



Network Manager
nominated by
the European Commission



Monthly Network Operations Report

Analysis – March 2018

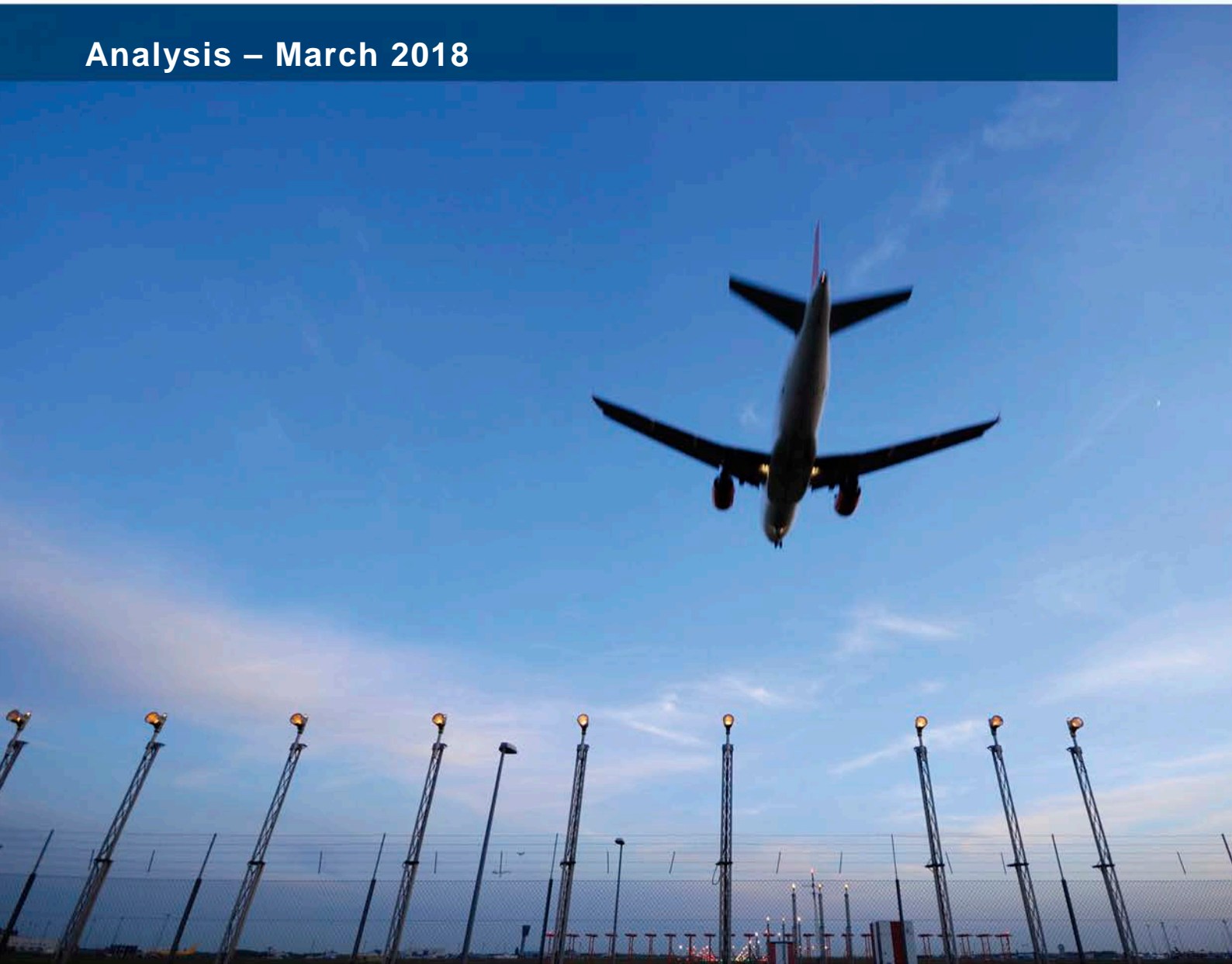


TABLE OF CONTENTS

TABLE OF CONTENTS	2
NOTICE	2
1. TOTAL TRAFFIC	3
2. ATFM DELAY AND ATTRIBUTIONS	6
3. EN-ROUTE ATFM DELAYS	7
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
4. AIRPORT/TMA ATFM DELAYS	11
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
5. DAILY EVOLUTION	12
6. ALL AIR TRANSPORT DELAYS (SOURCE: CODA)	13
7. ATFM SLOT ADHERENCE	14
8. SIGNIFICANT EVENTS AND ISSUES	14
Planned Events	14
ACC	14
Airports	15
Disruptions	15
9. NM ADDED VALUE	16

NOTICE

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 chapter 3 and chapter 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

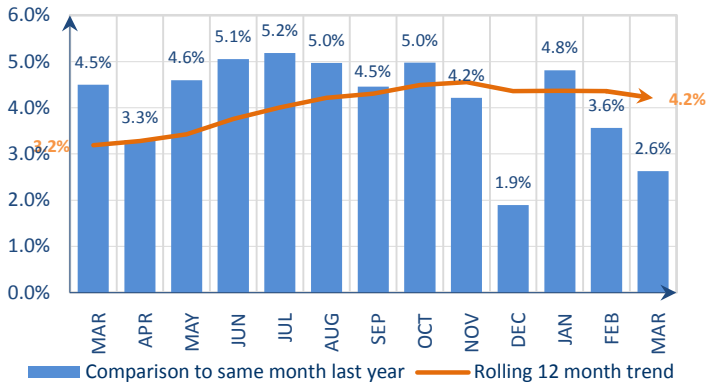
The table below shows the colour coding used in the report charts.

	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>.

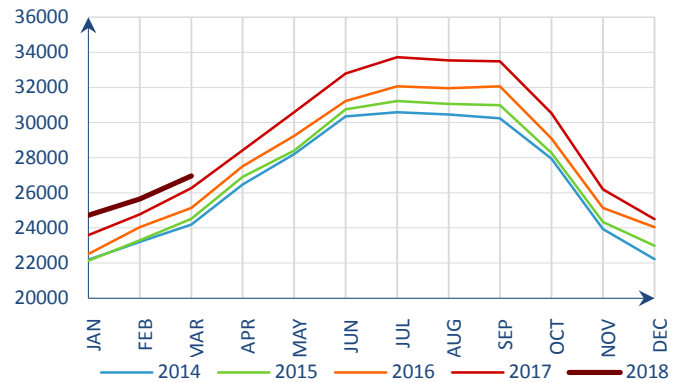
1. TOTAL TRAFFIC

Monthly traffic trend



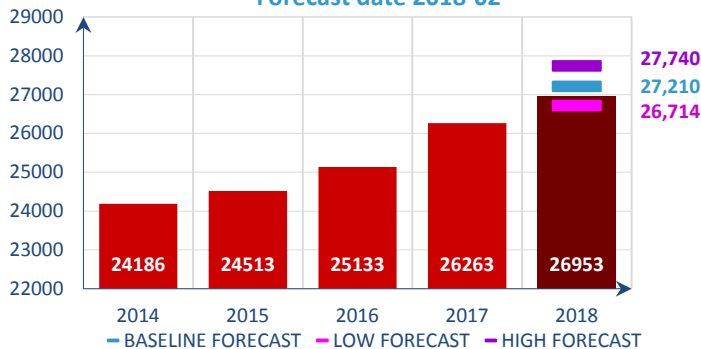
Traffic increased by 2.6% in March 2018¹.

Average daily traffic for last 5 Years



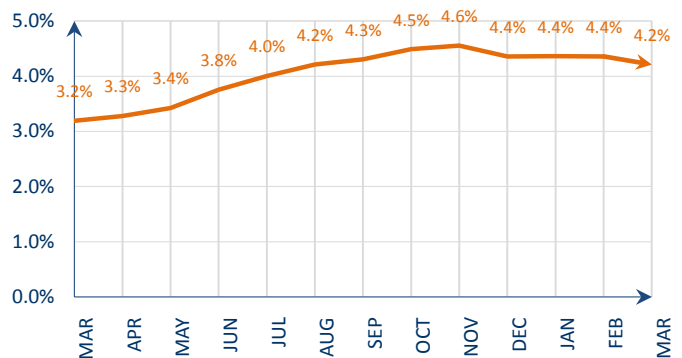
Average daily traffic in March 2018 was the highest for March in the last five years. It could have been higher but several events slow down the growth: Storm Emma and industrial action.

Average daily traffic in March for last 5 Years
Forecast date 2018-02



The traffic increase of 2.6% for March was close to the baseline forecast updated in February 2018. NM estimates that some 6,600 flights were cancelled during March due to Storm Emma. This represents 0.8% of expected March traffic.

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 April 2017 to March 2018 was 4.2% higher than the average from April 2016 to March 2017.

Nine states added more than 50 flights per day to the European local¹¹ traffic growth. Spain was by far the strongest contributor with 218 extra daily flights owing to its flows to/from Germany (+44 flights/day) and to/from Italy (+30 flights/day); Spain's international arrival/departure flow was up 9.4%. Turkey was second and added 197 daily flights (when it recorded 157 fewer flights per day in March 2017) due to a dynamic internal flow (+79 flights/day) but also due to its flows to/from Germany (+20 flights/day), to/from the Middle-East (+18 flights/day) and to/from the Russian Federation (+17 flights/day). Poland was the third contributor with 100 extra daily flights owing to its flows to/from Ukraine and to/from Israel (+10 flights/day for each flow) but also due to its robust flow to/from North Western Europe (+30 flights/day). Italy added 99 flights per day mainly thanks to its flows to/from Spain (+30 flights/day) and to/from the Russian Federation (+16 flights/day). Portugal (excluding Azores) and Canary Islands both added 82 and 78 flights per day. Morocco added 56 flights per day owing partly to its dynamic flow to/from France (+19 flights/day). Ukraine added 56 flights and saw its international departure/arrival flow grow by 16.5%. Germany added 52 extra daily flights and completed the list. At the other end of the scale, the United Kingdom which was impacted by severe weather conditions in early March recorded 117 fewer flights and saw its internal flow decrease by 6.7% (-70 flights/day). Norway saw 111 fewer flights due to its weak internal flow (-111 flights/day) which fell 13%.

The traditional segment remained the main driver of growth with 457 extra flights (including overflights) per day and posted an increase of 3.2%. The low-cost segment went from a 1.1% growth rate in February to 2.9% growth in March and added 217 flights (including overflights) per day. Since the beginning of this year, the charter segment continued to have the fastest growth and increased by 22% (145 extra daily flights, including overflights) owing partly to the recovery of flights between Germany and Egypt and between Ukraine and Egypt. The all-cargo and business aviation segments both declined and were down -2.1% and -1.7% respectively.

The aircraft operators which added the most flights to the network on a daily basis in March 2018 were Turkish Airlines (+153 flights/day), easyJet UK (+107 flights/day), Ryanair (+89 flights/day), Wizz Air (+80 flights/day) and Vueling (+70 flights/day).

The top five external partners (for average daily flights on flows in both directions) were the United States with 868 flights (+5%), the Russian Federation with 681 flights (+13.3%), the United Arab Emirates with 344 flights (+2.7%), Egypt with 245 flights (+44.3%) and Qatar with 187 flights (+22.6%).

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

Seven of the top ten airports had positive traffic growth. Overall, the largest traffic increases in March 2018 were at Tel Aviv/Ben Gurion, Ankara, Gran Canaria, Lisbon and Budapest airports. The largest traffic decreases were at Düsseldorf, Birmingham, Hamburg, Oslo/Gardermoen and Milan/Linate airports. 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 Hamburg 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 March 2017. The operators with the highest traffic growth were Eurowings, Jet2.com, Norwegian Air International, SunExpress Airlines and Wizz Air. The highest traffic decreases were recorded by Wideroe, British Airways Shuttle, Scandinavian Airlines System, Flybe and HOP. UK carriers were impacted by severe weather conditions.

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. Norwegian Air International traffic variation comes from a change in fleet size following new aircraft deliveries, as well as aircraft moving from using NAX to the IBK callsign. Scandinavian Airlines System traffic variation is due to a change in fleet size.

N°	ADEP	ADEP NAME	201803	%
1	EHAM	AMSTERDAM/SCHIPHOL	664	1.9%
2	EDDF	FRANKFURT MAIN	664	8.6%
3	EGLL	LONDON/HEATHROW	634	-0.7%
4	LFPG	PARIS CH DE GAULLE	624	0.1%
5	LTBA	ISTANBUL-ATATURK	604	5.9%
6	EDDM	MUENCHEN	532	-1.8%
7	LEMD	ADOLFO SUAREZ MADRID-BARAJA	531	4.7%
8	LEBL	BARCELONA/EL PRAT	416	6.5%
9	LIRF	ROMA/FIUMICINO	378	2.0%
10	EGKK	LONDON/GATWICK	357	-0.4%
11	LSZH	ZURICH	347	2.0%
12	EKCH	KOBENHAVN/KASTRUP	346	-2.6%
13	ESSA	STOCKHOLM-ARLANDA	338	-3.4%
14	ENGM	OSLO/GARDERMOEN	333	-5.6%
15	LOWW	WIEN SCHWECHAT	309	2.3%
16	LFPO	PARIS ORLY	298	-1.8%
17	EBBR	BRUSSELS NATIONAL	296	-3.6%
18	LTFJ	ISTANBUL/SABIHA GOKCEN	293	7.0%
19	EIDW	DUBLIN	276	-0.9%
20	LPPT	LISBOA	275	13.3%
21	EDDL	DUESSELDORF	270	-8.4%
22	LSGG	GENEVA	262	-3.4%
23	EFHK	HELSINKI-VANTAA	256	7.3%
24	EGCC	MANCHESTER	243	-1.0%
25	EGSS	LONDON/STANSTED	243	5.3%
26	LIMC	MILANO MALPENSA	239	8.1%
27	EPWA	CHOPINA W WARSZAWIE	232	9.9%
28	EDDT	BERLIN-TEGEL	223	0.8%
29	LGAV	ATHINA/ELEF THERIOS VENIZELOS	218	6.9%
30	LLBG	TEL AVIV/BEN GURION	191	30.8%
31	EDDH	HAMBURG	191	-6.3%
32	GCLP	GRAN CANARIA	187	14.1%
33	LKPR	PRAHA RUZYNE	181	7.7%
34	LEPA	PALMA DE MALLORCA	177	11.4%
35	EGGW	LONDON/LUTON	174	-0.7%
36	EDDK	KOELN-BONN	172	0.6%
37	LTAC	ANKARA-ESENBOGA	169	21.6%
38	EDDS	STUTTGART	160	7.2%
39	LFMN	NICE-COTE D'AZUR	159	3.9%
40	LEMG	MALAGA/COSTA DEL SOL	154	7.5%
41	LROP	BUCURESTI/HENRI COANDA	152	2.9%
42	EGPH	EDINBURGH	151	-4.0%
43	LFLL	LYON SAINT-EXUPERY	150	0.2%
44	LIML	MILANO LINATE	147	-4.9%
45	LHBP	BUDAPEST LISZT FERENC INT.	140	11.6%
46	EGBB	BIRMINGHAM	135	-6.9%
47	EDDB	SCHOENEFELD-BERLIN	134	2.6%
48	LFBO	TOULOUSE BLAGNAC	130	-1.8%
49	LFML	MARSEILLE PROVENCE	125	-0.5%
50	GMMN	CASABLANCA/MOHAMMED	117	0.0%
TOTALS and % TOTAL TRAFFIC			13997	58.5%

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

N°	ICAO	AIR OPERATOR	201803	%
1	RYR	RYANAIR	1815	5.2%
2	DLH	DEUTSCHE LUFTHANSA	1428	5.9%
3	EZY	EASYJET	1307	9.0%
4	THY	TURKISH AIRLINES	1281	13.6%
5	AFR	AIR FRANCE	834	-3.8%
6	SAS	SCANDINAVIAN AIRLINES SYSTEM	808	-10.0%
7	BAW	BRITISH AIRWAYS	672	2.0%
8	KLM	KLM ROYAL DUTCH AIRL	648	5.0%
9	EWG	EUROWINGS AG	611	200.6%
10	VLG	VUELING AIRLINES SA	498	16.4%
11	AZA	ALITALIA	477	-3.7%
12	WZZ	WIZZ AIR	453	21.5%
13	PGT	PEGASUS HAVA TASI	444	14.3%
14	SWR	SWISS INTERNATIONAL	372	-2.2%
15	BEE	JERSEY EUROPEAN T/A FLYBE	371	-7.7%
16	AUA	AUSTRIAN AIRLINES	342	4.0%
17	TAP	TAP/AIR PORTUGAL	340	15.5%
18	FIN	FINNAIR O/Y	339	9.0%
19	NAX	NORWEGIAN AIR SHUTTLE	333	-4.9%
20	LOT	LOT-POLISH AIRLINES	312	16.7%
21	WIF	WIDEROE	302	-13.0%
22	AFL	AEROFLOT-RUSSIAN	290	9.3%
23	IBK	NORWEGIAN AIR INTERNATIONAL	248	33.0%
24	AEA	AIR EUROPA	246	15.0%
25	IBE	IBERIA	240	1.7%
26	QTR	QATAR AIRWAYS COMP.	229	20.9%
27	HOP	HOP (MERGE OF BZH + RAE + RLA)	214	-7.2%
28	ANE	AIR NOSTRUM	212	2.7%
29	BEL	BRUSSELS AIRLINES	209	-3.6%
30	RAM	ROYAL AIR MAROC	195	3.7%
31	UAE	EMIRATES	191	-1.5%
32	EIN	AER LINGUS TEORANTA	179	-1.7%
33	BCS	EUROPEAN AIR TRANSP.	159	1.9%
34	AUI	UKRAINE INTERNATIONAL	147	9.3%
35	BTI	AIR BALTIC CORPORAT.	132	14.7%
36	EZS	EASY JET SWITZERLAND	132	1.2%
37	TRA	TRANSAVIA.COM	130	-0.2%
38	EXS	JET2.COM	125	40.9%
39	OAL	OLYMPIC	121	1.7%
40	NJE	NETJETS	118	9.1%
41	LOG	LOGANAIR	114	-0.4%
42	AEE	AEGEAN AIRLINES	113	5.5%
43	TOM	THOMSON FLY LTD	112	8.8%
44	SXS	SUNEXPRESS AIRLINES	110	22.8%
45	UAL	UNITED AIRLINES INC.	110	-1.6%
46	CFE	CITYFLYER EXPRESS	108	4.4%
47	DAH	AIR ALGERIE	102	6.6%
48	DAL	DELTA AIR LINES INC.	102	3.9%
49	SHT	BAW SHUTTLE	98	-10.6%
50	ROT	TAROM	98	3.5%
TOTALS and % TOTAL TRAFFIC			18571	68.9%

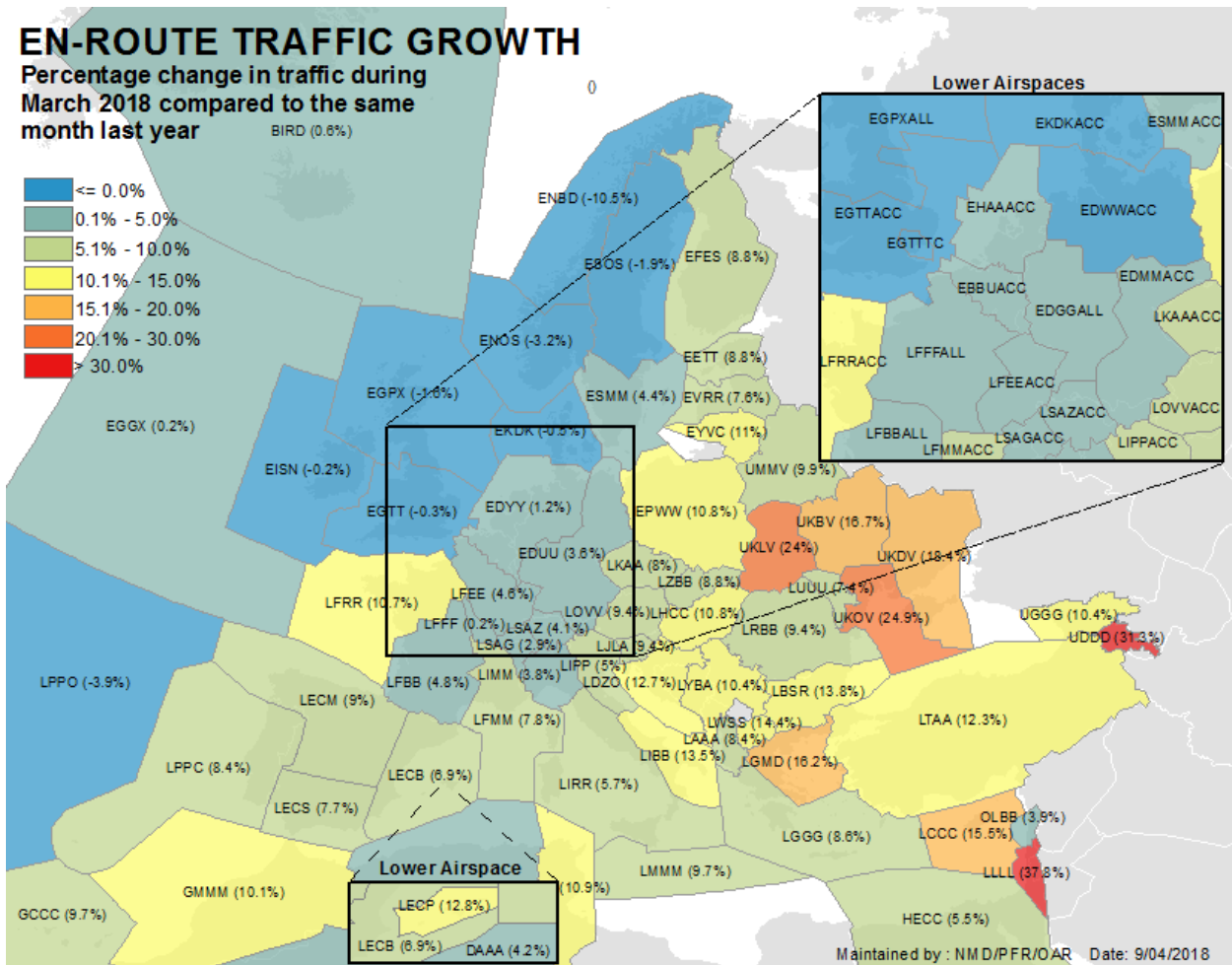
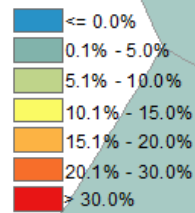
Top 50 Air Operators with average daily traffic and percentage compared to same period of previous year

N°	ICAO	AIR OPERATOR	201803	%
		Unidentified	1854	-9.5%

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 March 2018 compared to the same month last year

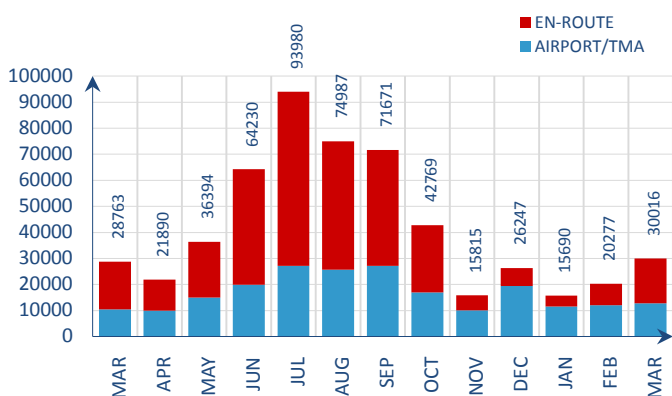


Nº	ASP ID	ASP NAME	201803	%	Nº	ASP ID	ASP NAME	201803	%
1	BIRDACC	REYKJAVIK ACC	335	0.6%	39	LFBBALL	BORDEAUX ALL ACC	2230	4.8%
2	DAAAACC	ALGERS ACC	477	4.2%	40	LFEEACC	REIMS U/ACC	2538	4.6%
3	DTTCACC	TUNIS ACC	285	10.9%	41	LFFFALL	PARIS ALL ACC	3100	0.2%
4	EBBUACC	BRUSSELS CANAC	1608	2.5%	42	LFMMACC	MARSEILLE ACC	2581	7.8%
5	EDGGALL	LANGEN ACC_FIR	3374	3.3%	43	LFMMAPP	MARSEILLE TMA	754	2.6%
6	EDMMACC	MUNCHEN ACC	2986	2.8%	44	LFRRACC	BREST U/ACC	2565	10.7%
7	EDUUUAC	KARLSRUHE UAC	4703	3.6%	45	LGGGACC	ATHINAI CONTROL	1051	8.6%
8	EDWWACC	BREMEN ACC	1657	-1.6%	46	LGMACC	MAKEDONIA CONTROL	802	16.2%
9	EDYYUAC	MAASTRICHT UAC	4746	1.2%	47	LHCCACC	BUDAPEST ACC	1819	10.8%
10	EETTACC	TALLIN ACC	541	8.9%	48	LIBBACC	BRINDISI ACC	629	13.5%
11	EFESACC	TAMPERE ACC	541	8.9%	49	LIMMACC	MILANO ACC	1987	3.8%
12	EGGXOCA	SHANWICK OACC	1228	0.2%	50	LIPPACC	PADOVA ACC	1529	5.0%
13	EGPXALL	SCOTTISH ACC	2495	-1.6%	51	LIRRACC	ROMA ACC	1896	5.7%
14	EGTTACC	LONDON ACC	5081	-0.3%	52	LJLAACC	LJUBLJANA ACC	642	9.4%
15	EGTTTC	LONDON TMA TC	3611	-0.9%	53	LKAAACC	PRAGUE ACC	1980	8.0%
16	EHAACC	AMSTERDAM ACC(245-)	1549	0.5%	54	LLLLACC	TEL AVIV ACC	489	37.8%
17	EIDWACC	DUBLIN ACC	586	-2.3%	55	LMMMACC	MALTA ACC	317	9.7%
18	EISNACC	SHANNON ACC	1106	-0.2%	56	LOVVACC	WIEN ACC	1963	9.4%
19	EKDKACC	COPENHAGEN ACC	1499	-0.5%	57	LPPCACC	LISBOA ACC/UAC	1554	8.4%
20	ENBDACC	BODO ACC	553	-10.5%	58	LPPOACC	SANTA MARIA OACC	393	-3.9%
21	ENOSACC	OSLO ATCC	945	-3.2%	59	LQSBACC	BOSNIA-HERZEGOVINA	81	-2.4%
22	ENSVACC	STAVANGER ATCC	571	-6.4%	60	LRBBACC	BUCURESTI ACC	1595	9.4%
23	EPWWACC	WARSAWA ACC	1931	10.8%	61	LSAGACC	GENEVA ACC	1675	3.0%
24	ESMMACC	MALMO ACC	1477	4.4%	62	LSAZACC	ZURICH ACC	1972	4.1%
25	ESOSACC	STOCKHOLM ACC	1187	-1.9%	63	LTAAACC	ANKARA ACC	3413	12.3%
26	EVRACC	RIGA ACC	678	7.6%	64	LTBBACC	ISTANBUL ACC	1931	6.9%
27	EYVACC	VILNIUS ACC	607	11.0%	65	LUUUACC	CHISINAU ACC	101	7.5%
28	GCCACC	CANARIAS ACC/FIC	1008	9.7%	66	LWSSACC	SKOPJE ACC	278	14.4%
29	GMMMACC	CASABLANCA ACC	1190	10.1%	67	LYBAACC	BEOGRADE ACC	1324	10.4%
30	HECCACC	CAIRO ACC	657	5.5%	68	LZBBACC	BRATISLAVA ACC	1149	8.8%
31	LAAACC	TIRANA ACC	374	8.4%	69	OLBBACC	BEIRUT ACC	134	3.9%
32	LBSRACC	SOFIA ACC	1798	13.8%	70	UDDACC	YEREVAN ACC	151	31.3%
33	LCCACC	NICOSIA ACC	955	15.5%	71	UGGACC	TBILISI ACC	382	10.4%
34	LDZOACC	ZAGREB ACC	1094	12.7%	72	UKBVACC	KIEV ACC	363	16.7%
35	LECBACC	BARCELONA ACC	1903	6.9%	73	UKDVACC	DNIPROPETROVSK ACC	45	18.4%
36	LECMACC	MADRID ALL ACC	2923	9.0%	74	UKLVACC	L'VIV ACC	279	24.0%
37	LECPACC	PALMA ACC	477	12.8%	75	UKOVACC	ODESSA ACC	211	24.9%
38	LECSACC	SEVILLA ACC	1006	7.7%	76	UMMVACC	MINSK ACC	708	9.9%

The Sevilla, Lisbon, Canarias, Madrid and Casablanca ACCs variation is due to increased traffic in the South/West axis. However, the highest relative traffic increases in March 2018 were in Tel Aviv, Yerevan, Odessa, L'viv and Kiev ACCs. Traffic increase in Ukraine is partially due to an increase of overflights from/to Turkey. Israel is now integrated in IFPS and the inclusion of Israeli domestic traffic explains much of the traffic growth for Tel Aviv ACC. The traffic increase in Turkish ACC is due to domestic and Russian flights recovery. The traffic variation in French ACCs and Tunisia is partly due to the relative effects of several days of French ATC industrial action in March 2017. Storm Emma has influenced the variation in UK ACCs.

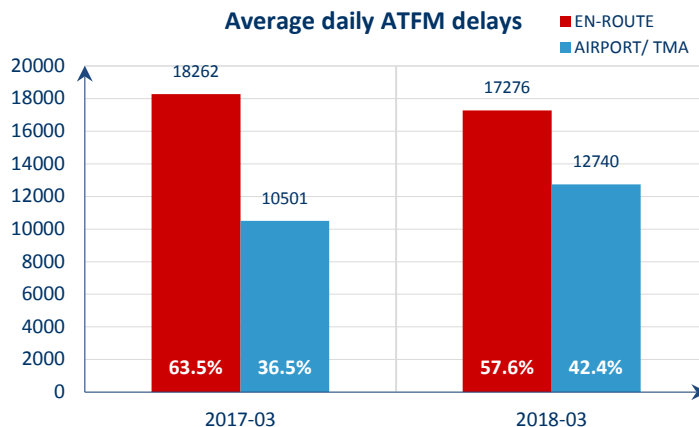
2. ATFM DELAY AND ATTRIBUTIONS

Average daily ATFM delays



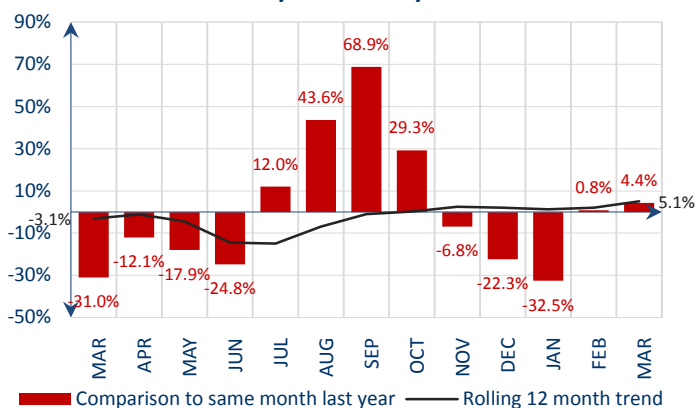
Total ATFM delays increased by 4.4% in March 2018¹.

Average daily ATFM delays



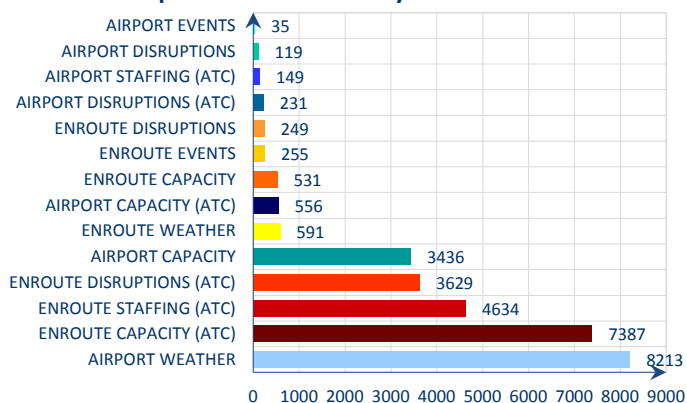
En-route ATFM delays decreased by 5.4% and airport ATFM delays increased by 21.3%.

Monthly ATFM delays trend



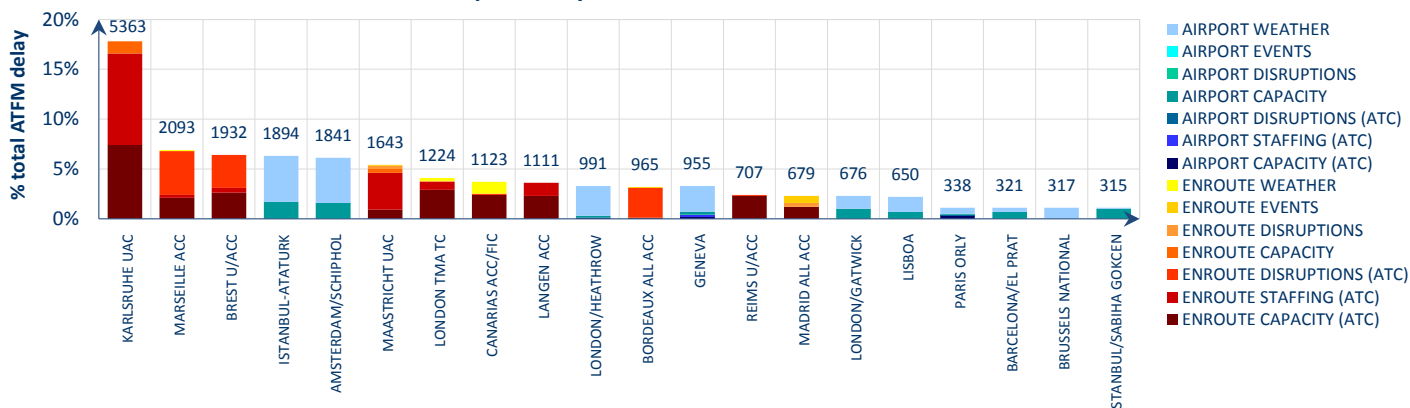
The rolling 12-month trend shows that ATFM delay was 5.1% higher during the period April 2017 – March 2018 compared to April 2016 – March 2017.

Proportion of ATFM delays in March 2018



Airport weather (27.4%), en-route ATC capacity (24.6%), en-route ATC staffing (15.4%) were the main causes of ATFM delays in March 2018.

Top 20 delay reference locations in March 2018

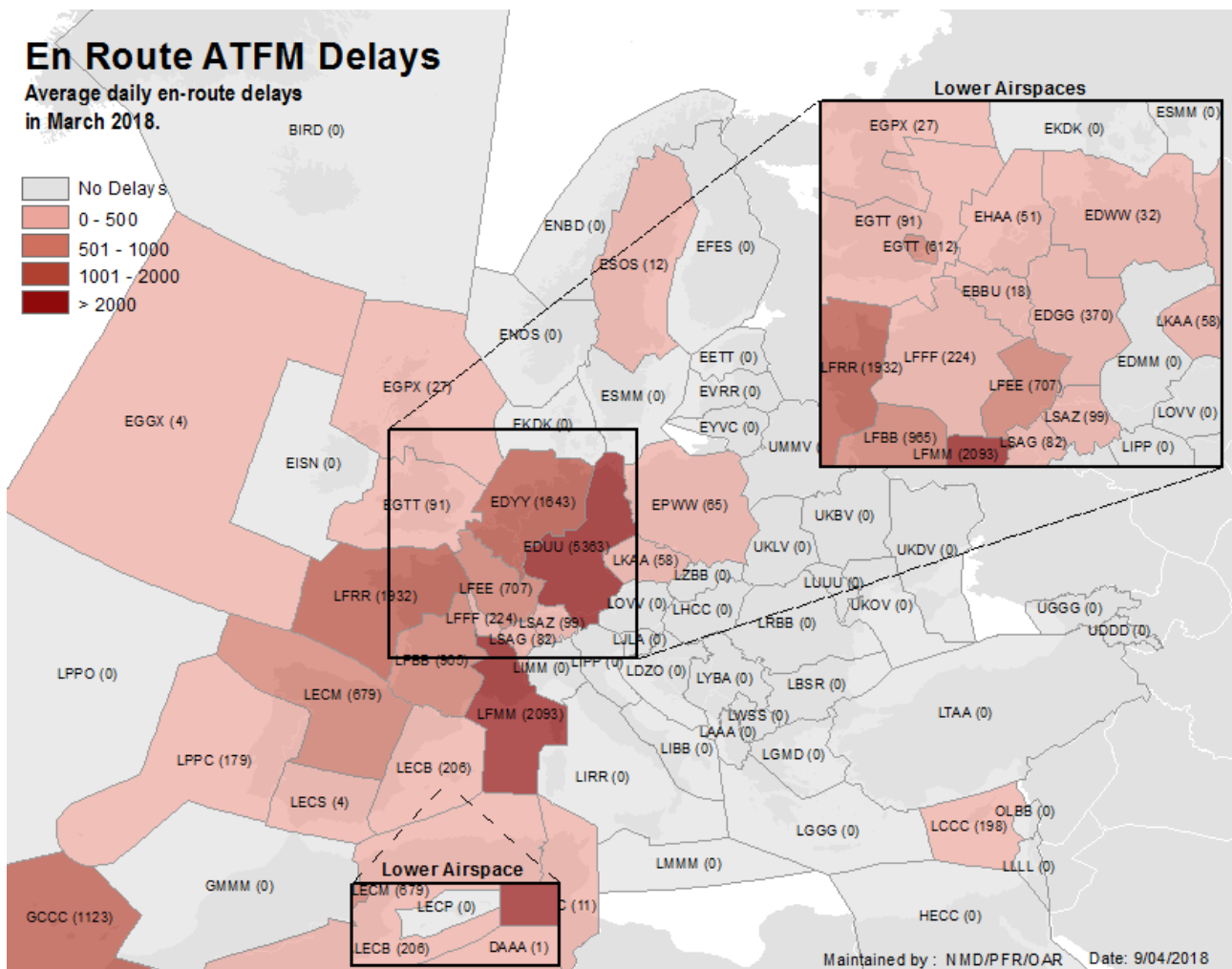


These are the top 20 delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

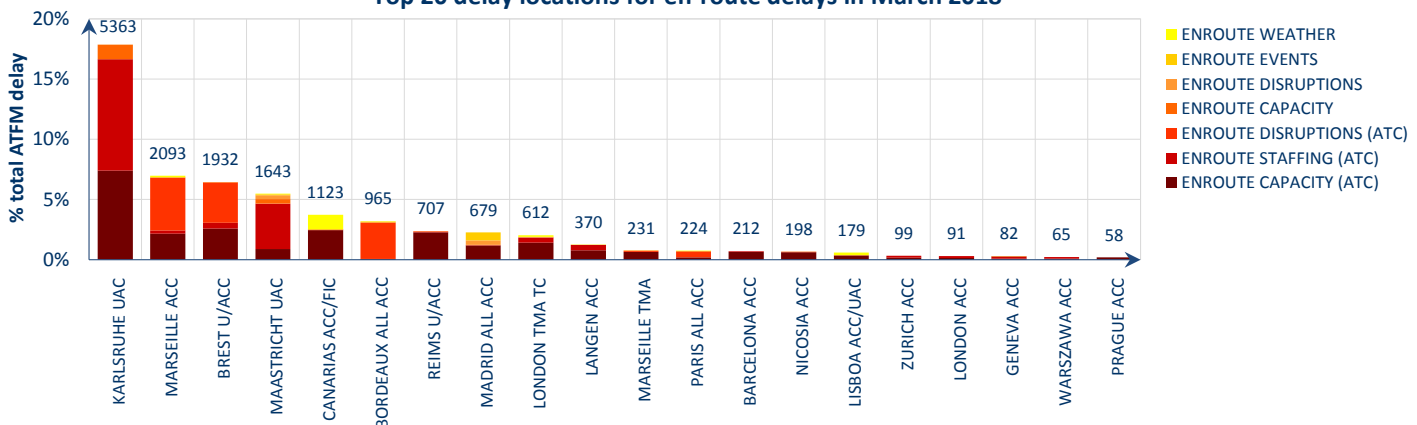
- French ATC industrial action from 21 March to 23 March resulted in disruption delays for Marseille, Brest and Bordeaux ACCs;
- Seasonal weather impacted operations at Istanbul/Ataturk, Amsterdam/Schiphol, London/Heathrow and Geneva airports;
- En-route ATC staffing issues in Karlsruhe and Maastricht UACs;
- En-route capacity delays in Karlsruhe, London, Canarias, Langen, Marseille, Brest and Reims ACCs;
- Capacity issues at Istanbul/Ataturk and Amsterdam/Schiphol airports;
- ATM interface transition in Bordeaux/Madrid ACCs.

3. EN-ROUTE ATFM DELAYS

EN-ROUTE ATFM DELAY PER LOCATION



Top 20 delay locations for en-route delays in March 2018



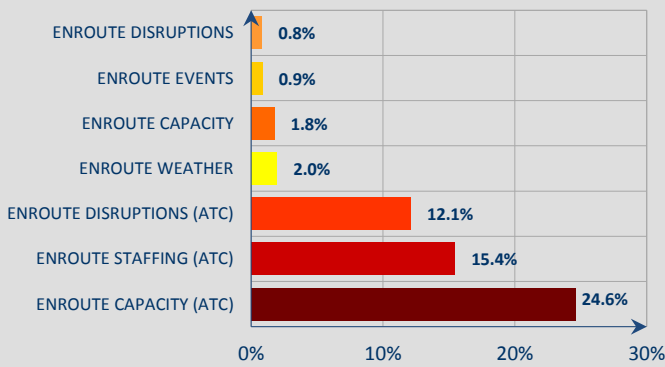
These are the top 20 en-route ATFM delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

The top 20 en-route ATFM delay locations generated **56.4%** of the monthly total (network) ATFM delay.
 The top 5 en-route ATFM delay locations generated **40.5%** of the monthly total (network) ATFM delay.

More detailed information available in the Monthly per ACC Summary Report via the [NM ATFCM Statistics website](#).

EN-ROUTE ATFM DELAY PER DELAY GROUP

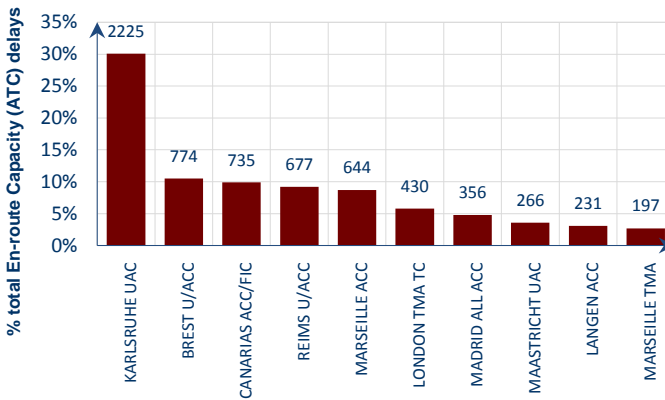
Reasons for en-route delays in March 2018



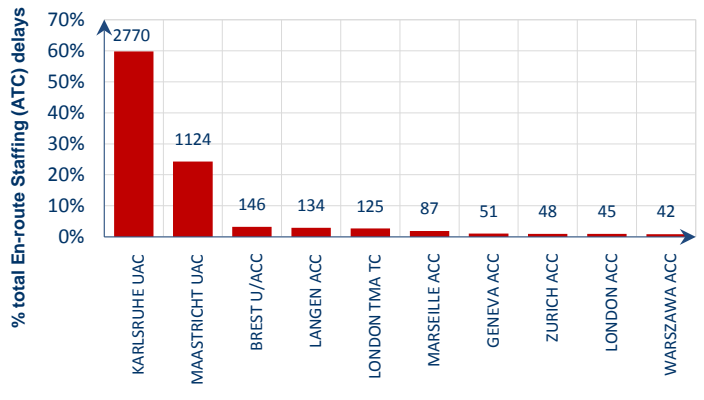
En-route ATFM delays accounted for 57.6% of all ATFM delays. Most of this delay was caused by en-route ATC capacity, en-route ATC staffing and en-route ATC disruptions as explained in detail below. The other causes were:

En-route weather; Wind direction created additional TMA complexity in Canarias ACC;
En-route capacity; Military activities in Karlsruhe UAC;
En-route events; ATM transition to new interface for Bordeaux/Madrid ACCs.

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



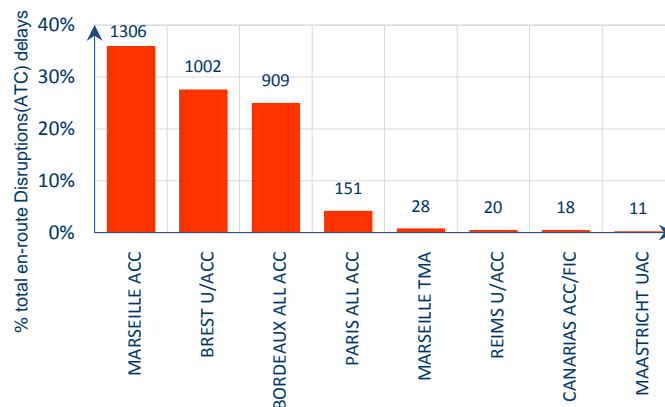
Top en-route Staffing (ATC) delays in March 2018



Karlsruhe UAC was the biggest generator of en-route ATC capacity delays in March.

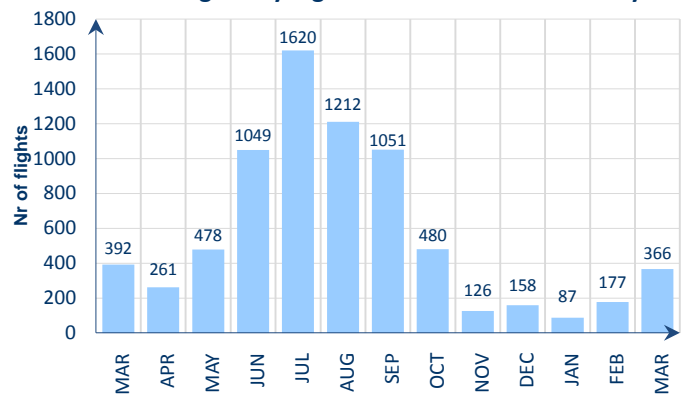
Karlsruhe and Maastricht UACs generated 84% of en-route ATC staffing delays due to staff shortage.

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



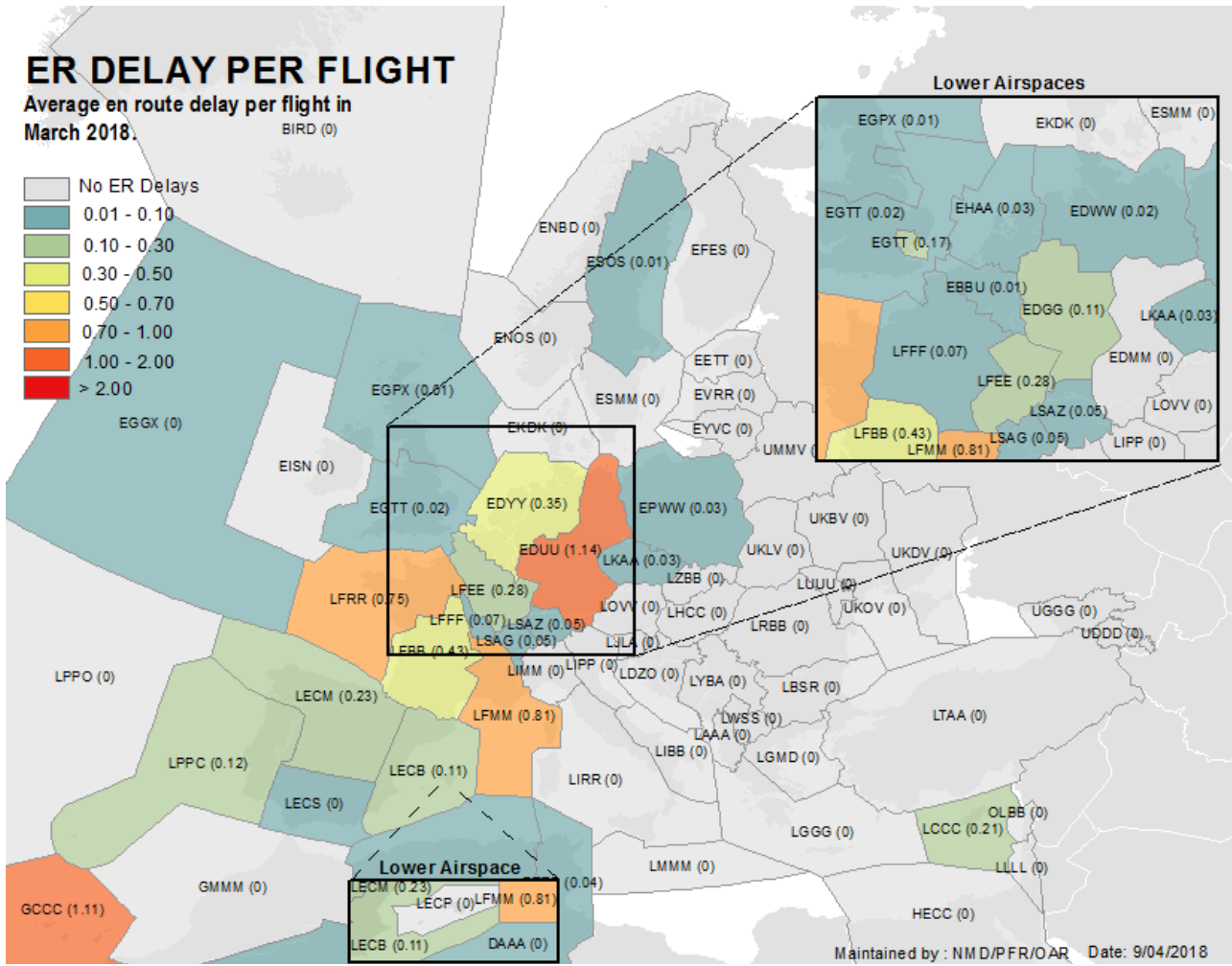
The French ATC industrial action from 21 March to 23 March generated significant en-route disruption delays at French ACCs.

Average daily flights >= 15 min en-route delay

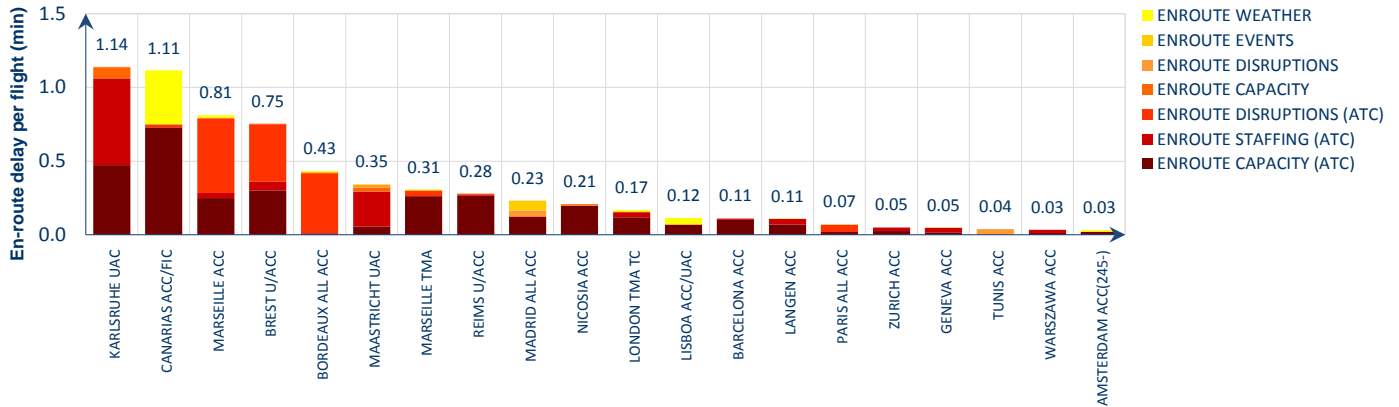


The average daily flights with an en-route ATFM delay of at least 15 minutes decreased from 392 flights/day in March 2017 to 366 flights/day in March 2018, which represents 1.4% of all traffic.

EN-ROUTE ATFM DELAY PER FLIGHT



Top 20 delay locations for en-route delays in March 2018



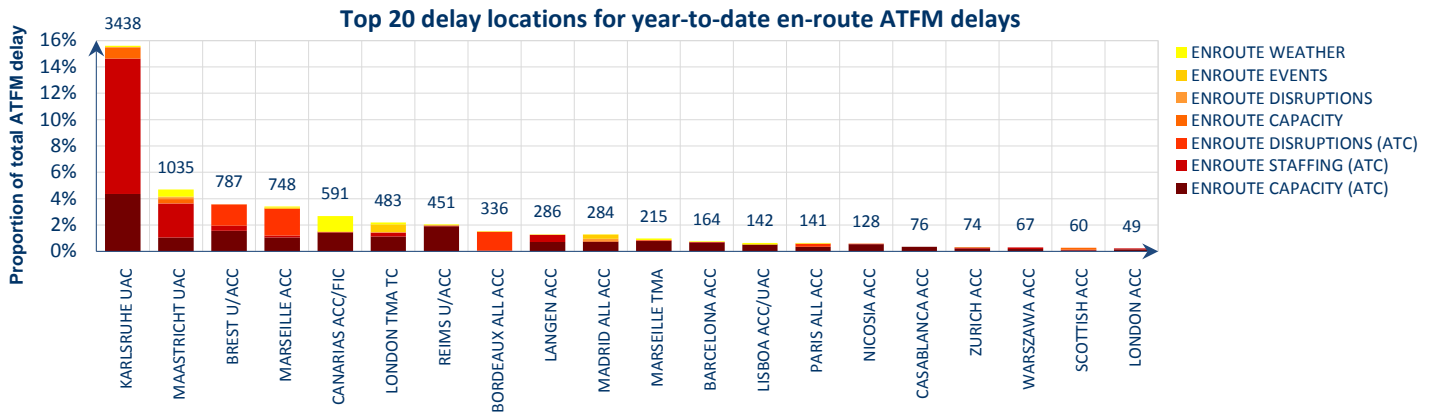
These are the top 20 average en-route ATFM delay per flight generating locations for the reporting month. Figures are the average en-route ATFM delay per flight in minutes for the individual locations.

Karlsruhe UAC en-route ATFM delay/flight increased from 0.79 min/flight in February 2018 to 1.14 min/flight in March 2018, mainly due to capacity;

Canarias ACC en-route ATFM delay/flight increased from 0.44 min/flight in February 2018 to 1.11 min/flight in March 2018, mainly due to capacity;

French ACCs en-route ATFM delay/flight increased due to French industrial action from 21 to 23 March.

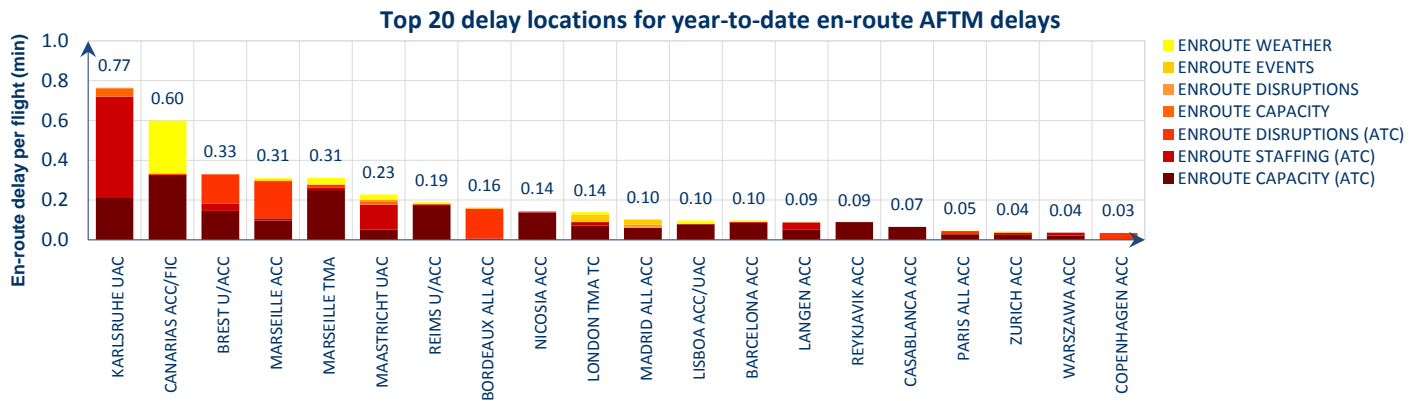
EN-ROUTE ATFM DELAY YEAR-TO-DATE



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.

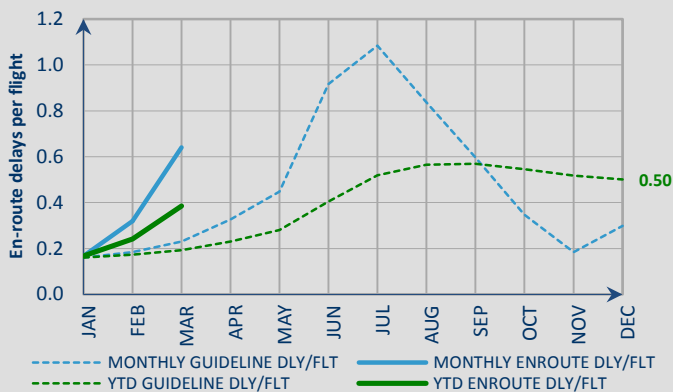
The top 20 en-route delay locations generated **43.3%** of the total ATFM (network) delay.

The top 5 en-route delay locations generated **29.9%** 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.

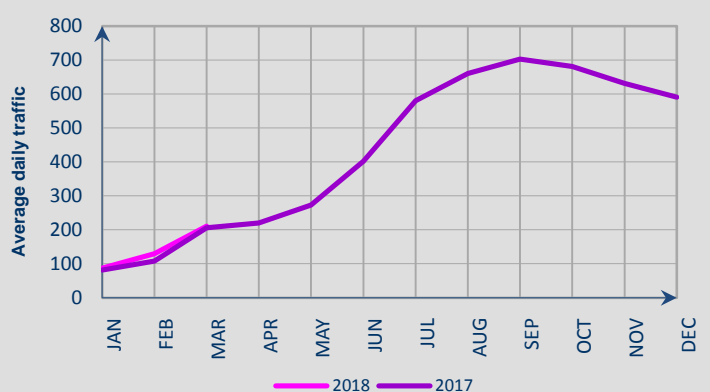
Monthly en-route delay per flight monitoring



Reporting month: The average en-route ATFM delay per flight in the NM areaⁱⁱⁱ in March was 0.64 min/ft, which is above the corresponding monthly guideline^{iv} value of 0.23 min/ft.

Year To Date: The average YTD en-route ATFM delay per flight in 2018 in the NM areaⁱⁱⁱ is 0.39 min/ft which is above the corresponding guideline value of 0.19 min/ft.

Year-to-date daily flights >= 15 min en-route delay



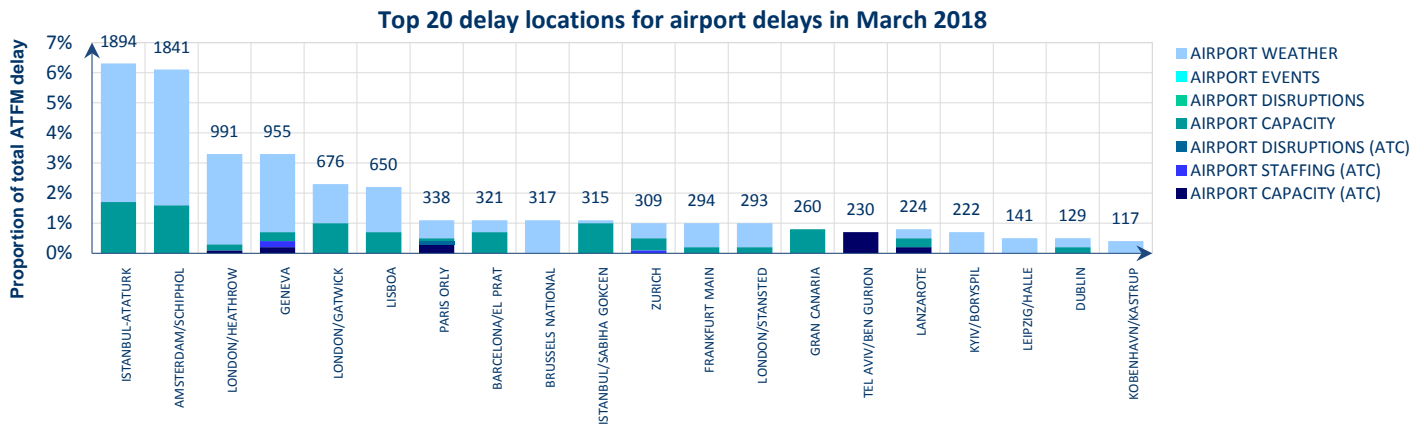
An average of 211 flights/day had an en-route ATFM delay of at least 15 minutes in 2018. The corresponding figure in 2017 was 206 flights/day.

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

- 65 flights/day in Karlsruhe UAC
- 22 flights/day in Maastricht UAC
- 21 flights/day in Marseille ACC

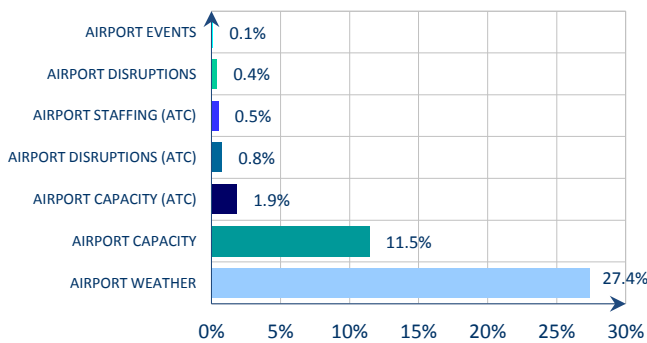
4. AIRPORT/TMA ATFM DELAYS

AIRPORT/TMA ATFM DELAY PER LOCATION

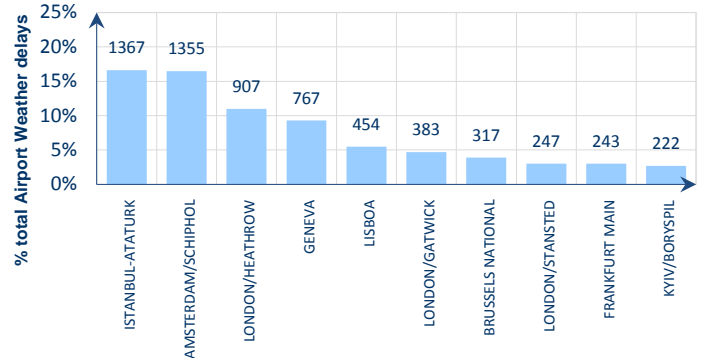


AIRPORT/TMA ATFM DELAY PER DELAY GROUPS

Reasons for airport delays in March 2018



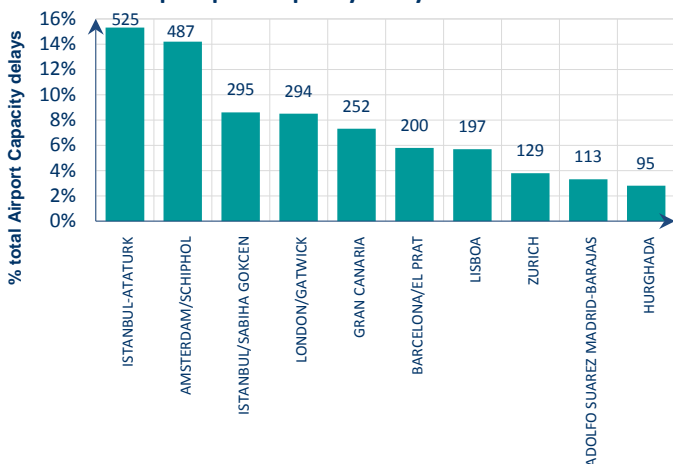
Top Airport Weather delays in March 2018



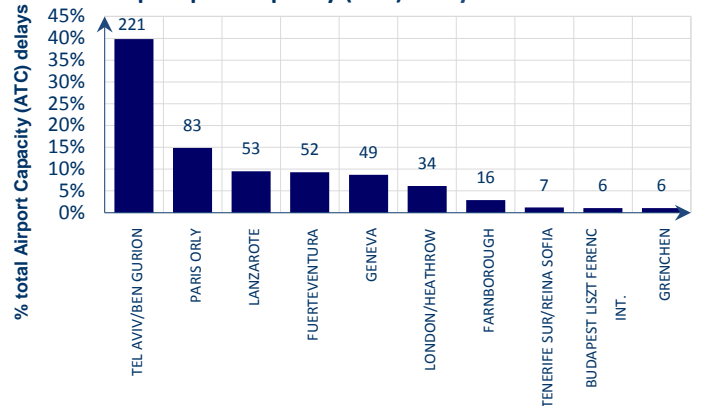
Airports accounted for 42.4% of all ATFM delays in March 2018, mainly due to airport weather and aerodrome capacity.

Arrival regulation was in force at Istanbul/Atatürk airport on 10 and 11 March due to capacity in conjunction with low visibility conditions and generated 27,256 minutes of ATFM delay. Low visibility impacted operations strongly at Amsterdam/Schiphol throughout the month and especially on 26 March with 11,965 minutes of ATFM delay.

Top Airport Capacity delays in March 2018



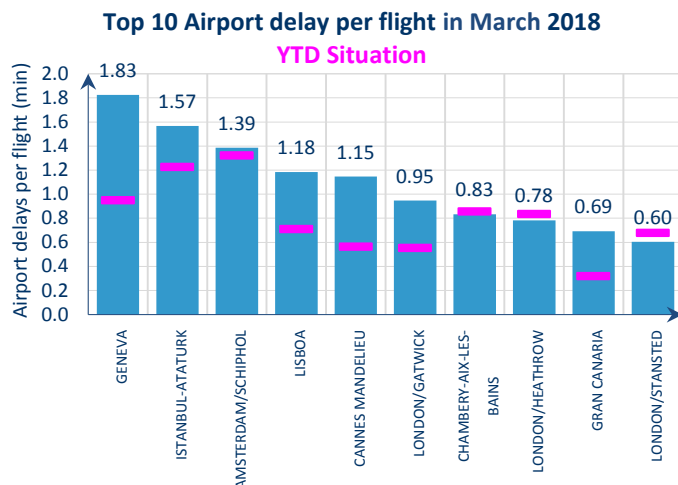
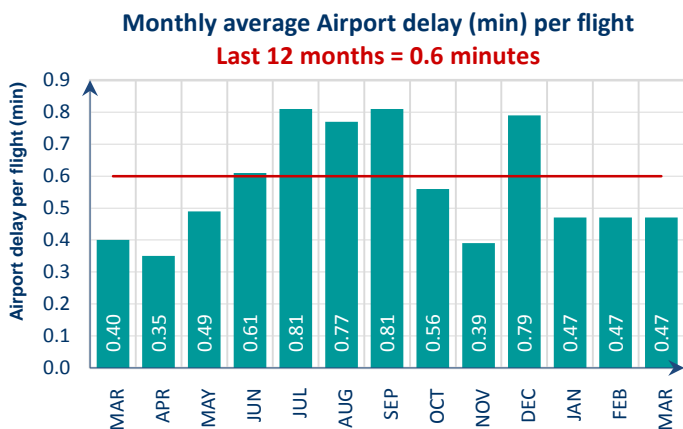
Top Airport Capacity (ATC) delays in March 2018



Capacity issues at Istanbul/Atatürk and Amsterdam/Schiphol airports. Capacity delay at Istanbul Sabiha/Gökçen airport has significantly decreased since last year, despite growth in traffic demand. This decrease is due to an increase in arrival capacity, enabled by the completion of a new rapid exit taxiway at the airport.

Airport ATC capacity delays at Tel Aviv/Ben Gurion airport throughout the month.

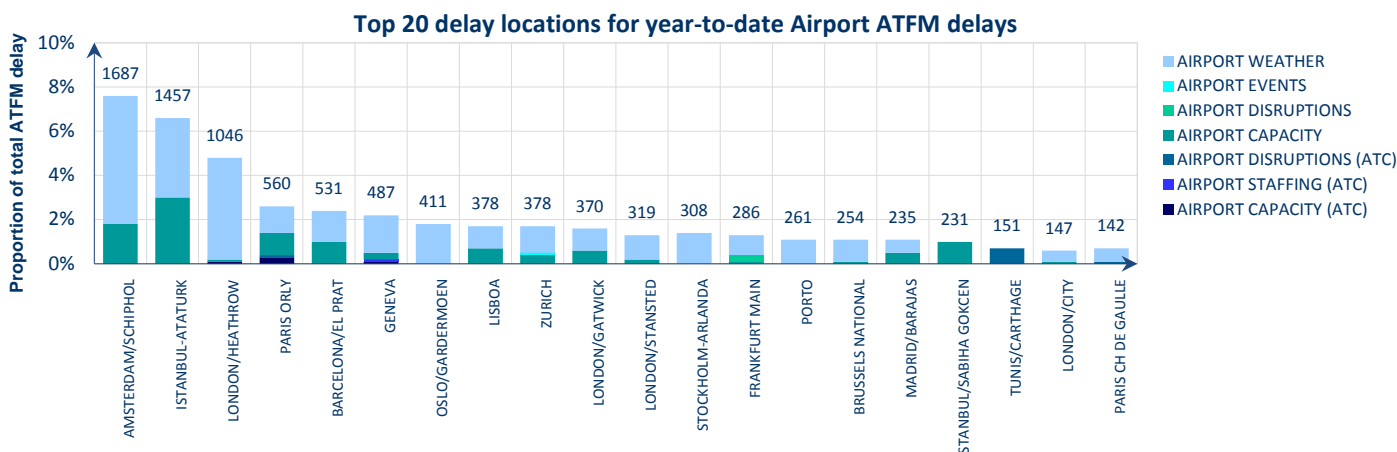
AIRPORT/TMA ATFM DELAY PER FLIGHT



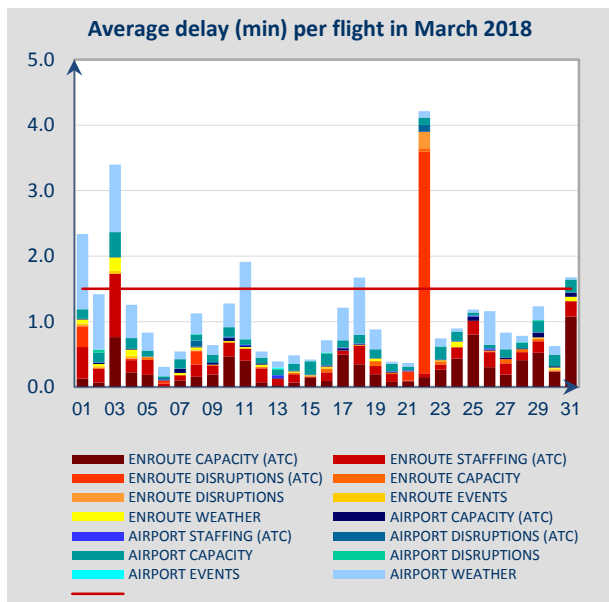
Average airport/TMA delay per flight increased from 0.40 min/flt in March 2017 to 0.47 min/flt in March 2018.

Geneva airport had the highest delay per flight in March mainly due to weather. Lisbon airport delay per flight increased from 0.71 min/flt in March 2017 to 1.18 min/flt in March 2018.

AIRPORT/TMA ATFM DELAY YEAR-TO-DATE



5. DAILY EVOLUTION



Six days in March 2018 had an average ATFM delay per flight exceeding 1.5 min:

01 March 2018: Seasonal weather impacted operations strongly at Amsterdam/Schiphol airport and, to a lesser extent, at London/Gatwick, London/Heathrow, Geneva and Lisbon airports; ATC staffing issues in Karlsruhe and Maastricht UACs; Technical problem with upper airspace reorganisation in Bordeaux ACC; Airport capacity delays at London/Paris CDG airport due to lack of stands.

03 March 2018: ATC staffing issues in Karlsruhe and Maastricht UACs; En-route capacity delays in Canarias, Brest and Marseille ACCs; Seasonal weather impacted operations at Istanbul/Sabiha Gökçen, London/Gatwick, Kiev, Geneva and Lanzarote airports; Aerodrome capacity delays at Birmingham, Gran Canaria and Dublin airports; En-route weather delays in Canarias ACC.

22 March 2018: En-route ATC disruptions delay in Marseille, Brest, Bordeaux and Paris ACCs due to the French ATC industrial action, with additional delays in Madrid and Maastricht ACCs;

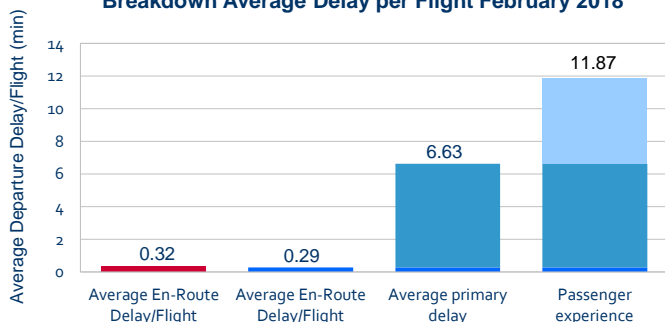
31 March 2018: En-route capacity delays in Karlsruhe, Marseille, Reims and Brest ACCs; En-route ATC staffing issues in Maastricht, London and Brest ACCs; Aerodrome capacity delays at London/Gatwick airport.

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 60% of the commercial flights in the ECAC region for February 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 its 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.

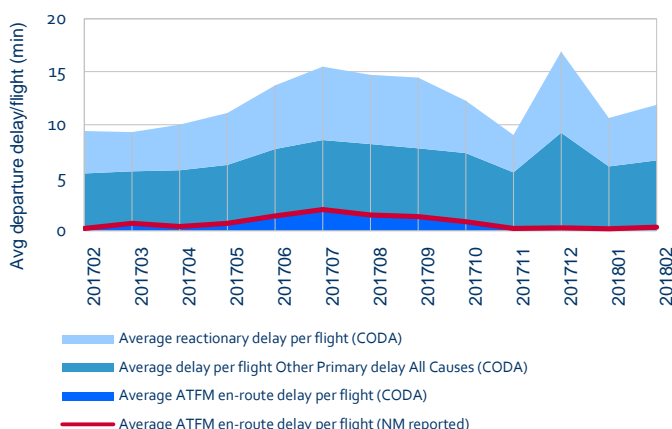
Breakdown Average Delay per Flight February 2018



The average departure delay per flight from ‘All-Causes’ was 11.87 minutes per flight, an increase in comparison to February 2017 where the average delay was 9.46 minutes per flight. Primary delays were counted for 56% (or 6.63 min/flt), with reactionary delays representing 44% (5.24 min/flt).

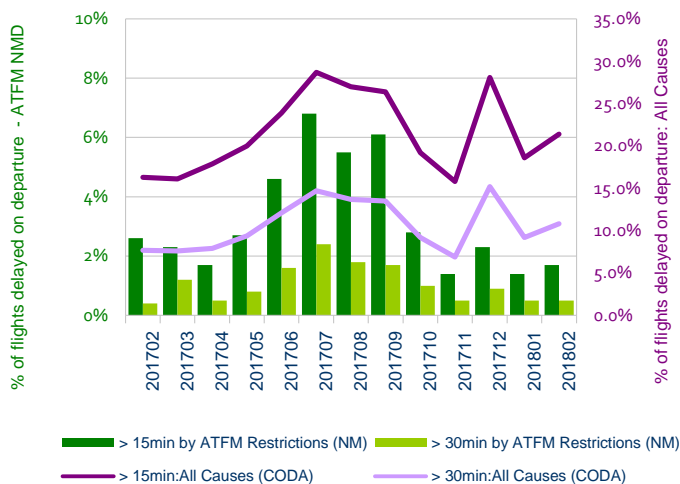
■ NM reported En-Route ATFM delay
■ Airline Reported En-Route ATFM Delay
■ Primary Delay (excl En-Route)
■ Reactionary delay

Average Departure Delay per Flight 2017/2018



Further analysis of the past 12 months shows that the average ‘All-Causes’ en-route ATFM delay reported by airlines was 0.29 minutes per flight. This is lower than NM reported average en-route ATFM delay of 0.32 minutes per flight in February 2018.

Percentage of Delayed Flights: ATFM & All Causes

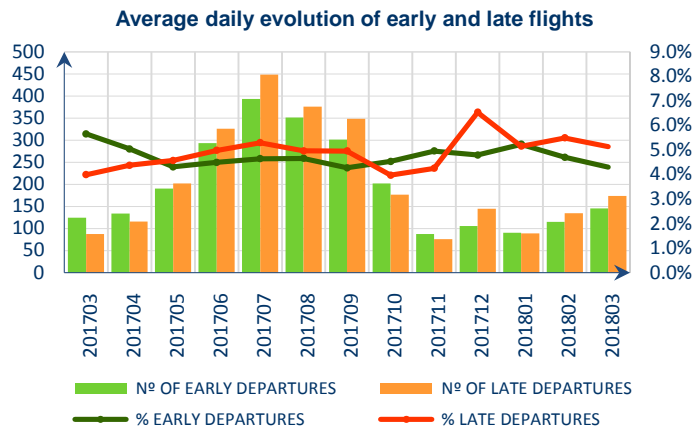


The percentage of flights delayed greater than 15 minutes from ‘All-Causes’ increased by 5.1 percentage points to 21.4%. Delays exceeding 30 minutes also increased, with 10.8% of flights delayed in February 2017.

For more information on CODA delays:

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

7. ATFM SLOT ADHERENCE

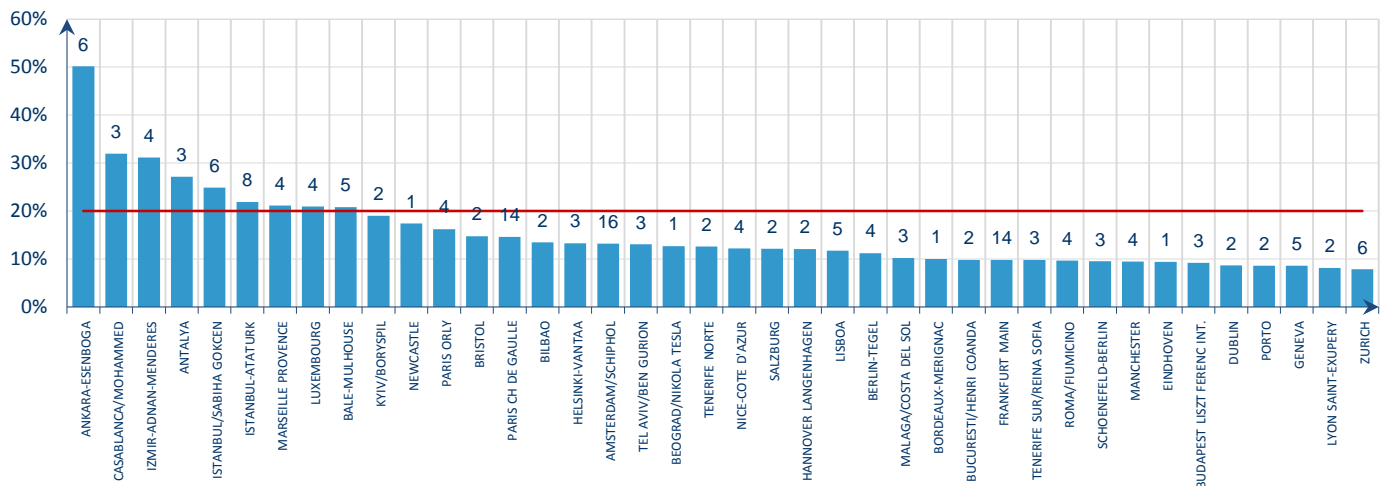


The percentage of early departures for March 2018 is 4.3% of regulated flights, which is a decrease of 1.4 percentage points compared to March 2017.

The percentage of late departures for March 2018 is 5.1% of regulated flights, which is an increase of 1.1 percentage points compared to March 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.

Proportion of regulated flights outside the Slot Tolerance Window in March 2018



8. SIGNIFICANT EVENTS AND ISSUES

PLANNED EVENTS

ACC

MAJOR AIRSPACE OR ATM SYSTEM IMPROVEMENT PROJECTS

PLANNED EVENTS

Four ACCs carried out activities involving airspace reorganisations during this reporting period.

Bremen, Munich and Karlsruhe ACCs implemented FRA within their respective areas of responsibility on 01 March, not generating any ATFM delay. Only Karlsruhe UAC originally had expected capacity reductions between 10-15%.

Maastricht UAC implemented new sectorisation in Delta sector group (DECO) on 29 March, not generating ATFM delay in March. Originally, a possible 10% capacity reduction had been planned.

ADDITIONAL INFORMATION

Bordeaux ACC implemented new organisation of the upper airspace (ESSO project including Bordeaux/Madrid interface BAMBI) on 01 March generating 8,496 minutes of ATFM delay.

Madrid ACC implemented new airspace organisation at the interface with Bordeaux ACC (BAMBI) on 01 March, generating 6,199 minutes of ATFM delay.

AIRPORTS

Local Plans in March

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

Special Events

- Naples airport became fully operational A-CDM on 27 March;
- Copenhagen airport became the first A-CDM airport to exchange data with NM via business-to-business (B2B) web services on 21 March;
- Menorca airport became fully operational Advanced ATC tower on 20 March;
- WWII ordnance disposal with zero rate regulation at Bremen airport on 15 March.

Completed

- Runway maintenance at Copenhagen and Venice airports;
- Taxiway and/or apron improvements at Iraklion, Nice, Rome/Fiumicino and Thessaloniki airports;
- ILS maintenance at Paris/Le Bourget and Warsaw airports;
- Terminal building maintenance at Barcelona airport.

Ongoing

- Runway maintenance at Amsterdam, Antalya, Bilbao, Budapest, Cologne, Dublin, Istanbul/Sabiha Gökçen, Katowice, Krakow and Thessaloniki airports;
- Taxiway and/or apron improvements at Antalya, Dublin, Frankfurt/Main, Hamburg, Ibiza, Lanzarote (1,406 minutes of ATFM delay generated), Lisbon, Palma de Mallorca, Paris/Orly, Stuttgart, Tenerife/Sur and Zurich airports;
- Tower renovation at Paris/Orly airport generated, in conjunction with taxiway maintenance, a total of 2,989 minutes of ATFM delay;
- ILS maintenance at Warsaw airport;
- Terminal building improvements/works at Budapest, Frankfurt/Main, Iraklion, Malta, Manchester and Oslo/Gardermoen airports.

DISRUPTIONS

Technical

- Technical problem with the implementation of ESSO (Espace Supérieur Sud Ouest) in Bordeaux ACC on 01 March generated 7,746 minutes of ATFM delay;
- ATFM protective measures applied between 0730-1100UTC in Brest ACC due to a planned technical maintenance on the flight data exchange system generated 1,144 minutes of ATFM delays;
- Lack of de-icing fluid at Bologna airport generated 1,051 minutes of ATFM delay on 02 March;
- Calibration of VOR-DME at Lanzarote airport in conjunction with TMA capacity generated 1,123 minutes of ATFM delay on 10 March.

Industrial Action

- French ATC industrial action from 21 March to 23 March generated 99,772 minutes of en-route ATFM delay in France; Neighbouring states generated 6,700 minutes due to ATFM protective measures; NM estimates there were 1,300 fewer flights during the action;
- Italian ATC industrial action on 08 March generated 8,293 minutes of en-route ATFM delay in Italy; NM estimates there were 260 fewer flights during the action.

9. NM ADDED VALUE

FLIGHTS WITH DELAY > 30'

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

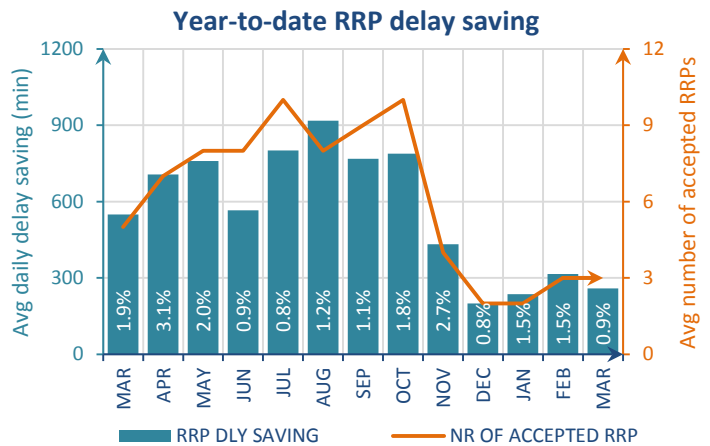
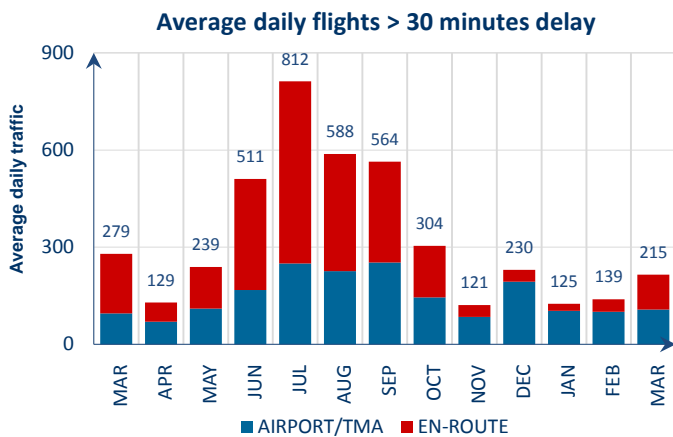
In March 2018, 50.2% of flights with more than 30 minutes of ATFM delay were en-route and 49.8% were airport.

An average 40 flights per day had their delay reduced to less than 30 min by NM.

RRP DIRECT DELAY SAVINGS

On average 3 RRPs/day were executed saving 259 min/day, accounting for 0.9% of ATFM delays.

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



© 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

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

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

ii Internals, international arrivals and departures, excluding overflights.

iii See Notice on page 2 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).

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