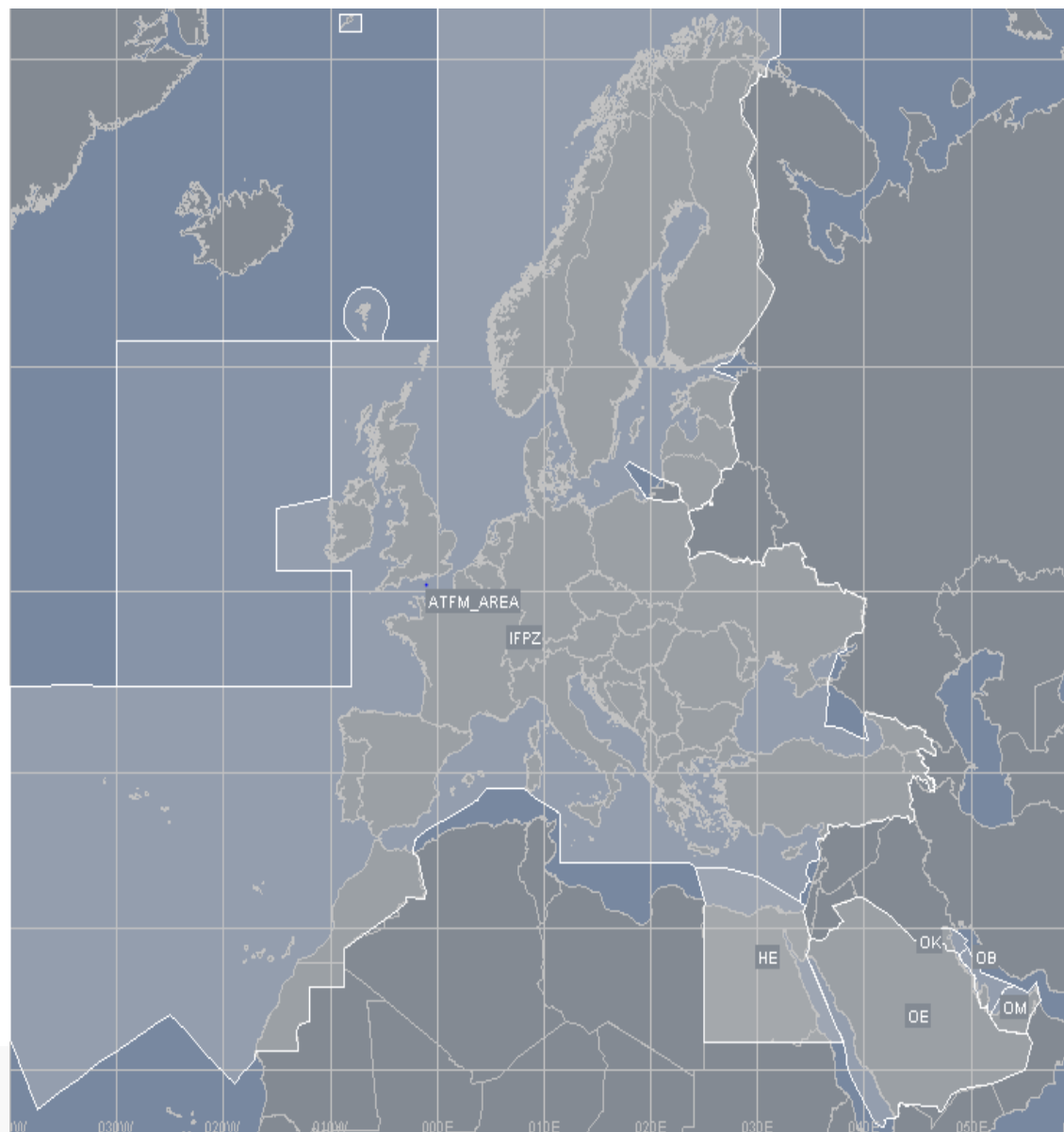
What is the Network Vision by 2020...
... to achieve predictability, punctuality, safety and service continuity.

Free Route & Seamless Airspace

Advanced Flexible Use of Airspace

FREE ROUTES

Low impact ATFM measures with Cooperative Traffic Management

FLIGHT LEVEL 310   FLIGHT LEVEL 310   FLIGHT LEVEL 310

STRUCTURED AIRSPACE

- Facilitated access to Airports
- Environment friendly Airport Operations
- PBN in TMA
- A-CDM

End-to-end Information Management

Efficient CNS Infrastructure

ENABLERS

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Network Manager adds value to network performance!

NM - connecting you to the network!