



Network Manager
nominated by
the European Commission



Monthly Network Operations Report

Analysis – August 2018



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NOTICE

Incomplete traffic data – 3 April

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

Traffic and Delay Comparisons

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

Graphics















All graphs in 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

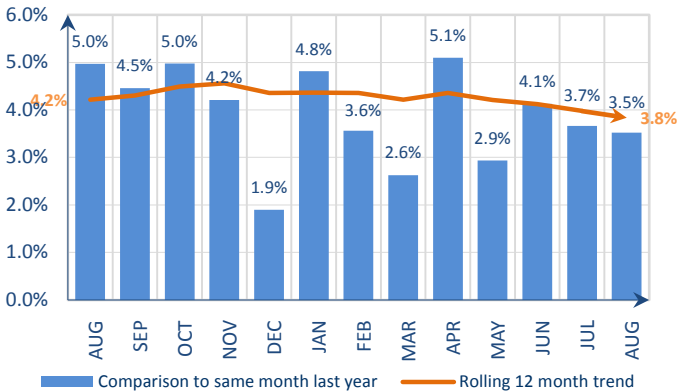
For further information on the regulation reason groupings, go to the Reporting Assumptions and Descriptions document available on the EUROCONTROL website at <http://www.eurocontrol.int/articles/network-operations-monitoring-and-reporting>.

ATFM Statistics dashboard

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

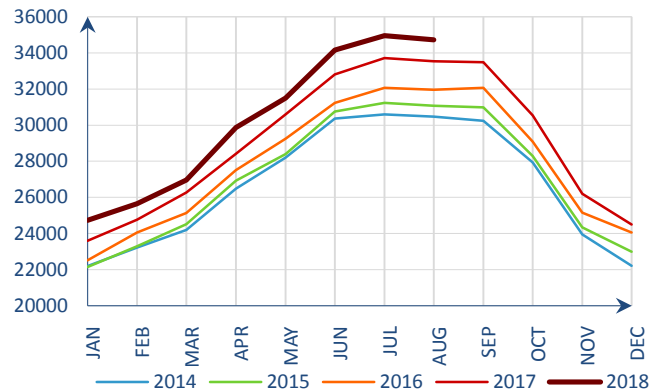
1. TOTAL TRAFFIC

Monthly traffic trend



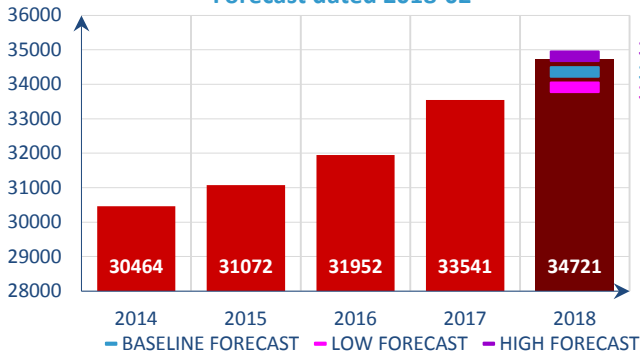
Traffic increased by 3.5% in August 2018ⁱⁱ.

Average daily traffic for last 5 Years



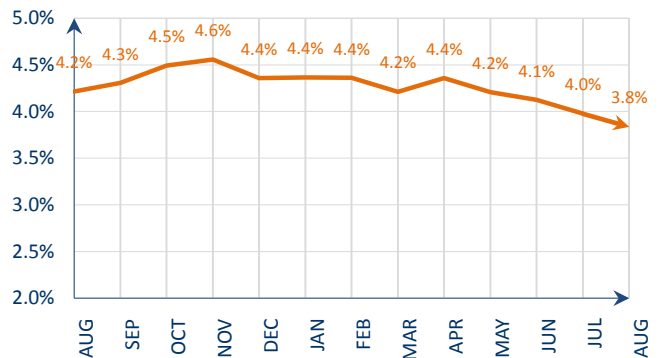
Average daily traffic in August 2018 was the highest ever recorded for August.

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



The traffic increase of 3.5% for August was in line with the high forecast published in February 2018. There were 36,966 flights on 31 August, which was a record for the network.

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 September 2017 to August 2018 was 3.8% higher than the average from September 2016 to August 2017.

Ten states added more than 50 flights per day to the European localⁱⁱⁱ traffic growth. Germany was the top contributor with 273 extra flights per day owing to a strong internal flow (+42 flights/day) but also to its Southern Europe flow (mainly to and from Turkey, Spain and Greece) which added 123 daily flights. Greece ranked second with 205 flights per day owing to its internal flow (+41 flights/day) and to its flow to and from Northern Europe (mainly Germany, Poland and UK adding together 67 daily flights). Poland was the third contributor with 164 extra daily flights, a 17.5% increase of its international arrival and departure flow thanks to strong growth of the flows to and from Turkey (+22 flights/day), Greece (+18 flights/day), Germany (+14 flights/day) and Ukraine (+12 flights/day). Italy added 130 flights per day due primarily to its flows to and from the Russian Federation (+21 flights/day), Austria (+15 flights/day), Spain (+14 flights/day) and France (+13 flights/day). Turkey was the fifth contributor and added 126 daily flights owing mainly to its flows to and from Germany (+48 flights/day), UK (+30 flights/day), the Russian Federation (+23 flights/day) and Poland (+22 flights/day). Spain added 105 daily flights and remained below its June level of 187 flights per day owing to a reduction of 55 flights per day on its flow to and from UK. Spain's international arrival and departure flow grew 2.2% and was supported mainly by Germany which added 37 flights per day. France (+89 flights/day), Austria (+73 flights/day), Ukraine (+60 flights/day) and the Canary Islands (+51 flights/day) completed the list of contributors to traffic growth in August. At the other end of the scale, only two states recorded fewer daily flights: Sweden (-38 flights/day) and UK (-35 flights/day) due to their weak internal flow.

The charter segment continued to record the fastest growth (10.6%). The traditional scheduled segment was up 5.1%, stable since June. The low-cost segment recorded an increase of 1.7%. The business aviation segment saw an increase of 0.1%. The all-cargo segment slowed down and declined by 8.3%.

The top five external partners in average daily flights on flows in both directions were the Russian Federation (1,228 flights, up 7.7%), the United States (1,144 flights, down 2.2%), the United Arab Emirates (371 flights, up 9.4%), Egypt (286 flights, up 33%) and Canada (246 flights, up 0.2%). Also to be noted was the continued recovery of flows to and from Tunisia which were up by 25.6%, 230 daily flights.

The airlines which added the most flights to the European network on a daily basis were easyJet UK (+196 flights), Lufthansa (+107 flights), Wizz Air (+92 flights), Ryanair (+78 flights), Jet2 (+64 flights) and LOT (+60 flights).

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 August 2018 were at Gran Canaria, Athens, Antalya, Budapest and Stuttgart airports. The largest traffic decreases were at Birmingham, Ankara, Hamburg, Ibiza and Stockholm/Arlanda airports. Athens traffic increase is mainly attributed to the expanded route network from summer 2018. Traffic recovery in Turkey explained the traffic variation at Antalya airport. Birmingham airport traffic variation is partially due to the Monarch cessation of operations. Traffic decreases at Hamburg airport is due in part to Air Berlin cessation of operations.

Nine of the top ten aircraft operators flew more compared to August 2017. The operators with the highest traffic growth were Eurowings, Jet2, Condor, Air Europa and LOT-Polish airlines. The highest traffic decreases were recorded by Flybe, Royal Air Maroc, Transavia.com, Alitalia 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 into the Eurowings operation. Condor airline has also recuperated routes from Air Berlin cessation of operations and particularly long haul to the Caribbean.

N°	ADEP	ADEP NAME	201808	%	N°	ICAO	AIR OPERATOR	201808	%
1	EHAM	AMSTERDAM/SCHIPHOL	752	-2.2%	1	RYR	RYANAIR	2320	3.8%
2	EDDF	FRANKFURT MAIN	748	8.0%	2	EZY	EASYJET	1680	13.2%
3	LFPG	PARIS CH DE GAULLE	740	2.5%	3	THY	TURKISH AIRLINES	1514	-0.1%
4	LTBA	ISTANBUL-ATATURK	680	-1.9%	4	DLH	DEUTSCHE LUFTHANSA	1508	7.7%
5	EGLL	LONDON/HEATHROW	676	-0.5%	5	AFR	AIR FRANCE	905	1.5%
6	EDDM	MUENCHEN	578	4.1%	6	SAS	SCANDINAVIAN AIRLINES SYSTEM	846	0.3%
7	LEMD	ADOLFO SUAREZ MADRID-BARAJA	575	6.8%	7	EWG	EUROWINGS AG	750	93.5%
8	LEBL	BARCELONA/EL PRAT	517	1.7%	8	BAW	BRITISH AIRWAYS	748	2.6%
9	LEPA	PALMA DE MALLORCA	481	2.8%	9	VLG	VUELING AIRLINES SA	711	7.0%
10	LIRF	ROMA/FIUMICINO	473	3.0%	10	KLM	KLM ROYAL DUTCH AIRL	708	0.3%
11	EGKK	LONDON/GATWICK	455	-0.7%	11	WZZ	WIZZ AIR	603	18.1%
12	LTAI	ANTALYA	429	14.2%	12	AZA	ALITALIA	565	-2.1%
13	LSZH	ZURICH	402	3.4%	13	PGT	PEGASUS HAYA TASI	542	7.5%
14	LGAV	ATHINA/ELEFTHERIOS VENIZELOS	399	14.5%	14	BEE	JERSEY EUROPEAN T/A FLYBE	433	-7.3%
15	EKCH	KOBENHAVN/KASTRUP	389	3.4%	15	SWR	SWISS INTERNATIONAL	430	5.1%
16	LOWW	WIEN SCHWECHAT	384	8.1%	16	AUA	AUSTRIAN AIRLINES	410	3.0%
17	ENGM	OSLO/GARDERMoen	372	3.5%	17	TAP	TAPAIR PORTUGAL	405	6.2%
18	EIDW	DUBLIN	354	3.1%	18	NAX	NORWEGIAN AIR SHUTTLE	376	5.6%
19	LTFJ	ISTANBUL/SABIHA GOKCEN	342	4.9%	19	LOT	LOT-POLISH AIRLINES	373	19.3%
20	EBBR	BRUSSELS NATIONAL	340	0.1%	20	FIN	FINNAIR O/Y	362	12.7%
21	ESSA	STOCKHOLM-ARLANDA	340	-3.3%	21	AFL	AEROFLOT-RUSSIAN	339	14.7%
22	LPPT	LISBOA	331	3.9%	22	EXS	JET2.COM	329	24.0%
23	EDDL	DUESSELDORF	330	-2.0%	23	WIF	WIDEROE	329	-0.9%
24	LFPO	PARIS ORLY	329	4.0%	24	IBK	NORWEGIAN AIR INTERNATIONAL	317	6.4%
25	EGCC	MANCHESTER	325	-2.4%	25	AEA	AIR EUROPA	297	22.9%
26	EGSS	LONDON/STANSTED	316	8.1%	26	IBE	IBERIA	260	5.1%
27	LIMC	MILANO MALPENSA	293	7.9%	27	TOM	THOMSON FLY LTD	250	3.1%
28	EPWA	CHOPINA W WARSZAWIE	291	9.8%	28	EIN	AER LINGUS TEORANTA	245	2.9%
29	LLBG	TEL AVIV/BEN GURION	279	10.1%	29	QTR	QATAR AIRWAYS COMP.	245	17.6%
30	EDDT	BERLIN-TEGEL	277	5.7%	30	VOE	VOLOTEA	243	15.4%
31	EFHK	HELSINKI-VANTAA	272	10.2%	31	BEL	BRUSSELS AIRLINES	241	6.7%
32	LFMN	NICE-COTE D'AZUR	263	-1.1%	32	ANE	AIR NOSTRUM	237	-0.3%
33	LKPR	PRAHA RUZYNE	249	6.8%	33	RAM	ROYAL AIR MAROC	236	-5.1%
34	LEMG	MALAGA/COSTA DEL SOL	242	-2.4%	34	OAL	OLYMPIC	232	5.6%
35	LSGG	GENEVA	241	-1.3%	35	UAE	EMIRATES	206	5.0%
36	EDDK	KOELN-BONN	220	1.3%	36	TRA	TRANSVIA.COM	205	-3.8%
37	EDDH	HAMBURG	213	-6.4%	37	SXS	SUNEXPRESS AIRLINES	203	7.7%
38	EGPH	EDINBURGH	203	2.1%	38	AEE	AEGEAN AIRLINES	196	-1.3%
39	EGGW	LONDON/LUTON	201	-1.4%	39	AUI	UKRAINE INTERNATIONAL	193	7.5%
40	LEIB	IBIZA	197	-5.3%	40	TVS	TRAVEL SERVIS	193	14.9%
41	EDDS	STUTTGART	195	10.4%	41	CFG	CONDOR FLUGDIENST	186	23.5%
42	LROP	BUCURESTI/HENRI COANDA	193	8.9%	42	DAL	DELTA AIR LINES INC.	170	0.8%
43	LHBP	BUDAPEST LISZT FERENC INT.	179	13.9%	43	BTI	AIR BALTIC CORPORAT.	170	11.0%
44	EGBB	BIRMINGHAM	173	-10.8%	44	TCX	THOMAS COOK AIT LTD	169	8.9%
45	GCLP	GRAN CANARIA	171	15.3%	45	BCS	EUROPEAN AIR TRANSP.	168	5.1%
46	LEAL	ALICANTE	167	-1.6%	46	EZS	EASY JET SWITZERLAND	163	6.3%
47	LIPZ	VENEZIA TESSERA	163	8.7%	47	JAF	TUI AIRLINE BELGIUM	160	13.0%
48	LGIR	IRAKLION/NIKOS KAZANTZAKIS	158	6.2%	48	NJE	NETJETS	156	-0.9%
49	LTAC	ANKARA-ESENBOGA	156	-9.4%	49	HOP	HOP (MERGE OF BZH + RAE + RLA)	155	11.7%
50	LFLL	LYON SAINT-EXUPERY	150	0.0%	50	UAL	UNITED AIRLINES INC.	152	-2.1%
TOTALS and % TOTAL TRAFFIC			17203	55.9%	TOTALS and % TOTAL TRAFFIC			22834	65.8%

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

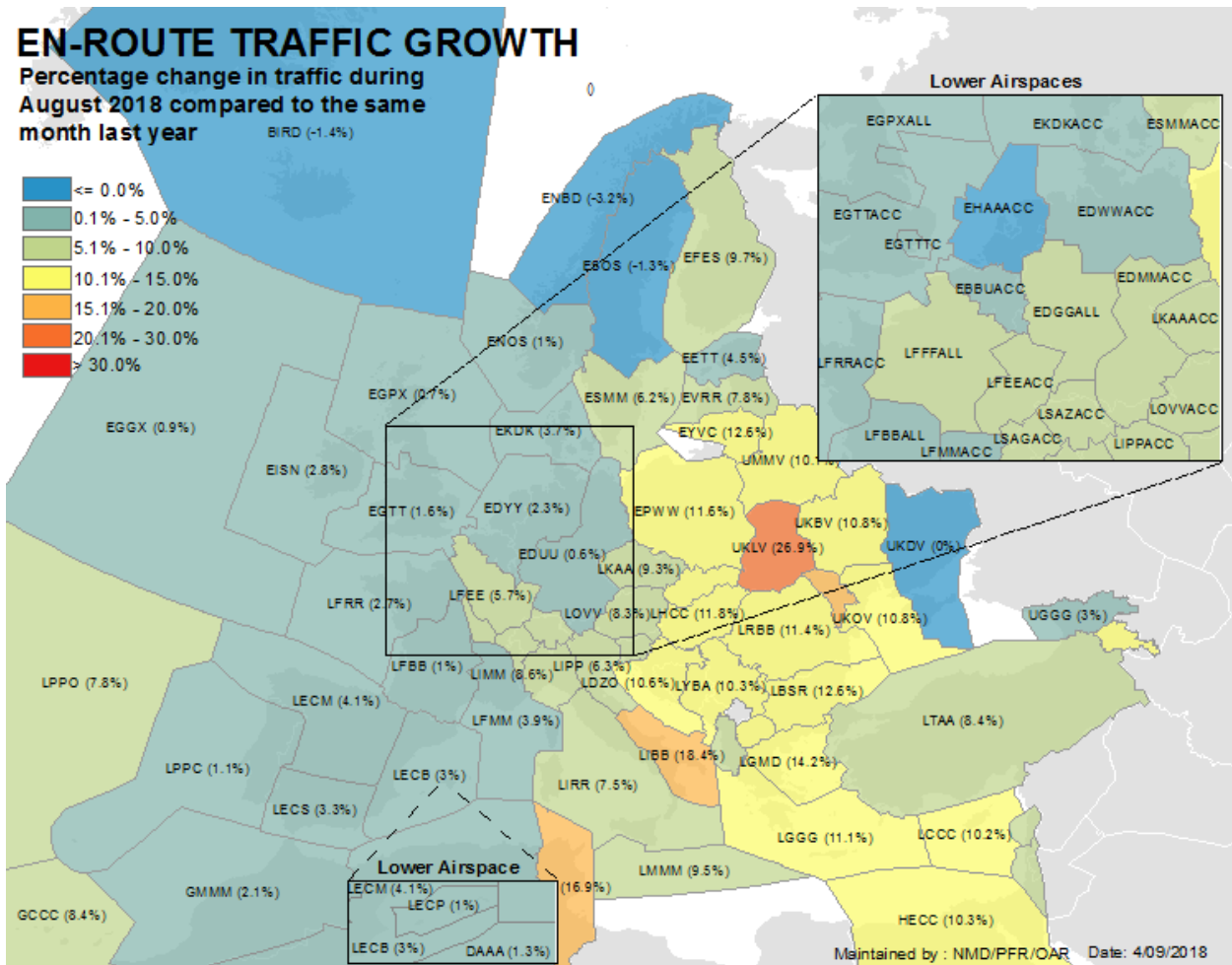
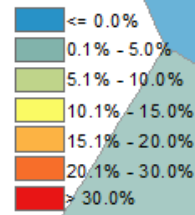
Top 50 Air Operators with average daily traffic and percentage compared to same period of previous year

N°	ICAO	AIR OPERATOR	201808	%
		Unidentified	2181	-2.5%

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 August 2018 compared to the same month last year

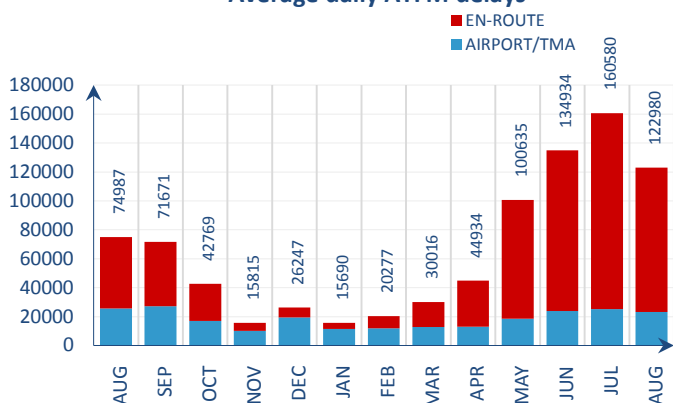


Nº	ASP ID	ASP NAME	201808	%	Nº	ASP ID	ASP NAME	201808	%
1	BIRDACC	REYKJAVIK ACC	487	-1.4%	39	LFBBALL	BORDEAUX ALL ACC	3186	1.0%
2	DAAAACC	ALGERS ACC	556	1.3%	40	LFEEACC	REIMS U/ACC	3308	5.7%
3	DITCACC	TUNIS ACC	436	16.9%	41	LFFFALL	PARIS ALL ACC	3735	5.4%
4	EBBUACC	BRUSSELS CANAC	1953	4.2%	42	LFMMACC	MARSEILLE ACC	4052	3.9%
5	EDGGALL	LANGEN ACC_FIR	4072	7.8%	43	LFMMAPP	MARSEILLE TMA	1085	-1.1%
6	EDMMACC	MUNCHEN ACC	3600	8.6%	44	LFRRACC	BREST U/ACC	3644	2.7%
7	EDUUUAC	KARLSRUHE UAC	5796	0.6%	45	LGSGACC	ATHINAI CONTROL	2547	11.1%
8	EDWWACC	BREMEN ACC	1997	3.5%	46	LGMDDACC	MAKEDONIA CONTROL	2020	14.3%
9	EDYYUAC	MAASTRICHT UAC	5677	2.3%	47	LHCCACC	BUDAPEST ACC	3185	11.8%
10	EETTACC	TALLIN ACC	692	4.5%	48	LIBBACC	BRINDISI ACC	1429	18.4%
11	EFESACC	TAMPERE ACC	521	9.7%	49	LIMMACC	MILANO ACC	2980	8.6%
12	EGGXOCA	SHANWICK OACC	1587	1.0%	50	LIPPACC	PADOVA ACC	2601	6.3%
13	EGPXALL	SCOTTISH ACC	3212	0.7%	51	LIRRACC	ROMA ACC	3228	7.5%
14	EGTTACC	LONDON ACC	6617	1.6%	52	LUALACC	LJUBLJANA ACC	1290	9.6%
15	EGTTTC	LONDON TMA TC	4399	3.0%	53	LKAAACC	PRAGUE ACC	2798	9.3%
16	EHAAACC	AMSTERDAM ACC(245-)	1784	-0.3%	54	LLLLACC	TEL AVIV ACC	696	9.4%
17	EIDWACC	DUBLIN ACC	785	3.7%	55	LMMMACC	MALTA ACC	404	9.5%
18	EISNACC	SHANNON ACC	1463	2.8%	56	LOVVACC	WIEN ACC	3164	8.3%
19	EKDKACC	COPENHAGEN ACC	1698	3.7%	57	LPCCACC	LISBOA ACC/UAC	1778	1.1%
20	ENBDACC	BODO ACC	613	-3.2%	58	LPPOACC	SANTA MARIA OACC	496	7.8%
21	ENOSACC	OSLO ATCC	1086	1.0%	59	LQSBACC	BOSNIA-HERZEGOVINA	176	2.9%
22	ENSVACC	STAVANGER ATCC	693	0.3%	60	LRBBACC	BUCURESTI ACC	2613	11.4%
23	EPWWACC	WARSAWA ACC	2753	11.6%	61	LSAGACC	GENEVA ACC	2185	5.9%
24	ESMMACC	MALMO ACC	1737	6.2%	62	LSAZACC	ZURICH ACC	2690	9.7%
25	ESOSACC	STOCKHOLM ACC	1185	-1.3%	63	LTAAACC	ANKARA ACC	4858	8.4%
26	EVRACC	RIGA ACC	912	7.8%	64	LTBBACC	ISTANBUL ACC	2357	2.5%
27	EYVACC	VILNIUS ACC	820	12.6%	65	LUUUACC	CHISINAU ACC	210	18.6%
28	GCCCACC	CANARIAS ACC/FIC	981	8.4%	66	LWSSACC	SKOPJE ACC	830	11.1%
29	GMMMACC	CASABLANCA ACC	1234	2.2%	67	LYBAACC	BEOGRADE ACC	2759	10.3%
30	HECCACC	CAIROACC	741	10.3%	68	LZBBACC	BRATISLAVA ACC	2072	12.5%
31	LAAAACC	TIRANA ACC	878	6.9%	69	LOBBACC	BEIRUT ACC	222	8.8%
32	LBSRACC	SOFIA ACC	3124	12.6%	70	UDDDACC	YEREVAN ACC	205	13.3%
33	LCCCACC	NICOSIA ACC	1378	10.2%	71	UGGGACC	TBILISI ACC	475	3.0%
34	LDZOACC	ZAGREB ACC	2450	10.6%	72	UKBVACC	KIEV ACC	583	10.8%
35	LECBACC	BARCELONA ACC	3390	3.0%	73	UKDVACC	DNIPROPETROVSK ACC	65	0.0%
36	LECMALL	MADRID ALL ACC	3453	4.1%	74	UKLVACC	L'VIV ACC	500	26.9%
37	LECPACC	PALMA ACC	1545	1.0%	75	UKOVACC	ODESSA ACC	380	10.8%
38	LECSACC	SEVILLA ACC	1300	3.3%	76	UMMVACC	MINSK ACC	983	10.1%

The highest relative traffic increases in August 2018 were in L'viv, Chisinau, Brindisi, Tunis and Makedonia ACCs. There is a double digit growth from Central to South-East Europe. 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. The 4 ACCs project has successfully redistributed traffic out of Karlsruhe UAC, which explains the low percentage growth.

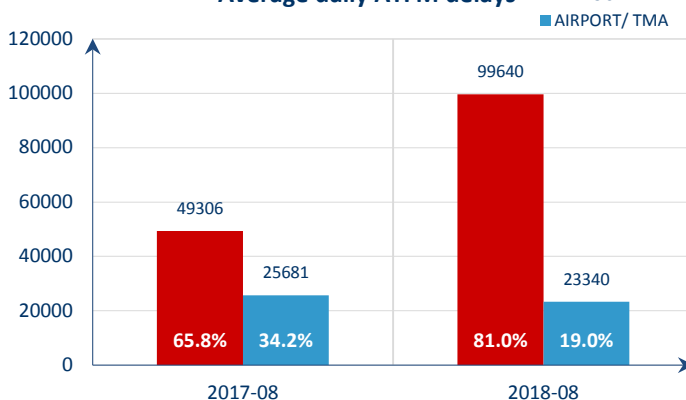
2. ATFM DELAY AND ATTRIBUTIONS

Average daily ATFM delays



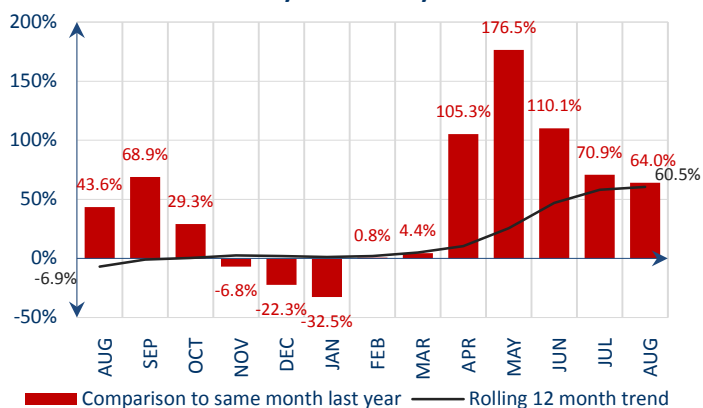
Total ATFM delays increased by 64.0% in August 2018ⁱⁱ.

Average daily ATFM delays



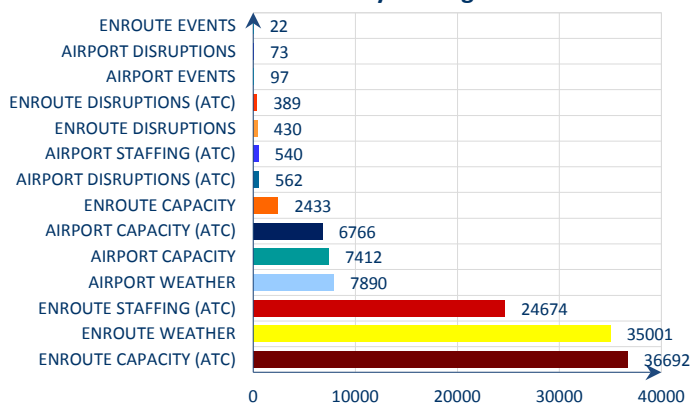
En-route ATFM delays increased by 102.1% and airport ATFM delays decreased by 9.1%.

Monthly ATFM delays trend



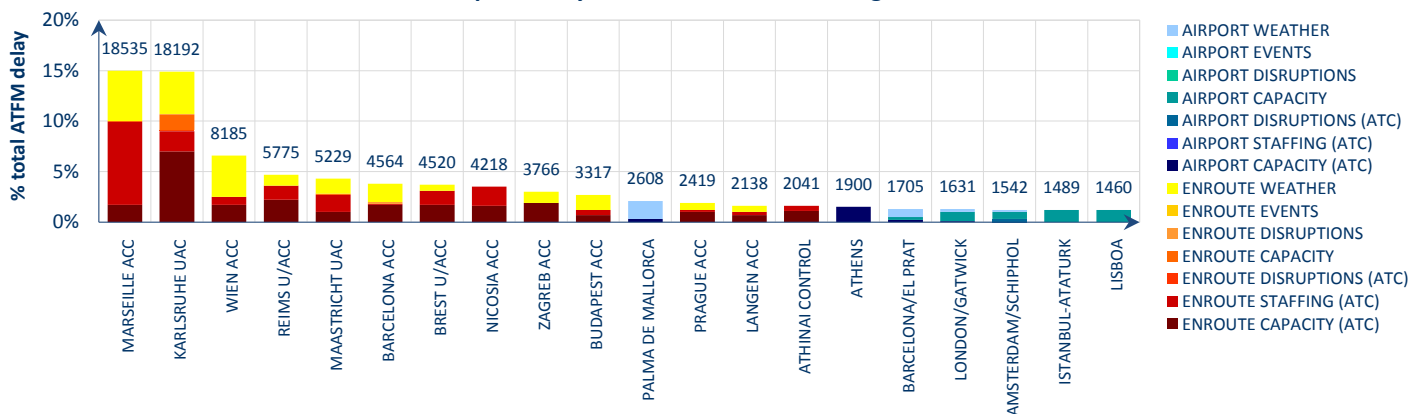
The rolling 12-month trend shows that ATFM delay was 60.5% higher during the period September 2017 – August 2018 compared to September 2016 – August 2017.

Reasons for ATFM delays in August 2018



En-route ATC capacity (29.8%), en-route weather (28.5%) and en-route ATC staffing (20.1%) were the main causes of ATFM delays in August 2018.

Top 20 delay reference locations in August 2018

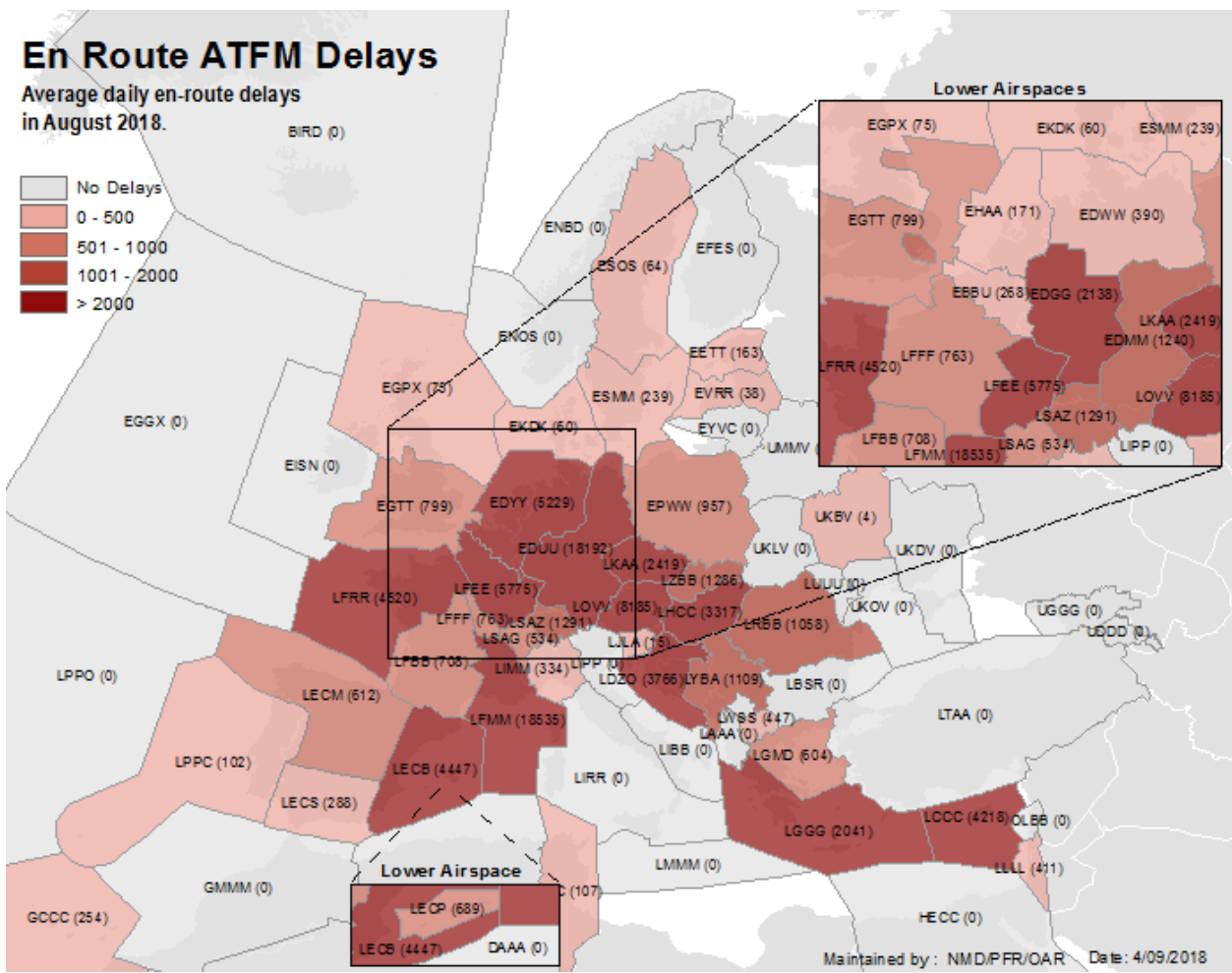


These are the top 20 delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

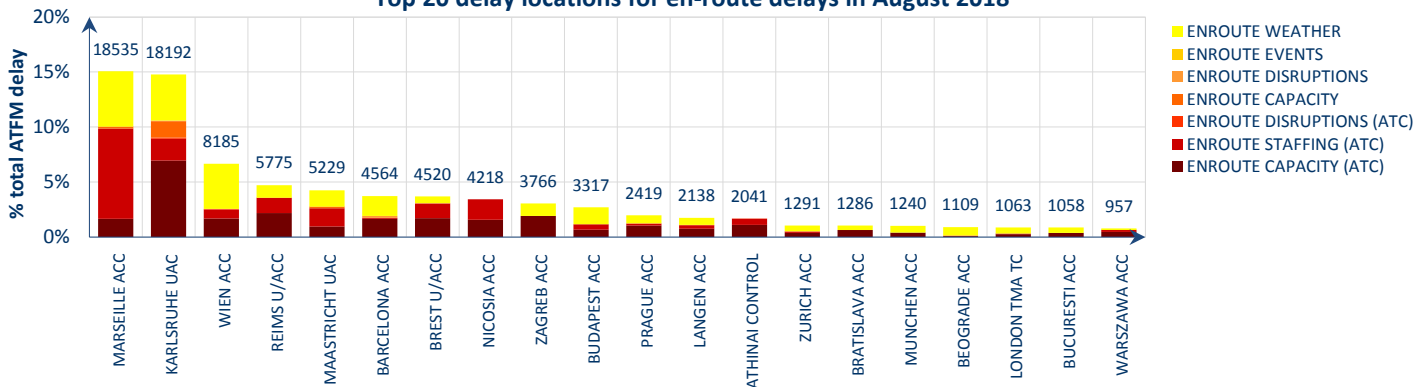
- High en-route capacity delays in Karlsruhe UAC, and to a lesser extent in Reims, Zagreb, Brest, Vienna and Marseille ACCs;
- En-route weather issues in Marseille, Karlsruhe, Vienna, Reims, Barcelona and Maastricht ACCs;
- High en-route staffing delays in Marseille ACC, and to a lesser extent in Karlsruhe, Nicosia, Maastricht, Reims and Brest ACCs.
- Thunderstorms impacted operations at Palma de Mallorca and Barcelona airports.

3. EN-ROUTE ATFM DELAYS

EN-ROUTE ATFM DELAY PER LOCATION



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



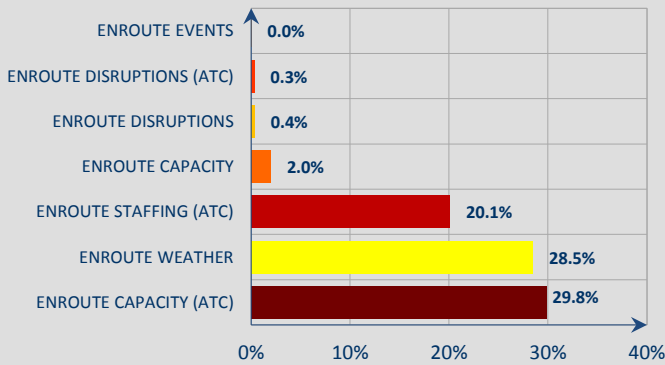
These are the top 20 en-route ATFM delay generating locations for the reporting month with respect to total ATFM delays. Figures are the average daily delays in minutes for the individual locations.

The top 20 en-route ATFM delay locations generated **74.0%** of the monthly total (network) ATFM delay. The top 5 en-route ATFM delay locations generated **45.5%** 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

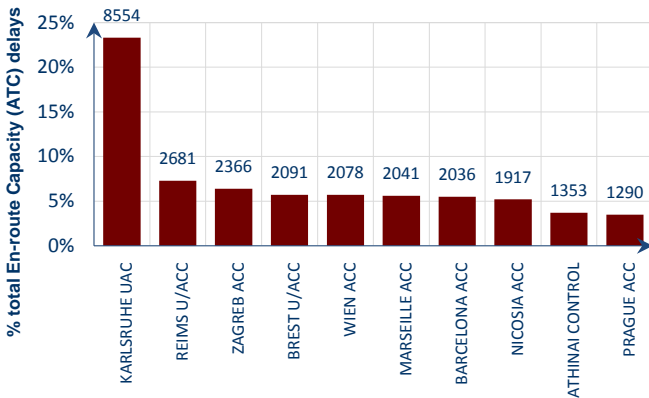
Reasons for en-route delays in August 2018



En-route ATFM delays accounted for 81.0% of all ATFM delays. Most of this delay was caused by en-route ATC capacity, en-route weather and en-route ATC staffing as explained in detail below. The other causes were:

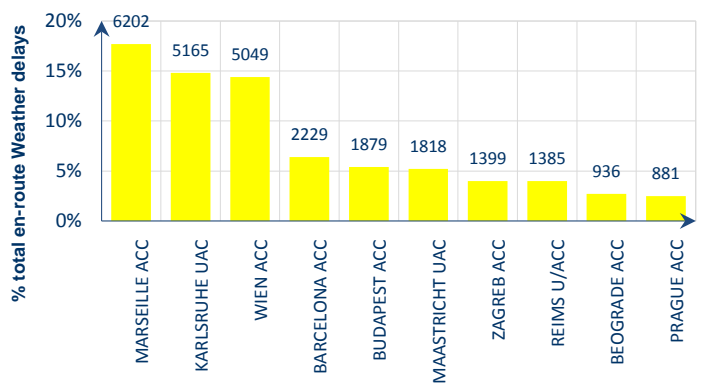
- En-route capacity*; Military exercises in Karlsruhe, Marseille, Maastricht, Beograd and Prague ACCs;
- En-route disruptions*; ATFM delays due to on-going reorganisation of the interface between Barcelona and Bordeaux ACCs;
- En-route ATC disruptions*; Radar processing instability in Copenhagen ACC on 08 August and OLDI issue between Karlsruhe and Vienna ACCs on 30 August;

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



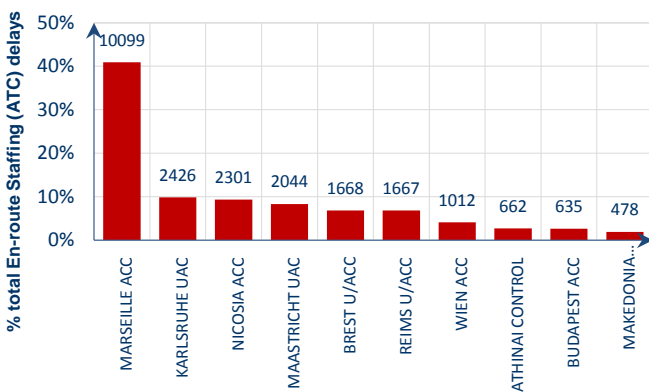
Karlsruhe UAC was the biggest generator of en-route ATC capacity delays in August. Strong seasonal traffic growth added complexity in several ACCs.

Top en-route Weather delays in August 2018



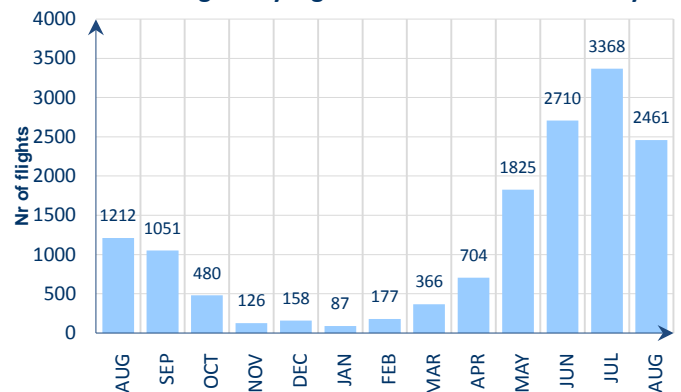
Thunderstorms affected large areas of North West Europe with intense local convective activity in Marseille, Karlsruhe and Vienna ACCs. Marseille generated a total of 192,259 minutes of ATFM delay, Karlsruhe a total of 160,103 minutes of ATFM delay and Vienna a total of 156,612 minutes of ATFM delay.

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



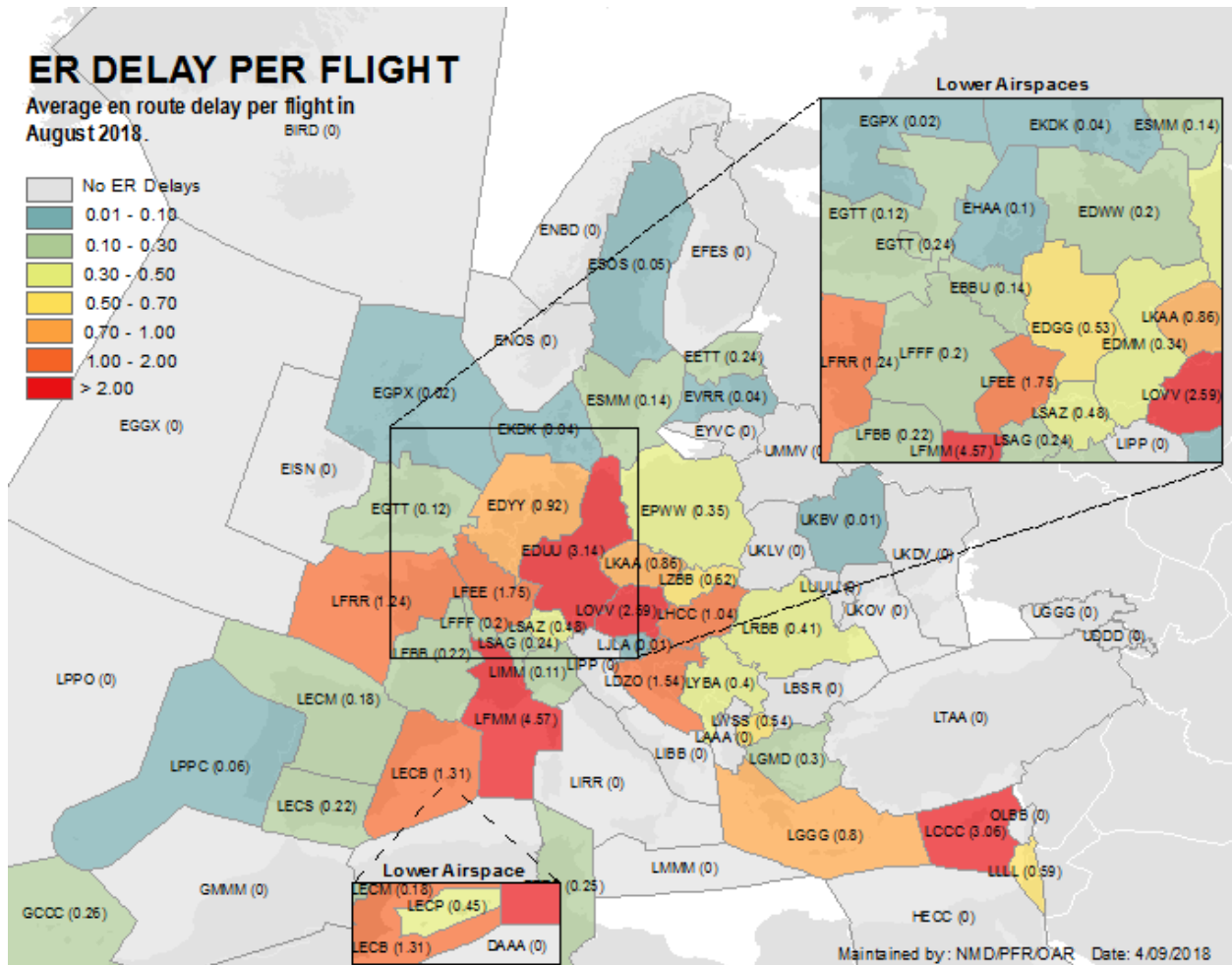
High delays in Marseille ACC due to staffing issues and, to a lesser extent, in Karlsruhe, Nicosia and Maastricht ACCs.

Average daily flights >= 15 min en-route delay

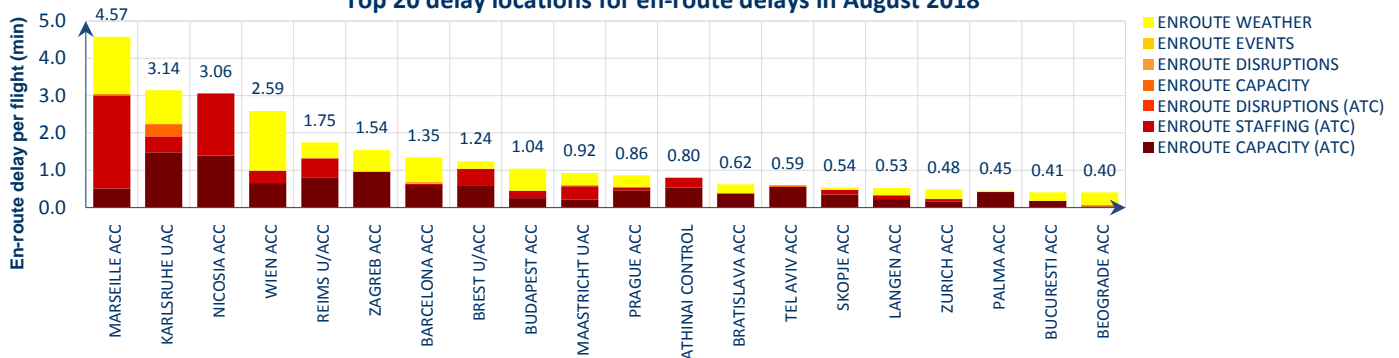


The average daily flights with an en-route ATFM delay of at least 15 minutes increased from 1,212 flights/day in August 2017 to 2,461 flights/day in August 2018, which represents 7.1% of all traffic.

EN-ROUTE ATFM DELAY PER FLIGHT



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

Nicosia ACC en-route ATFM delay/flight increased from 2.16 min/flight in July 2018 to 3.06 min/flight in August 2018, due to ATC capacity and staffing;

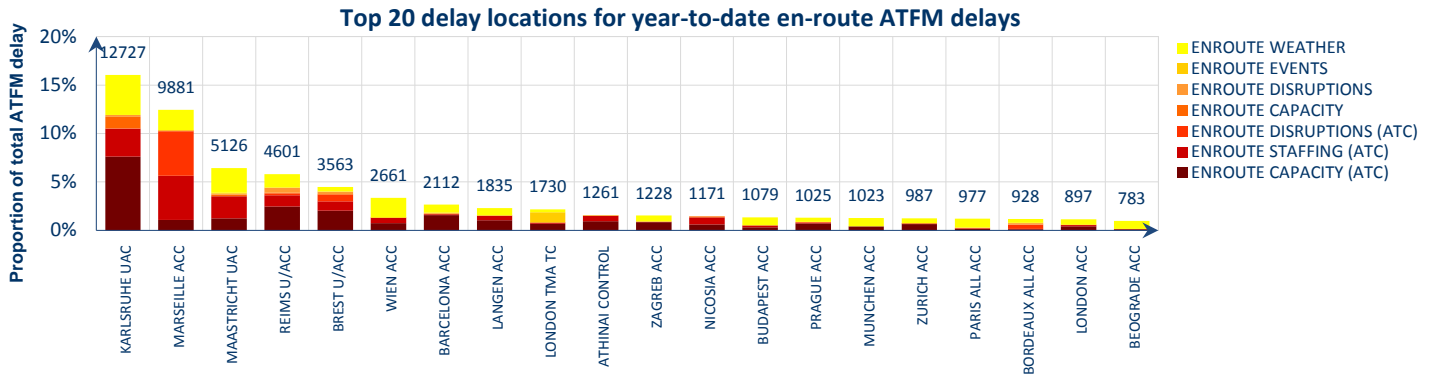
Vienna ACC en-route ATFM delay/flight increased from 2.16 min/flight in July 2018 to 2.59 min/flight in August 2018, mainly due to weather;

Marseille ACC en-route ATFM delay/flight decreased from 5.09 min/flight in July 2018 to 4.57 min/flight in August 2018, mainly due to fewer ATC staffing issues;

Karlsruhe UAC en-route ATFM delay/flight decreased from 4.19 min/flight in July 2018 to 3.14 min/flight in August 2018, mainly due to fewer capacity issues;

Reims ACC en-route ATFM delay/flight decreased from 2.48 min/flight in July 2018 to 1.75 min/flight in August 2018 due to fewer ATC staffing issues.

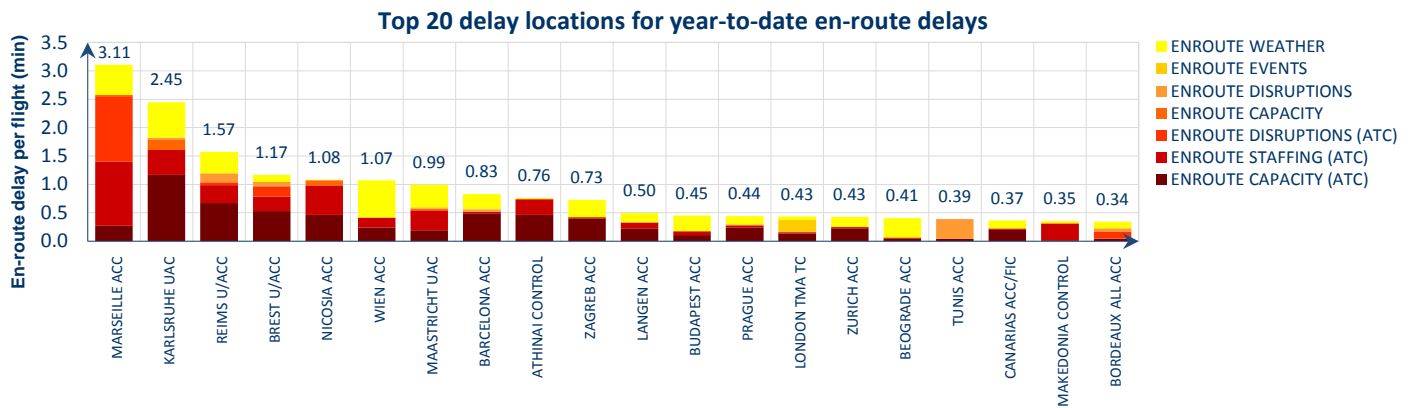
EN-ROUTE ATFM DELAY YEAR-TO-DATE



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.

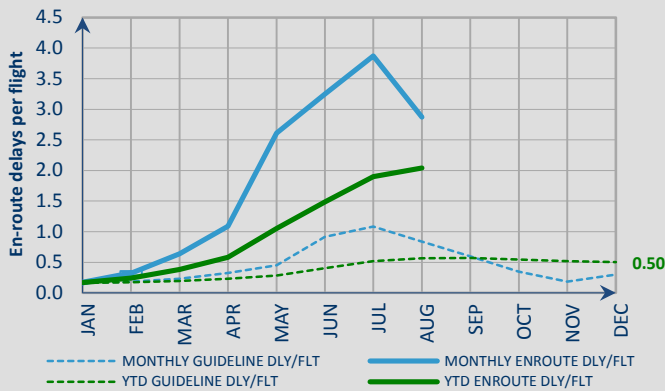
The top 20 en-route delay locations generated **70.1%** of the total ATFM (network) delay.

The top 5 en-route delay locations generated **45.2%** of the total ATFM (network) delay.

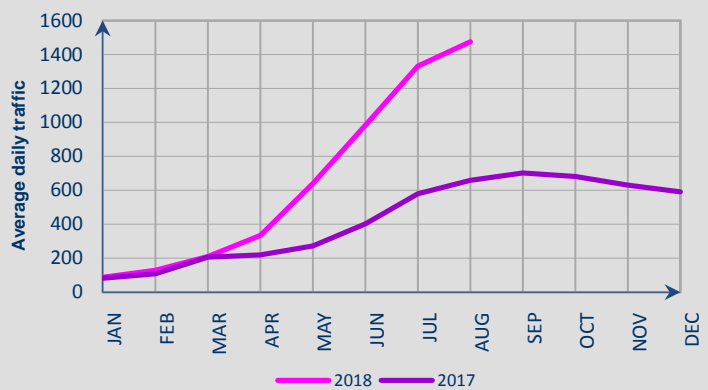


These are the top 20 average en-route ATFM delay per flight generating locations in 2018. Figures are the average daily en-route delay in minutes for the individual locations.

Monthly en-route delay per flight monitoring



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



Reporting month: The average en-route ATFM delay per flight in the NM area^{iv} in August was 2.87 min/flt, which is well above the corresponding monthly guideline^v value of 0.84 min/flt.

Year To Date: The average YTD en-route ATFM delay per flight in 2018 in the NM area^{iv} is 2.04 min/flt which is more than three times the corresponding guideline value of 0.57 min/flt.

An average of 1,476 flights/day had an en-route ATFM delay of at least 15 minutes in 2018. The corresponding figure in 2017 was 660 flights/day.

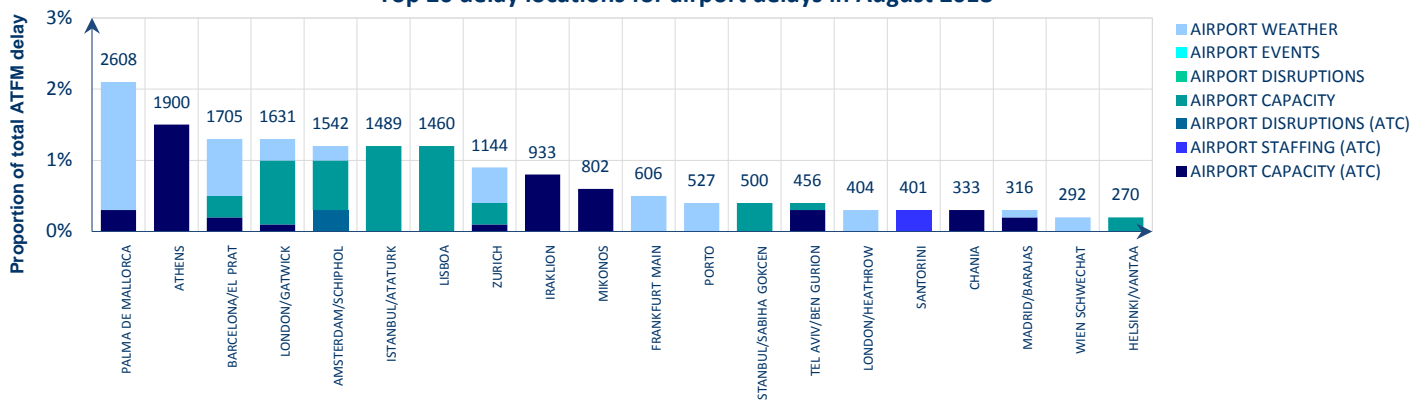
The top 3 locations for flights with 15 minutes or more en-route ATFM delay (year-to-date) are:

- Karlsruhe UAC with 297 flights/day
- Marseille ACC with 229 flights/day
- Maastricht UAC with 124 flights/day

4. AIRPORT/TMA ATFM DELAYS

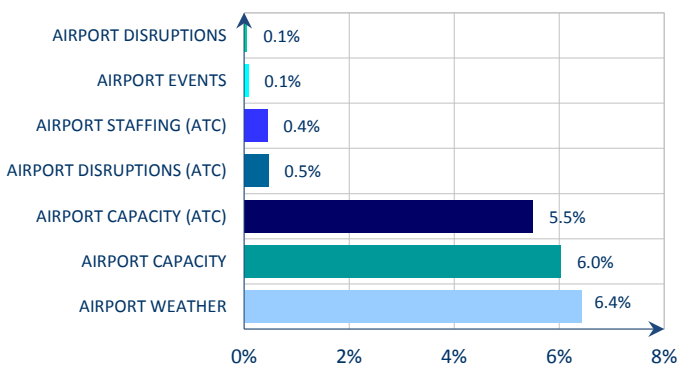
AIRPORT/TMA ATFM DELAY PER LOCATION

Top 20 delay locations for airport delays in August 2018

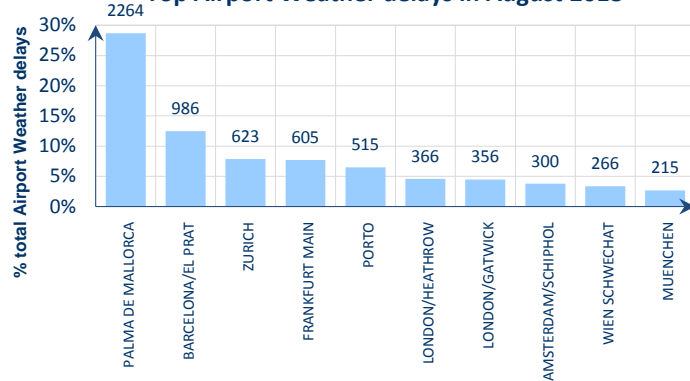


AIRPORT/TMA ATFM DELAY PER DELAY GROUPS

Reasons for airport delays in August 2018



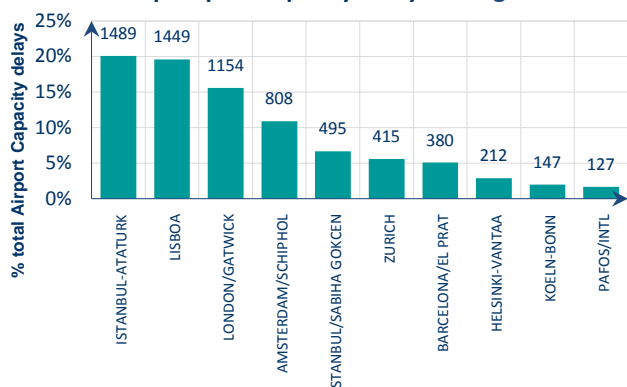
Top Airport Weather delays in August 2018



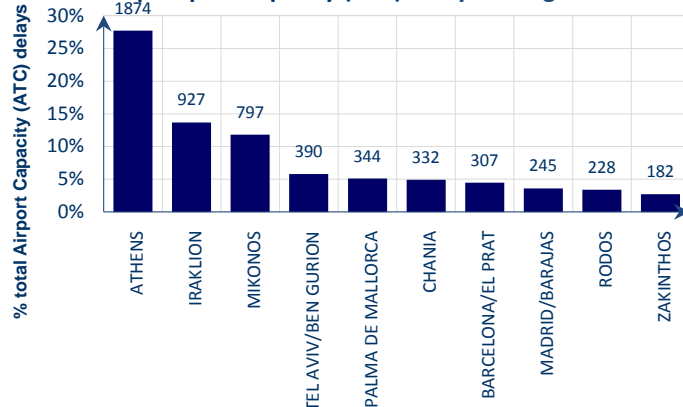
Airports accounted for 19.0% of all ATFM delays in August 2018, mainly due to airport weather, capacity and ATC capacity.

Thunderstorms impacted strongly operations at Palma de Mallorca airport with a total of 70,184 minutes of ATFM delay.

Top Airport Capacity delays in August 2018



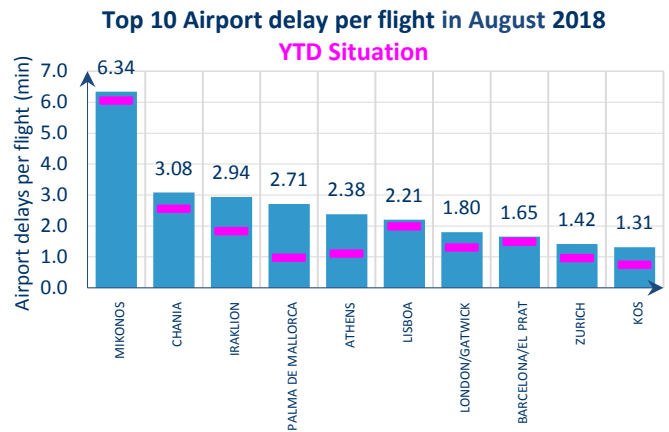
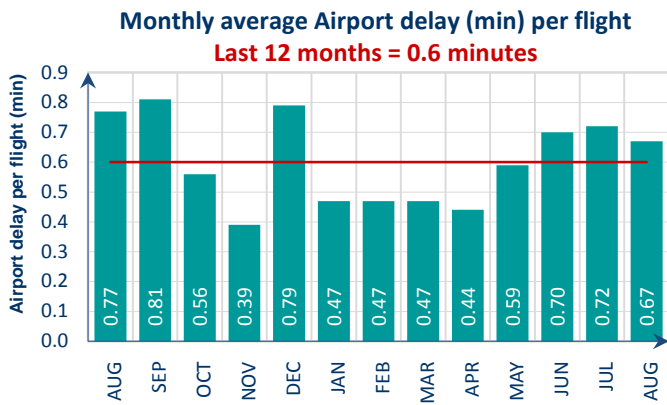
Top Airport Capacity (ATC) delays in August 2018



Airport capacity issues at Istanbul/Atatürk airport with arrivals regulated early morning and early afternoon. Early arrivals and constraints elsewhere in the network are having an operational impact at Lisbon airport. Arrivals regulated in London/Gatwick airport to balance with departures throughout the month.

Athens and Greek island airports generated delays due to high demand relative to their capacity throughout the month.

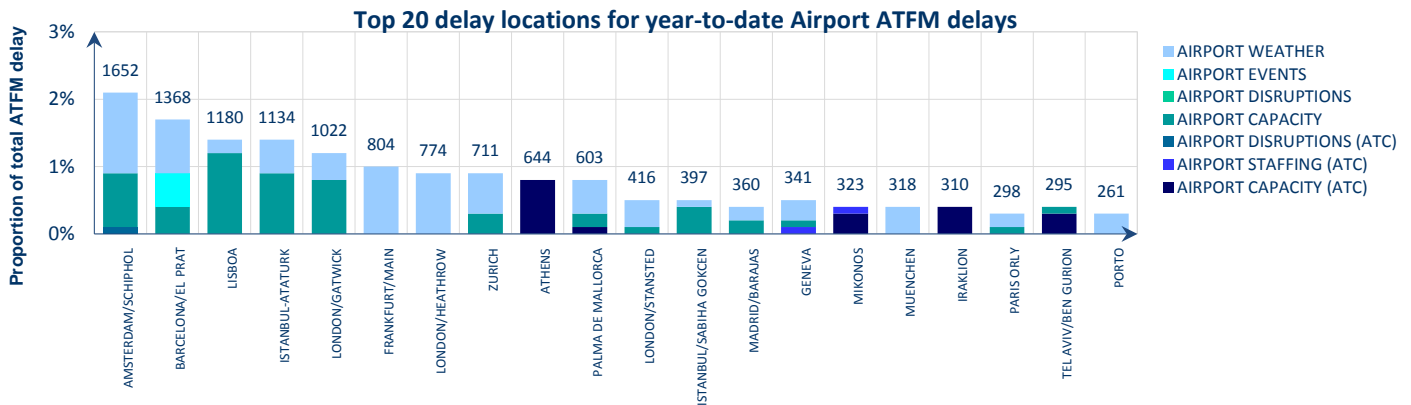
AIRPORT/TMA ATFM DELAY PER FLIGHT



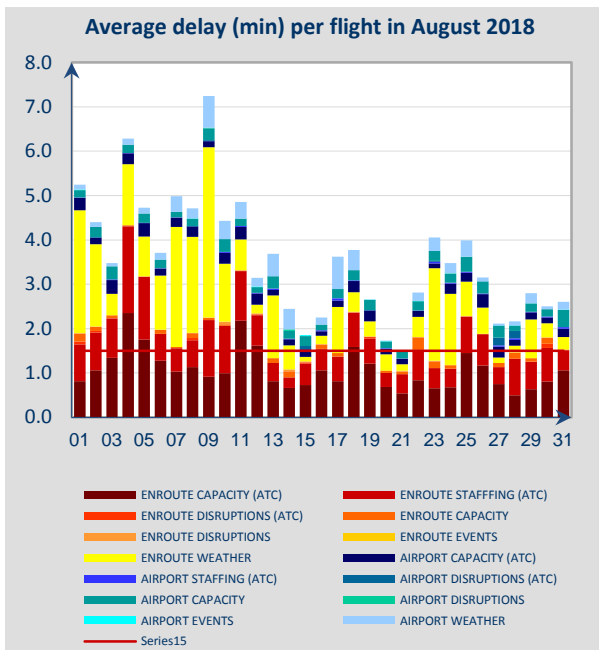
Average airport/TMA delay per flight decreased from 0.77 min/ft in August 2017 to 0.67 min/ft in August 2018.

Iraklion, Palma de Mallorca and Athens airports generated an average delay per flight well above their year to date average. Iraklion and Athens airports were impacted by ATC capacity. Weather issues at Palma de Mallorca.

AIRPORT/TMA ATFM DELAY YEAR-TO-DATE



5. DAILY EVOLUTION



All but one day in August 2018 had an average ATFM delay per flight exceeding 1.5 min and most weekend days had an average over 3 min. Weather had a significant impact throughout the month. These were the most significant days:

01 August: Convective activity impacted operations strongly in Marseille, Karlsruhe, Reims and Budapest ACCs, and to a lesser extent in Vienna, Zurich and Beograd ACCs; En-route ATC capacity delays in Karlsruhe, Zagreb, Bratislava, Nicosia and Prague ACCs; ATC staffing issues in Marseille, Vienna, Maastricht, Makedonia and Reims ACCs; Airport ATC capacity issues at Athens, Mikonos and Iraklion airports; Military exercises in Beograd and Maastricht ACCs;

04 August: En-route ATC capacity issues in Karlsruhe, Brest, Marseille, London, Athens, Reims and Barcelona ACCs; High delays due to ATC staffing in Marseille ACC, and to a lesser extent in Brest, Reims, Maastricht, Budapest, Karlsruhe and Langen ACCs; Convective activity impacted operations strongly in Karlsruhe UAC, and to a lesser extent in Marseille, Zurich, Munich and Prague ACCs; Airport ATC capacity issues at Chania, Athens and Mikonos airports;

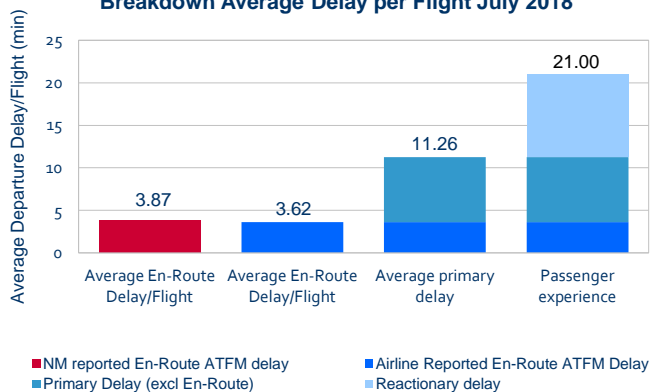
09 August: Extensive convective activity affecting north-west Europe and generated delays in Marseille, Maastricht, Karlsruhe, Reims, Langen, Barcelona, Munich, Paris and Zurich ACCs; ATC staffing issues in Marseille, Brest, Karlsruhe, Reims and Maastricht ACCs; ATC capacity delays in Karlsruhe, Brest, Vienna, Zagreb and Prague ACCs; Thunderstorms and strong winds impacted operations at Amsterdam/Schiphol, Frankfurt, Barcelona and Nice 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 59% of the commercial flights in the ECAC region for July 2018. ATFM delays reported by airlines could be lower than the NM calculated ATFM delays due to difference in methods: ATFM delays of NM are the (flight) planned “delays”; the airlines report the “actual” experienced ATFM delay on departure.

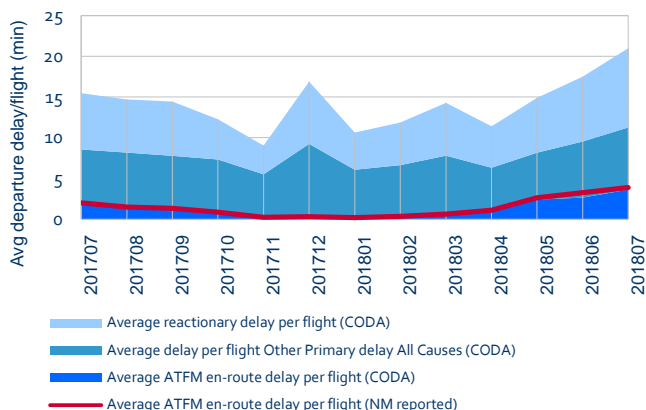
For instance, a flight with an ATFM delay may also have a handling delay absorbed within the ATFM delay. In the event of a long delay an example being during ATC industrial action a flight may keep its original schedule however when it's flight plan is submitted for example a day later any ATFM delay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

Breakdown Average Delay per Flight July 2018



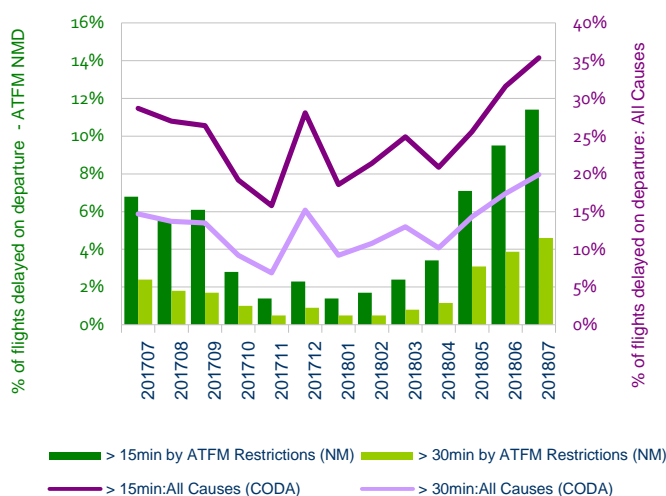
Based on airline data, the average departure delay per flight from ‘All-Causes’ was 21.0 minutes per flight, a significant increase in comparison to July 2017 where the average delay was 16.1 minutes per flight. Primary delays accounted for 53.6% or 11.3 min/ft, with reactionary delays representing the smaller remaining share of 46.54% at 9.7 min/ft, an increase of 2.5min/ft compared to July 2017. The increase in primary delays was mainly driven by the strong increase in reported ATFM en-route delays (+1.7min/ft) and airline delays (+0.9 min/ft).

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 peaked at 3.6 minutes per flight in July 2018. This is nearly double the delay of July 2017 when the ‘All-Causes’ en-route ATFM delay was 1.9 minutes per flight. ATFM delays in July 2018 were mostly generated by en-route ATFM Regulations caused by weather, ATC capacity delays and ATC staffing. This increase in en-route ATFM delay caused an increase in reactionary delay for airlines.

Percentage of Delayed Flights: ATFM & All Causes

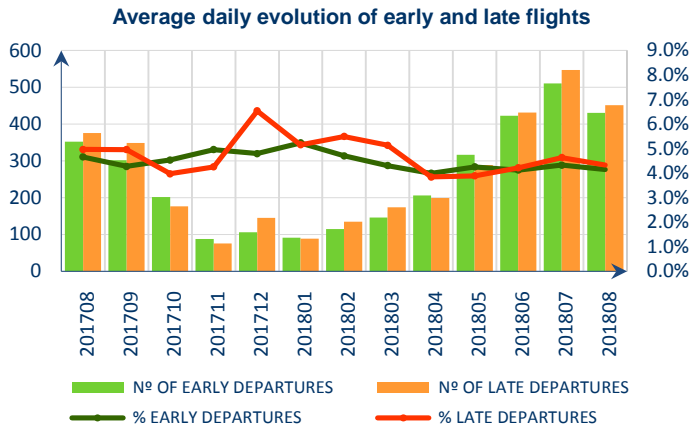


The percentage of flights delayed more than 15 minutes from ‘All-Causes’ increased by 6.7 percentage points to 35.4%. Delays exceeding 30 minutes also increased, with 19.9% of flights delayed in July 2018. Both values are the highest recorded monthly values during the last 12 months.

For more information on CODA delays:

<https://www.eurocontrol.int/sites/default/files/publication/files/flad-july-2018.pdf>

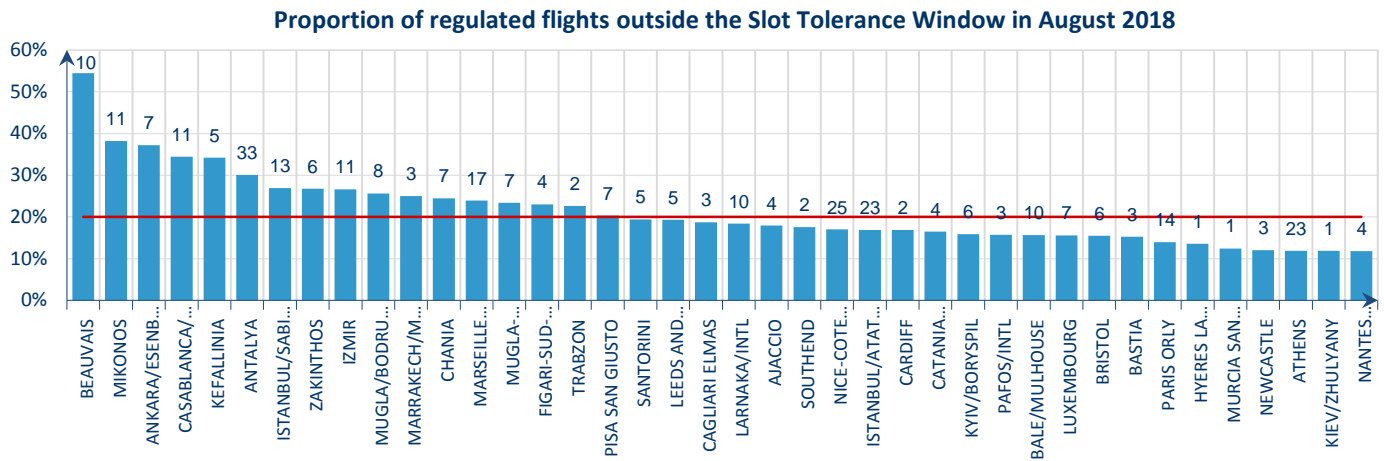
7. ATFM SLOT ADHERENCE



The percentage of early departures for August 2018 is 4.2% of regulated flights, which is a decrease of 0.5 percentage points compared to August 2017.

The percentage of late departures for August 2018 is 4.3% of regulated flights, which is a decrease of 0.6 percentage points compared to August 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

None of the ACCs has planned implementations of system or airspace related projects subject to the transition planning process during August 2018.

ADDITIONAL INFORMATION

Bordeaux ACC generated 2,910 minutes of ATFM delay due to the reorganized interface with LECB/LEBL.

Barcelona ACC generated 4,627 minutes of ATFM delay due to the improved interface with LFBB.

AIRPORTS

Local Plans in August

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

Special Events

- Rehearsal and military parade for the Armed Forces day on 12 and 15 August respectively, at both Warsaw/Modlin and Warsaw/Chopin airports;
- An eruption of Mt. Etna on 24 August affected Catania, Comiso and Sigonella airports;
- Rehearsal for Air Display at Kloten impacted Zurich airport on 30 August.

Completed

- Runway maintenance/closure at Helsinki/Vantaa (6,549 minutes of ATFM delay from 21 to 26 August), Paris/Orly and Stockholm/Arlanda airports;
- Taxiway and/or apron improvements at Riga airport.

Ongoing

- Runway maintenance/closure at Cologne, Hamburg, Istanbul/Sabiha Gökçen, Krakow and Paris/Charles de Gaulle airports;
- Taxiway and/or apron improvements at Bergamo, Düsseldorf, Frankfurt/Main, Helsinki/Vantaa, Manchester, Paris/Charles de Gaulle, Stuttgart and Tenerife/Sur airports;
- ILS maintenance at Hannover, Milan/Malpensa and Paris/Charles de Gaulle airports;
- Terminal building improvements/works at Budapest, Frankfurt/Main, Manchester, Oslo/Gardermoen and Paris/Charles de Gaulle airports.

DISRUPTIONS

Technical

- Radar processing instability in Copenhagen ACC on 08 August generated 1,856 minutes of ATFM delay;
- Non-availability of runway due to a disabled aircraft generated 1,012 minutes of ATFM delay at Barcelona/El Prat airport on 14 August;
- Instability of telecommunications and subsequent zero rates at Amsterdam/Schiphol airport on 15 August resulted in 2,205 minutes of ATFM delay;
- Unavailability of tower back up communications systems at Amsterdam/Schiphol on 27/28 August resulted in 11,073 minutes of ATFM delay;
- Runway inspection for foreign object debris, following the emergency landing of an A330 at London/Gatwick airport, generated 4,657 minutes of ATFM delay on 31 August.
- Technical issue on OLDI link between Karlsruhe and Vienna ACCs on 31 August generated 3,363 minutes of ATFM delay.

Other

- A zero rate was applied on 04 August at Reus airport due to fire;
- ATC tower evacuation at Aberdeen airport on 07 August resulted in a zero rate;
- Bomb alert on a departing aircraft lead to a zero rate at Hamburg airport on 25 August.

9. NM ADDED VALUE

FLIGHTS WITH DELAY > 30'

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

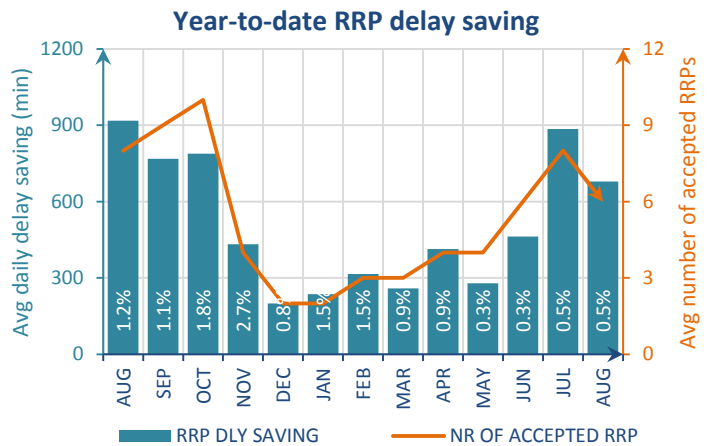
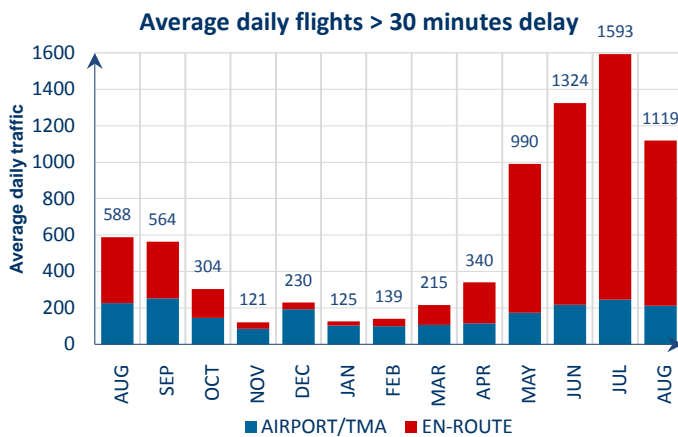
In August 2018, 81.1% of flights with more than 30 minutes of ATFM delay were en-route and 18.9% were airport.

An average 155 flights per day had their delay reduced to less than 30 min by NM.

RRP DIRECT DELAY SAVINGS

On average 6 RRPs/day were executed saving 679 min/day, accounting for 0.5% of ATFM delays.

This graph shows the actual daily averages for the previous 13 months' period^{vi}.



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

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

iii Internals, international arrivals and departures, excluding overflights.

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

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

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