

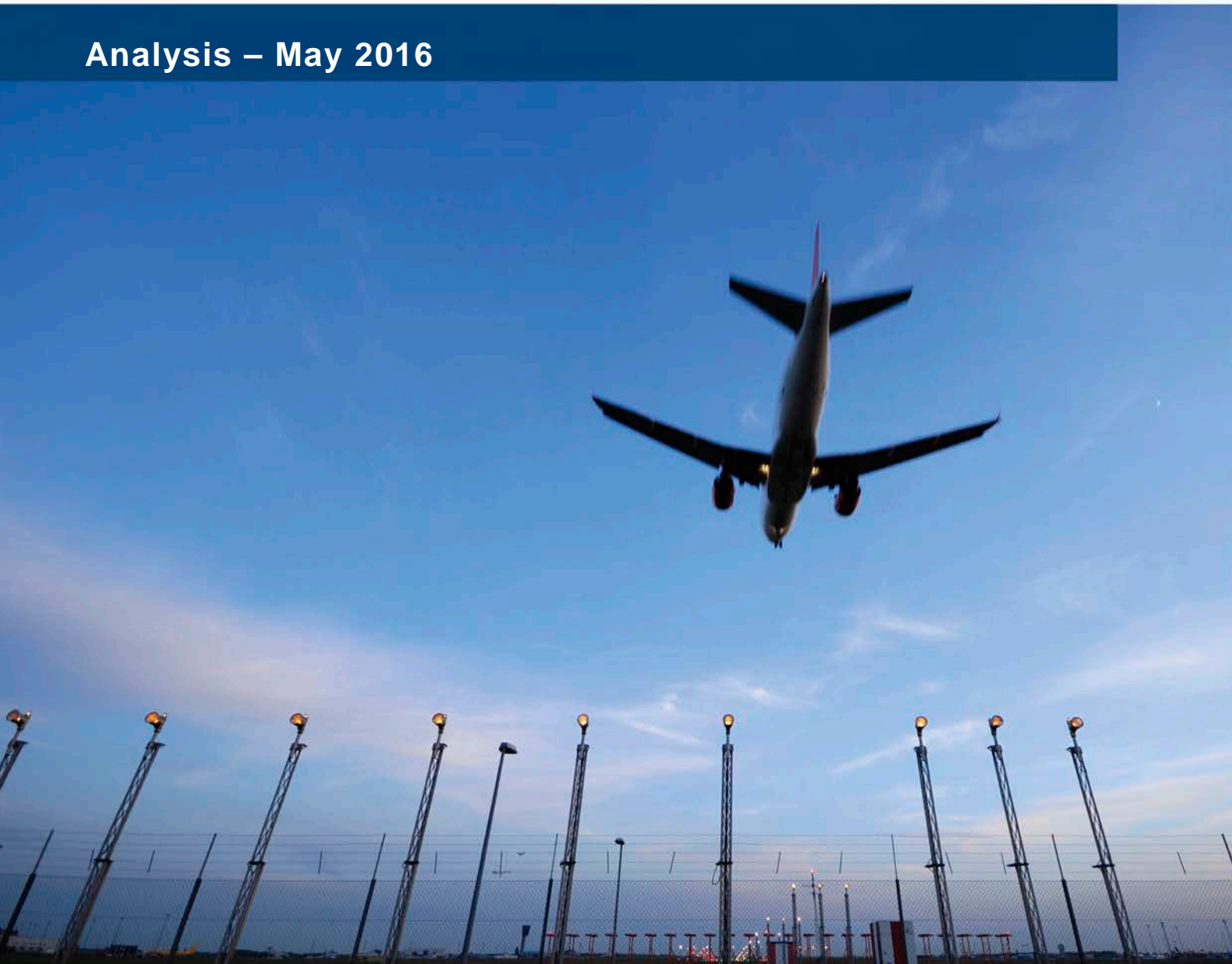


**Network Manager**  
nominated by  
the European Commission



# Monthly Network Operations Report

**Analysis – May 2016**



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## NOTICE

- Traffic and Delay Comparisons**















All traffic and delay comparisons are between report month and equivalent month of previous year, unless otherwise stated.

- NM Area**

All figures presented in this report are for the geographical area that is within Network Manager's responsibility (NM area).

- Regulation Reason Groupings**

The table below shows the colour coding used in the report charts.

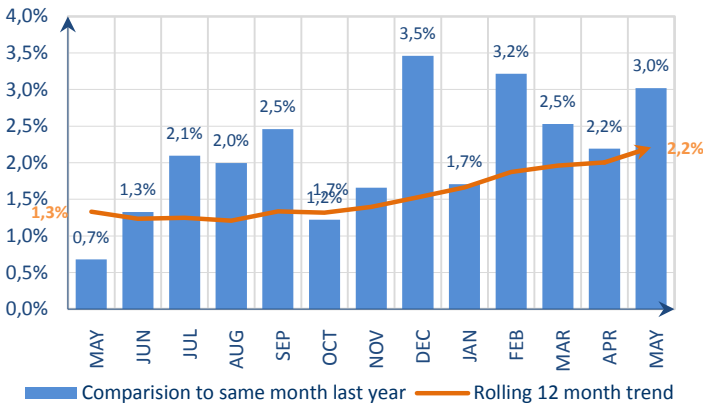
	EN-ROUTE CAPACITY (ATC)		AIRPORT CAPACITY (ATC)
	EN-ROUTE STAFFING (ATC)		AIRPORT STAFFING (ATC)
	EN-ROUTE DISRUPTIONS (ATC)		AIRPORT DISRUPTIONS (ATC)
	EN-ROUTE CAPACITY		AIRPORT CAPACITY
	EN-ROUTE DISRUPTIONS		AIRPORT DISRUPTIONS
	EN-ROUTE EVENTS		AIRPORT EVENTS
	EN-ROUTE WEATHER		AIRPORT WEATHER

- Reporting Assumptions and Descriptions**

For further information on the NM Area and the regulation reason groupings, go to the Reporting Assumptions and Descriptions document available on the EUROCONTROL website at <http://www.eurocontrol.int/articles/network-operations-monitoring-and-reporting>.

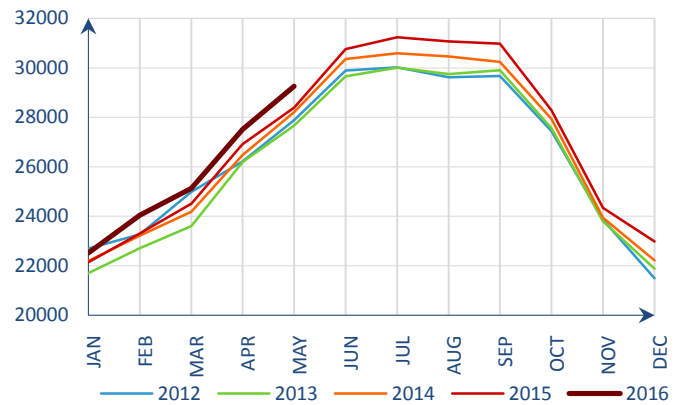
# 1. TOTAL TRAFFIC

Monthly traffic trend



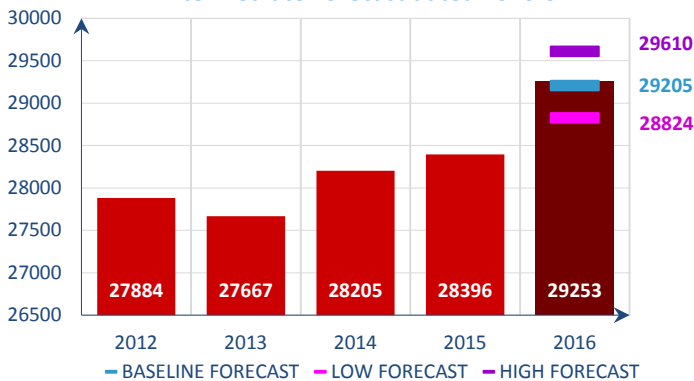
Traffic increased by 3.0 % in May 2016<sup>i</sup>.

Average daily traffic for last 5 Years



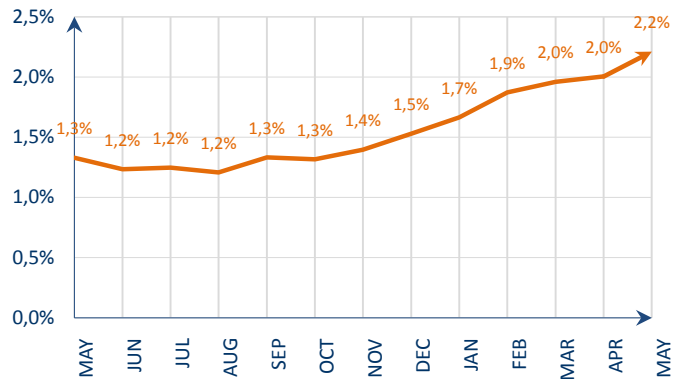
Average daily traffic in May 2016 was the highest May traffic recorded since 2001.

Average daily traffic in May for last 5 Years  
Intermediate Forecast dated 2016-02



The traffic increase of 3.0% for May was just above the baseline forecast updated in February 2016.

12 months rolling traffic trend



This graph shows the variation in average daily traffic for the last 12-month period relative to previous 12-months. The average daily traffic from June 2015 to May 2016 was 2.2% higher than the average from June 2014 to May 2015. The trend shows a continuous recovery in traffic.

European flight growth of 3% in May was in line with the forecast.

With an increase of 5%, the traditional scheduled segment was the main driver of growth in May and took over from low-cost which rose by 3.5%. The business aviation and all-cargo segments were up by 2.2% and 1.7% respectively. Charter was the weakest market segment in May, with a fall of 23%, resulting from traffic declines from/to Russia, Egypt, Tunisia and Turkey but also from aircraft operators, namely SAS and Thomas Cook UK, filing a different flight type compared with last year.

In May 2016, 16 states contributed most to the growth of local traffic<sup>ii</sup> in Europe and together added 1,600 daily flights to the network. UK was the top contributor with record high 350 extra daily flights thanks to a solid increase in its international arrivals/departures, boosted by half-term holiday. Spain added 250 daily flights, France, Italy and Lisbon (FIR) added each circa 125 daily flights and completed the top five contributors to growth in May. At the other end of the scale, Turkey saw 155 fewer daily flights mainly due to its international arrival/departure flow which went down 12% in May as a result of security concerns impacting tourism from Russia and North West Europe.

The aircraft operators that added the most flights to the network on a daily basis were Ryanair (+169 flights), easyJet (+71 flights), Vueling and Wizzair (each +60 flights).

The top three extra-European partners in average daily flights on flows in both directions in May 2016 were the United States (1000 flights, up 6%), the Russian Federation (690 flights, down 21%) and the United Arab Emirates (310 flights, up 8%). Traffic flows between Europe and Egypt continued to decline and were down 39% to 130 flights per day on average whereas traffic flows between Europe and Tunisia decreased by 32% to an average of 110 daily flights in May 2016.

For more information on EUROCONTROL Forecasts, go to <http://www.eurocontrol.int/statfor/sid>.

Nine of the top ten airports had positive traffic growth. Overall, the largest traffic increases in May 2016 were at Birmingham, Lisbon, London/Luton, Bucharest and Manchester airports. The largest traffic decreases were at Antalya, Frankfurt, Brussels and Berlin/Tegel airports.

Seven of the top ten aircraft operators had more traffic compared to May 2015. The operators with the highest traffic growth were Olympic, Transavia France, Qatar, LOT/Polish airlines, Wizz Air, Flybe and Emirates. Germanwings, Norwegian Air Shuttle, Aegean and Sunexpress Airlines recorded the highest traffic decrease.

Ryanair's increase is partially due to an increase in fleet size which is due to continue throughout 2016, although it slowed down from a growth rate of circa 20% during winter to 8% with the introduction of the summer schedule. The continuing transfer of flights between Lufthansa, Germanwings and Eurowings accounts for the variation among the German carriers. The traffic variation of Flybe (Finland) and Finnair, Norwegian Air Shuttle and Norwegian Air International, is due to the transfer of flights between the aircraft operators. Pegasus recorded an increase in flights due to an increase in fleet size. The traffic variation of Olympic and Aegean is due to Aegean flights operated with Olympic callsign. Transavia France increase of traffic was mainly due to the opening of new routes inside Europe.

N°	ADEP	ADEP NAME	201605	%	N°	ICAO	AIR OPERATOR	201605	%
1	EHAM	AMSTERDAM/SCHIPHOL	719	5,3%	1	RJR	RYANAIR	1944	9,5%
2	LFPG	PARIS CH DE GAULLE	682	1,4%	2	DLH	DEUTSCHE LUFTHANSA	1381	-4,0%
3	EGLL	LONDON/HEATHROW	670	0,1%	3	EZY	EASYJET	1320	5,7%
4	EDDF	FRANKFURT MAIN	664	-3,5%	4	THY	TURKISH AIRLINES	1309	4,2%
5	LTBA	ISTANBUL-ATATURK	645	0,7%	5	AFR	AIR FRANCE	916	-2,7%
6	EDDM	MUENCHEN	551	2,8%	6	SAS	SCANDINAVIAN AIRLINES SYSTEM	889	1,1%
7	LEMD	ADOLFO SUAREZ MADRID-BARAJA	533	2,9%	7	BAW	BRITISH AIRWAYS	726	2,6%
8	LEBL	BARCELONA/EL PRAT	458	5,9%	8	KLM	KLM ROYAL DUTCH AIRL	656	2,1%
9	LIRF	ROMA/FIUMICINO	451	4,9%	9	BER	AIR BERLIN, INC.	586	-1,7%
10	EGKK	LONDON/GATWICK	411	4,5%	10	AZA	ALITALIA	574	4,1%
11	EKCH	KOBENHAVN/KASTRUP	377	4,4%	11	VLG	VUELING AIRLINES SA	561	12,1%
12	LSZH	ZURICH	371	1,3%	12	BEE	JERSEY EUROPEAN T/A FLYBE	427	14,1%
13	LOWW	WIEN SCHWECHAT	357	2,3%	13	PGT	PEGASUS HAVA TASI	422	7,4%
14	ENGM	OSLO/GARDERMoen	348	1,3%	14	SWR	SWISS INTERNATIONAL	416	-0,8%
15	LFPO	PARIS ORLY	347	5,8%	15	NAX	NORWEGIAN AIR SHUTTLE	397	-23,3%
16	LEPA	PALMA DE MALLORCA	343	7,5%	16	WZZ	WIZZ AIR	386	18,3%
17	ESSA	STOCKHOLM-ARLANDA	342	4,3%	17	AUA	AUSTRIAN AIRLINES	368	7,5%
18	EBBR	BRUSSELS NATIONAL	326	-2,8%	18	GWJ	GERMAN WINGS	365	-25,7%
19	LTFJ	ISTANBUL/SABIHA GOKCEN	322	9,5%	19	WFI	WIDEROE	346	1,0%
20	EDDL	DUESSELDORF	314	3,2%	20	FIN	FINNAIR OY	318	-0,1%
21	EIDW	DUBLIN	310	10,1%	21	TAP	TAP/AIR PORTUGAL	304	11,8%
22	EGCC	MANCHESTER	281	11,1%	22	AFL	AEROFLOT-RUSSIAN	254	2,1%
23	LGAV	ATHINA/ELEF THERIOS VENIZELOS	268	8,3%	23	IBE	IBERIA	242	7,1%
24	EDDT	BERLIN-TEGEL	259	-1,2%	24	LOT	LOT-POLISH AIRLINES	236	19,6%
25	LPPT	LISBOA	254	15,2%	25	HOP	HOP (MERGE OF BZH + RAE + RLA)	232	10,4%
26	EGSS	LONDON/STANSTED	254	5,3%	26	AEA	AIR EUROPA	229	-1,3%
27	LSGG	GENEVA	251	1,2%	27	ANE	AIR NOSTRUM	228	-1,1%
28	EFHK	HELSINKI-VANTAA	240	-0,4%	28	BEL	BRUSSELS AIRLINES	226	4,0%
29	LIMC	MILANO MALPENSA	238	3,1%	29	AEE	AEGEAN AIRLINES	222	-19,8%
30	LFMN	NICE-COTE D'AZUR	229	4,1%	30	EIN	AER LINGUS TEORANTA	220	0,3%
31	EPWA	CHOPINA W WARSZAWIE	215	7,2%	31	TOM	THOMSON FLY LTD	200	2,8%
32	EDDH	HAMBURG	215	0,0%	32	UAE	EMIRATES	194	13,3%
33	EGGW	LONDON/LUTON	196	13,7%	33	RAM	ROYAL AIR MAROC	192	7,1%
34	EDDK	KOELN-BONN	192	8,6%	34	TRA	TRANSAVIA.COM	188	9,8%
35	LTAI	ANTALYA	192	-34,5%	35	QTR	QATAR AIRWAYS COMP.	175	29,5%
36	LEMG	MALAGA/COSTA DEL SOL	190	9,4%	36	IBK	NORWEGIAN AIR INTERNATIONAL	155	
37	LKPR	PRAHA RUZYNE	183	1,1%	37	EZS	EASY JET SWITZERLAND	150	-1,3%
38	EDDS	STUTTGART	178	1,1%	38	EWG	EUROWINGS AG	148	0,0%
39	EGPH	EDINBURGH	177	7,0%	39	UAL	UNITED AIRLINES INC.	147	0,2%
40	LIML	MILANO LINATE	169	3,1%	40	EXS	JET2.COM	146	2,7%
41	LLBG	TEL AVIV/BEN GURION	162	8,7%	41	BCS	EUROPEAN AIR TRANSP.	142	5,4%
42	EGBB	BIRMINGHAM	160	16,1%	42	NJE	NETJETS	142	-0,1%
43	LFLL	LYON SAINT-EXUPERY	158	2,9%	43	DAL	DELTA AIR LINES INC.	140	4,0%
44	LROP	BUCURESTI/HENRI COANDA	146	11,3%	44	AUI	UKRAINE INTERNATIONAL	132	12,9%
45	LIPZ	VENEZIA TESSERA	140	7,3%	45	BTI	AIR BALTIC CORPORAT.	127	0,5%
46	LFML	MARSEILLE PROVENCE	139	3,2%	46	OAL	OLYMPIC	123	124,5%
47	LTAC	ANKARA-ESENBOGA	138	4,0%	47	MON	MONARCH AIRLINES LTD	123	3,5%
48	LHBP	BUDAPEST LISZT FERENC INT.	138	7,1%	48	AAL	AMERICAN AIRLINES	122	-1,4%
49	EGPF	GLASGOW	136	0,0%	49	TVF	TRANSAVIA FRANCE	119	43,0%
50	EDDB	SCHOENEFELD-BERLIN	135	0,0%	50	SXS	SUNEXPRESS AIRLINES	118	-8,5%
<b>TOTALS and % TOTAL TRAFFIC</b>			<b>15174</b>	<b>57,4%</b>	<b>TOTALS and % TOTAL TRAFFIC</b>			<b>19683</b>	<b>67,2%</b>

Top 50 Departure Airports with average daily traffic and percentage compared to same period of previous year

Top 50 Air Operators with average daily traffic and percentage compared to same period of previous year

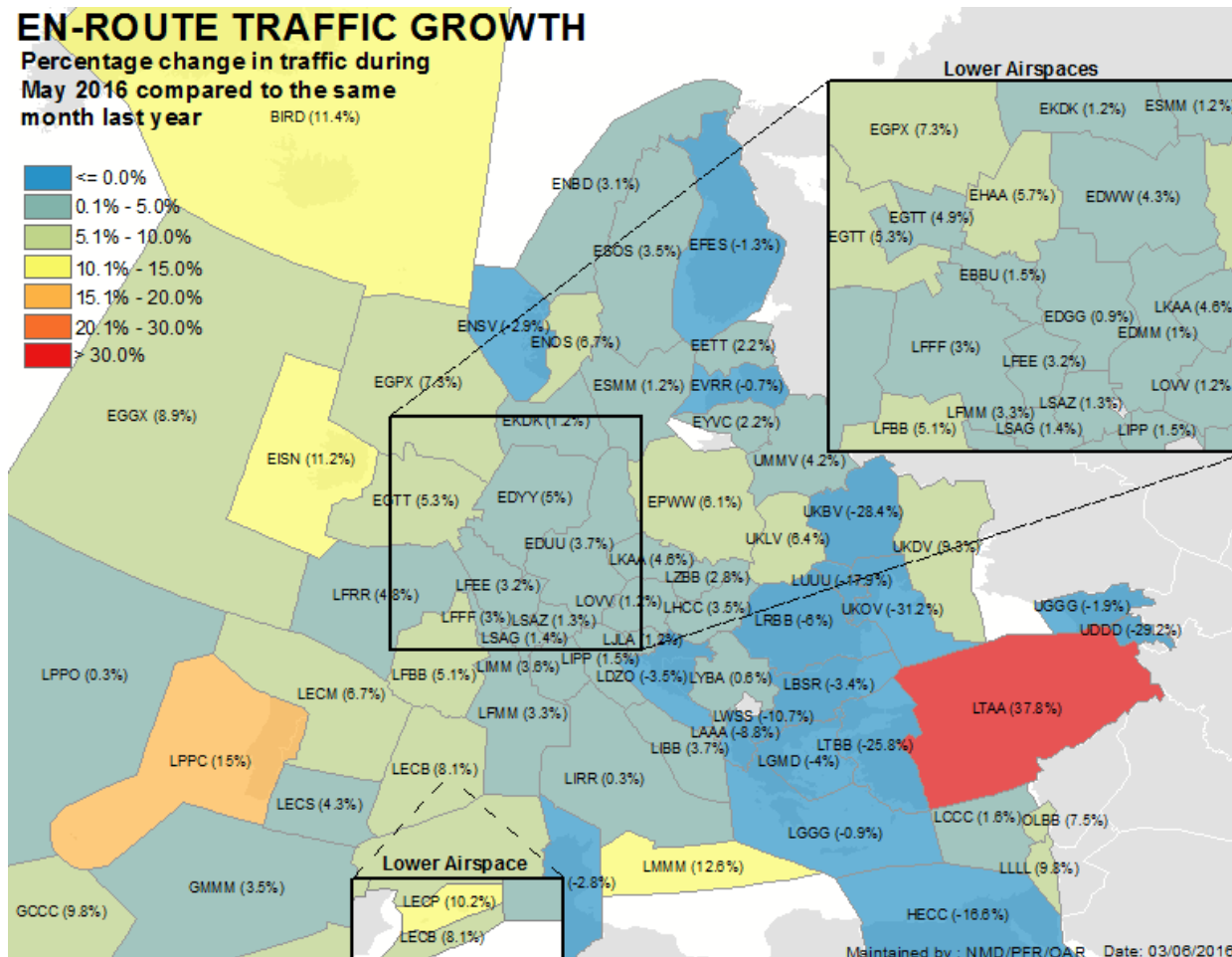
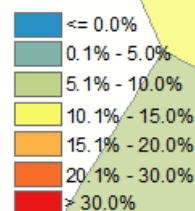
N°	ICAO	AIR OPERATOR	201605	%
		Unidentified	2202	-6,1%

Average daily traffic and percentage compared to same period of previous year for all flights where Air Operators can't be identified



# EN-ROUTE TRAFFIC GROWTH

Percentage change in traffic during May 2016 compared to the same month last year



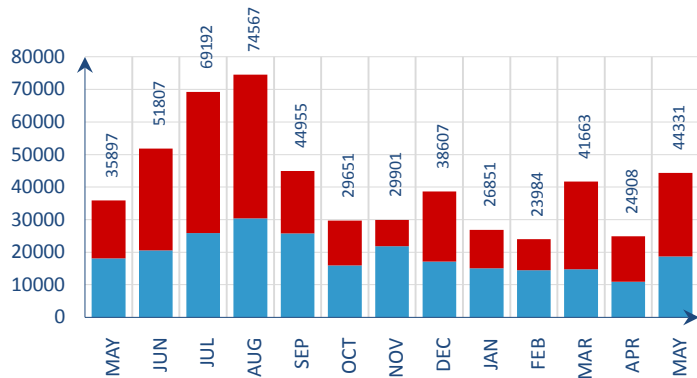
Maintained by : NMD/PFR/OAR Date: 03/06/2016

Nº	ASP ID	ASP NAME	201605	%	Nº	ASP ID	ASP NAME	201605	%
1	BIRDACC	REYKJAVIK ACC	353	11,7%	39	LFBBALL	BORDEAUX ALL ACC	2746	5,1%
2	DAAAACC	ALGERS ACC	459	10,1%	40	LFEACC	REIMS U/ACC	2867	3,2%
3	DTTCAACC	TUNIS ACC	281	-2,4%	41	LPFFALL	PARIS ALL ACC	3445	2,9%
4	EBBUACC	BRUSSELS CANAC	1721	1,5%	42	LFMMACC	MARSEILLE ACC	3148	3,3%
5	EDGGALL	LANGEN ACC_FIR	3589	0,9%	43	LFMMAPP	MARSEILLE TMA	985	3,6%
6	EDMMACC	MUNCHEN ACC	3095	1,0%	44	LFRRACC	BREST U/ACC	2928	4,8%
7	EDUUUAC	KARLSRUHE UAC	5275	3,7%	45	LGGGACC	ATHINAI CONTROL	1460	-1,0%
8	EDWWACC	BREMEN ACC	1868	4,3%	46	LGMACC	MAKEDONIA CONTROL	1160	-4,1%
9	EDYYUAC	MAASTRICHT UAC	5198	5,0%	47	LHCCACC	BUDAPEST ACC	2101	3,5%
10	EETTACC	TALLIN ACC	558	2,2%	48	LIBBACC	BRINDISI ACC	759	3,7%
11	EFESACC	TAMPERE ACC	459	-1,3%	49	LIMMACC	MILANO ACC	2431	3,6%
12	EGXOCA	SHANWICK OACC	1352	8,9%	50	LIPPACC	PADOVA ACC	2023	1,5%
13	EGPXALL	SCOTTISH ACC	2730	7,3%	51	LIRRACC	ROMA ACC	2273	0,3%
14	EGTTACC	LONDON ACC	5792	5,3%	52	LILAACC	LIUBLJANA ACC	836	1,2%
15	EGTTTC	LONDON TMA TC	3992	4,9%	53	LKAAACC	PRAGUE ACC	2203	4,6%
16	EHAACC	AMSTERDAM ACC(245-)	1703	5,7%	54	LLLLACC	TEL AVIV ACC	394	9,8%
17	EIDWACC	DUBLIN ACC	677	11,0%	55	LMMMACC	MALTA ACC	322	12,6%
18	EISNACC	SHANNON ACC	1309	11,2%	56	LOVVACC	WIEN ACC	2308	1,2%
19	EKDKACC	COPENHAGEN ACC	1539	1,2%	57	LPPCACC	LISBOA ACC/UAC	1415	15,0%
20	ENBDACC	BODO ACC	599	3,1%	58	LPPOOAC	SANTA MARIA OACC	361	0,3%
21	ENOSACC	OSLO ATCC	1020	6,7%	59	LQSBACC	BOSNIA-HERZEGOVINA	104	2,0%
22	ENSVACC	STAVANGER ATCC	659	-3,0%	60	LRBBACC	BUCURESTI ACC	1683	-6,0%
23	EPWWACC	WARSAWA ACC	2052	6,1%	61	LSAGACC	GENEVA ACC	1866	1,4%
24	ESMMACC	MALMO ACC	1493	1,2%	62	LSAZACC	ZURICH ACC	2182	1,3%
25	ESOSACC	STOCKHOLM ACC	1169	3,5%	63	LTAACC	ANKARA ACC	3590	37,9%
26	EVRACC	RIGA ACC	703	-0,7%	64	LTBBACC	ISTANBUL ACC	2112	-25,7%
27	EYVACC	VILNIUS ACC	651	2,2%	65	LUUUACC	CHISINAU ACC	101	-17,9%
28	GCCACC	CANARIAS ACC/FIC	748	9,8%	66	LWSSACC	SKOPJE ACC	408	-10,7%
29	GMMMACC	CASABLANCA ACC	946	3,5%	67	LYBAACC	BEOGRADE ACC	1800	0,6%
30	HECCACC	CAIROACC	569	-16,3%	68	LZBBACC	BRATISLAVA ACC	1356	2,8%
31	LAAACC	TIRANA ACC	559	-8,8%	69	OLBBACC	BEIRUT ACC	143	7,5%
32	LBSRACC	SOFIA ACC	2103	-3,4%	70	UDDACC	YEREVAN ACC	68	-29,2%
33	LCCACC	NICOSIA ACC	905	1,6%	71	UGGGACC	TBILISI ACC	315	-1,6%
34	LDZOACC	ZAGREB ACC	1521	-3,5%	72	UKBVACC	KIEV ACC	317	-28,4%
35	LECBACC	BARCELONA ACC	2570	8,1%	73	UKDVACC	DNIPROPETROVSK ACC	47	9,3%
36	LECMALL	MADRID ALL ACC	2871	6,7%	74	UKLVACC	L'VIV ACC	265	6,4%
37	LECPACC	PALMA ACC	985	10,2%	75	UKOVACC	ODESSA ACC	192	-31,2%
38	LECSACC	SEVILLA ACC	1017	4,3%	76	UMMVACC	MINSK ACC	727	4,3%

Traffic increased in Ankara, Lisbon, Malta, Reykjavik, Shannon, Dublin and Palma ACCs. Airspace realignment in Ankara and Istanbul ACCs accounts for the variation. Increased usage of the Oceanic ATS routes by traffic avoiding French ACCs during the French ATC industrial action and increased traffic between UK and Spain accounts for the variation in Shannon, Shanwick, Lisbon, Palma, Barcelona, Malta and Canarias ACCs. Increased usage of more southerly routes for traffic routing to/from Turkey accounts for the increase in Malta ACC. Reykjavik ACC increase is due to increased domestic flights and flows to/from N. America and UK.

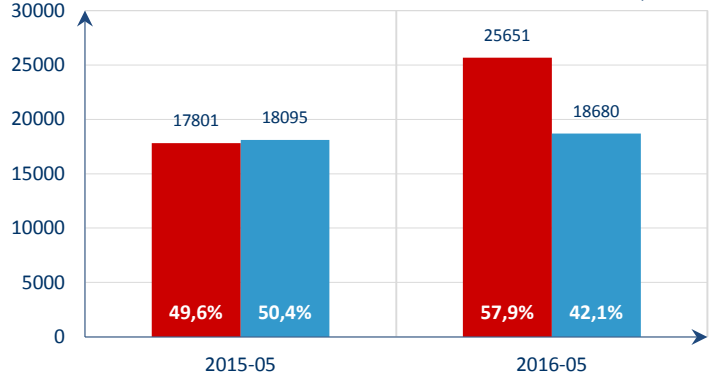
## 2. ATFM DELAY AND ATTRIBUTIONS

Average daily ATFM delays



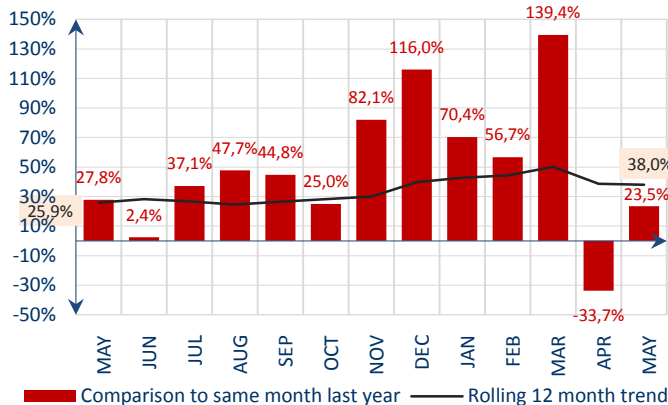
Total ATFM delays increased by 23.5% in May 2016<sup>1</sup>.

Average daily ATFM delays



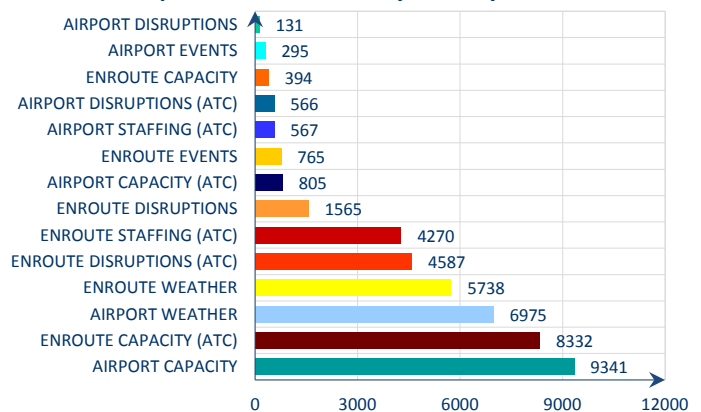
En-route ATFM delays increased by 44.1% and airport ATFM delays increased by 3.2%.

Monthly ATFM delays trend



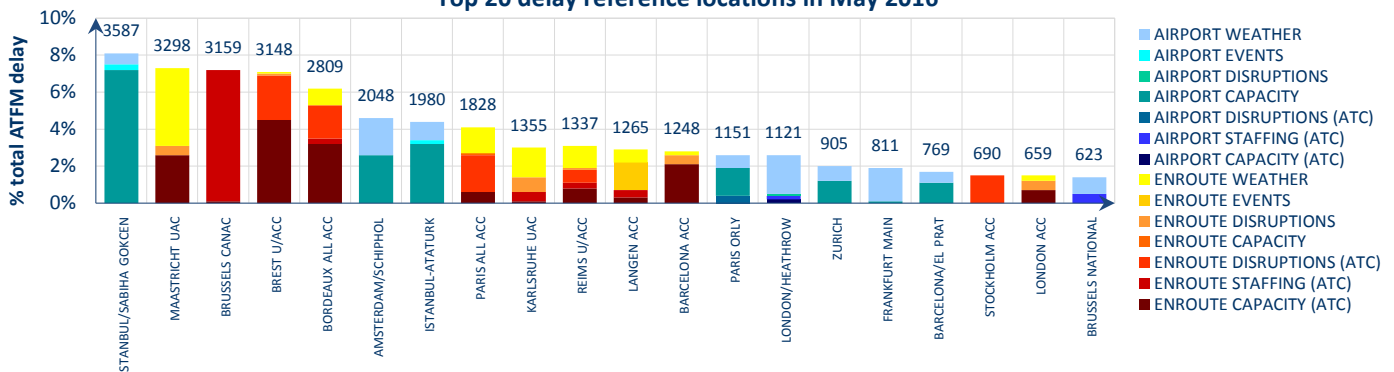
The rolling 12-month trend shows that ATFM delay was 38.0% higher during the period June 2015 – May 2016 compared to June 2014 – May 2015.

Proportion of ATFM delays in May 2016



Airport capacity (21.1%), en-route ATC capacity (18.8%) and airport weather (15.7%) were the main causes of ATFM delays in May 2016.

Top 20 delay reference locations in May 2016

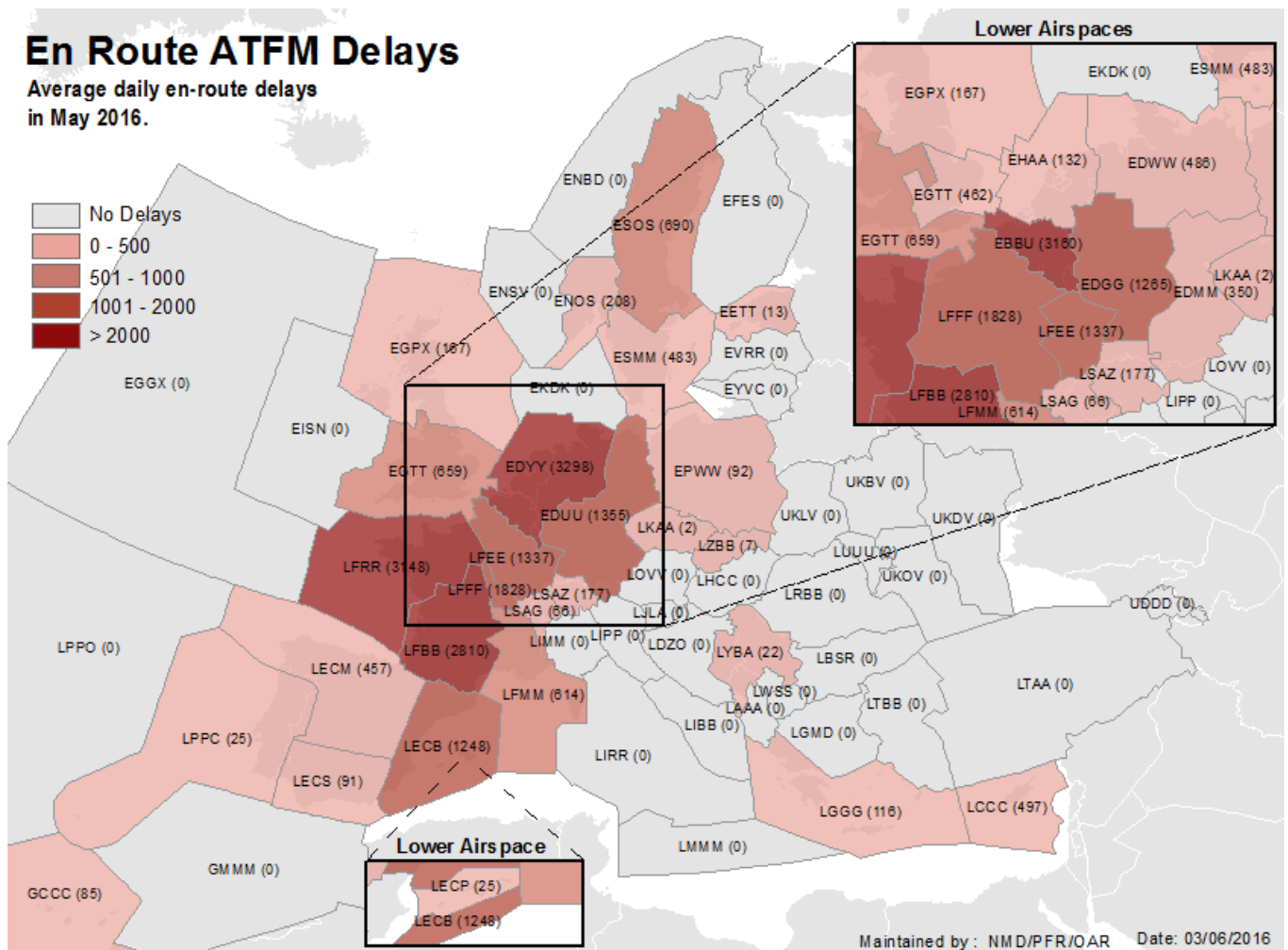


These are the top 20 delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

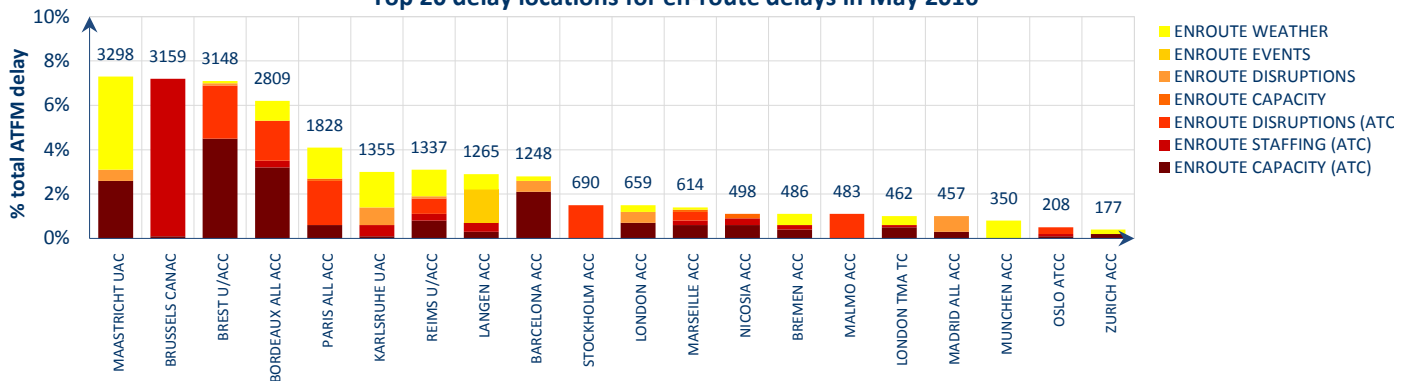
- Aerodrome capacity issues generated delays at Istanbul/Sabiha Gökçen airport, and to a lesser extent Istanbul/Ataturk Amsterdam/Schiphol, Paris/Orly, Zurich and Barcelona airports;
- En-route weather generated delays in Maastricht, Karlsruhe, Paris, Reims, Bordeaux and Langen ACCs;
- Brussels ACC recorded delays due to several ATC staffing issues during the month;
- French industrial action on 19 May and on 26 May resulted in delays for Brest, Bordeaux, Paris and Reims ACCs;
- En-route ATC capacity delays in Brest, Maastricht, Bordeaux, Barcelona, London, Madrid and Paris ACCs;
- Seasonal weather (fog, strong winds, rain, thunderstorms) impacted operations particularly at Amsterdam/Schiphol, Istanbul/Ataturk, Paris/Orly, London/Heathrow, Frankfurt Main, Zurich and Barcelona airports;
- Stockholm ACC recorded en-route disruptions delays due to technical failures on 19 May and 30 May;

### 3. EN-ROUTE ATFM DELAYS

#### EN-ROUTE ATFM DELAY PER LOCATION



Top 20 delay locations for en-route delays in May 2016

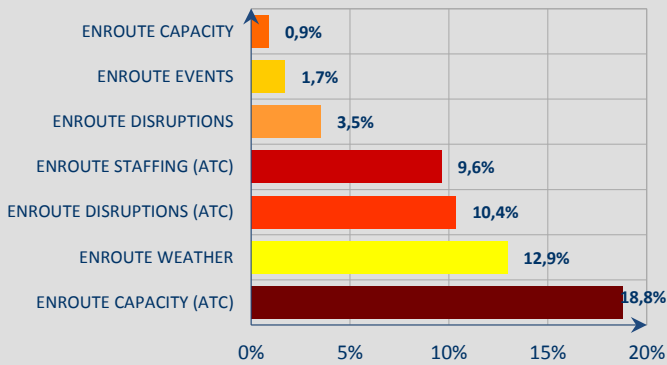


These are the top 20 en-route ATFM delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

The top 20 en-route ATFM delay locations generated **55%** of the monthly total (network) ATFM delay. The top 5 en-route ATFM delay locations generated **32%** of the monthly total (network) ATFM delay.

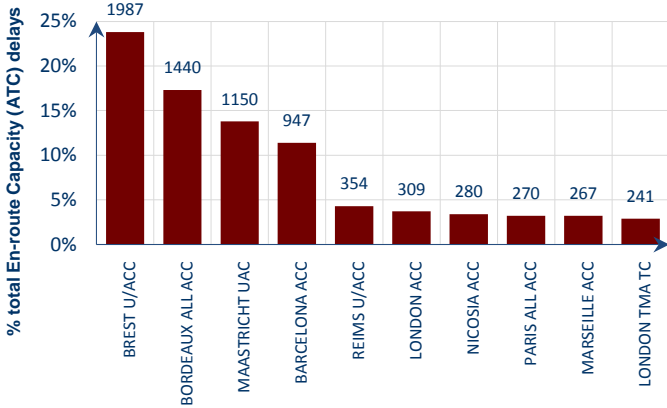
# EN-ROUTE ATFM DELAY PER DELAY GROUP

Reasons for en-route delays in May 2016



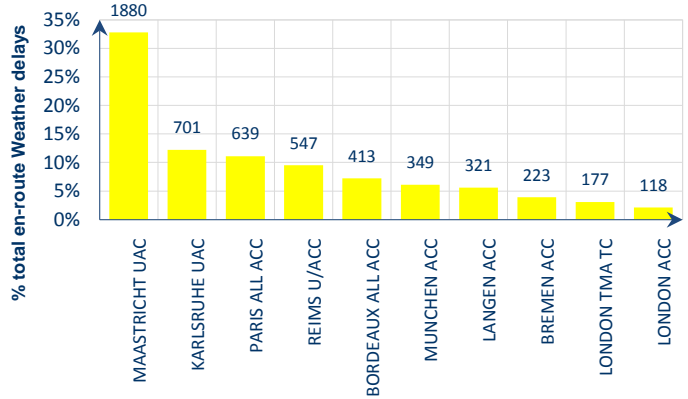
En-route ATFM delays accounted for 57.9% of all ATFM delays. Most of this delay was caused by en-route ATC capacity, en-route weather and en-route ATC disruptions as explained in detail below. The other causes were: *En-route ATC staffing*; Brussels ACC was the biggest generator and represented 73.2% of all en-route ATC staffing delays; *En-route disruptions*; Karlsruhe, Madrid, Maastricht, London and Barcelona ACCs all generated delays due to the application of ATFM protective measures during the French ATC industrial action; *En-route events*; Langen ACC generated 84.4% of all en-route events delays due to the implementation of paperless system.

Top en-route Capacity (ATC) delays in May 2016



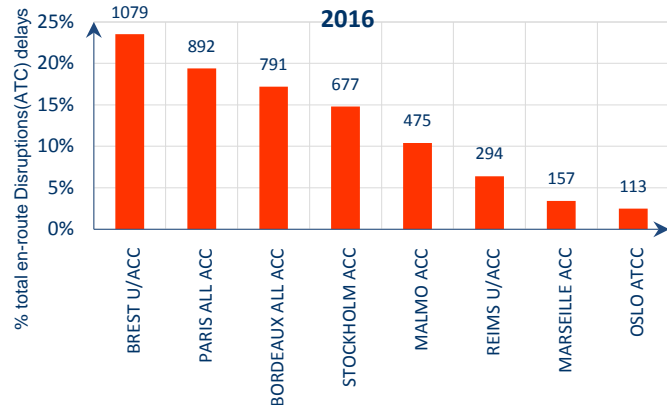
Brest, Bordeaux, Maastricht and Barcelona ACCs the biggest generators of en-route ATC capacity delays in May. The top three ACCs for en-route ATC capacity accounted for 18% of the total en-route ATFM delay in May.

Top en-route Weather delays in May 2016



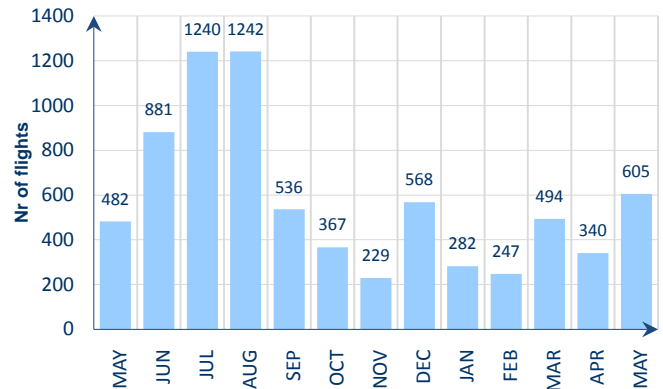
Thunderstorms, rain and/or turbulence impacted operations at several ACCs. Maastricht ACC was badly impacted mainly between 27 and 30 May.

Top en-route Disruption (ATC) delays in May 2016



The French ATC industrial action generated significant en-route disruption delays at French ACCs. Delays recorded at Stockholm and Malmo ACCs due to technical failures.

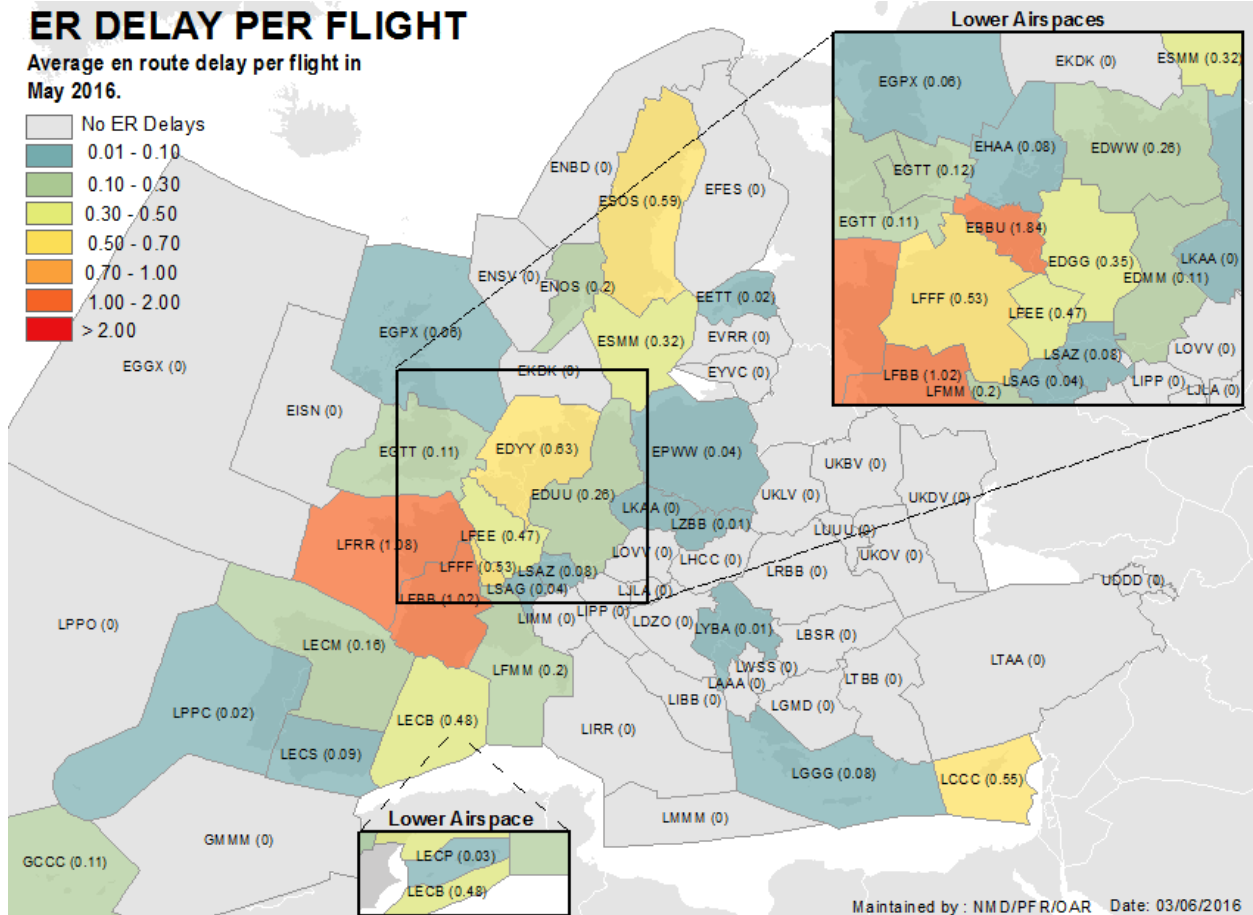
Average daily flights >= 15 min en-route delay



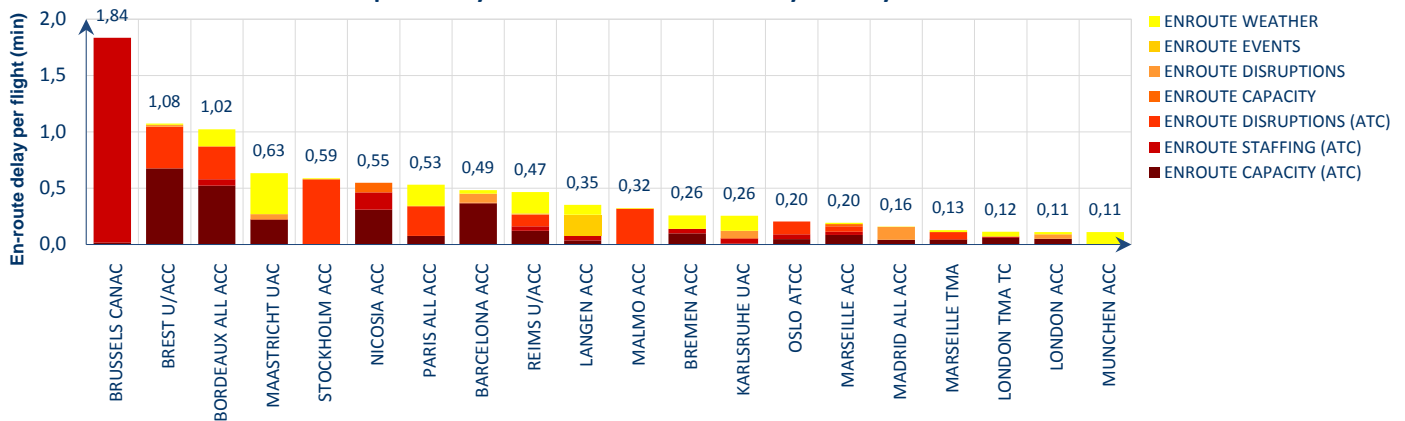
An average of 605 flights/day received an en-route ATFM delay of at least 15 minutes in May 2016. The corresponding figure for May 2015 was 482 flights/day.



# EN-ROUTE ATFM DELAY PER FLIGHT



**Top 20 delay locations for en-route delays in May 2016**



These are the top 20 average en-route ATFM delay per flight generating locations for the reporting month. Figures are the average en-route ATFM delay per flight in minutes for the individual locations.

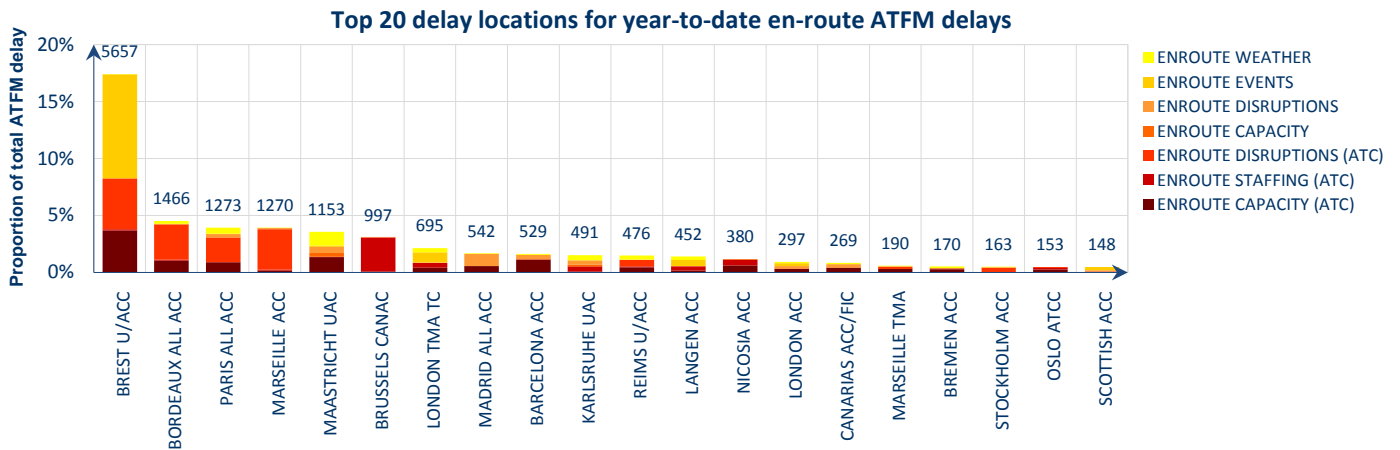
Brest ACC average en-route ATFM delay/flight decreased for the first time this year from 1.94 min/ft in April 2016 to 1.08 min/ft in May 2016 with the finalisation of ERATO implementation.

Brussels ACC average en-route ATFM delay/flight increased from 1.11 min/ft in April 2016 to 1.84 min/ft in May 2016.

Bordeaux ACC average en-route ATFM delay/flight increased from 0.19 min/ft in April 2016 to 1.02 min/ft in May 2016.

Maastricht ACC average en-route ATFM delay/flight increased from 0.18 min/ft in April 2016 to 0.63 min/ft in May 2016.

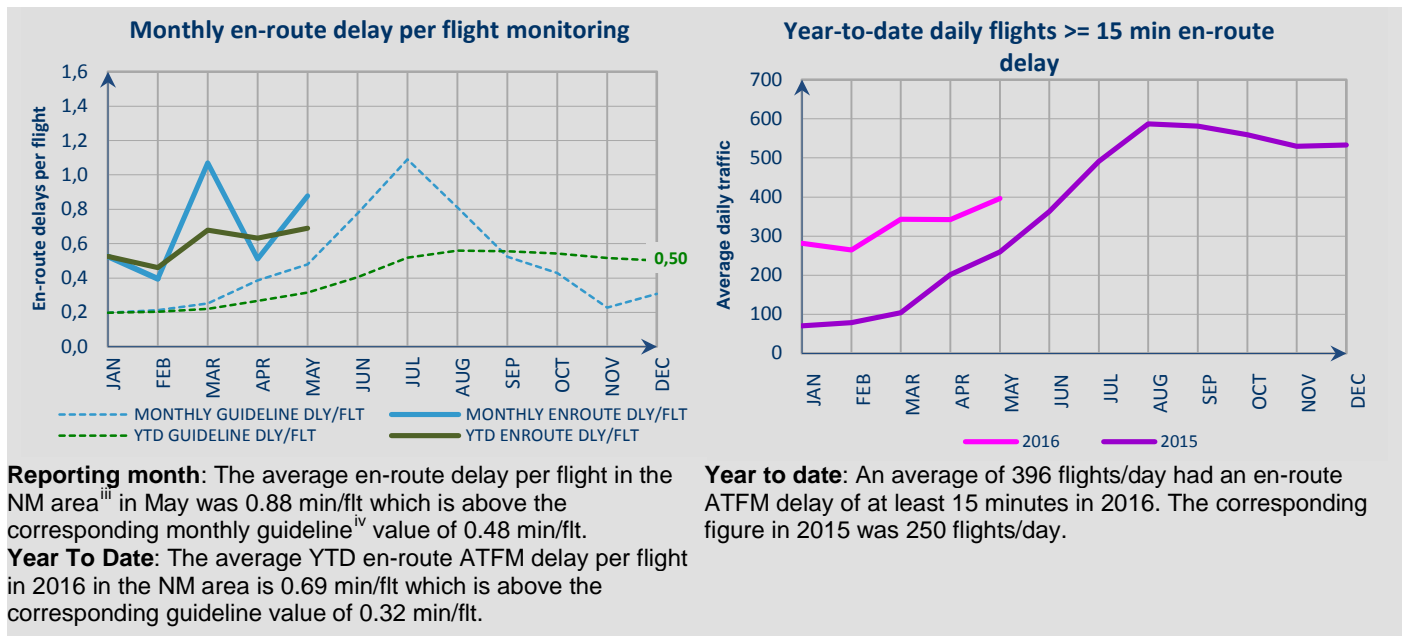
# EN-ROUTE ATFM DELAY YEAR-TO-DATE



These are the top 20 en-route delay locations for 2016 with respect to the total ATFM delay. Figures are the average daily en-route delay in minutes for the individual locations.

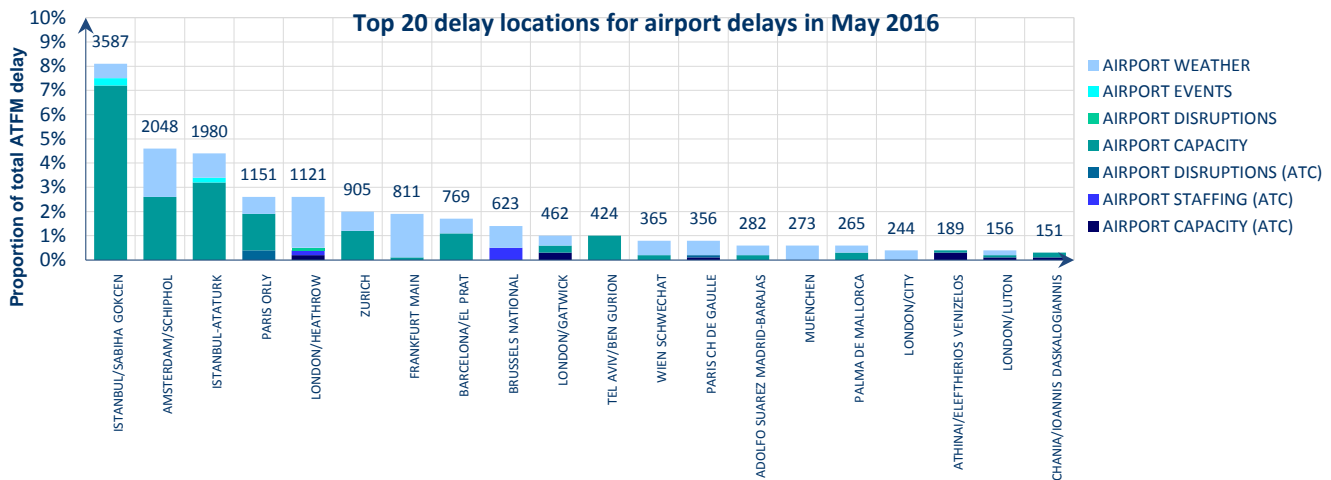
The top 20 en-route delay locations generated **51.6%** of the total ATFM (network) delay.

The top 5 en-route delay locations generated **33.3%** of the total ATFM (network) delay.



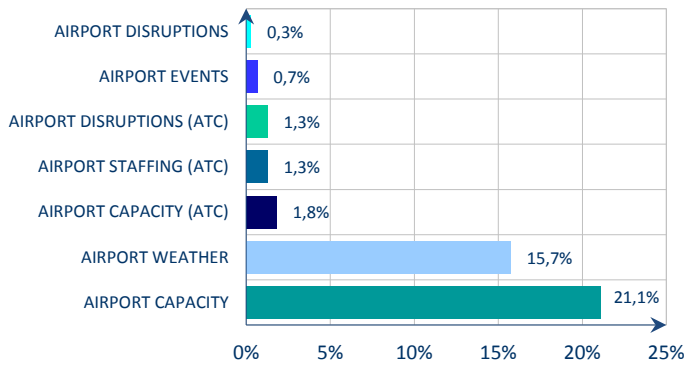
# 4. AIRPORT/TMA ATFM DELAYS

## AIRPORT/TMA ATFM DELAY PER LOCATION



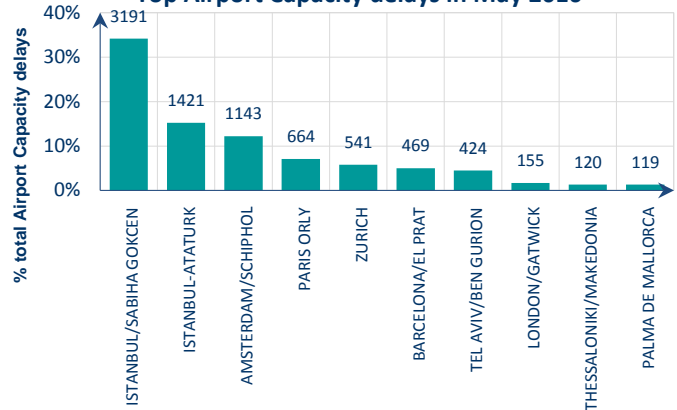
## AIRPORT/TMA ATFM DELAY PER DELAY GROUPS

Reasons for airport delays in May 2016



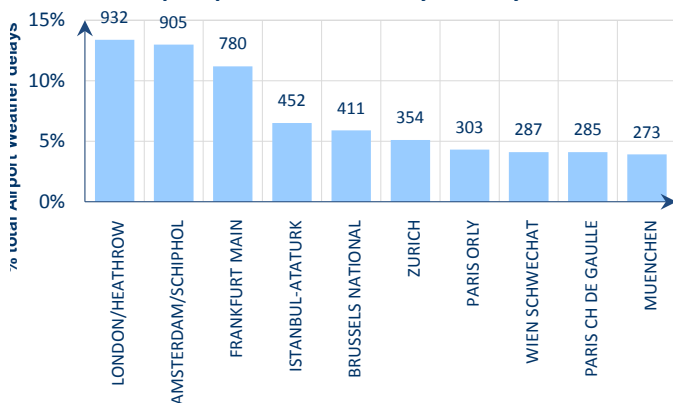
Airports accounted for 42.1% of all ATFM delays in May 2016, mainly due to capacity and airport weather.

Top Airport Capacity delays in May 2016



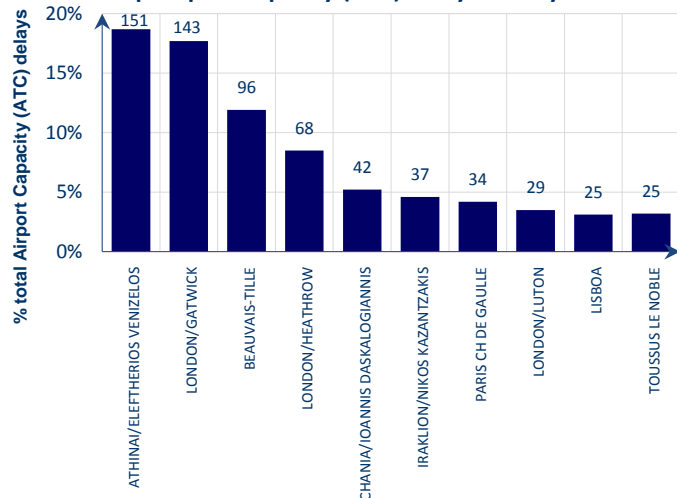
Airport capacity delays at Istanbul/Sabiha Gökçen, Istanbul/Ataturk, Amsterdam/Schiphol and, to a lesser extent, Paris/Orly and Zurich airports.

Top Airport Weather delays in May 2016



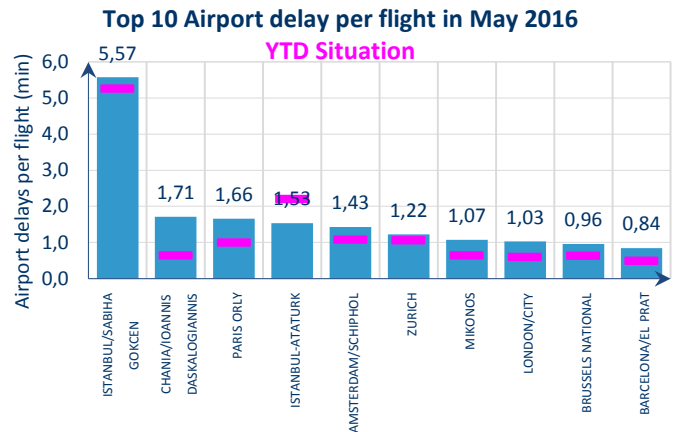
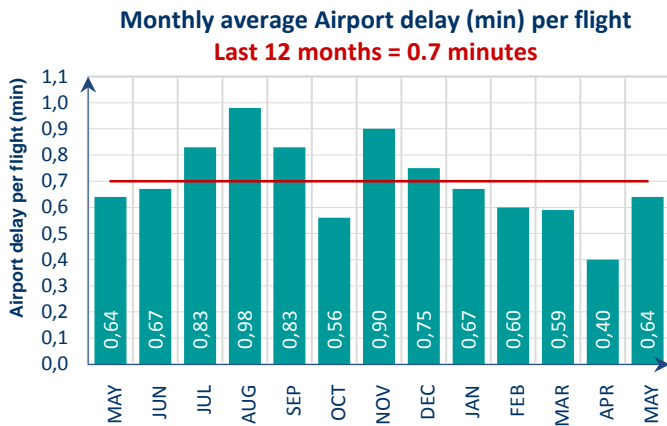
Seasonal weather (fog, strong winds, thunderstorm and rain) particularly impacted operations at London/Heathrow, Amsterdam/Schiphol (in combination with work in progress) and Frankfurt airports.

Top Airport Capacity (ATC) delays in May 2016



Athens airport generated delay due to the application of ATFM measures on departing aircraft. Delays generated at Gatwick airport due to separation between arrival and departure flights.

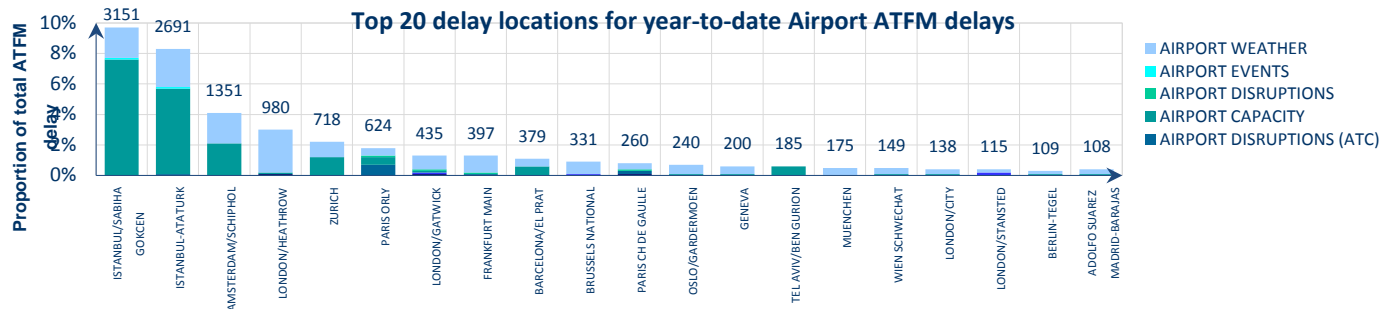
# AIRPORT/TMA ATFM DELAY PER FLIGHT



Average airport/TMA delay per flight in May 2016 was the same as May 2015 0.64 min/ft.

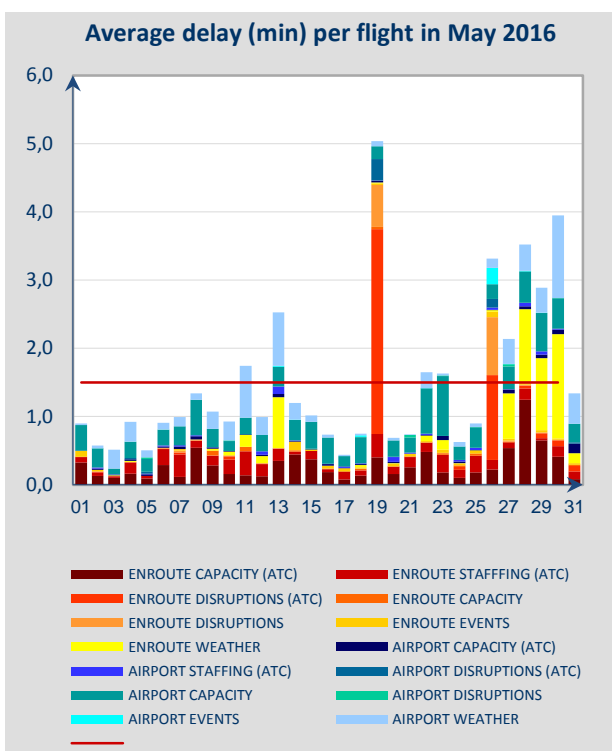
Istanbul/Sabiha Gökçen had the highest delay per flight in May, mainly due to airport capacity and seasonal weather. Istanbul/Ataturk airport generated an average delay per flight well below its year to date average.

# AIRPORT/TMA ATFM DELAY YEAR-TO-DATE



The top 20 Airport/TMA delay locations have generated **38.9%** of the total ATFM (network) delay in 2016. The top 5 Airport/TMA delay locations have generated **27.3%** of the total ATFM (network) delay in 2016.

# 5. DAILY EVOLUTION



Ten days in May 2016 had an average delay/ft above 1.5 min/ft. These were the most significant days;

**11 May;** Wide spread weather issues, in particular in London TMA; Staffing issues in Brussels ACC led to almost whole airspace being regulated all day with high delays.

**13 May;** Weather issues in the afternoon affecting both airports and airspaces; Staffing issues in Brussels ACC and at London TMA.

**19 May;** En-route ATC disruption delays in Brest, Marseille, Paris, Reims and Bordeaux ACCs due to the French ATC industrial action, with additional delays in Maastricht, Madrid, Barcelona and Karlsruhe ACCs; Malmö and Stockholm ACCs generated delay due to communication systems failure; Staffing issues in Brussels ACC.

**22 May;** Airport capacity at Istanbul/Sabiha Gökçen and Istanbul/Ataturk airports was the main issue; En-route ATC capacity in Brest, Barcelona and Maastricht ACCs.

**23 May;** Airport capacity delays were generated at Amsterdam/Schiphol airport due to maintenance on RWY 18C/36C;

**26 May;** En-route ATC disruption delays in Brest, Marseille, Paris, Reims and Bordeaux ACCs due to the French ATC industrial action, with additional delays in Maastricht, Madrid, Barcelona, Sevilla, Canarias, London and Karlsruhe ACCs; Afternoon regulation on arrival flights at Istanbul/Sabiha Gökçen and Istanbul/Ataturk airports to facilitate a rehearsal within the TMA for an air display generated Airport events delay.

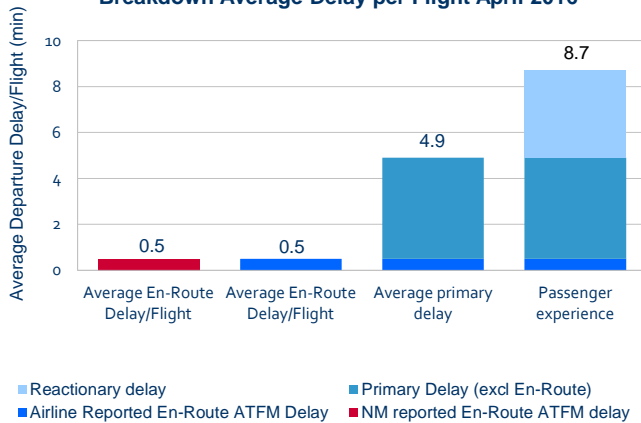
**27 May;** En-route weather in Bordeaux, Karlsruhe, Langen, Maastricht and München ACCs; En-route ATC capacity in Bordeaux, London TMA, Reims, Maastricht and Barcelona ACCs; Airport weather issues at Brussels, Frankfurt and Istanbul/Sabiha Gökçen airports.

**28, 29 and 30 May;** En-route ATC capacity in Bordeaux, Marseille, Barcelona, Sevilla, Brest and Maastricht ACCs; Thunderstorms generated delay from Portugal to UK and Germany for both en-route and airports.

## 6. ALL AIR TRANSPORT DELAYS (SOURCE: CODA)

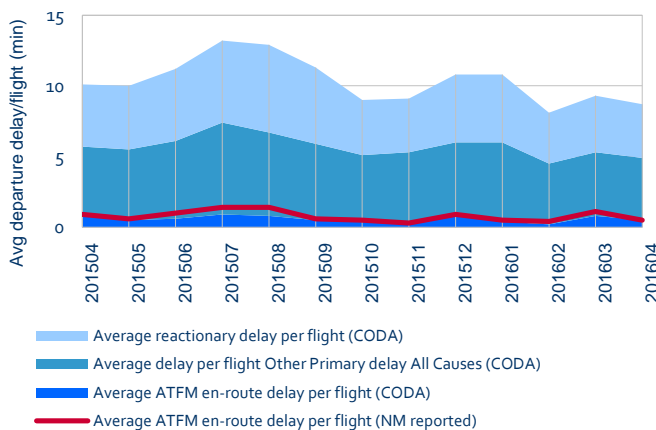
This section presents the all air transport delay situation as seen from the airlines by using the data collected by Central Office for Delay Analysis (CODA) from the airlines. Data coverage is 66% of the commercial flights in the ECAC region for April 2016. ATFM delays reported by airlines may be lower than the NM calculated ATFM delays due to difference in methods: ATFM delays of NM are the (flight) planned "delays"; the airlines report the "actual" experienced ATFM delay on departure. For instance, a flight with an ATFM delay may also have a handling delay absorbed within the ATFM delay. For the airline, a part of this delay is the ATFM delay and the remaining amount is the handling delay.

**Breakdown Average Delay per Flight April 2016**



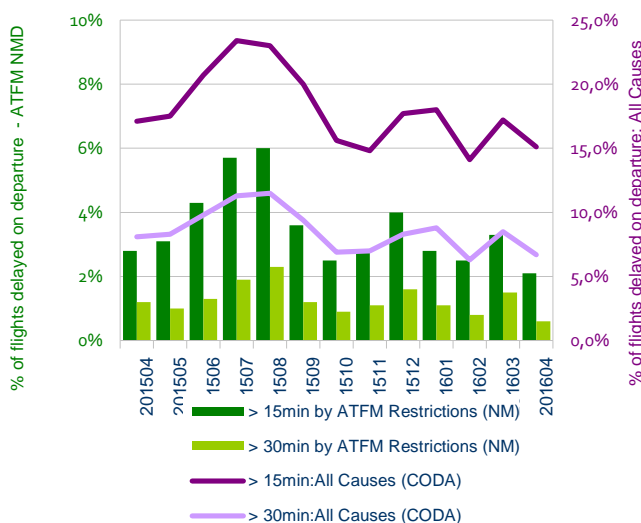
Based on airline data, the average departure delay per flight from "All Causes" was 8.7 minutes per flight, this was a decrease of 10% in comparison to 9.7 minutes per flight in the same month of 2015. Within all air transport delays, en-route ATFM delays were 0.5 minutes/flight in April 2016. Primary delays counted for 57% (or 4.9 min/flt), with reactionary delays representing a smaller remaining share of 43% at (3.8 min/flt).

**Average departure delay per flight 2015/2016**



Further analysis of airline data from 'All-Causes' shows that the average en-route ATFM delay was 0.5 minutes per flight. This was the same as the NM reported average en-route ATFM delay of 0.5 minutes per flight.

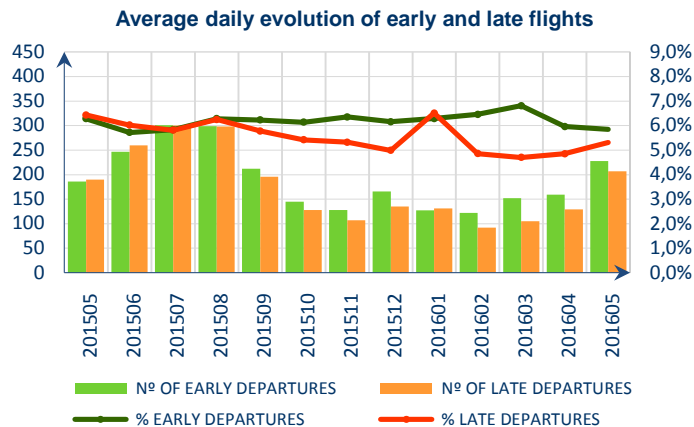
**Percentage of Delayed Flights: ATFM & All Causes**



The percentage of flights delayed from 'all-causes' decreased (those exceeding 15 minutes) by 2 percentage points to 15.1% and those (exceeding 30 minutes) decreasing by 1.4 points to 6.7% of flights in April 2016.



## 7. ATFM SLOT ADHERENCE

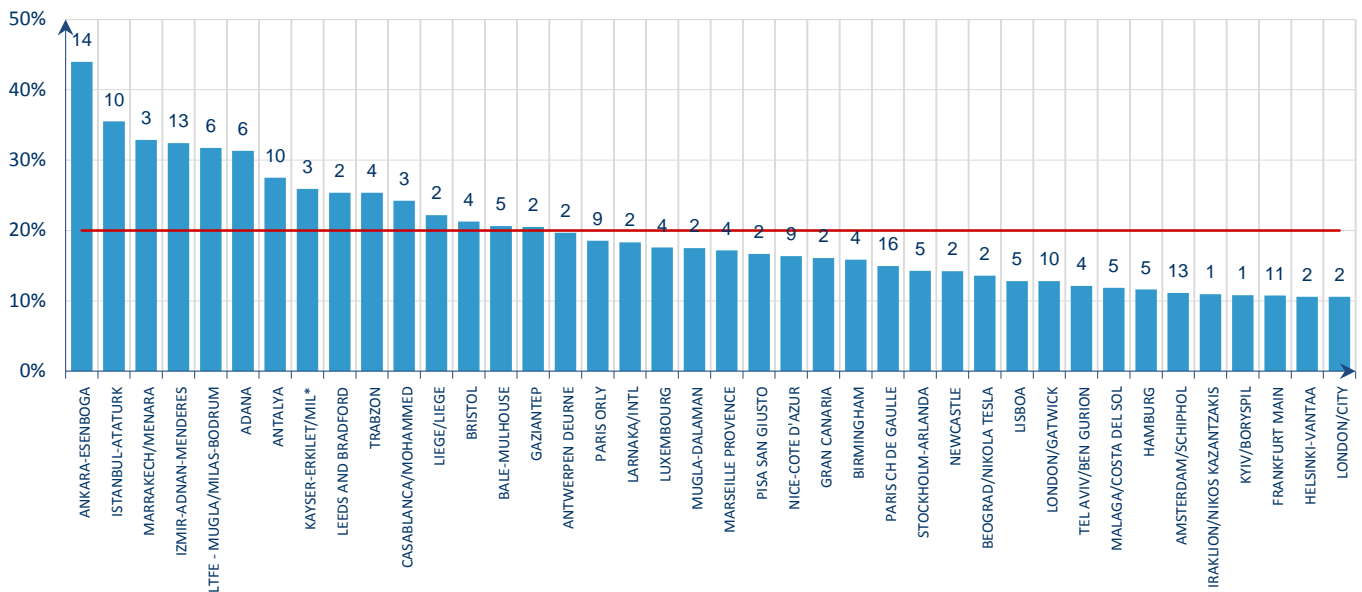


The percentage of early departures for May 2016 is 5.9% of regulated flights, which is a decrease of 0.4% compared to May 2015.

The percentage of late departures for May 2016 is 5.3% of regulated flights, which is a decrease of 1.1% compared to May 2015.

The chart below shows the airports that have more than 300 regulated flights during the month with their average daily number and proportion of regulated flights that departed outside of the Slot Tolerance Window (STW). Any airport above the red line is non-compliant with the threshold (20%). Those airports with a number of departures outside the slot tolerance window can reduce network predictability.

Proportion of regulated flights outside the Slot Tolerance Window in May 2016



## 8. SIGNIFICANT EVENTS AND ISSUES

### PLANNED EVENTS

#### ACC

##### Major airspace or ATM system improvement projects.

Four ACCs carried out projects, planned for this reporting period, involving ATM system changes/upgrades or airspace reorganisations. All projects had been categorised as special, planned events with potential impact on the network performance.

##### Brest ACC

Stepped implementation of ERATO was finalised on 10 May. Even though up to 20% sector capacity reduction had been originally anticipated, with normal sector configuration available (19), the project did not generate any ATFM delay in May.

### Langen ACC

The implementation of PSS on the sector group EBG07 started on 14 May, preceded by the second operational weekend on 01-03 May. It generated 20,018 minutes of ATFM delay. The delay generated during the operational weekend and the transition period presented 51% of total delay (39,213 min) generated by Langen ACC during May.

A 20% sector capacity reduction had been originally planned with maximum configuration of 2 sectors plus feeder EDDK.

### L'viv ACC

The implementation of a new ATM system progressed through the transition phase during May 2016. The project did not generate ATFM delay, despite a capacity reduction of 10%.

### Warsaw ACC

The implementation of new sectorisation with vertical split progressed throughout the entire month. The project did not generate ATFM delay. Capacity reductions had been planned between 5 – 10% with maximum sector configuration between 8-10 sectors depending on the time of the day.

In addition to the above projects, Prestwick ACC carried out iTEC/Common work station implementation project generating 4,392 minutes of ATFM delay. This presented 85% of total delay (5,182 min) by Prestwick ACC for May.

## AIRPORTS

### Local Plans in May

A number of airports undertook infrastructure and technical system improvement works during May. These improvements had at most a minor impact on local airport operations unless otherwise stated:

#### Special Events

- Giro d'Italia in Amsterdam 06 - 08 May;
- The ILA Berlin Air Show 31 May – 05 June;
- Grand Prix de Monaco 25 – 30 May 568 minutes of ATFM delay at Nice airport;
- Air Display at Istanbul/Ataturk airport (7,130 minutes of ATFM delay and zero rates in two intervals) 26 and 29 May.
- Air Display at Istanbul/Sabiha airport (3,322 minutes of ATFM delay) 26 and 29 May.

#### Completed:

- A-CDM implementation at Milan/Linate airport on 3 May;
- Runway maintenance at Amsterdam/Schiphol (20,070 minutes of ATFM delay and 26,934 minutes of ATFM delay due to combination of runway maintenance and weather on 30 May), Athens (1,084 minutes of ATFM delay), Frankfurt Main, Hamburg, Copenhagen, Nurnberg and Oslo airports;
- Taxiway(s) and/or apron(s) improvements at Helsinki, Malta, Nurnberg, Palma de Mallorca and Riga airports;
- ILS maintenance at London/Heathrow airport.

#### Ongoing

- Runway maintenance at Gran Canaria, Istanbul/Sabiha Gökçen, Luxembourg, Nurnberg and Vienna airports;
- Taxiway(s) and/or apron(s) improvements Bologna, Dublin, Gran Canaria, Hamburg, Helsinki, Malta Luqa, Nurnberg, Oslo Gardermoen (2,586 minutes of ATFM delay), Palma de Mallorca, Paris Orly (11,763 minutes of ATFM delay), Prague, Riga, Stuttgart, Thessaloniki (5,481 minutes of ATFM delay) and Venice airports;
- ILS maintenance at Bologna airport;
- Terminal building(s) improvements/works at Frankfurt Main, Hamburg, Ljubljana, and Oslo Gardermoen airports.
- PRIDEP trial at Zurich airport generated 1,990 minutes of ATFM delay.

## DISRUPTIONS

### Industrial Action

- French ATC industrial action on 19 May generated 9,134 minutes of airport ATFM delay and 60,924 minutes of en-route ATFM delay in France; Neighbouring states generated 19,079 minutes due to ATFM protective measures; Most affected airport was Paris Orly (4,939 minutes of ATFM delay); NM estimates there were 939 fewer flights during the action;
- French ATC industrial action on 26 May generated 3,317 minutes of airport ATFM delay and 37,919 minutes of en-route ATFM delay in France; Neighbouring states generated 26,066 minutes due to ATFM protective measures; Most affected airport was Basel (1,038 minutes of ATFM delay); NM estimates there were 772 fewer flights during the action;
- Airport operators were requested to reduce by 15% their flight programmes for Paris-Orly on both days.

### Other

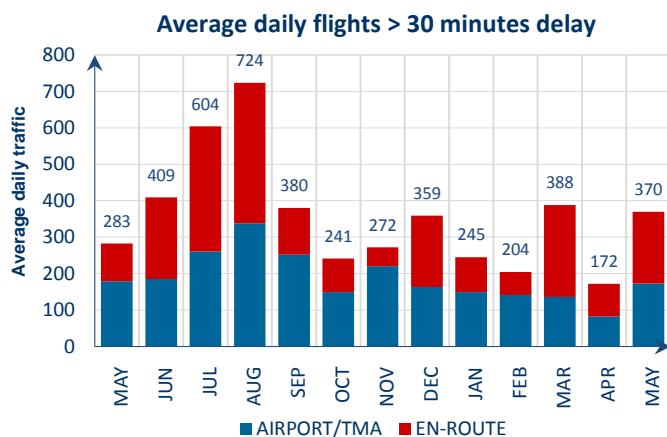
- Technical failure in Stockholm and Malmo ACCs on 19 May generated 32,363 minutes of ATFM delay;
- Radar/callsign correlation issues in Malmo ACC on 28 May generated 1,191 min of ATFM delay;
- Communication system malfunction in Stockholm ACC on 30 May generated 2,691 minutes of ATFM delay;
- ATC equipment issue in Oslo ACC on 31 May generated 2,452 minutes of ATFM delay.

## 9. NM ADDED VALUE

### FLIGHTS WITH DELAY > 30'

The number of flights that had more than 30 minutes of ATFM delay increased by 30.7% from 283 fts/day in May 2015 to 370 fts/day in May 2016.

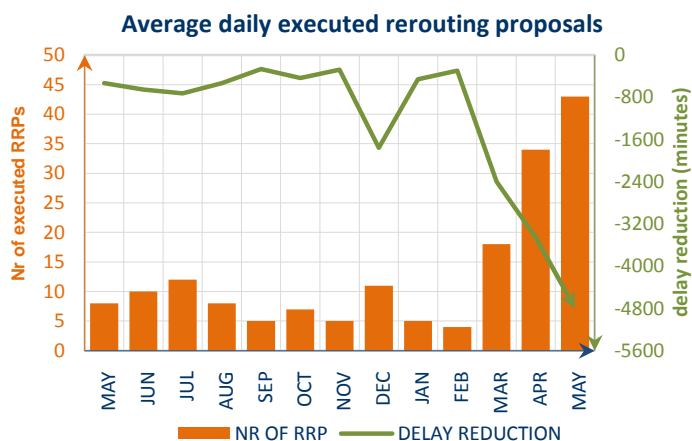
53.2% of flights with more than 30 minutes of ATFM delay in May 2016 were en-route and 46.8% were airport.



### RRP DIRECT DELAY SAVINGS

On average 62 RRP were offered in May 2016 of which 43 RRP were executed, saving 4,794 minutes of daily delay.

This graph shows the actual daily averages for the previous 13 months period.



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<http://www.eurocontrol.int/articles/network-operations-monitoring-and-reporting>

i See Notice on page 1 for more information on traffic and delay comparison.

ii Internals, international departures and arrivals, excluding overflights.

iii See Notice on page 1 for more information on NM Area

iv NM's calculation that provides the guideline en-route delay (min) requirements to achieve the annual target (0.5 min/flight).