BLUE MED
Mediterranean FAB

FLIGHT EFFICIENCY PLAN
ANNUAL REPORT
2017

www.bluemed.aero
info@bluemed.aero

99.43%
flights on time

controlled
2.5 flights
million

area control
centres
8

2,200
ATCOs

1,675,000 kmq
Airspace extension

93 airports

BLUE MED
Mediterranean FAB

FLIGHT EFFICIENCY PLAN
ANNUAL REPORT
2017

www.bluemed.aero
info@bluemed.aero

FOREWORD

2017 proved to be a year in which once again, the BLUE MED FAB further strengthened its efforts towards a more efficient and safer European airspace.

A few days before the start of the year, Free Route Airspace (FRA) above FL 335 was introduced in a coordinated manner in Italian and Maltese airspace. In line with providing a better and more efficient service to our customers, Cyprus and Greece also continued in their efforts through the introduction of additional direct routes and significant reduction in En-Route delays.

. To complement the operational and technical achievement it is noteworthy that for the first time BLUE-MED hosted the 4th InterFAB coordination workshop in Valletta.This noteworthy workshop, which was addressed by the Network Manager and attended by around 25 participants from different FABs, impelled further coordinated inter-FAB activity. Amongst others, this activity included the establishment of a common position toward RP3 and SES, as well as discussions aimed at addressing delays stemming from weather and airport-related issues.

Throughout the year, discussions for cooperation with countries neighboring BLUE MED continued and progress was also registered in line with the Implementation Programme. In April 2017, an Airspace Users meeting was held successfully and a Social Forum was also organised to foster dialogue between all partners and stakeholders.

Progress within the BLUE MED FAB alone is not sufficient unless our customers are aware of it to be able to exploit it. The key to create awareness is communication. Towards this end, the Governing Board approved the widening of the tasks of the administrative secretariat, to include communications. In 2018, we expect to start bearing the fruit of this important decision.

While thanking my predecessors for their work throughout their terms, I look forward to taking on this role of ANSP Committee Chairperson with enthusiasm and energy, to build on what has been achieved with the ultimate aim of working together with the rest of the BLUE MED team to provide a better service to the Airspace Users.

Dr Ing. Kenneth Chircop
Chief Executive Officer – MATS
BLUE MED FAB ANSPC Chairman

CONTENTS

EXECUTIVE **SUMMARY**

A QUICK OVERVIEW

The annual analysis of the BLUE MED FAB's Flight Efficiency performances has become a fixture for us, with the purpose to update the Airspace structure of the four States members of the BLUE MED FAB to the necessities of their Airspace Users and to increase its availability in order to reduce the environmental impact caused by fuel consumption and CO_2 emissions in the atmosphere, as well as to optimize the flight profiles of aircraft.

The 'BLUE MED FAB Flight Efficiency Plan and Annual Report 2017', in a new format, provides also information on Traffic and Punctuality at FAB level and in each of the four member Countries' airspaces (Cyprus, Greece, Italy and Malta).

The information contained in this Report highlights, along with the constant traffic increase that has affected the BLUE MED FAB during last years, a positive trend in the Punctuality datum, something which the FAB is proud of and from which the Airspace Users are benefiting, especially after the introduction of Free Route Airspace above 33,500 ft in the Italian and Maltese airspaces since the end of 2016.

During 2017, such optimisation of trajectory profiles has also affected the underlying network; at the same time, the continuous network optimisation within Greece and Cyprus, with an increased availability of the existing network as well as the creation of new routes, has resulted in an ever smaller difference in terms of average distance planned by the AUs compared to the direct entry/exit trajectory into the FAB's airspace.

Further analysis of what has been done to optimise the network is supported by some aeronautical charts and screenshots; the respect of the flight duration planned, combined with the Punctuality, was pursued also with the introduction of an arrival network, the so-called TROMBONEs, at Rome Fiumicino and Verona Villafranca Italian airports, with benefits referred to the certainty calculation of the amount of fuel necessary for the flight trajectory route.

The final section of the document provides an overview of the implementations that the four member States have planned for the next years and an Appendix showing Traffic and Punctuality results both for the FAB as a whole and for the individual ANS providers.

TRAFFIC **OVERVIEW**

A WINDOW ON PERFORMANCE

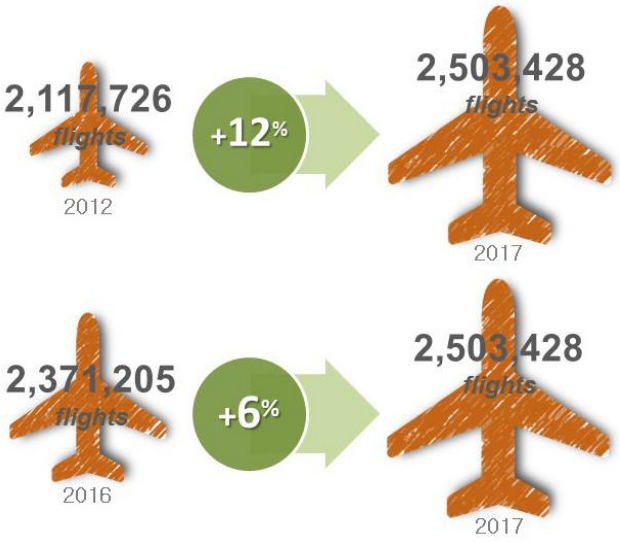
In 2017, Cypriots, Greeks, Italians and Maltese Air Traffic Controllers guided 2,503,428 flights (+5.58 % compared to 2016) safely and punctually through the BLUE MED FAB airspace.

This new total represents an ever increasing value starting from 2012, the first year of RP1; the growth is much higher if we examine what was totaled in 2012 compared to 2017, reaching 11.82%.

Despite this overall trend, there were significant variations between Area Control Centers and single States.

The bandwidth of growth for the BLUE MED FAB airspace varied between the 2.79% (Italy) and the 11.58% (Cyprus).

The overall ATFM delay has increased in parallel with traffic growth, not only due to ATM-related causes but also to the geopolitical situation in the Eastern Cypriot airspace, were multiple 'no fly zones' and 'military activity areas' obliged the traffic flows to reroute and, as a result, to be subject to increased delay.



Source: Network Manager - Performance Review Unit (PRU) - DDR2

PUNCTUALITY

IS THE WORD 'DELAY' APPLICABLE TO THE BLUE MED FAB?

A usual concern for passengers - or family members - waiting at a European airport is to look at the Departures-Arrivals screen and read that their flights are delayed.

Surely none of us, except the insiders, are aware of the real causes that lead to a delay of a flight; we just perceive that a myriad of technical causes, unrelated to "human" factors, are possible, and that the management of a flight must be really complex.

Excluding delays not due to ATFCM Regulations (e.g. delays attributable to the aircraft taxiing towards the assigned parking bay, to airport operations such as boarding or disembarking passengers, aircraft cleaning, refueling and so on), and also excluding factors linked to the ATC domain but not directly attributable to it (such as bad weather conditions or aircraft accidents or the activation of military areas etc.), in the present report you will find a brief summary of all the causes that determined a delay, attributable both to Airports or to Area Control Centers that form part of the BLUE MED FAB member Countries.

First of all, we can start by saying that, in 2017, 97.65% of the flights involved (overflying or landing/taking-off) the airports located within the BLUE MED FAB airspace have not been affected by ATFCM Regulations (and resulting delay).

It is an important result, especially for the benefit of Airspace Users (AUs), as well as a real merit point for both the BLUE MED FAB ANSPs and Airport Operators: the four ANSPs have reconfigured their ACC sectorization according to the traffic flows forecasts for 2017; Airport Operators have made considerable efforts both for improving the operational management of aircraft movements on the ground and for adapting their ground structures to the needs of the AUs' planning activities.

The output was remarkable: only 0.57% of flights that affected the BLUE MED FAB airspace in 2017 (14,349 Flights in take-off, landing or overflight) were assigned an ATFCM delay exceeding 15 mins while the EnRoute average Delay per Aircraft was limited to 0.23 min only, though slightly growing compared to the 0.13 min per Flight of 2016 (source: EC-NM PRU Portal – DDR2).

A detailed analysis shows that more than 60% of all ATFM Delay has been prominent in the Airport domain, where flights got delayed by an average of 16 secs (of which only 9 secs can be attributed to ATC causes). Even more significant is that only 0.57% of the Total Flights got an ATFM Delay of more than 15 mins per flight!

If we want to focus on ATFCM causes, the comparison between 2016 and 2017 reveals a large percentage of reduction in airport ground causes in 2017, in contrast with an increase in ATM causes.

As we mentioned before, the reduction of airport causes is primarily due to ground structures adaptation (airport layout) to the necessities of airlines or at least, when airports were not such as to allow any adjustment or enlargement, to the adjustment of the arrival and departure times of scheduled flights, in order not to clog the ground movement area.

With regard to the increase in ATM related causes, a small part can be charged to Industrial Action regulations (in Italy and Greece); a more substantial portion to ATC staff shortage (Greece and Cyprus) and the remaining part to congestion problems in En-route airspace, mainly due to geopolitical problems insisting on the East border of the Cypriot airspace (Syrian conflict), along with the presence of many 'no fly zones' and multiple military ships and aircraft carriers in the area.

Traffic rerouting, which also determined a significant increase in NM for the Total Route Length of the flights concerned, as well as the shift of traditional trajectories to and from Near/Middle East Countries towards the Southern and especially the Northern part of the Cypriot airspace, has had a significant impact on the capacity of the Cypriot and Turkish airspaces.

Source: Network Manager - Performance Review Unit (PRU)

ENVIRONMENT

FREE TO PLAN WHERE TO FLY

The traffic growth in 2017, compared to 2016 (which was also a leap year) was positive both when it came to analysing the traffic that affected the whole BLUE MED Countries' airspace (+ 5.58% equal with an increase of 132,218 controlled flights) and also when looking at the results of the ANSPs examined individually.

If the two-digit increase (+11.58%) of IFR flights in the Cypriot airspace stands out, the other ANSPs also show significant increases of around 6% by Greece and Malta, whereas about 45,000 flights more than 2016 were assisted in Italy.

In this positive framework, however, the impact of Syrian conflict, with the constant presence of military traffic (including aircraft carriers crossing the Eastern Cyprus airspace) that continues to affect scheduled and seasonal traffic must be taken into account, since it has led to continuous rerouting among the Persian Gulf area and Middle East.

This situation has also determined volatility, especially in the "holiday" traffic schedule, because travel agencies are avoiding areas at risk of terrorism.

Flight Efficiency Gain
per Flight intra
BLUE MED FAB

NM -10.5

KG -75
Fuel

Kg **CO_2**
-235

THE DAILY PLANNING BENEFITS FOR THE AUs

Nevertheless, a good percentage (58%) of the implementations were caught by the planning of the AUs during the 2017, an encouraging result, even if higher values can be obtained by spreading the knowledge of the measures implemented.

All the improvements made to the network, both EnRoute and Terminal (for Arrivals/Departures to/from the Airports located within the BLUE MED area) can be computed in over 1,400,000 NM of potential Route Length savings, corresponding to over 10,000 tonnes of fuel saved and a reduction of over 32,000 tonnes of CO_2 emissions into the atmosphere.

The above mentioned totals do not take into account the positive impact that the Free Route implementation has had on attracting traffic inside the BLUE MED FAB airspace (see below).

Since the BLUE MED FAB acts as a sort of buffer zone among the ECAC Area, African Countries and the Near/Middle East, the analysis made also highlight the changes and opportunities arisen in terms of Flight Efficiency for the entry/exit of the ECAC airspace through the FRA area of Italy and Malta.

In 2017 over 55% of the FPLs filed all or in part over the Italian and/or Maltese FRA airspace have benefited from a reduction in the Total Route Length, capitalising an average gain of 10 NM per flight thanks to the planning without reference to the network. This is a new operating concept that allows the AUs to reduce the flight distance from the departure airport to the destination thanks to the absence of network above 33,500 ft and to the network adaptation by the BLUE MED FAB neighbouring countries.

It can be quantified that the total average daily saving is about 13,400 NM, corresponding to an average saving of about 75 kg of fuel and to about 235 Kg of CO_2 emissions reduction per aircraft for the reference period.

THE FLIGHTS' TRAJECTORIES

What we have described in the previous sections is the benefits that the BLUE MED FAB has made available for the AUs in terms of planning; however, it is also necessary to consider the added value brought daily by the ATCOs judgment. Indeed, the "Actual Trajectory" of the flight is associated with the Flight Efficiency Culture, constantly supported by the recurrent training provided to ATCOs by the ANSPs in the FAB.

Flight Efficiency Culture allows ATCOs to disregard network inefficiencies determined by the existence of "Airspace Restrictions", "Military Activities", "Temporarily Restricted Areas" or Weather causes, or other AUs needs to deviate from the Planned Route due to different constraints. This determines the Flight Efficiency of the "Actual Trajectory" and it is used to determine the Average Horizontal EnRoute Flight Efficiency.

"KEA" is a Key Performance Indicator at EU level. It measures the reduction of the aviation environmental impact in Horizontal Flight Efficiency (HFE), correlating the environmental reduction of emissions caused by fuel burn, using and taking into account the benefits attributable to it. In simple terms, it compares the length of the Actual Trajectory (the trajectory followed by the flights thanks to the clearance to fly "direct to..." assigned by ATCOs) to the "Achieved Distance", that is the segment of the Great Circle Distance (GCD) between the origin and the destination Airport.

For airports within the FAB airspace, the distance taken into account for the KEA is the trajectory segment outside a circle with radius of 40 nautical miles centered on the Airport Reference Point (the airport segment is not included into this measure because it is part of the Terminal Area).

The BLUE MED FAB target was to reduce by 2.62% the value of KEA in 2017, the third of the 5 years of RP2 (2015-2019) and the result was 2.83%; that is, the target for 2017 was exceeded by 0.21%!

In 2017, the Average Planned EnRoute Distance per flight in BLUE MED FAB airspace was 241.63 NM, 10.93 NM longer than the Average GCD Route (in 2016 the difference was 11.96 NM longer, equal to 5.25%). Thanks to the Actual Direct Trajectory, instead, the AUs could benefit of an average reduction of 6.18 NM in the distance flown per flight when compared with their originally planned routing. Indeed, the Average Actual Distance dropped to 235.44 NM and, as a consequence, the difference with the Average Great Circle Distance per flight was 3.82 NM only (source: EC-NM PRU Portal – DDR2).

Comparison AVG Distance per Flight Intra BLUE MED FAB

This result leads us to affirm that flying within the BLUE MED FAB airspace allows AUs to plan very close to the Ideal Trajectory.

BLUE MED FREE ROUTE AIRSPACE: ITALY AND MALTA ONE YEAR AFTER

8 December 2016 is a date to remember for the BLUE MED FAB airspace: it was the date when the network above 33,500 ft was canceled in both the Italian and Maltese airspaces. Because of this new concept, a portion of flights' planned routing gets a direct trajectory associated to an optimal vertical profile.

Within Italian and Maltese FRA, aircraft are allowed to fly their preferred trajectories between a defined entry and exit point across their respective FIRs, or to enter/leave the FRA by multiple Intermediate Navigation Points; FRA is available H24 for overflights, arrival and departing traffic.

The BLUE MED FRA implementation project has been a joint effort at FAB level for a common target.

Multiple simulations and studies were done before FRA implementation and all foresaw that AUs would be facilitated to reduce the flight distance for million nautical miles annually, reducing as well the amount of fuel burned and CO_2 emissions into the atmosphere. For AUs the FRA implementation is also an opportunity for cost reduction linked to the reduction of Route Charges.

All these advantages are possible without any impact on Safety, which is paramount for all the BLUE MED FAB ANSPs.

The FRA Concept also facilitated ATCOs' vision to "address" the direct flight trajectory.

A network of fixed routes causes specific conflict zones while managing flight routings; instead, the Free Route concept helps solve potential conflicts, making them easier to handle for ATCOs.

In the meantime, the Free Route concept makes it easy to provide accommodations for capacity demand of future routing by AUs, helping airspace management with and in cooperation with Military Authorities.

The ex post analysis to evaluate the results in the Italian and Maltese FRA, for the entire 2017, confirms fully what had already been shown by the output of the ex post analysis of simulations and by the results of the first 24 days of December 2016 (the initial period of FRA implementation).

The outputs expected both in terms of fuel savings and lower CO_2 emissions, as well as of optimisation of the aircraft flight's horizontal and vertical profiles have been confirmed also from the feedbacks received by the AUs

The following table shows in detail the benefits of FRA, in terms of Flight Efficiency, both in total and broken down by aircraft, which obtained a reduction in Total Flight Distance planning the BM FRA.

The results are really impressive: more than 4,900,000 NM reduction for the Planned Route of the AUs, corresponding to more than 35,000 tonnes of fuel saved and, for the environment's benefit, more than 110,000 tonnes less of CO_2 emissions in the atmosphere.

From an economical point of view, more than €26 million were saved.

The above results encourage the FRA project to lower the minimum flight level of the FRA from the actual 33,500 ft to 30,500 ft in 2018.

It is interesting to observe that for the implementation of FRA the AUs did not have to modify anything in the City Pairs planning. Benefits came directly, choosing to plan in BM FRA and thus optimising both the aircraft's vertical flight profile and its occupancy within the BM FRA.

Total Distance Saving Entering BM_FRA in 2017

Fuel Reduction (Tonnes)	**35,300**
CO_2 Reduction (Tonnes)	**111,200**
Cost Reduction (€)	**26,500,000**

BM Italy_Malta FRA benefits: Average Reduction per Aircraft

Below is an example of benefit in term of flight distance gained by the AUs by comparing the Flight Route planned for the City_Pair HECA_LEBL before and after December 8th 2016.

Source: Network Manager - Performance Review Unit (PRU)

CAIRO_BARCELONA before and after BM FRA implementation
Δ_NM: 1612.92 (pre) vs 1589.50 (new) = -23.42 NM

ENROUTE AIRSPACE **DESIGN** AND NETWORK **AVAILABILITY**

2017 was characterised by the ex post analysis and consequent adaptation of the network existing below 33,500 ft after the implementation of FRA Italy and FRA Malta, both in term of introduction/modification of EnRoute Segments (DCTs and New Routes) and Network Availability (RAD).

The introduction of the Free Route Area requires a continued activity to adapt the existing network to the needs of the AUs' schedules that were not in place during 2016, as well as the network availability for entry/exit trajectories from Departure/ Arrival Airports neighbor to the Italian/Maltese boundaries. Therefore a series of amendments and implementations were made, not only by Italy and Malta but also by neighbouring countries, in order to adapt the network to the new planning necessities.

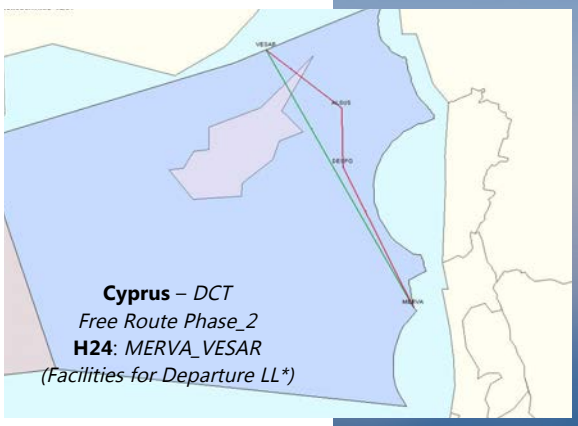
Further activity in Italy was focused to arrange the network's availability, as well as the implementation of some ATS Routes and DCTs; in addition, the planning activity to lower the Free Route Airspace, that will take place before next June 2018, has started.

Malta introduced a large number of DCTs to support the network below the FRA airspace, mainly in order to optimise East-West (and VV) traffic flows; they also started the Safety Assessment to plan the new airspace structure in the vision of lowering the FRA Area, as well as in Italy.

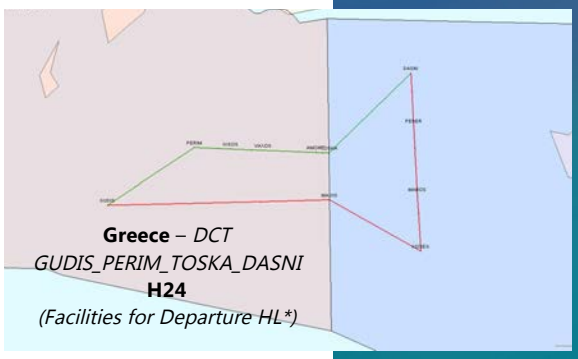
As regards Cyprus, it is noteworthy to mention the implementation of Phase 2 of the Free Route Project (from 6 February 2017), which provides the extension H24 of the DCTs already implemented in Phase 1.

In addition, the implementation of a series of DCTs, in cooperation with Greece, has allowed a considerable reduction of the planned distance for flows to/from Libya.

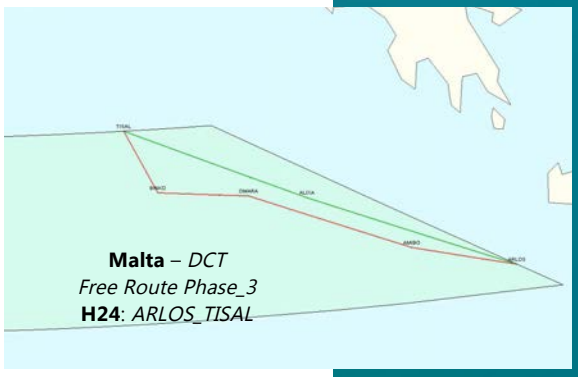
With regards to Greece, in addition to the implementation of the above-mentioned DCTs in cooperation with Cyprus, the main activity was addressed both to the Safety Assessment for the Free Route Phase 3 execution that will be planned with the first AIRAC of January 2018, and to adapt the National Network to the needs of the AUs, especially for the Summer Season 2017's schedule.



Cyprus – *DCT*
Free Route Phase_2
H24: *MERVA_VESAR*
(Facilities for Departure LL)*



Greece – *DCT*
GUDIS_PERIM_TOSKA_DASNI
H24
(Facilities for Departure HL)*



Malta – *DCT*
Free Route Phase_3
H24: *ARLOS_TISAL*

NM
1,420,000

KG
10,100,000
Fuel

IMPROVEMENTS
IN ENROUTE
AIRSPACE DESIGN

Tonnes **CO_2**
31,300

TERMINAL AIRSPACE **DESIGN**

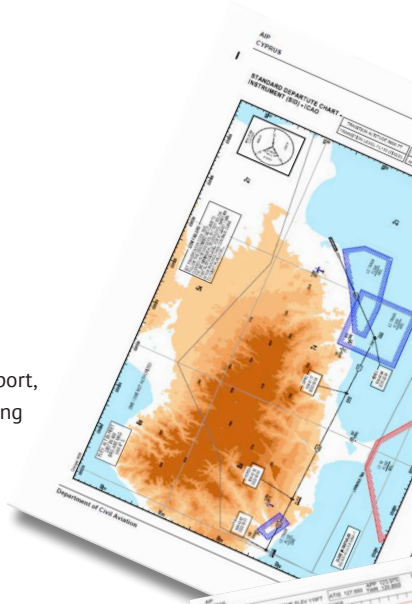
The Terminal Network was adapted to the needs of the "Upper Airspaces and Upper Network" which is constantly revised to respect the Free Route Criteria.

The Terminal Network was also updated to match the needs of the Airspace Users, especially due to the new aircraft models that have integrated the existing fleets and due to the new destinations requiring adjustments or even the creation of new corridors that serve the needs of new traffic flows.

All the BLUE MED FAB Member States are involved in the constant update activity.

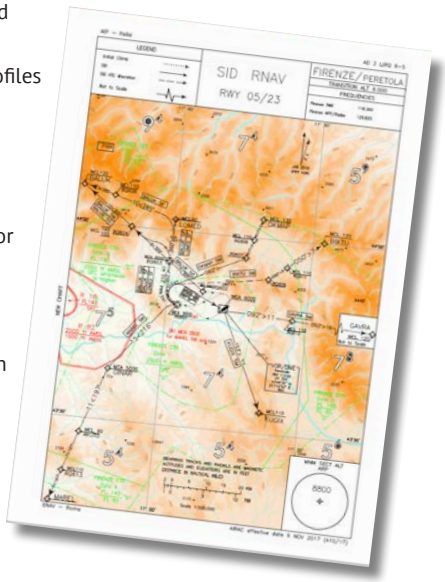
OPTIMIZATION
IN AIRPORTS OPERATIONS

Kg **CO_2**
260,000



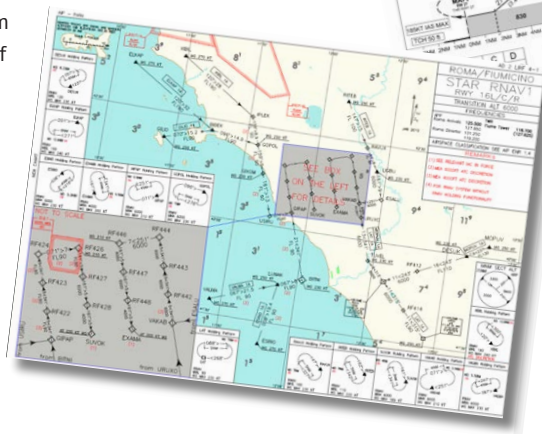
Cyprus introduced two new RNAV STAR/SID for LCLK airport, in effect from 22 June 2017, that integrate the two existing conventional STAR/SID.
For **2018** some new RNAV procedures are planned to be implemented, both for LCPH and for LCLK.

In **Italy** many implementations have been introduced to the Terminal Network, implementations which were not only minor adjustments or minor changes.
The airports were the implementations have been introduced are Brindisi Casale (LIBR) and Firenze Peretola (LIRQ), where all the Departure, Arrival and Terminal Network have been adapted (last June and October) to the new Italian airspace reorganization, that will take place by next Spring 2018.
These new Arrival/Departure procedures generated benefits in terms of Fuel Efficiency and CO_2 emissions reduction.
he AUs can also take advantage of the introduction of the "TROMBONEs" at Roma Fiumicino (LIRF) , introduced in 25 May 2017 and in Verona Villafranca (LIPX), introduced in 22 June, optimising their planning and their flight profiles in terms of Punctuality and Flight Efficiency Time.
Benefits produced by these new Terminal Network and Airport Procedures overall for "more accurate" and "more predictable" Arrival Routing and Arrival Planning Time, especially with benefits both for Airspace Users and for Airport Operators on the ground.



Greece continued the planned activity to update and introduce new PBN procedures at several National Airports, with benefits in terms of Flight Efficiency and Punctuality, with savings in Fuel consumption and CO_2 emissions.
Attached is the new Arrival GNSS Procedure at IRAKLION (LGIR) Airport implemented since 12 October 2017.

Malta is also continuing the Program dedicated to the full update and review of their Terminal Network, in parallel with the Free Route Project; the new Terminal Airspace Network will be available by next year.



KG Fuel 83,000
OPTIMIZATION
IN AIRPORTS OPERATIONS

FUTURE PLANS **(2018-2022)**

DCAC - CYPRUS ANSP

Free Route Project

Phase 3: 2018 - 2021
DCTs with multiple Entry/Exit - Implementation above FL195 - Available H24
Phase 4: 2022
Full FRA implementation - above FL195 – Available H24

Short Track Routings

Gradual implementation of multiple DCTs connecting City Pairs among airports into the BLUE MED FAB airspace and also close to the boundaries

On-going Projects

Implementation of RNP Approach for LCLK RWY 11/29 and for LCPH RWY 04/22 (by 2019)
Introduction for LCLK RWY 11/29 STARs RNAV 1 GNSS NORDI1P (by 2019)
Introduction for LCLK RWY 11 SIDs RNAV 1 GNSS NORDI1R / RIMEX1R (by 2019)

HANSP - GREECE ANSP

Free Route Project

Phase 3_A – January 2018 (in progress ...): New DCTs implemented
Phase 3_B – January 2019 - New DCTs or modification of the implemented ones are possible following traffic's needs
Phase 4_A – January 2020 - Implementation of Night FRA (2100 – 0400 UTC) - FL355 – 460

Short Track Routings

Gradual implementation of multiple DCTs connecting City Pairs among airports into BLUE MED FAB airspace and also close to the boundaries

On-going Projects

Reorganisation of fixed ATS Route Network
Implementation of RNP Approach at LGSR, LGMK (Spring 2018)
Introduction of RNP Approaches at LGMT, LGIO, LGKO, LGTS (H2020 – implementation 2018)
Improved ATM computer system update PALLAS 3G – Spring 2018
Increase of the number of logical sectors – New sectorisation – More efficient traffic flow
FEP classroom modules will be delivered to ATC personnel, winter 2018/19

ENAV - ITALY ANSP

On-going Projects

Free Route Airspace above FL305 by May 2018 – in harmonisation with MATS
Reclassification of military areas above FL305 in AMC manageable
Implementations or improvements of RNAV1 SIDs/STARs procedure for multiple Italian Airports
New implementations of RNAV1 – TROMBONEs in LIMC by Spring 2019
E-AMAN new implementation in Roma TMA (LIRF and LIRA) and Milano TMA (LIMC-LIML-LIME) - 2019
ACDM: OPS release in LIRN Aerodrome in 2018 and in LIME Aerodrome by 2019
Continuous Training on Flight Efficiency, Performances and every topic relevant to the "best use of airspace"

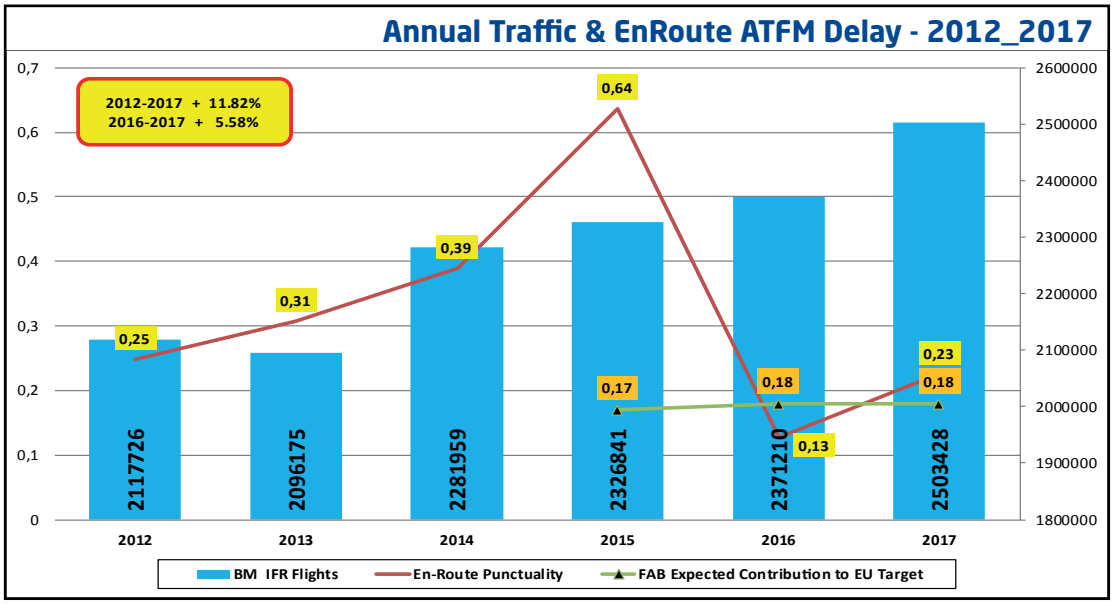
MATS - MALTA ANSP

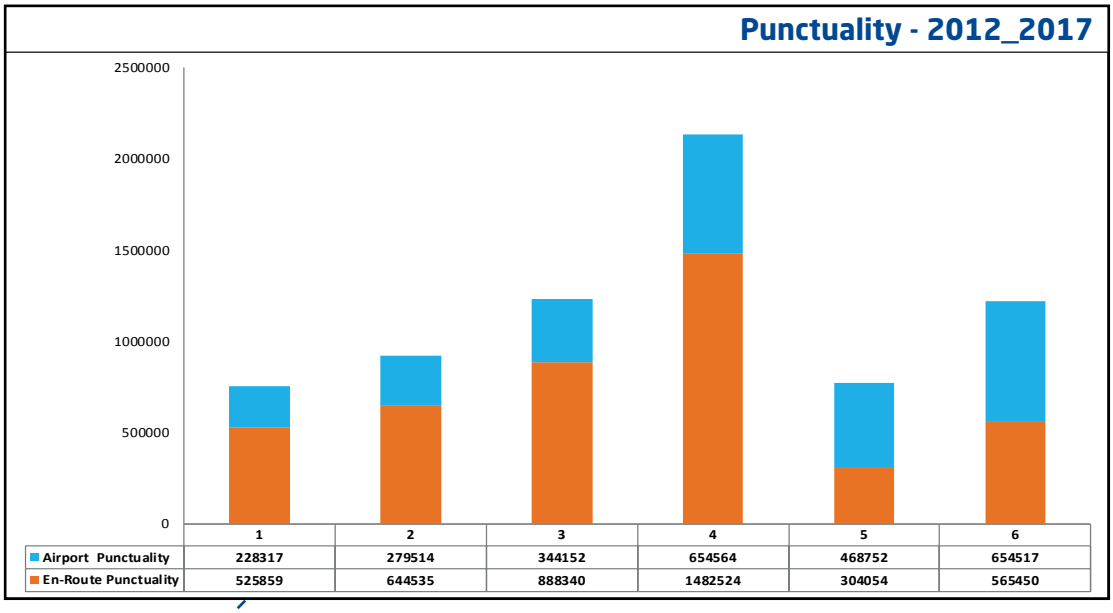
On-going Projects

Free Route Airspace above FL305 by May 2018 – in harmonisation with ENAV
Implementation of a new TMA and the introduction of RNP Approaches at LMML

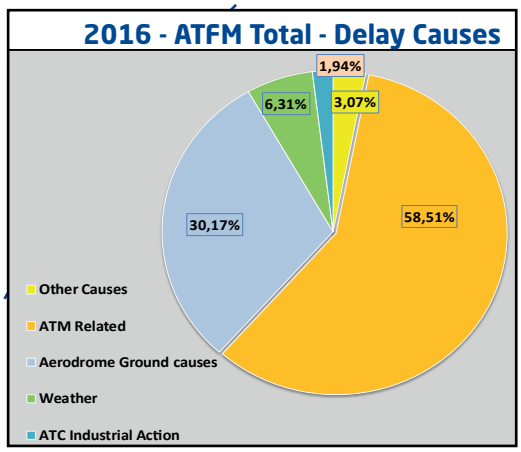
APPENDIX

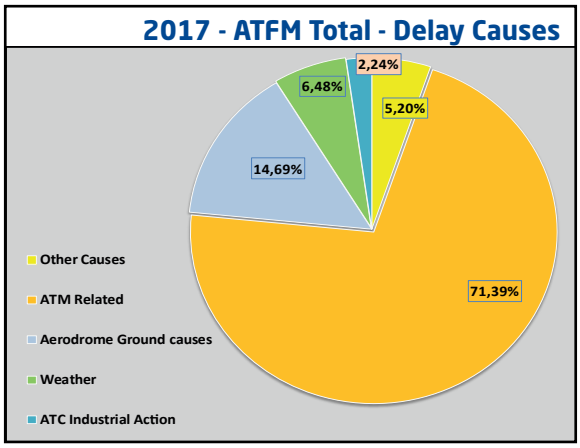
BLUE MED TRAFFIC & PUNCTUALITY





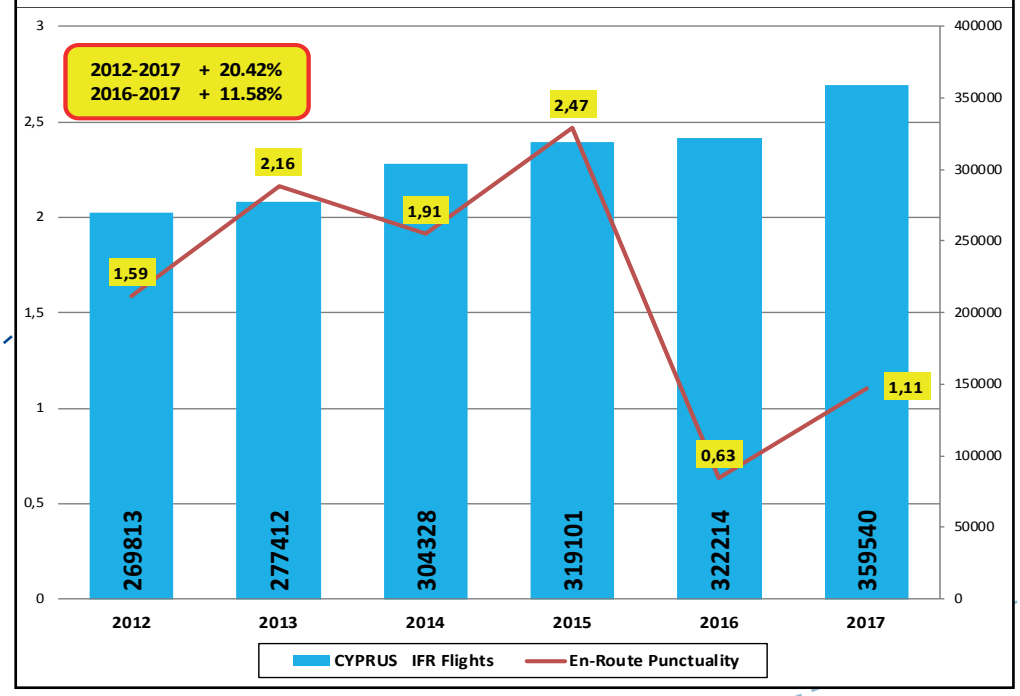
	1	2	3	4	5	6
Airport Punctuality	228317	279514	344152	654564	468752	654517
En-Route Punctuality	525859	644535	888340	1482524	304054	565450



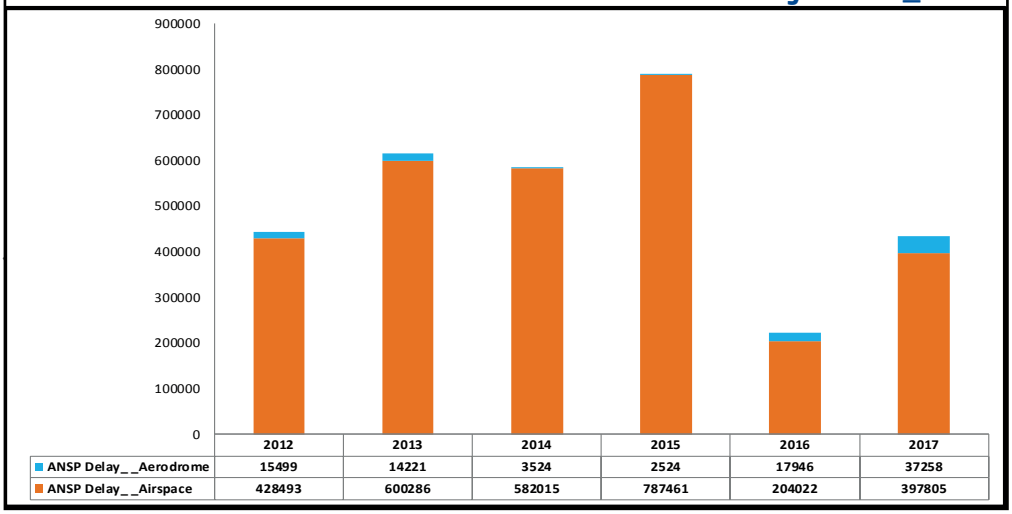


CYPRUS

Annual Traffic & EnRoute ATFM Delay - 2012_2017

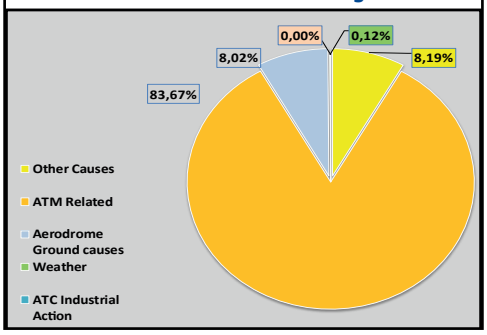


Punctuality - 2012_2017

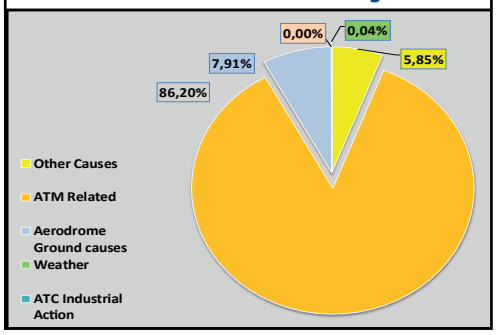


	2012	2013	2014	2015	2016	2017
ANSP Delay__Aerodrome	15499	14221	3524	2524	17946	37258
ANSP Delay__Airspace	428493	600286	582015	787461	204022	397805

2016 - ATFM Total - Delay Causes



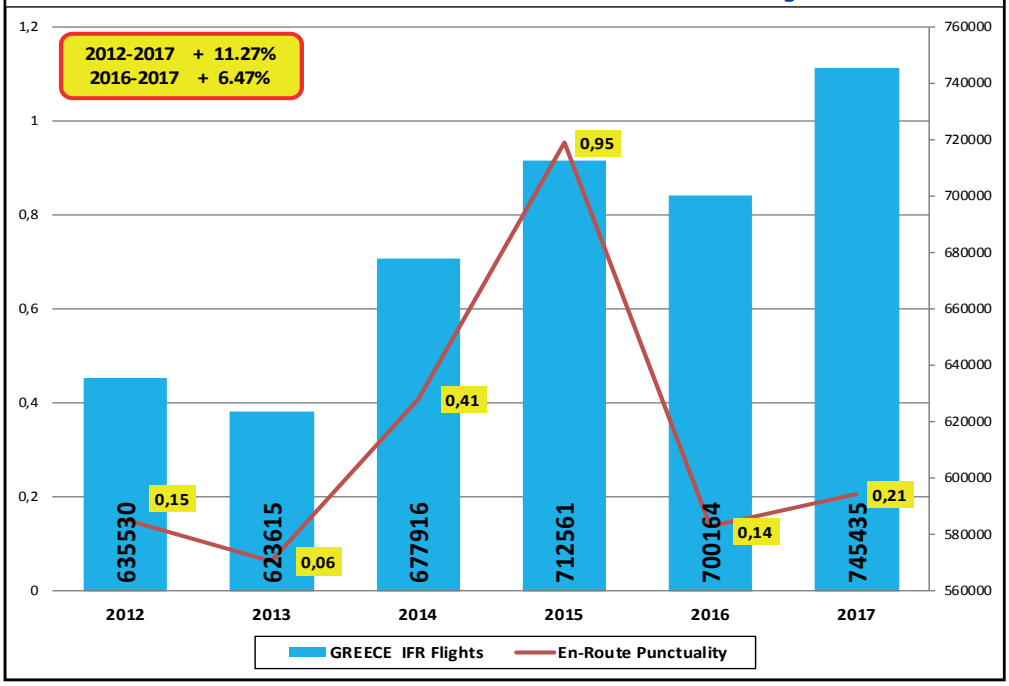
2017 - ATFM Total - Delay Causes



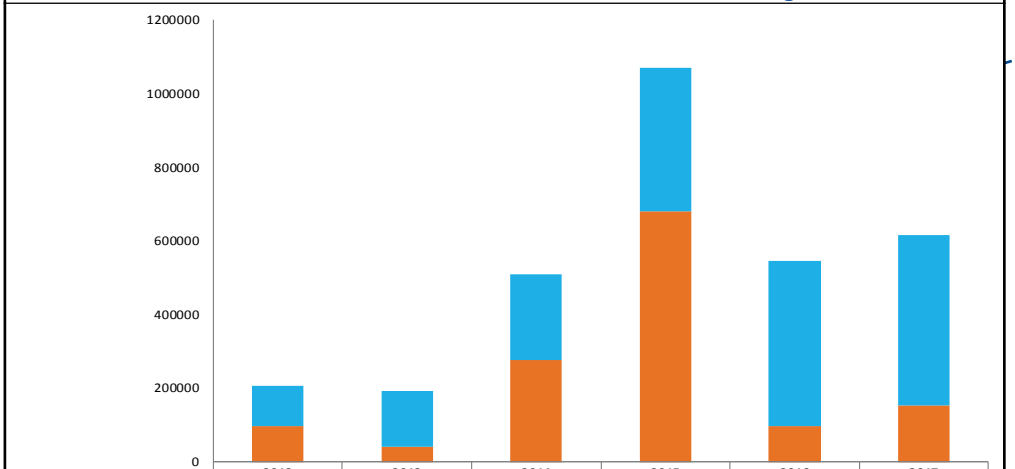
GREECE

HELLENIC CIVIL AVIATION AUTHORITY

Annual Traffic & EnRoute ATFM Delay - 2012_2017

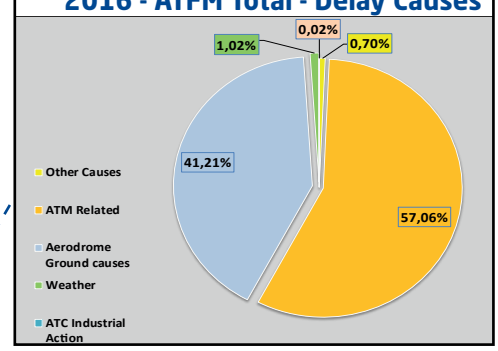


Punctuality - 2012_2017

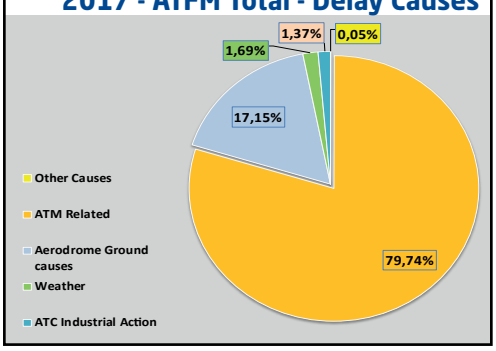


	2012	2013	2014	2015	2016	2017
ANSP Delay__Aerodrome	109547	151735	233140	391713	450369	462605
ANSP Delay__Airspace	96950	39750	276657	679631	96298	153079

2016 - ATFM Total - Delay Causes

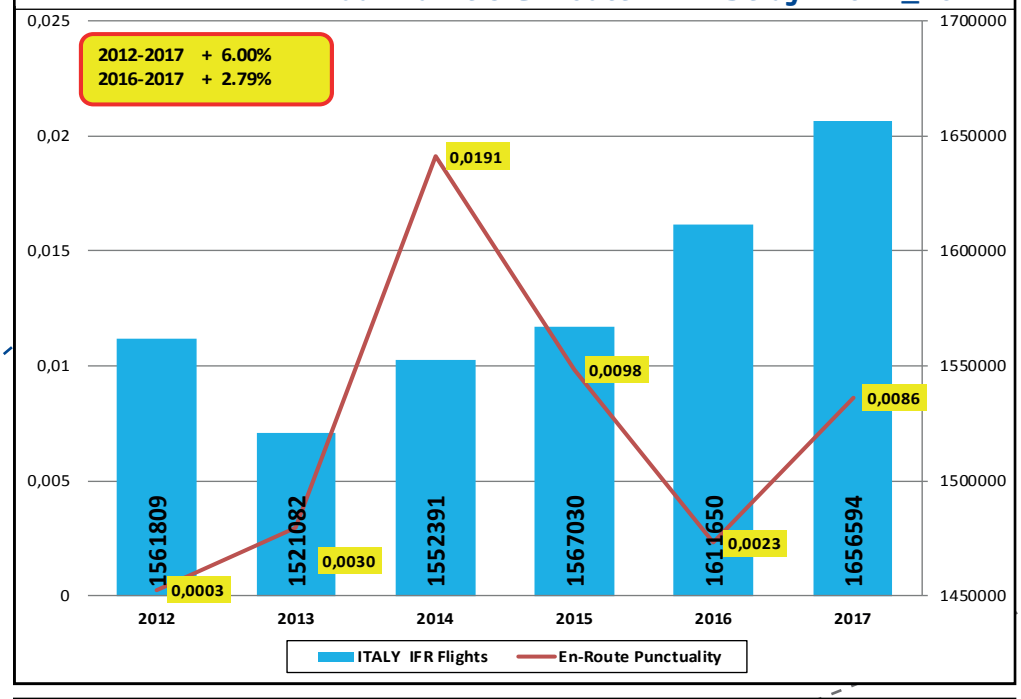


2017 - ATFM Total - Delay Causes

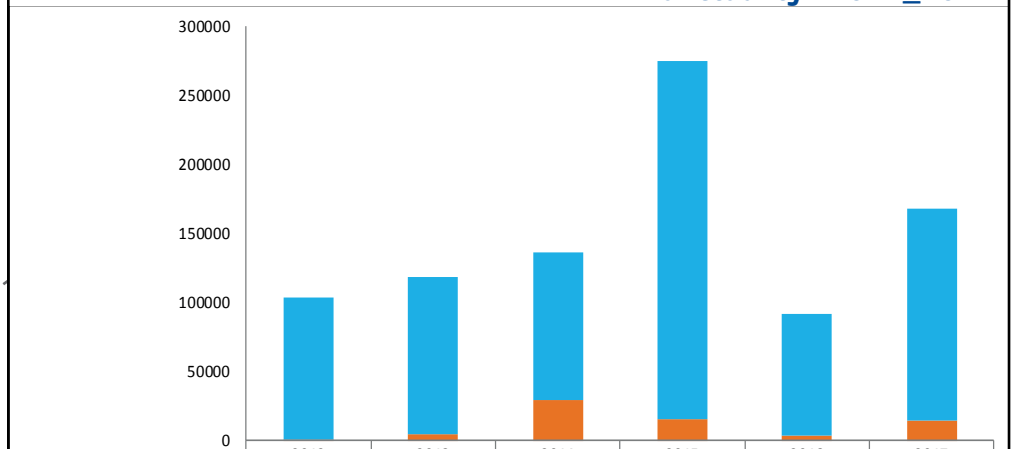


ITALY

Annual Traffic & EnRoute ATFM Delay - 2012_2017

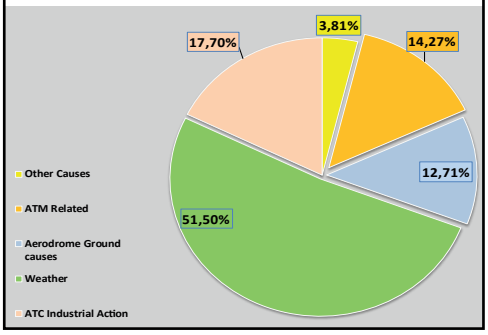


Punctuality - 2012_2017

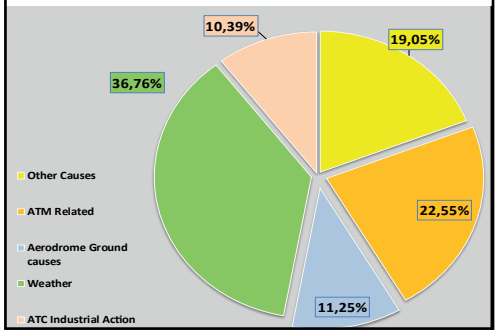


	2012	2013	2014	2015	2016	2017
ANSP Delay__Aerodrome	103170	113470	106845	259701	88350	153990
ANSP Delay__Airspace	416	4499	29668	15419	3716	14285

2016 - ATFM Total - Delay Causes

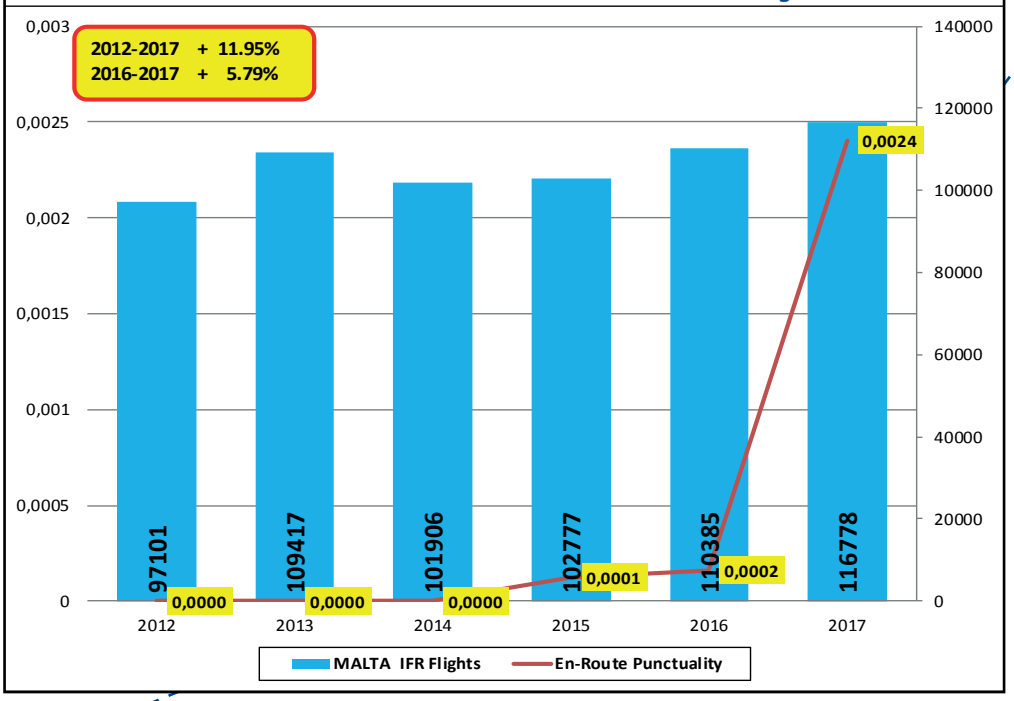


2017 - ATFM Total - Delay Causes

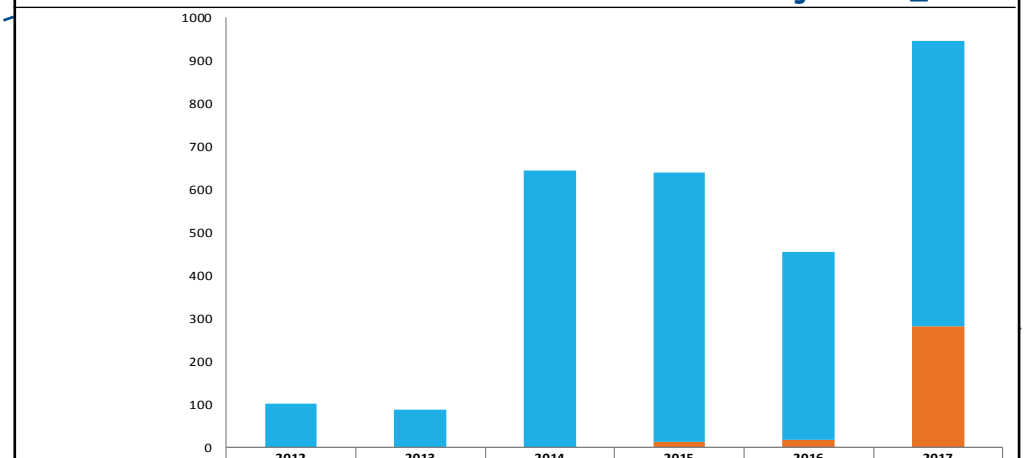


MALTA

Annual Traffic & EnRoute ATFM Delay - 2012_2017

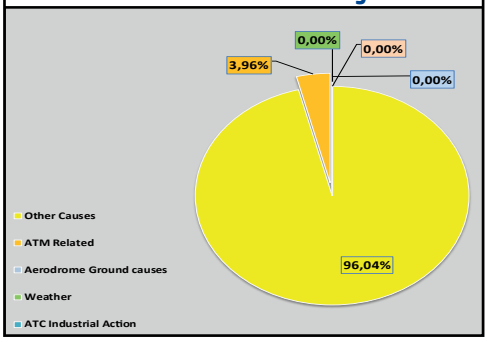


Punctuality - 2012_2017

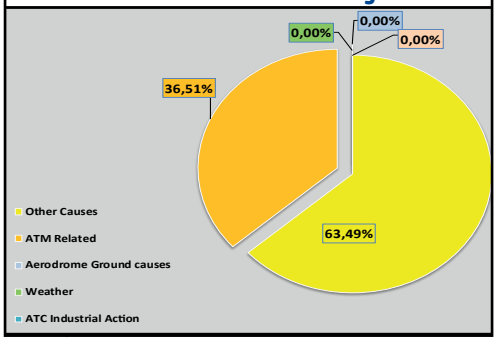


	2012	2013	2014	2015	2016	2017
ANSP Delay__Aerodrome	101	88	643	626	437	664
ANSP Delay__Airspace	0	0	0	13	18	281

2016 - ATFM Total - Delay Causes



2017 - ATFM Total - Delay Causes



FEP **METHODOLOGY**

Tbuilds he Flight Efficiency Plan builds on the solid foundations of the ongoing work among European Air Navigation Service Providers (ANSP) and Airports to improve European Airspace Design and Network Management which is also in line with the common objectives of the Single European Sky.

The FEP plan is based on two Main Areas and five Action Points.

The two Main Areas are:

Improving design on both En Route and Terminal Areas (improve existing network)

Improving Airspace and Airport utilization (improve utilisation of the existing network)

The five Action Points are:

Improve European Route Airspace design through annual improvements of European ATS Route Network, with priority to:

Implementation of a coherent package of annual improvements and of shorter Routes;
Improving efficiency for the most penalised City Pairs;
Implementation of additional Conditional Routes for main traffic flows;
Supporting initial implementation of Free Route Airspace.

Improving Airspace utilisation and Route Network Availability through:

Actively support and involve aircraft operators and the computer Flight Plan Service providers in Flight Plan quality improvements;
Gradually applying Route Availability Restrictions only where and when required;
Improving the utilisation of Civil/Military Airspace structures.

Efficient TMA design and utilisation through:

Implementing Advanced Navigation Capabilities (PBN etc.);
Implementing Continuous Descent Approaches (CDAs);
Improving arrival/departure Routes, optimised departure profiles, etc.

Optimising Airport operations through:

Implementation of Airport Collaborative Decision Making (A-CDM)
(Reduce taxi times using Collaborative Pre-Departure sequencing and variable taxi times).

Performance awareness through:

Flight Efficiency dissemination among ANSPs and AUs personnel.

ACRONYMS AND **ABBREVIATIONS**

ACC	Area Control Center	**ACDM**	Airport Collaborative Decision Making
AIRAC	Aeronautical Information Regulation And Control	**ANSP**	Air National Service Provider
ANSPC	Air National Service Provider Comity	**AO**	Aircraft Operator
ATCO	Air Traffic Controller Officer	**ATFM**	Air Traffic Flow Management
ATFCM	Air Traffic Flow Capacity Management	**ATM**	Air Traffic Management
ATC	Air Traffic Control	**ATS**	Air Traffic Service
AU	Airspace User	**CO_2**	Carbon Dioxide
DCT	Direct Segment	**DDR2**	Demand Data Repository 2
E-AMAN	Extended – Advanced Arrival Management Support	**ECAC**	European Civil Aviation Conference
EU	European Union	**FAB**	Functional Airspace Block
FEP	Flight Efficiency Plan	**FIR**	Flight Information Region
FPL	Flight Plan	**FRA**	Free Route Airspace
GCD	Great Circle Distance	**GNSS**	Global Navigation Satellite System
HFE	Horizontal Flight Efficiency	**KEA**	Key performance Environment indicator based on Actual trajectory
EC-NM	Network Manager	**NM**	Nautical Mile
PBN	Performance Based Navigation	**PRU**	Performance Review Unit
RAD	Route Availability Document	**RNP**	Required Navigation Performance
RNAV	aRea NAVigation	**RP 1–2-3**	Reference Period (1-2-3)
SES	Single European Sky	**SID**	Standard Instrumental Departure
STAR	Standard Arrival Route	**TMA**	Terminal Maneuvering Area
UTC	Universal Time Coordinated		

North West Flows

65.5%

North East Flows

13.5%

South West Flows

12%

South East Flows

9%

POINTS OF CONTACT

BLUE MED
Mediterranean FAB

Administrative Secretariat
+ 39 06 8166 4572
flightefficiencyteam@bluemed.aero

Department of Civil Aviation of Cyprus (DCAC)
Andreas Xenophontos
+357 22 305088
axenophontos@dca.mcw.gov.cy
Cyprus

Hellenic Civil Aviation Authority (HCAA)
Harry Panorios
+30 210 997 2604
hansp.fep@hcaa.gr
Greece

ENAV S.p.A. (ENAV)
Giuseppe Romano
+39 06 8166 2131
giuseppe.romano@enav.it
Italy

Malta Air Traffic Services Ltd. (MATS)
Naomi Galea
+356 2235 5340
naomi.galea@maltats.com
Malta

BLUE MED
Mediterranean FAB

BLUE MED **CONTACTS**

+ 39 06 8166 4572
info@bluemed.aero
www.bluemed.aero

PRINTED IN APRIL 2018
REALIZED BY ENAV BRAND DEVELOPMENT