Network Manager
nominated by
the European Commission

EUROCONTROL

Monthly Network Operations Report

Analysis – December 2018

TABLE OF CONTENTS

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 sections 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.

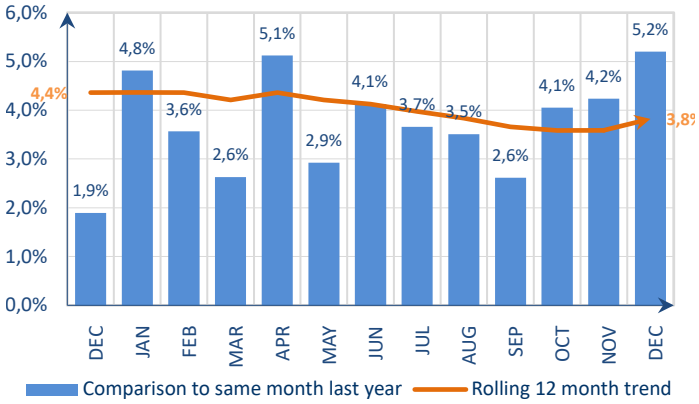
	EN-ROUTE CAPACITY (ATC)		AIRPORT CAPACITY (ATC)
	EN-ROUTE STAFFING (ATC)		AIRPORT STAFFING (ATC)
	EN-ROUTE DISRUPTIONS (ATC)		AIRPORT DISRUPTIONS (ATC)
	EN-ROUTE CAPACITY		AIRPORT CAPACITY
	EN-ROUTE DISRUPTIONS		AIRPORT DISRUPTIONS
	EN-ROUTE EVENTS		AIRPORT EVENTS
	EN-ROUTE WEATHER		AIRPORT WEATHER

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.**

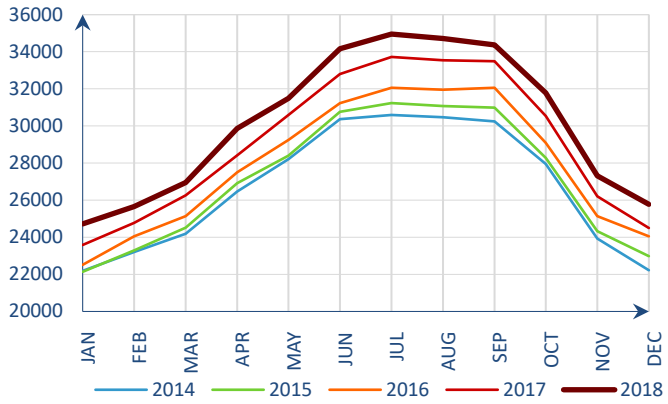
1. TOTAL TRAFFIC

Monthly traffic trend



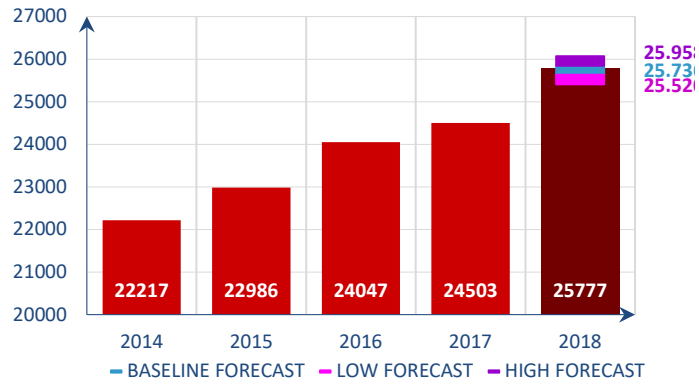
Traffic increased by 5.2% in December 2018[i]. Note that this growth is boosted due to heavy cancellations in December 2017.

Average daily traffic for last 5 Years



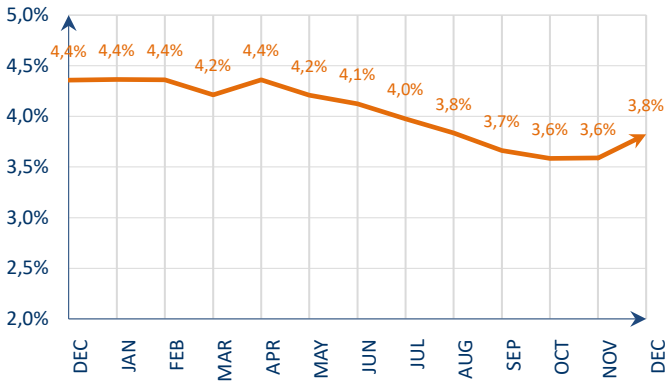
Average daily traffic in December 2018 was 25,777, the highest ever recorded for December.

Average daily traffic in December for last 5 Years
Forecast dated 2018-10



The traffic increase of 5.2% for December was in line with the baseline forecast published in October 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 January 2018 to December 2018 was 3.8% higher than the average from January 2017 to December 2017.

Eleven States added more than 50 flights per day to the European local[ii] traffic growth. Germany was the main contributor, adding 470 flights per day. Notably additional traffic was generated by its internal flow (+128 flights/day). Germany also gained flights on its flows to and from Spain (+51 flights/day), Italy (+41 flights/day) and Austria (+28 flights/day). Spain and Italy were the next two contributors adding respectively 257 and 208 flights per day to the network. Both States recorded additional traffic on their flows from and to Germany (above mentioned) but also thanks to an increase on their internal flow (+51 flights/day for Spain and +56 flights per day for Italy). Additional traffic between the two States was recorded too (24 flights/day). France was next with 153 extra flights per day owing to the growth of its internal flows (+52 flights/day) and to flows to and from Germany (+15 flights/day) and Morocco (+12 flights/day). Austria was the fifth contributor (+117 extra flights per day) thanks to its dynamic flows to and from Germany (+28 flights/day), Spain (+21 flights/day) and Italy (+12 flights/day). The other states amongst the top 10 contributors were UK (+106 flights/day), Poland (+71 flights/day), The Netherlands (+68 flights per day), Greece (+64 flights/day), Ukraine (+53 flights/day) and Portugal (+51 flights/day). At the other end of the list, a few States recorded a decline in local traffic, amongst which Turkey (-32 flights/day) was affected by a reduction of domestic traffic.

The low-cost segment recorded the fastest growth with an 8.7% increase. Traditional scheduled and non-scheduled (charter) segments grew by 5% (each). On the other hand, the all-cargo and business aviation segments declined by 9.3% and 3.1% respectively.

The top five external partners in average daily flights on flows in both directions were the United States (874 flights, up 6%), the Russian Federation (721 flights, up 9%), the United Arab Emirates (357 flights, up 6%), Egypt (277 flights, up 19%) and Qatar (205 flights, up 15%).

The airlines which added the most flights to the European network on a daily basis compared with December 2017 were, Easyjet UK (+193 flights), Ryanair (+130 flights), Lufthansa (+99 flights), Eurowings (+71 flights) and LOT (+49 flights).

For more information on EUROCONTROL Statistics and 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 December 2018 were at Berlin/Tegel, Düsseldorf, Palma de Mallorca, Vienna and Milano/Malpensa airports. The largest traffic decreases were at Ankara, Toulouse/Blagnac, Istanbul/Atatürk, Stockholm/Arlanda and Berlin/Schönefeld airports. The increase of traffic in Berlin/Tegel airport is partially due to the opening of new routes. The traffic changes in Vienna, Düsseldorf, Berlin Tegel and Palma can be partly attributed to airline failures in 2017 creating opportunity for start-up carriers and existing competitors to increase frequencies.

Nine of the top ten aircraft operators flew more compared to December 2017. The operators with the highest traffic growth were Volotea, Norwegian Air International, Binter Canarias, easyJet UK and LOT-Polish airlines. The highest traffic decreases were recorded by Flybe, NetJets, Aegean, Delta Air Lines and Scandinavian Airlines System.

The traffic variation of Easyjet follows an increase of in fleet size, including the introduction of A321Neo aircraft.
Eurowings follows the continued integration of Germanwings, with some Lufthansa routes and more recently ex Air Berlin operated routes. Norwegian Air International traffic variation comes from a change in fleet size following new aircraft deliveries of Boeing 737Max. Volotea saw increases in flights following the introduction of A319's to their fleet.

N°	ADEP	ADEP NAME	201812	%
1	LFPG	PARIS CH DE GAULLE	635	4.2%
2	EHAM	AMSTERDAM/SCHIPHOL	629	4.5%
3	EGLL	LONDON/HEATHROW	625	2.2%
4	EDDF	FRANKFURT MAIN	617	9.0%
5	LTBA	ISTANBUL-ATATURK	580	-2.6%
6	LEMD	ADOLFO SUAREZ MADRID-BARAJA	533	5.7%
7	EDDM	MUENCHEN	505	7.7%
8	LEBL	BARCELONA/EL PRAT	401	7.7%
9	LIRF	ROMA/FIUMICINO	382	9.0%
10	LSZH	ZURICH	340	6.1%
11	LOWW	WIEN SCHWECHAT	336	17.6%
12	EGKK	LONDON/GATWICK	329	-0.4%
13	EKCH	KOBENHAVN/KASTRUP	307	5.3%
14	ENGM	OSLO/GARDERMOEN	299	2.3%
15	LTFJ	ISTANBUL/SABIHA GOKCEN	294	4.6%
16	LFPO	PARIS ORLY	288	2.5%
17	ESSA	STOCKHOLM-ARLANDA	288	-0.7%
18	EIDW	DUBLIN	281	5.7%
19	LPPT	LISBOA	276	3.1%
20	EBBR	BRUSSELS NATIONAL	275	3.1%
21	EDDL	DUESSELDORF	271	26.0%
22	LIMC	MILANO MALPENSA	253	13.3%
23	EDDT	BERLIN-TEGEL	251	62.8%
24	EFHK	HELSINKI-VANTAA	248	8.9%
25	EGSS	LONDON/STANSTED	237	6.8%
26	EGCC	MANCHESTER	234	3.6%
27	LSGG	GENEVA	234	-0.3%
28	LGAV	ATHINAI/ELEFTHERIOS VENIZELOS	233	9.9%
29	EPWA	CHOPINA W WARSZAWIE	232	9.0%
30	GCLP	GRAN CANARIA	189	0.5%
31	EDDH	HAMBURG	183	4.4%
32	LLBG	TEL AVIV/BEN GURION	181	8.8%
33	LKPR	PRAHA RUZYNE	177	2.7%
34	EGGW	LONDON/LUTON	172	11.0%
35	EDDK	KOELN-BONN	164	0.6%
36	EGPH	EDINBURGH	152	4.9%
37	LROP	BUCURESTI/HENRI COANDA	150	6.9%
38	LEPA	PALMA DE MALLORCA	147	22.6%
39	LFLL	LYON SAINT-EXUPERY	146	7.1%
40	LEMG	MALAGA/COSTA DEL SOL	144	11.6%
41	EDDS	STUTTGART	144	10.7%
42	LHBP	BUDAPEST LISZT FERENC INT.	144	10.1%
43	LFMN	NICE-COTE D'AZUR	142	5.1%
44	LIML	MILANO LINATE	141	1.5%
45	LTAC	ANKARA-ESENBOGA	132	-20.5%
46	UKBB	KYIV/BORYSPIL	125	0.0%
47	EGBB	BIRMINGHAM	124	1.3%
48	GMMN	CASABLANCA/MOHAMMED	124	2.4%
49	LFBO	TOULOUSE BLAGNAC	121	-3.1%
50	EDDB	SCHOENEFELD-BERLIN	121	-0.7%
	TOTALS and % TOTAL TRAFFIC		13536	59.8%

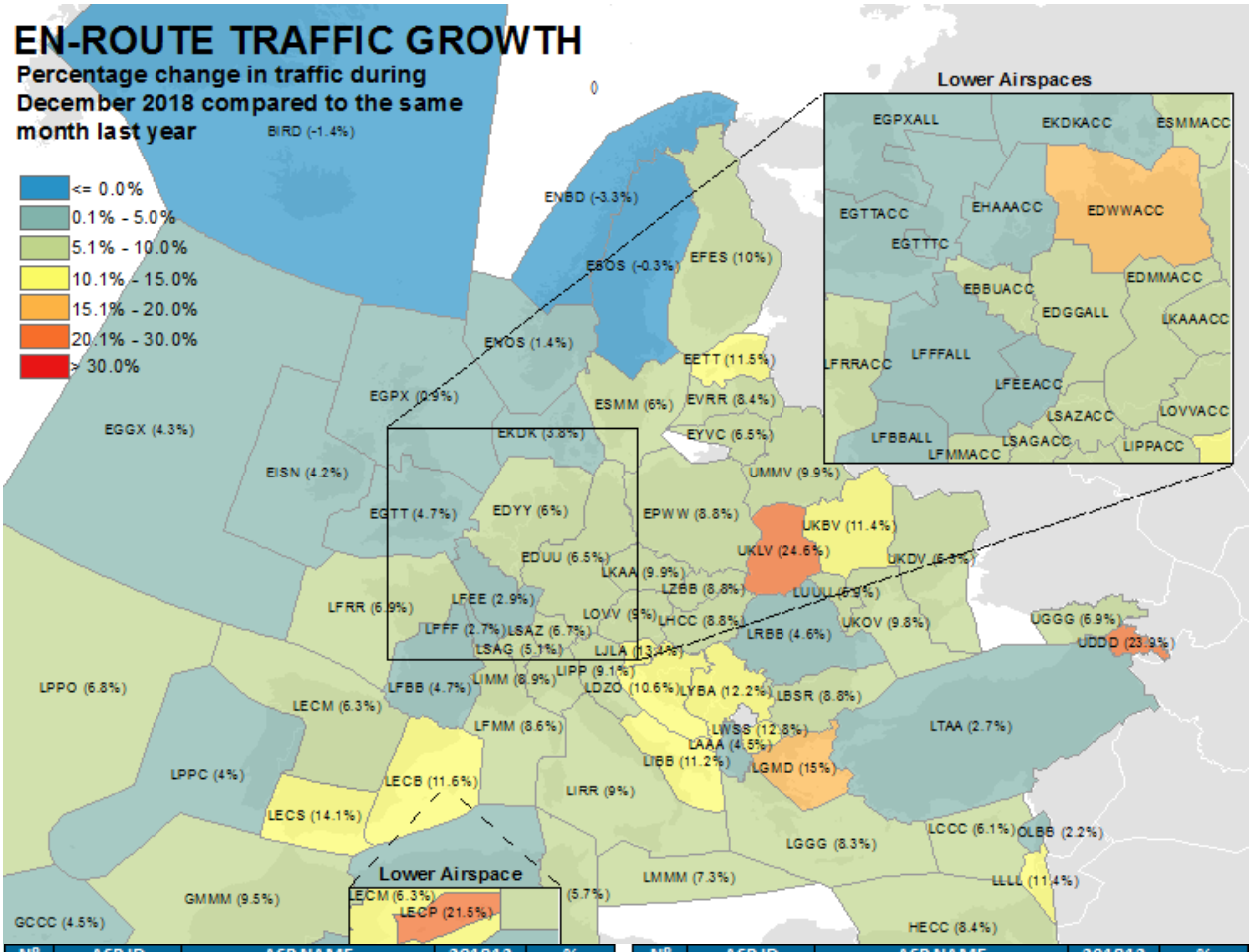
Top 50 Departure Airports with average daily traffic and percentage compared to same period of previous year

N°	ICAO	AIR OPERATOR	201812	%
1	RYR	RYANAIR	1815	7.9%
2	EZY	EASYJET	1305	17.4%
3	DLH	DEUTSCHE LUFTHANSA	1298	8.2%
4	THY	TURKISH AIRLINES	1221	0.6%
5	AFR	AIR FRANCE	852	1.8%
6	SAS	SCANDINAVIAN AIRLINES SYSTEM	660	-0.8%
7	BAW	BRITISH AIRWAYS	637	2.8%
8	KLM	KLM ROYAL DUTCH AIRL	627	6.6%
9	EWG	EUROWINGS AG	559	14.6%
10	AZA	ALITALIA	496	7.3%
11	VLG	VUELING AIRLINES SA	489	9.7%
12	WZZ	WIZZ AIR	463	7.0%
13	PGT	PEGASUS HAVA TASI.	437	1.8%
14	SWR	SWISS INTERNATIONAL	379	8.0%
15	BEE	JERSEY EUROPEAN T/A FLYBE	355	-5.6%
16	TAP	TAP/AIR PORTUGAL	352	1.7%
17	LOT	LOT-POLISH AIRLINES	333	17.0%
18	AFL	AEROFLOT-RUSSIAN	328	15.3%
19	FIN	FINNAIR O/Y	324	8.2%
20	AUA	AUSTRIAN AIRLINES	318	5.3%
21	NAX	NORWEGIAN AIR SHUTTLE	317	9.4%
22	WIF	WIDEROE	287	1.8%
23	AEA	AIR EUROPA	260	11.3%
24	IBK	NORWEGIAN AIR INTERNATIONAL	257	22.2%
25	QTR	QATAR AIRWAYS COMP.	245	10.6%
26	IBE	IBERIA	239	5.1%
27	UAE	EMIRATES	200	4.0%
28	RAM	ROYAL AIR MAROC	199	0.5%
29	EIN	AER LINGUS TEORANTA	191	12.0%
30	HOP	HOP (MERGE OF BZH + RAE + RLA)	191	2.7%
31	ANE	AIR NOSTRUM	188	3.8%
32	BEL	BRUSSELS AIRLINES	187	4.1%
33	BCS	EUROPEAN AIR TRANSP.	166	11.6%
34	AUI	UKRAINE INTERNATIONA	153	6.1%
35	BTI	AIR BALTIC CORPORAT.	141	11.2%
36	EZS	EASY JET SWITZERLAND	139	12.1%
37	OAL	OLYMPIC	126	8.4%
38	UAL	UNITED AIRLINES INC.	109	5.1%
39	TOM	THOMSON FLY LTD	106	4.6%
40	AEE	AEGEAN AIRLINES	106	-5.4%
41	DAH	AIR ALGERIE	105	2.5%
42	TRA	TRANSAVIA.COM	103	2.1%
43	IBB	BINTER CANARIAS	103	19.1%
44	VOE	VOLOTEA	103	29.8%
45	DAL	DELTA AIR LINES INC.	100	-3.0%
46	IBS	IBERIA EXPRESS	99	8.5%
47	EXS	JET2.COM	99	10.2%
48	NJE	NETJETS	99	-5.4%
49	ROT	TAROM	95	7.8%
50	CFE	CITYFLYER EXPRESS	94	8.8%
	TOTALS and % TOTAL TRAFFIC		18055	70.0%

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

N°	ICAO	AIR OPERATOR	201812	%
		Unidentified	1522	2.8%

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

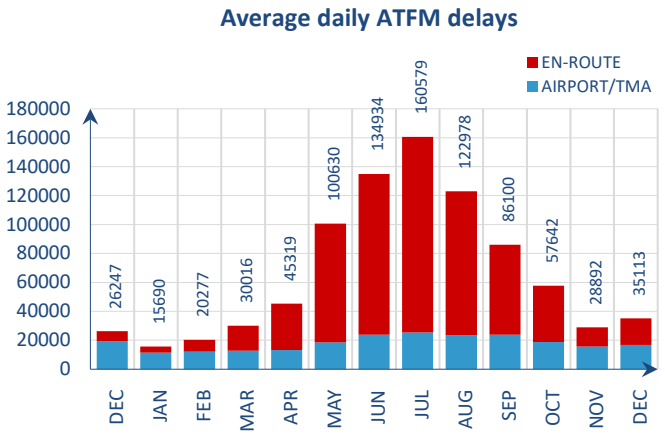


Nº	ASP ID	ASP NAME	201812	%
1	BIRDACC	REYKJAVIK ACC	346	-1.4%
2	DAAAACC	ALGERS ACC	487	2.1%
3	DTTCACC	TUNIS ACC	280	5.7%
4	EBBUACC	BRUSSELS CANAC	1506	5.0%
5	EDGGALL	LANGEN ACC_FIR	3116	10.0%
6	EDMMACC	MUNCHEN ACC	2802	8.7%
7	EDUUUAC	KARLSRUHE UAC	4501	6.5%
8	EDWWACC	BREMEN ACC	1605	17.3%
9	EDYYUAC	MAASTRICHT UAC	4570	6.0%
10	EETTACC	TALLIN ACC	544	11.5%
11	EFESACC	TAMPERE ACC	551	10.0%
12	EGGXOCA	SHANWICK OACC	1203	4.3%
13	EGPXALL	SCOTTISH ACC	2382	0.9%
14	EGTTACC	LONDON ACC	4875	4.7%
15	EGTTTC	LONDON TMA TC	3443	2.9%
16	EHAAACC	AMSTERDAM ACC(245-)	1442	4.6%
17	EIDWACC	DUBLIN ACC	594	4.4%
18	EISNACC	SHANNON ACC	1058	4.2%
19	EKDKACC	COPENHAGEN ACC	1393	3.8%
20	ENBDACC	BODO ACC	525	-3.3%
21	ENOSACC	OSLO ATCC	886	1.4%
22	ENSVACC	STAVANGER ATCC	572	4.2%
23	EPWWACC	WARSZAWA ACC	1947	8.8%
24	ESMMACC	MALMO ACC	1388	6.0%
25	ESOSACC	STOCKHOLM ACC	1058	-0.3%
26	EVRRACC	RIGA ACC	694	8.4%
27	EYVCACC	VILNIUS ACC	604	6.5%
28	GCCCACC	CANARIAS ACC/FIC	1060	4.5%
29	GMMMACC	CASABLANCA ACC	1312	9.5%
30	HECCACC	CAIROACC	686	8.4%
31	LAAAACC	TIRANA ACC	391	4.6%
32	LBSRACC	SOFIA ACC	1850	8.8%
33	LCCCACC	NICOSIA ACC	917	6.1%
34	LDZOACC	ZAGREB ACC	1135	10.6%
35	LECBACC	BARCELONA ACC	1822	11.6%
36	LECMALL	MADRID ALL ACC	2886	6.3%
37	LECPACC	PALMA ACC	395	21.5%
38	LECSACC	SEVILLA ACC	1044	14.1%

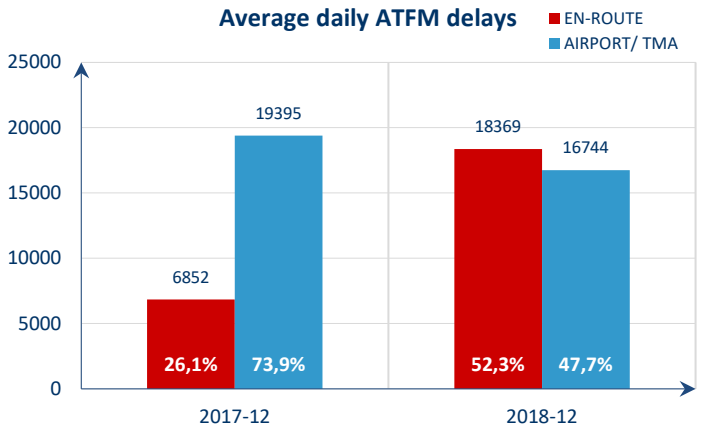
Nº	ASP ID	ASP NAME	201812	%
39	LFBBALL	BORDEAUX ALL ACC	2135	4.7%
40	LFEEACC	REIMS U/ACC	2369	2.9%
41	LFFFALL	PARIS ALL ACC	2971	2.7%
42	LFMMACC	MARSEILLE ACC	2509	8.6%
43	LFMMAPP	MARSEILLE TMA	685	5.7%
44	LFRRACC	BREST U/ACC	2437	6.9%
45	LGGGACC	ATHINAI CONTROL	1021	8.3%
46	LGMDACC	MAKEDONIA CONTROL	827	15.0%
47	LHCCACC	BUDAPEST ACC	1852	8.8%
48	LIBBACC	BRINDISI ACC	673	11.2%
49	LIMMACC	MILANO ACC	1976	8.9%
50	LIPPACC	PADOVA ACC	1503	9.1%
51	LIRRACC	ROMA ACC	1918	9.0%
52	LJLAACC	LJUBLJANA ACC	660	13.4%
53	LKAAACC	PRAGUE ACC	1953	9.9%
54	LLLLACC	TEL AVIV ACC	478	11.4%
55	LMMMACC	MALTA ACC	294	7.3%
56	LOVVACC	WIEN ACC	1976	9.1%
57	LPPCACC	LISBOA ACC/UAC	1541	4.1%
58	LPPOOAC	SANTA MARIA OACC	393	6.8%
59	LQSBACC	BOSNIA-HERZEGOVINA	79	-11.2%
60	LRBBACC	BUCURESTI ACC	1605	4.6%
61	LSAGACC	GENEVA ACC	1534	5.1%
62	LSAZACC	ZURICH ACC	1856	6.7%
63	LTAAACC	ANKARA ACC	3327	2.7%
64	LTBBACC	ISTANBUL ACC	1866	-0.2%
65	LUUUACC	CHISINAU ACC	108	5.9%
66	LWSSACC	SKOPJE ACC	283	12.8%
67	LYBAACC	BEOGRADE ACC	1403	12.2%
68	LZBBACC	BRATISLAVA ACC	1162	8.8%
69	OLBBACC	BEIRUT ACC	141	2.2%
70	UDDDACC	YEREVAN ACC	176	23.9%
71	UGGGACC	TBILISI ACC	402	6.9%
72	UKBVACC	KIEV ACC	401	11.4%
73	UKDVACC	DNIPROPETROVSK ACC	49	6.5%
74	UKLVACC	L'VIV ACC	329	24.6%
75	UKOVACC	ODESSA ACC	225	9.8%
76	UMMVACC	MINSK ACC	742	9.9%

The Casablanca, Sevilla, Canaries, Lisbon and Madrid ACCs variation is due to increased traffic on the South/West axis. Canarias ACC experienced their busiest day ever on Saturday 22 December when they handled 1,520 flights. High growth figures in Bremen and Palma are most probably explained by the cessation of both Monarch and Air Berlin operations in 2017 suppressing traffic levels which have since recovered. However, the highest relative traffic increases in December 2018 were in L'viv, Yerevan, Palma, Bremen and Makedonia ACCs. Traffic increase in Ukraine is partially due to an increase in overflights. The traffic decrease in Istanbul airspace is due to Turkish ACC re-structuring.

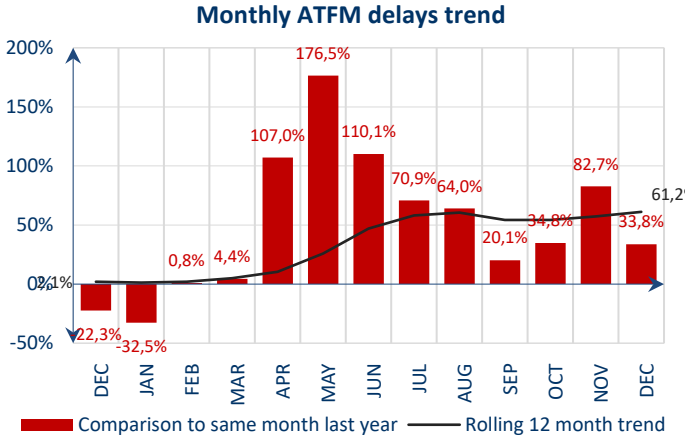
2. ATFM DELAY AND ATTRIBUTIONS



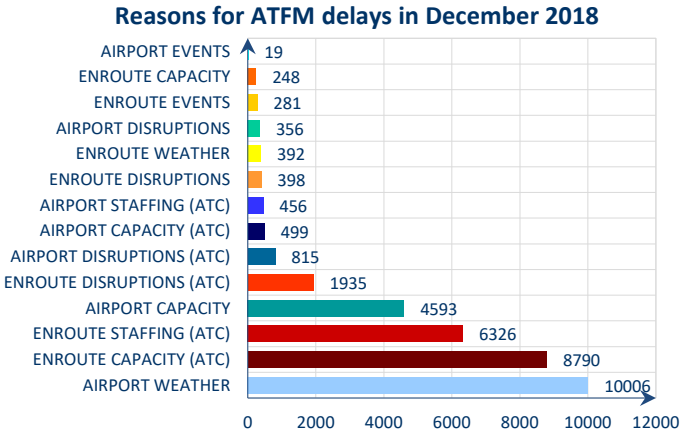
Total ATFM delays increased by 33.8% in December 2018[i].



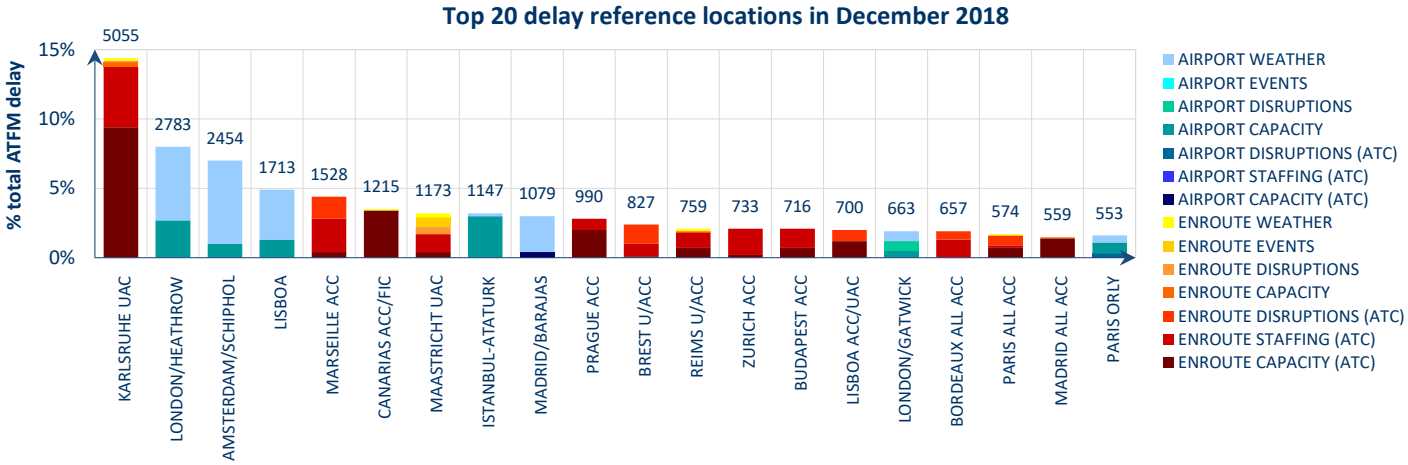
En-route ATFM delays increased by 168.1% and airport ATFM delays decreased by 13.7%.



The rolling 12-month trend shows that ATFM delay was 61.2% higher during the period January 2018 – December 2018 compared to January 2017 – December 2017.



Airport weather (28.5%), en-route ATC capacity (25.0%) and en-route ATC staffing (18.0%) were the main causes of ATFM delays in December 2018.

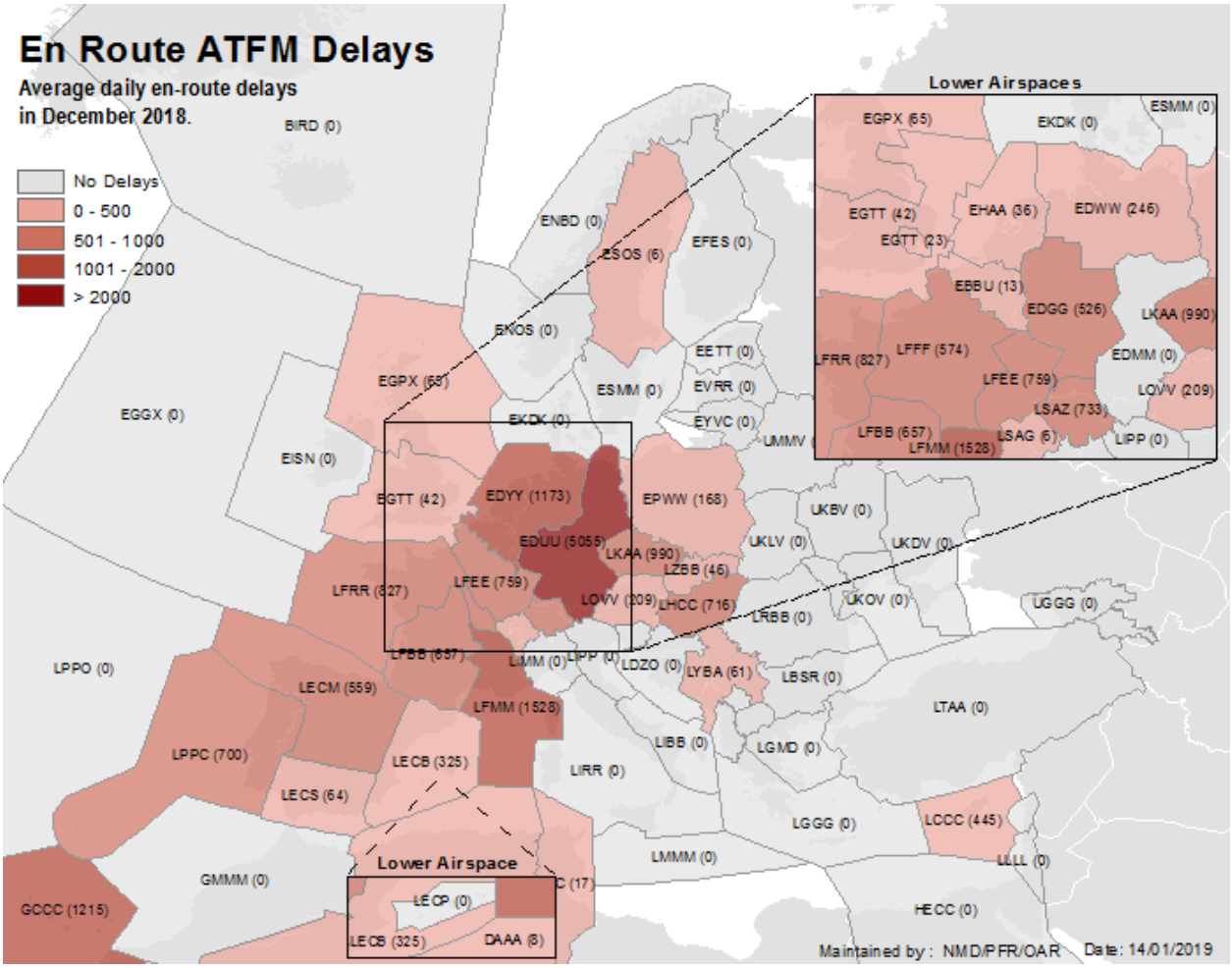


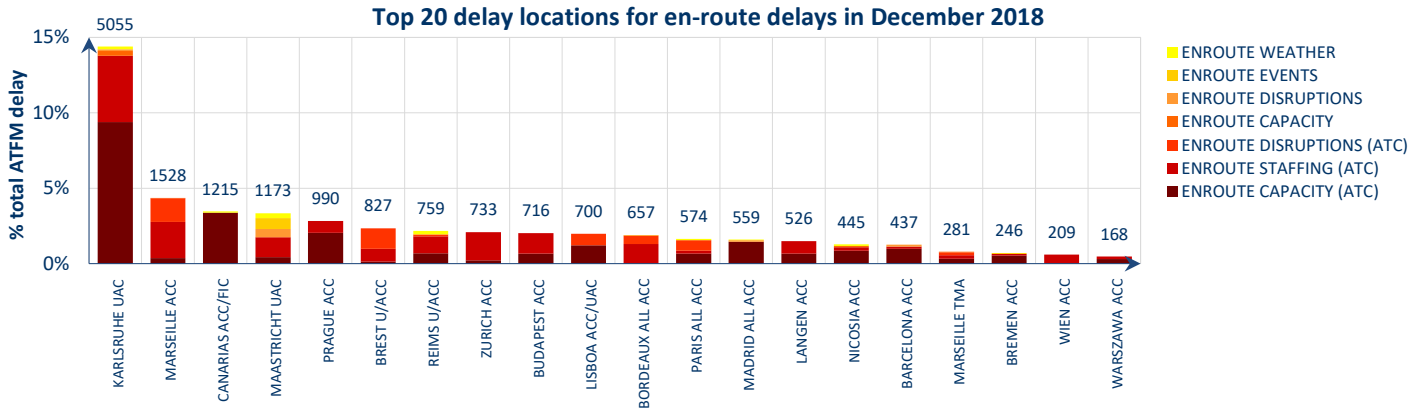
These are the top 20 delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

- French ATC industrial action on 14 December generated delays in French ACCs and neighbouring states;
- Seasonal weather impacted operations strongly at Amsterdam/Schiphol and London/Heathrow airports;
- High en-route capacity delays in Karlsruhe UAC;
- Airport capacity issues at Istanbul/Atatürk and London/Heathrow airports;
- En-route staffing delays in Karlsruhe, Marseille, Zurich, Budapest and Bordeaux ACCs.

3. EN-ROUTE ATFM DELAYS

EN-ROUTE ATFM DELAY PER LOCATION



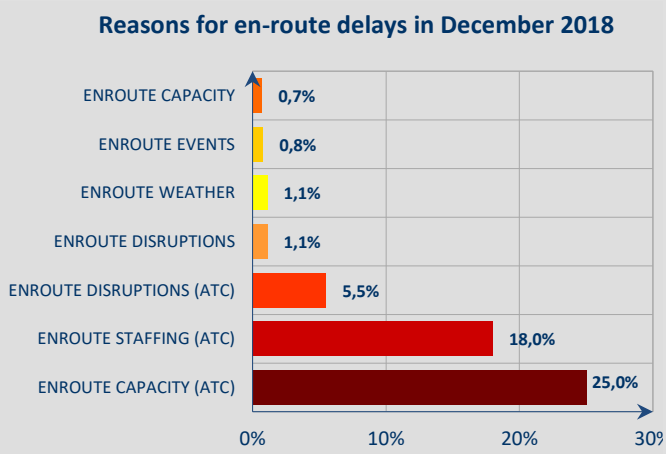


These are the top 20 en-route ATFM delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

The top 20 en-route ATFM delay locations generated **50.7%** of the monthly total (network) ATFM delay.
The top 5 en-route ATFM delay locations generated **28.4%** 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

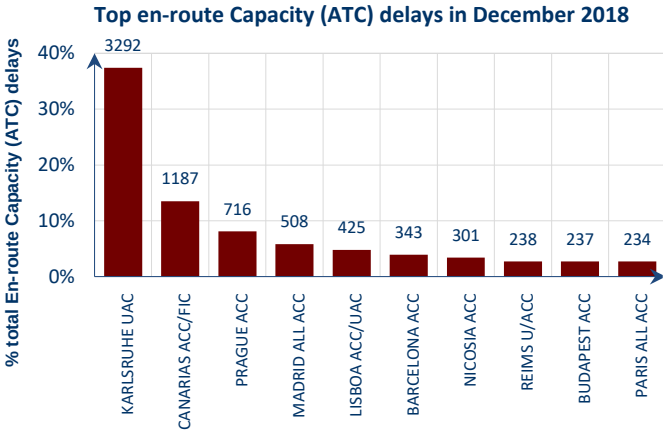


En-route ATFM delays accounted for 52.3% of all ATFM delays. Most of this delay was caused by en-route ATC capacity, en-route ATC staffing and en-route ATC disruptions as explained in detail below. The other causes were:

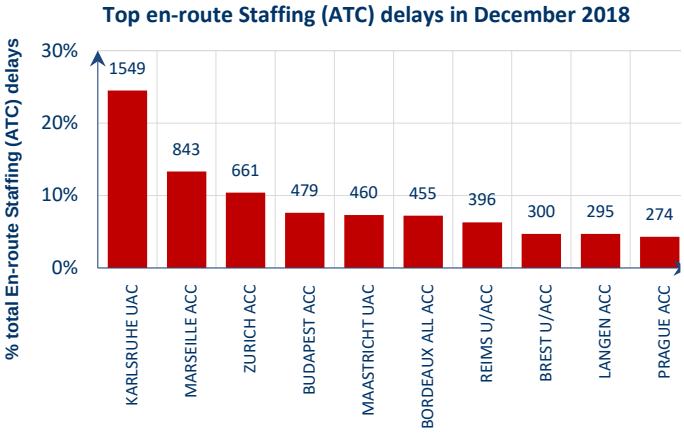
En-route disruptions; Delays generated in Barcelona, Madrid and Karlsruhe ACCs on 14 December due to locally reported onload of traffic from industrial action in France; precautionary measures were applied on behalf of the Deco Sector Group due to certain airspace changes which were implemented by London (EGTTACC) as part of the Swanwick Airspace Improvement Programme (SAIP) - Airspace Deployment 4 (AD4).

En-route weather; Turbulence in Reims ACC on 29 December generated 2,598 minutes of ATFM delay;

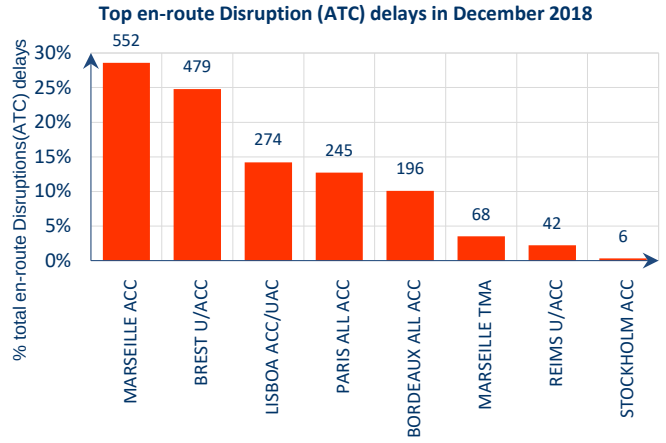
En-route events; precautionary measures were applied in Maastricht UAC due to the MUAC Free Route Airspace (FRA) implementation Phase 2 (FRAM 2) and generated 7,819 minutes of ATFM delay.



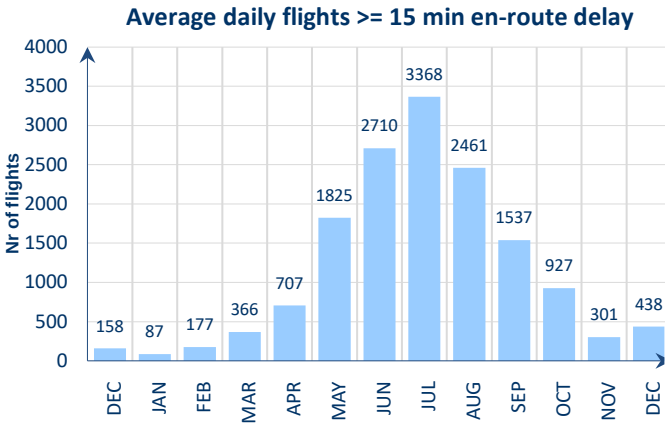
Karlsruhe UAC generated 37.4% of these delays throughout the month. Canarias ACC experienced their busiest day ever on Saturday 22 December when they handled 1,520 flights.



Karlsruhe UAC was the biggest generator of ATC staffing delays.

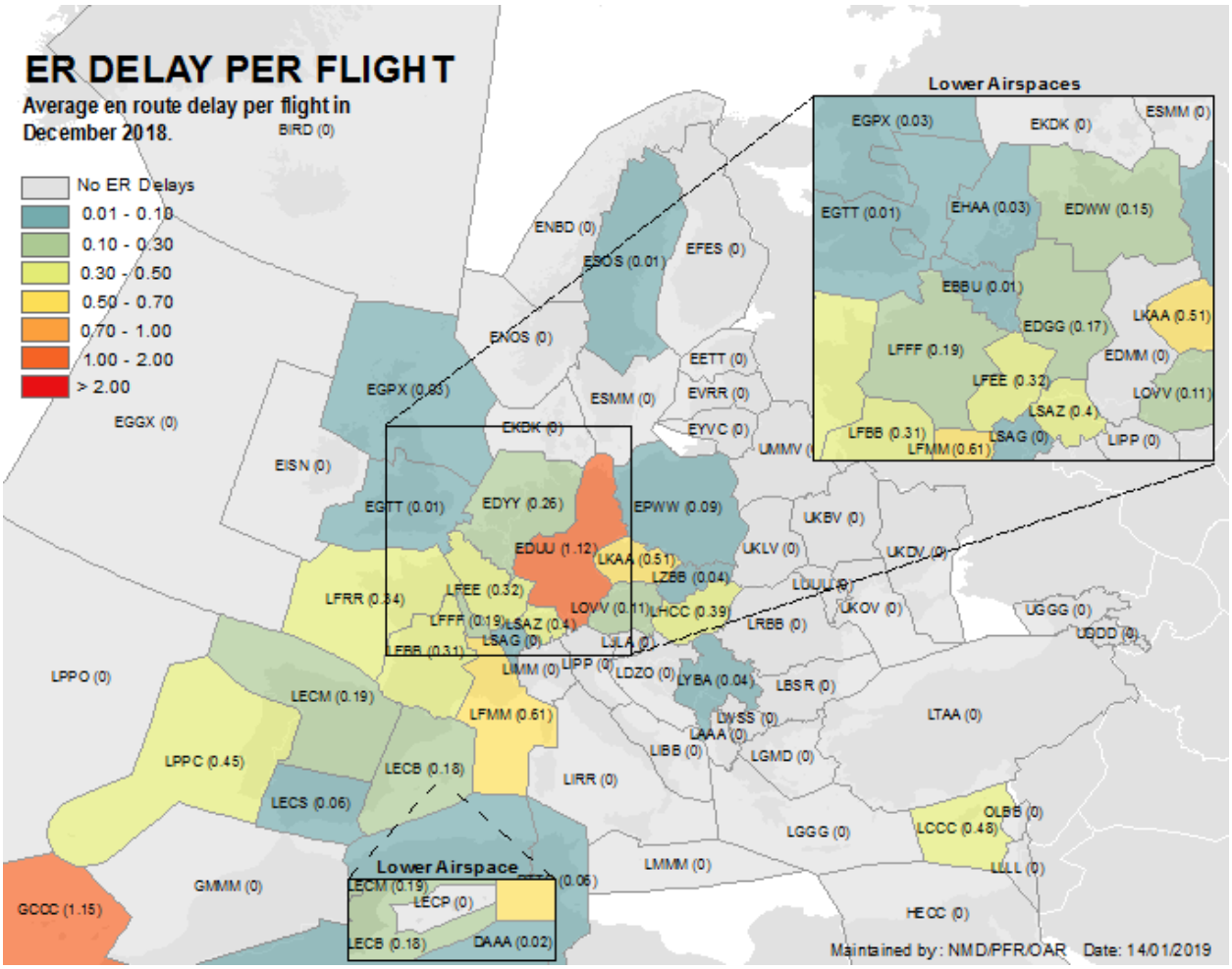


French Industrial Action on 14 December generated 31,986 minutes of ATFM delay in Marseille and Brest ACCs.

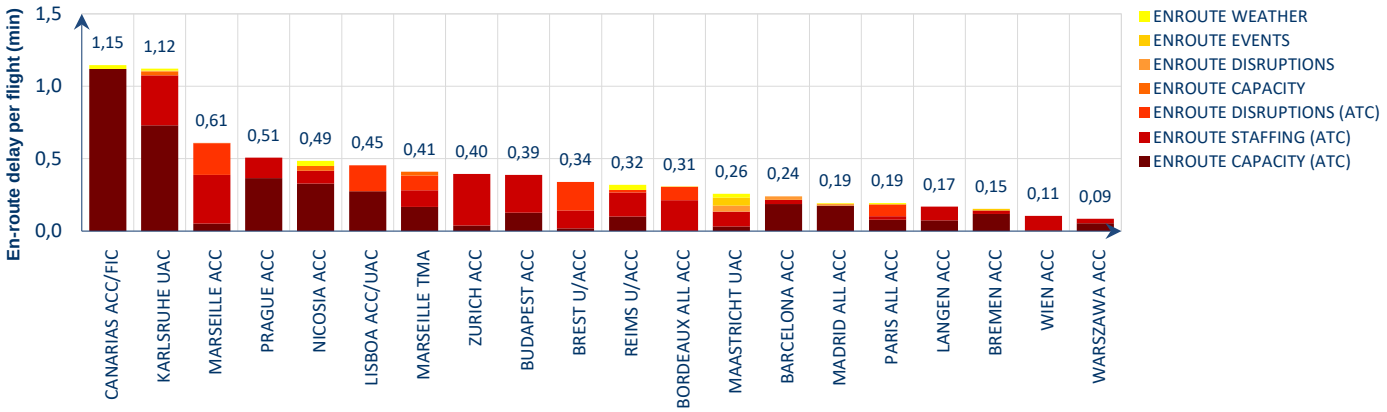


The average daily flights with an en-route ATFM delay of at least 15 minutes increased from 158 flights/day in December 2017 to 438 flights/day in December 2018, which represents 1.7% of all traffic.

EN-ROUTE ATFM DELAY PER FLIGHT



Top 20 delay locations for en-route delays in December 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.

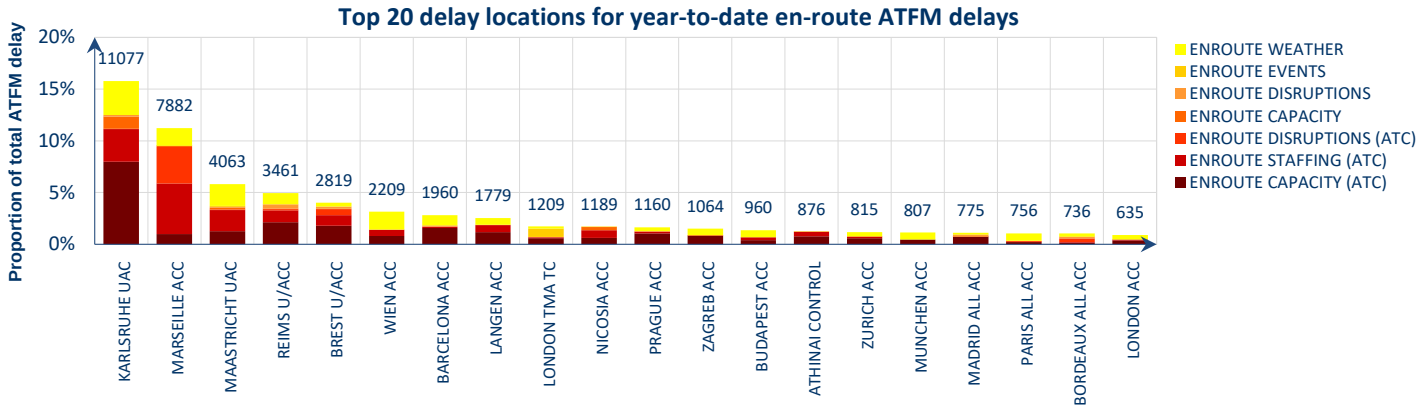
Karlsruhe UAC en-route ATFM delay/flight increased from 0.61 min/flight in November 2018 to 1.12 min/flight in December 2018, mainly due to more ATC capacity issues;

Marseille ACC en-route ATFM delay/flight increased from 0.36 min/flight in November 2018 to 0.61min/flight in December 2018, mainly due to ATC industrial actions;

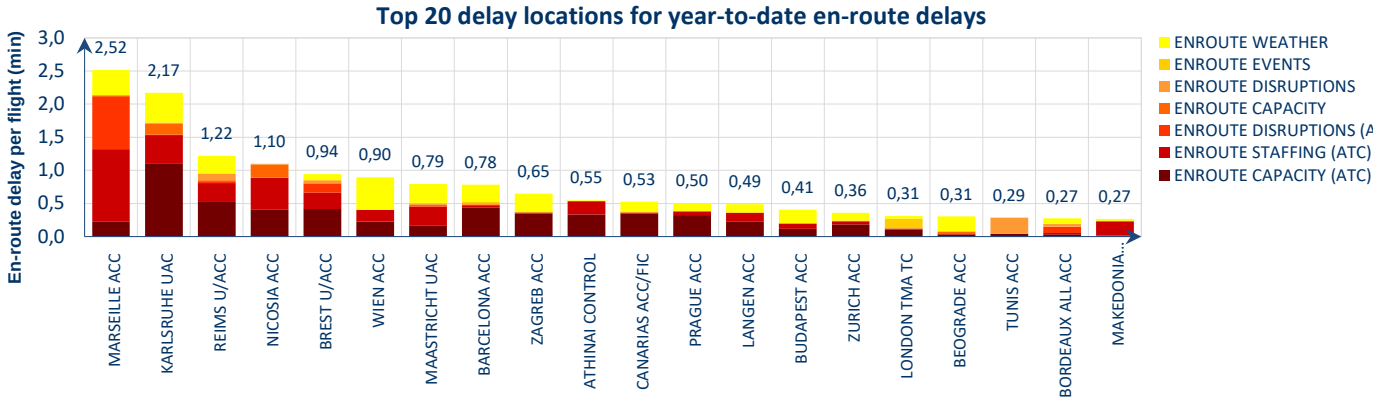
Lisbon ACC en-route ATFM delay/flight decreased from 0.94 min/flight in November 2018 to 0.45 min/flight in December 2018, mainly due to fewer ATC capacity issues;

Barcelona ACC en-route ATFM delay/flight decreased from 0.43 min/flight in November 2018 to 0.24 min/flight in December 2018, mainly due to fewer ATC capacity issues.

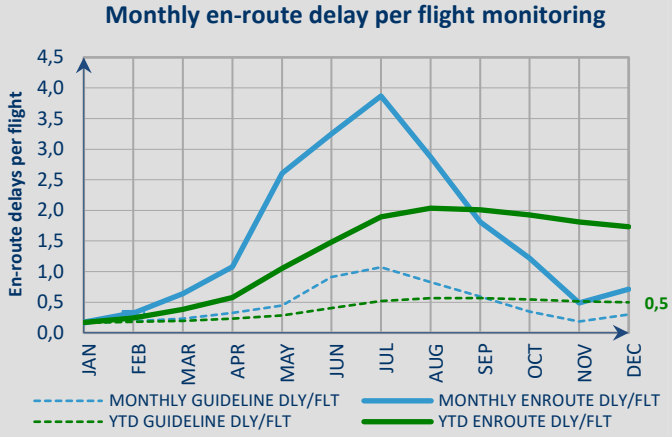
EN-ROUTE ATFM DELAY YEAR-TO-DATE

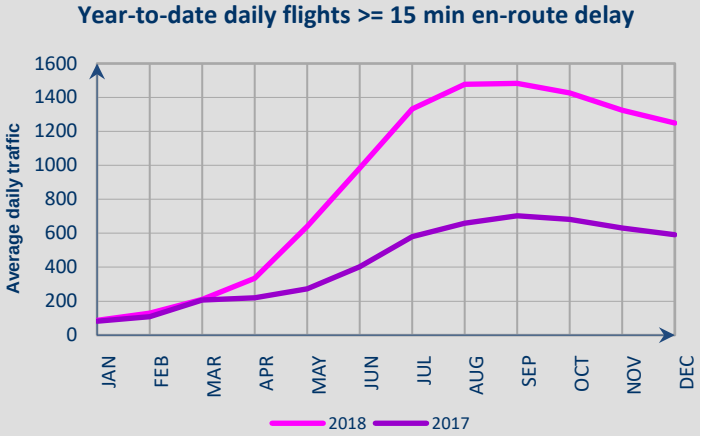


These are the top 20 en-route delay locations for 2018 with respect to the total ATFM delay. Figures are the average daily en-route delay in minutes for the individual locations.
The top 20 en-route delay locations generated **65.9%** of the total ATFM (network) delay.
The top 5 en-route delay locations generated **41.8%** of the total ATFM (network) delay.



These are the top 20 average en-route ATFM delay per flight generating locations in 2018. 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[iii] in December was 0.71 min/flt, which is above the corresponding monthly guideline[iv] value of 0.30 min/flt.
Year To Date: The average YTD en-route ATFM delay per flight in 2018 in the NM area[iii] is 1.73 min/flt which is more than three times the SES target of 0.50 min/flt.

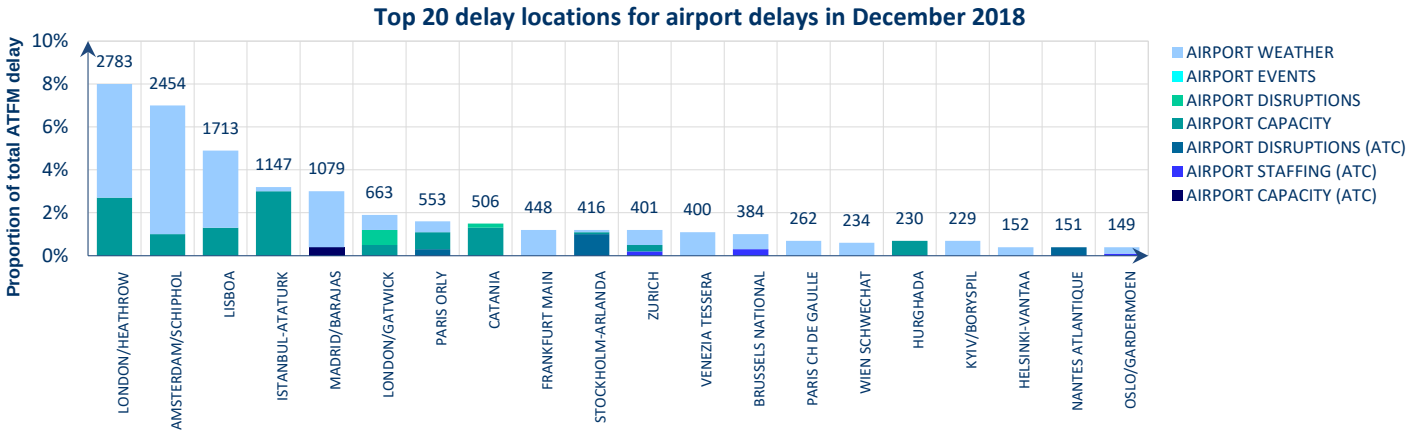
An average of 1,250 flights/day had an en-route ATFM delay of at least 15 minutes in 2018. The corresponding figure in 2017 was 591 flights/day.

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

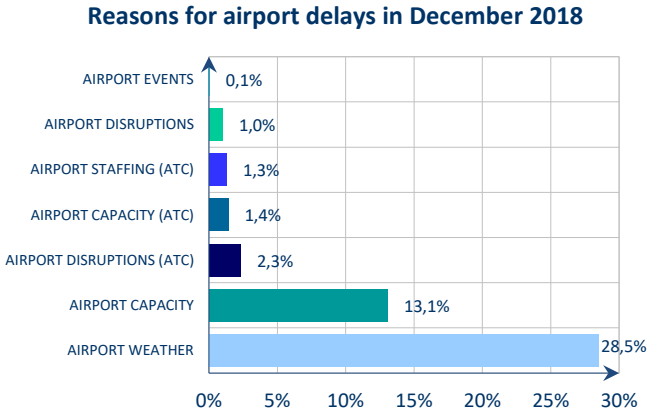
- Karlsruhe UAC with 258 flights/day
- Marseille ACC with 187 flights/day
- Maastricht UAC with 97 flights/day

4. AIRPORT/TMA ATFM DELAYS

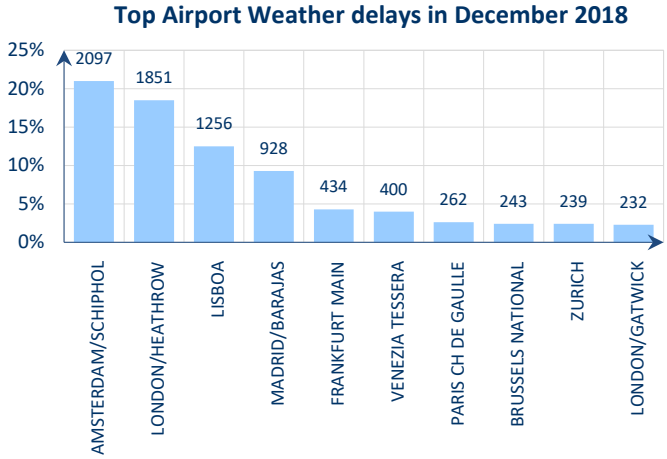
AIRPORT/TMA ATFM DELAY PER LOCATION



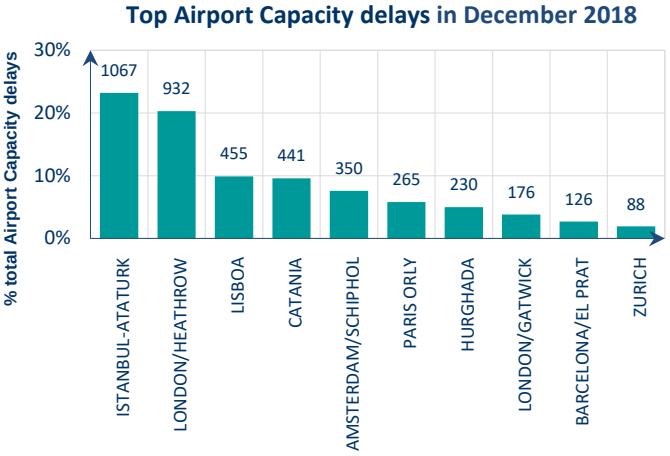
AIRPORT/TMA ATFM DELAY PER DELAY GROUPS



Airports accounted for 47.7% of all ATFM delays in December 2018, mainly due to airport weather and capacity.

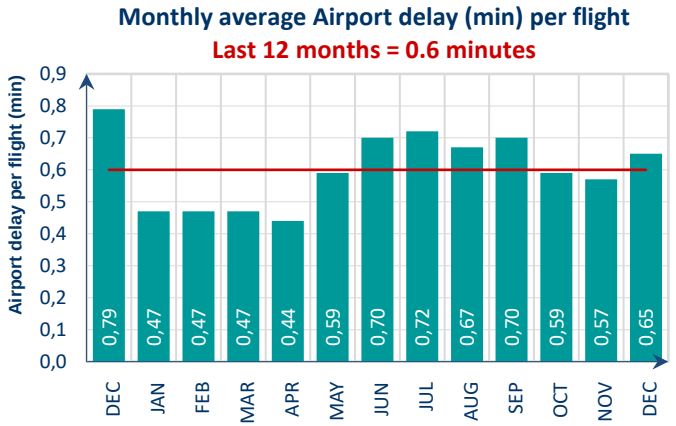


Crosswinds and low visibility impacted operations at Amsterdam/Schiphol with a total of 64,992 minutes of ATFM delay. Strong winds and fog also impacted operations strongly at London/Heathrow airport with a total of 57,379 minutes of ATFM delay.

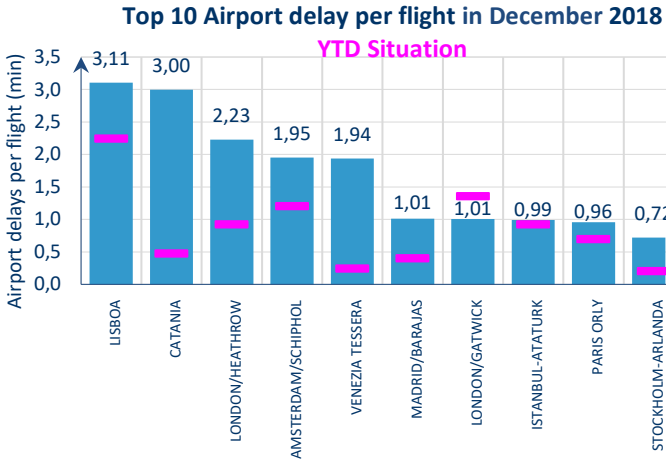


Capacity issues at Istanbul/Atatürk airport generated a total of 33,074 minutes of ATFM delay throughout the month.

AIRPORT/TMA ATFM DELAY PER FLIGHT

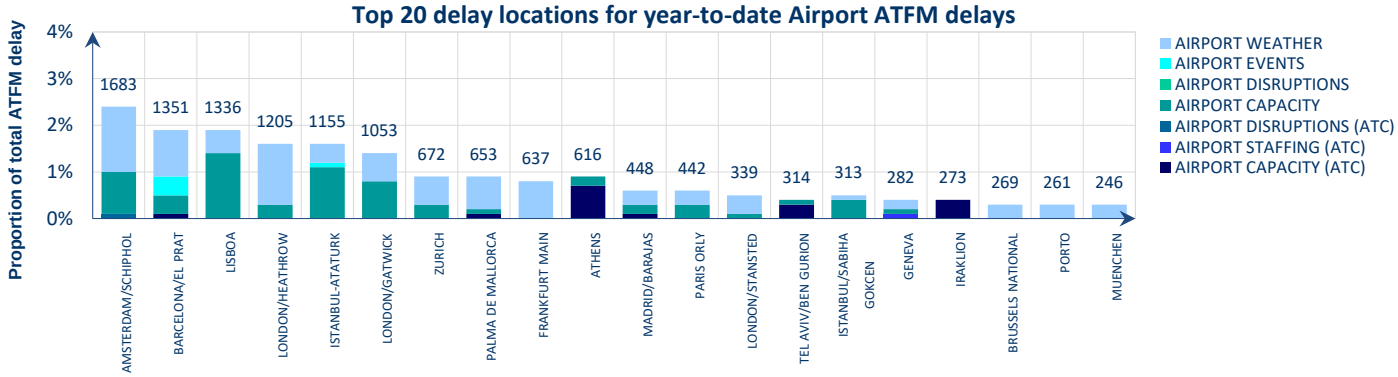


Average airport/TMA delay per flight decreased from 0.79 min/flt in December 2017 to 0.65 min/flt in December 2018.

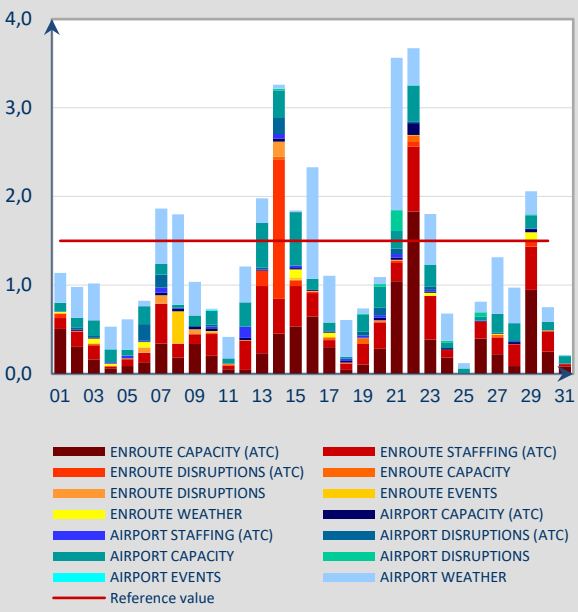


London/Gatwick airport generated an average delay per flight below its year to date average mainly due to fewer airport capacity issues. Operations at Catania airport were impacted by volcanic eruption of Etna.

AIRPORT/TMA ATFM DELAY YEAR-TO-DATE



5. DAILY EVOLUTION



Nine days in December 2018 had an average ATFM delay per flight exceeding 1.5 min. These were the most significant days:

14 December: Industrial action in France impacted operations in Marseille, Brest, Paris, Bordeaux and Reims ACCs, and at Paris/Orly airport; Additional delays due to locally reported unload of traffic due to French industrial action in Barcelona, Madrid and Karlsruhe ACCs; ATC capacity delays in Karlsruhe and Prague ACCs; ATC staffing issues in Marseille, Budapest and Karlsruhe ACCs; Airport capacity issues in London/Heathrow due to work in progress in combination with strong winds;

16 December: Wintry conditions impacted a number of airports with Amsterdam/Schiphol especially affected. High delays due to weather at Frankfurt and London Heathrow airports; ATC capacity delays in Karlsruhe, Prague, Canarias and Nicosia ACCs; ATC staffing issues in Budapest and Marseille ACCs;

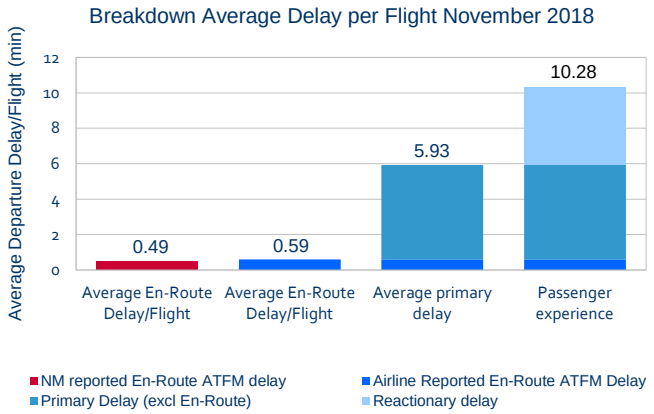
21 December: High delays due to strong winds at Amsterdam/Schiphol and London/Heathrow airports; Low visibility impacted operations at Lisbon, Vienna and Madrid airports; ATC capacity issues in Karlsruhe, Prague, Reims, Madrid, Canarias and Marseille ACCs; ATC staffing issues in Marseille and Budapest ACCs; Unauthorized drones in the vicinity of London/Gatwick airport generated high delays; Airport capacity issues at Catania airport due to work in progress on runways;

22 December: High ATC capacity delays in Karlsruhe UAC, and to a lesser extent in Canarias, Paris, Prague, Reims, Lisbon and Budapest ACCs; ATC staffing issues in Bordeaux and Maastricht ACCs; Aerodrome capacity delays at Istanbul/Atatürk airport; Strong winds at Amsterdam/Schiphol and London/Heathrow airports.

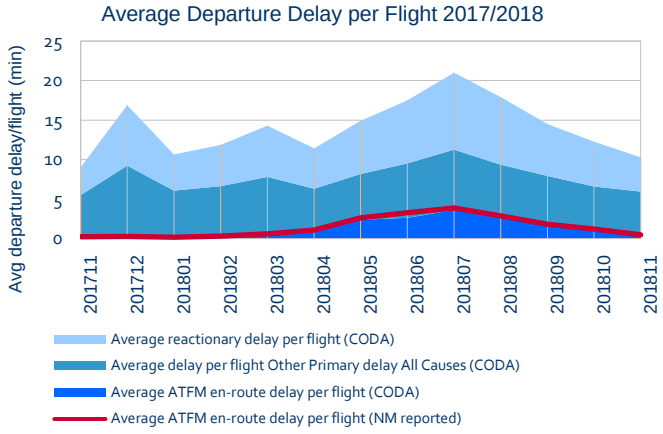
6. ALL AIR TRANSPORT DELAYS (SOURCE: CODA)

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 airlines. Data coverage is 72% of the commercial flights in the ECAC region for November 2018. 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.

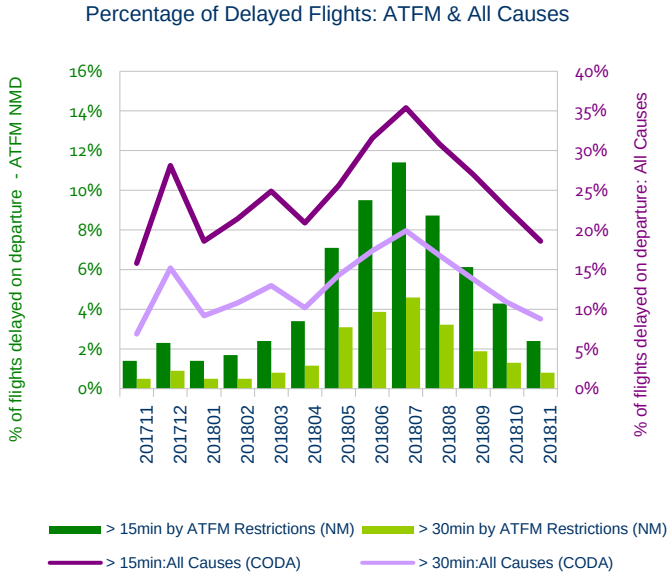
For instance, a flight with an ATFM delay may also have a handling delay absorbed within the ATFM delay. In the event of a long delay an example being during ATC industrial action a flight may keep its original schedule, however when it’s flight plan is submitted for example a day later any ATFM delay 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 10.3 minutes per flight, a 14% increase in comparison to November 2017. Primary delays counted for 57.7% or 5.9 min/flt, with reactionary delays representing the smaller remaining share of 42.3% at 4.4 min/flt. The increase in primary delays was mainly driven by an increase in airline reported ATFM en-route delay (+0.3 min/flt) and airline delay (+0.1 min/flt).



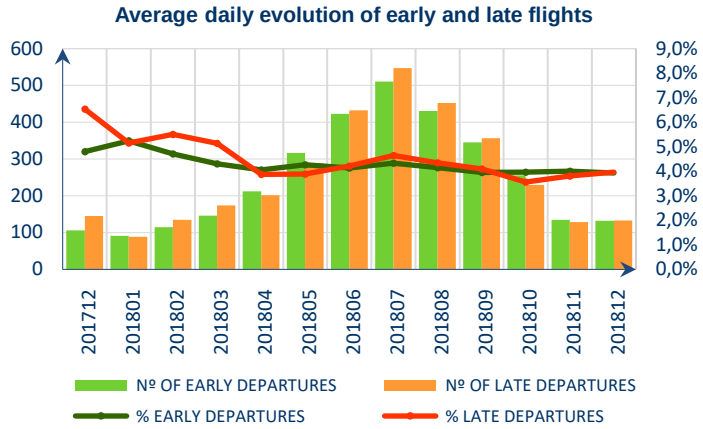
Further analysis of the past 12 months shows that the monthly average ‘All-Causes’ en-route ATFM delay reported by airlines remains high at 0.9 minutes per flight in November 2018. ATFM delays in November 2018 were mostly generated by en-route ATFM Regulations caused by ATC capacity, ATC staffing and en-route weather. The 42.3% share of reactionary delays in November 2018 is lower than the shares observed during the last three months, however it is higher than November 2017 where the share was 39%.



The percentage of flights delayed greater than 15 minutes from ‘All-Causes’ increased by 2.8 percentage points to 18.6% compared to the same period last year. All-causes delays exceeding 30 minutes also increased slightly to 1.9% of flights. 2.4% of flights in November 2018 experienced an ATFM delay exceeding 15 minutes with 0.8% of flights having an ATFM delay exceeding 30 minutes.

For more information on CODA delays:
https://www.eurocontrol.int/sites/default/files/publication/files/flad-november-2018.pdf

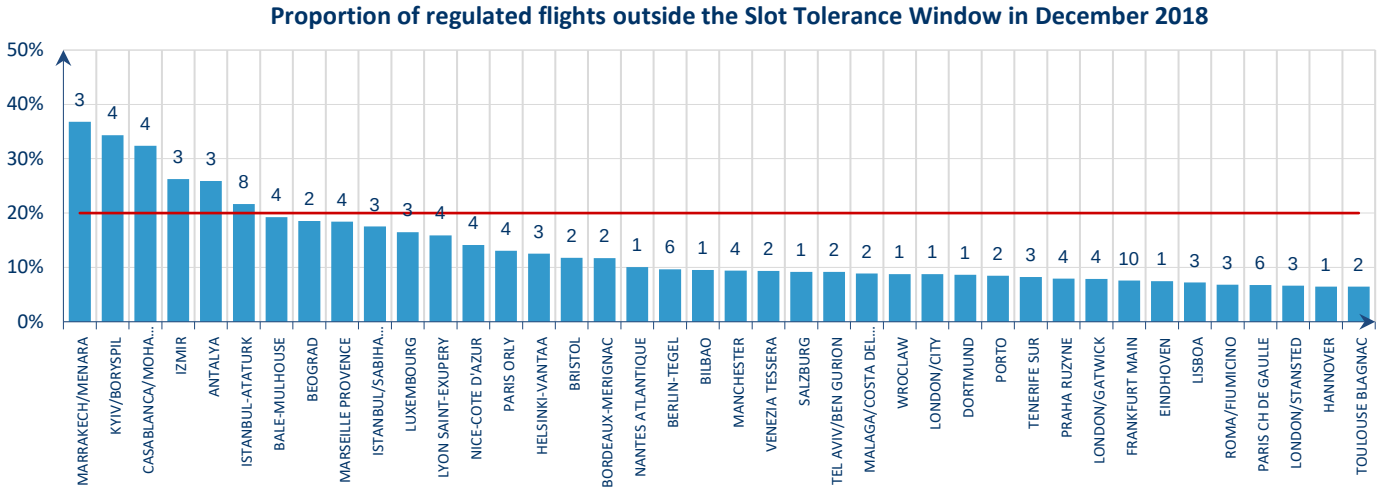
7. ATFM SLOT ADHERENCE



The percentage of early departures for December 2018 is 3.9% of regulated flights, which is a decrease of 0.9 percentage points compared to December 2017.

The percentage of late departures for December 2018 is 4.0% of regulated flights, which is a decrease of 2.6 percentage points compared to December 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

Five ACCs implemented airspace related projects on 06 December (AIRAC 1813).

Langen ACC implemented Langen 2.0 in SF 10, not generating ATFM delay, as planned.

Prestwick ACC implemented PLAS Network 3b, between 06 – 12 December, not generating ATFM delay, as planned.

London ACC implemented SAIP AD4 not generating ATFM delay, even though 10% capacity reduction had been previously foreseen. Maastricht UAC generated 5,273 minutes of ATFM delay on the account of SAIP AD4.

Munich ACC implemented OASE Part 2 between 06 – 17 December not generating ATFM delay, even though 10-20% of capacity reduction had been planned. Karslruhe UAC generated 341 minutes of delay on the account of OASE project.

Maastricht UAC implemented FRAM 2 Phase 2 between 06 – 17 December, generating 7,819 minutes of ATFM delay on 08 December. Capacity reduction of 10% had been planned for the weekends.

AIRPORTS

Local Plans in December

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

Special Events

- Climate Change Conference in Katowice from 01 to 16 December;
- Flight check for missed approach procedures at Lisbon airport on 03 December (in combination with weather, airspace management and aerodrome capacity – 7,797 minutes of ATFM delay).

Completed

- Runway maintenance/closure at Nice and Olsztyn/Mazury airports;
- Taxiway and/or apron improvements at Bergamo, Larnaca and London/Heathrow (28,452 minutes of ATFM delay) airports;
- ILS maintenance at Milano/Malpensa airport.

Ongoing

- Runway maintenance/closure at Istanbul/Sabiha Gökcen and Malaga airports;
- Taxiway and/or apron improvements at Catania (14,030 minutes of ATFM delay), Ibiza, Katowice, Manchester, Malta, Munich, Olsztyn/Mazury, Porto, Paris/Orly (5,636 minutes of ATFM delay), Rome/Fiumicino, Tenerife/Sur and Venice airports;
- Terminal building improvements/works at Budapest, Frankfurt/Main, Manchester, Oslo/Gardermoen and Paris/Charles de Gaulle airports.

DISRUPTIONS

Technical

- Unreliable ground radar (SMGCS) generated a total of 11,694 minutes of ATFM delay from 02 to 10 December at Stockholm/Arlanda airport;
- ILS flight check on 07, 19 and 20 December generated 2,096 minutes of ATFM delay in total at Porto airport;
- Radar failure from 18 to 26 December at Nantes/Atlantique airport generated 4,139 minutes of ATFM delay;
- Locally reported presence of unauthorised drones in the immediate vicinity of London/Gatwick airport. The airport was unavailable for flight operations from 21:08 UTC on Wednesday 19 December until 05:58 on Friday 21 December followed by a brief disruption in the evening of 21 December. This resulted in 47 in-flight diversions on 19 December, 40 flights that landed at alternative airports on the morning of 20 December and the cancellation of approximately 770 movements. A total of 7,554 minutes of ATFM delay was generated;
- Volcanic eruption of Etna from 24 until 26 December generated 1,670 minutes of ATFM delay at Catania airport;

Industrial Action

- Industrial Action in France on Friday 14 December generated a total of 45,385 minutes of en-route delay and 5,784 minutes of airport delay. The most impacted airport was Paris/Orly with 3,084 minutes of ATFM delay. Neighbouring States also generated delays due to locally reported onload of traffic.

9. NM ADDED VALUE

FLIGHTS WITH DELAY > 30'

The number of flights with more than 30 minutes of ATFM delay increased by 27.4% between December 2017 and December 2018.

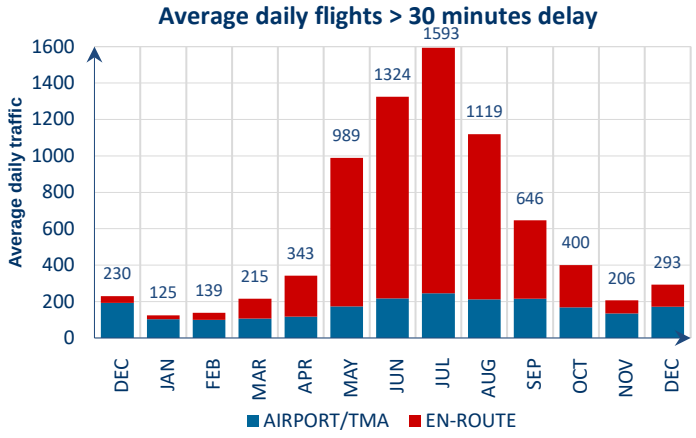
In December 2018, 41.6% of flights with more than 30 minutes of ATFM delay were en-route and 58.4% were airport.

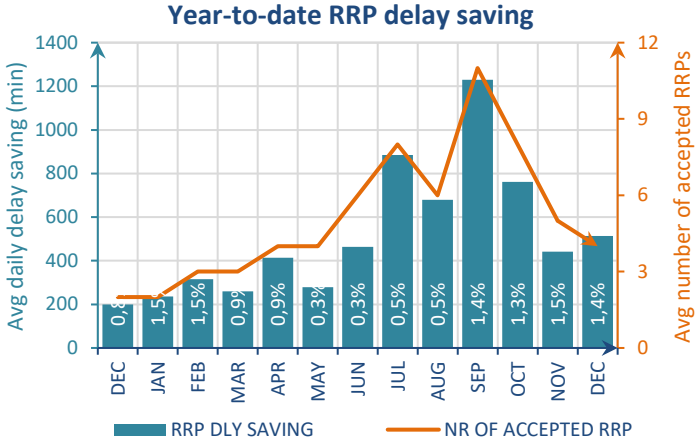
An average 24 flights per day had their delay reduced to less than 30 minutes by NM.

RRP DIRECT DELAY SAVINGS

On average 4 RRPs/day were executed saving 513 min/day, accounting for 1.4% of ATFM delays.

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





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.