

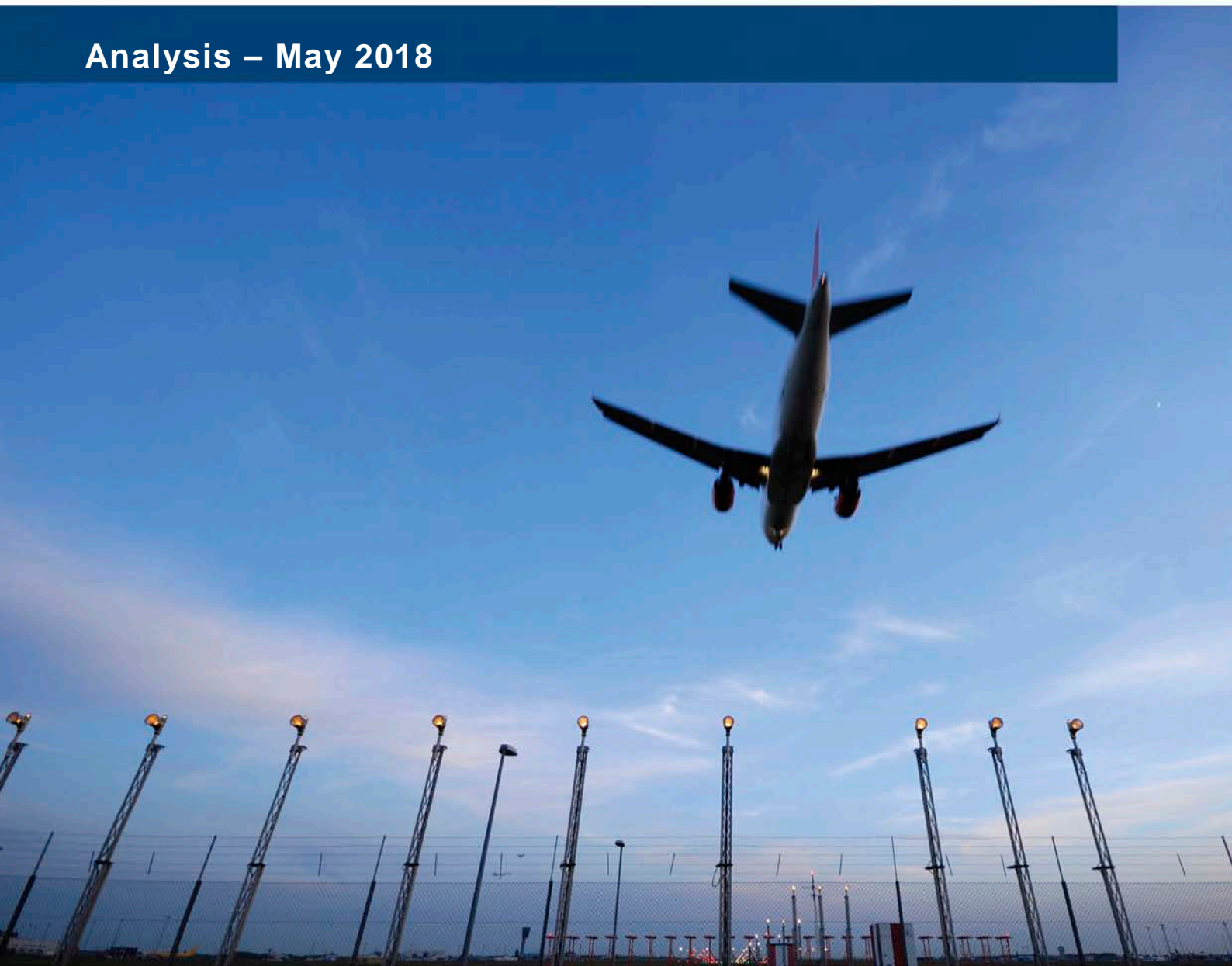


**Network Manager**  
nominated by  
the European Commission



# Monthly Network Operations Report

**Analysis – May 2018**



# TABLE OF CONTENTS

<b>TABLE OF CONTENTS</b>	<b>2</b>
<b>NOTICE</b>	<b>2</b>
<b>1. TOTAL TRAFFIC</b>	<b>3</b>
<b>2. ATFM DELAY AND ATTRIBUTIONS</b>	<b>6</b>
<b>3. EN-ROUTE ATFM DELAYS</b>	<b>7</b>
En-Route ATFM Delay per Location	7
En-Route ATFM Delay per Delay Group	8
En-Route ATFM Delay per Flight	9
En-Route ATFM Delay Year-To-Date	10
<b>4. AIRPORT/TMA ATFM DELAYS</b>	<b>11</b>
Airport/TMA ATFM Delay per Location	11
Airport/TMA ATFM Delay per Delay Groups	11
Airport/TMA ATFM Delay per Flight	12
Airport/TMA ATFM Delay Year-To-Date	12
<b>5. DAILY EVOLUTION</b>	<b>12</b>
<b>6. ALL AIR TRANSPORT DELAYS (SOURCE: CODA)</b>	<b>13</b>
<b>7. ATFM SLOT ADHERENCE</b>	<b>14</b>
<b>8. SIGNIFICANT EVENTS AND ISSUES</b>	<b>14</b>
Planned Events	14
ACC	14
Airports	15
Disruptions	15
<b>9. NM ADDED VALUE</b>	<b>16</b>

## NOTICE

### Incomplete traffic data – 3 April

NM operational data archive for 3 April is incomplete due to NM system outage (See note i)

### Traffic and Delay Comparisons

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

### Graphics















All graphs in chapters 2, 3 and 4 are in average minutes of ATFM delay per day, 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). For further information on the NM Area go to the Reporting Assumptions and Descriptions document available on the EUROCONTROL website at <http://www.eurocontrol.int/articles/network-operations-monitoring-and-reporting>.

### 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

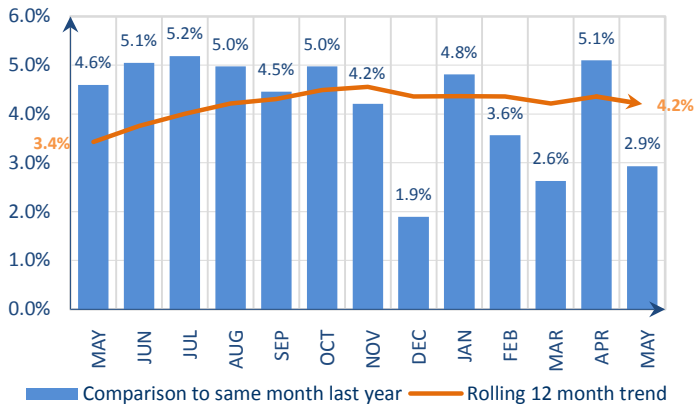
For further information on the regulation reason groupings, go to the Reporting Assumptions and Descriptions document available on the EUROCONTROL website at <http://www.eurocontrol.int/articles/network-operations-monitoring-and-reporting>.

### ATFM Statistics dashboard

More detailed information available via the new [ATFM Statistics dashboard](#).

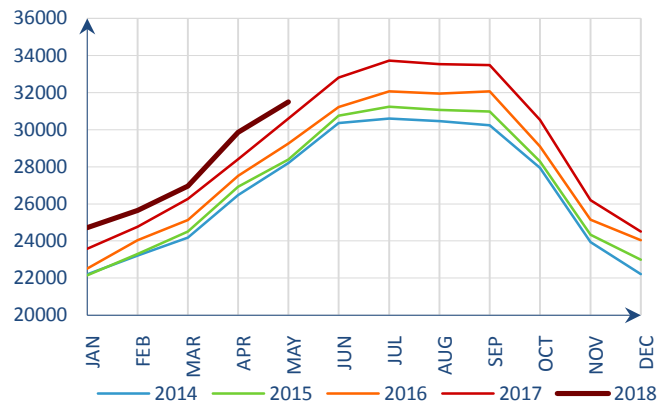
# 1. TOTAL TRAFFIC

Monthly traffic trend



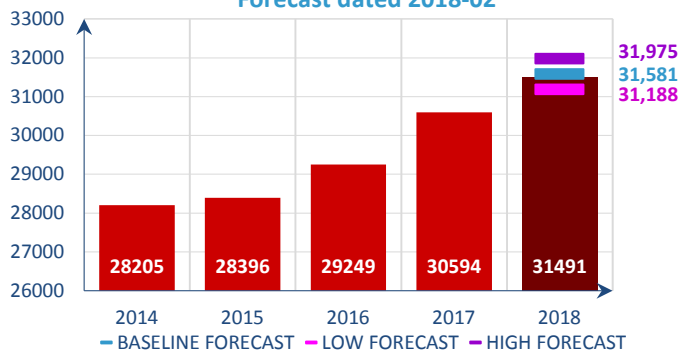
Traffic increased by 2.9% in May 2018<sup>ii</sup>.

Average daily traffic for last 5 Years



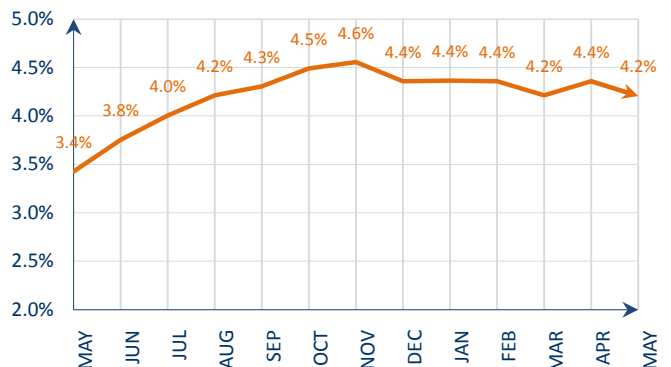
Average daily traffic in May 2018 was the highest for May in the last five years. Several events slowed down the growth: industrial action and weather.

Average daily traffic in May for last 5 Years  
Forecast dated 2018-02



The traffic increase of 2.9% for May was in line with the baseline forecast published in February 2018.

12 months rolling traffic trend



This graph shows the variation in average daily traffic for the last 12-month period relative to the previous 12-months. The average daily traffic from June 2017 to May 2018 was 4.2% higher than the average from June 2016 to May 2017.

Nine states added more than 50 flights per day to the European local<sup>iii</sup> traffic growth. Greece was the top contributor with 205 flights per day and saw a 17% growth rate of its local traffic. This was due to strong growth of the flow from and to Western Europe (the flow from and to Germany alone generated 55 extra flights per day) as well as a dynamic internal flow (+29 flights/day). Turkey ranked second with 193 flights per day owing primarily to its flow to and from the Russian Federation (+75 flights/day) and its flows to and from Germany and UK (respectively +51 flights/day and +24 flights/day). Spain was the third contributor with 141 extra daily flights owing mainly to a dynamic internal flow (+47 flights/day). Poland was next with 138 extra daily flights 14% increase thanks to strong growth of the flows from and to Greece (+19 flights/day), Turkey (+13 flights/day) and Ukraine (+12 flights/day). Germany was the fifth contributor with 118 extra daily flights thanks to the growing flows indicated above (from and to Greece and Turkey) as well as the continued recovery of the flow from and to Egypt. Ukraine added 87 flights per day and saw an increase of 22% in its local traffic owing to its flow to and from Poland (+12 flights/day), Egypt (+11 flights/day) and Turkey (+10 flights/day). Portugal (excluding Azores), Canary Islands and Finland added altogether 178 flights per day.

At the other end of the scale, France was affected by ATC and Air France industrial action and saw 83 fewer flights, and saw its local traffic declined by 6% in May. The United Kingdom still impacted by the failure of Monarch saw 69 fewer flights due to its weak arrival, departure and internal flows.

With an increase of 22%, the charter segment had the fastest growth owing to strong increases of touristic flows between North-Africa (eg Tunisia, Egypt) and Europe, Middle-East or Russian federation. The traditional scheduled saw a 3% increase. The all-cargo segment and the low-cost segment grew respectively by 2% and 1%. The business aviation segment declined by 0.5%.

The top six external partners in average daily flights on flows in both directions were the United States (1065 flights, up 0.6%), the Russian Federation (1034 flights, up 17.5%), Israel (344 flights, up 11.5%), Morocco (312 flights, up 5.3%), The United Arab Emirates (302 flights, down 2%), and Egypt (236 flights, up 38.3%).

The airlines which added the most flights to the European network on a daily basis were easyJet UK (+113 flights), Ryanair (+110 flights/day), Wizzair (+67 flights/day), Lufthansa (60 flights/day) and Air Europa (+53 flights/day).

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

Five of the top ten airports had positive traffic growth. Overall, the largest traffic increases in May 2018 were at Antalya, Tel Aviv/Ben Gurion, Athens, Budapest and Helsinki airports. The largest traffic decreases were at Birmingham, Düsseldorf, Berlin/Tegel, Lyon, Geneva and Milano/Malpensa airports. Traffic recovery in Turkey explained the traffic variation at Antalya airport. The Tel Aviv/Ben Gurion traffic increase was due to the expansion of routes made available by low-cost airlines and increased tourism. Traffic decreases at Düsseldorf and Berlin/Tegel airports are due in part to Air Berlin cessation of operations. Birmingham airport traffic variation is partially due to the Monarch cessation of operations.

Eight of the top ten aircraft operators flew more compared to May 2017. The operators with the highest traffic growth were Eurowings, Condor, Air Europa, Jet2.com and Volotea airlines. The highest traffic decreases were recorded by Royal Air Maroc, HOP, Wideroe, Aegean and Brussels airlines.

The traffic variation of Eurowings follows the continued integration of Germanwings, some Lufthansa routes and more recently ex Air Berlin operated routes into the Eurowings operation. Brussels Airlines traffic growth was negatively affected by a two days strike action triggered by its social partners representing the airline's pilot community.

N°	ADEP	ADEP NAME	201805	%	N°	ICAO	AIR OPERATOR	201805	%
1	EHAM	AMSTERDAM/SCHIPHOL	739	-1.7%	1	RYR	RYANAIR	2245	5.5%
2	EDDF	FRANKFURT MAIN	737	9.0%	2	EZY	EASYJET	1544	7.9%
3	LFPG	PARIS CH DE GAULLE	675	-1.5%	3	DLH	DEUTSCHE LUFTHANSA	1505	4.2%
4	EGLL	LONDON/HEATHROW	667	0.3%	4	THY	TURKISH AIRLINES	1327	2.8%
5	LTBA	ISTANBUL-ATATURK	614	-2.0%	5	SAS	SCANDINAVIAN AIRLINES SYSTEM	901	-0.2%
6	EDDM	MUENCHEN	577	-1.7%	6	AFR	AIR FRANCE	880	-5.2%
7	LEMD	ADOLFO SUAREZ MADRID-BARAJA	575	5.5%	7	EWG	EUROWINGS AG	723	103.5%
8	LEBL	BARCELONA/EL PRAT	495	2.1%	8	BAW	BRITISH AIRWAYS	720	2.2%
9	LIRF	ROMA/FIUMICINO	438	1.6%	9	KLM	KLM ROYAL DUTCH AIRL	704	0.0%
10	EGKK	LONDON/GATWICK	413	-2.8%	10	VLG	VUELING AIRLINES SA	613	6.3%
11	EKCH	KOBENHAVN/KASTRUP	390	3.9%	11	AZA	ALITALIA	537	-2.1%
12	LSZH	ZURICH	383	2.1%	12	WZZ	WIZZ AIR	515	15.0%
13	LEPA	PALMA DE MALLORCA	370	3.8%	13	PGT	PEGASUS HAVA TASI	477	10.5%
14	ENGM	OSLO/GARDERMOEN	366	-0.2%	14	BEE	JERSEY EUROPEAN T/A FLYBE	421	-5.8%
15	LOWW	WIEN SCHWECHAT	362	1.8%	15	SWR	SWISS INTERNATIONAL	414	4.5%
16	ESSA	STOCKHOLM-ARLANDA	359	-3.2%	16	AUA	AUSTRIAN AIRLINES	407	4.4%
17	EIDW	DUBLIN	345	6.7%	17	TAP	TAP AIR PORTUGAL	370	15.1%
18	LFPO	PARIS ORLY	332	-3.4%	18	NAX	NORWEGIAN AIR SHUTTLE	366	5.1%
19	EBBR	BRUSSELS NATIONAL	329	-3.9%	19	FIN	FINNAIR OY	361	12.2%
20	LTAI	ANTALYA	321	33.9%	20	LOT	LOT-POLISH AIRLINES	337	17.2%
21	EDDL	DUESSELDORF	305	-10.4%	21	IBK	NORWEGIAN AIR INTERNATIONAL	309	13.5%
22	LPPT	LISBOA	305	9.6%	22	AFL	AEROFLOT-RUSSIAN	308	9.9%
23	LTFJ	ISTANBUL/SABHA GOKCEN	299	2.3%	23	WIF	WIDEROE	303	-9.6%
24	LGAV	ATHINA/ELEFTERIOS VENIZELOS	298	11.8%	24	AEA	AIR EUROPA	267	25.0%
25	EGCC	MANCHESTER	296	-3.0%	25	IBE	IBERIA	260	5.3%
26	EGSS	LONDON/STANSTED	289	5.8%	26	EXS	JET2.COM	243	24.3%
27	EFHK	HELSINKI-VANTAA	275	10.4%	27	EIN	AER LINGUS TEORANTA	239	4.9%
28	LIMC	MILANO MALPENSA	271	5.6%	28	BEL	BRUSSELS AIRLINES	233	-7.0%
29	EPWA	CHOPINA W WARSZAWIE	258	10.3%	29	QTR	QATAR AIRWAYS COMP.	227	17.8%
30	EDDT	BERLIN-TEGEL	250	-7.2%	30	ANE	AIR NOSTRUM	225	2.3%
31	LSGG	GENEVA	246	-4.5%	31	TOM	THOMSON FLY LTD	214	1.7%
32	LFMN	NICE-COTE D'AZUR	230	-1.2%	32	HOP	HOP (MERGE OF BZH + RAE + RLA)	195	-10.9%
33	EDDH	HAMBURG	216	-4.2%	33	TRA	TRANSavia.COM	194	-3.5%
34	LLBG	TEL AVIV/BEN GURION	215	20.3%	34	UAE	EMIRATES	188	-1.5%
35	LEMG	MALAGA/COSTA DEL SOL	210	-0.1%	35	AUI	UKRAINE INTERNATIONAL	173	7.1%
36	LKPR	PRAHA RUZYNE	209	4.0%	36	RAM	ROYAL AIR MAROC	173	-13.2%
37	EGGW	LONDON/LUTON	203	-0.6%	37	VOE	VOLOTEA	171	19.8%
38	EDDK	KOELN-BONN	203	1.9%	38	CFG	CONDOR FLUGDIENST	166	38.8%
39	EGPH	EDINBURGH	192	0.0%	39	OAL	OLYMPIC	165	4.1%
40	EDDS	STUTTGART	183	2.8%	40	BTI	AIR BALTIC CORPORAT.	164	16.0%
41	LROP	BUCURESTI/HENRI COANDA	171	5.0%	41	BCS	EUROPEAN AIR TRANSP.	162	6.6%
42	EGBB	BIRMINGHAM	163	-11.8%	42	NJE	NETJETS	150	6.2%
43	LHBP	BUDAPEST LISZT FERENC INT.	161	10.9%	43	TCX	THOMAS COOK AIT LTD	150	16.4%
44	LIML	MILANO LINATE	159	-4.5%	44	EZS	EASY JET SWITZERLAND	148	-1.3%
45	GCLP	GRAN CANARIA	156	0.0%	45	SXS	SUNEXPRESS AIRLINES	147	5.3%
46	LTAC	ANKARA-ESENBOGA	155	0.0%	46	UAL	UNITED AIRLINES INC.	145	-1.2%
47	LFLL	LYON SAINT-EXUPERY	153	-5.7%	47	DAL	DELTA AIR LINES INC.	144	3.0%
48	LEAL	ALICANTE	144	-0.8%	48	AEE	AEGEAN AIRLINES	139	-7.7%
49	EDDB	SCHOENEFELD-BERLIN	144	-0.3%	49	TVF	TRANSavia FRANCE	135	10.9%
50	LIPZ	VENEZIA TESSERA	142	-2.4%	50	LOG	LOGANAIR	127	-1.1%
<b>TOTALS and % TOTAL TRAFFIC</b>			<b>15988</b>	<b>56.8%</b>	<b>TOTALS and % TOTAL TRAFFIC</b>			<b>21231</b>	<b>67.4%</b>

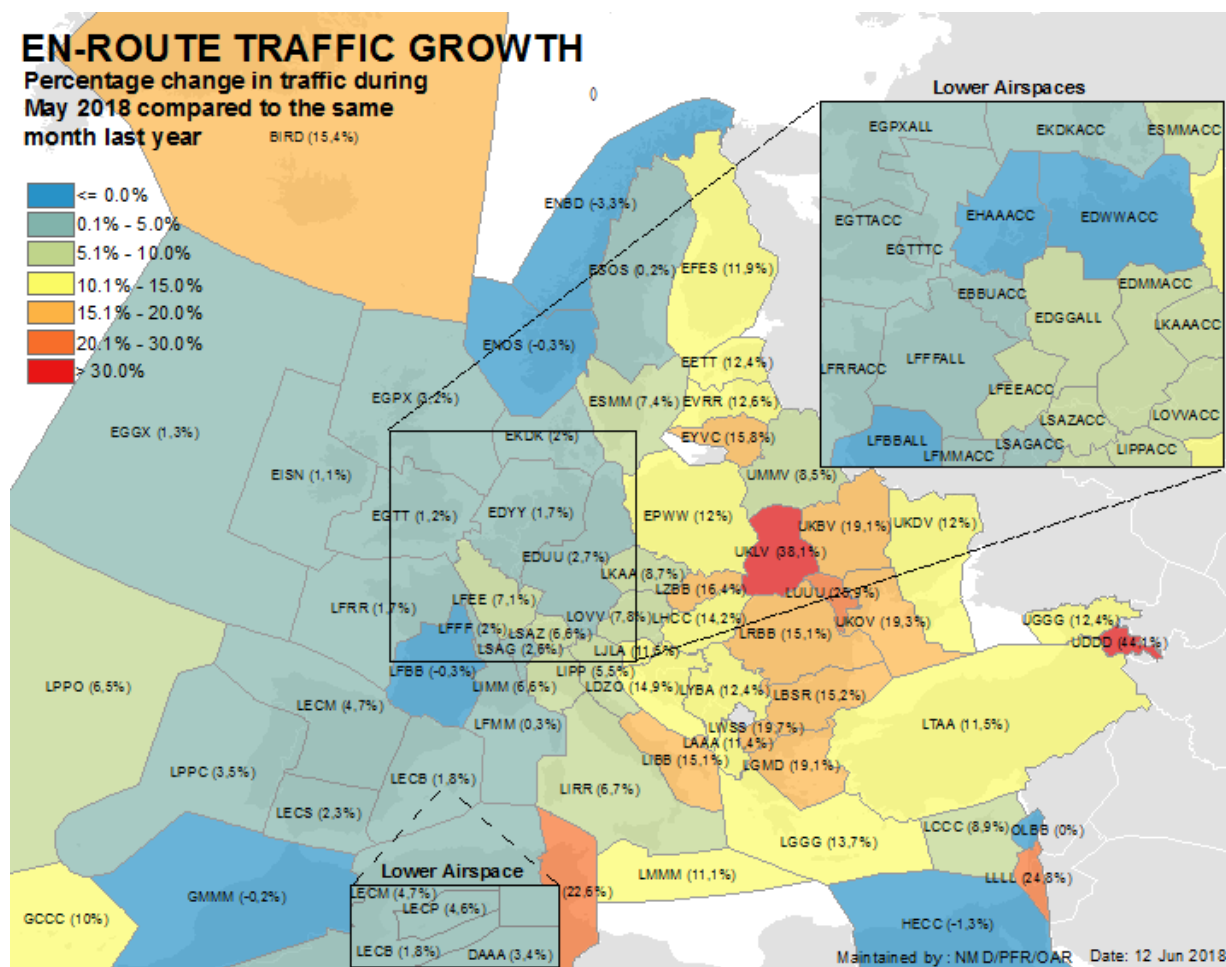
Top 50 Departure Airports with average daily traffic and percentage compared to same period of previous year

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

N°	ICAO	AIR OPERATOR	201805	%
		Unidentified	2182	-3.0%

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

<= 0.0 %  
 0.1 % - 5.0 %  
 5.1 % - 10.0 %  
 10.1 % - 15.0 %  
 15.1 % - 20.0 %  
 20.1 % - 30.0 %  
 > 30.0 %

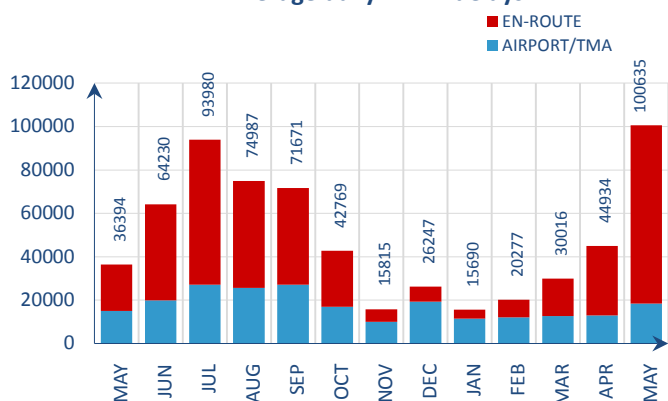


Nº	ASP ID	ASP NAME	201805	%	Nº	ASP ID	ASP NAME	201805	%
1	BIRDACC	REYKJAVIK ACC	435	15.4%	39	LFBALL	BORDEAUX ALL ACC	2954	-0.3%
2	DAAAACC	ALGERS ACC	484	3.4%	40	LFEEACC	REIMS U/ACC	3179	7.1%
3	DTTCACC	TUNIS ACC	364	22.6%	41	LFFFALL	PARIS ALL ACC	3601	2.0%
4	EBBUACC	BRUSSELS CANAC	1879	2.5%	42	LFMMACC	MARSEILLE ACC	3312	0.3%
5	EDGGALL	LANGEN ACC_FIR	3942	5.8%	43	LFMMAPP	MARSEILLE TMA	985	-1.4%
6	EDMMACC	MUNCHEN ACC	3444	6.0%	44	LFRRACC	BREST U/ACC	3275	1.7%
7	EDUUUAC	KARLSRUHE UAC	5610	2.7%	45	LGGGACC	ATHINAI CONTROL	1786	13.7%
8	EDWWACC	BREMEN ACC	1941	-0.1%	46	LGMDACC	MAKEDONIA CONTROL	1453	19.1%
9	EDYYUAC	MAASTRICHT UAC	5528	1.7%	47	LHCCACC	BUDAPEST ACC	2461	14.3%
10	EETTACC	TALLIN ACC	673	12.4%	48	LIBBACC	BRINDISI ACC	947	15.1%
11	EFESACC	TAMPERE ACC	546	11.9%	49	LIMMACC	MILANO ACC	2609	6.6%
12	EGGXOCA	SHANWICK OACC	1449	1.3%	50	LIPPACC	PADOVA ACC	2167	5.5%
13	EGPXALL	SCOTTISH ACC	3064	3.2%	51	LIRRACC	ROMA ACC	2561	6.7%
14	EGTTACC	LONDON ACC	6200	1.2%	52	LJLAACC	LJUBLJANA ACC	1050	11.5%
15	EGTTTC	LONDON TMA TC	4233	2.1%	53	LKAAACC	PRAGUE ACC	2434	8.7%
16	EHAACC	AMSTERDAM ACC(245-)	1772	-0.2%	54	LLLLACC	TEL AVIV ACC	533	24.8%
17	EIDWACC	DUBLIN ACC	761	7.3%	55	LMMMACC	MALTA ACC	382	11.1%
18	EISNACC	SHANNON ACC	1353	1.1%	56	LOVVACC	WIEN ACC	2685	7.8%
19	EKDKACC	COPENHAGEN ACC	1644	2.0%	57	LPPCACC	LISBOA ACC/UAC	1604	3.6%
20	ENBDACC	BODO ACC	583	-3.3%	58	LPPOACC	SANTA MARIA OACC	411	6.5%
21	ENOSACC	OSLO ATCC	1045	-0.3%	59	LQSBACC	BOSNIA-HERZEGOVINA	117	7.3%
22	ENSVACC	STAVANGER ATCC	646	-1.2%	60	LRBBACC	BUCURESTI ACC	2056	15.1%
23	EPWWACC	WARSAWA ACC	2362	12.0%	61	LSAGACC	GENEVA ACC	2022	2.6%
24	ESMMACC	MALMO ACC	1709	7.4%	62	LSAZACC	ZURICH ACC	2424	6.6%
25	ESOSACC	STOCKHOLM ACC	1260	0.2%	63	LTAAACC	ANKARA ACC	4069	11.5%
26	EVRRACC	RIGA ACC	852	12.6%	64	LTBBACC	ISTANBUL ACC	2026	0.9%
27	EYVCACC	VILNIUS ACC	768	15.8%	65	LUUUACC	CHISINAU ACC	165	26.0%
28	GCCCACC	CANARIAS ACC/FIC	867	10.0%	66	LWSSACC	SKOPIE ACC	602	19.7%
29	GMMMACC	CASABLANCA ACC	1030	-0.2%	67	LYBAACC	BEOGRADE ACC	2079	12.4%
30	HECCACC	CAIROACC	617	-1.3%	68	LZBBACC	BRATISLAVA ACC	1599	16.4%
31	LAAAACC	TIRANA ACC	614	11.4%	69	OLBBACC	BEIRUT ACC	138	0.0%
32	LBSRACC	SOFIA ACC	2383	15.2%	70	UDDACC	YEREVAN ACC	170	44.1%
33	LCCACC	NICOSIA ACC	1074	8.9%	71	UGGGACC	TBILISI ACC	407	12.4%
34	LDZOACC	ZAGREB ACC	1871	14.9%	72	UKBVACC	KIEV ACC	493	19.1%
35	LECBACC	BARCELONA ACC	2783	1.8%	73	UKDVACC	DNIPROPETROVSK ACC	56	12.0%
36	LECMALL	MADRID ALL ACC	3240	4.7%	74	UKLVACC	L'VIV ACC	399	38.1%
37	LECPACC	PALMA ACC	1075	4.6%	75	UKOVACC	ODESSA ACC	309	19.3%
38	LECSACC	SEVILLA ACC	1138	2.3%	76	UMMVACC	MINSK ACC	818	8.5%

NM Monthly Network Operations Report - Analysis – May 2018

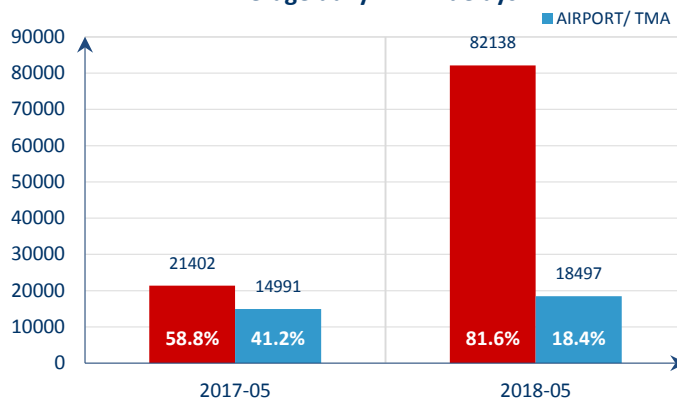
## 2. ATFM DELAY AND ATTRIBUTIONS

Average daily ATFM delays



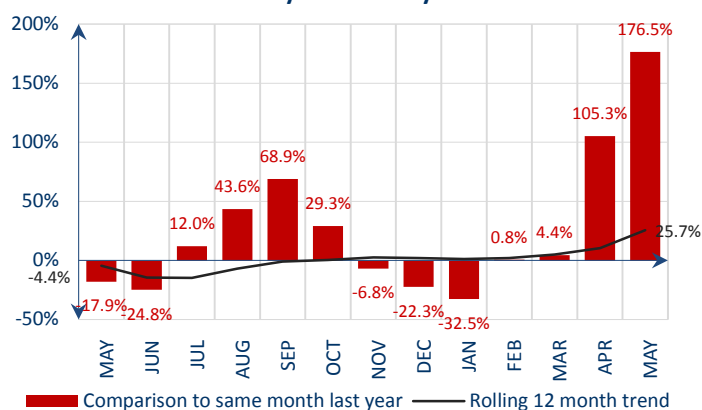
Total ATFM delays increased by 176.5% in May 2018<sup>ii</sup>.

Average daily ATFM delays



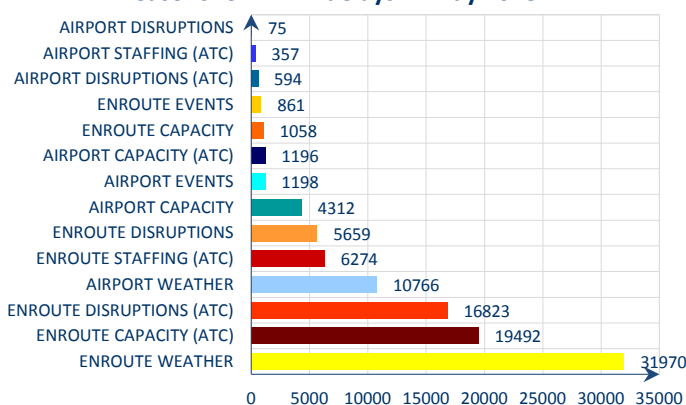
En-route ATFM delays increased by 283.8% and airport ATFM delays increased by 23.4%.

Monthly ATFM delays trend



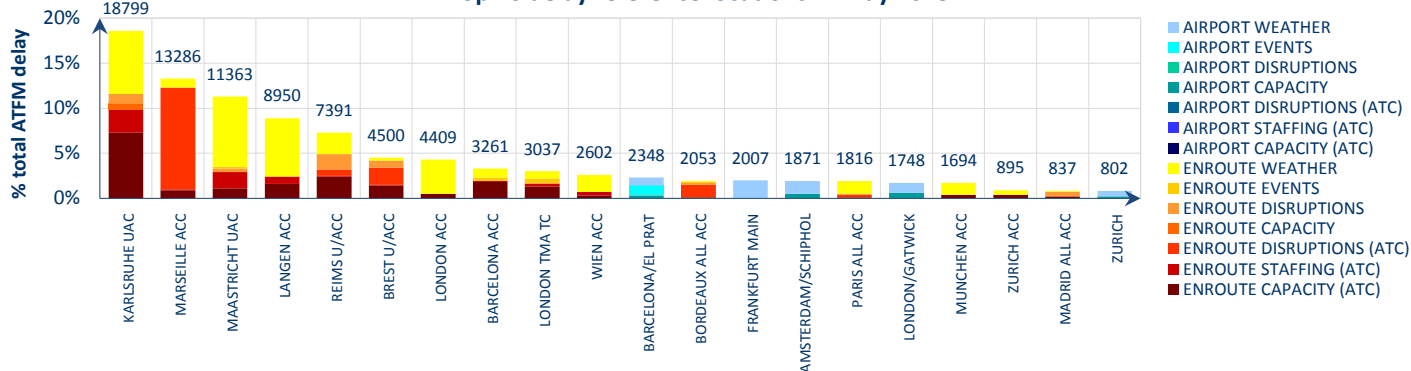
The rolling 12-month trend shows that ATFM delay was 25.7% higher during the period June 2017 – May 2018 compared to June 2016 – May 2017.

Reasons for ATFM delays in May 2018



En-route weather (31.8%), en-route ATC capacity (19.4%), en-route ATC disruptions (16.7%) were the main causes of ATFM delays in May 2018.

Top 20 delay reference locations in May 2018

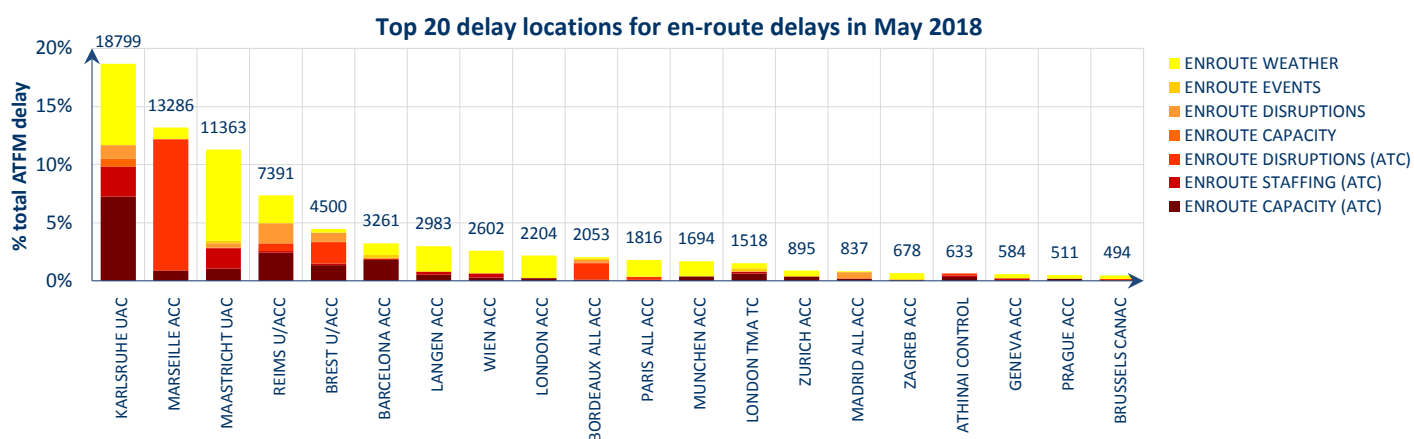
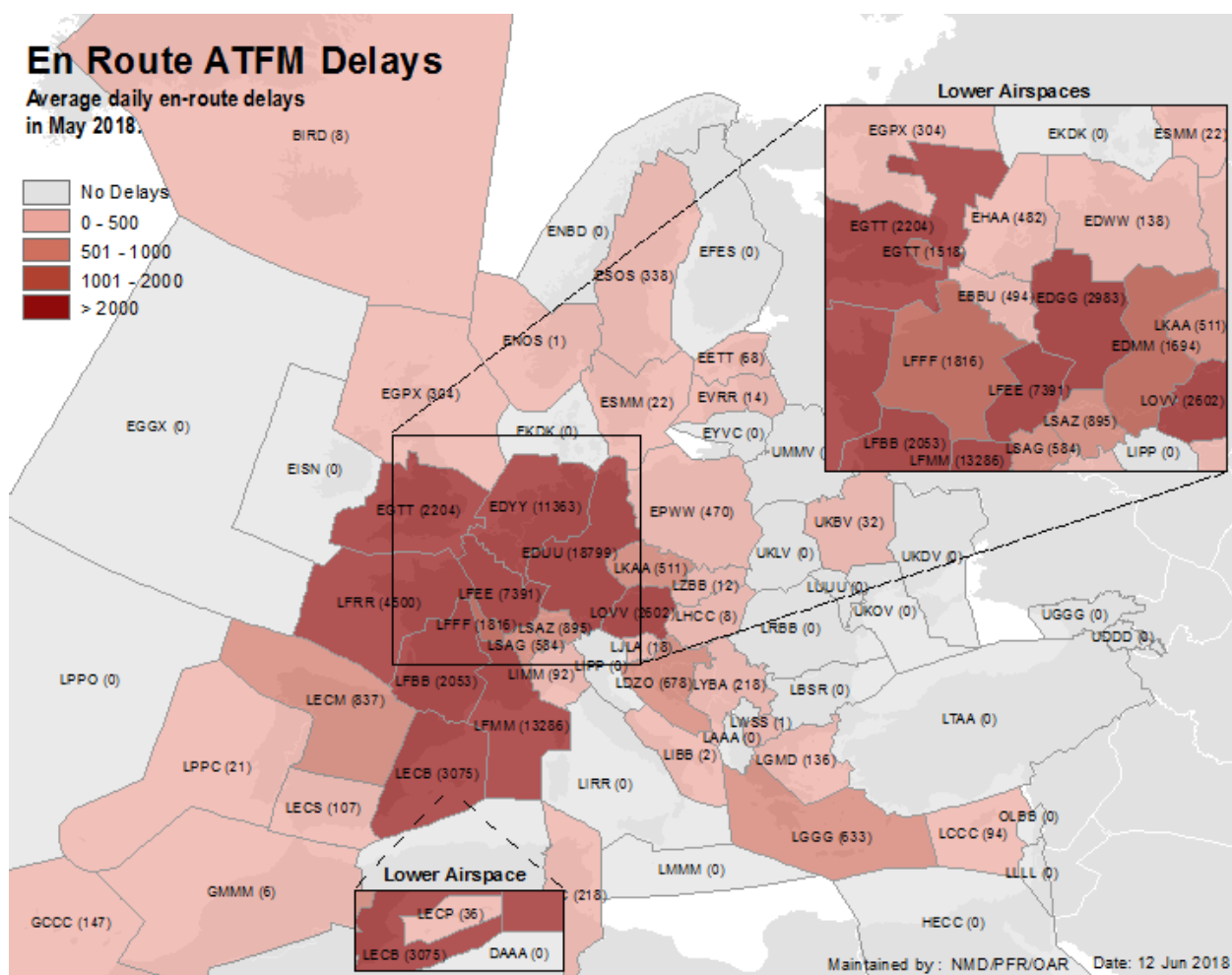


These are the top 20 delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

- En-route weather issues in Karlsruhe, Maastricht, Langen, Reims, London and Vienna ACCs;
- ATC industrial action in Marseille ACC generated disruptions in Marseille ACC with additional delays in Reims and Madrid ACCs;
- French ATC industrial action from 21 May to 23 May resulted in disruptions delays for Marseille, Brest, Bordeaux and Reims ACCs;
- En-route ATC staffing issues in Karlsruhe and Maastricht UACs;
- En-route capacity delays in Karlsruhe, Maastricht, Langen, Reims, Brest, Barcelona and London ACCs;
- Seasonal weather impacted operations at Frankfurt/Main, Amsterdam/Schiphol and London/Gatwick airports;
- Event delays at Barcelona airport due to BRAIN (Barcelona RNAV Approach Innovations) implementation in Barcelona TMA.

### 3. EN-ROUTE ATFM DELAYS

#### EN-ROUTE ATFM DELAY PER LOCATION



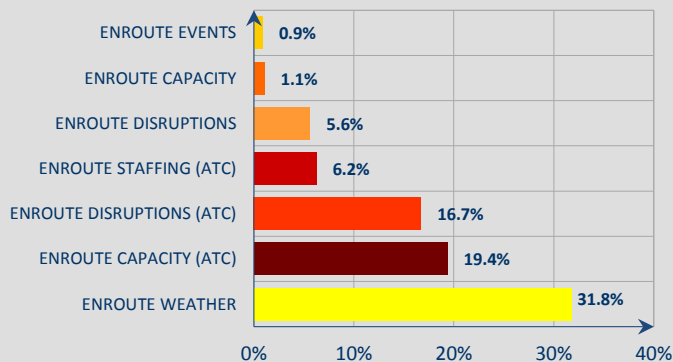
These are the top 20 en-route ATFM delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

The top 20 en-route ATFM delay locations generated **77.6%** of the monthly total (network) ATFM delay.  
The top 5 en-route ATFM delay locations generated **55.0%** of the monthly total (network) ATFM delay.

More detailed information available in the Airspace dashboard via the [ATFM Statistics dashboard](#).

## EN-ROUTE ATFM DELAY PER DELAY GROUP

Reasons for en-route delays in May 2018



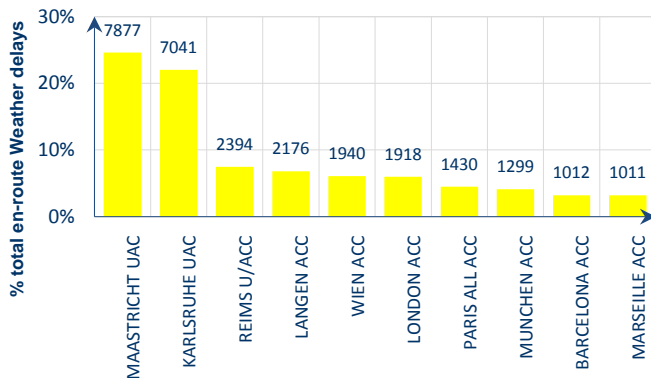
En-route ATFM delays accounted for 81.6% of all ATFM delays. Most of this delay was caused by en-route ATC weather, en-route ATC capacity and en-route ATC disruptions as explained in detail below. The other causes were:

*En-route ATC staffing*; Staffing issues in Karlsruhe and Maastricht UACs throughout the month;

*En-route disruptions*; ATFM delay due to locally reported traffic onload in Reims and Karlsruhe ACCs due to ATC industrial action in French ACCs;

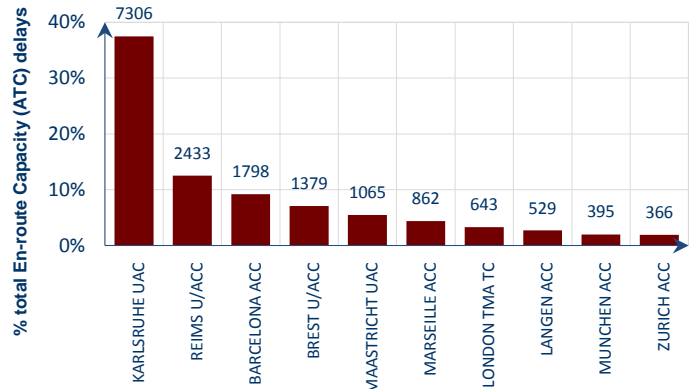
*En-route capacity*; Military exercises in Karlsruhe UAC.

Top en-route Weather delays in May 2018



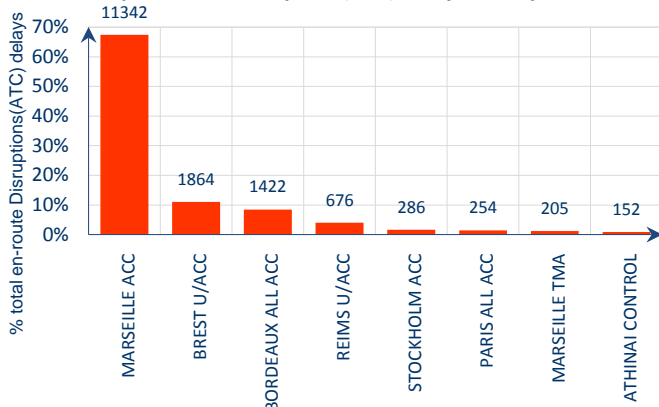
Thunderstorms particularly affected Maastricht and Karlsruhe UACs throughout the month, with a peak of 74,171 minutes of delay in Maastricht UAC on 27 May, and a peak of 28,253 minutes of delay in Karlsruhe UAC on 31 May.

Top en-route Capacity (ATC) delays in May 2018



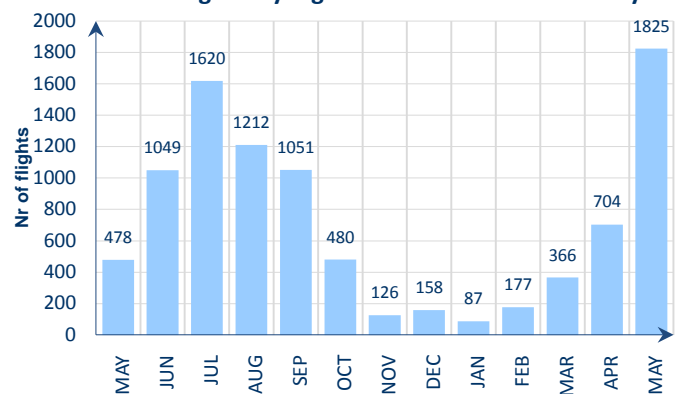
Karlsruhe UAC was the biggest generator of en-route ATC capacity delays in May. Delays in Reims ACC are partially due to Marseille ACC industrial action and strong seasonal traffic growth.

Top en-route Disruption (ATC) delays in May 2018



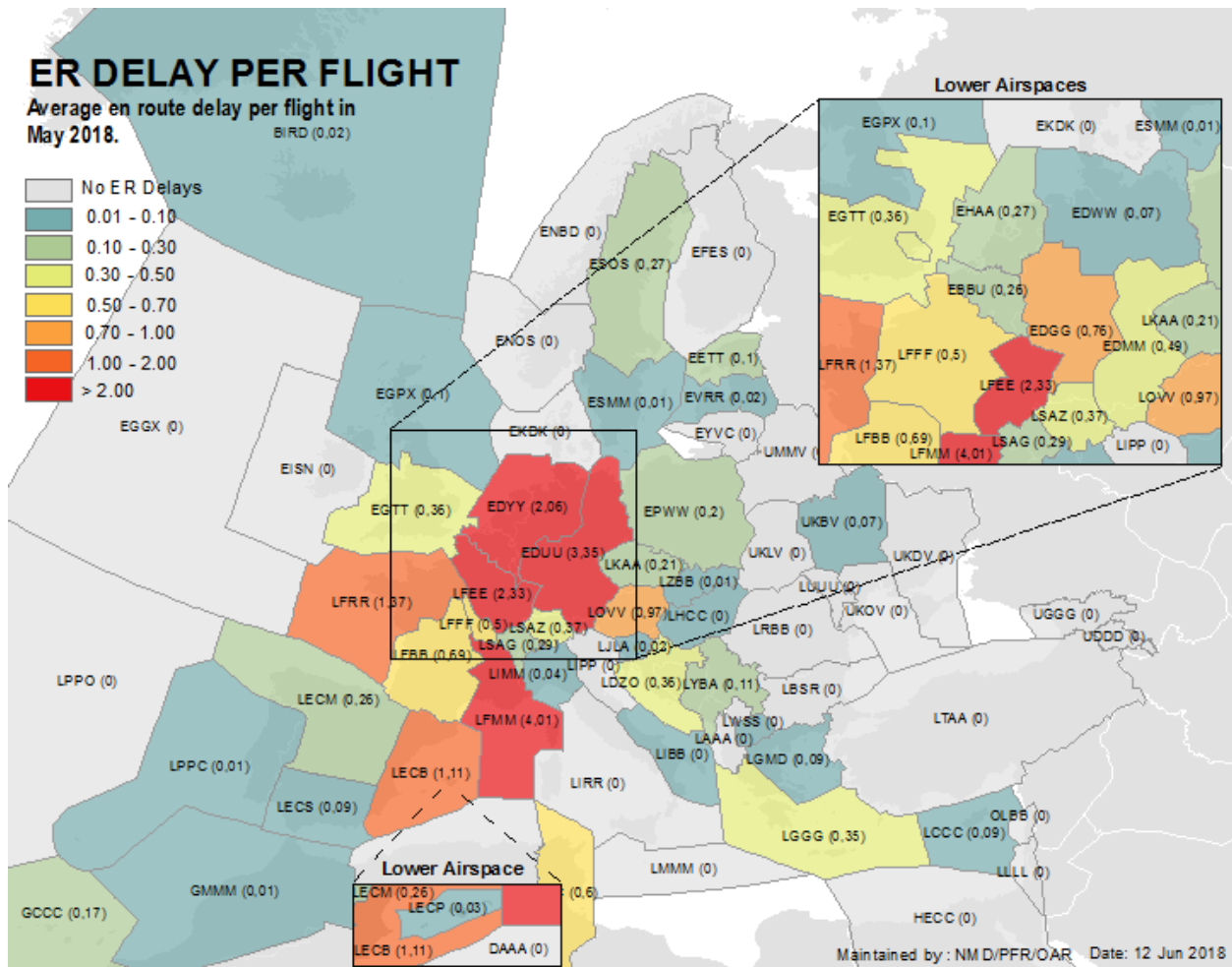
ATC industrial action in Marseille ACC throughout the month. French ATC industrial action from Monday 21 May to Wednesday 23 May generated delays in Brest, Bordeaux, Reims and Paris ACCs.

Average daily flights >= 15 min en-route delay

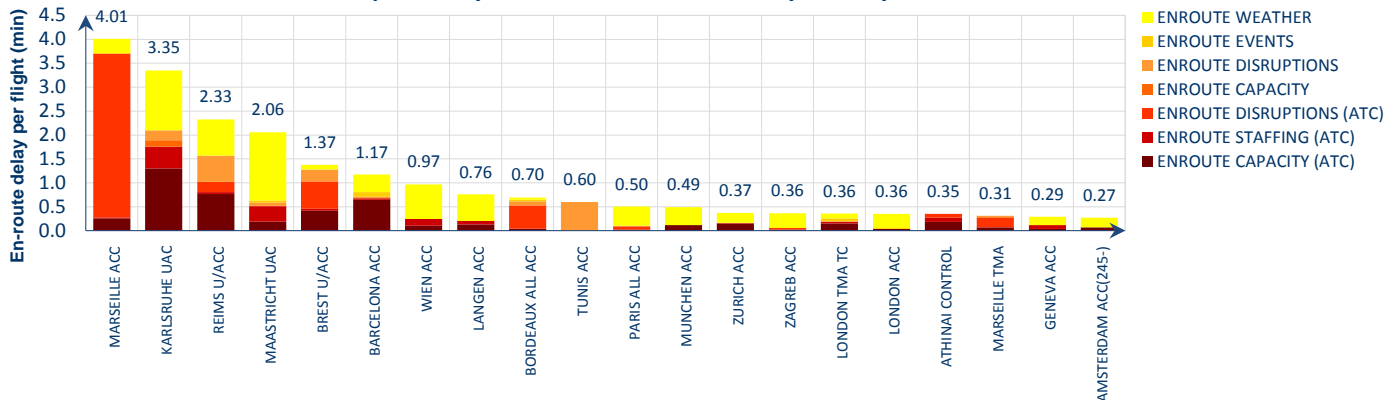


The average daily flights with an en-route ATFM delay of at least 15 minutes increased from 478 flights/day in May 2017 to 1,825 flights/day in May 2018, which represents 5.8% of all traffic.

## EN-ROUTE ATFM DELAY PER FLIGHT



### Top 20 delay locations for en-route delays in May 2018



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.

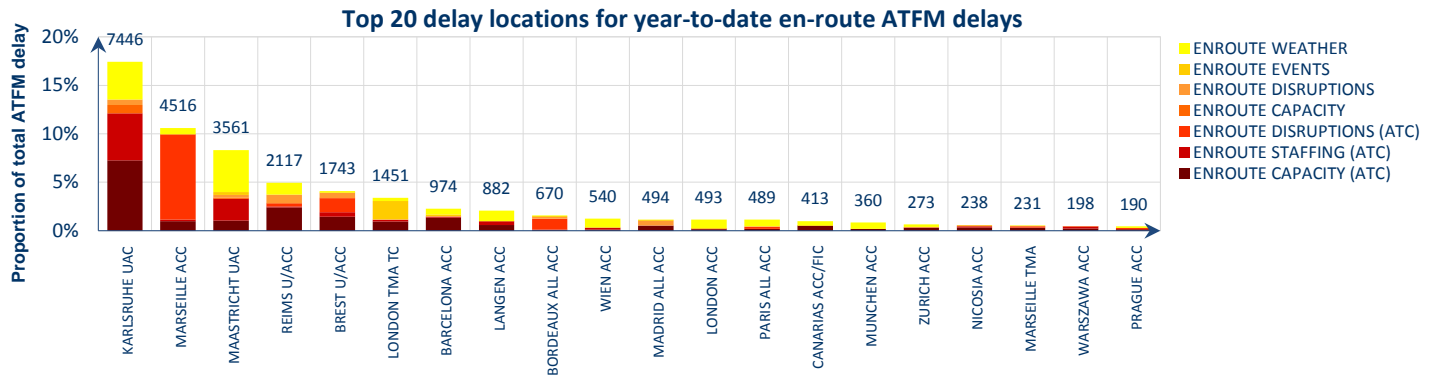
Marseille ACC en-route ATFM delay/flight increased from 2.24 min/flight in April 2018 to 4.01 min/flight in May 2018, mainly due to several ATC industrial actions;

Karlsruhe UAC en-route ATFM delay/flight increased from 1.50 min/flight in April 2018 to 3.35 min/flight in May 2018, mainly due to ATC capacity and weather;

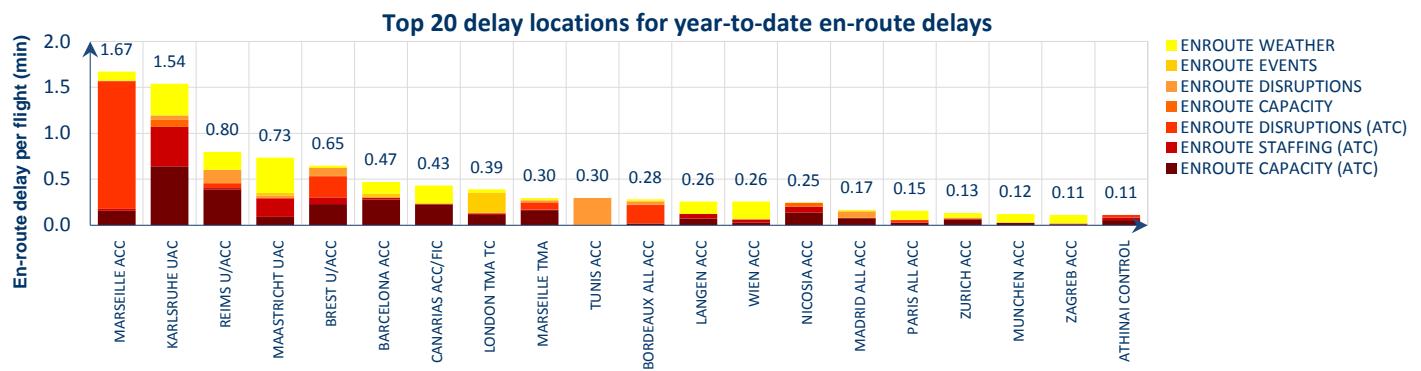
Reims ACC en-route ATFM delay/flight increased from 0.58 min/flight in April 2018 to 2.33 min/flight in May 2018, mainly due to ATC capacity and disruptions;

Maastricht UAC en-route ATFM delay/flight increased from 0.60 min/flight in April 2018 to 2.06 min/flight in May 2018, mainly due to weather.

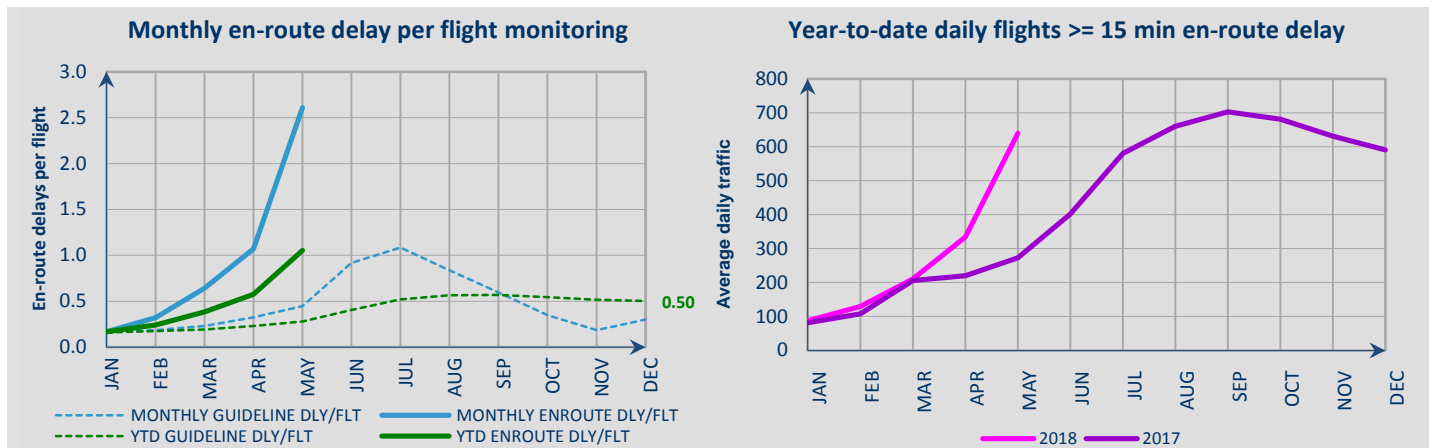
# EN-ROUTE ATFM DELAY YEAR-TO-DATE



These are the top 20 en-route delay locations for 2018 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 **63.9%** of the total ATFM (network) delay.  
 The top 5 en-route delay locations generated **45.5%** of the total ATFM (network) delay.



These are the top 20 average en-route ATFM delay per flight generating locations in 2018 with respect to the total ATFM delay. Figures are the average daily en-route delay in minutes for the individual locations.



**Reporting month:** The average en-route ATFM delay per flight in the NM area<sup>iv</sup> in May was 2.61 min/flt, which is well above the corresponding monthly guideline<sup>v</sup> value of 0.45 min/flt.

**Year To Date:** The average YTD en-route ATFM delay per flight in 2018 in the NM area<sup>iv</sup> is 1.05 min/flt which is approximately four times the corresponding guideline value of 0.28 min/flt.

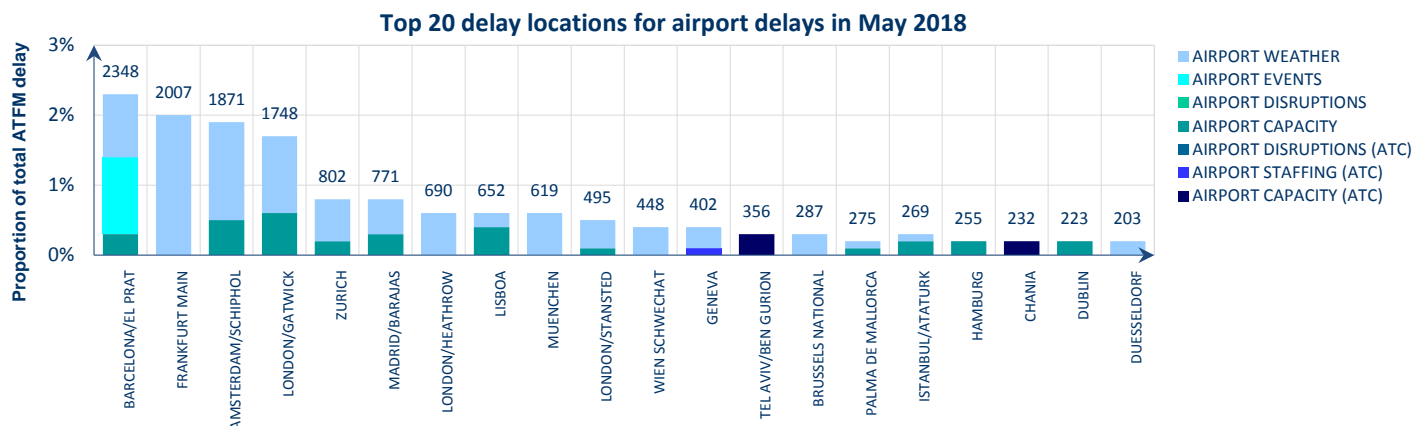
An average of 640 flights/day had an en-route ATFM delay of at least 15 minutes in 2018. The corresponding figure in 2017 was 273 flights/day.

The top 3 locations for flights with 15 minutes or more en-route ATFM delay (year-to-date) are:

- Karlsruhe UAC with 159 flights/day
- Marseille ACC with 97 flights/day
- Maastricht UAC with 79 flights/day

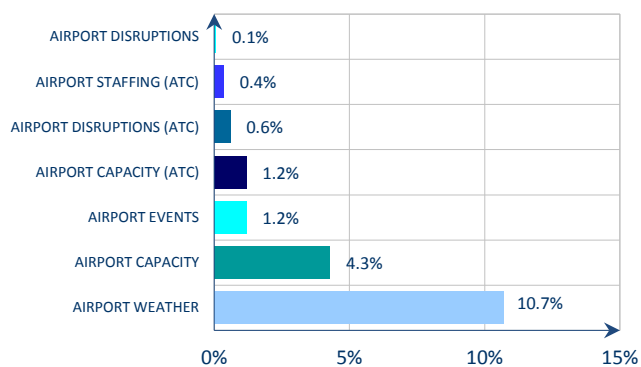
## 4. AIRPORT/TMA ATFM DELAYS

### AIRPORT/TMA ATFM DELAY PER LOCATION



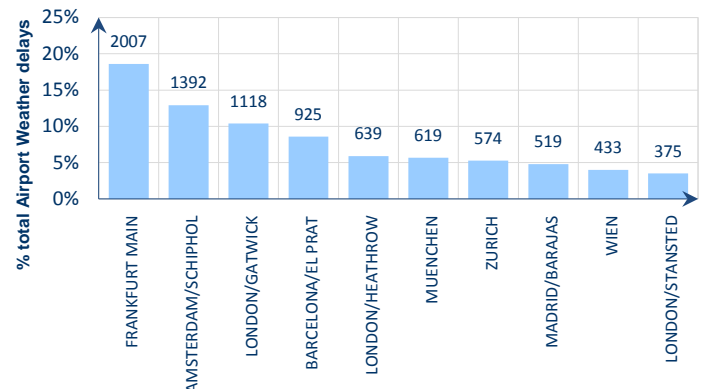
### AIRPORT/TMA ATFM DELAY PER DELAY GROUPS

**Reasons for airport delays in May 2018**



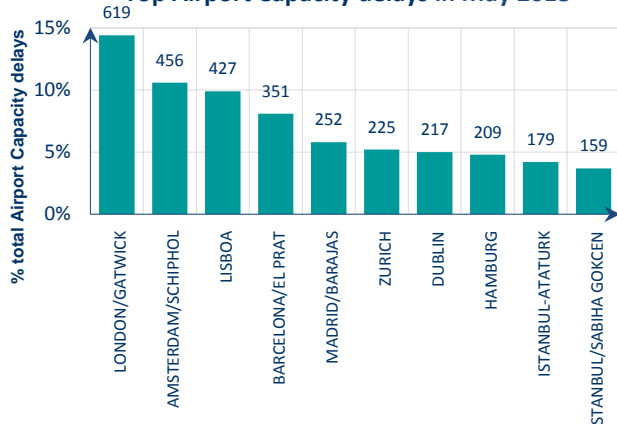
Airports accounted for 18.4% of all ATFM delays in May 2018, mainly due to airport weather and aerodrome capacity.

**Top Airport Weather delays in May 2018**



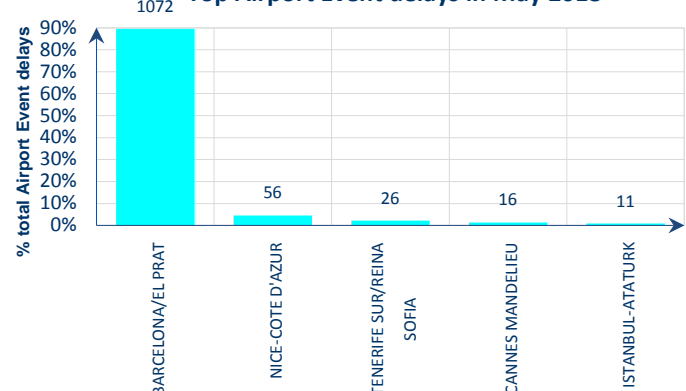
Thunderstorms impacted operations strongly at Frankfurt/Main airport for several days, especially on 23-24 May with a total of 13,663 minutes of delay. Capacity was reduced at Amsterdam/Schiphol airport on 29 May due to convective activity which generated 15,321 minutes of delay.

**Top Airport Capacity delays in May 2018**



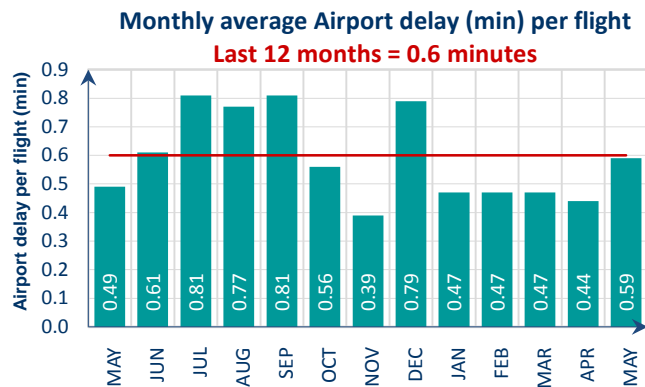
Arrivals regulated at London/Gatwick airport to balance with departures throughout the month.

**Top Airport Event delays in May 2018**

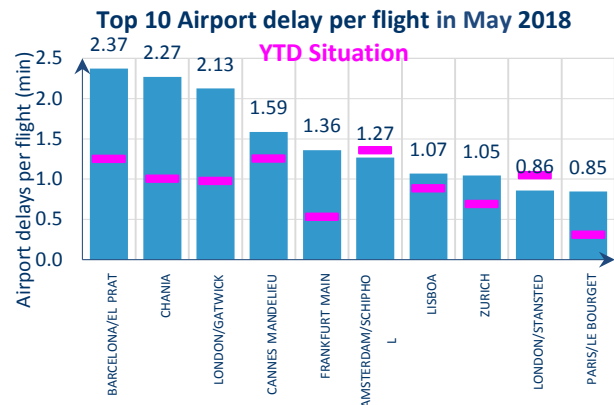


Barcelona TMA generated 90% of these delays due to ongoing BRAIN (Barcelona RNAV Approach Innovations) implementation.

## AIRPORT/TMA ATFM DELAY PER FLIGHT

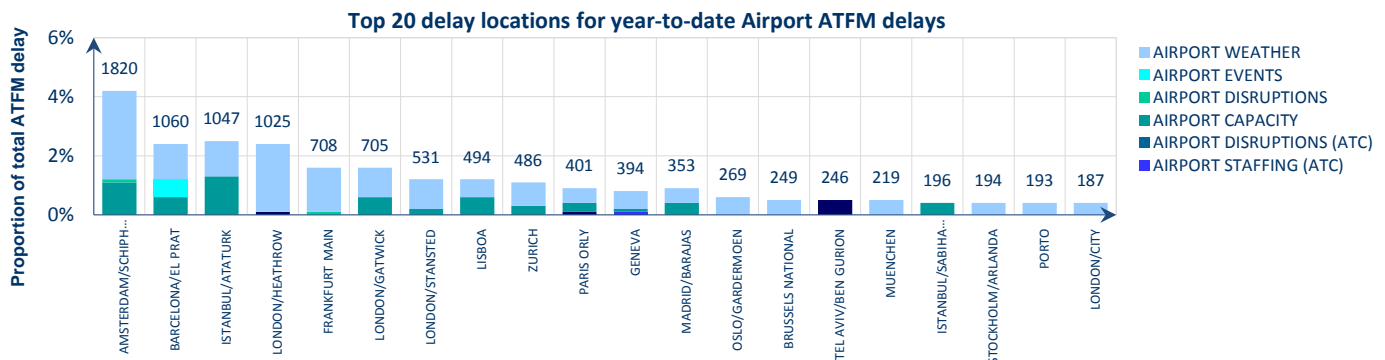


Average airport/TMA delay per flight increased from 0.49 min/flt in May 2017 to 0.59 min/flt in May 2018.

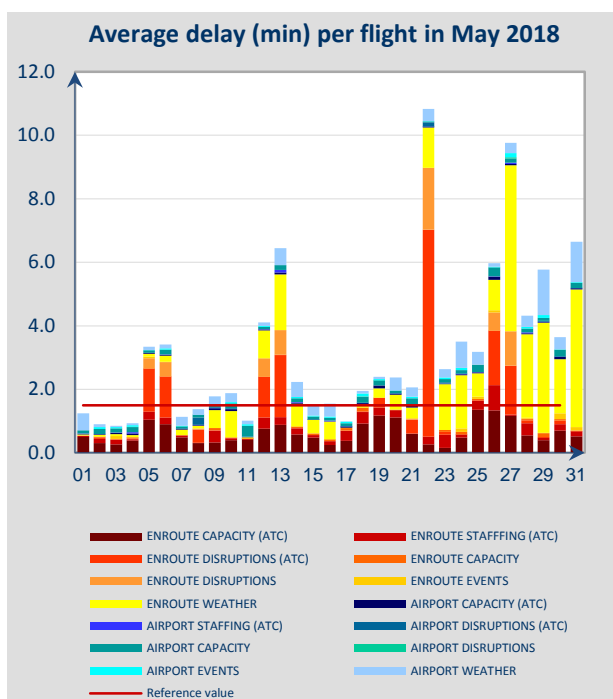


Barcelona airport had the highest delay per flight in May mainly due to system implementation in TMA. Chania airport generated delays due to high demand relative to their capacity.

## AIRPORT/TMA ATFM DELAY YEAR-TO-DATE



## 5. DAILY EVOLUTION



All but 9 days in May 2018 had an average ATFM delay per flight exceeding 1.5 min. These were the most significant days:

**05-06 May:** En-route disruptions delays in Marseille ACC due to ATC industrial action, with additional delays in Brest, Reims and Madrid ACCs; En-route ATC capacity delays in Karlsruhe, Brest and Maastricht ACCs;

**12-13 May:** En-route disruptions delays in Marseille ACC due to ATC industrial action, with additional delays in Brest, Reims, Bordeaux and Madrid ACCs; Thunderstorms impacted operations in Karlsruhe, Maastricht, Barcelona, Vienna and Langen ACCs; En-route capacity delays in Karlsruhe, Brest, Maastricht and Barcelona ACCs; Seasonal weather impacted operations at Frankfurt/Main, Munich and Barcelona airports; ATC staffing issues in Karlsruhe, Maastricht and Brest ACCs;

**22 May:** En-route ATC disruptions delay in Marseille, Brest, Bordeaux, Reims and Paris ACCs due to the French ATC industrial action, with additional delays in Karlsruhe, Maastricht, Madrid and London ACCs; Thunderstorms impacted operations in Karlsruhe, Maastricht, Langen, Paris and Zurich ACCs; Weather delays at Frankfurt/Main airport;

**26-27 May:** En-route disruptions delays in Marseille ACC due to ATC industrial action, with additional delays in Reims, Brest, Milano and Barcelona ACCs; Thunderstorms impacted operations strongly in Maastricht and London ACCs, and to a lesser extent in Karlsruhe, Marseille, Vienna and Langen ACCs; ATC staffing issues in Maastricht, Vienna, Langen and Barcelona ACCs;

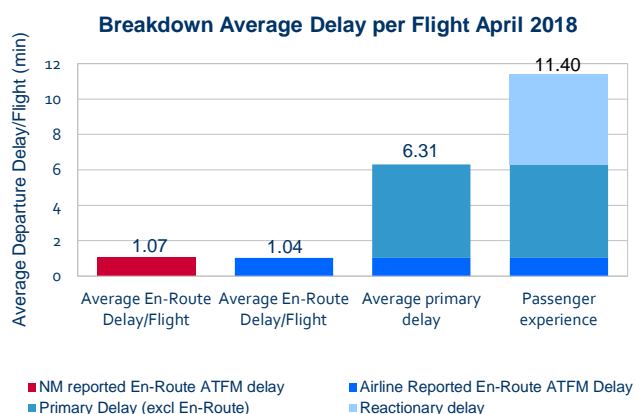
**29 May:** Thunderstorms impacted operations strongly in Maastricht and Karlsruhe UACs, and to a lesser extent in Langen, Vienna and Reims ACCs; Seasonal weather generated delays at Amsterdam/Schiphol, London/Gatwick, London/Heathrow and London/Stansted airports; ATC capacity and staffing issues in Karlsruhe UAC;

**31 May:** Thunderstorms impacted operations strongly in Maastricht, Karlsruhe, Reims, London, Paris, Zurich and Langen ACCs; High weather delays at London/Gatwick, Amsterdam/Schiphol, Frankfurt/Main, London/Heathrow, London/Stansted and London/City airports; ATC capacity and staffing issues in Reims ACC.

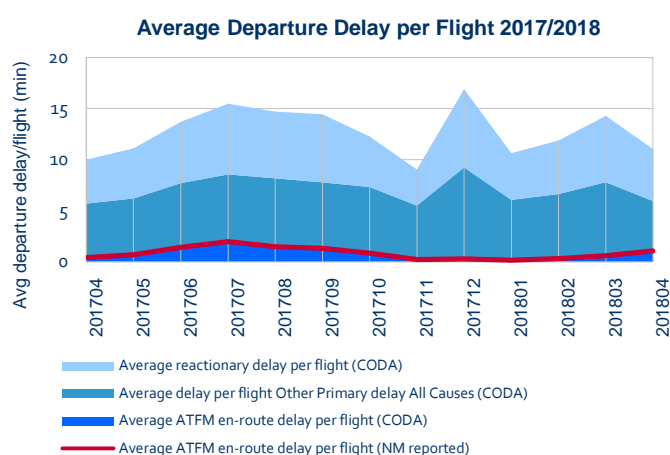
## 6. ALL AIR TRANSPORT DELAYS (SOURCE: CODA)

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 airlines. Data coverage is 62% of the commercial flights in the ECAC region for April 2018. ATFM delays reported by airlines could 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.

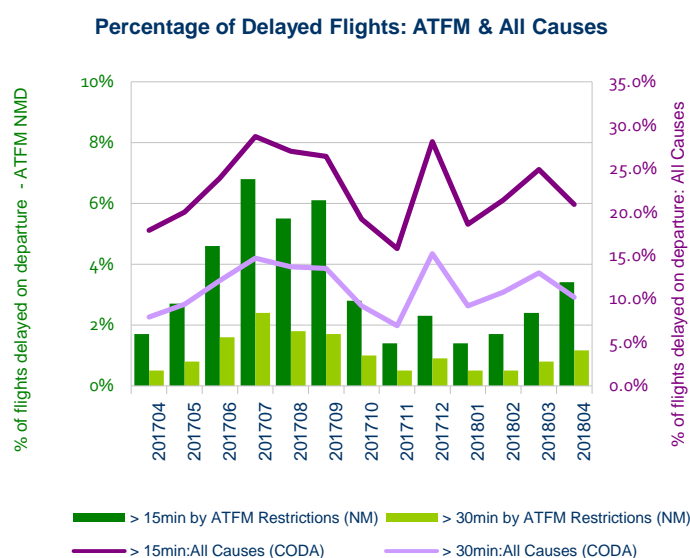
For instance, a flight with an ATFM delay may also have a handling delay absorbed within the ATFM delay. In the event of a long delay an example being during ATC industrial action a flight may keep its original schedule however when it's flight plan is submitted for example a day later any ATFM delay allocated may be lower or zero, in this case airline reported delay will exceed NM reported ATFM delay.



Based on airline data, the average departure delay per flight from 'All-Causes' was 11.4 minutes per flight, an increase in comparison to April 2017 where the average delay was 9.9 minutes per flight. Primary delays counted for 55% (or 6.31 min/ft), with reactionary delays representing the smaller remaining share of 45% at (5.09 min/ft), and increase of 0.8min/ft compared to April 2017.



Further analysis of the past 12 months shows that the average 'All-Causes' en-route ATFM delay reported by airlines was 1.07 minutes per flight in April 2018. This was significantly higher when compared to April 2017 when the 'All-Causes' en-route ATFM delay was 0.4 minutes per flight. April 2018 saw ATC industrial actions, mainly during the First Rotation Hours which in turn caused an increase in reactionary delays for airlines.

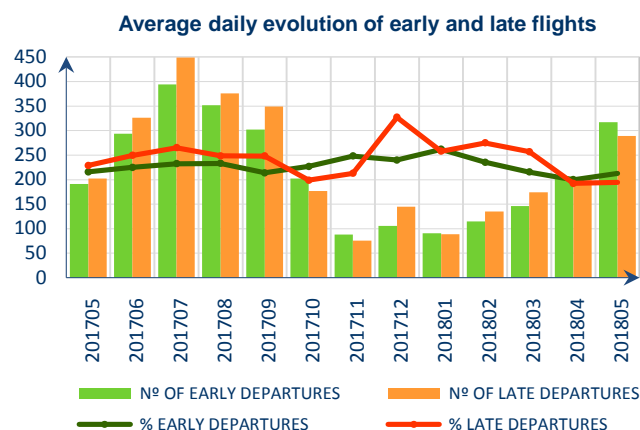


The percentage of flights delayed greater than 15 minutes from 'All-Causes' increased by 3.9 percentage points to 21.8%. Delays exceeding 30 minutes also increased, with 10.2% of flights delayed in April 2018.

For more information on CODA delays:

<http://www.eurocontrol.int/sites/default/files/content/documents/official-documents/facts-and-figures/coda-reports/flad-april-2018.pdf>

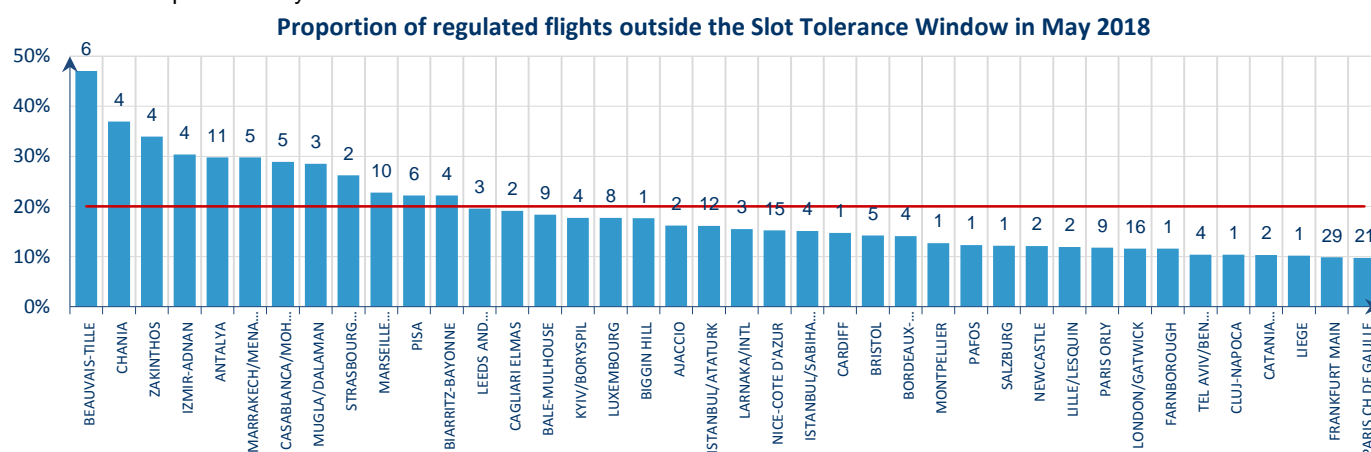
## 7. ATFM SLOT ADHERENCE



The percentage of early departures for May 2018 is 4.3% of regulated flights, which is a decrease of 0.1 percentage points compared to May 2017.

The percentage of late departures for May 2018 is 3.9% of regulated flights, which is a decrease of 0.7 percentage points compared to May 2017.

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.



## 8. SIGNIFICANT EVENTS AND ISSUES

### PLANNED EVENTS

#### ACC

#### MAJOR AIRSPACE OR ATM SYSTEM IMPROVEMENT PROJECTS

##### PLANNED EVENTS

Three ACCs carried out activities involving airspace ATM system changes or upgrades, during this reporting period.

Agadir ACC progressed through the transition phase after the move to the new ACC building and the migration to the new ATM system, not generating ATFM delays, despite anticipated capacity reductions of 15%.

London TC introduced ExCDS into the TMA East and Thames sectors, on 30 May as planned, and generated 7,820 min of ATFM delay. Previously, 20% of capacity reductions had been planned for the said sectors. This amount of delay presented 17% of total delay (47,073 min) by London TC in May.

Shannon ACC upgraded their ATM system without generating ATFM delays, as it had been anticipated.

##### ADDITIONAL INFORMATION

Barcelona ACC generated 7,911 minutes of ATFM delay due to the implementation of RNAV-1 in Barcelona TMA. In addition, Barcelona airport generated 33,241 minutes of delay on the same account.

Bordeaux ACC generated 4,794 minutes of ATFM delay due to the reorganized interface with LECB/LEBL, and 2,991 minutes due to the new TMA at LFZB.

## AIRPORTS

### Local Plans in May

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

### Special Events

- Monaco Grand Prix generated 1,743 minutes of ATFM delay at Nice airport on 27 May;
- UEFA Champion's league final generated 2,382 minutes of ATFM delay at Kiev airport over 25, 26 and 27 May.
- Amsterdam/Schiphol became a fully operational A-CDM airport on 16 May. It is the first airport to be connected via B2B on first operations and the second to be sending DPI messages via B2B.

### Completed

- Runway maintenance at Bilbao, Copenhagen (2,690 minutes of ATFM delay), Dublin, London/Stansted, Nurnberg and Katowice airports;
- Taxiway and/or apron improvements at Ibiza, Lisbon and Palma de Mallorca airports;
- ILS maintenance at Porto (generated 1,725 minutes of ATFM delay over two days) and Lisbon airports.

### Ongoing

- Runway maintenance at Amsterdam/Schiphol, Bucharest (2,953 minutes of ATFM delay generated over four days), Budapest, Cologne, Hamburg (in combination with apron works generated 3,555 minutes of ATFM delay), Istanbul/Sabiha Gökçen, Krakow, Tenerife/Sur, Thessaloniki and Warsaw airports;
- Taxiway and/or apron improvements at Bergamo, Copenhagen, Dusseldorf, Frankfurt/Main, Hamburg, Helsinki, Paris/Orly, Paris/Charles de Gaulle, Rome /Fiumicino, Stuttgart, Tenerife/Sur and Warsaw airports;
- Tower works at Tenerife/Sur airport;
- ILS maintenance at Milan/Malpensa and Poznan airports;
- Terminal building improvements/works at Budapest, Frankfurt/Main, Malta, Manchester, Oslo/Gardermoen and Paris/Charles de Gaulle airports.

## DISRUPTIONS

### Technical

- FDPS technical issue in Stockholm ACC on 19 May generated 8,855 minutes of ATFM delay;
- Frequency issue in Brussels CANAC on 28 May generated 2,503 minutes of ATFM delay.

### Industrial Action

- Marseille ACC industrial action from 0430 UTC on Saturday 05 May to 0430 UTC on Monday 07 May generated 76,117 minutes of en-route ATFM delay in France; Neighbouring states generated 21,686 minutes due to ATFM protective measures;
- Marseille ACC industrial action from 0430 UTC on Saturday 12 May to 0430 UTC on Monday 14 May generated 95,922 minutes of en-route ATFM delay in France; Neighbouring states generated 41,050 minutes due to ATFM protective measures;
- French ATC industrial action from 1700 UTC on 21 May to 0400 UTC on 23 May generated 214,650 minutes of en-route ATFM delay in France; Neighbouring states generated 60,253 minutes due to ATFM protective measures;
- Marseille ACC industrial action from 0430 UTC on Saturday 26 May to 0430 UTC on Monday 28 May generated 95,482 minutes of en-route ATFM delay in France; Neighbouring states generated 49,671 minutes due to ATFM protective measures;
- Italian ATC industrial action on 08 May generated 12,462 minutes of en-route ATFM delay in Italy; NM estimates there were 600 flights which did not operate to/from Italian airports.
- Greeks ATC industrial action from 0700 UTC to 1000UTC on Wednesday 30 May generated 4,252 minutes of en-route ATFM delay in Greece. Athens TMA was regulated immediately after the strike to protect against a peak of traffic, generating 6,270 minutes of en-route ATFM delay.

## 9. NM ADDED VALUE

### FLIGHTS WITH DELAY > 30'

The number of flights with more than 30 minutes of ATFM delay increased between May 2017 and May 2018.

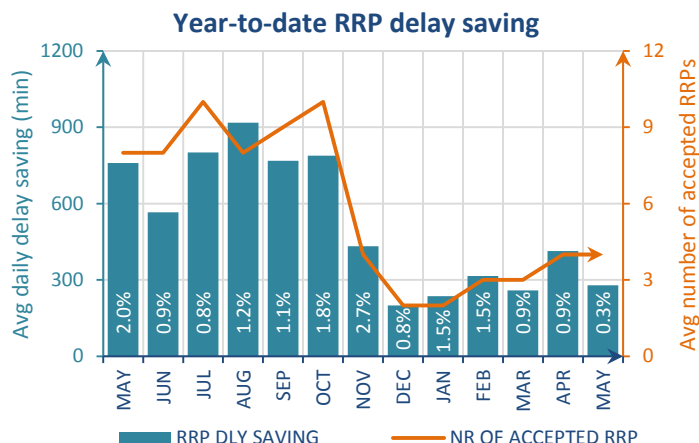
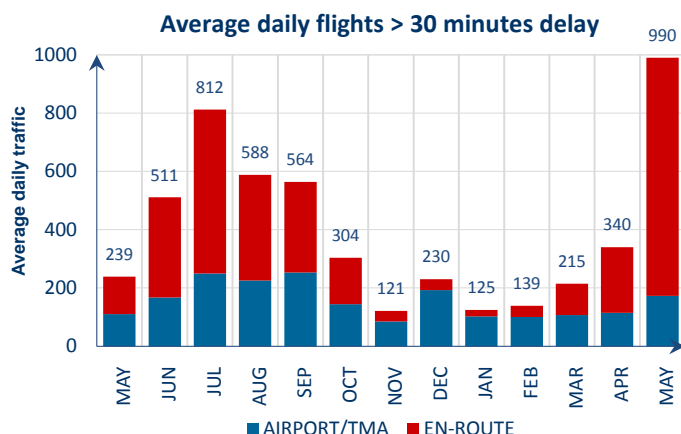
In May 2018, 82.5% of flights with more than 30 minutes of ATFM delay were en-route and 17.5% were airport.

An average 57 flights per day had their delay reduced to less than 30 min by NM.

### RRP DIRECT DELAY SAVINGS

On average 4 RRP/day were executed saving 259 min/day, accounting for 0.3% of ATFM delays.

This graph shows the actual daily averages for the previous 13 months' period<sup>vi</sup>.



© 2018 THE EUROPEAN ORGANISATION FOR THE SAFETY OF AIR NAVIGATION (EUROCONTROL)

This document is published by EUROCONTROL in the interests of exchange of information. It may be copied in whole or in part, providing that the copyright notice and disclaimer are included. The information contained in the document may not be modified without prior written permission from EUROCONTROL. EUROCONTROL makes no warranty, either implied or express, for the information contained in this document, neither does it assume any legal liability or responsibility for the accuracy, completeness or usefulness of this information.

#### Contact Us

Operational Analysis & Reporting,  
Performance, Forecasts and Relations (PFR) Unit,  
Network Manager Directorate (NMD),  
EUROCONTROL,  
96 Rue de la Fusée,  
B - 1130 Brussels

e-mail: [nm.ops.perf@eurocontrol.int](mailto:nm.ops.perf@eurocontrol.int)

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

i On the 03 April the Network Manager suffered an outage of its technical system affecting its operational services, which resulted in the non-availability of traffic data. Therefore the NOR traffic data for this date are based on guideline estimated traffic.

ii See Notice on page 2 for more information on traffic and delay comparison.

iii Internals, international arrivals and departures, excluding overflights.

iv See Notice on page 2 for more information on NM Area.

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

vi NM has revised the delay saving method. Where flights are subject to scenarios, delay savings from RRP are considered when the RRP is sent 3 hours (or less) in advance of the EOBT.