



Network Manager
nominated by
the European Commission



Monthly Network Operations Report

Analysis – October 2018



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NOTICE

Traffic and Delay Comparisons

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

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

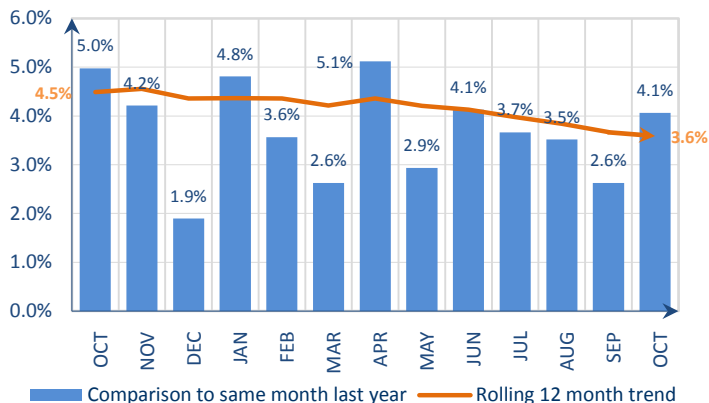
For further information on the regulation reason groupings, go to the Reporting Assumptions and Descriptions document available on the EUROCONTROL website at <http://www.eurocontrol.int/articles/network-operations-monitoring-and-reporting>.

ATFM Statistics dashboard

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

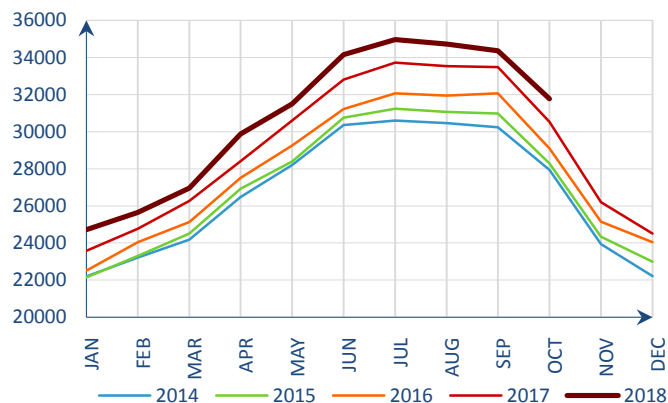
1. TOTAL TRAFFIC

Monthly traffic trend



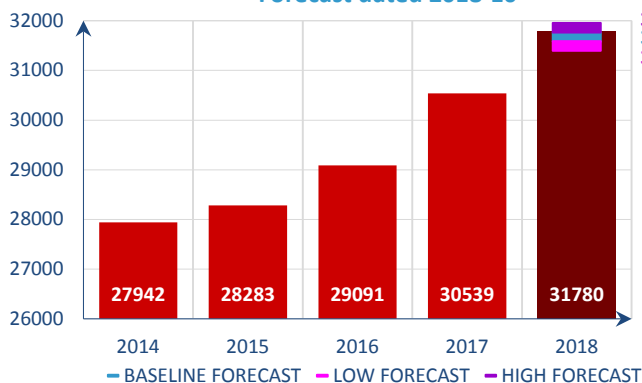
Traffic increased by 4.1% in October 2018ⁱ.

Average daily traffic for last 5 Years



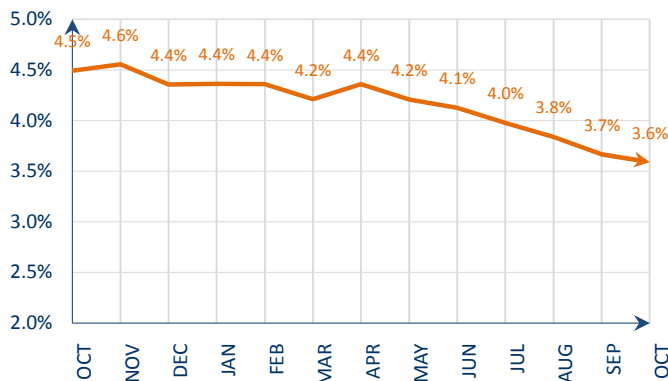
Average daily traffic in October 2018 was the highest ever recorded for October.

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



The traffic increase of 4.1% for October was in line with the high 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 November 2017 to October 2018 was 3.6% higher than the average from November 2016 to October 2017.

Twelve states added more than 50 flights per day to the European localⁱⁱ traffic growth. Germany was the main contributor, adding 376 flights per day to the network thanks to a dynamic internal flow (+89 flights/day) but also to its flows to and from Turkey (+72 flights/day), Greece (+33 flights/day) and Spain (+30 flights/day). Spain was next with 255 extra flights per day because of the growth of its internal flow (+53 flights/day) as well as its flows to and from Italy (+31 flights/day), France (+30 flights/day), and Germany (+30 flights/day). Italy was the third contributor owing mainly to its flows to and from Spain (+31 flights/day). Turkey was next with 152 extra flights per day owing mainly to its flow to and from Germany (+72 flights/day) and also to the flows to and from the Russian Federation (+42 flights/day) and the UK (+31 flights/day). France completed the top five contributors with 127 flights per day. UK is now again contributing positively to the network with 56 flights per day thanks to its flows to and from Turkey (+31 flights/day), Italy (+18 flights/day) and Spain (+13 flights/day). The other states amongst the 10 contributors were: Greece (+116 flights/day), Poland (+90 flights/day), Austria (+78 flights/day), and Portugal (+67 flights/day).

The charter segment continued to record the fastest growth and was up 7.6%. The low-cost segment saw a 5.2% increase whereas traditional scheduled segment grew by 4.3%. The all-cargo and business aviation segments declined by 4% and 0.4% respectively.

The top five external partners in average daily flights on flows in both directions were the United States (1,102 flights, up 5.1%), the Russian Federation (994 flights, up 9.3%), the United Arab Emirates (330 flights, up 3.5%), Egypt (297 flights, up 28.1%) and Qatar (206 flights, up 18.6%).

The airlines which added the most flights to the European network on a daily basis compared with October 2017 were EuroWings (+340 flights), easyJet UK (+217 flights), Ryanair (+146 flights), Lufthansa (+91 flights), Vueling (+57 flights), LOT (+55 flights), Air Europe (+51 flights), and Wizz Air (+51 flights).

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

Eight of the top ten airports had positive traffic growth. Overall, the largest traffic increases in October 2018 were at Berlin/Tegel, Antalya, Milano/Malpensa, Athens and Vienna airports. The largest traffic decreases were at Brussels, Stockholm/Arlanda, Birmingham, Venice and Hamburg airports. The increase of traffic in Berlin/Tegel airport is partially due to the opening of new routes. Traffic recovery in Turkey explained the traffic variation at Antalya airport. Traffic decrease at Brussels airport is due to the ground handling strike between 26 and 31 October. Birmingham airport traffic variation is partially due to the Monarch cessation of operations. Traffic decrease at Hamburg airport is due in part to Air Berlin cessation of operations.

Eight of the top ten aircraft operators flew more compared to October 2017. The operators with the highest traffic growth were Eurowings, Volotea, Jet2.com, Condor and Air Europa airlines. The highest traffic decreases were recorded by Flybe, Aegean Airlines, Royal Air Maroc, Scandinavian Airlines and United Airlines.

The traffic variation of Eurowings follows the continued integration of Germanwings, some Lufthansa routes and more recently ex Air Berlin operated routes. Condor airline has also recuperated routes from Air Berlin cessation of operations and particularly long haul to the Caribbean.

N°	ADEP	ADEP NAME	201810	%	N°	ICAO	AIR OPERATOR	201810	%
1	EDDF	FRANKFURT MAIN	750	6.2%	1	RYR	RYANAIR	2254	7.1%
2	EHAM	AMSTERDAM/SCHIPHOL	743	0.5%	2	EZY	EASYJET	1629	15.4%
3	LFPG	PARIS CH DE GAULLE	695	2.7%	3	DLH	DEUTSCHE LUFTHANSA	1558	6.2%
4	EGLL	LONDON/HEATHROW	672	1.2%	4	THY	TURKISH AIRLINES	1353	2.8%
5	LTBA	ISTANBUL-ATATURK	632	-1.0%	5	AFR	AIR FRANCE	916	0.1%
6	EDDM	MUENCHEN	609	4.9%	6	SAS	SCANDINAVIAN AIRLINES SYSTEM	907	-1.6%
7	LEMD	ADOLFO SUAREZ MADRID-BARAJA	589	7.8%	7	EWG	EUROWINGS AG	739	85.1%
8	LEBL	BARCELONA/EL PRAT	494	4.7%	8	KLM	KLM ROYAL DUTCH AIRL	717	2.3%
9	LIRF	ROMA/FIUMICINO	444	6.2%	9	BAW	BRITISH AIRWAYS	711	-0.3%
10	EGKK	LONDON/GATWICK	404	-0.2%	10	VLG	VUELING AIRLINES SA	621	10.1%
11	LSZH	ZURICH	396	4.1%	11	AZA	ALITALIA	542	3.4%
12	EKCH	KOBENHAVN/KASTRUP	388	2.4%	12	WZZ	WIZZ AIR	536	10.4%
13	LOWW	WIEN SCHWECHAT	387	11.4%	13	PGT	PEGASUS HAVA TASI	478	5.1%
14	ENGM	OSLO/GARDERMOEN	384	2.5%	14	SWR	SWISS INTERNATIONAL	422	5.9%
15	LEPA	PALMA DE MALLORCA	365	6.6%	15	AUA	AUSTRIAN AIRLINES	404	5.0%
16	ESSA	STOCKHOLM-ARLANDA	354	-4.6%	16	BEE	JERSEY EUROPEAN TIA FLYBE	401	-8.7%
17	LFPO	PARIS ORLY	343	4.0%	17	NAX	NORWEGIAN AIR SHUTTLE	379	4.3%
18	EDDL	DUESSELDORF	340	6.0%	18	TAP	TAP/AIR PORTUGAL	377	8.3%
19	LTAI	ANTALYA	339	23.3%	19	LOT	LOT-POLISH AIRLINES	371	17.6%
20	EIDW	DUBLIN	335	7.0%	20	FIN	FINNAIR O/Y	352	8.9%
21	EBBR	BRUSSELS NATIONAL	314	-5.3%	21	WIF	WIDEROE	342	0.5%
22	LTFJ	ISTANBUL/SABIHA GOKCEN	310	5.7%	22	AFL	AEROFLOT-RUSSIAN	327	10.2%
23	LPPT	LISBOA	309	6.3%	23	IBK	NORWEGIAN AIR INTERNATIONAL	308	8.8%
24	LGAV	ATHINA/ELEFTHERIOS VENIZELOS	306	11.7%	24	AEA	AIR EUROPA	268	23.6%
25	EDDT	BERLIN-TEGEL	299	23.6%	25	IBE	IBERIA	265	7.8%
26	EGCC	MANCHESTER	293	2.1%	26	QTR	QATAR AIRWAYS COMP.	249	18.8%
27	EGSS	LONDON/STANSTED	292	6.4%	27	BEL	BRUSSELS AIRLINES	241	-0.6%
28	LIMC	MILANO MALPENSA	284	12.2%	28	EXS	JET2.COM	238	24.6%
29	EFHK	HELSINKI-VANTAA	273	7.6%	29	HOP	HOP (MERGE OF BZH + RAE + RLA)	228	0.2%
30	EPWA	CHOPINA W WARSZAWIE	268	5.8%	30	ANE	AIR NOSTRUM	224	4.9%
31	LSGG	GENEVA	247	-0.2%	31	EIN	AER LINGUS TEORANTA	220	4.9%
32	EDDK	KOELN-BONN	226	8.8%	32	UAE	EMIRATES	204	5.8%
33	EDDH	HAMBURG	226	-1.4%	33	RAM	ROYAL AIR MAROC	188	-3.5%
34	LLBG	TEL AVIV/BEN GURION	220	0.9%	34	TOM	THOMSON FLY LTD	188	2.9%
35	LKPR	PRAHA RUZYNE	214	3.0%	35	TRA	TRANSVIA.COM	182	0.3%
36	LEMG	MALAGA/COSTA DEL SOL	210	0.9%	36	BCS	EUROPEAN AIR TRANSP.	180	13.2%
37	EGGW	LONDON/LUTON	199	2.5%	37	SXS	SUNEXPRESS AIRLINES	178	10.5%
38	LFMN	NICE-COTE D'AZUR	198	-0.7%	38	AUI	UKRAINE INTERNATIONAL	176	8.1%
39	EDDS	STUTTGART	198	8.5%	39	CFG	CONDOR FLUGDIENST	165	24.1%
40	EGPH	EDINBURGH	193	2.9%	40	BTI	AIR BALTIC CORPORAT.	163	12.2%
41	GCLP	GRAN CANARIA	178	7.2%	41	OAL	OLYMPIC	162	3.6%
42	LROP	BUCURESTI/HENRI COANDA	175	5.4%	42	EZS	EASY JET SWITZERLAND	160	8.0%
43	LFLL	LYON SAINT-EXUPERY	166	3.5%	43	VOE	VOLOTEA	157	38.7%
44	LHBP	BUDAPEST LISZT FERENC INT.	164	11.3%	44	AEE	AEGEAN AIRLINES	149	-7.9%
45	EGBB	BIRMINGHAM	163	-2.3%	45	TCX	THOMAS COOK AIT LTD	146	18.4%
46	LIML	MILANO LINATE	161	1.2%	46	TVF	TRANSVIA FRANCE	136	21.5%
47	EDDB	SCHOENEFELD-BERLIN	150	4.4%	47	NJE	NETJETS	135	3.1%
48	LEAL	ALICANTE	148	0.0%	48	UAL	UNITED AIRLINES INC.	134	-0.7%
49	LFBO	TOULOUSE BLAGNAC	147	0.6%	49	DAL	DELTA AIR LINES INC.	132	-0.6%
50	LIPZ	VENEZIA TESSERA	146	-2.0%	50	CFE	CITYFLYER EXPRESS	124	13.4%
TOTALS and % TOTAL TRAFFIC			16340	57.6%	TOTALS and % TOTAL TRAFFIC			21636	68.1%

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

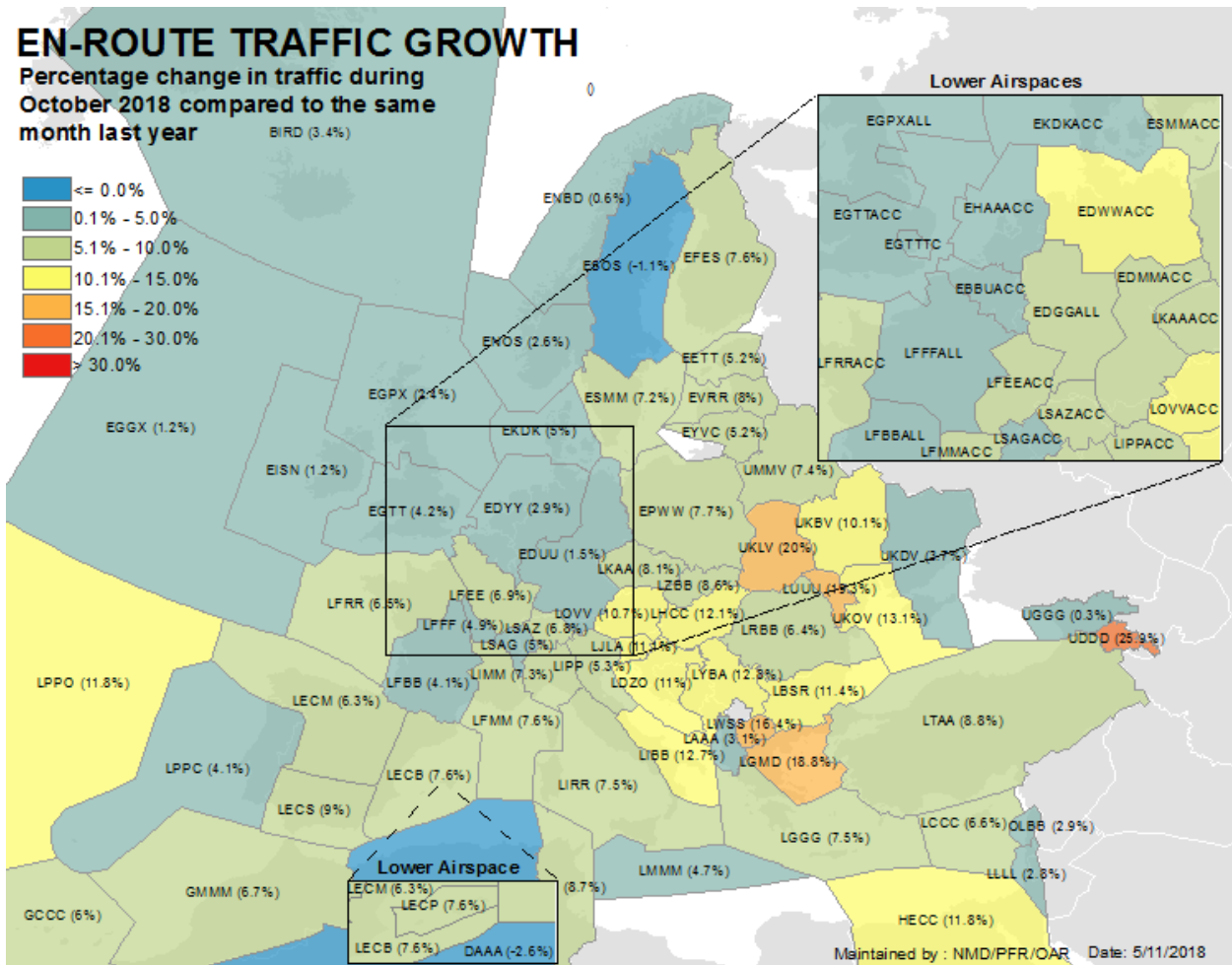
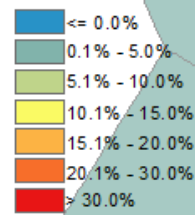
Top 50 Air Operators with average daily traffic and percentage compared to same period of previous year

N°	ICAO	AIR OPERATOR	201810	%
		Unidentified	2095	-0.2%

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 October 2018 compared to the same month last year



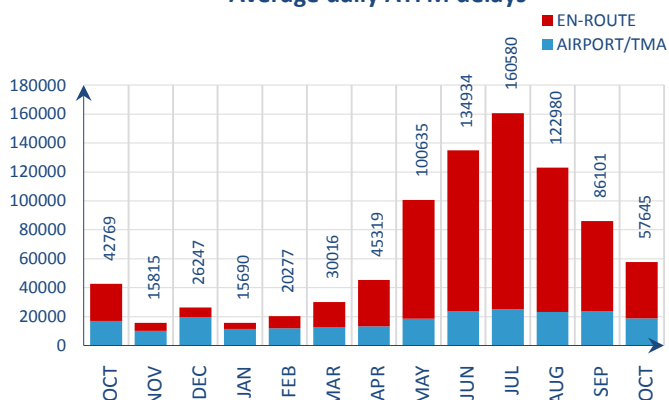
Maintained by : NMD/PFR/OAR Date: 5/11/2018

Nº	ASP ID	ASP NAME	201810	%	Nº	ASP ID	ASP NAME	201810	%
1	BIRDACC	REYKJAVIK ACC	423	3.4%	39	LFBALL	BORDEAUX ALL ACC	2949	4.1%
2	DAAAACC	ALGERS ACC	477	-2.7%	40	LFEACC	REIMS U/ACC	3112	6.9%
3	DTTACC	TUNIS ACC	326	8.7%	41	LFFFALL	PARIS ALL ACC	3572	4.9%
4	EBBUACC	BRUSSELS CANAC	1885	1.9%	42	LFMMACC	MARSEILLE ACC	3426	7.6%
5	EDGGALL	LANGEN ACC_FIR	4108	8.5%	43	LFMMAPP	MARSEILLE TMA	892	0.2%
6	EDMMACC	MUNCHEN ACC	3627	9.3%	44	LFRRACC	BREST U/ACC	3283	6.5%
7	EDUUUAC	KARLSRUHE UAC	5525	1.5%	45	LGGGACC	ATHINAI CONTROL	1676	7.5%
8	EDWWACC	BREMEN ACC	2098	10.1%	46	LGMACC	MAKEDONIA CONTROL	1489	18.8%
9	EDYYUAC	MAASTRICHT UAC	5513	2.9%	47	LHCCACC	BUDAPEST ACC	2515	12.1%
10	EETTACC	TALLIN ACC	629	5.2%	48	LIBBACC	BRINDISI ACC	956	12.7%
11	EFESACC	TAMPERE ACC	555	7.6%	49	LIMMACC	MILANO ACC	2563	7.3%
12	EGGXOCA	SHANWICK OACC	1414	1.2%	50	LIPPACC	PADOVA ACC	2090	5.3%
13	EGPXALL	SCOTTISH ACC	3002	2.4%	51	LIRRACC	ROMA ACC	2526	7.5%
14	EGTTACC	LONDON ACC	6118	4.2%	52	LJLAACC	LJUBLJANA ACC	1050	11.1%
15	EGTTTC	LONDON TMA TC	4220	4.5%	53	LKAAACC	PRAGUE ACC	2432	8.1%
16	EHAACC	AMSTERDAM ACC(245-)	1770	2.4%	54	LLLLACC	TEL AVIV ACC	554	2.8%
17	EIDWACC	DUBLIN ACC	728	6.1%	55	LMMMACC	MALTA ACC	334	4.7%
18	EISNACC	SHANNON ACC	1304	1.2%	56	LOVVACC	WIEN ACC	2783	10.7%
19	EKDKACC	COPENHAGEN ACC	1692	5.0%	57	LPPCACC	LISBOA ACC/UAC	1680	4.1%
20	ENBDACC	BODO ACC	625	0.6%	58	LPOOACC	SANTA MARIA OACC	445	11.8%
21	ENOSACC	OSLO ATCC	1087	2.6%	59	LQSBACC	BOSNIA-HERZEGOVINA	128	4.1%
22	ENSVACC	STAVANGER ATCC	685	3.6%	60	LRBBACC	BUCURESTI ACC	2033	6.4%
23	EPWWACC	WARSAWA ACC	2351	7.7%	61	LSAGACC	GENEVA ACC	2078	5.0%
24	ESMMACC	MALMO ACC	1692	7.2%	62	LSAZACC	ZURICH ACC	2468	6.8%
25	ESOSACC	STOCKHOLM ACC	1244	-1.1%	63	LTAACC	ANKARA ACC	4209	8.8%
26	EVRACC	RIGA ACC	828	8.0%	64	LTBBACC	ISTANBUL ACC	904	-55.8%
27	EYVACC	VILNIUS ACC	733	5.2%	65	LUUVACC	CHISINAU ACC	161	19.3%
28	GCCACC	CANARIAS ACC/FIC	988	6.0%	66	LWSSACC	SKOPJE ACC	595	16.4%
29	GMMMACC	CASABLANCA ACC	1213	6.7%	67	LYBAACC	BEOGRADE ACC	2169	12.8%
30	HECCACC	CAIRO ACC	656	11.8%	68	LZBBACC	BRATISLAVA ACC	1564	8.6%
31	LAAACC	TIRANA ACC	593	3.1%	69	OLBBACC	BEIRUT ACC	143	2.9%
32	LBSRACC	SOFIA ACC	2474	11.4%	70	UDDACC	YEREVAN ACC	170	25.9%
33	LCCACC	NICOSIA ACC	1118	6.6%	71	UGGACC	TBILISI ACC	402	0.3%
34	LDZOACC	ZAGREB ACC	1849	11.0%	72	UKBVACC	KIEV ACC	478	10.1%
35	LECBACC	BARCELONA ACC	2797	7.6%	73	UKDVACC	DNIPROPETROVSK ACC	56	3.7%
36	LECMALL	MADRID ALL ACC	3377	6.3%	74	UKLVACC	L'VIV ACC	396	20.0%
37	LECPACC	PALMA ACC	1027	7.7%	75	UKOVACC	ODESSA ACC	303	13.1%
38	LECSACC	SEVILLA ACC	1247	9.0%	76	UMMVACC	MINSK ACC	831	7.4%

The Santa Maria, Canarias, Lisbon, Madrid and Casablanca ACCs variation is due to increased traffic in the South/West axis. However, the highest relative traffic increases in October 2018 were in Yerevan, L'viv, Chisinau, Makedonia and Skopje ACCs. Traffic increase in Ukraine is partially due to an increase of overflights from/to Turkey. The traffic increase in Turkish airspace is due to domestic and Russian flights recovery.

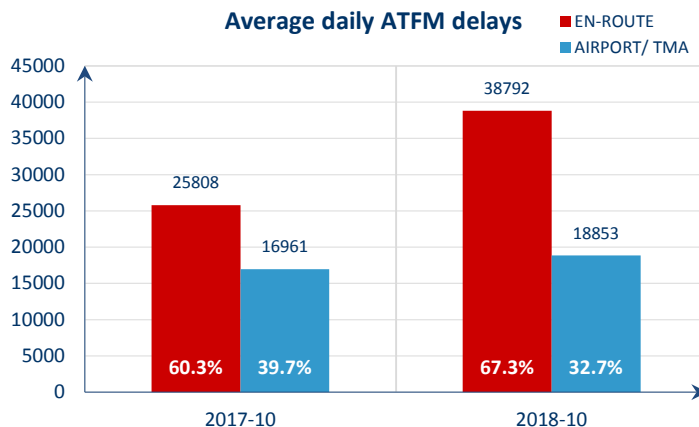
2. ATFM DELAY AND ATTRIBUTIONS

Average daily ATFM delays



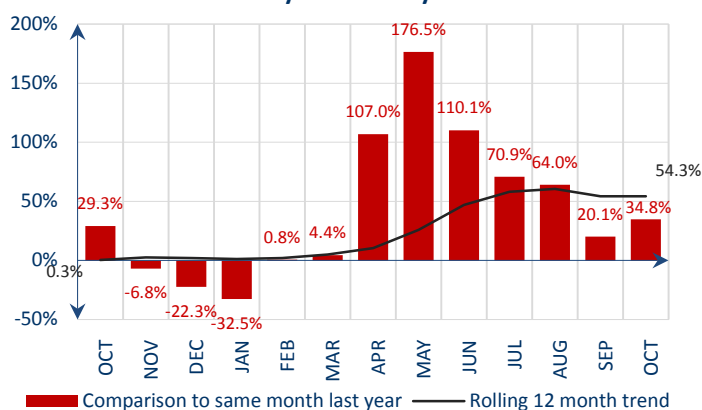
Total ATFM delays increased by 34.8% in October 2018¹.

Average daily ATFM delays



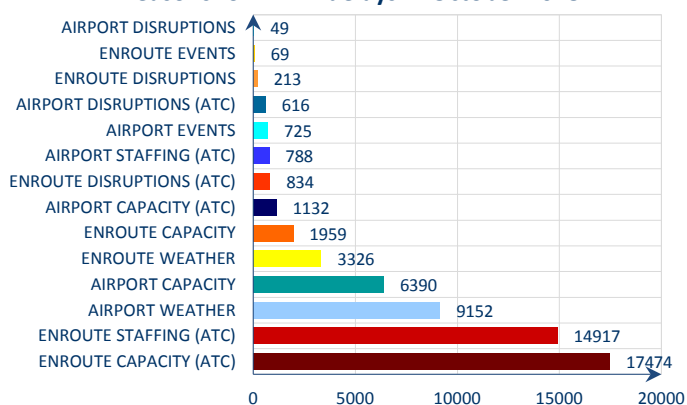
En-route ATFM delays increased by 50.3% and airport ATFM delays increased by 11.2%.

Monthly ATFM delays trend



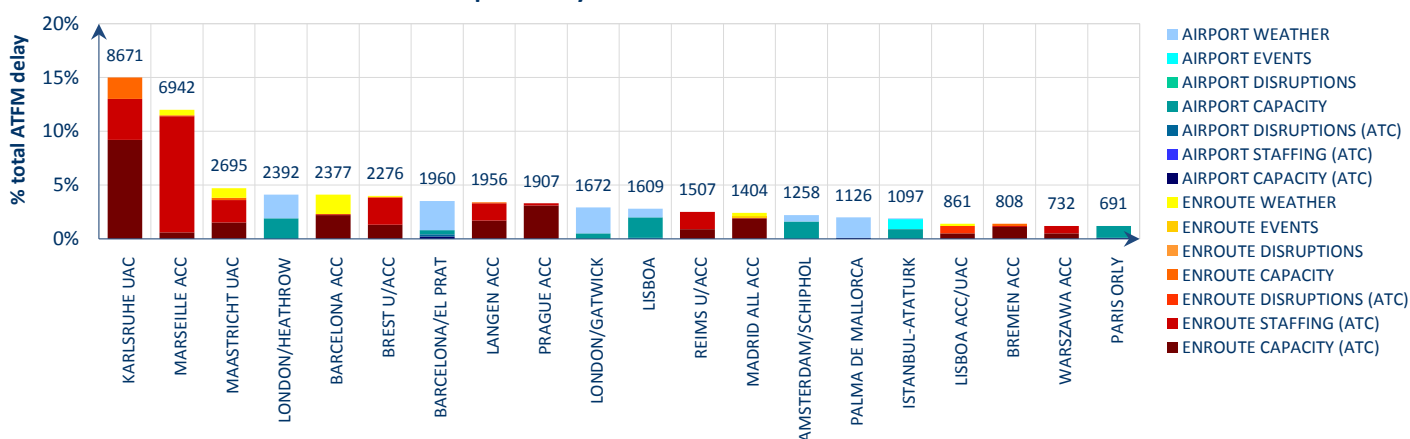
The rolling 12-month trend shows that ATFM delay was 54.3% higher during the period November 2017 – October 2018 compared to November 2016 – October 2017.

Reasons for ATFM delays in October 2018



En-route ATC capacity (30.3%), en-route ATC staffing (25.9%) and airport weather (15.9%) were the main causes of ATFM delays in October 2018.

Top 20 delay reference locations in October 2018

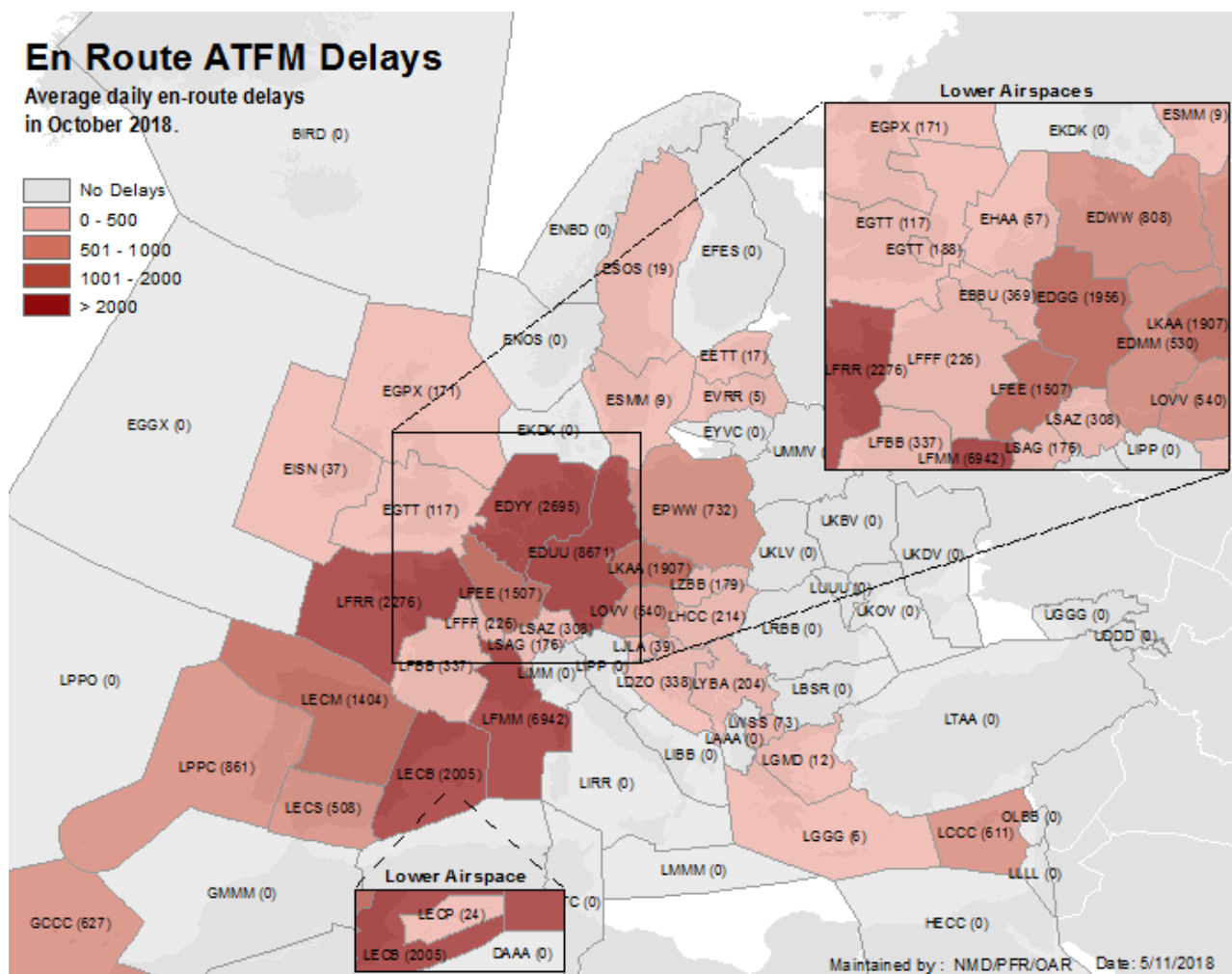


These are the top 20 delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

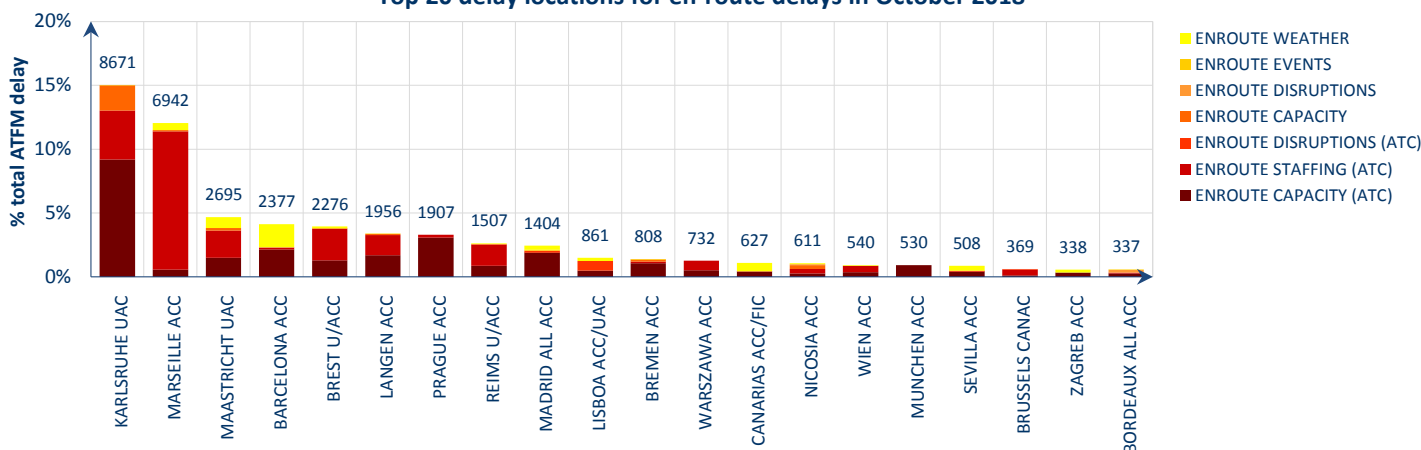
- High en-route capacity delays in Karlsruhe UAC, and to a lesser extent in Prague, Barcelona and Madrid ACCs;
- High en-route staffing delays in Marseille ACC, and to a lesser extent in Karlsruhe, Brest, Maastricht and Langen ACCs;
- En-route weather issues in Barcelona ACC;
- Seasonal weather impacted operations at Barcelona, London/Gatwick, London/Heathrow and Palma de Mallorca airports;
- Capacity constraints at Istanbul/Atatürk airport due to the opening ceremony of the new Istanbul airport.

3. EN-ROUTE ATFM DELAYS

EN-ROUTE ATFM DELAY PER LOCATION



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



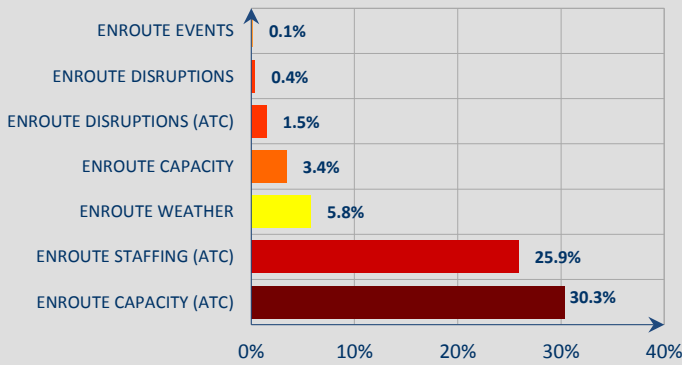
These are the top 20 en-route ATFM delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

The top 20 en-route ATFM delay locations generated **62.4%** of the monthly total (network) ATFM delay. The top 5 en-route ATFM delay locations generated **39.8%** 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

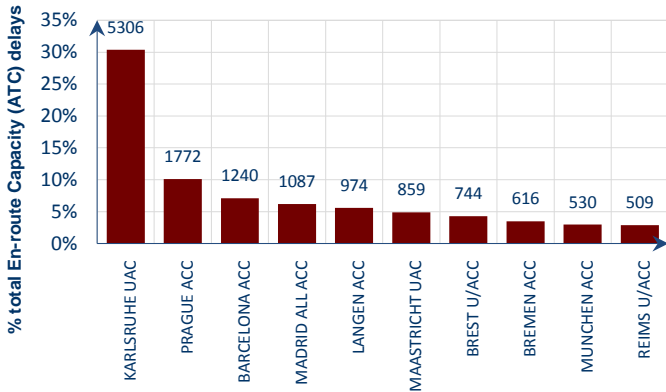
Reasons for en-route delays in October 2018



En-route ATFM delays accounted for 67.3% of all ATFM delays. Most of this delay was caused by en-route ATC capacity, en-route ATC staffing and en-route weather as explained in detail below. The other causes were:

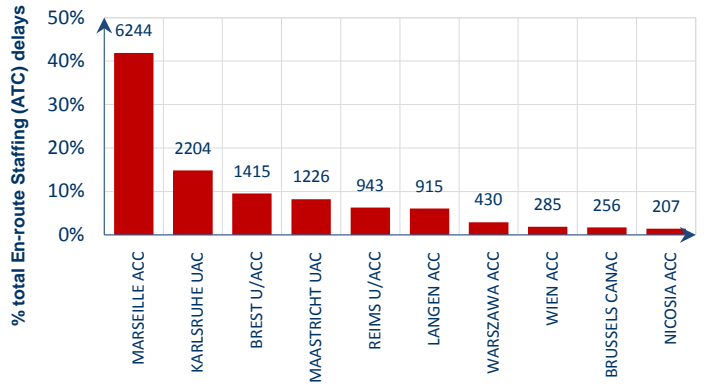
- En-route capacity*; Military exercises restricted operations in Karlsruhe, Beograd, Nicosia, Maastricht and Bremen ACCs;
- En-route ATC disruptions*; Telecommunications issues and radar maintenance in Lisbon ACC; Radar instability in Zurich and Madrid ACCs; Radio system issues in Brussels ACC;
- En-route disruptions*; Essential maintenance to Nicosia's operations facility resulted in the non-availability of the optimum sector configuration.

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



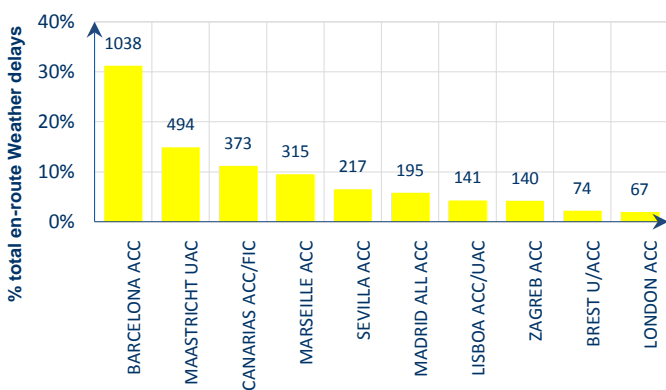
Karlsruhe UAC generated a total of 164,500 minutes of en-route ATC capacity delay throughout the month, which represented 30.4% of these delays.

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



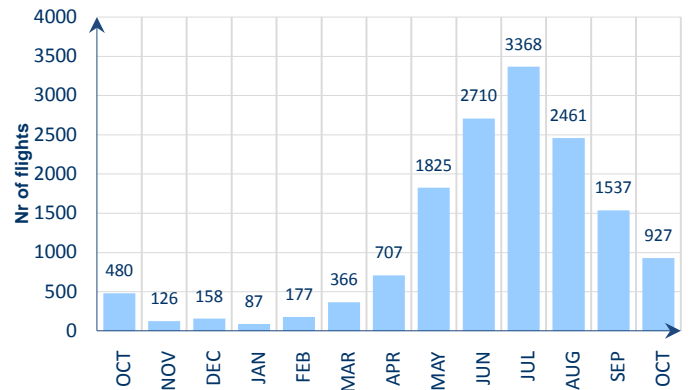
57% of ATFM delays due to staff shortage were generated in Marseille and Karlsruhe ACCs. Marseille ACC generated 64% of its delays during weekends.

Top en-route Weather delays in October 2018



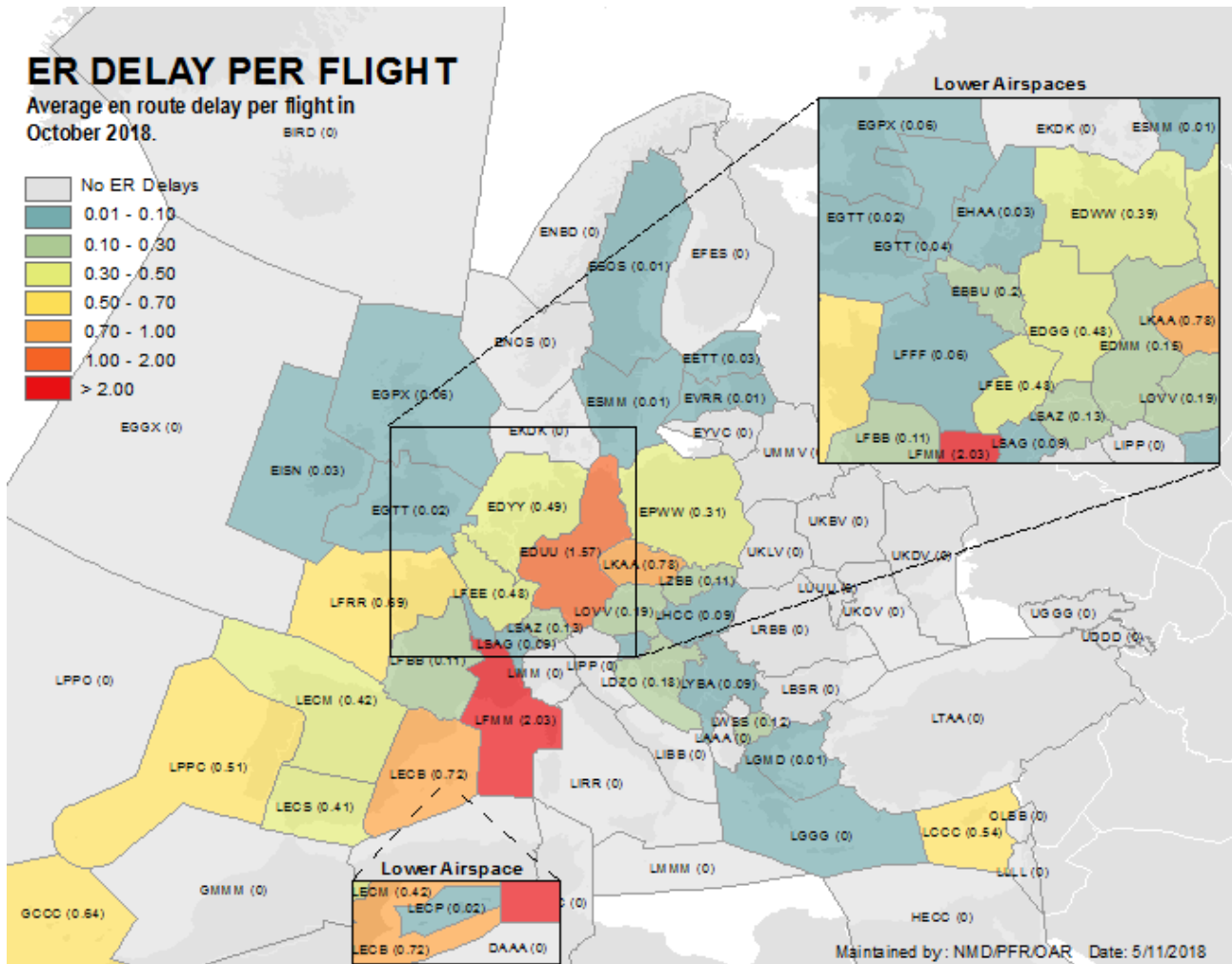
Convective activity impacted operations in Barcelona ACC and generated a total of 15,492 minutes of ATFM delay.

Average daily flights >= 15 min en-route delay

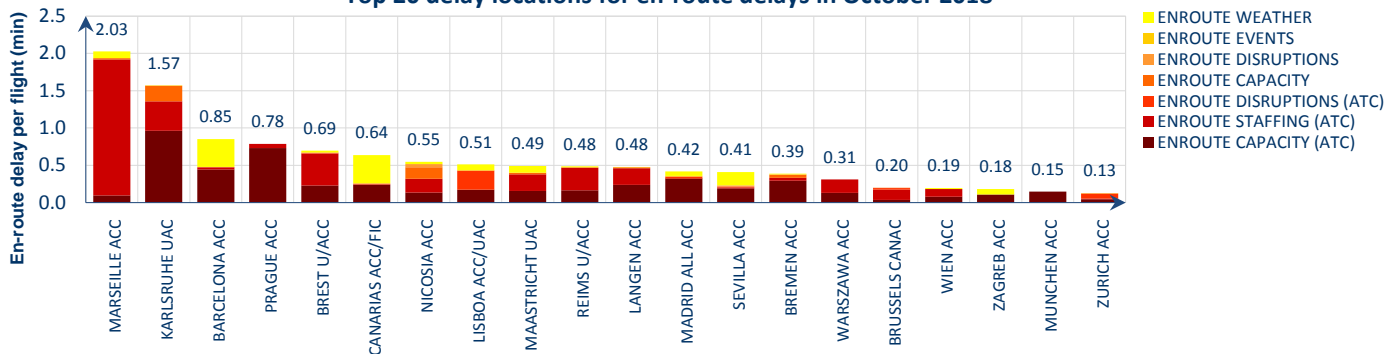


The average daily flights with an en-route ATFM delay of at least 15 minutes increased from 480 flights/day in October 2017 to 927 flights/day in October 2018, which represents 2.9% of all traffic.

EN-ROUTE ATFM DELAY PER FLIGHT



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

The biggest differences from the previous month are highlighted below:

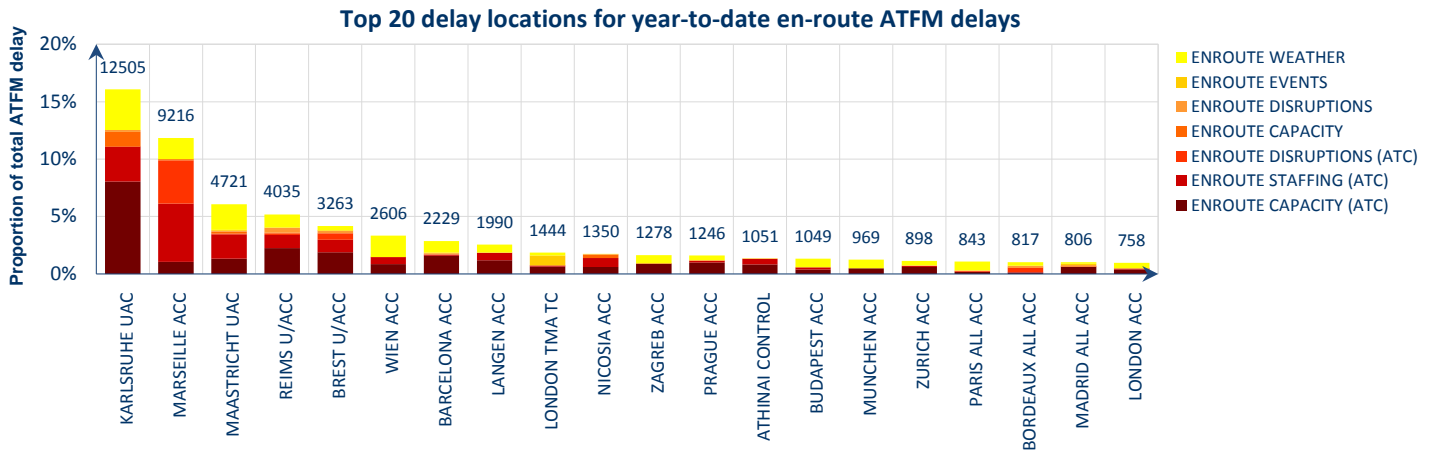
Marseille ACC en-route ATFM delay/flight increased from 1.57 min/flight in September 2018 to 2.03 min/flight in October 2018, mainly due to more ATC staffing issues;

Karlsruhe UAC en-route ATFM delay/flight decreased from 2.52 min/flight in September 2018 to 1.57 min/flight in October 2018, mainly due to fewer weather and ATC capacity delays;

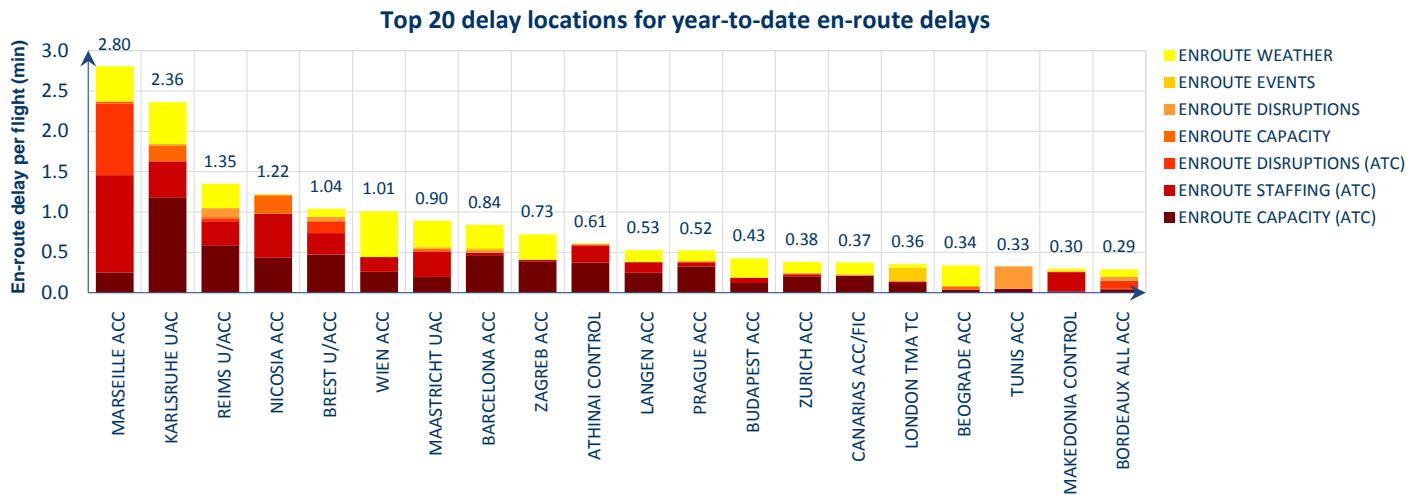
Nicosia ACC en-route ATFM delay/flight decreased from 2.91 min/flight in September 2018 to 0.55 min/flight in October 2018, mainly due to fewer ATC staffing and capacity issues;

Vienna ACC en-route ATFM delay/flight decreased from 1.40 min/flight in September 2018 to 0.19 min/flight in October 2018, mainly due to fewer weather and ATC staffing 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 **68.1%** of the total ATFM (network) delay.
 The top 5 en-route delay locations generated **43.3%** 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.

Monthly en-route delay per flight monitoring

Reporting month: The average en-route ATFM delay per flight in the NM areaⁱⁱⁱ in October was 1.22 min/ft, which is well above the corresponding monthly guideline^{iv} value of 0.35 min/ft.
Year To Date: The average YTD en-route ATFM delay per flight in 2018 in the NM areaⁱⁱⁱ is 1.93 min/ft which is more than three times the corresponding guideline value of 0.54 min/ft.

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

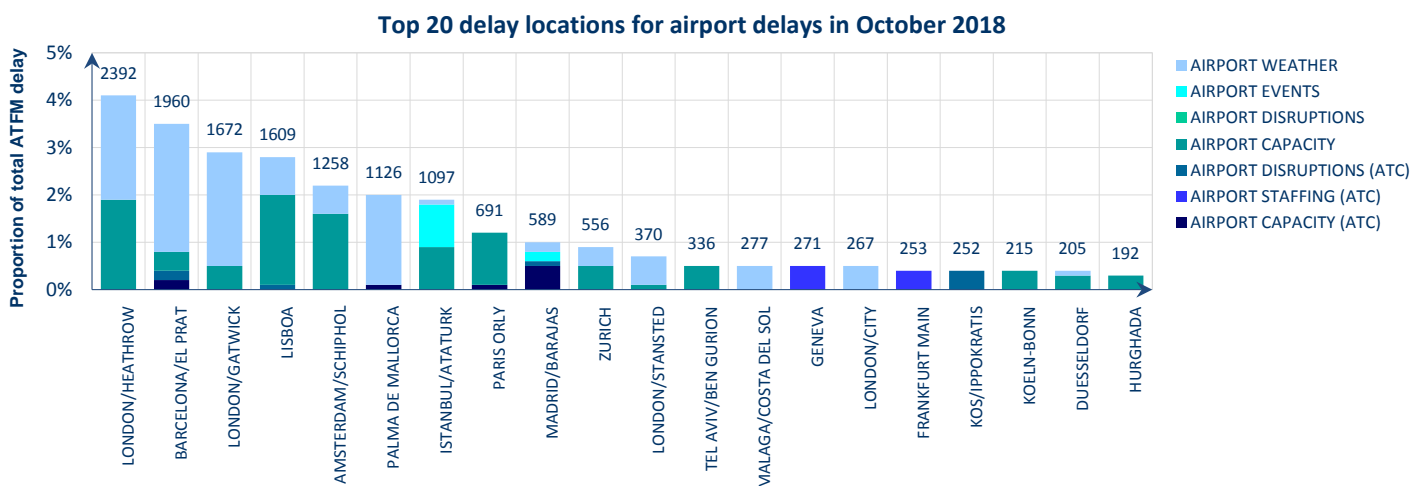
An average of 1,427 flights/day had an en-route ATFM delay of at least 15 minutes in 2018. The corresponding figure in 2017 was 681 flights/day.

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

- Karlsruhe UAC with 293 flights/day
- Marseille ACC with 217 flights/day
- Maastricht UAC with 114 flights/day

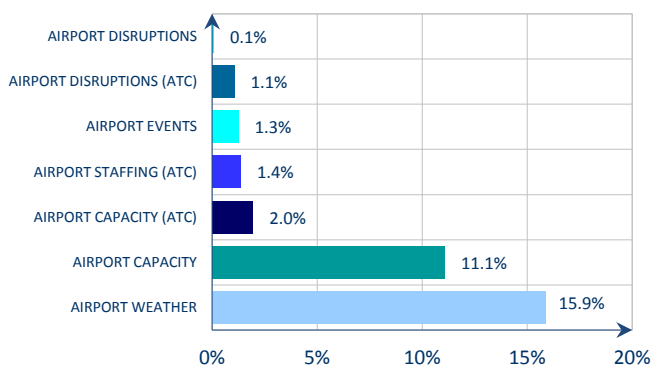
4. AIRPORT/TMA ATFM DELAYS

AIRPORT/TMA ATFM DELAY PER LOCATION

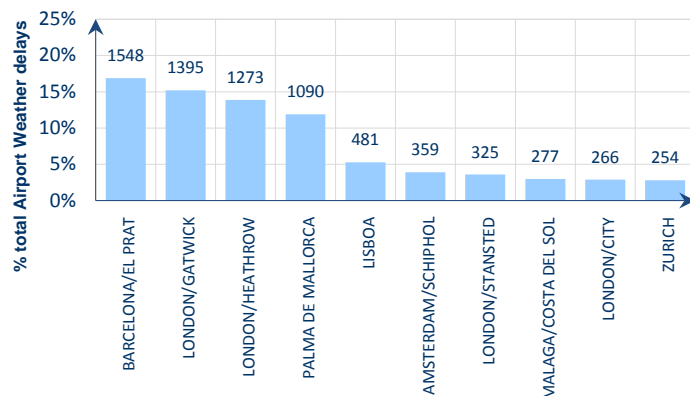


AIRPORT/TMA ATFM DELAY PER DELAY GROUPS

Reasons for airport delays in October 2018



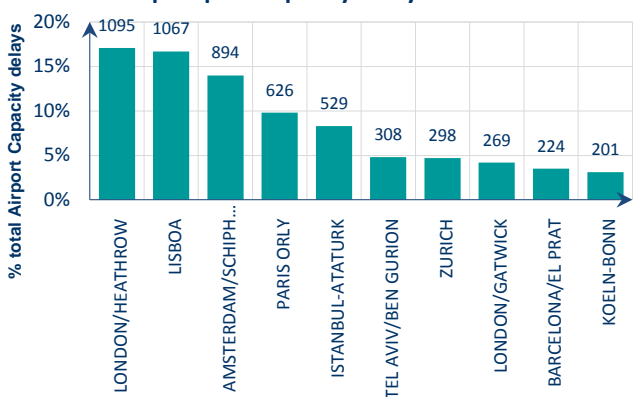
Top Airport Weather delays in October 2018



Airports accounted for 32.7% of all ATFM delays in October 2018, mainly due to airport weather and capacity.

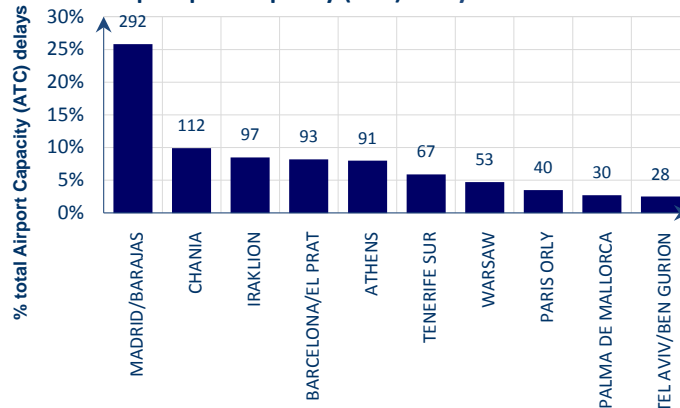
Storm conditions impacted operations strongly at Barcelona airport on 14 October. Fog and strong winds generated 27,750 minutes of ATFM delay at London/Gatwick airport from 04 to 06 October.

Top Airport Capacity delays in October 2018



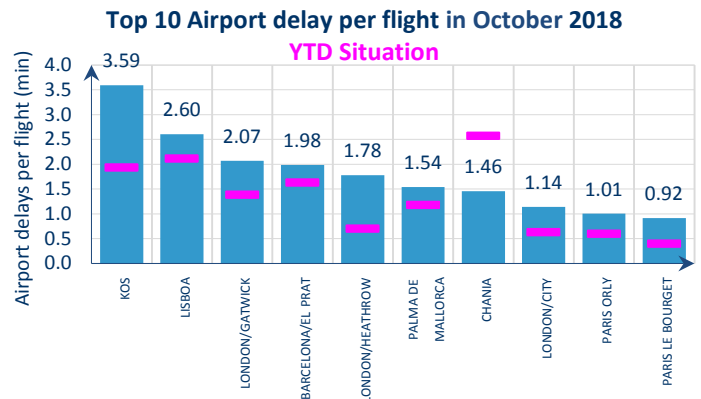
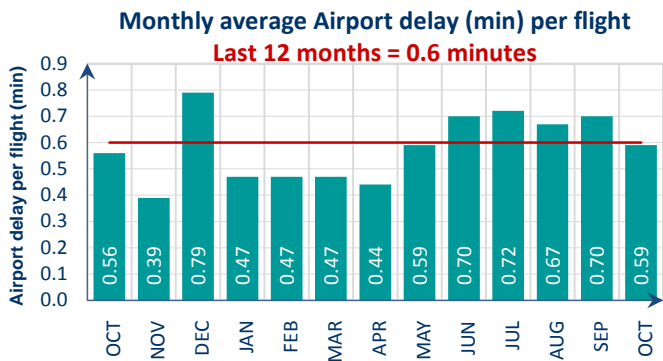
Airport capacity in conjunction with planned taxiway maintenance at London/Heathrow airport generated delays. Early arrivals and constraints elsewhere in the network are having an operational impact at Lisbon airport. High demand in conjunction with runway maintenance at Amsterdam/Schiphol airport generated delays.

Top Airport Capacity (ATC) delays in October 2018



Arrivals regulated at Madrid/Barajas airport generated a total of 9,061 minutes of ATFM delay.

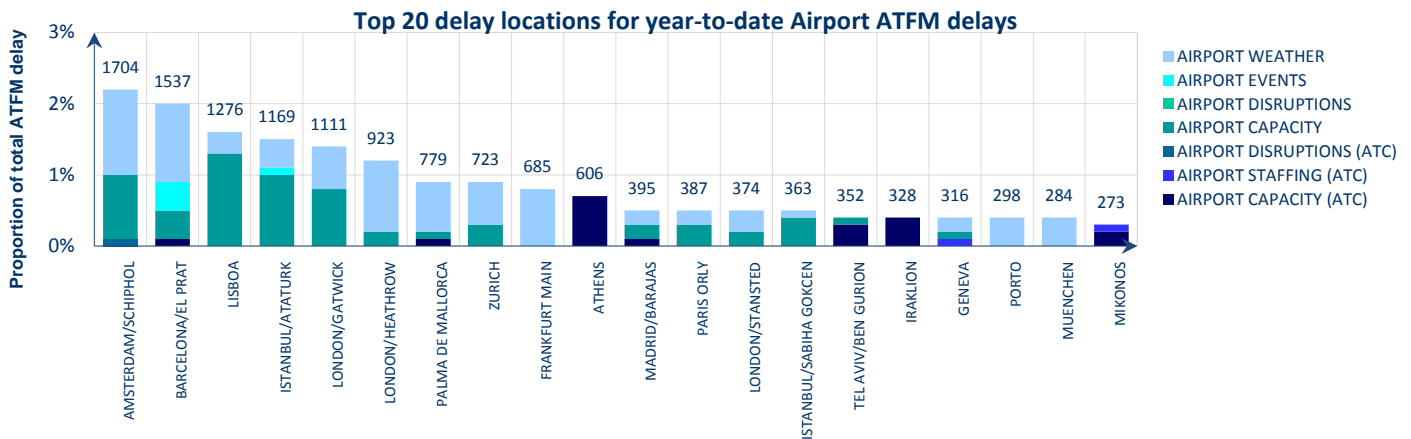
AIRPORT/TMA ATFM DELAY PER FLIGHT



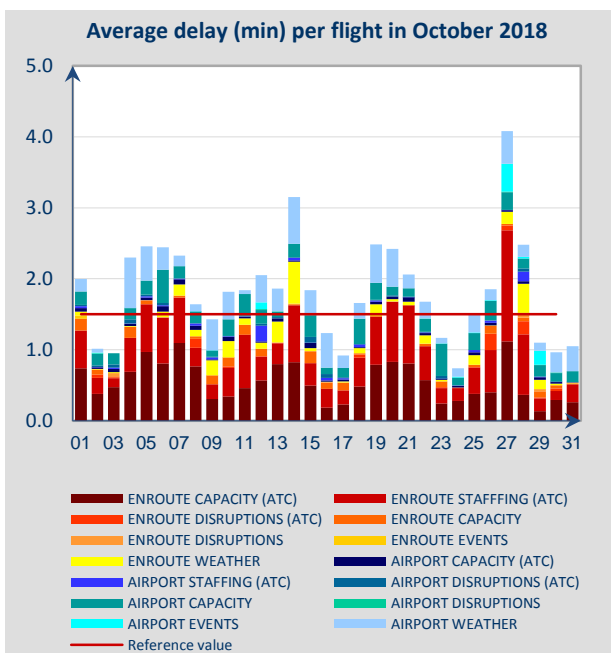
Average airport/TMA delay per flight slightly increased from 0.56 min/flt in October 2017 to 0.59 min/flt in October 2018.

Kos airport generated an average delay per flight well above its year to date average mainly due to navigation infrastructure issues. Chania airport generated an average delay per flight well below its year to date average mainly due to fewer ATC capacity issues.

AIRPORT/TMA ATFM DELAY YEAR-TO-DATE



5. DAILY EVOLUTION



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

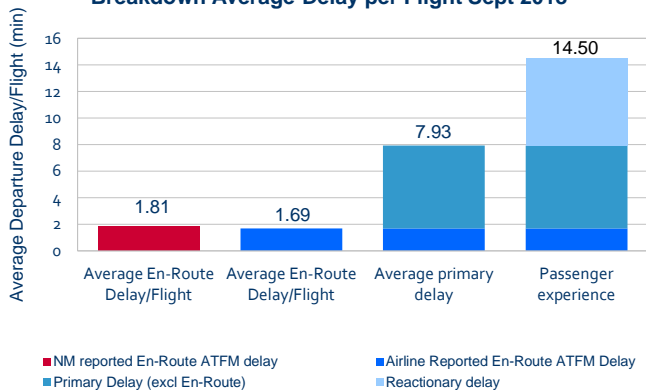
- 01 October:** En-route ATC capacity delays in Karlsruhe, Prague, Langen, Paris and Bremen ACCs; ATC staffing issues in Marseille, Karlsruhe and Langen ACCs; Military exercises in Karlsruhe and Brest ACCs; Aerodrome capacity issues at Amsterdam/Schiphol, Istanbul/Atatürk and Lisbon airports; Weather delays at both Istanbul airports and Palma de Mallorca airport;
- 04-07 October:** Low visibility at London airports; Thunderstorms at Barcelona and Palma de Mallorca airports; En-route ATC capacity issues in Karlsruhe, Prague, Maastricht, Langen, Marseille, Madrid and Warsaw ACCs; ATC staffing issues in Marseille, Karlsruhe, Brest, Warsaw and Maastricht ACCs; Aerodrome capacity delays at London/Heathrow, Lisbon, Istanbul/Atatürk, Amsterdam/Schiphol and Zurich airports; Military exercises in Karlsruhe and Beograd ACCs;
- 14 October:** Storm Leslie impacted operations strongly at Barcelona airport and in Barcelona TMA; Additional weather issues in Sevilla and Madrid ACCs; High ATC capacity delays in Karlsruhe UAC, and to a lesser extent in Maastricht and Scottish ACCs; ATC staffing issues in Marseille, Maastricht and Reims ACCs; Aerodrome capacity delays at London/Heathrow airport;
- 27 October:** Capacity constraints at Istanbul/Atatürk airport due to the planned opening of the new Istanbul airport; High delays due to ATC staffing in Marseille and Brest ACCs; ATC capacity issues in Brest, Madrid, Karlsruhe, Bordeaux and Maastricht ACCs; Thunderstorms impacted operations at Palma de Mallorca and Barcelona airports;
- 28 October:** Severe turbulence impacted operations in Maastricht UAC; Communications issues in Lisbon ACC; ATC staffing issues in Marseille, Brest, Budapest and Reims ACCs; Staffing delays at Geneva airport; ATC capacity issues in Madrid, Karlsruhe and Sevilla ACCs.

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 64% of the commercial flights in the ECAC region for September 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.

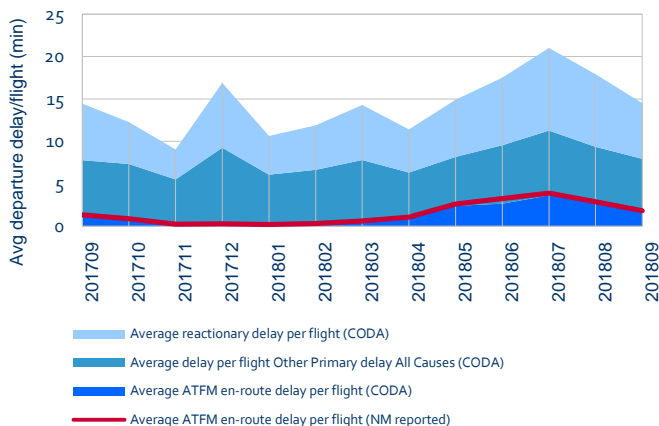
For instance, a flight with an ATFM delay may also have a handling delay absorbed within the ATFM delay. In the event of a long delay an example being during ATC industrial action a flight may keep its original schedule. However when its flight plan is submitted for example a day later any ATFM delay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

Breakdown Average Delay per Flight Sept 2018



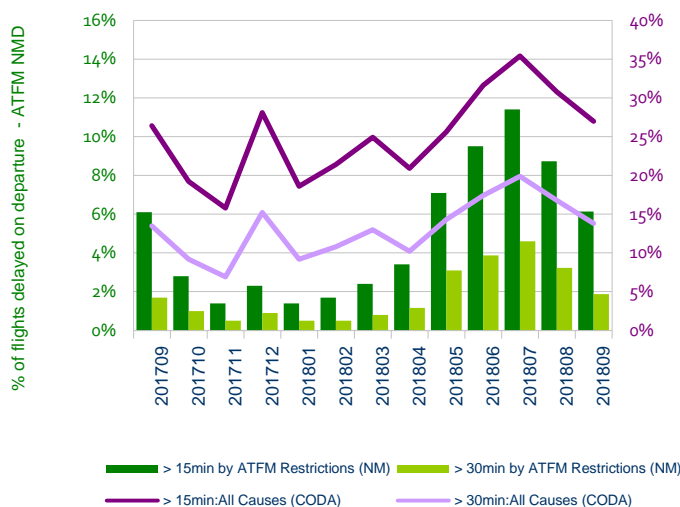
Based on airline data, the average departure delay per flight from ‘All-Causes’ was 14.5 min/flight, a status quo in comparison to September 2017. Primary delays counted for 54.7% or 7.9 min/flight, with reactionary delays representing the smaller remaining share of 45.3% at 6.6 min/flight, a small decrease of 0.2min/flight compared to September 2017. The increase in primary delays was mainly driven by an increase in reported ATFM en-route delays (+0.2min/flight) and miscellaneous delays (+0.4 min/flight).

Average Departure Delay per Flight 2017/2018



Further analysis of the past 12 months shows that the monthly average ‘All-Causes’ en-route ATFM delay reported by airlines remains high at 1.7 minutes per flight in September 2018. ATFM delays in September 2018 were mostly generated by en-route ATFM Regulations caused by weather, ATC staffing and ATC equipment issues. The 45.3% share of reactionary delays in September 2018 is lower than the shares observed during the last three months and similar to the 46% share observed in September 2017.

Percentage of Delayed Flights: ATFM & All Causes



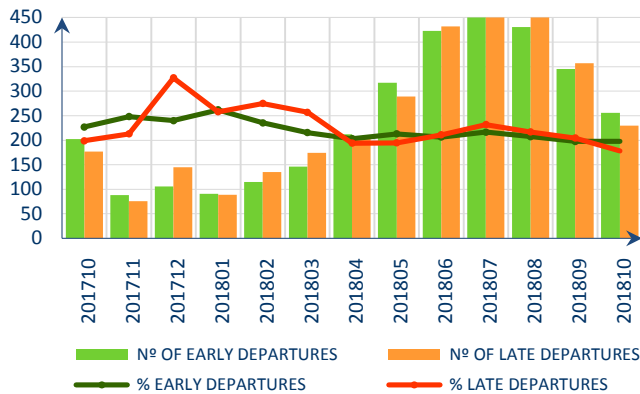
The percentage of flights delayed greater than 15 minutes from ‘All-Causes’ increased by 0.6 percentage points to 27.0% compared to the same period last year. All-causes delays exceeding 30 minutes also increased slightly to 13.8% of flights. 6.1% of flights in September 2018 experienced an ATFM delay exceeding 15 minutes with 1.9% 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-september-2018.pdf>

7. ATFM SLOT ADHERENCE

Average daily evolution of early and late flights

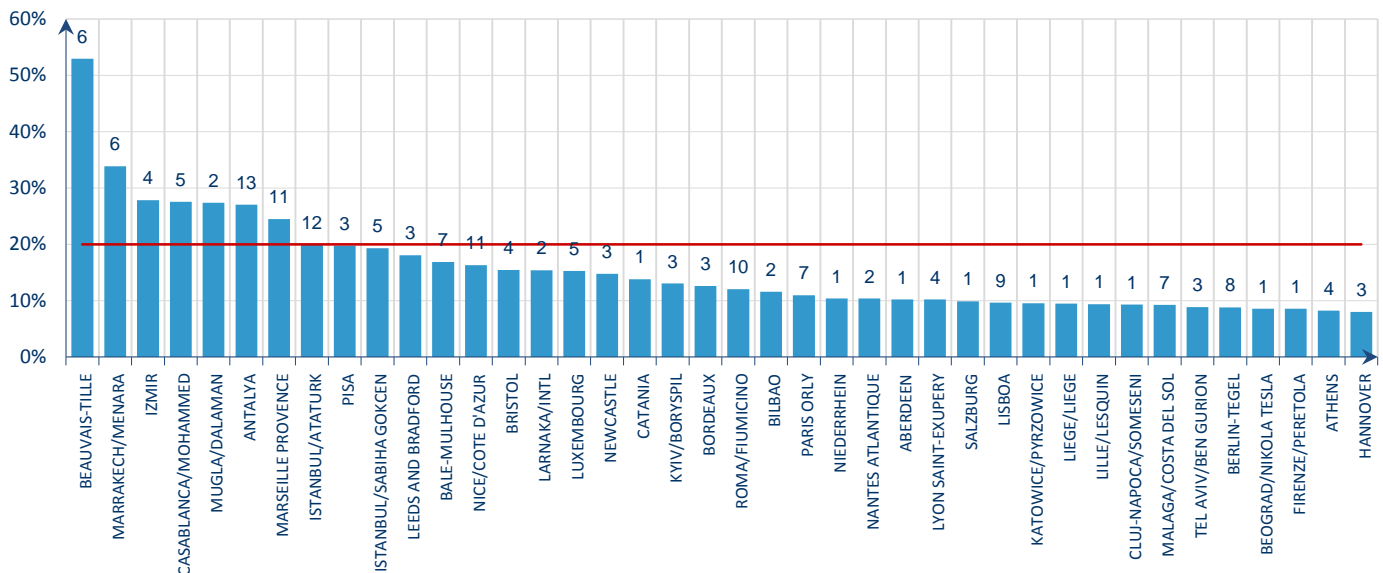


The percentage of early departures for October 2018 is 4.0% of regulated flights, which is a decrease of 0.6 percentage points compared to October 2017.

The percentage of late departures for October 2018 is 3.6% of regulated flights, which is a decrease of 0.4 percentage points compared to October 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 October 2018



8. SIGNIFICANT EVENTS AND ISSUES

PLANNED EVENTS

ACC

MAJOR AIRSPACE OR ATM SYSTEM IMPROVEMENT PROJECTS

PLANNED EVENTS

Geneva and Zurich ACCs deployed, between 02 and 05 October, another step of the Virtual Centre Program generating 257 and 234 minutes of ATFM delay respectively.

ADDITIONAL INFORMATION

Bordeaux ACC generated 3,089 minutes of ATFM delay due to the reorganized interface with LECB/LEBL, and 291 minutes due to the new TMA at LFBZ.

Barcelona ACC generated 391 minutes of ATFM delay due to the reorganized interface with LFBZ.

AIRPORTS

Local Plans in October

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

Special Events

- Military parade at Madrid/Barajas airport on 12 October generated 3,247 minutes of ATFM delay;
- Air Show at Marrakech/Menara airport generated a total of 1,631 minutes of ATFM delay from 22 to 27 October;
- Opening ceremony of the new Istanbul Airport generated 15,589 minutes of ATFM delay on 27 and 29 October;
- Military show at Prague airport on 28 October;
- Emergency exercise at Athens airport generated 1,137 minutes of ATFM delay on 31 October.

Completed

- Runway maintenance/closure Bologna, Krakow, Paris/Charles de Gaulle and Warsaw/Chopin airports;
- Taxiway and/or apron improvements at Düsseldorf airport;
- ILS maintenance at Barcelona (2,943 minutes of ATFM delay), Budapest, Milano/Malpensa and Paris/Charles de Gaulle (generated 4,754 minutes of delay at Paris/Le Bourget) airports.

Ongoing

- Runway maintenance/closure at Cologne, Istanbul/Sabiha Gökçen, Nice and Olsztyn/Mazury airports;
- Taxiway and/or apron improvements at Bergamo, Frankfurt/Main, London/Heathrow (10,008 minutes of ATFM delay), Manchester, Munich, Paris/Orly (19,333 minutes of ATFM delay), Rome/Fiumicino, Stuttgart, Tenerife/Sur and Venice airports;
- Terminal building improvements/works at Frankfurt/Main, Manchester, Oslo/Gardermoen and Paris/Charles de Gaulle airports.

DISRUPTIONS

Technical

- Technical issues with VOR/DME equipment at Kos airport generated a total of 6,899 minutes of ATFM throughout the month;
- Radar instability in Zurich ACC on 06 October generated 4,244 minutes of ATFM delay;
- Radio system issues in Brussels CANAC on 18 October generated 1,319 minutes of ATFM delay;
- Telecommunication issues in Lisbon ACC on 26 October generated 4,654 minutes of ATFM delay;
- Radar instability in Madrid ACC on 26 October generated 2,471 minutes of ATFM delay;
- Radar maintenance in Lisbon ACC on 27 October generated 1,841 minutes of ATFM delay;
- Communication issues with the On-Line Data Interface (OLDI) between Lisbon and Madrid ACCs on 28 October generated 3,113 minutes of ATFM delay;
- Radar instability in Lisbon ACC on 28 October generated 1,740 minutes of en-route ATFM delay and 1,147 min of airport ATFM delay.

Other

- Essential maintenance in the operational room in Nicosia ACC generated 1,469 minutes of ATFM delay;
- Ground handling strike at Brussels airport between 26 and 31 October.

9. NM ADDED VALUE

FLIGHTS WITH DELAY > 30'

The number of flights with more than 30 minutes of ATFM delay increased by 31.9% between October 2017 and October 2018.

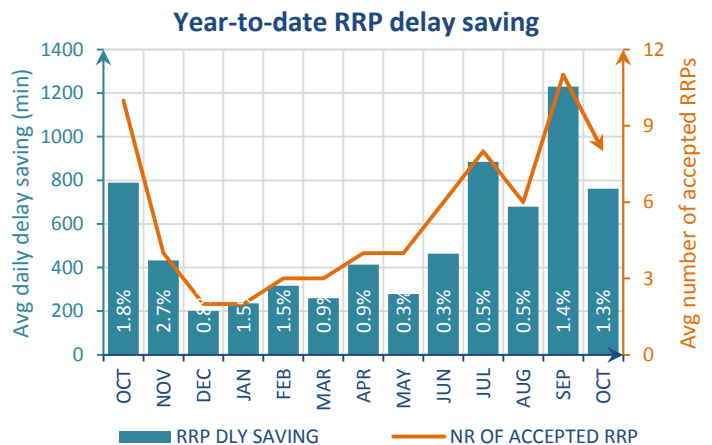
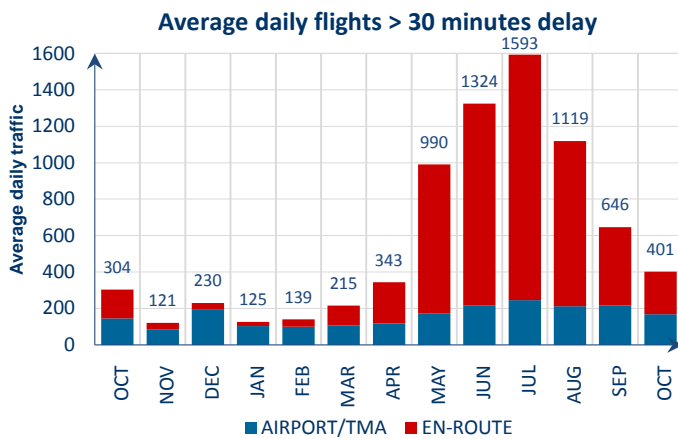
In October 2018, 58.1% of flights with more than 30 minutes of ATFM delay were en-route and 41.9% were airport.

An average 105 flights per day had their delay reduced to less than 30 min by NM.

RRP DIRECT DELAY SAVINGS

On average 8 RRPs/day were executed saving 761 min/day, accounting for 1.3% of ATFM delays.

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



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<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.