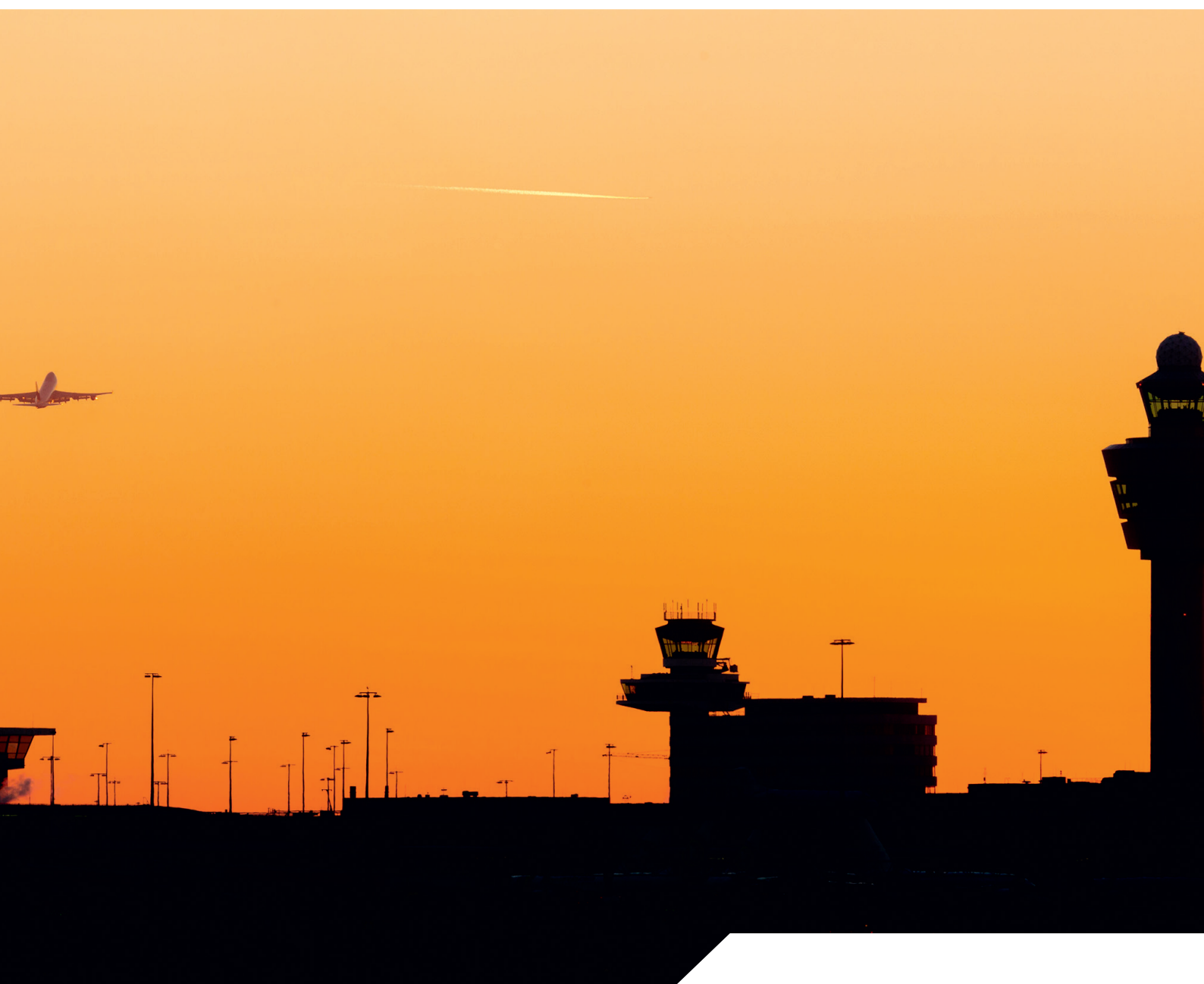


Network Operations Report 2019

Annex II - ACC



ANNEX II: ACC CAPACITY EVOLUTION

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ACC VIEW ON PERFORMANCE

ATC capacity and staffing issues in four ACCs (Marseille, Karlsruhe, Vienna and Budapest) were the main cause of the en-route ATFM delays in the network, particularly over the summer. A detailed analysis on the performance of these ACCs is described in the main document under 5.4.1 Problem Areas. Karlsruhe and Budapest ACC's comments on their own performance assessment is reproduced in the next paragraphs.

Karlsruhe UAC

The implementation of several capacity measures of DFS included an agreement with unions for the provision of extra ATCO shifts on a voluntary basis and the eNM/S19 initiative mitigated some of the impact of the announced staff shortage.

Budapest ACC

The traffic demand was high (see traffic figures for ACCs south of Budapest – Belgrade – Zagreb – Ljubljana). Unfortunately the reduced number of available sectors (which was mainly due to staff shortage) and the application of pre-tactical regulations projected significant delays already at pre-tact level, and this forced Aircraft operators to circumnavigate Budapest ACC.

2019 DELAY RE-ATTRIBUTION

The enhanced NM/ANSP network measures for summer 2019 (eNM/S19) were implemented at the end of April and run until early November 2019. The large set of strategic ATFM measures (RAD restrictions) were aimed at reducing delays by removing traffic from congested areas, either by rerouting or by level-capping flights. The ACCs heavily affected by significant numbers of measures were monitored throughout the application period for the eNM/S19.

As part of the CDM process for ATFM delay assignment/retribution, the NMB endorsed¹, with the support of the NDOP, the ATFM delay assignment/retribution approach for the eNM/S2019 measures. This was part of the wider post-operations performance adjustment process.

Capacity and weather regulations in the areas receiving the rerouted or level-restricted traffic were analysed and the percentage of delay which occurred specifically due to the additional traffic or complexity was reattributed as weather and capacity delay to the root-cause ANSPs, namely, the DFS, the DSNA and MUAC.

The table below displays the agreed delay retribution related to eNM/S2019 measures.

	DFS		DFS total	DSNA		DSNA total	MUAC		MUAC total	Grand total
Reattributed from	C – ATC capacity	W – weather		C - ATC capacity	W - weather		C - ATC capacity	W - weather		
EB	48,102	11,090	59,192				13,088	832	13,920	73,112
EG	1,355	4,095	5,450	13,722	20,272	33,994				39,444
EH	104	43	147				312	639	951	1,098
EP	62,270	6,307	68,577							68,577
LD	45,433	30,294	75,727	6,574	3,616	10,190				85,917
LE				257,806	55,104	312,910				312,910
LI		6,704	6,704							6,704
LK	21,852	23,839	45,691							45,691
LO	78,636	106,049	184,685	13,383	18,936	32,319				217,004
LP				2,015	519	2,534				2,534
LS	23,327	20,830	44,157	38,850	30,742	69,592				113,749
Grand total	281,079	209,251	490,330	332,350	129,189	461,539	13,400	1,471	14,871	966,740

The 2019 post-ops performance adjustment performance dataset includes the eNM/S19 delay retribution and others. The dataset is available on the process website².

¹ Action paper NMB/20/27/13

² <https://www.eurocontrol.int/service/post-operations-performance-adjustment>

ACC CAPACITY EVOLUTION

The following annex provides a detailed analysis of ATC capacity evolution in 2019 for ACCs within the ECAC States for which data is available. The source of statistics is the NMOC unless otherwise indicated. The analysis covers:

- **Traffic & Delay**

The chart and data table provide comprehensive information concerning the evolution of traffic and delay from 2015 to 2098 (where data is available). It includes the following values:

- **Peak day traffic:** the number of flight entries on the peak day of each year.
- **Summer & Yearly Traffic:** the daily average number of flight entries during the summer season (May to October inclusive) and over the whole year (January to December inclusive).
- **Summer & Yearly En-route Delay:** the average En-route delay per flight (for all reasons, including weather and special events e.g. industrial action), attributed to the ACC during the summer season (May to October inclusive) and over the whole year (January to December inclusive).

- **2019 Realisation of Capacity Plan³**

- **Traffic Evolution (2019 v 2018)**

- **Traffic forecast:** the traffic forecast for 2019 compared to 2018, as published in the European Network Operations Plan 2019-2024
- **Actual traffic:** the percentage difference between the total traffic (number of flight entries) in 2019 compared to 2018, for the summer and the full year.

- **En-route Delay (min per flight)**

- **All reasons:** the en-route minutes of delay per flight for all causes, for the summer and the full year.
- **ACC Reference value:** the delay per flight to achieve the European delay target of 0.5 min/flight for the full year, as published in the European Network Operations Plan 2018-2019/22, for the summer and the full year.

- **Capacity gap?:** Network Manager assessment of the capacity offered in 2019

- **ACC Capacity Baseline (% difference 2019 v 2018):** the capacity actually offered by the ACC during Summer 2018, and the comparison with the 2017 capacity baseline.

- **Capacity Plan:** the capacity planned in Summer 2019 versus Summer 2018, as published in the European Network Operations Plan 2019-2024.

- **Capacity enhancement measures:** reporting for each measure planned to be implemented before Summer 2019 in the European Network Operations Plan 2019-2024.

- **Summer 2019 Performance Assessment:** analysis of the observed performance versus peak traffic demand.

- **Allocation of and reasons for En-route delay**

The table lists the reference locations causing most of the en-route delay in 2019, the average daily minutes of en-route delay attributed to each reference location and the percentage of the total ACC en-route delay.

The graph shows the average daily en-route delay, broken down into the 5 most significant reasons given for the delay in 2019 compared to 2018.

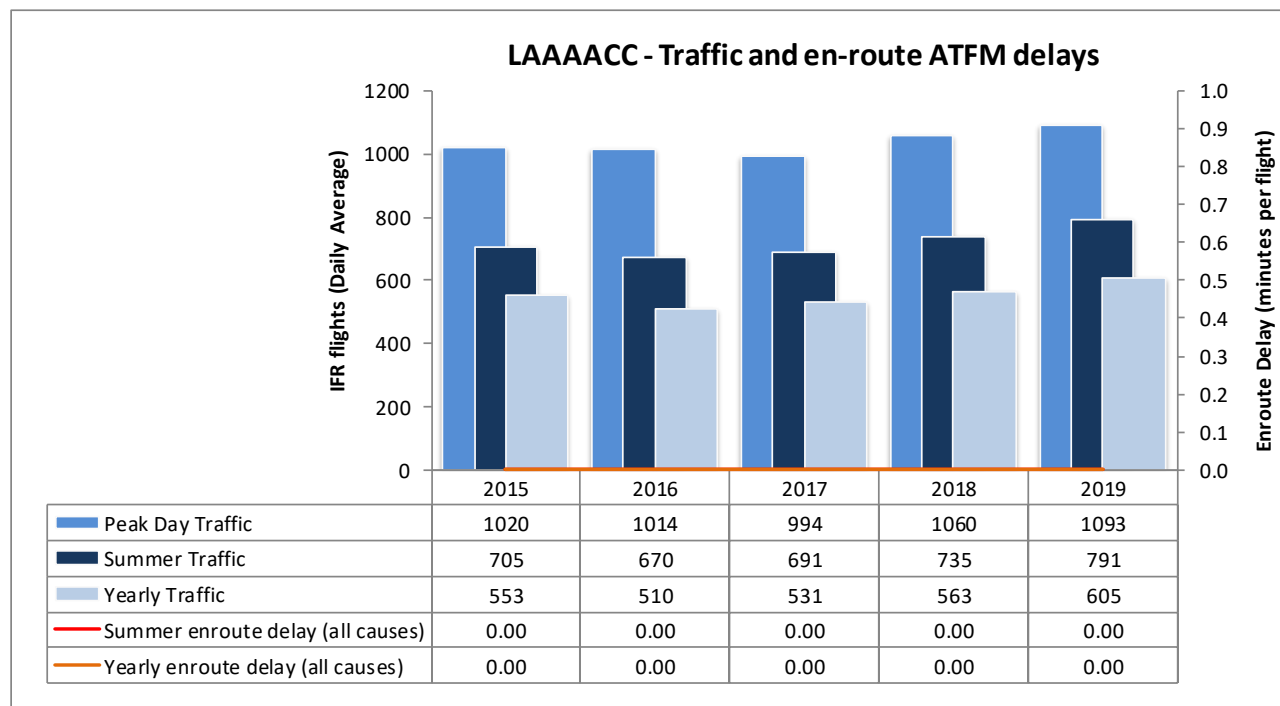
³ ACC plans for 2020 and beyond may be reviewed due to the COVID-19 situation.

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Note: The scale on all graphs varies from ACC to ACC - graphs should not be directly compared.

1. ALBANIA - TIRANA ACC

Traffic & Delay

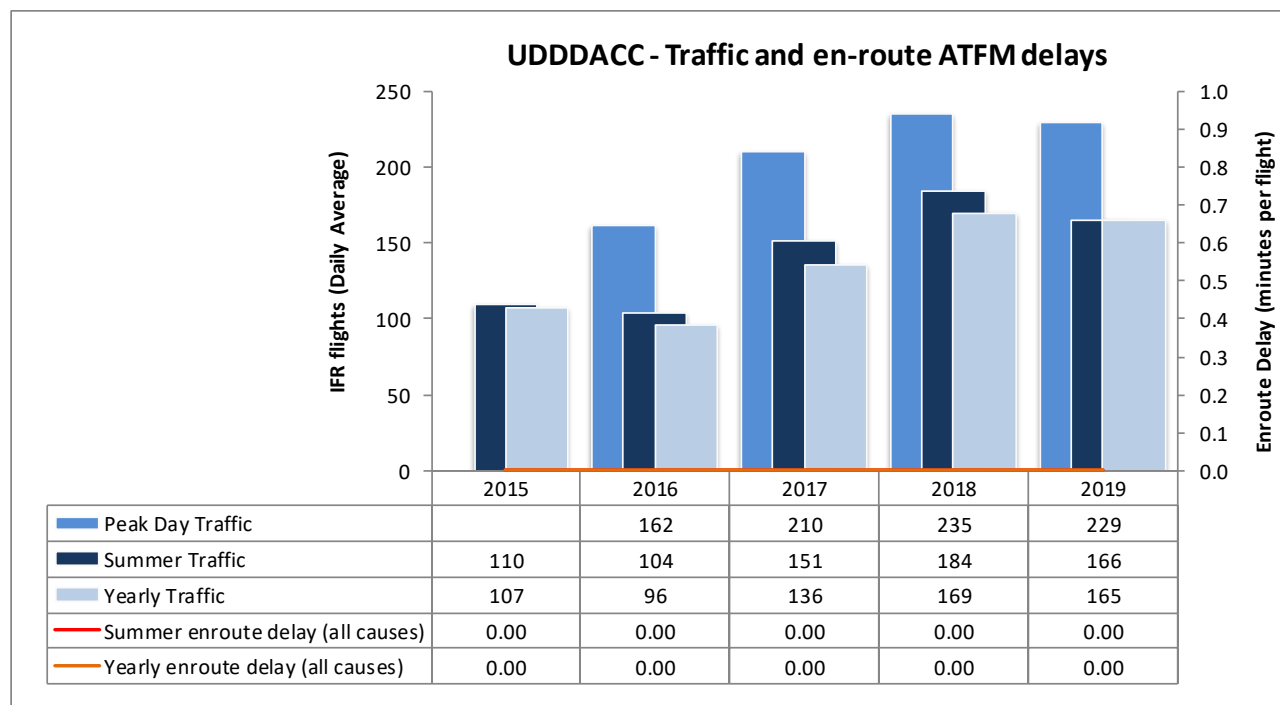


2019 Realisation of Capacity Plan

Tirana ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 7.0% B: 5.5% L: 3.6%	+5%	+7.4%	0.00	0.09			
Summer	L: 3.6%		+7.5%	0.00		69 (+3%)	69 (+3%)	No
Summer 2019 performance assessment								
The average en-route delay per flight remained at zero minutes per flight in Summer 2019. The ACC capacity baseline was estimated at 69. During the measured period, the average peak 1 hour demand was 60 and the average peak 3 hour demand was 53.								
Operational actions				Achieved	Comments			
FRALB Implemented H24				Yes				
AMC set up, implementation of LARA, AMC starts sending AUP/UUP. LARA to MIL Coord. Centre				Ongoing	Implemented AIRAC of 5th Dec 2019			
New Airport in North Albania and associated network connecting procedures				No	It is expected to be operational by the end of 2022			
Reduction of separation to 5NM in ACC				No	Reduction of separation to 7NM implemented in June 2019 – Reduction to 5NM to be reassessed at a later stage			
Maintain sufficient level of staffing to open 3 ENR + 1 APP sectors				Yes				
MLAT ATM Back up system Integration of LYPG radar in our system				Ongoing				
Maximum configuration: 3 ENR + 1 APP sectors				Yes				

2. ARMENIA - YEREVAN ACC

Traffic & Delay

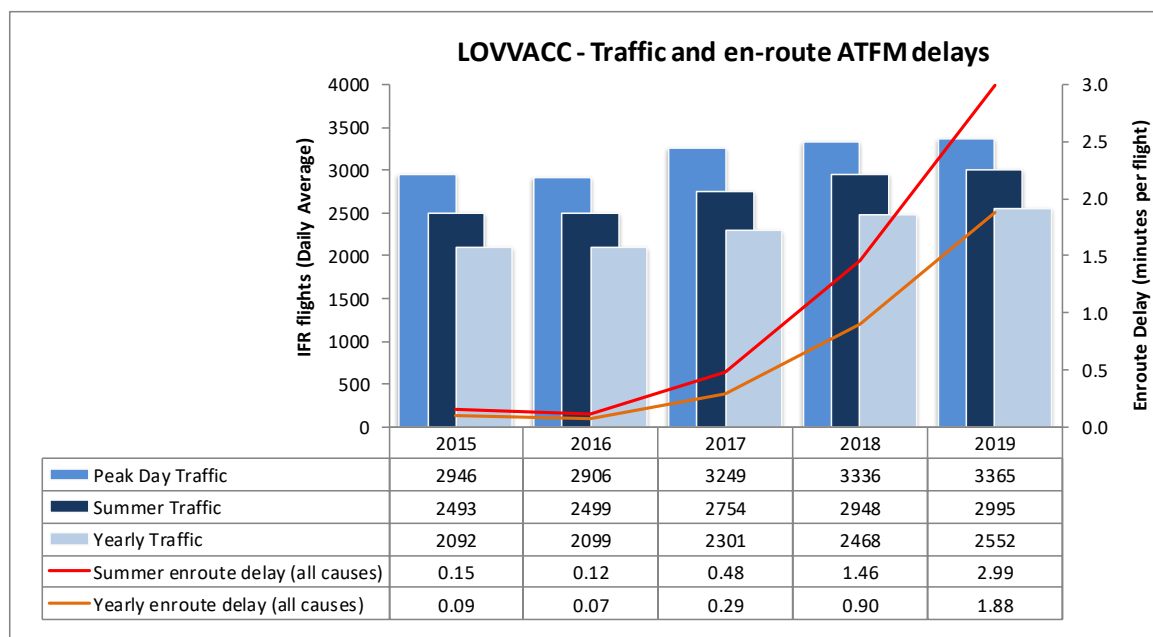


2019 Realisation of Capacity Plan

Yerevan ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.7%	+8%	-2.2%	0.00	0.01	Sufficient	40 (+0%)	No
Summer	B: 6.2% L: 4.9%		-10.1%	0.00				
Summer 2019 performance assessment								
The average en-route delay per flight remained at zero in Summer 2019.								
The ACC capacity baseline was estimated at 40. During the measured period, the average peak 1 hour demand was 14 and the average peak 3 hour demand was 10								
Capacity Plan: Sufficient Capacity to meet demand				Achieved	Comments			
Maximum configuration: 1 sector				Yes				

3. AUSTRIA - VIENNA ACC

Traffic & Delay



2019 Realisation of Capacity Plan

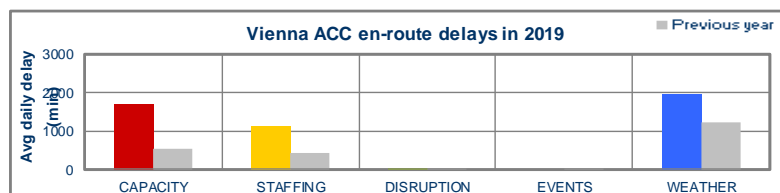
Vienna ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.2% B: 4.5% L: 2.7%	+8%	+3.4%	1.88	0.19			
Summer			+1.6%	2.99		202 (+2%)	181 (-9%)	Yes
Summer 2019 performance assessment								
The average en-route delay per flight increased from 1.46 minutes per flight in Summer 2018 to 2.99 minutes per flight in Summer 2019. 43% of the Summer delays were due to Weather, 36% due to ATC capacity and 21% due to ATC staffing. The ACC capacity baseline was measured with ACCESS / Reverse CASA at 181. During the measured period, the average peak 1 hour demand was 203 and the average peak 3 hour demand was 188.								
Operational actions				Achieved	Comments			
AMAN LOWW				Yes				
Improved ATFCM techniques, including STAM				Yes				
Enhanced sectorisation according to the FAB CE Airspace Plan				Yes	As per ERNIP Part 2			
Minor sector adaptations				Yes				
Improved operational procedures including FMP/AMC				Yes				
Recruitment to increase staff levels				Yes	Unexpected departure of some staff to other ANSPs, and the long term absences.			
Continuous system improvements				Yes				
Additional sectors as required, depending on traffic demand levels and available staff				Yes	Applied with limited extent.			
Maximum configuration: 12 sectors				Yes	12 sectors were opened			
Remedial measures				Achieved	Comments			
Continued effort to increase staffing levels				Yes	Unexpected departure of some staff to other ANSPs, and the long term absences.			
Continued alignment of traffic demand and sector opening times at sector group level				No	Not possible at all times due to the unexpected departure of some staff to other ANSPs, and the long term absences. When sector opening scheme from the NOP was available the delays remained at the low levels.			

NETWORK OPERATIONS REPORT – 2019

Network weather mitigation measures	No	Applied at local level. Vienna ACC to be included in the network weather mitigation measures as from summer 2020
Implementation of the eNM/ANSPs proposed measures	Yes	
Central/South East Europe airspace restructuring project	Yes	

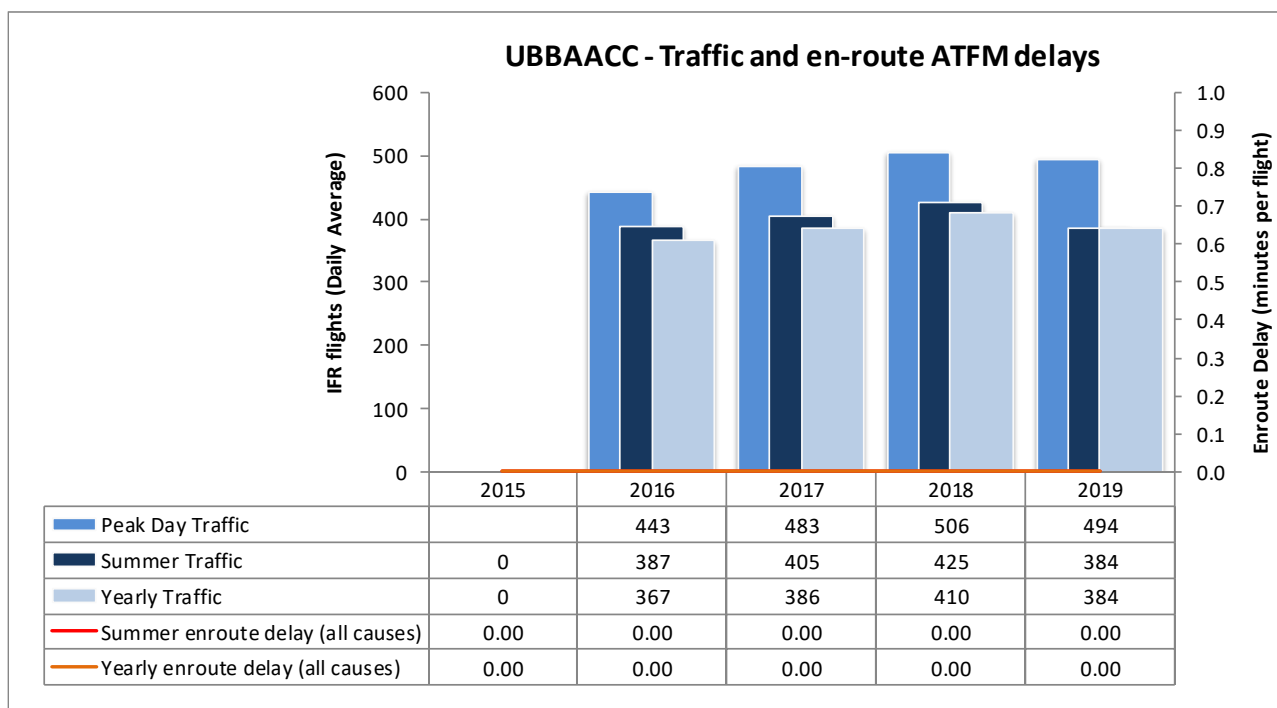
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LOVW12	661	13.8%
2019	LOVVE15	628	13.1%
2019	LOVW35	545	11.4%
2019	LOVVS15	517	10.8%
2019	LOVW12	387	8.1%
2019	LOVVS35	349	7.3%



4. AZERBAIJAN - BAKU ACC

Traffic & Delay

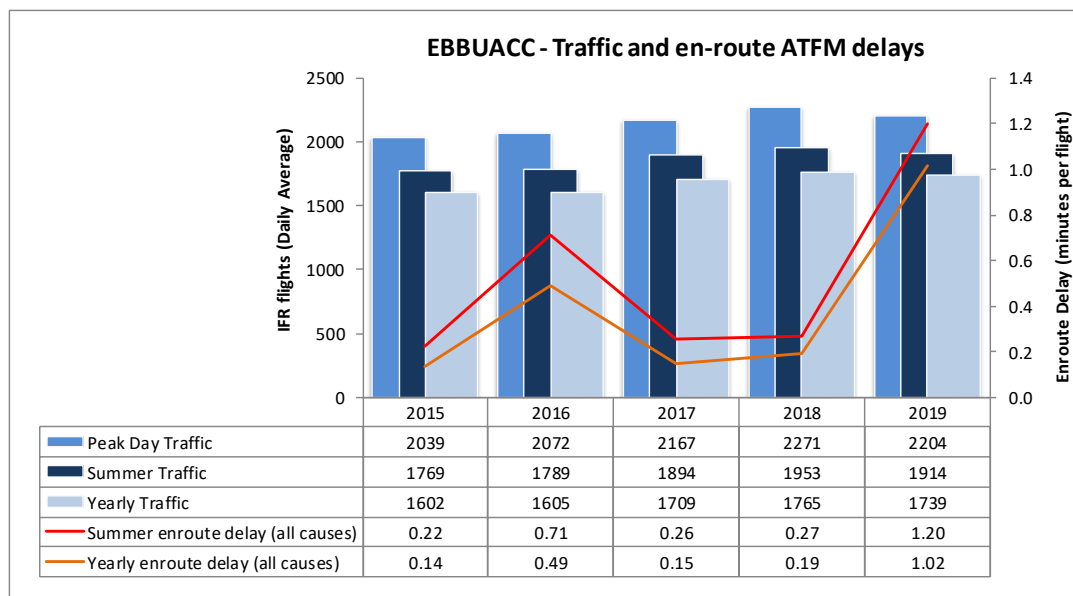


2019 Realisation of Capacity Plan

Baku ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 4.7%	No significant impact	-6.3%	0.00	0.01			
Summer	B: 3.4% L: 0.6%		-9.8%	0.00		Sufficient	65 (+0%)	No
Summer 2019 performance assessment								
The average en-route delay per flight remained at zero in Summer 2019.								
The ACC capacity baseline was estimated at 65. During the measured period, the average peak 1 hour demand was 28 and the average peak 3 hour demand was 19.								
Operational actions				Achieved	Comments			
ATS route network optimisation - an on-going process in co-operation with neighboring States				Yes				
Implementation of OLDI link between Baku and Rostov ACCs				Yes				
Maximum configuration: 5 + 3APP				Yes	3+3APP sectors were sufficient			

5. BELGIUM - BRUSSELS ACC

Traffic & Delay

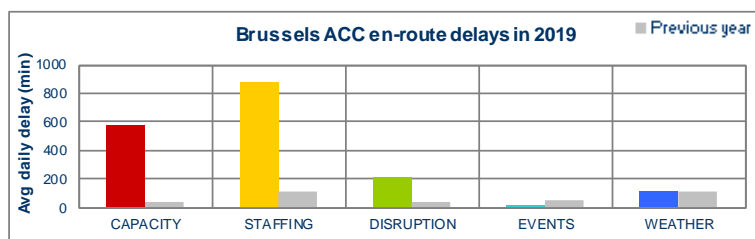


2019 Realisation of Capacity Plan

Brussels ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 2.1% B: 1.3%	No significant impact	-1.5%	1.02	0.10			
Summer	L: -0.1%		-2.0%	1.20		140 (+2%)	118 (-14%)	Yes
Summer 2019 performance assessment								
<p>The average en-route delay per flight increased from 0.27 minutes per flight in Summer 2018 to 1.20 minutes per flight in 2019. 45% of the Summer delays were due to ATC capacity, 43% due to ATC staffing, and 9% due to Weather.</p> <p>The ACC capacity baseline was estimated with ACCESS / Reverse CASA to be at 118 in summer 2019. During the measured period, the average peak 1 hour demand was 124 and the average peak 3 hour demand was 114.</p>								
Operational actions				Achieved	Comments			
Enhanced Civ/Mil ASM procedures				Ongoing	FUA WG on booking principles & priority rules			
Improved use of the route network as a result of FUA enhancement				Yes	Approval D-1 of orange slots for Durbuy area			
Enhancement of ATFCM procedures, including STAM				Yes				
ATFCM 2.0 Project				Ongoing	Set of projects in testing/validation phase, including complexity assessment tool			
Complexity Assessment Tool				Ongoing	Planned to start operational trials in June 2020			
Segregation of EBCI and EBBR flows				No	Postponed until 2022			
Recruitment of new ATCOs to maintain level of staffing				Yes	Continuous recruitment			
New ATCOs available				Yes				
Enhanced rostering tool				Yes	Rolling out 20 Dec 2019			
CANAC2 hardware upgrade				Yes				
Reassessment of sector capacities following CAPAN				Yes	Sector capacities adapted outside military activity			
Maximum configuration: 6 sectors				No	Only 5 sectors were open			
Remedial measures				Achieved	Comments			
Continued effort to increase staffing levels				Yes				
Continued alignment of traffic demand and sector opening times at sector group level				Partially	Lack of resources to open the required sectors			
Network weather mitigation measures				Yes				
FABEC airspace restructuring project				No				
Update capacity plans				No				

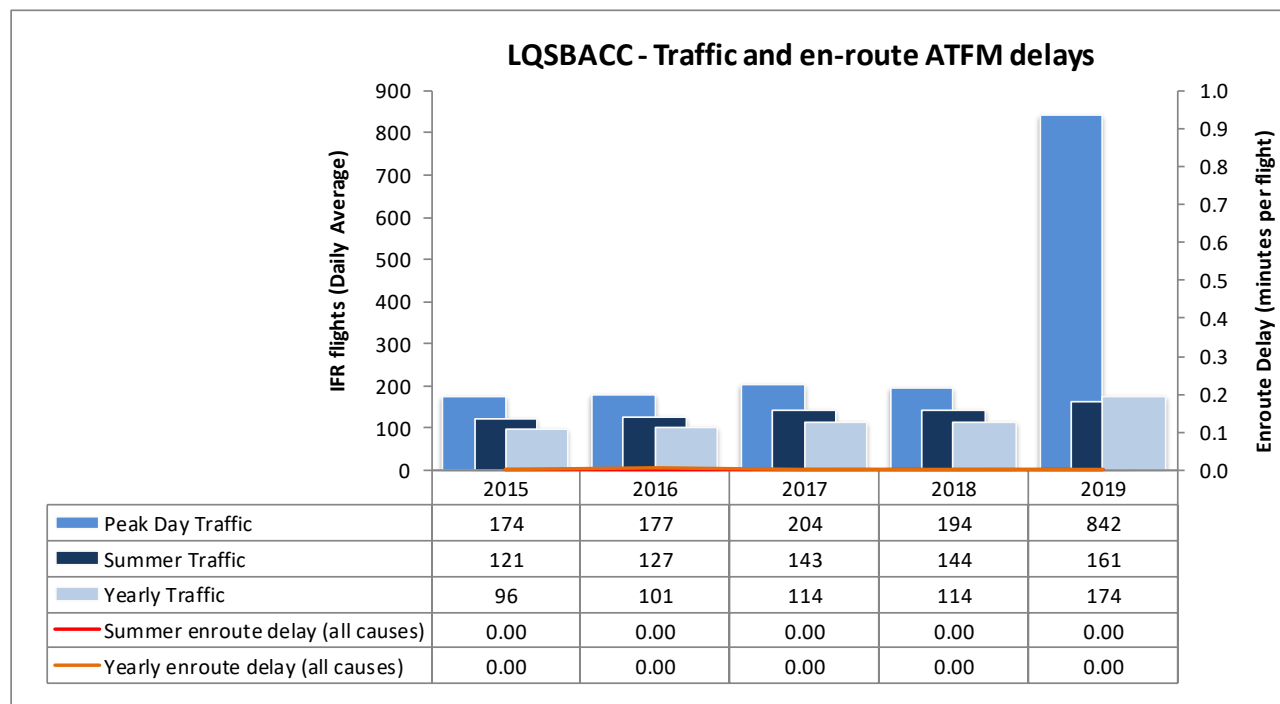
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EBBUWSC	648	36.6%
2019	EBBUDEC	394	22.2%
2019	EBBUESC	271	15.3%
2019	EBBUNWC	245	13.9%
2019	EBBRTA	96	5.4%
2019	EBBUHLC	76	4.3%



6. BOSNIA & HERZEGOVINA - SARAJEVO ACC

Traffic & Delay

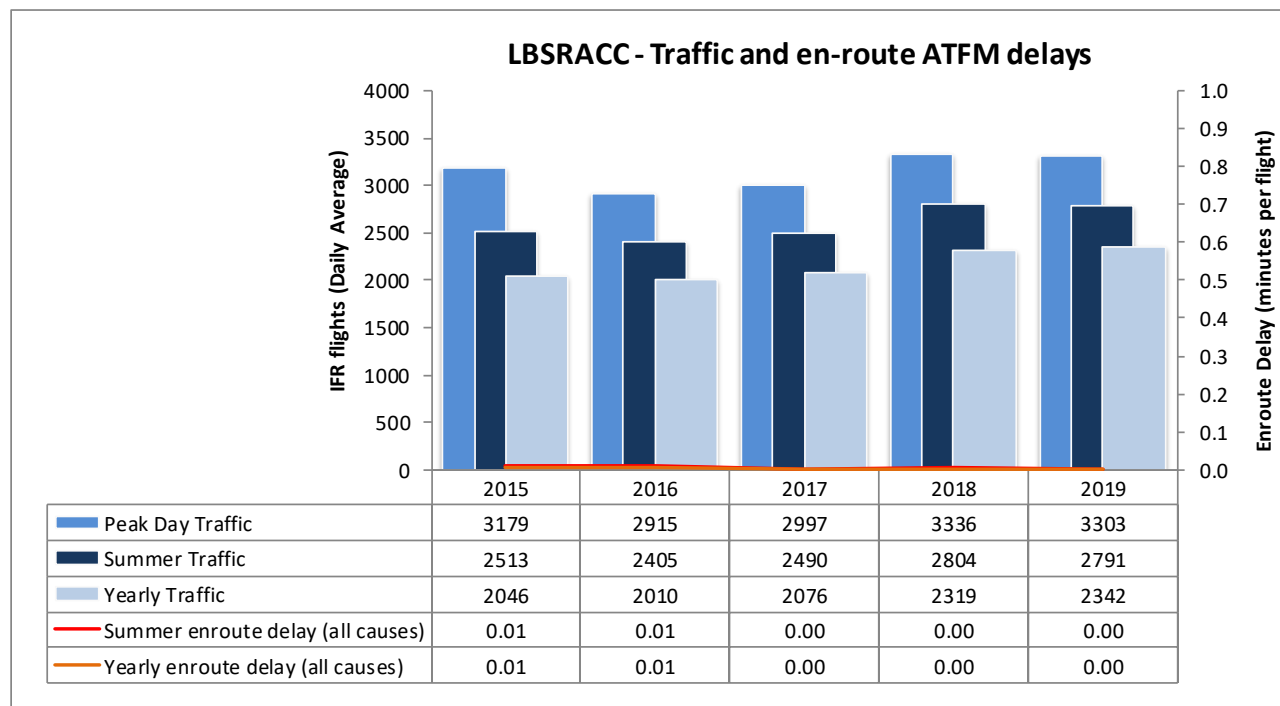


2019 Realisation of Capacity Plan

BHACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.1%	+25%	+52.1%	0.00	0.01	27 (+0%)	27 (+0%)	No
Summer	B: 2.5% L: 1.0%		+12.4%	0.00				
Summer 2019 performance assessment								
The average en-route delay per remained at zero minutes per flight in Summer 2019. The capacity baseline was estimated with ACCESS at 27. During the measured period, the average peak 1 hour demand was 15 and the average peak 3 hour demand was 13.								
Operational actions				Achieved	Comments			
Implementation of 2 PBN procedures for TMA Mostar and Banja Luka				No	Postponed to 2020.			
Enhanced ATFM techniques, including STAM				Yes				
Changes of areas of responsibility between Zagreb, Beograd and BH ACCs (Phase 2 BHANSA). New ATCC sectorisation				Yes	Cut-off date 5.12.2019.			
New procedures shall be developed after FRA RTS and System upgrade				Yes				
NEW ATCOs				Yes				
New VCS implementation - DPS Upgrade				Yes				
CAPAN study				Yes				
New and flexible sectorisation and sector capacities				Yes	Cut-off date 5.12.2019.			
Maximum configuration: 2 sectors				Yes	<ul style="list-style-type: none">- 2 sectors were opened,- 4 sectors will be opened after Cut-off date 05.12.2019.			

7. BULGARIA - SOFIA ACC

Traffic & Delay

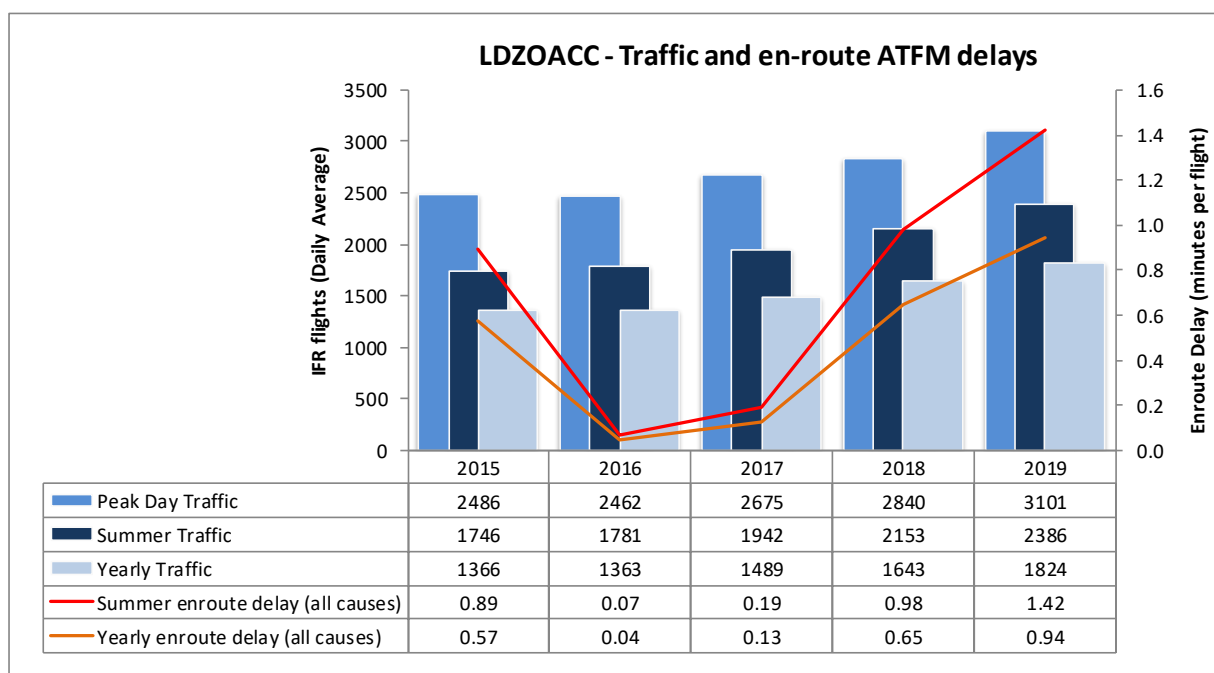


2019 Realisation of Capacity Plan

Sofia ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.7% B: 5.3%	-4%	1.0%	0.00	0.07			
Summer	L: 2.3%		-0.5%	0.00		220 (+9%)	202 (+0%)	No
Summer 2019 performance assessment								
The en-route delay remained at zero minutes per flight during Summer in 2019. The ACC capacity baseline was measured with ACCESS and was assessed to be at 202. During the period June/July, the average peak 1 hour demand was 184 flights and the average peak 3 hour demand was 170 flights.								
Operational actions				Achieved	Comments			
Stepped implementation of full FRA				Yes				
Gradual implementation of AFUA functionalities				Yes				
Improved ATFCM, including use of occupancy counts and STAM				Yes				
Implementation of Traffic Complexity Tool				Ongoing				
Airspace changes at the interface with Turkey resulting from the implementation of the Istanbul new airport and of the second runway at Sabiha Gökçen airport.				Ongoing	Changes in the LoAs with DHMI			
Cross sector training as required				Yes				
Additional ATCOs				Yes				
ATC system upgrade				Ongoing	Finalisation planned in 2020			
WAM in east part of FIR				Yes				
WAM in west part of FIR				Ongoing	Finalisation planned in 2020			
New EN-route Radar on the Black Sea Coast				Ongoing	Finalisation planned in 2020			
Gradual increase of maximum sector configurations available up to 18 sectors				Yes				
Maximum configuration: 18 sectors				Yes	10 sectors were sufficient			

8. CROATIA - ZAGREB ACC

Traffic & Delay



2019 Realisation of Capacity Plan

Zagreb ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.8%	+13%	+11.0%	0.94	0.24			
Summer	B: 4.7% L: 2.6%		+10.8%	1.42		160 (+3%)	166 (+7%)	Yes

Summer 2019 performance assessment

The average en-route delay per flight increased from 0.98 minutes per flight in Summer 2018 to 1.42 minutes per flight in Summer 2019.

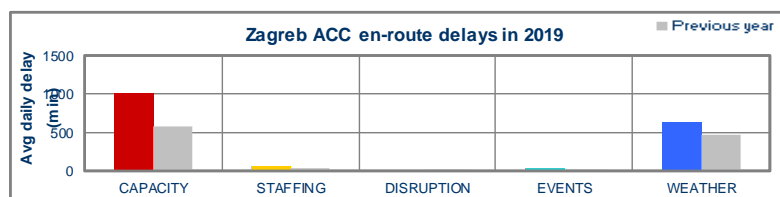
59% of the Summer delays were for the reason ATC Capacity, 37% for Weather and 3% for ATC Staffing.

The capacity baseline was measured using ACCESS at 166. During the measured period, the average peak 1 hour demand was 178, and the average peak 3 hour demand was 163.

Operational actions	Achieved	Comments
Upgrade and extension of AMC Portal	Yes	
Integration of TMAs in the network through the implementation of the FABCE concept of seamless operations for the TMAs within Zagreb FIR	Yes	
Implementation of PBN procedures in TMA airspace	Yes	
Enhanced ATFM techniques (STAM Phase II)	Yes	
Enhanced sectorisation according to the FABCE Airspace Plan	Yes	
Changes of areas of responsibility between Zagreb and BH ACCs (Phase 2 BHANSA)	Yes	Preparations finalised to the cutover on 05 Dec. '19
Full lateral and vertical implementation of Central sector below FL355	No	Postponed for Feb. 2020
Optimization of manpower planning	Yes	
Additional ATCOs as required (~6 per year)	Yes	
Development of supporting tool for sector configuration management	No	To be implemented in 2020
Re-assessment of sector capacities according to new CAPAN study	Yes	
Improved sector opening times	Yes	
Maximum configuration: 11 sectors	Yes	

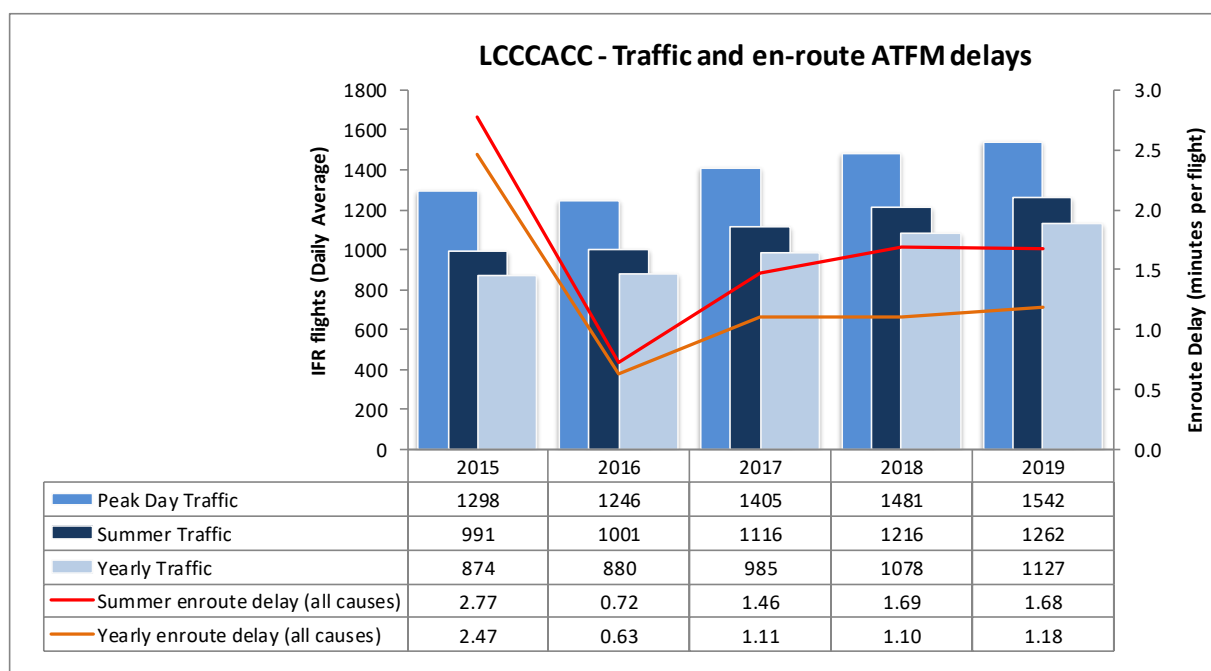
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LDZOHV	416	24.3%
2019	LDZOULW	307	17.9%
2019	LDZOULN	211	12.3%
2019	LDZOTHN	118	6.9%
2019	LDZOULN36	101	5.9%
2019	LDZOULA	73	4.3%



9. CYPRUS - NICOSIA ACC

Traffic & Delay



2019 Realisation of Capacity Plan

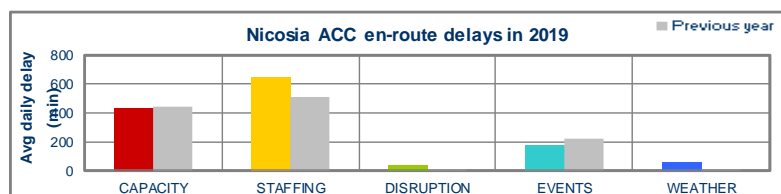
Nicosia ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 7.2% B: 6.1% L: 3.2%	No significant impact	+4.5%	1.18	0.25			
Summer			+3.9%	1.68		72 (+5%)	71 (+3%)	Yes
Summer 2019 performance assessment								
<p>The average en-route delay per flight remained at the same level as in 2018 in Summer 2019. 53% of the Summer delays were due ATC staffing, 29% due to ATC capacity, 10% due to airspace management, 4% due to Weather and 3% due to Equipment.</p> <p>The ACC capacity baseline was measured with ACCESS/Reverse CASA at 71, showing a 3% increase compared to 2018. During the measured period, the average peak 1 hour demand was 76 and the average peak 3 hour demand was 70.</p>								
Operational actions				Achieved	Comments			
Stepped implementation of A-FUA				Yes				
Improved ATFCM, including STAM				Yes				
Continuous improvement of route network				Partially	Work in progress for implementation prior to Summer 2020			
Stepped re-sectorisation of Nicosia ACC				Partially	Work in progress for implementation prior to Summer 2020			
4 ATCOs less on the roster				No	Staff not removed from roster			
Continuation of staff performance scheme until the creation of the new ANSP				Yes				
Datalink				No	Awaiting the implementation of the system upgrade prior to Summer 2021			
ATM system upgrades				No	Awaiting the implementation of the system upgrade prior to Summer 2021; small system upgrades foreseen for Summer 2020			
More flexibility in sector configuration openings				Yes				
Improve Civil-Military cooperation in the South-East part of the FIR				Yes				

NETWORK OPERATIONS REPORT – 2019

Revision of sector capacities	Yes	Tactical revisions
Transition to the new ACC (pending approvals)	No	Transition expected to start during 2020 with operations planned for Summer 2021
Maximum configuration: 5 sectors	Yes	5 sectors were opened
Remedial measures	Achieved	Comments
Implementation of the new ANSP organisation	No	Operation of the new ANSP expected as from 2021
Implementation of re-sectorisation proposals	No	Work in progress for implementation prior to Summer 2020
Sector capacities re-evaluations	Yes	Tactical revisions
Flexible rostering allowing better alignment between traffic demand and sector opening times, including for week-ends and peak days	Partially	Enhanced opening schemes for Summer 2019. Further improvements expected with the operation of the new ANSP in 2021
Flexible configurations opening, according to the traffic flows	Partially	Enhanced opening schemes for Summer 2019. Further improvements expected with the operation of the new ANSP in 2021
Improved ATFCM techniques	Yes	
Implementation of a new ATM system	No	Awaiting the implementation of the system upgrade prior to Summer 2021; small system upgrades foreseen for Summer 2020

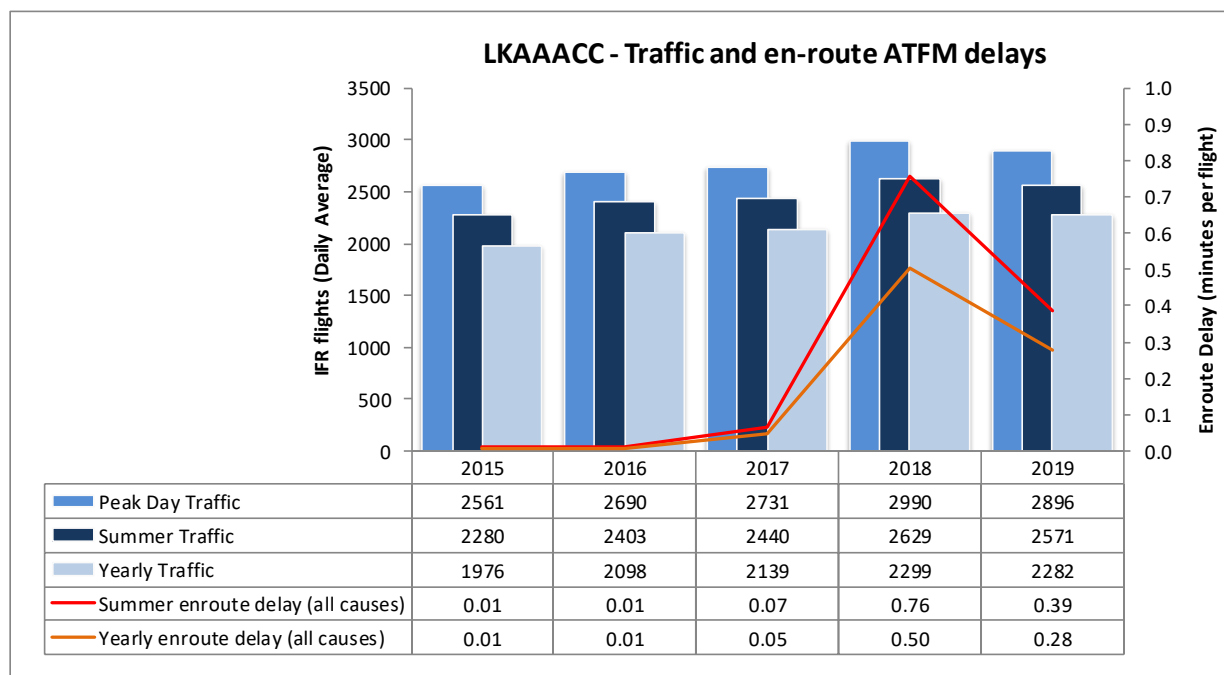
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LCCCS12	278	20.9%
2019	LCCCS1	250	18.8%
2019	LCCCES0	245	18.4%
2019	LCCCW	216	16.2%
2019	LCCCS12W	113	8.5%
2019	LCCCWUPP	101	7.6%



10. CZECH REPUBLIC - PRAGUE ACC

Traffic & Delay

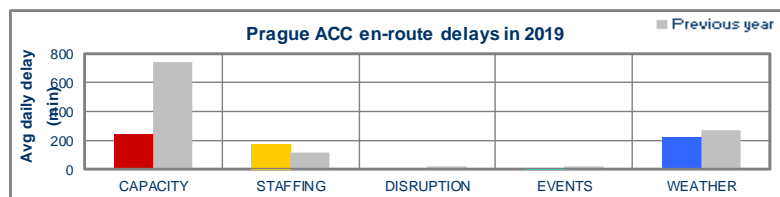


2019 Realisation of Capacity Plan

Prague ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 4.5%	-16%	-0.7%	0.28	0.10			
Summer	B: 3.7% L: 1.8%		-2.2%	0.39		186 (+2%)	184 (+1%)	Yes
Summer 2019 performance assessment								
The average en-route delay per flight decreased from 0.76 minutes per flight in Summer 2018 to 0.39 minutes per flight in the Summer 2019. 41% of the delays were for the reason Weather, 35% for ATC Capacity and 24% for ATC Staffing. The ACC capacity baseline was measured with ACCESS / Reverse CASA and was assessed to be at 184. The peak 1 hour demand was 186 flights and the peak 3 hour demand was 174 flights.								
Operational actions				Achieved	Comments			
ASM tool (equiv. to LARA)				Yes				
Improved flow and capacity management techniques, including STAM				Yes				
Improved ATS route network				Yes				
Additional controllers				Yes				
Adaptation of sector opening times depending on available staff				Yes				
Centralisation of regional APPs with airspace optimisation				Yes				
Maximum configuration: 10 sectors				Yes				
Remedial measures				Achieved	Comments			
Continuous monitoring of the traffic evolution between NM and Prague ACC				Yes				
Evaluation of possible ATFM scenarios				No	Not required by Prague ACC for Summer 2019, due to lower traffic levels.			
Improved ATFCM techniques				Yes				
Adaptation of the ATCO recruitment levels				Yes				
Implementation of the eNM/ANSPs proposed measures				Yes				
Central/South East Europe airspace restructuring project				Yes				

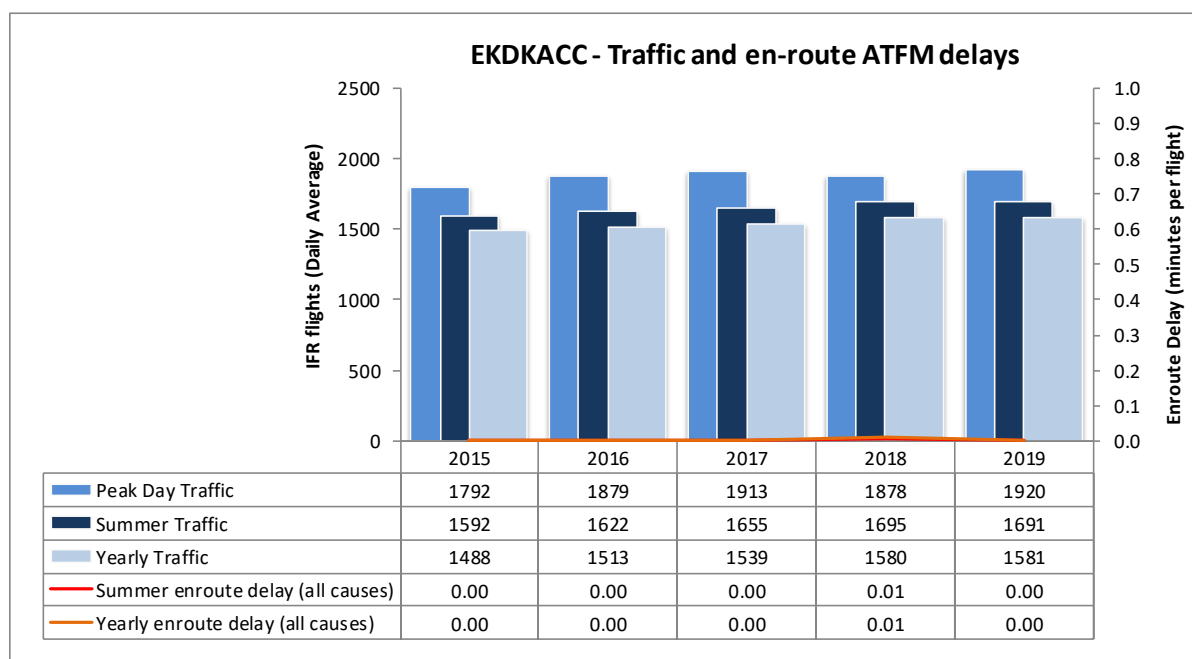
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LKAANSHT	125	19.9%
2019	LKAANSL	113	18.0%
2019	LKAAWLM	91	14.5%
2019	LKAANSM	84	13.3%
2019	LKAAL	65	10.4%
2019	LKAAWM	48	7.7%



11. DENMARK - COPENHAGEN ACC

Traffic & Delay

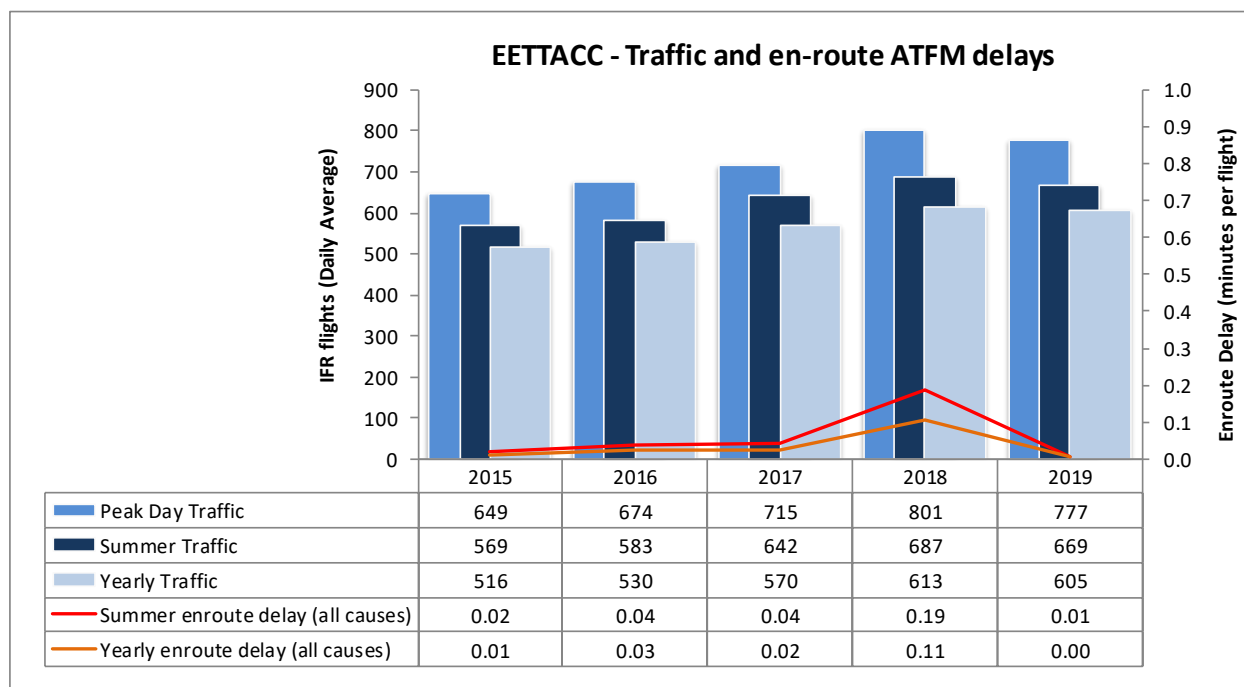


2019 Realisation of Capacity Plan

Copenhagen ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value			
	Current Routes	Shortest Routes						
Year	H: 2.4% B: 1.6% L: 0.3%	No significant impact	+0.1%	0.00	0.06	129 (+1%)	128 (+0%)	Capacity gap? No
Summer			-0.2%	0.00				
Summer 2019 performance assessment								
The average en-route delay per flight decreased from 0.01 minutes per flight in Summer 2018 to zero minutes per flight in Summer 2019.								
The ACC capacity baseline was measured with ACCESS at 128. During the measured period, the average peak 1 hour demand was 120 and the average peak 3 hour demand was 111.								
Operational actions				Achieved	Comments			
Optimizing the use of FRA when military areas are active				Yes				
New arrival concept for EKCH including PBN procedures, Extended AMAN, TBS (Time Based Separation)				No	PBN procedures for EKCH postponed to 2021, other initiatives postponed to 2023			
Operational capacity expansion at EKDK ACC to increase ATM capacity at EKCH				Yes				
Improved ATFCM, working with occupancy counts				Yes				
Continuous improvements on the ATS route network and FRA sectorisation				Yes				
Establish a work group looking for possible changes to sector borders to optimise workload				No	Postponed to 2020			
Maintain appropriate level of staffing to open up to 8 sectors				Yes				
Training ATCOs in using the available configurations to the full extent				Yes				
Minor updates of COOPANS				Yes				
Sector configurations adapted to traffic demand				Yes				
Maximum configuration: 5 (E) + 3 (W)				Not required	3 (E) + 2 (W) were sufficient			

12. ESTONIA - TALLINN ACC

Traffic & Delay

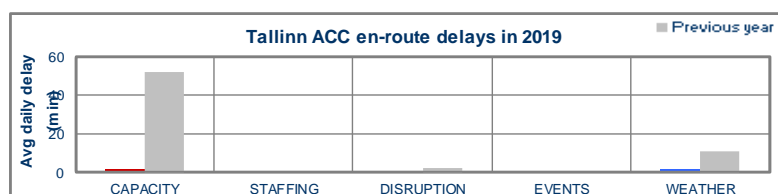


2019 Realisation of Capacity Plan

Tallinn ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.8% B: 5.0%	-5%	-1.3%	0.00	0.03			
Summer	L: 2.8%		-2.7%	0.01		77 (+15%)	67 (+0%)	No
Summer 2019 performance assessment								
The average en-route delay per flight decreased from 0.19 minutes per flight in Summer 2018 to 0.01 minutes per flight in Summer 2019.								
49% of the delays were for the reason ATC capacity, and 51% due to Weather.								
The capacity baseline was estimated with ACCESS to be 67. During the measured period, the average peak 1 hour demand was 62 and the average peak 3 hour demand was 55.								
Operational actions				Achieved	Comments			
Kept in current level of staffing				Yes				
Surveillance service in EETU TMA				Yes				
Adaptation of sector opening times				Yes				
3 rd sector to be open in Summer 2019				Yes				
Maximum configuration: 3 (+1 FEEDER)				Yes				

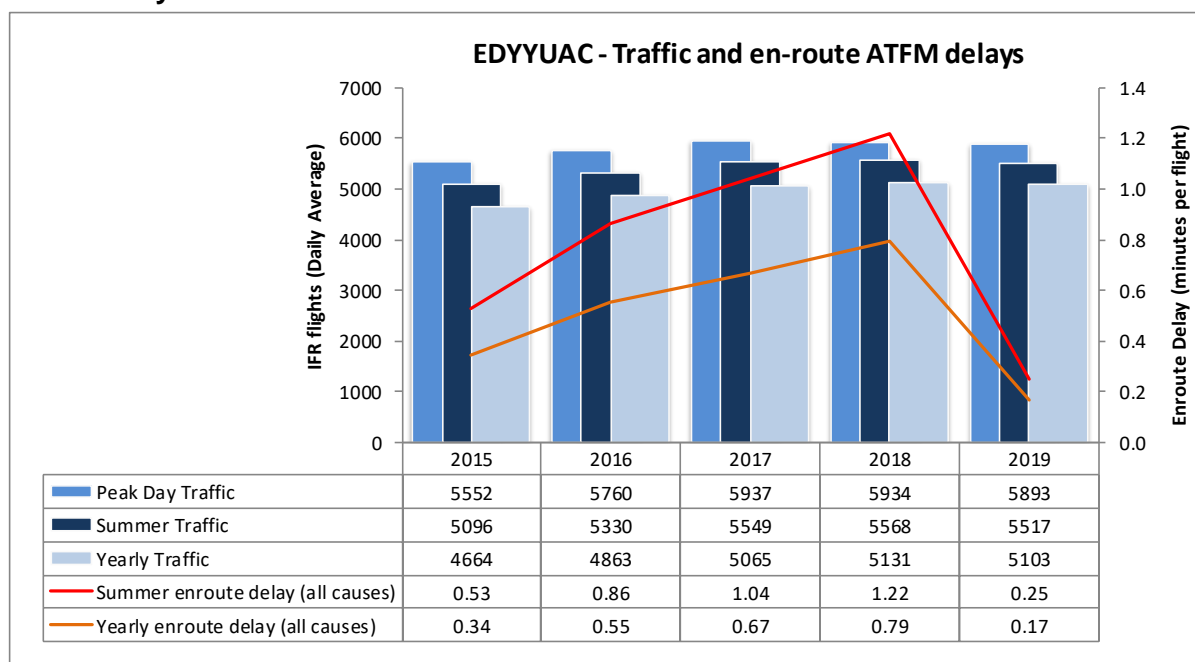
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EETTEL	1	34.4%
2019	EETTALL	1	25.9%
2019	EETTE	0	16.6%
2019	EETWLF	0	14.8%
2019	EETTFED	0	8.4%



13. EUROCONTROL - MAASTRICHT ACC

Traffic & Delay



2019 Realisation of Capacity Plan

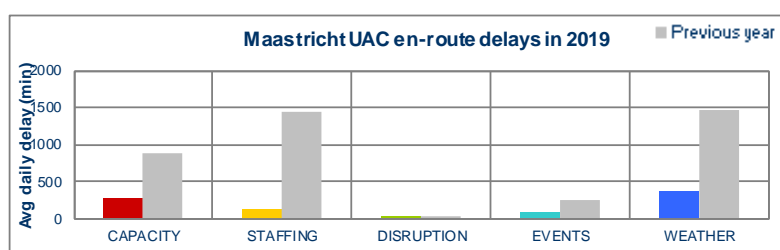
Maastricht UAC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.5%	No significant impact	-0.5%	0.17	0.17			
Summer	B: 2.9%		-0.9%	0.25		332 (+1%)	340 (+3%)	No
Summer 2019 performance assessment								
The average en-route delay per flight decreased from 1.22 minutes per flight in Summer 2018 to 0.25 minutes per flight in Summer 2019. 50% of the Summer delays were for the reason Weather, 33% for the reason ATC Capacity, 11% for ATC Staffing, 3% for Airspace Management, and 2% for Other.								
The capacity baseline was measured with ACCESS/Reverse CASA at 340. During the same period, the peak 3 hour demand was 329 and the peak 1 hour was 346.								
Operational actions					Achieved	Comments		
FRAM2 Phase 2: FRA during night and weekend					Yes			
Cross-border FRAMUAC – Copenhagen ACC					Yes			
Dynamic FUA Implementation above FL365					Ongoing	Phase I implemented before summer 2019		
Trial EDTRA 302/305					Yes			
Change from CDR to Area Restriction in EH airspace					Yes			
Improved ATFCM including STAM					Yes			
Trial AAPF (Advanced ATC Planning Function)					Yes	Trial performed during first months of summer 2019. Ongoing analyses to determine follow-up.		
Customer Initiative					Yes			
UK interface improvements (AD4)					Yes			
NORD Boundary Change					Yes			
Military to Civil Cross training of ATCOs					Yes	First ATCOs endorsed.		
New ATCOs to compensate departures (At maximum training capacity)					Yes			
MUSE (Optimised training)					Yes			
Increased usage in operations of CPDLC					Yes			
Stepped implementation of XMAN (possible negative impact on capacity)					Yes	No impact on MUAC capacity		
RDF					Yes			
Maximum configuration: BRU 5/6, DECO 4/5, HANN 5/6					Yes	BRU: 6 DECO: 6 HANN: 7		

NETWORK OPERATIONS REPORT – 2019

Remedial measures	Achieved	Comments
Continued effort to increase staffing	Yes	
Continued alignment of traffic demand and sector opening times at sector group level	Yes	
Implementation of the eNM/ANSPs proposed measures	Yes	Most of the MUAC measures cancelled during first AIRAC, as not required
Improved and harmonise ASM	Yes	
Reduced complexity by the exclusion of short duration high workload flights	Yes	
Complete restructuring of MUAC airspace through cross border sectorisation	No	Waiting for the impact analysis of the FRA H24 implementation (Implemented on 5 th December 2019)
FABEC airspace restructuring project	No	Ongoing, to be aligned with the European Airspace Re-structuring project

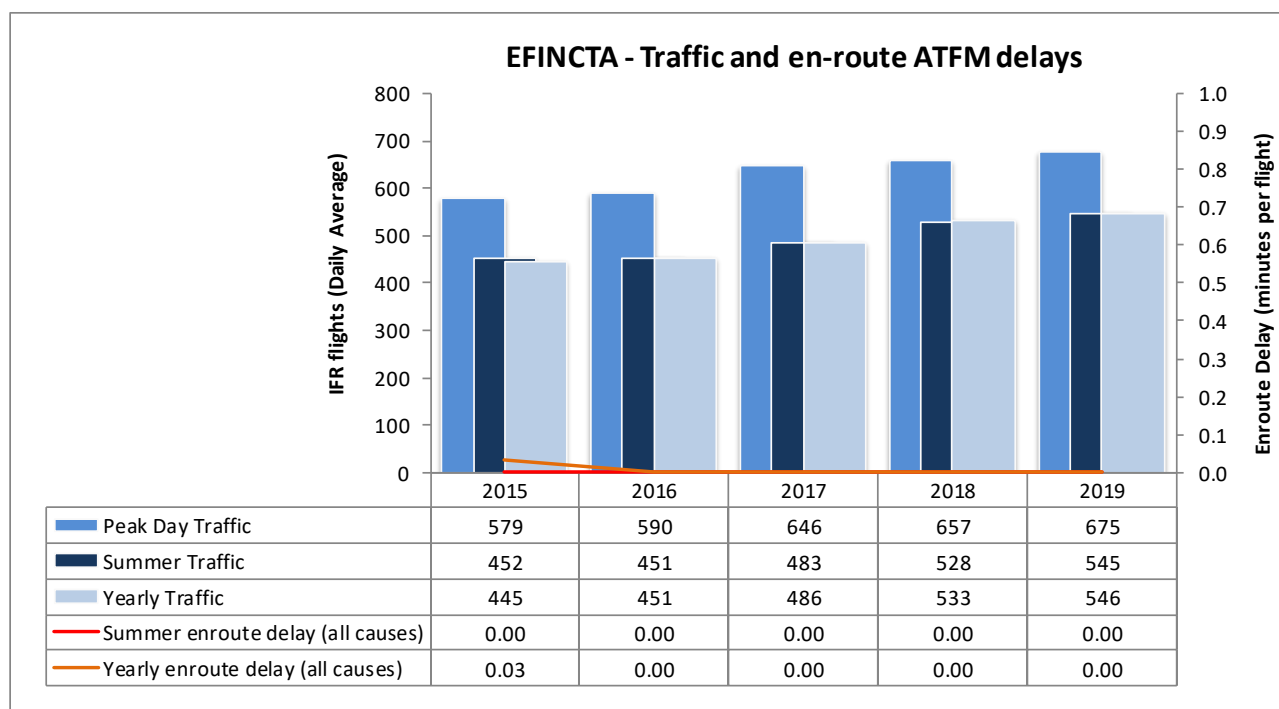
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EDYYBOLN	188	21.7%
2019	EDYYB3EH	91	10.5%
2019	EDYYD3WLC	71	8.2%
2019	EDYYB5WL	58	6.7%
2019	EDYYB3LL	55	6.3%
2019	EDYYD6WH	44	5.1%



14. FINLAND - HELSINKI ACC

Traffic & Delay

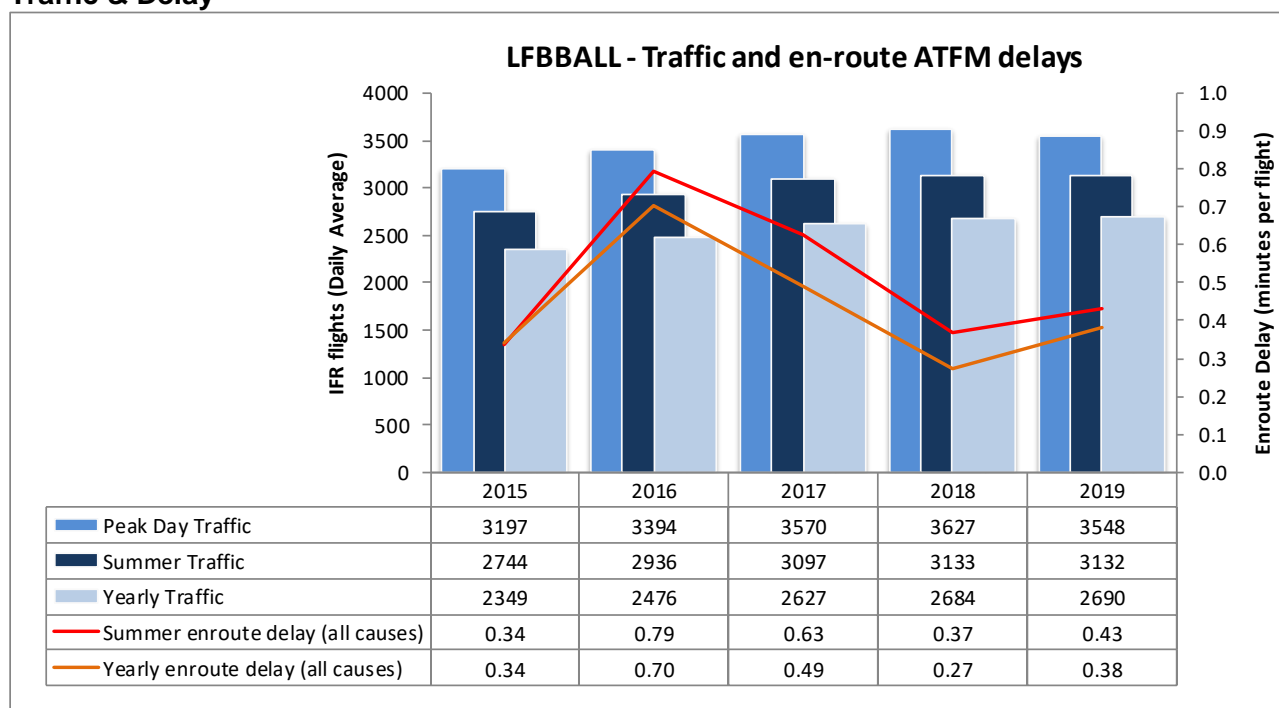


2019 Realisation of Capacity Plan

Helsinki EFINCTA	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 4.3% B: 4.0% L: 2.7%	No significant impact	+2.5%	0.00	0.09			
Summer			+3.2%	0.00		Sufficient	58 (+0%)	No
Summer 2019 performance assessment								
The average en-route delay per remained at zero minutes per flight in Summer 2019.								
The capacity baseline was estimated at the same level as last year. During the measured period, the average peak 1 hour demand was 49 and the average peak 3 hour demand was 42.								
Operational actions				Achieved	Comments			
LARA tool planned implementation Apr.2019				No	Implementation April 2020			
Airspace re-design AIRAC April 2019, 1 new sector				Yes	Sector V			
B2B applications development ongoing				Yes				
DAPS implementation Q2				No	Implementation April 2020 (linked to WAM implementation)			
WAM implementation Q3				No	Implementation April 2020 (delay due to change of service provider)			
Maximum configuration: 5 sectors				Not required	4 sectors were sufficient			

15. FRANCE - BORDEAUX ACC

Traffic & Delay



2019 Realisation of Capacity Plan

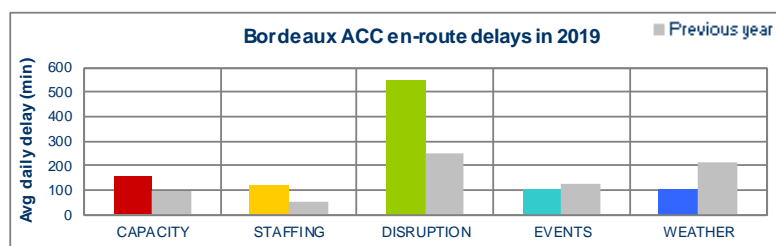
Bordeaux ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.6%	No significant impact	+0.3%	0.38	0.12			
Summer	B: 3.0% L: 1.7%		0.0%	0.43		210 (-2%)	215 (+0%)	Yes
Summer 2019 performance assessment								
<p>The average en-route delay per flight increased from 0.37 minutes per flight in Summer 2018 to 0.43 minutes per flight during the same period in 2019.</p> <p>23% of the Summer delays were due Industrial action, 21% due to ATC Capacity, 14% due to Weather, 14% due to ATC equipment, 13% due to ATC staffing, and 13% due to Special events.</p> <p>The ACC capacity baseline was assessed with ACCESS/Reverse CASA to be at 215. During the measured period, the average peak 1 hour demand was 218 and the average peak 3 hour demand was 207.</p>								
Operational actions				Achieved	Comments			
Improved Airspace Management / FUA				Yes	FUA with TRA10			
Improved ATFCM Procedures and STAM				Yes				
CDM processes and procedures				Yes	Use of CAP			
MAC + eNM				Yes				
LFBB/LEBL interface				Yes	Natpi agreement 25 th April			
LoAs between LFBB/LEBL				Yes				
Flexible roster				Yes	Improved the 6pm daily capacity			
FOC (datalink)				Yes	Implemented in march			
SALTO (ATFCM tool)				Yes	V4 before summer, V5 after summer with B2B configurations sharing			
Re-evaluation of sector capacities				Yes	Sectors P and T			
Maximum configuration: 18 UCESO				Yes				
Remedial measures				Achieved	Comments			
Continuous monitoring of the traffic evolution				Yes				
Implementation of airspace changes proposals				Yes				
Flexible rostering allowing better alignment between traffic demand and sector opening times				Yes	Improved the 6pm daily capacity			

NETWORK OPERATIONS REPORT – 2019

Flexible configurations opening, according to the traffic flows	Yes	
Improved ATFCM techniques	Yes	
Evaluation of possible ATFM scenarios	Yes	
Adaptation of the ATCO recruitment levels	Yes	At national level
Implementation of the eNM/ANSPs proposed measures	Yes	
FABEC airspace restructuring project	Yes	Contributor
France/Spain airspace restructuring project	Yes	NATPI agreement

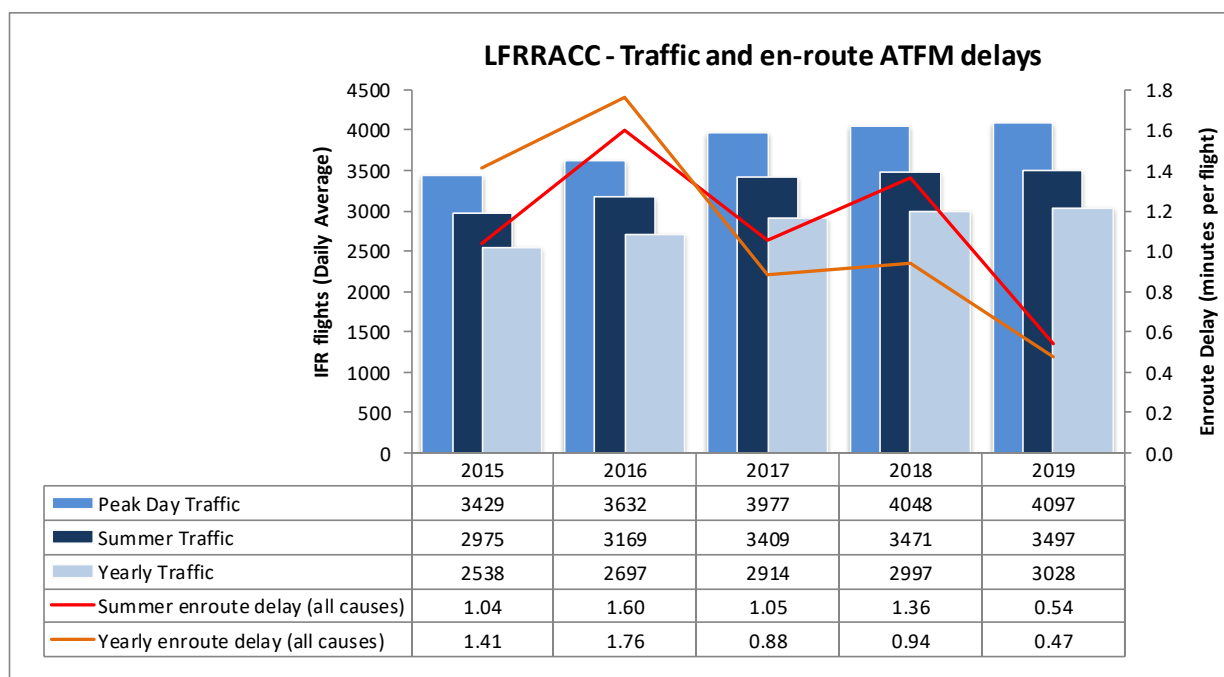
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LFBBPT	108	10.5%
2019	LFBOTMA	106	10.4%
2019	LFBBUS34	89	8.7%
2019	LFBBX4	59	5.8%
2019	LFBBR4	56	5.5%
2019	LFBBZX12	42	4.1%



16. FRANCE - BREST ACC

Traffic & Delay



2019 Realisation of Capacity Plan

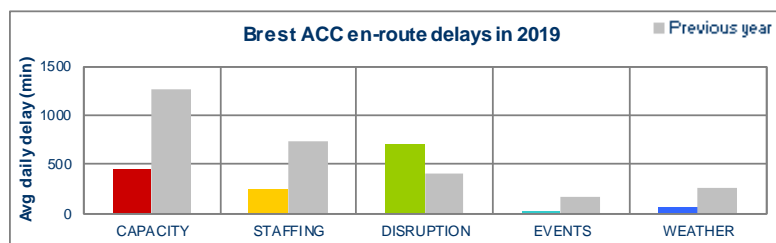
Brest ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 4.2%	No significant impact	+1.0%	0.47	0.11			
Summer	B: 3.6% L: 2.1%		+0.7%	0.54		223 (+0%)	234 (+5%)	Yes
Summer 2019 performance assessment								
<p>The average en-route delay decreased from 1.36 minutes per flight in Summer 2018 to 0.54 minutes per flight in 2019. 42% of the Summer delays were due to the reason ATC Capacity, 19% due to Equipment, 16% due to ATC Staffing, 16% due to Industrial Actions and 5% due to Weather.</p> <p>The ACC capacity baseline was measured with ACCESS/Reverse CASA at 234. During the measured period, the average peak 1 hour demand was 258 and the average peak 3 hour demand was 229.</p>								
Operational actions				Achieved	Comments			
Improved airspace management / FUA				Yes				
Improvement of ATFCM procedures and STAM				Yes	FMP team enlarged/reinforced			
CDM processes and procedures				Yes				
MAC + eNM				Yes				
Reorganisation of airspace below FL195				No	Scheduled AIRAC 04/20 (phase 1)			
Flexible roster				Yes	Capacity increased in the evening			
SALTO				Yes	V5 end 2019 (after summer)			
FOC (datalink)				Yes	Fully deployed			
Maximum configuration: 17 UCESO				Yes	17 sectors were opened			
Remedial measures				Achieved	Comments			
Continuous monitoring of the traffic evolution				Yes				
Implementation of airspace changes proposals				Yes				
Flexible rostering allowing better alignment between traffic demand and sector opening times				Yes	Close monitoring possible due extra FMP staff available in ops room – notably in the evening			
Flexible configurations opening, according to the traffic flows				Yes	Cf above			

NETWORK OPERATIONS REPORT – 2019

Improved ATFCM techniques	Yes	
Evaluation of possible ATFM scenarios	Yes	
Adaptation of the ATCO recruitment levels	Yes	National process
Implementation of the eNM/ANSPs proposed measures	Yes	
FABEC airspace restructuring project	Yes	Contributor
France/Spain airspace restructuring project	Ongoing	Talks still on-going

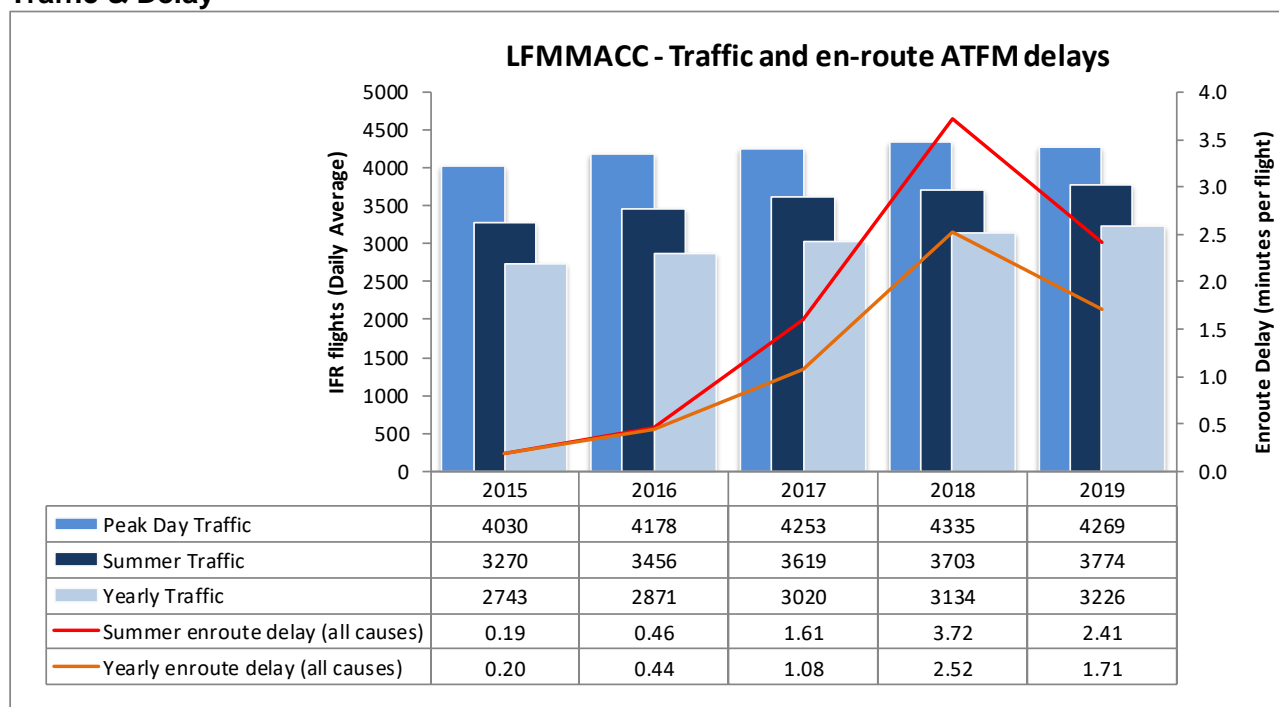
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LFRRNGA	132	9.3%
2019	LFRRMZ	88	6.1%
2019	LFRRMZU	83	5.8%
2019	LFRRMZS	78	5.4%
2019	LFRRQXU	76	5.4%
2019	LFRRGA	67	4.7%



17. FRANCE - MARSEILLE ACC

Traffic & Delay



2019 Realisation of Capacity Plan

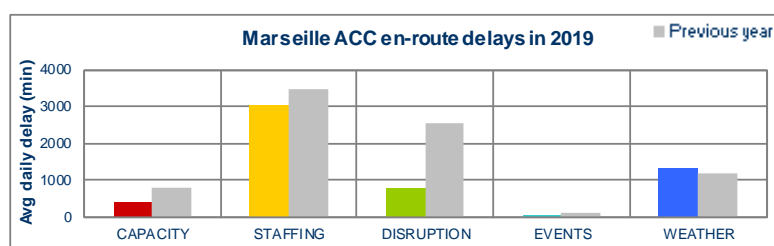
Marseille ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 4.9%	+5%	+2.9%	1.71	0.15			
Summer	B: 4.4% L: 3.2%		+1.9%	2.41		222 (-2%)	247 (+9%)	Yes
Summer 2019 performance assessment								
<p>The average en-route delay decreased from 3.72 minutes per flight in Summer 2018 to 2.41 minutes per flight in Summer 2019. 57% of the Summer delays were due to the reason ATC Staffing, 28% due to Weather, 7% due to ATC capacity, 5% due to Industrial Action, and 3% due to Equipment.</p> <p>The ACC capacity baseline was assessed with ACCESS / Reverse CASA to be at 247. During the measured period, the average peak 1 hour demand was 271 and the average peak 3 hour demand was 258.</p>								
Operational actions				Achieved	Comments			
Improved airspace management / FUA				Yes	LFTRA42S			
Airspace management procedures for D54 during Summer season				Yes	Normal procedures applied			
Improvement of ATFCM procedures and STAM				Yes				
CDM Processes and procedures				Yes				
MAC + eNM				Yes				
Improvement of cooperative traffic management during strong weather episodes on airports				Yes	Cooperation to be enhanced in 2020 with other ACCs and military ANSPs			
DFL changes in WW and MM sectors				No	Not needed anymore			
Improvement of FMP roster				No	Postponed to 2020			
New seasonal roster				Yes	Improvement of mi-season rostering and HR punctual improvement			
Improvement of radar and radio coverage in Mediterranean Sea				Yes				
Improvement of safety net				Yes				
SALTO				Yes	V4 before summer, V5 after summer with B2B configurations sharing			
Maximum configuration: 26 UCESO (13+13)				Yes	27 sectors were open			

NETWORK OPERATIONS REPORT – 2019

Remedial measures	Achieved	Comments
Continuous monitoring of the traffic evolution	Yes	
Implementation of airspace changes proposals	Yes	
Flexible rostering allowing better alignment between traffic demand and sector opening times	On-going	Improvement of seasonal rostering implemented in 2019.
Flexible configurations opening, according to the traffic flows	Yes	
Improved ATFCM techniques	Yes	
Evaluation of possible ATFM scenarios	Yes	
Adaptation of the ATCO recruitment levels	Yes	At national level
Implementation of the eNM/ANSPs proposed measures	Yes	
FABEC airspace restructuring project	Yes	Contributor
France/Spain airspace restructuring project	On-going	works on-going

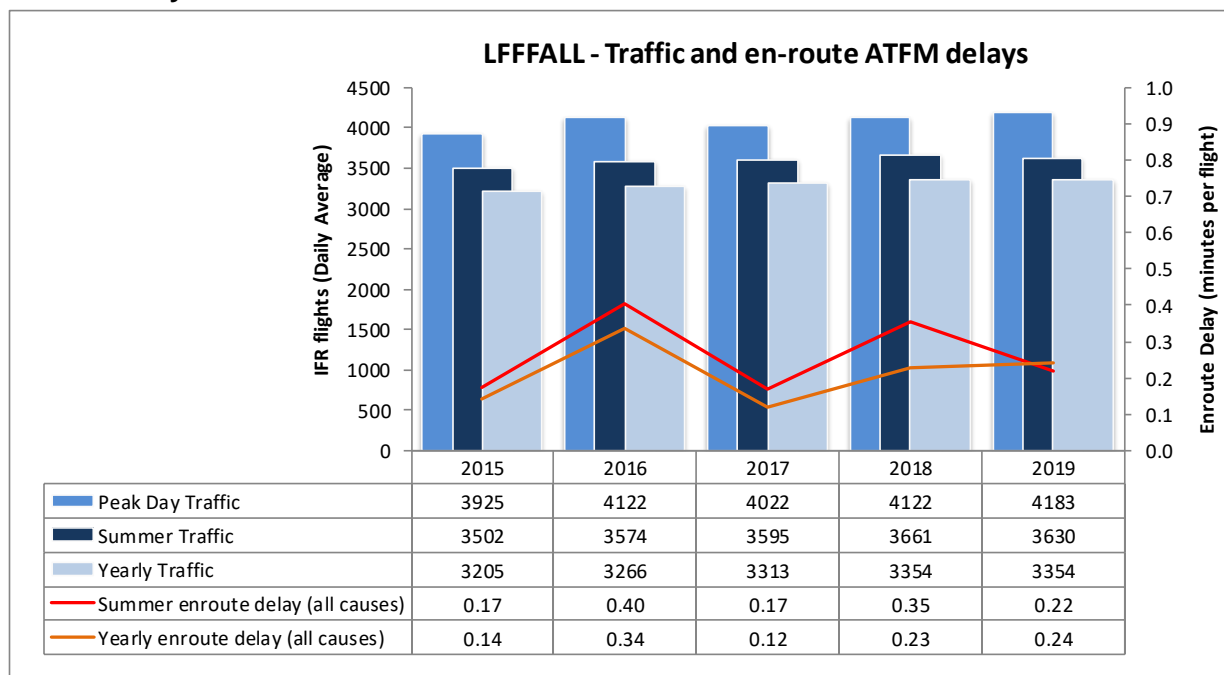
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LFMMRAW	466	8.4%
2019	LFMMGY	313	5.7%
2019	LFMMMF	302	5.5%
2019	LFMMEK12	254	4.6%
2019	LFMMB12	249	4.5%
2019	LFMMGY12	228	4.1%



18. FRANCE - PARIS ACC

Traffic & Delay



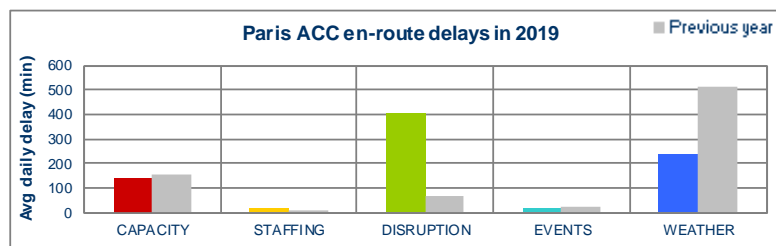
2019 Realisation of Capacity Plan

2019 Reconciliation of Capacity Plan								
Paris ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 1.7% B: 1.2%	No significant impact	0.0%	0.24	0.14			
Summer	L: 0.4%		-0.8%	0.22		291 (+1%)	288 (+0%)	No
Summer 2019 performance assessment								
<p>The average en-route delay decreased from 0.35 minutes per flight in Summer 2018 to 0.22 minutes per flight in 2019. 55% of the Summer delays were due to the reason Weather, 20% due to ATC Capacity, 9% due to Industrial Action, and 8% due to Equipment.</p> <p>The ACC capacity baseline was assessed with ACCESS to be at 288, same level as in Summer 2018. During the measured period, the average peak 1 hour demand was 276 and the average peak 3 hour demand was 253.</p>								
Operational actions				Achieved	Comments			
Improved airspace management / FUA				Yes	FUA restrictions			
xStream operational trials				Yes	Successful trials			
Improved ATFCM procedures and STAM / GF project				Yes				
CDM Processes and procedures				Yes	Contribution to handle traffic during LFPO runway works			
MAC + eNM				Yes				
Reorganisation of lower airspace and delegation of ATS to APP units below FL115 (South of FIR)				No	Project suspended at national level			
Gradual roster improvements				Yes	Roster changed on 1 st April 2019 and adjusted on 1 st January 2020			
SALTO				Yes	V5 end of 2019 (after summer)			
Maximum configuration: 16 UCESO (8+8)				Yes	20 sectors opened			

NETWORK OPERATIONS REPORT – 2019

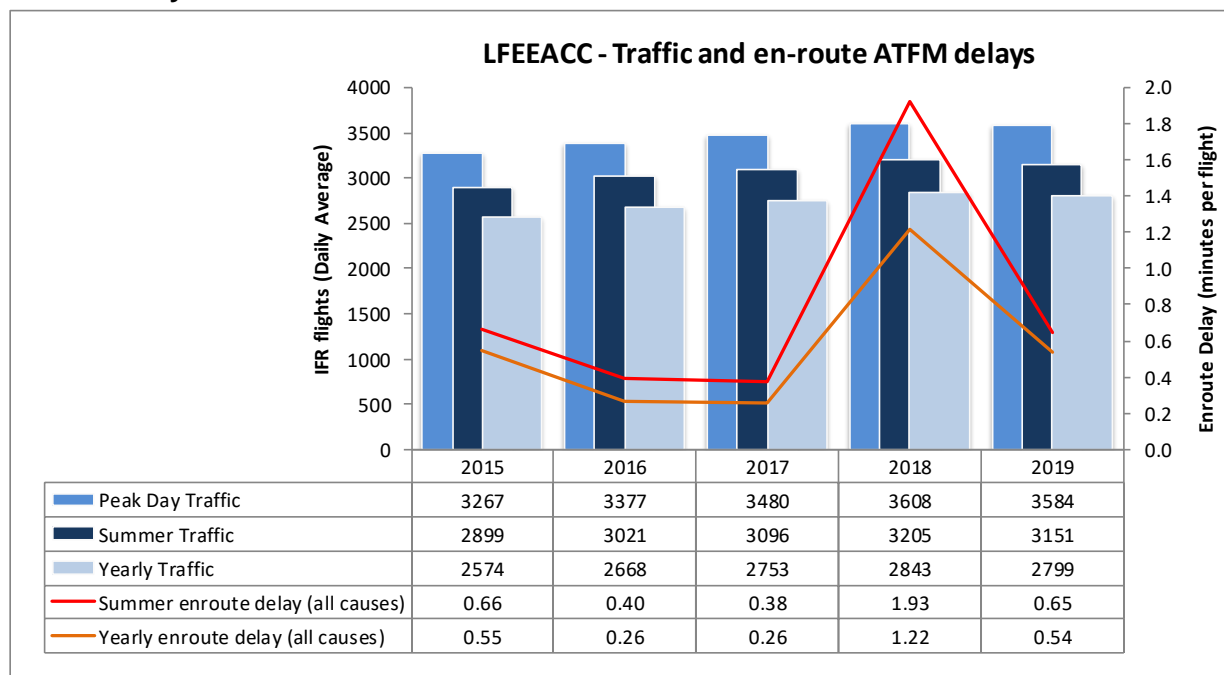
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LFFFHPKZ	88	10.9%
2019	LFFFUJ	85	10.6%
2019	LFFFTNTB	65	8.0%
2019	LFFFTE	64	8.0%
2019	LFFFLEMHJ	54	6.7%
2019	LFFFAENB	53	6.5%



19. FRANCE - REIMS ACC

Traffic & Delay



2019 Realisation of Capacity Plan

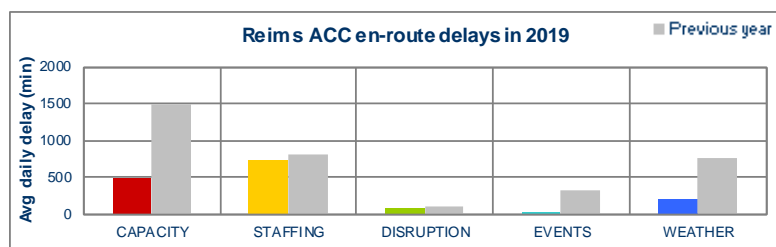
Reims ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.2% B: 2.6% L: 1.3%	No significant impact	-1.6%	0.54	0.17			
Summer			-1.7%	0.65		198 (-3%)	207 (+1%)	Yes
Summer 2019 performance assessment								
<p>The average en-route delay decreased from 1.93 minutes per flight in Summer 2018 to 0.65 minutes per flight in Summer 2019. 47% of the Summer delays were due to Staffing, 31% due to ATC Capacity, and 18% due to Weather.</p> <p>The ACC capacity baseline was measured with ACCESS/Reverse CASA at 207. During the measured period, the average peak 1 hour demand was 222 and the average peak 3 hour demand was 205.</p>								
Operational actions				Achieved	Comments			
Improved airspace management / FUA				Yes	FUA with TSA200 and TRA22			
FABEC XMAN (EGKK, EHAM)				Yes	XMAN EHAM postpone to 2021			
Improved ATFCM procedures and STAM				Yes				
CDM Processes and procedures				Yes	CAP			
MAC +eNM				Yes				
Flexible rostering				Yes	Extra shift from mid-April to mid-October			
SALTO				Yes	V5 end 2019 (after summer)			
Improvement of safety net				Yes	PC STCA implemented in January 2019.			
Maximum configuration: 16 UCESO				Yes	18 sectors were open			
Remedial measures				Achieved	Comments			
Continuous monitoring of the traffic evolution				Yes				
Implementation of airspace changes proposals				Yes				
Flexible rostering allowing better alignment between traffic demand and sector opening times				Yes				
Flexible configurations opening, according to the traffic flows				Yes				
Improved ATFCM techniques				Yes				
Evaluation of possible ATFM scenarios				Yes				

NETWORK OPERATIONS REPORT – 2019

Adaptation of the ATCO recruitment levels	Yes	At national level
Implementation of the eNM/ANSPs proposed measures	Yes	
FABEC airspace restructuring project	Yes	Contributor

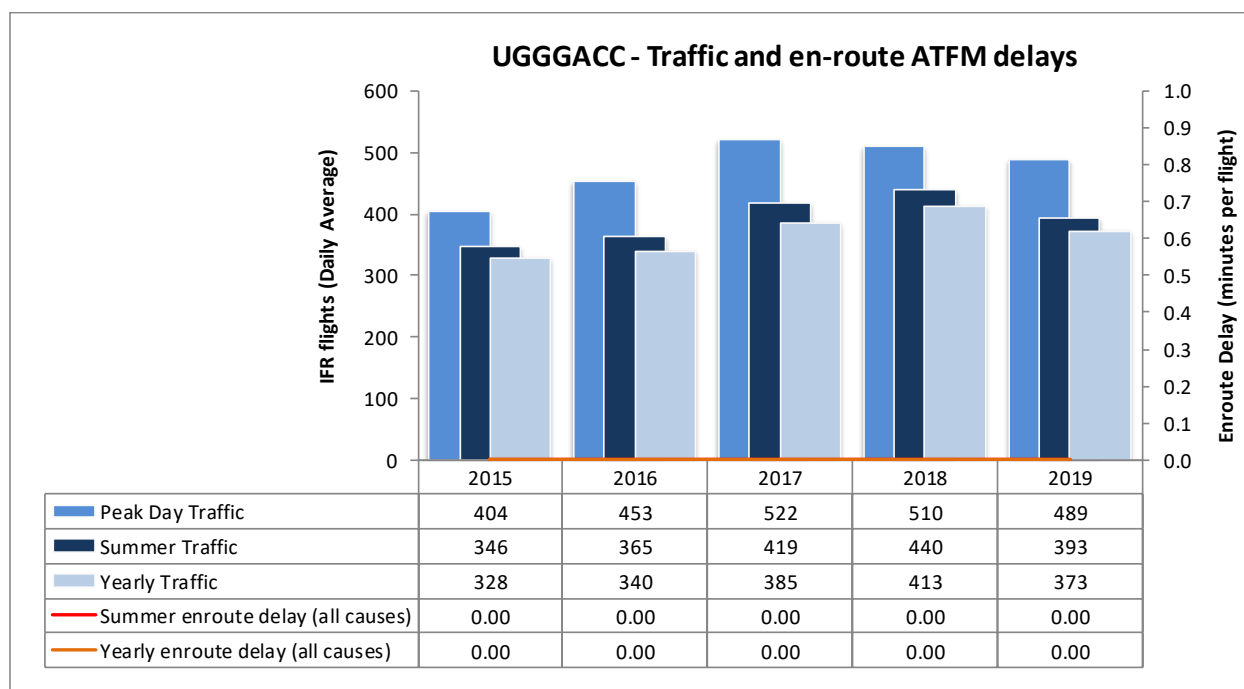
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LFEE4H	226	14.9%
2019	LFEE4E	213	14.1%
2019	LFEE5R	190	12.6%
2019	LFEEHYR	179	11.8%
2019	LFEE4N	106	7.0%
2019	LFEEKHN	93	6.2%



20. GEORGIA - TBILISI ACC

Traffic & Delay

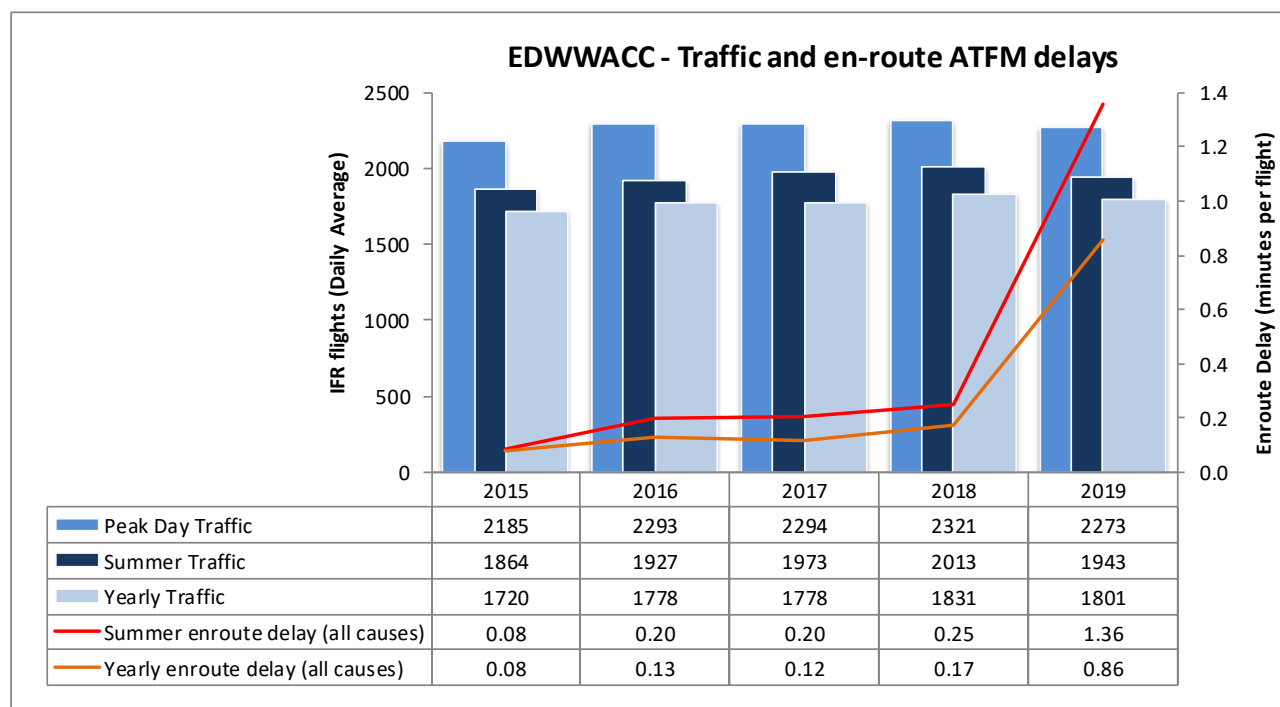


2019 Realisation of Capacity Plan

Tbilisi ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 8.1%	-6%	-9.8%	0.00	0.01	Sufficient	50 (+0%)	No
Summer	B: 7.0% L: 4.1%		-10.7%	0.00				
Summer 2019 performance assessment								
The average en-route delay per flight remained at zero in Summer 2019.								
The ACC capacity baseline was estimated to be 50. During the measured period, the average peak 1 hour demand was 26 and the average peak 3 hour demand was 20.								
Operational actions				Achieved	Comments			
FRAG implementation of the Step Two				Yes				
Enhanced ATFM techniques through cooperative traffic management				No	Process still is on planning stage.			
Further optimisation and implementation of ATS route network				Ongoing	Optimization of ATS route is a continuous process			
Implementation of two upper ACC sectors				Yes				
Implementation of RNAV1 (GNSS) for SID/STAR's				Ongoing	This project will be completed in the scope of Tbilisi TMA reorganisation by the end of 2020			
Implementation of APV LNAV/VNAV (including LNAV-only minima) at all instrument runway ends as a backup for ILS precision approaches				Ongoing	This project will be completed by the end of 2023			
Technical implementation of new ATM system				Yes				
Transfer to new ATM system				Yes				
Traffic management improvements				Yes	Monitoring of demand and capacity balance on pre-tactical and tactical phases is on active stage			
Maximum configuration: 4 sectors				Yes				

21. GERMANY - BREMEN ACC

Traffic & Delay

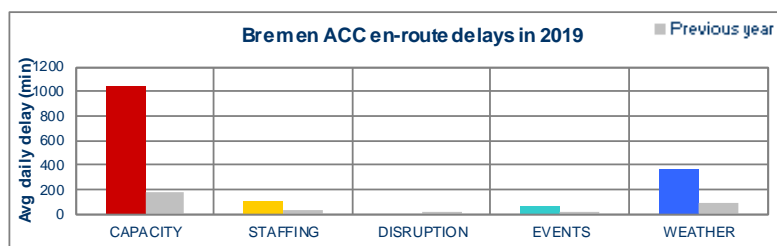


2019 Realisation of Capacity Plan

Bremen ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 4.8%	No significant impact	-1.7%	0.86	0.06			
Summer	B: 4.4%		-3.5%	1.36		149 (-1.3%)	128 (-15%)	Yes
L: 3.1%								
Summer 2019 performance assessment								
<p>The average en-route delay per flight increased from 0.25 minutes per flight in summer 2018 to 1.36 minutes per flight in summer 2019.</p> <p>67% of the summer delays were due to ATC capacity, 26% due to weather, 5% due to ATC staffing and 2% due to airspace management. The eNM/S19 RAD measures were the main cause of en-route ATFM delay due to the high traffic increase in the SF South.</p> <p>The ACC capacity baseline was assessed with ACCESS / Reverse CASA to be at 128. During the measured period, the average peak 1 hour demand was 141 and the average peak 3 hours demand was 134.</p>								
Operational actions				Achieved	Comments			
Free Route Airspace: FRA Cell EDWW East From FL245, H24 (DCT routings published in RAD)				Postponed	Implementation planned end of 2020			
AirMagic (ATFM Tool)				Yes	Partly, installation completed, calibration ongoing. Operational use from II/2020			
Maximum configuration: 11 ENR + 6 APP + 2 feeders + 2 military positions				Yes				
Remedial measures				Achieved	Comments			
Flexible configurations opening, according to the traffic flows				Yes				
Improved ATFCM techniques				Yes	Post-ops tool in the development phase and AirMagic in the final operational validation			
Evaluation of possible ATFM scenarios				Yes				
Adaptation of the ATCO recruitment levels				Yes				
Implementation of the eNM/ANSPs proposed measures				Yes				
FABEC airspace restructuring project				Yes	On-going work in the context of ADCG			

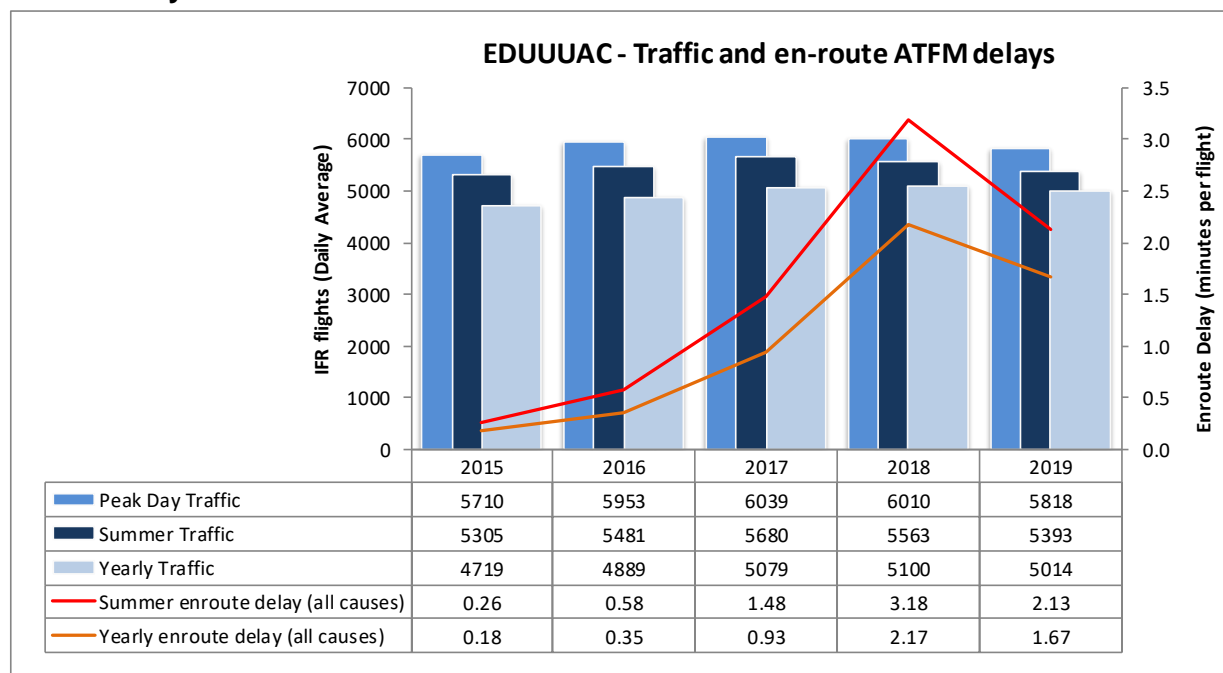
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EDWWSOUTH	751	48.5%
2019	EDWWDBAT	181	11.7%
2019	EDWWEMSC	173	11.2%
2019	EDWWDBANS	153	9.9%
2019	EDWWHRZ	60	3.9%
2019	EDWWFLG	55	3.6%



22. GERMANY - KARLSRUHE ACC

Traffic & Delay

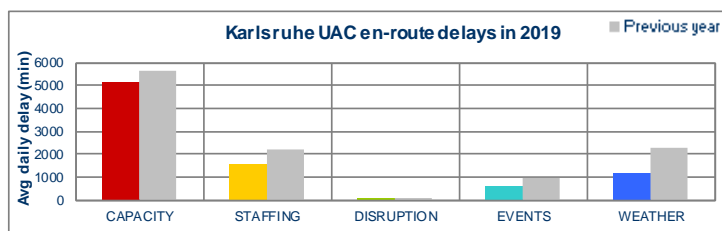


2019 Realisation of Capacity Plan

Karlsruhe ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 4.5%	+11%	-1.7%	1.67	0.26	279 (-7.9%)	299 (-1%)	Yes
Summer	B: 3.9% L: 2.1%		-3.1%	2.13				
Summer 2019 performance assessment								
<p>The average en-route delay decreased from 3.18 minutes per flight in summer 2018 to 2.13 minutes per flight in summer 2019. 58% of the summer delays were due to ATC capacity, 19% due to weather, 15% due to staffing, and 7% due to airspace management.</p> <p>The ACC capacity baseline was assessed with ACCESS / Reverse CASA to be at 299. During the measured period, the average peak 1 hour demand was 329 and the average peak 3 hours demand was 311.</p>								
Operational actions				Achieved	Comments			
Free Route Airspace: Cells EDUU Central/West/South (FL245+), H24 (DCT Routings published in RAD)				Postponed	Implementation planned end of 2020			
Link AMAN EDDL – EDUU				No	No operational benefit identified; therefore no implementation planned			
Long-term recruitment plan				Yes	On-going recruitment as planned			
Maximum configuration: 24ENR – potentially available: 43ENR				Yes	29 sectors were opened			
Remedial measures				Achieved	Comments			
Improved ATFCM techniques				Yes				
Continuous monitoring of the traffic evolution and realignment of the traffic flows in Germany				Yes				
Development of mitigation measures for the staffing issues in Karlsruhe				Yes				
Adaptation of the ATCO recruitment levels				Yes				
Implementation of the eNM/ANSPs proposed measures				Yes				
FABEC airspace restructuring project				Yes	On-going work in the context of ADCG			

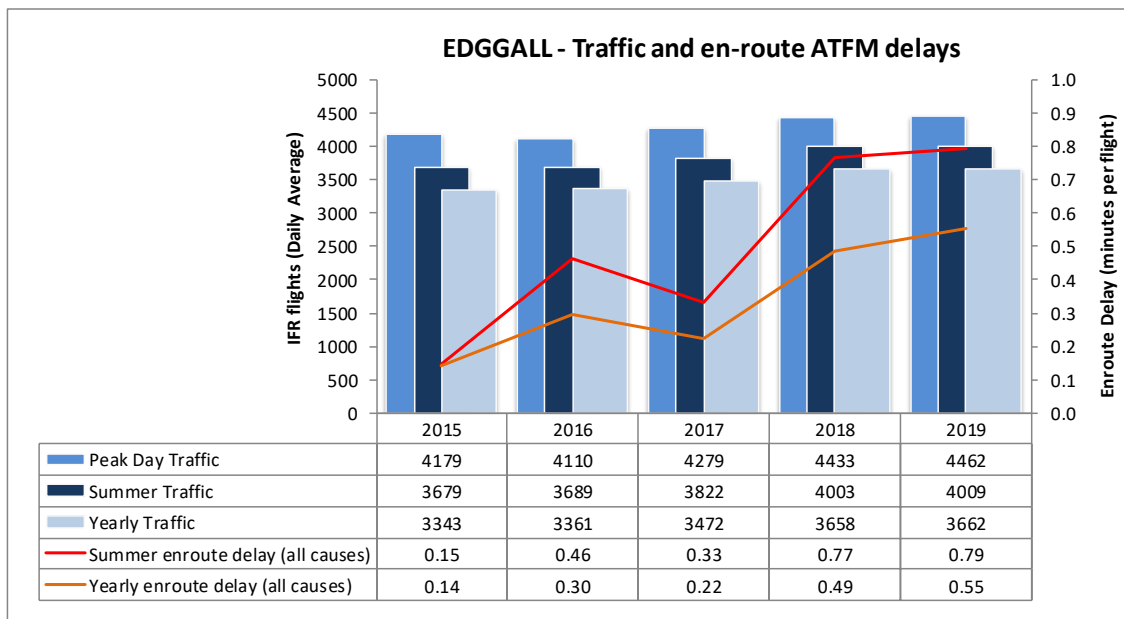
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EDUWUR1C	833	9.9%
2019	EDUWUR3C	736	8.8%
2019	EDUUDON1D	629	7.5%
2019	EDUUFUL1U	520	6.2%
2019	EDUUFFM1C	478	5.7%
2019	EDUUALP1L	463	5.5%



23. GERMANY - LANGEN ACC

Traffic & Delay

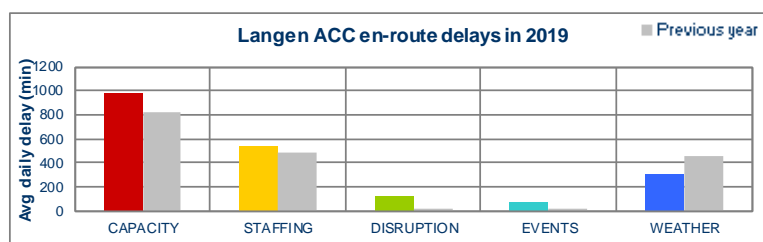


2019 Realisation of Capacity Plan

Langen ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.1%	No significant impact	+0.1%	0.55	0.23			
Summer	B: 2.5%		+0.2%	0.79		245 (-2.0%)	251 (+0%)	Yes
Summer 2019 performance assessment								
<p>The average en-route delay slightly increased from 0.77 minutes per flight in summer 2018 to 0.79 minutes per flight in summer 2019.</p> <p>52% of the summer delays were due to the reason ATC capacity, 25% due to ATC staffing, 19% due to weather, and 3% due to airspace management.</p> <p>The ACC capacity baseline was measured with ACCESS / Reverse CASA at 251. During the measured period, the average peak 1 hour demand was 270 and the average peak 3 hours demand was 259.</p>								
Operational actions				Achieved	Comments			
XMAN DUS Link AMAN EDDL – EDYY and EDUU				No	No operational benefit identified; no positive CBA and therefore no implementation planned			
XMAN FRA Link AMAN EDDF – EDYY				On-going	Further technical aspects to be addressed; planned for Q4 2020.			
High Transition Operations (HTO) - Phases 1, 2 and 3a				On-going	Phase 2a is planned for the end of 2020; phase 3a, for August 2020.			
Langen 2.0: SF05 and SF10				Yes				
Night Transitions Cologne				Yes				
Maximum configuration: 19 ENR + 9 APP + 5 feeders + 2 military positions				Yes				
Remedial measures				Achieved	Comments			
Improved ATFCM techniques				Yes				
Continuous monitoring of the traffic evolution and realignment of the traffic flows in Germany				Yes				
Adaptation of the ATCO recruitment levels				Yes				
Implementation of the eNM/ANSPs proposed measures				Yes				
FABEC airspace restructuring project				Yes	On-going work in the context of ADCG			

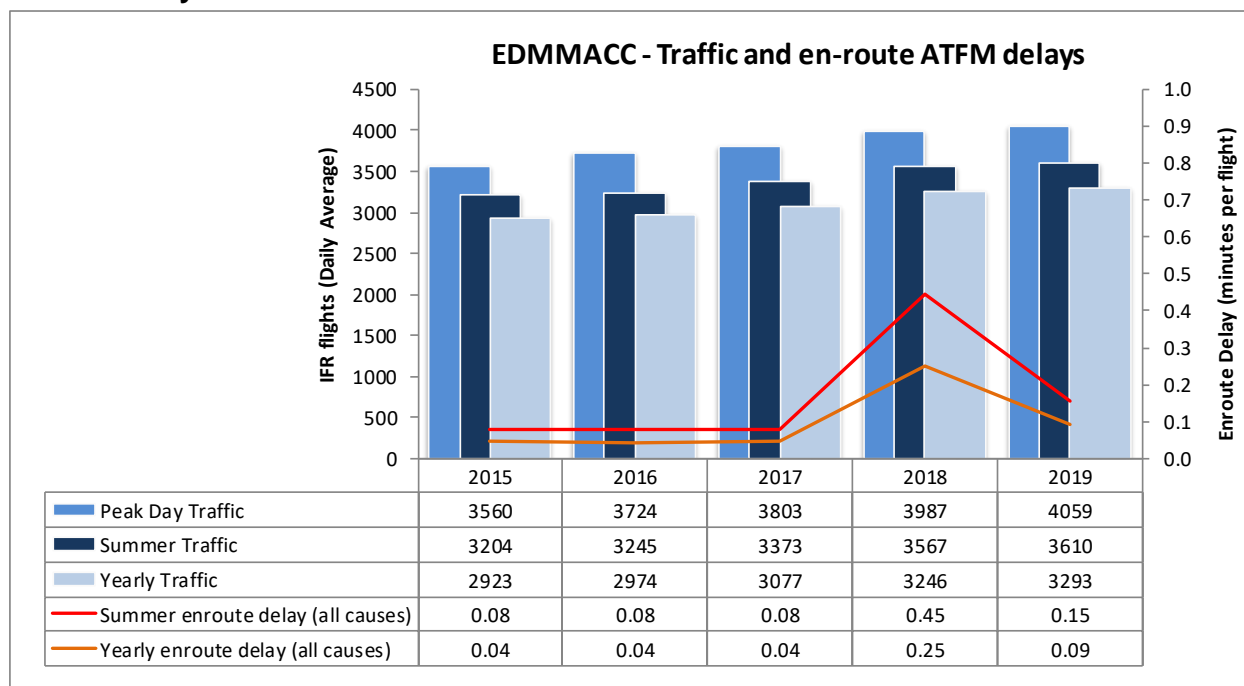
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EDGGKOD	329	16.3%
2019	EDGGKIHA	219	10.8%
2019	EDGG7	195	9.7%
2019	EDGGSITA	162	8.0%
2019	EDGGGIN	112	5.5%
2019	EDGGADS	111	5.5%



24. GERMANY - MUNICH ACC

Traffic & Delay

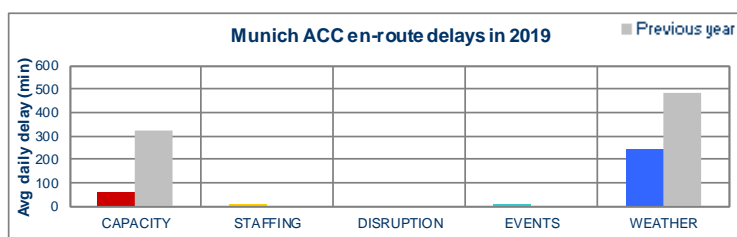


2019 Realisation of Capacity Plan

Munich ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.5%	No significant impact	+1.5%	0.09	0.20			
Summer	B: 3.0% L: 1.5%		+1.2%	0.15		264 (+2%)	264 (+2%)	No
Summer 2019 performance assessment								
The average en-route delay decreased from 0.45 minutes per flight in summer 2018 to 0.15 minutes per flight in summer 2019. 85% of the delays were due to the reason weather, 14% due to ATC capacity and 1% due to ATC staffing. The ACC capacity baseline was assessed with ACCESS to be at 264. During the measured period, the average peak 1 hour demand was 251 and the average peak 3 hours demand was 236.								
Operational actions				Achieved	Comments			
Free Route Airspace: FRA Cell EDMM South From FL245, H24 (DCT routings published in RAD)				Yes	Implemented in December 2019			
Link AMAN EDDM – LIPP				No	Planned for end of 2021			
"Enlarged Sector Groups" (3 SFs)				On-going	Cross-training lasting until 2024			
Sector Split: Tegernsee				Yes	Implemented in April 2019			
Maximum configuration: 16 ENR + 4 APP + 2 feeders				Yes				

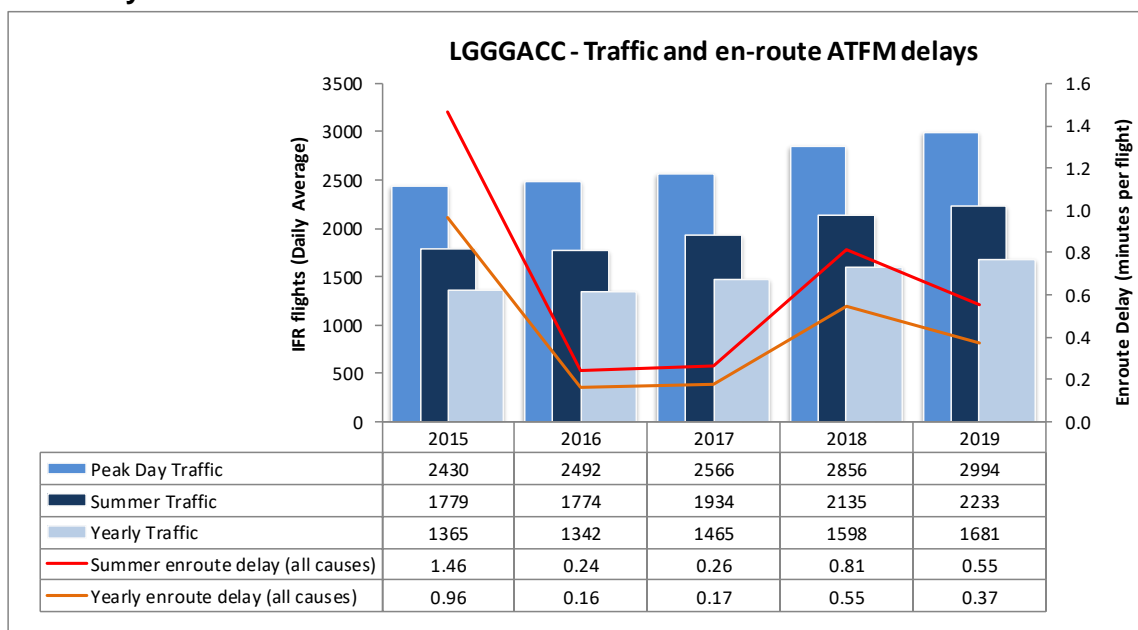
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EDMMHOB	81	27.2%
2019	EDMMCN2	46	15.5%
2019	EDMMZUS	34	11.4%
2019	EDMMCS2	27	9.2%
2019	EDMMRDEG	24	8.0%
2019	EDMMHAG	17	5.8%



25. GREECE - ATHENS ACC

Traffic & Delay



2019 Realisation of Capacity Plan

Athens ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 7.8%	No significant impact	+5.1%	0.37	0.18			
Summer	B: 6.7% L: 4.8%		+4.6%	0.55		147 (+5%)	152 (+9%)	Yes

The average en-route delay per flight decreased from 0.81 minutes per flight in Summer 2018 to 0.55 minutes per flight in Summer 2019. 89% of the Summer delays were due to the reason ATC Staffing, 9% due to ATC capacity, and 2% due to Equipment.

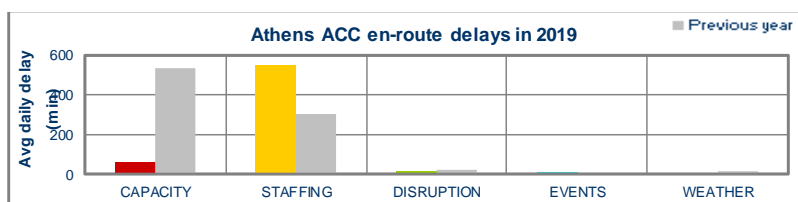
The ACC capacity baseline was measured with ACCESS/Reverse CASA at 152. During the measured period, the average peak 1 hour demand was 158 and the average peak 3 hour demand was 143.

Operational actions	Achieved	Comments
Stepped implementation of FRA	Yes	
Improved civil/military coordination	Yes	
Stepped Implementation of LARA	Yes	
PBN/SBAS procedures (Thessaloniki, Kos, Ioannina, Mytilini, Santorini, Mikonos)	Yes	
Improved ATFCM, including STAM	Yes	
Improved ATS route network and airspace management	Yes	
Lower airspace reorganisation/resectorisation project	Yes	On-going
33 additional ATCOs (25 en-route+8 airport)	Yes	21 en-route + 4 TMA + 21 airport
Maximum configuration: 8 sectors	Yes	8 sectors open
Remedial measures	Achieved	Comments
Intensive recruitment to be continued	Yes	
Implementation of a new ATM system	Yes	Technical documentation finalised, official call for tender yet to be launched in 2020

NETWORK OPERATIONS REPORT – 2019

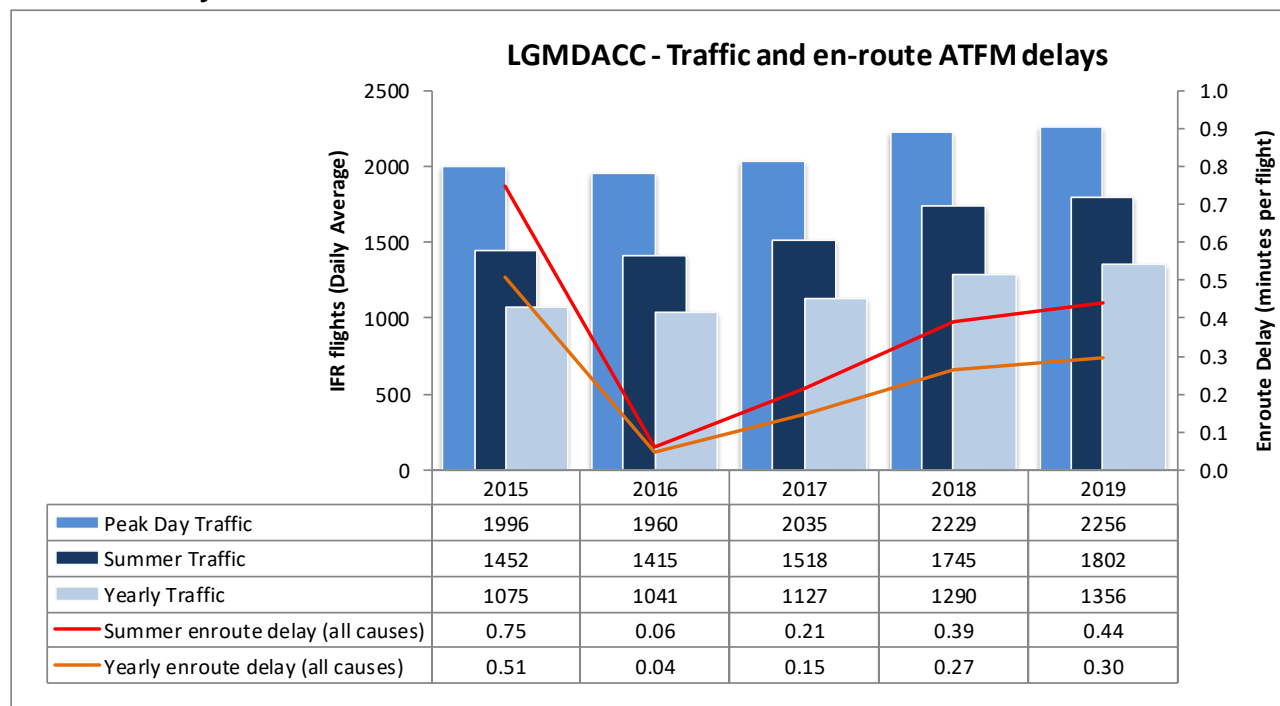
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LGGGRDS	231	36.9%
2019	LGGGMIL	203	32.4%
2019	LGGGKFPL	89	14.1%
2019	LGGGKRK	23	3.7%
2019	LGGGW	23	3.7%
2019	LGGGRDSL	14	2.2%



26. GREECE - MAKEDONIA ACC

Traffic & Delay



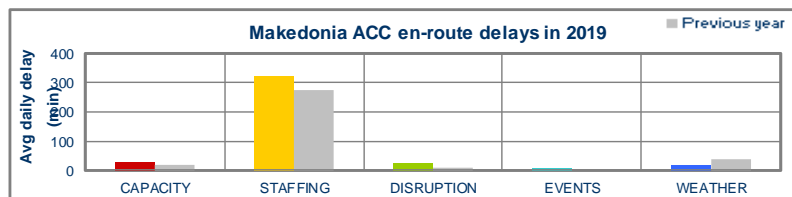
2019 Realisation of Capacity Plan

Makedonia ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 7.5%	-5%	+5.1%	0.30	0.15			
Summer	B: 5.9% L: 3.5%		+3.3%	0.44		120 (+5%)	121 (+6%)	Yes
Summer 2019 performance assessment								
<p>The average en-route delay increased from 0.39 minutes per flight in Summer 2018 to 0.44 minutes per flight in Summer 2019. 81% of the Summer delays were due to the reason of ATC staffing, 7% due ATC capacity, 6% due to Equipment, 4% due to Weather and 2% due to Airspace management.</p> <p>The ACC capacity baseline was measured with ACCESS/Reverse CASA at 121. During the measured period, the average peak 1 hour demand was 117 and the average peak 3 hour demand was 107.</p>								
Operational actions				Achieved	Comments			
Stepped implementation of FRA				Yes				
Improved civil/military coordination				Yes				
Stepped Implementation of LARA				Yes				
PBN/SBAS procedures (Thessaloniki, Kos, Ioannina, Mytilini, Santorini, Mikonos)				Yes				
Improved ATFCM, including STAM				Yes				
Improved ATS route network and airspace management				Yes				
Lower airspace reorganisation/resectorisation project				Yes	On-going			
33 additional ATCOs (25 en-route+8 airport)				Yes	21 en-route + 4 TMA + 21 airport			
Maximum configuration: 5 sectors				Yes	5 sectors were open			
Remedial measures				Achieved	Comments			
Intensive recruitment to be continued				Yes				
Implementation of a new ATM system				Yes	Technical documentation finalised, official call for tender yet to be launched in 2020			

NETWORK OPERATIONS REPORT – 2019

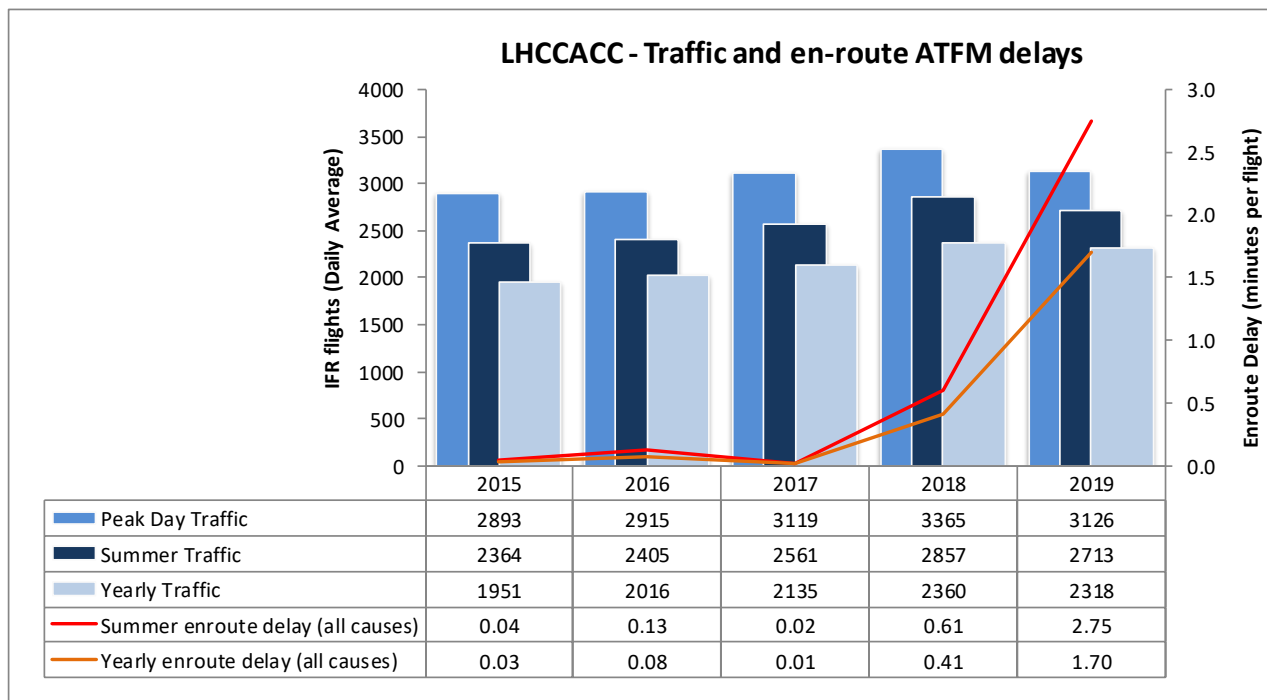
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LGMDEML	267	66.8%
2019	LGMDW	120	30.1%
2019	LGMDE	9	2.3%
2019	LGMDEU	2	0.4%
2019	LGMDKVLML	2	0.4%
2019	LGMDLMOML	0	0.1%



27. HUNGARY - BUDAPEST ACC

Traffic & Delay

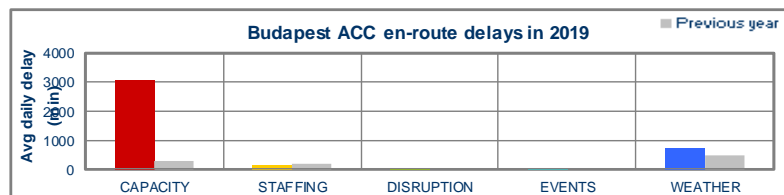


2019 Realisation of Capacity Plan

Budapest ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.9%	-16%	-1.7%	1.70	0.05			
Summer	B: 5.0% L: 2.7%		-5.1%	2.75		203 (-5%)	170 (-21%)	Yes
Summer 2019 performance assessment								
The average en-route delay per flight increased from 0.61 minutes per flight in Summer 2018 to 2.75 minutes per flight in 2019. 78% of the Summer delays were for the reason ATC Capacity, 19% for Weather and 3% for ATC Staffing. The ACC capacity baseline was measured with ACCESS / Reverse CASA at 170. During the measured period, the average peak 1 hour demand was 184 and the average peak 3 hour demand was 174.								
Operational actions				Achieved	Comments			
Cross border FRA with Bucharest ACC				Yes				
Deployment of LARA tool to military units to support Advanced FUA				Yes				
With the support of LARA tool the full rolling ASM/ATFCM process and ASM information sharing has been implemented.				Yes				
Optimization of airspace structure				Yes	Optimization of the West sector but limited benefits due to staffing			
Recruitment and training of controllers and possible extra work				Yes				
Maximum configuration: 6 (+1 KFOR)				Yes	6 sectors were opened (+1 KFOR)			
Remedial measures								
Intensive recruitment				Yes	Recruitment at the maximum possible level all years of the 5 years planning period			
Implementation of the eNM/ANSPs proposed measures				Yes				
Central/South East Europe airspace restructuring project				Yes	Ongoing			

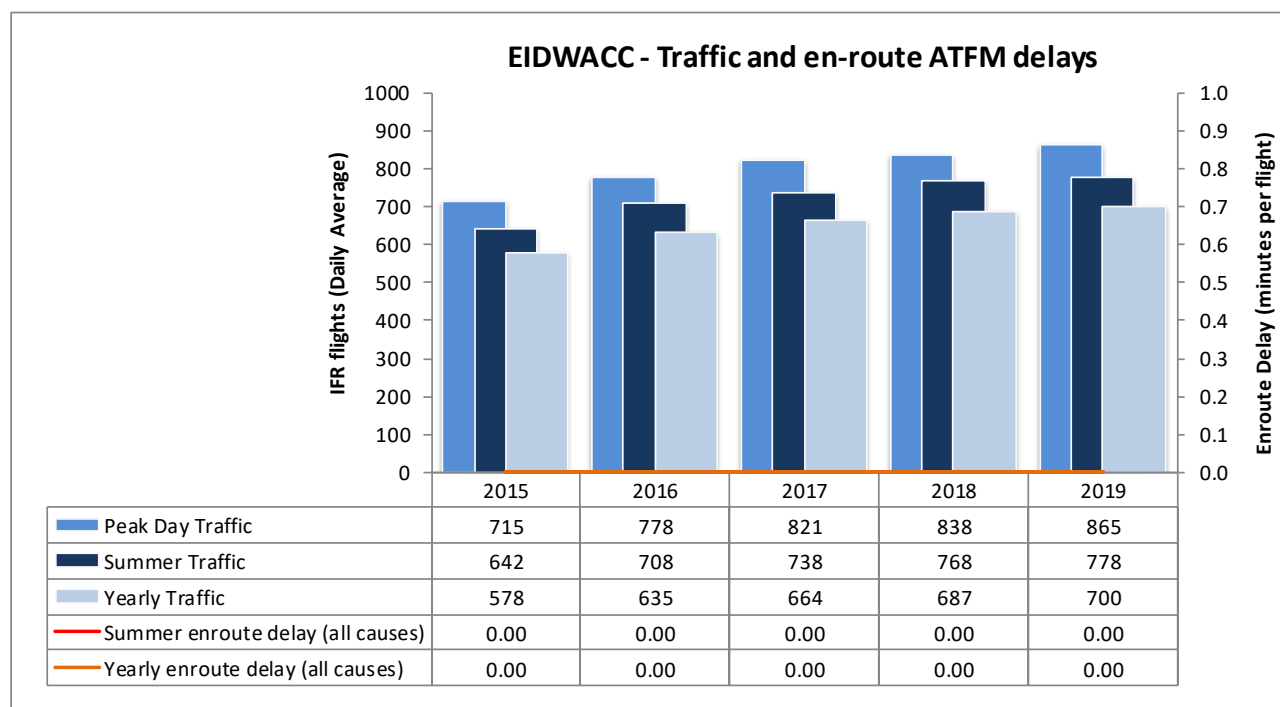
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LHCCENLM	737	18.7%
2019	LHCCWSLM	663	16.8%
2019	LHCCENUHT	612	15.5%
2019	LHCCENHT	508	12.9%
2019	LHCCWSUHT	361	9.1%
2019	LHCCENU	272	6.9%



28. IRELAND - DUBLIN ACC

Traffic & Delay

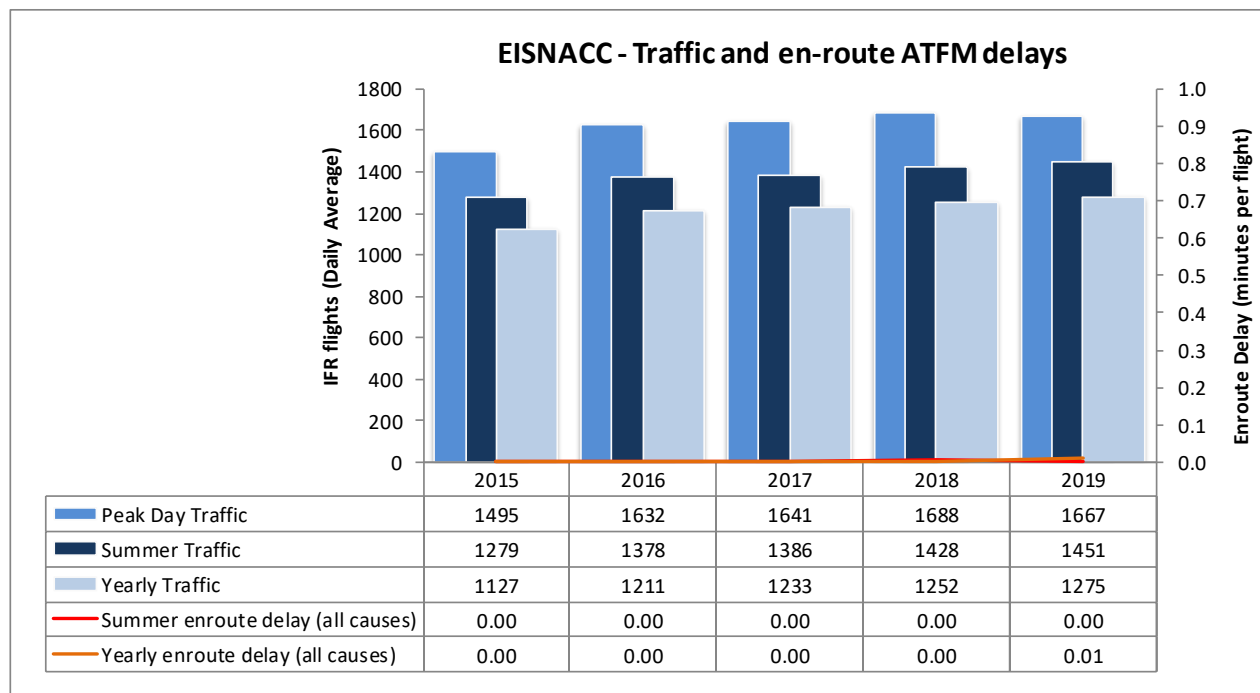


2019 Realisation of Capacity Plan

Dublin ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.0%	No significant impact	+1.8%	0.00	0.03			
Summer	B: 2.5% L: 0.7%		+1.3%	0.00		67 (+1%)	66 (+0%)	No
Summer 2019 performance assessment								
Average enroute delay per flight remained at zero minutes per flight in Summer 2019 as in 2018.								
The ACC capacity baseline was measured with ACCESS at 66. During the measured period, the average peak 1 hour demand was 58 and the average peak 3 hour demand was 50.								
Operational actions				Achieved	Comments			
Improved ATFCM, including STAM				Yes				
UK / Ireland FAB initiatives				Yes				
On-going recruitment to maintain staff levels				Yes				
Cross rating training				Yes				
Maximum configuration: 4 sectors				Yes				

29. IRELAND - SHANNON ACC

Traffic & Delay

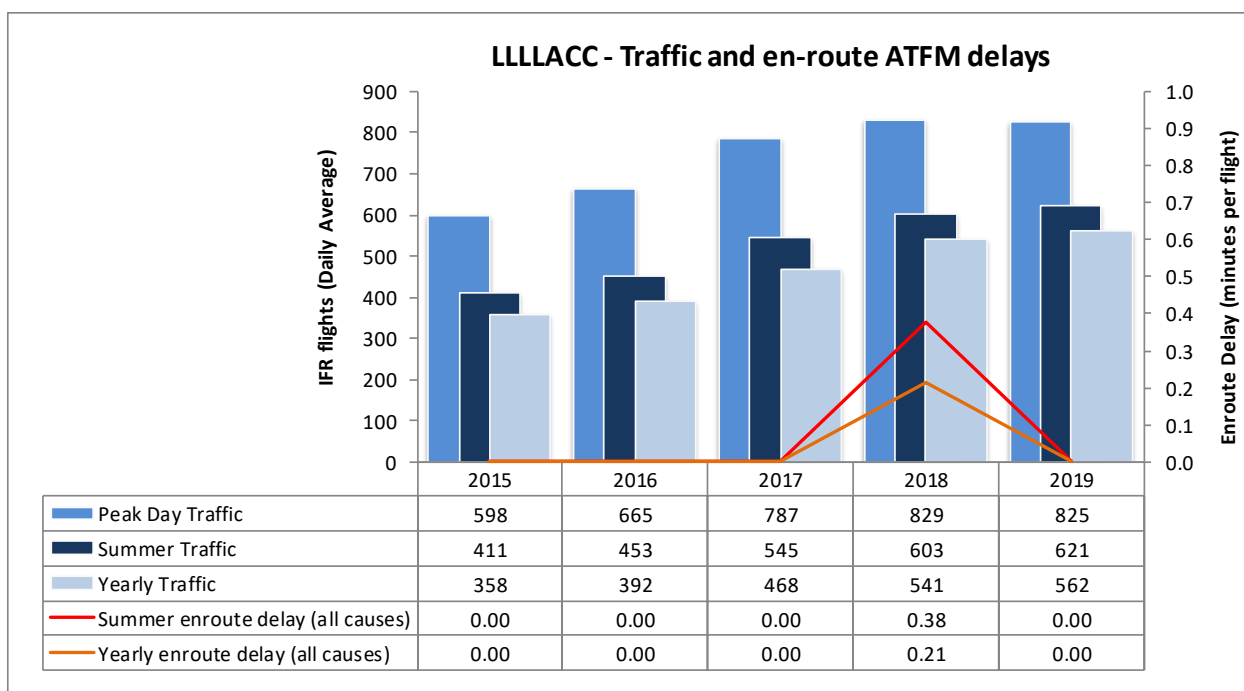


2019 Realisation of Capacity Plan

Shannon ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 2.5%	No significant impact	+1.8%	0.01	0.04			
Summer	B: 2.2% L: 0.8%		+1.6%	0.00		128 (+0%)	128 (+0%)	No
Summer 2019 performance assessment								
Average enroute delay per flight remained at zero minutes per flight in Summer 2019 as in 2018. The ACC capacity baseline was measured with ACCESS at 128. During the measured period, the average peak 1 hour demand was 117 and the average peak 3 hour demand was 106.								
Operational actions				Achieved	Comments			
Improved ATFCM, including STAM				Yes				
UK / Ireland FAB initiatives				Yes				
CPDLC (FANS and ATN)				Yes				
Developing Queue Management programme				Yes				
On-going recruitment to maintain staff levels				Yes				
Terrestrial ADS-B				On-going	ADS-B stations operational, to be incorporated into COOPANS			
Dynamic sectorisation available				Yes				
New Contingency Centre				Ongoing	Validation process ongoing			
Maximum configuration: 12 sectors				Not required	10 sectors were sufficient			

30. ISRAEL – TEL AVIV ACC

Traffic & Delay



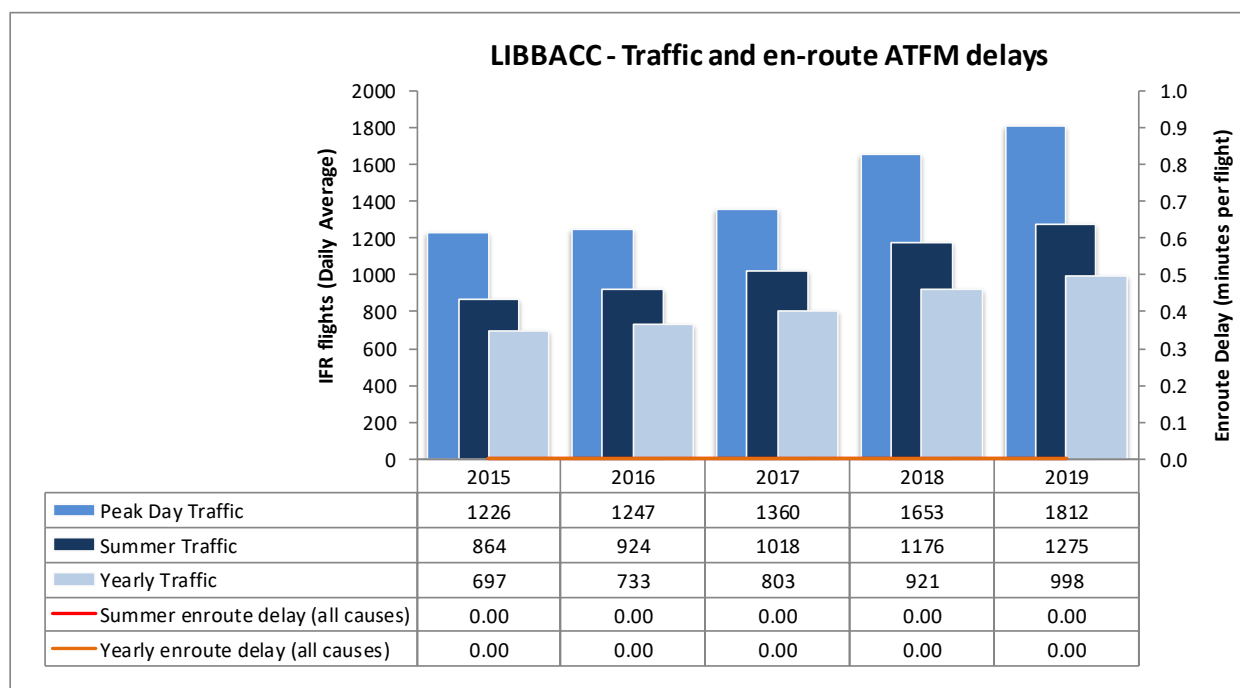
2019 Realisation of Capacity Plan

Tel Aviv ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year			+3.8%	0.00				
Summer			+3.0%	0.00			40	No
Summer 2019 performance assessment								
There was no delay in Tel Aviv ACC during Summer 2019. The ACC capacity baseline was estimated to be 40. During the measured period, the average peak 1 hour demand was 40 and the average peak 3 hour demand was 36.								

31. ITALY - BRINDISI ACC

Traffic & Delay

NETWORK OPERATIONS REPORT – 2019



2019 Realisation of Capacity Plan

Brindisi ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 7.4%	+4%	+8.4%	0.00	0.02	118 (+10%)	116 (+8%)	No
Summer	B: 6.1% L: 4.3%		+8.4%	0.00				

Average en-route delay per flight remained at zero, the same as during Summer 2018.

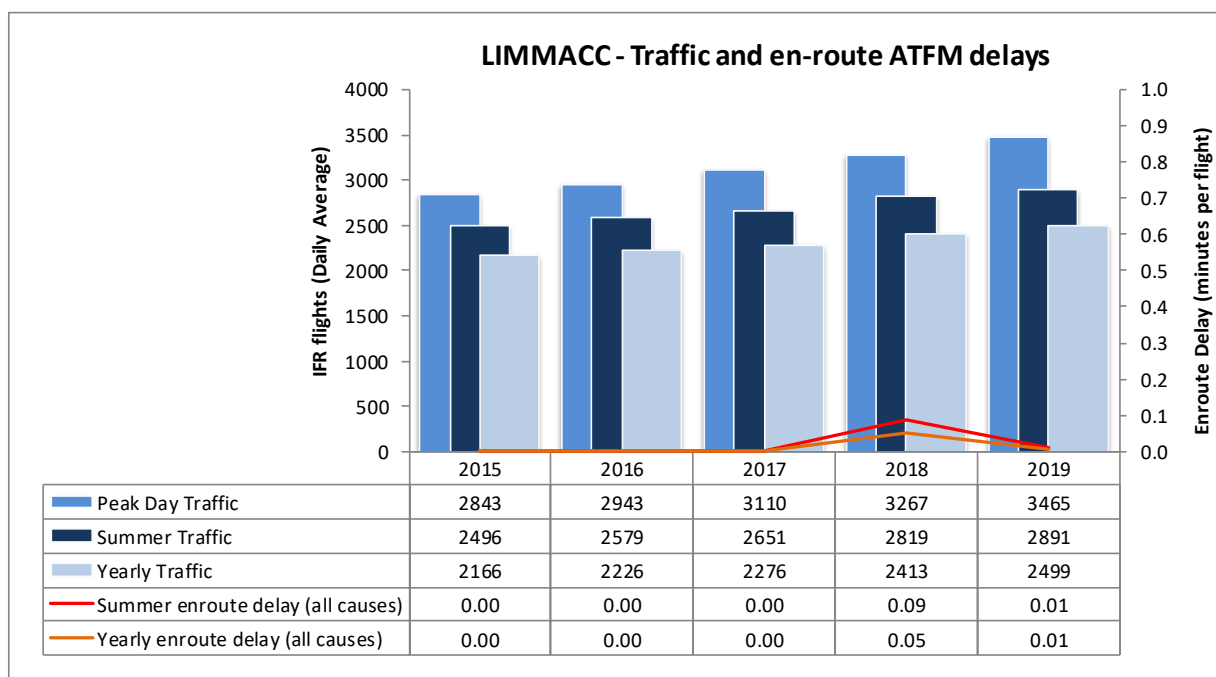
The ACC capacity baseline was measured with ACCESS at 116. During the measured period (June and July), the average peak 1 hour demand was 96 and the average peak 3 hour demand was 88.

Operational actions	Achieved	Comments
Improved airspace management	Yes	
PBN Program	Ongoing	To be implemented in Bari by end of 2020 and in Brindisi by end of 2021
Improved ATFCM, including STAM	Yes	
Airspace management and ATS route assessment and/or improvements according to network needs, Airspace Users expectations, ENAV's Flight Efficiency Plan and BLUEMED FAB implementation	Yes	
Recruitment of ATCOs if necessary	Yes	No recruitment was necessary for 2019
Flexible opening scheme according to traffic demand and system enablers implementation	Yes	
Maximum configuration: 5 sectors	Yes	Up to 6 sectors were open

32. ITALY - MILAN ACC

Traffic & Delay

NETWORK OPERATIONS REPORT – 2019



2019 Realisation of Capacity Plan

Milan ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.5%	-4%	+3.6%	0.01	0.09			
Summer	B: 5.0% L: 3.3%		+2.5%	0.01		211 (+5%)	218 (+8%)	No

Average en-route delay per flight decreased from 0.09 minutes per flight in Summer 2018 to 0.01 minutes per flight during Summer 2019.

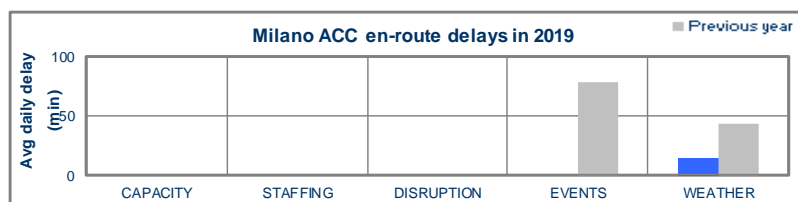
ACC capacity baseline was measured with ACCESS at 218. During the measured period (June and July), the average peak 1 hour demand was 211 and the average peak 3 hour demand was 201.

Operational actions	Achieved	Comments
Improved airspace management	Yes	
PBN Program	Ongoing	To be implemented in Torino by end of 2021
Trombone implementation LIMC/LIML/LIME	Yes	
Improved ATFCM, including STAM	Yes	
Airspace management and ATS route assessment and/or improvements according to network needs, Airspace Users expectations, ENAV's Flight Efficiency Plan and BLUEMED FAB implementation	Yes	
Torino Project	No	Postponed to 2022
Recruitment of ATCOs if necessary	Yes	No recruitment was necessary for 2019
Flexible opening scheme according to traffic demand and system enablers implementation	Yes	
Maximum configuration: 23 sectors	Not required	20 sectors were sufficient

Allocation of and Reasons for En-route Delay

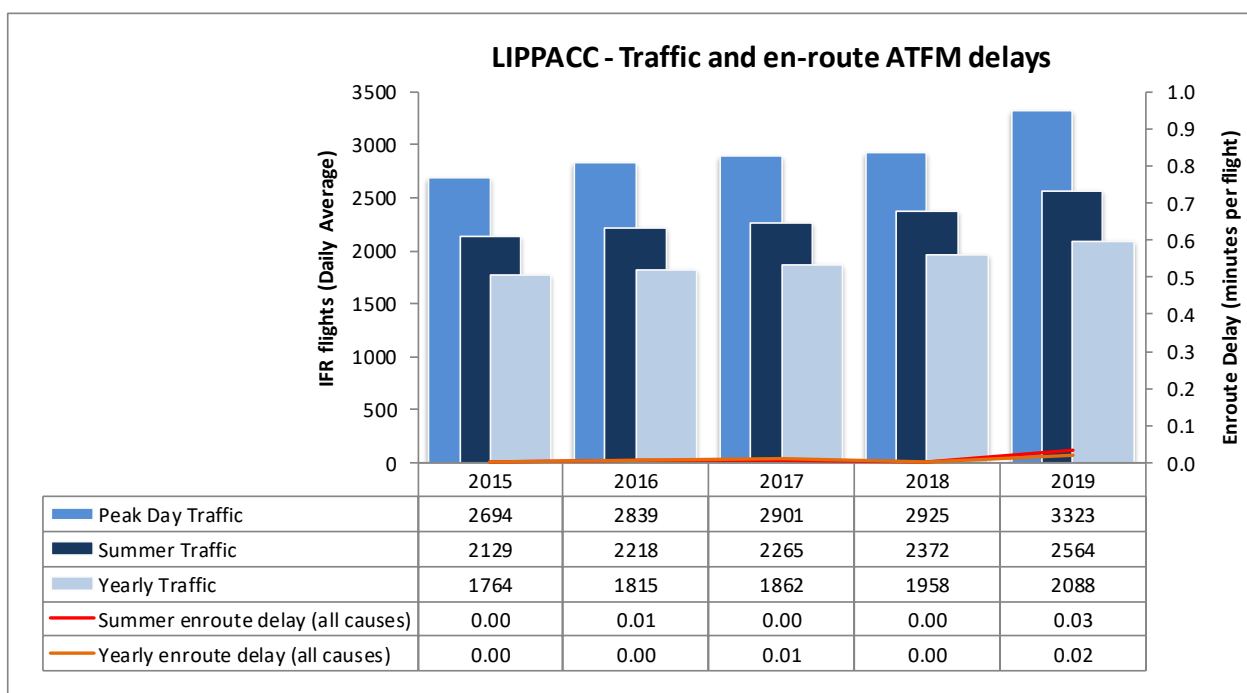
NETWORK OPERATIONS REPORT – 2019

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LIMMAWY	14	98.5%
2019	LIMMWN12	0	1.5%



33. ITALY - PADOVA ACC

Traffic & Delay



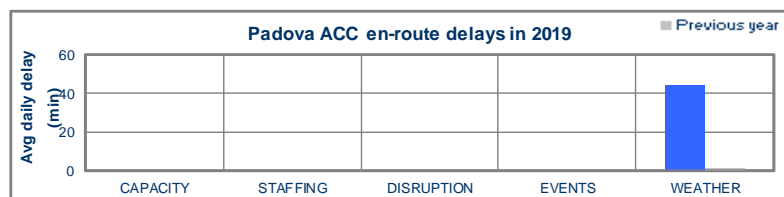
2019 Realisation of Capacity Plan

Padova ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.8% B: 5.2%	+7%	+6.6%	0.02	0.09			
Summer	L: 3.5%		+8.1%	0.03		216 (+4.5%)	220 (+6%)	No
Average en-route delay per flight slightly increased to 0.03 minutes per flight in Summer 2019, all the delays were due to Weather. The ACC capacity baseline was measured with ACCESS at 220. During the measured period (June and July) the average peak 1 hour demand was 198 and the average peak 3 hour demand was 188.								
Operational actions					Achieved	Comments		
Improved airspace management					Yes			
PBN Program					Ongoing	To be implemented in Trieste by end of 2021		
Improved ATFCM, including STAM					Yes			
Airspace management and ATS route assessment and/or improvements according to network needs, Airspace Users expectations, ENAV's Flight Efficiency Plan and BLUEMED FAB implementation					Yes			
Ronchi Project					No	Postponed to end 2020		
Recruitment of ATCOs if necessary					Yes	No recruitment was necessary for 2019		
Flexible opening scheme according to traffic demand and system enablers implementation					Yes			
Maximum configuration: 14 sectors					Not required	13 sectors were sufficient		

NETWORK OPERATIONS REPORT – 2019

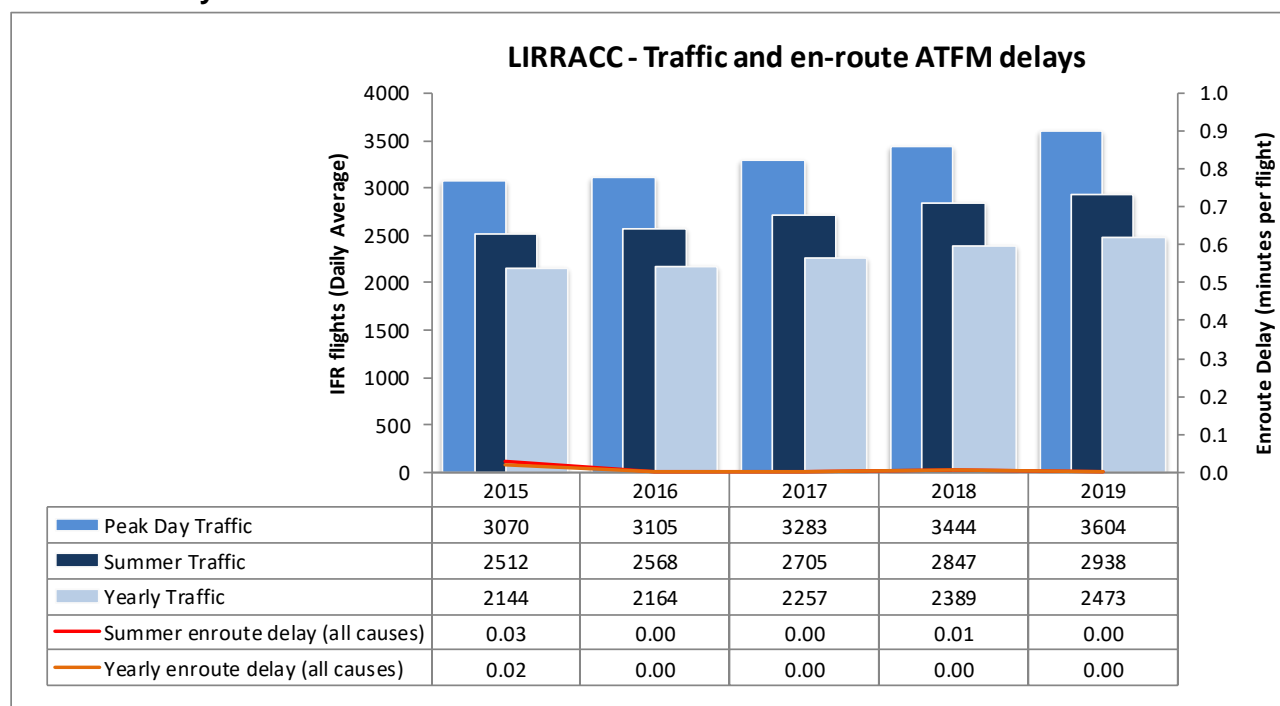
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LIPPN57	24	54.3%
2019	LIPPN14	20	45.7%



34. ITALY - ROME ACC

Traffic & Delay



2019 Realisation of Capacity Plan

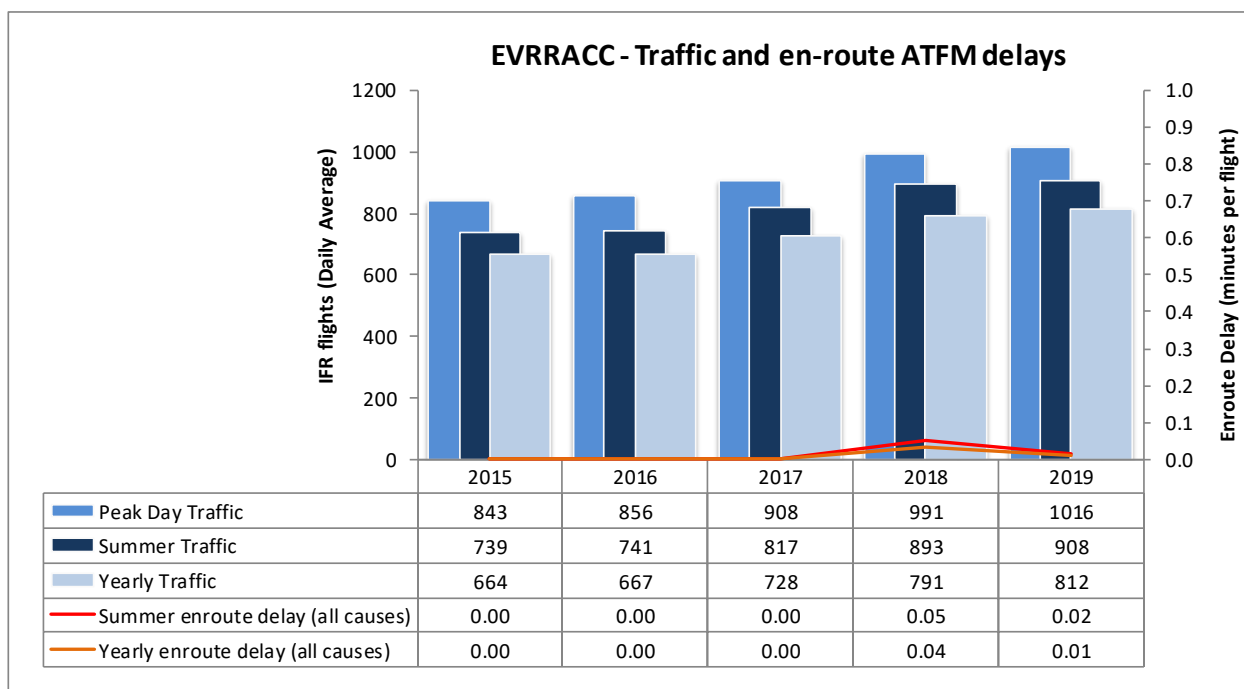
Rome ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.2%	No significant impact	+3.5%	0.00	0.05			
Summer	B: 4.4% L: 2.9%		+3.2%	0.00		234 (+3%)	241 (+6%)	No

Average en-route delay per flight remained at zero minutes per flight in Summer 2019.
The ACC capacity baseline was assessed with ACCESS at 241. During the measured period (June and July), the average peak 1 hour demand was 218 and the average peak 3 hour demand was 207.

Operational actions	Achieved	Comments
Improved airspace management	Yes	
PBN Program	Ongoing	To be implemented in Napoli by end of 2021
Improved ATFCM, including STAM	Yes	
Airspace management and ATS route assessment and/or improvements according to network needs, Airspace Users expectations, ENAV's Flight Efficiency Plan and BLUEMED FAB implementation	Yes	
Lamezia Project	No	Postponed to end 2020
Recruitment of ATCOs if necessary	Yes	No recruitment was necessary for 2019
Flexible opening scheme according to traffic demand and system enablers implementation	Yes	
Maximum configuration: 23 sectors	Yes	

35. LATVIA - RIGA ACC

Traffic & Delay

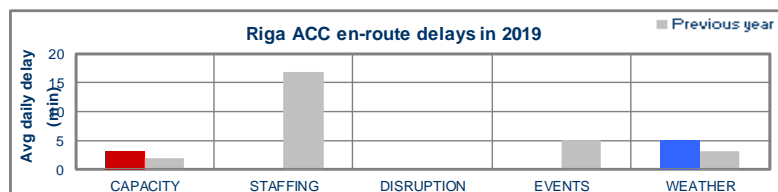


2019 Realisation of Capacity Plan

Riga ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.9%	No significant impact	+2.6%	0.01	0.03			
Summer	B: 4.4% L: 2.2%		+1.7%	0.02		Sufficient	90 (+0%)	No
Summer 2019 performance assessment								
The average en-route delay per flight decreased from 0.05 minutes per flight in Summer 2018 to 0.02 minutes per flight in Summer 2019. 64% of the delays were due to Weather, and 36% due to ATC capacity. The capacity baseline was estimated with ACCESS to be 90. The average peak 1 hour demand was 75 and the peak 3 hour demand was 68 flights during the measured period, indicating that the ACC offered sufficient capacity to meet the demand.								
Operational actions				Achieved	Comments			
Maximum configuration: 3 + 2 APP				Yes				

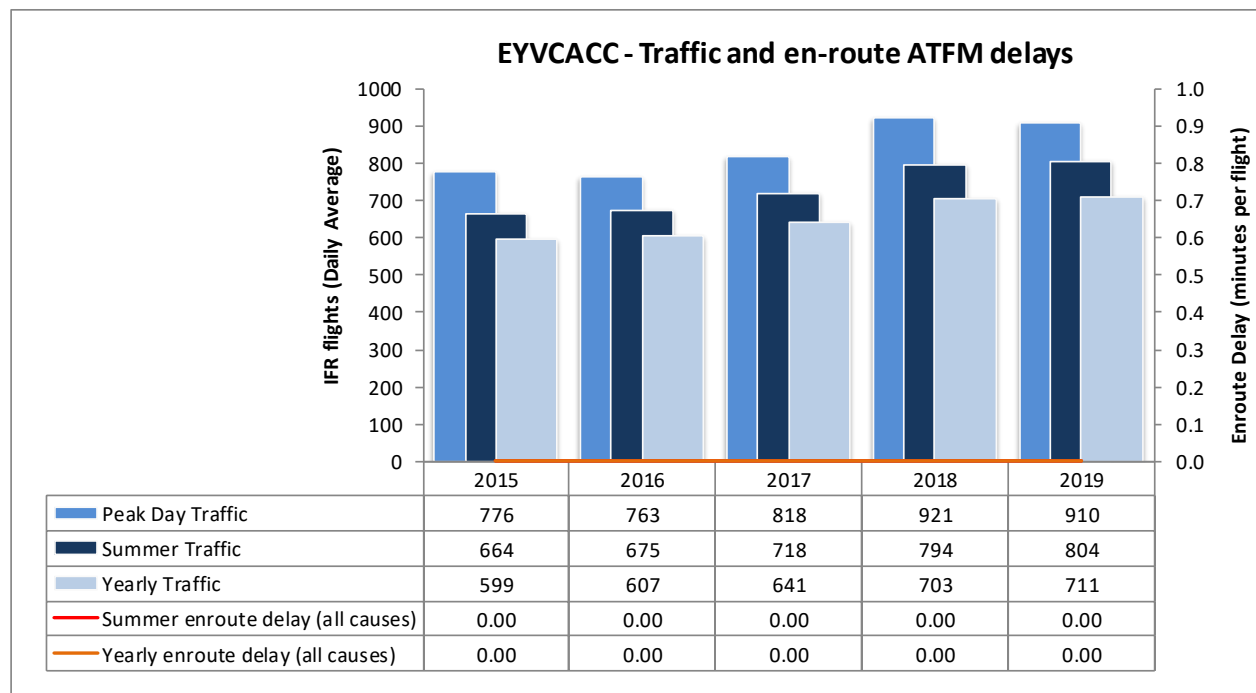
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EVRAPP	4	49.8%
2019	EVRRS	2	27.5%
2019	EVRRWS	1	15.6%
2019	EVRRNS	1	7.1%



36. LITHUANIA - VILNIUS ACC

Traffic & Delay

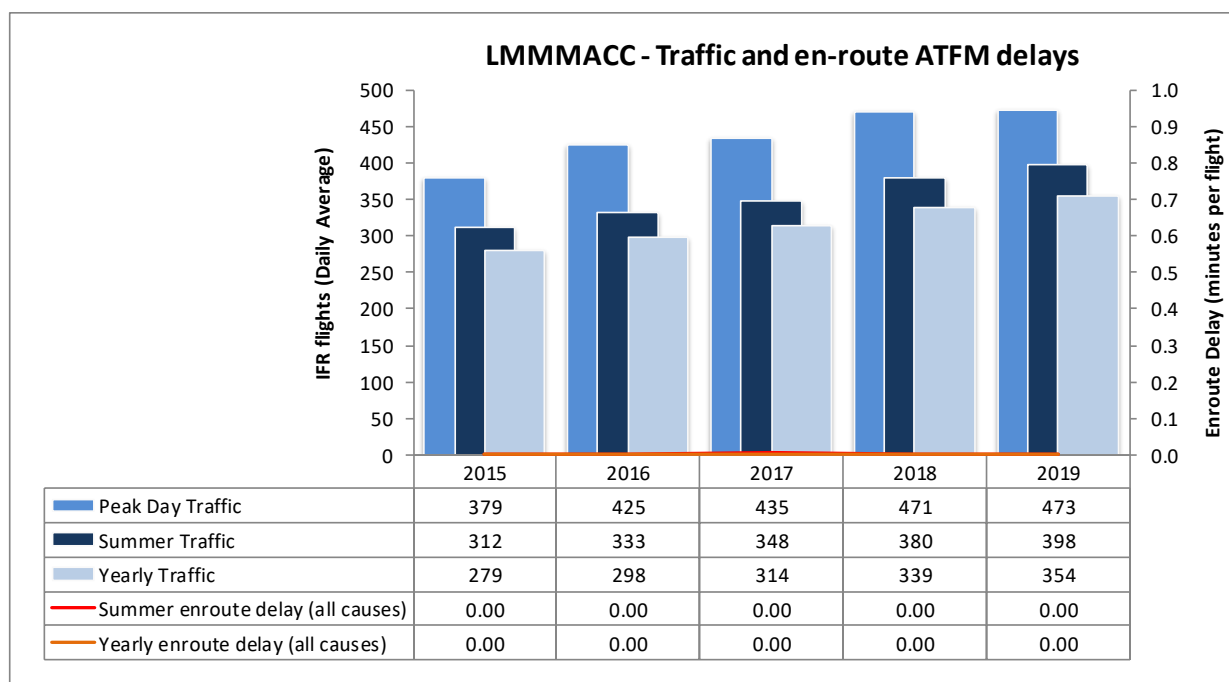


2019 Realisation of Capacity Plan

Vilnius ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.3% B: 5.2% L: 3.1%	No significant impact	+1.0%	0.00	0.04			
Summer			+1.3%	0.00		Sufficient	77 (+0%)	No
Summer 2019 performance assessment								
The average en-route delay per flight remained at zero minutes per flight in Summer 2019.								
The ACC capacity baseline was assessed to be at the same level as in Summer 2019. The peak 1 hour demand was 63 and the peak 3 hour demand was 55 during the measured period.								
Operational actions				Achieved	Comments			
Gradual Full Implementation of FRA within Baltic FAB				Ongoing	Project started. Implementation Feb 2022.			
New ACC building				Yes				
Maximum configuration: 4 sectors				Yes				

37. MALTA - MALTA ACC

Traffic & Delay

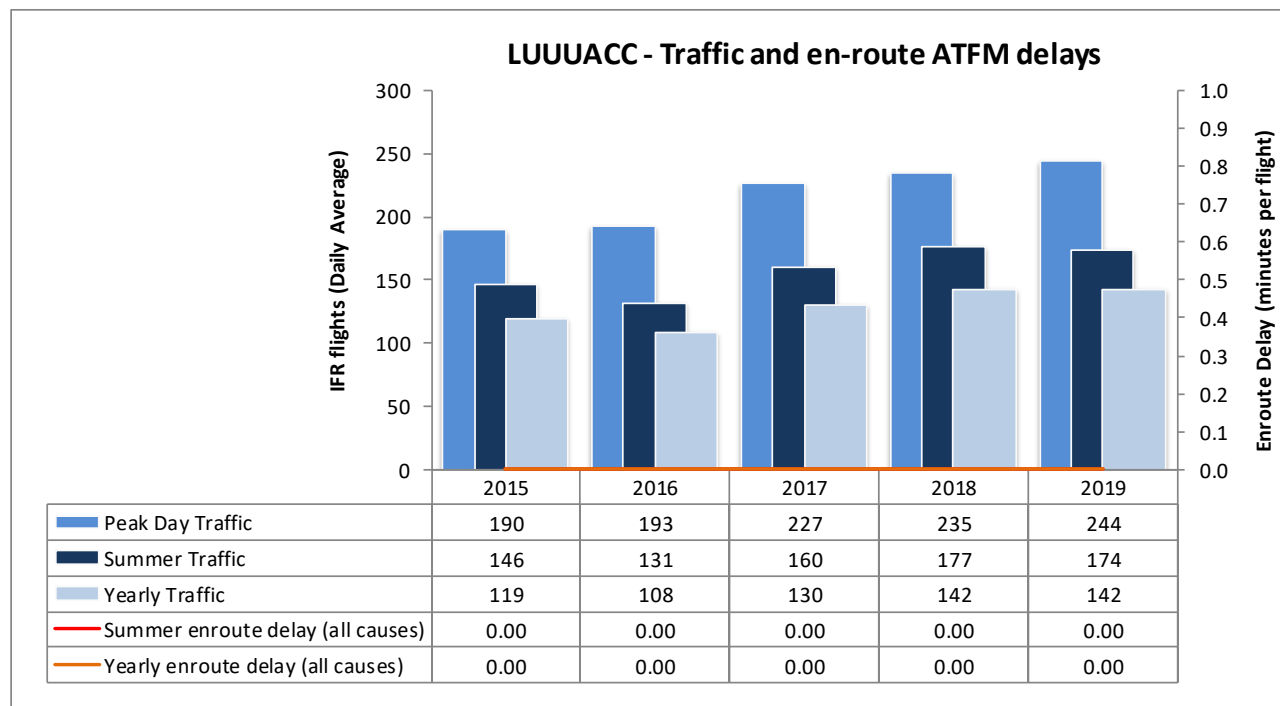


2019 Realisation of Capacity Plan

Malta ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.2%	-5%	+4.3%	0.00	0.02			
Summer	B: 5.0% L: 2.1%		+4.8%	0.00		Sufficient	42 (+0%)	No
The average en-route delay per flight remained at zero minutes per flight in Summer 2019. The ACC capacity baseline was measured with ACCESS. During June and July, the average peak 1 hour demand was 31 flights and the peak 3 hour demand was 27 flights per hour.								
Operational actions				Achieved	Comments			
Maximum configuration: 2 sectors				Yes				

38. MOLDOVA - CHISINAU ACC

Traffic & Delay

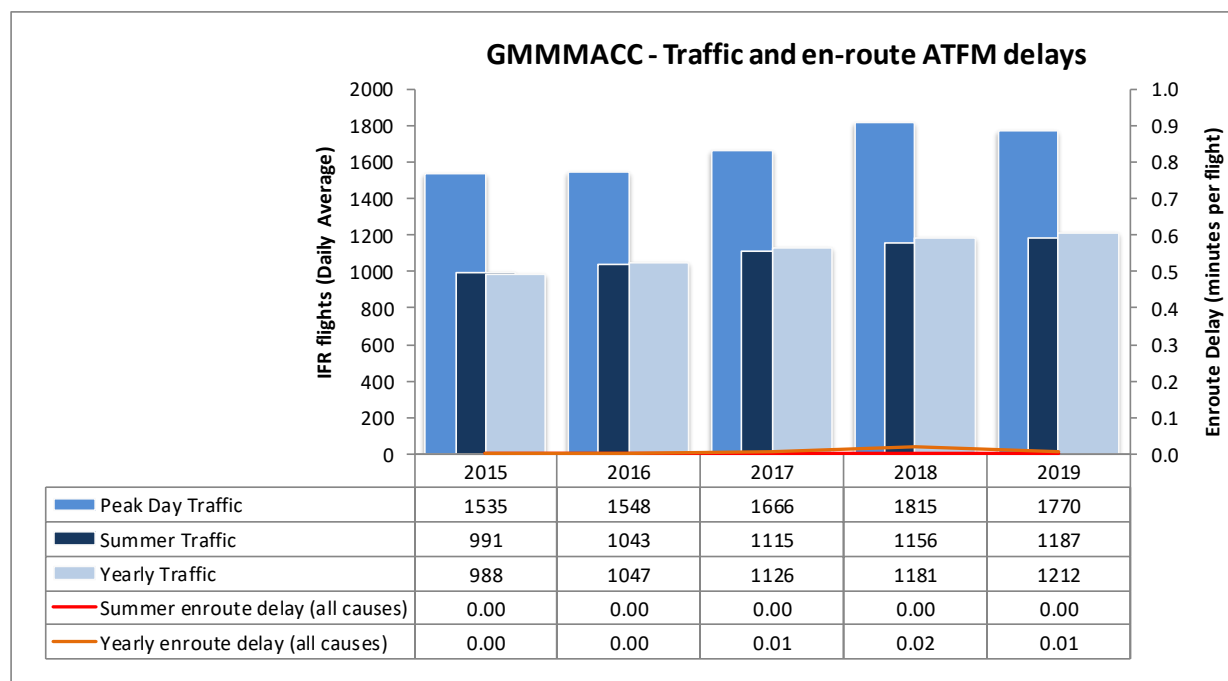


2019 Realisation of Capacity Plan

Chisinau ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 7.4%	+37%	+0.2%	0.00	0.01			
Summer	B: 6.6% L: 5.0%		-1.5%	0.00		sufficient	40 (+0%)	No
The average en-route delay per flight remained at zero minutes per flight in Summer 2019. The ACC capacity baseline was estimated at 40. The peak 1 hour demand was 15 flights and the peak 3 hour demand was 12.								
Operational actions				Achieved	Comments			
Maximum configuration: 3 sectors				Yes				

39. MOROCCO – CASABLANCA & AGADIR ACCS

Traffic & Delay

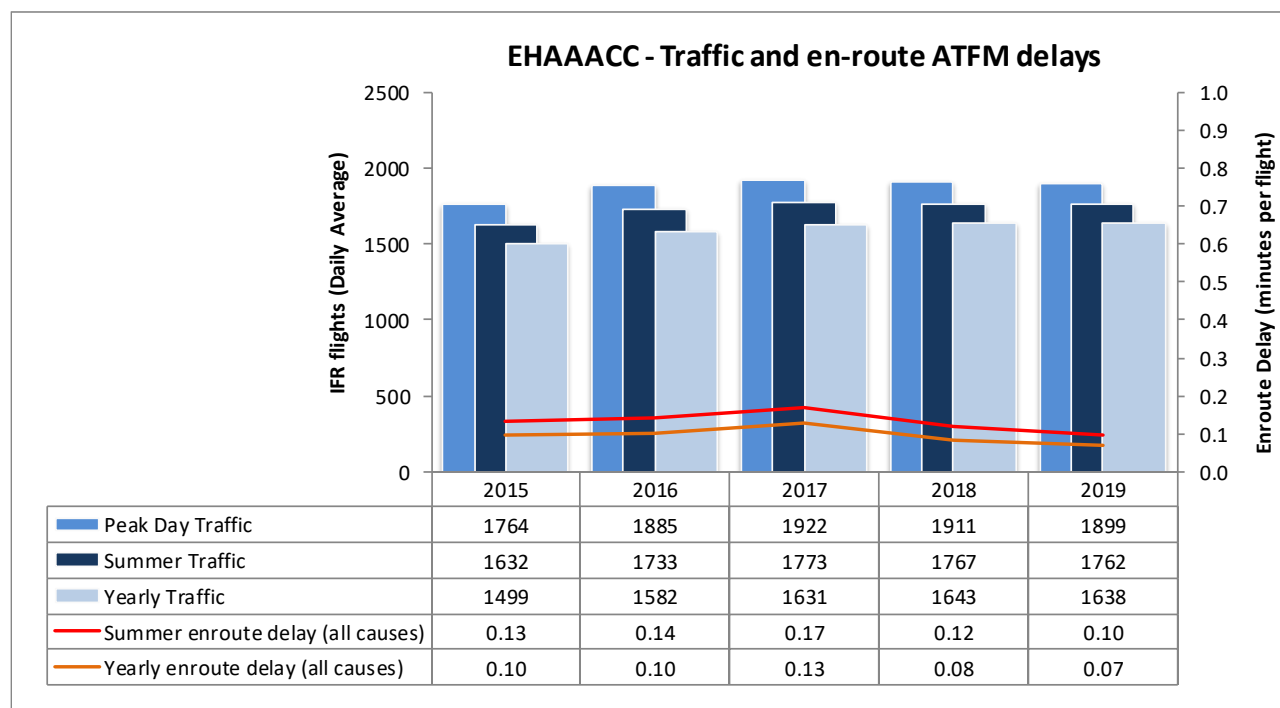


2019 Realisation of Capacity Plan

Casablanca & Agadir ACCs	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)			
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value		Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes							
Year			+2.6%	0.01		Casablanca		69	No
Summer			+2.6%	0.00		Agadir		77	No
Summer 2019 performance assessment									
<p>There was no delay in Casablanca and Agadir ACCs during Summer 2019.</p> <p>The ACC capacity baseline for Casablanca ACC was estimated with ACCESS to be 69. During the measured period, the average peak 1 hour demand was 50 and the average peak 3 hour demand was 43.</p> <p>The ACC capacity baseline for Agadir ACC was estimated with ACCESS to be 77. During the measured period, the average peak 1 hour demand was 49 and the average peak 3 hour demand was 41.</p>									

40. THE NETHERLANDS - AMSTERDAM ACC

Traffic & Delay



2019 Realisation of Capacity Plan

Amsterdam ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 2.7% B: 1.8% L: 0.4%	No significant impact	-0.3%	0.07	0.14			
Summer			-0.3%	0.10		152 (+1%)	150 (+0%)	No

The average en-route delay per flight slightly decreased from 0.12 minutes per flight during Summer 2019 to 0.10 minutes per flight in Summer 2019.

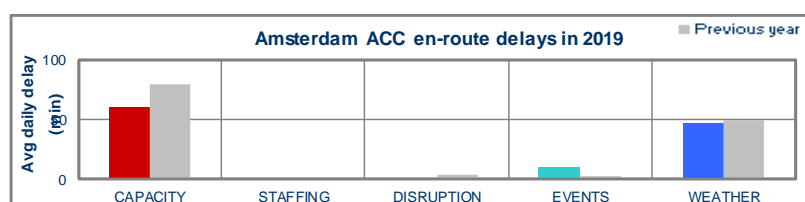
52% of the Summer delays were for the reason Weather, 39% for ATC Capacity, and 8% for Special events.

The ACC capacity baseline was measured with ACCESS at 150. This was sufficient to accommodate the traffic demand, with an average peak 1 hour of 136 during the measured period and an average peak 3 hour of 118 during the measured period.

Operational actions	Achieved	Comments
Continuous recruitment and training to maintain levels of ATCOs	Yes	
Workload assessment for sectors other than sector 3	Ongoing	Started in 2019, but postponed until 2020. No impact on delays.
Maximum configuration: 5 sectors	Yes	

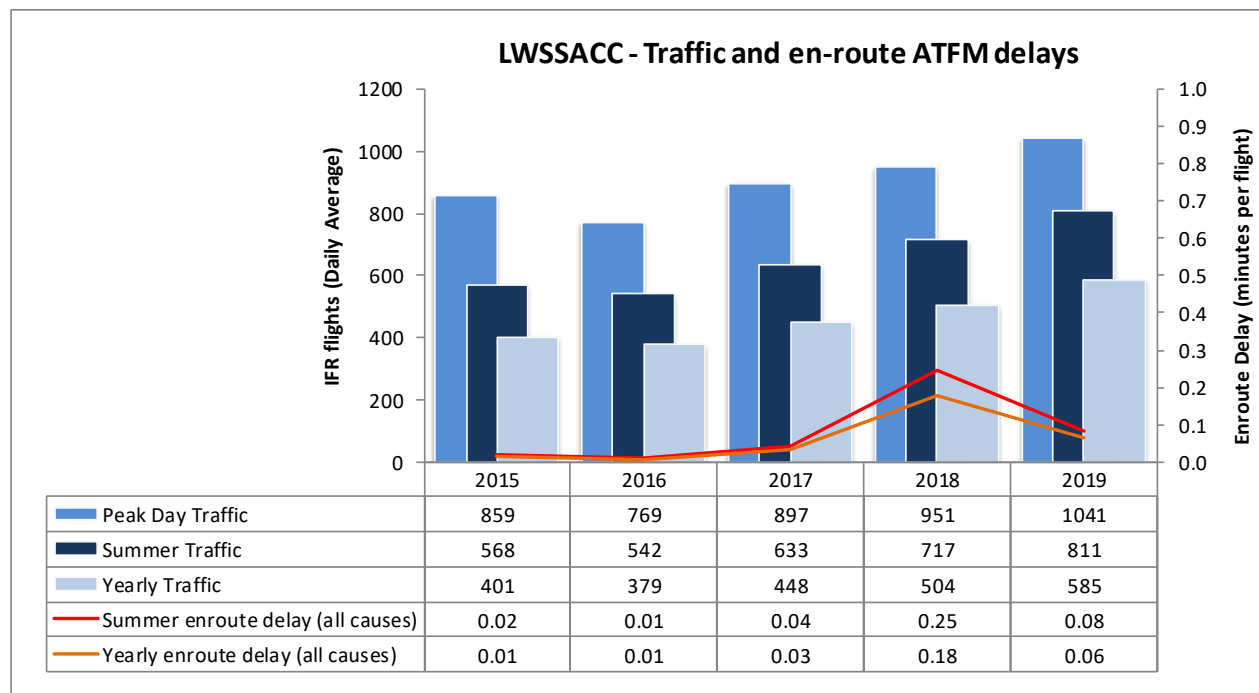
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EHAACBAS	97	83.5%
2019	EHAASECT3	12	10.4%
2019	EHAASECT2	7	5.8%
2019	EHBKTA	0	0.3%



41. REPUBLIC OF NORTH MACEDONIA - SKOPJE ACC

Traffic & Delay



2019 Realisation of Capacity Plan

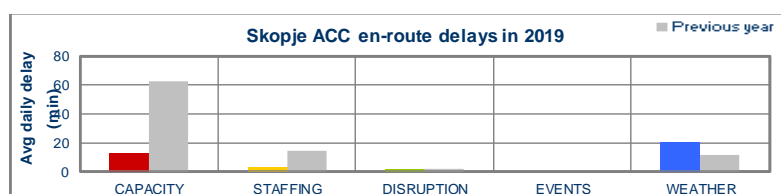
Skopje ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.4%	+27%	+16.1%	0.06	0.19			
Summer	B: 5.0% L: 3.0%		+13.0%	0.08		67 (+5%)	68 (+6%)	No

The delays decreased from 0.25 minutes per flight in during Summer 2018 to 0.08 minutes per flight during Summer 2019. 58% of the Summer delays were due to the reason Weather, 33% to ATC Capacity, and 9% were due to ATC Staffing. The ACC capacity baseline was estimated with ACCESS to be at 68. During the measured period the average peak 1 hour was 60 and the average peak 3 hour was 54.

Operational actions	Achieved	Comments
Traffic occupancy counts during night shifts	No	Not implemented due to staff shortage during night shifts.
New software for roster and shifts planning for better planning of human resources	No	Not implemented yet due to prolonged operational testing.
Maximum configuration: 3 sectors	Yes	

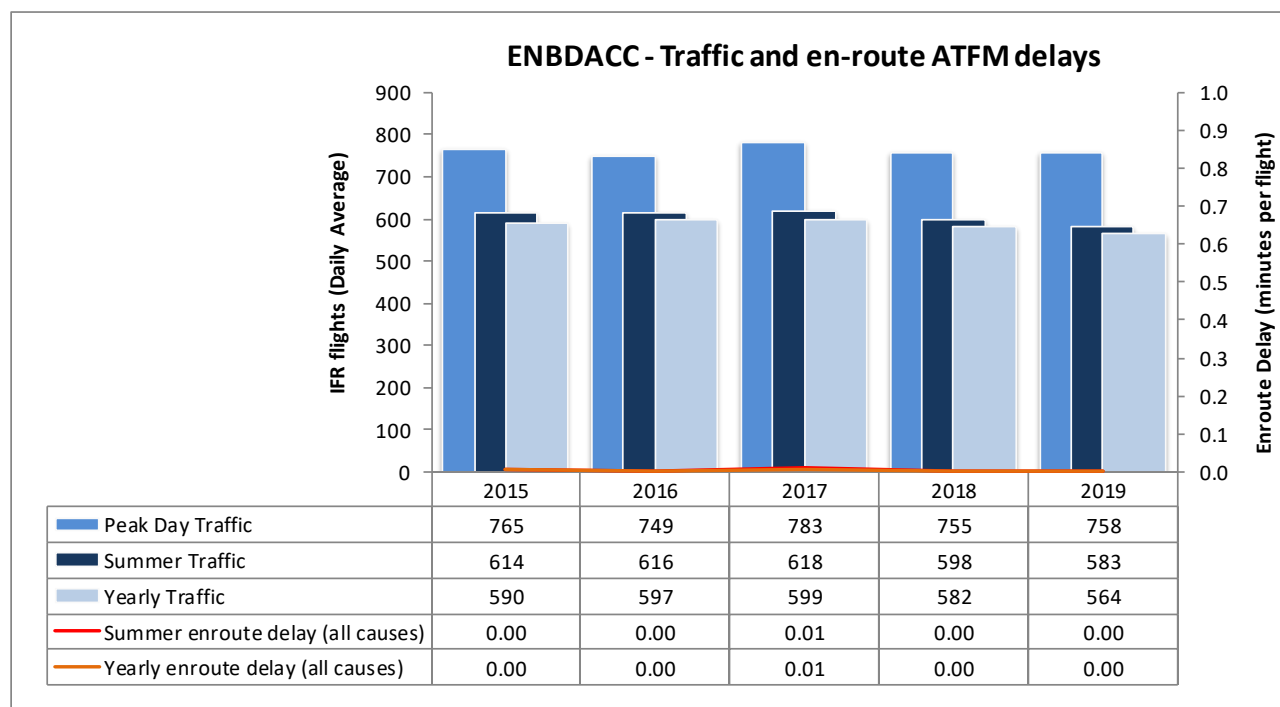
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LWSSUPP355	11	30.6%
2019	LWSSALL	10	26.8%
2019	LWSSLOW365	7	18.3%
2019	LWSSLOW355	6	16.1%
2019	LWSSUPP365	3	8.2%



42. NORWAY - BODO ACC

Traffic & Delay



2019 Realisation of Capacity Plan

Bodo ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 0.5%	No significant impact	-3.2%	0.00	0.11			
Summer	B: -0.1% L: -0.8%		-2.6%	0.00		sufficient	57 (+0%)	No

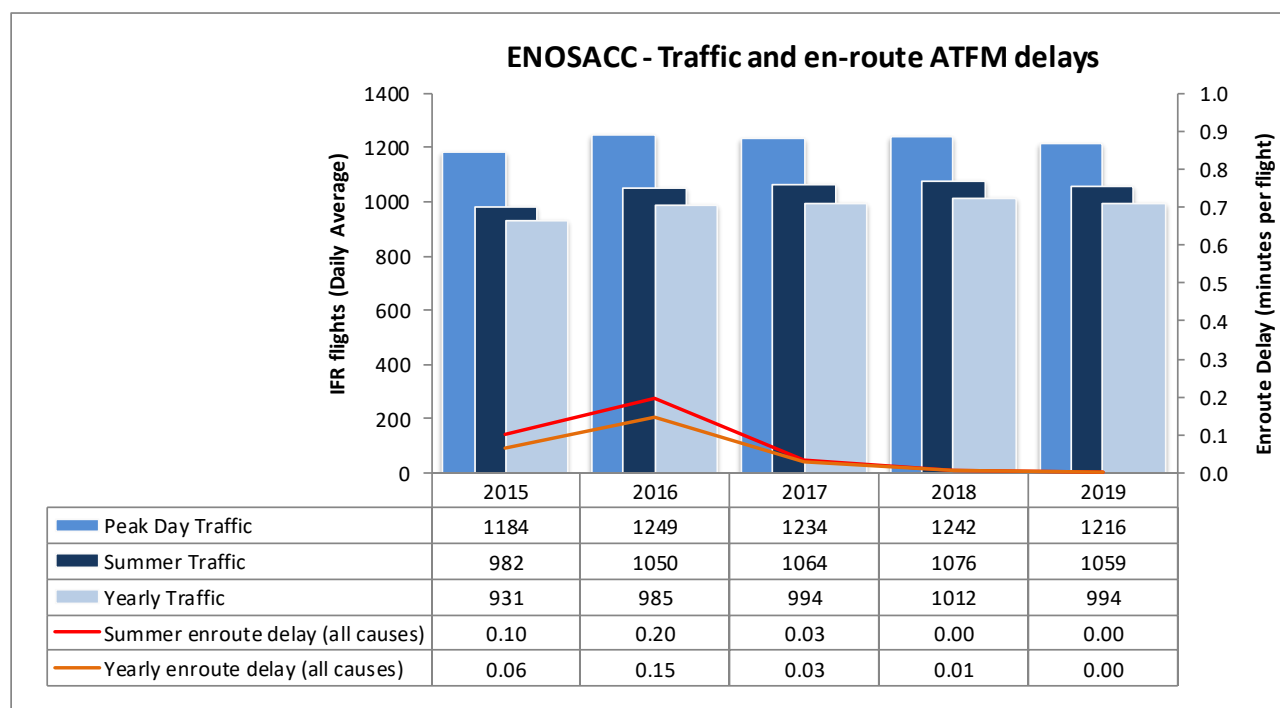
Average enroute delay per flight remained at zero min/flight in Summer 2019.

The ACC capacity baseline was assessed to be at the same level as in Summer 2018. During the measured period, the average peak hour demand was 47 and the average peak 3 hour demand was 42.

Operational actions	Achieved	Comments
Airspace project northern part	Yes	
Flexible rostering of ATC staff	Yes	
Recruitment and training to maintain number of air traffic controllers	Yes	
New sectors increase flexibility	Yes	
Evaluation of sector capacities and sector configurations	Ongoing	
Maximum configuration: 5 + 1 oceanic	Yes	

43. NORWAY - OSLO ACC

Traffic & Delay

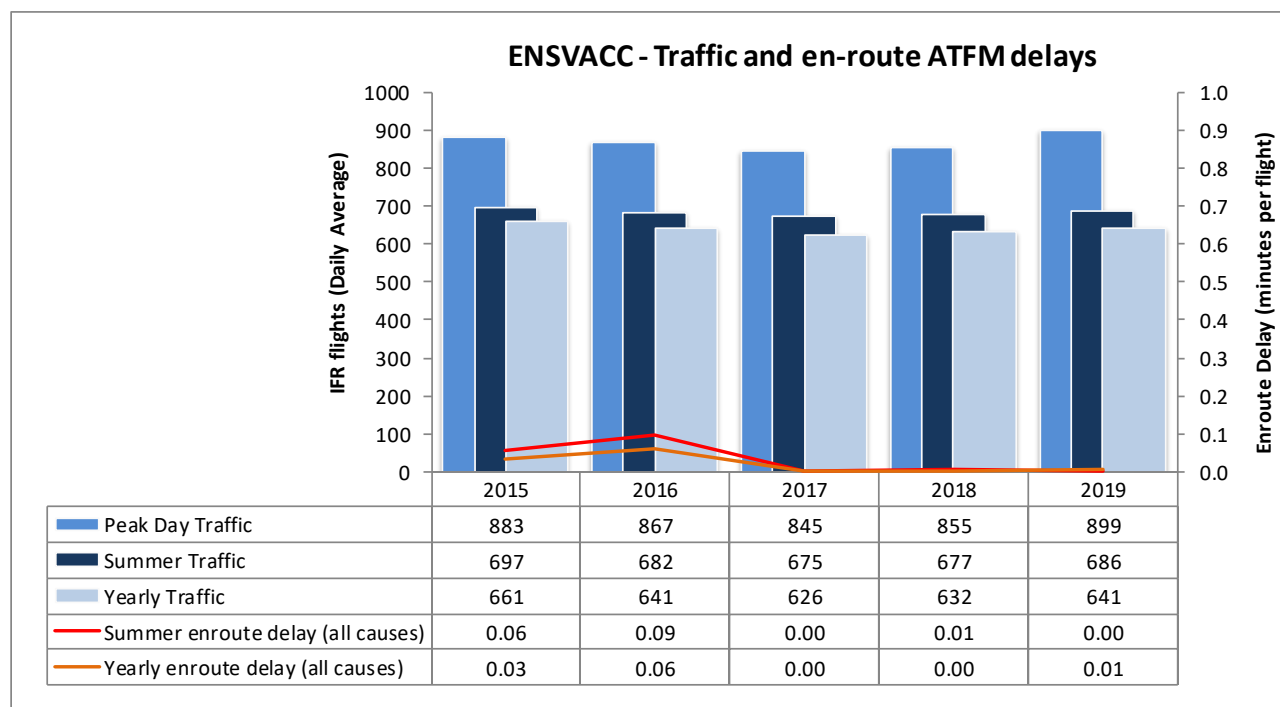


2019 Realisation of Capacity Plan

Oslo ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 2.1% B: 1.3% L: 0.2%	No significant impact	-1.8%	0.00	0.14			
Summer			-1.5%	0.00		sufficient	90 (+0%)	No
Average enroute delay per flight remained at zero minutes per flight in Summer 2019. The capacity baseline of 90 was measured with ACCESS, indicating the capacity actually offered. During the measured period, the average peak demand was 82 (peak 1 hour) and 76 (peak 3 hour).								
Operational actions				Achieved	Comments			
Flexible rostering of ATC staff				Yes				
Recruitment and training of air traffic controllers				Yes				
Evaluation of sector capacities and sector configurations				Ongoing				
Maximum configuration: 6 sectors				Yes				

44. NORWAY - STAVANGER ACC

Traffic & Delay



2019 Realisation of Capacity Plan

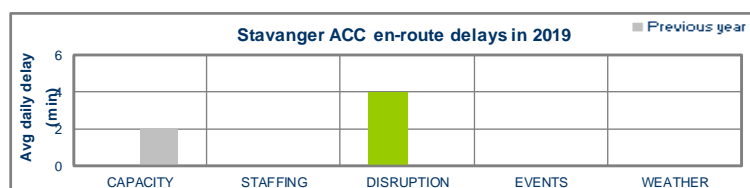
Stavanger ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 1.4% B: 1.0% L: 0.1%	No significant impact	+1.5%	0.01	0.11			
Summer			+1.3%	0.00		sufficient	64 (+0%)	No

Average enroute delay per flight decreased from 0.01 minutes per flight in Summer 2018 to zero minutes per flight in Summer 2019. The capacity baseline of 64 was measured with ACCESS, indicating the capacity actually offered. During the measured period, the average peak demand was 56 (peak 1 hour) and 52 (peak 3 hour).

Operational actions	Achieved	Comments
Flexible rostering of ATC staff	Yes	
Recruitment and training of air traffic controllers	Yes	
Evaluation of sector capacities and sector configurations	Ongoing	
Maximum configuration: 4 + 1 helicopter	Yes	

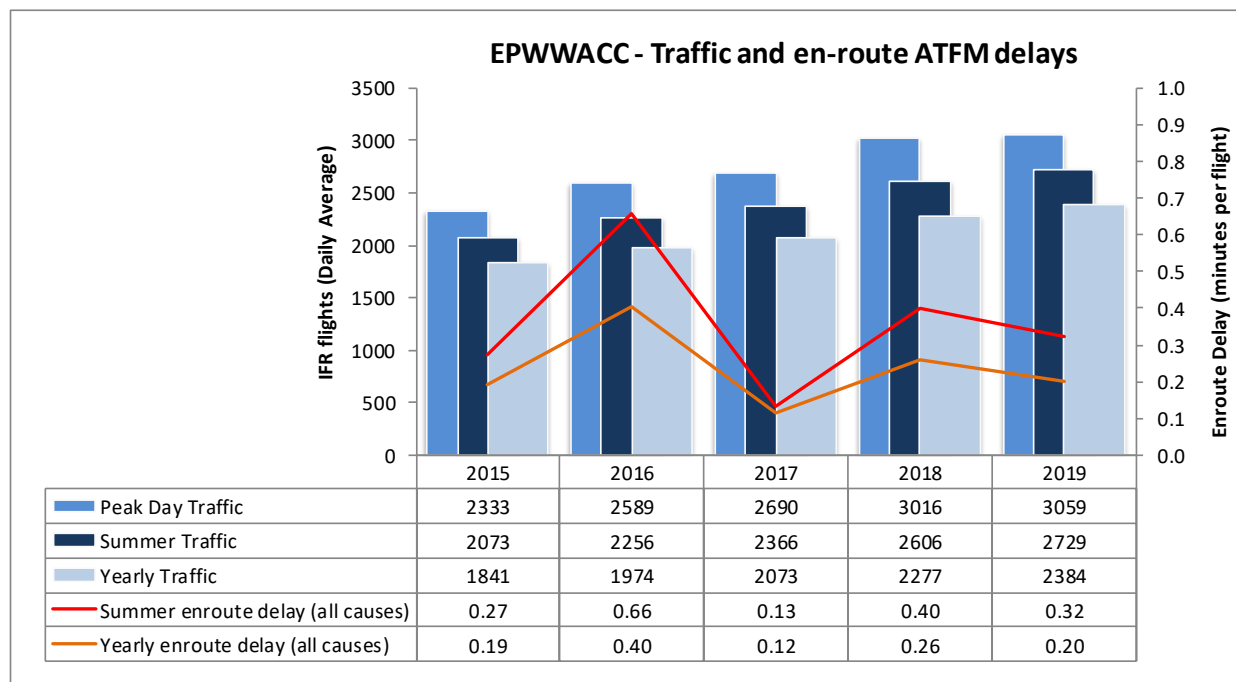
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	ENZ/TAS	4	82.7%
2019	ENBRTAN	0	7.3%
2019	ENOSW9012	0	6.9%
2019	ENOSWALLO	0	3.1%



45. POLAND - WARSAW ACC

Traffic & Delay

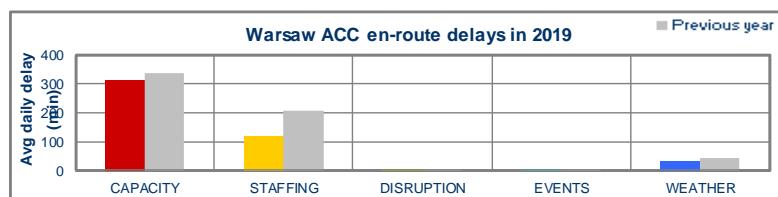


2019 Realisation of Capacity Plan

2019 Realisation of Capacity Plan								
Warsaw ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.7%	-7%	+4.7%	0.20	0.23			
Summer	B: 6.2% L: 4.2%		+4.7%	0.32		191 (+4%)	191 (+4%)	No
Summer 2019 performance assessment								
<p>The average en-route delay per flight decreased from 0.40 minutes per flight in Summer 2018 to 0.32 minutes per flight in Summer 2019.</p> <p>65% of the Summer delays were for the reason ATC Capacity, 26% for ATC Staffing, 8% for Weather, and 1% for Equipment.</p> <p>The ACC capacity baseline was measured with ACCESS/Reverse CASA at 191, 4% higher than in 2018. During the measured period, the average peak 1 hour demand was 186 and the average peak 3 hour demand was 176.</p> <p>Approximately 50% of total delay was attributed to the eNM measures and will be reattributed to DFS.</p>								
Operational actions				Achieved	Comments			
Full implementation of FRA in Baltic FAB				Yes				
Evolutionary ASM Tool to support Advanced FUA				Yes				
Full operation of A-CDM at Warsaw Chopin airport				Yes	Technical implementation finalised, ops tests ongoing for the final steps			
Advanced ATFCM techniques, including STAM, workload and complexity estimation, and improved predictability				Yes				
Polish 2010+ airspace project				Yes				
Re-sectorisation of R and J low				Yes				
Full benefits of 5NM longitudinal separation				Yes				
Additional controllers				Yes				
Additional benefits ATC air-ground data link services above FL-285				Yes				
TCT training and tests				Yes	On-going			
Continuous development of sector configurations and management				Yes				
Maximum configuration: 12 sectors				Yes	13 sectors opened			

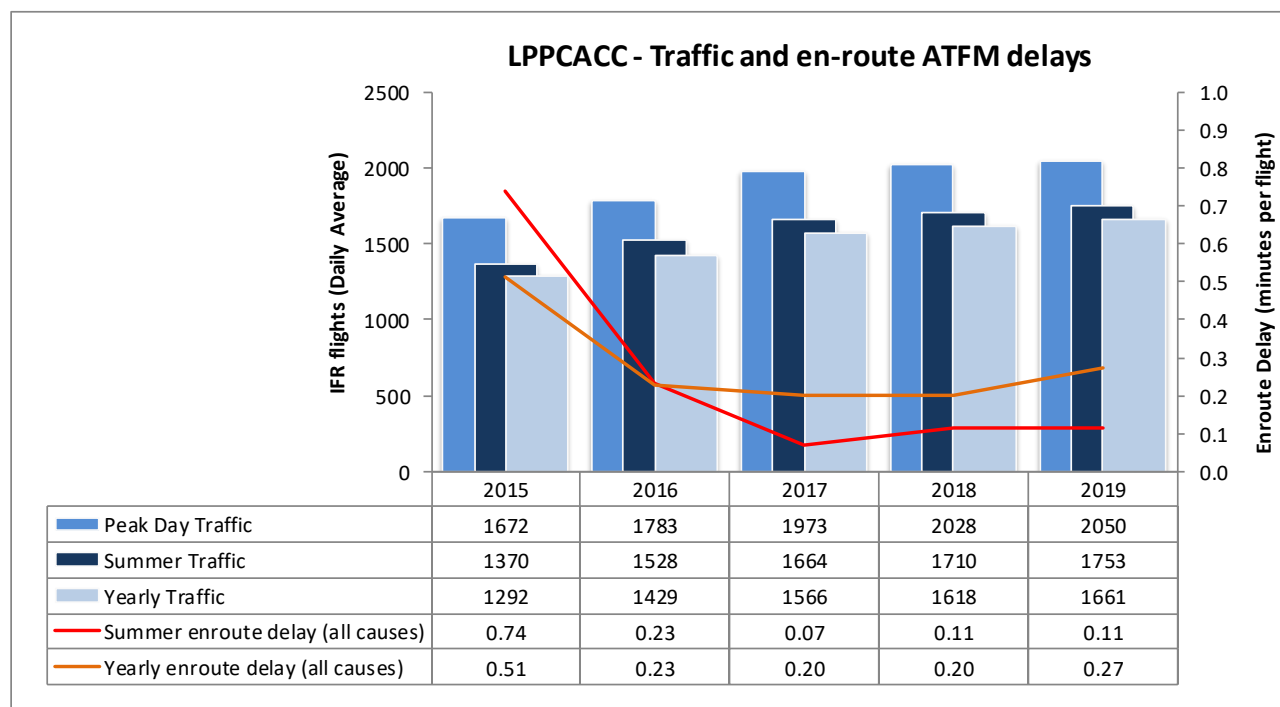
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EPWWZL	109	22.6%
2019	EPWWJL	65	13.6%
2019	EPWWBDL	56	11.7%
2019	EPWWJKL	52	10.9%
2019	EPWWTCL	45	9.3%
2019	EPWWJKRZL	21	4.4%



46. PORTUGAL - LISBON ACC

Traffic & Delay



2019 Realisation of Capacity Plan

2019 Realisation of Capacity Plan								
Lisbon ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity gap? ACC Capacity Baseline (% difference 2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
	Year	H: 5.0%	-5%	+2.7%	0.27	0.12	127 (+3%)	123 (+0%)
Summer	B: 4.2% L: 2.8%	+2.5%		0.11				
Summer 2019 performance assessment								

Summer 2019 performance assessment

The average en-route delay per flight remained at 0.11 minutes per flight in Summer 2019.

44% of the delays were for the reason ATC Capacity, 25% for ATC Staffing, 12% for the reason Weather and 8% for the reason Equipment.

The ACC capacity baseline was measured with ACCESS at 123. During the measured period (June and July AIRAC cycles), the average peak 1 hour demand was 124 and the average peak 3 hour demand was 110.

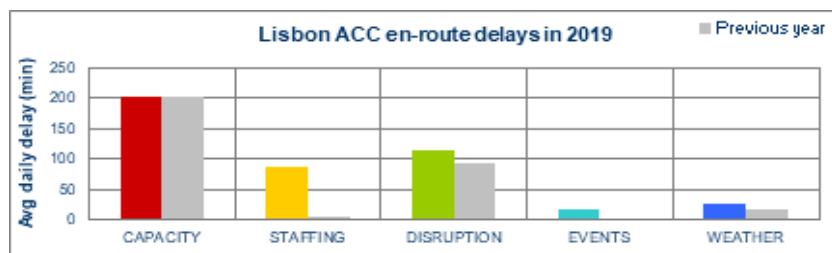
Taking into consideration the Lisbon FIR traffic demand characterisation, the hourly traffic summer 2019 has presented a slightly reduction of 2H peak traffic demand compared to 2018. Significant difference has been presented between winter and summer season 2H peak traffic demand, where winter season 2H peak traffic demand was 8% above summer season.

Operational actions	Achieved	Comments
Enhanced ATFCM procedures, including STAM	Yes	
Flexible rostering	Yes	
Availability of ATCOs to open up to 9-10 sectors (6/7 ENR, 2/3 TMA)	Yes	CONF10I & CONF10A6 most frequently used
Dynamic split of South sector	No	Delay until new ATM System implemented
Flexible sector opening schemes	Yes	CONF 11D6 CONF10I CONF10A6 CONF 9B
Training for the new system	Yes	
Maximum configuration: 12 (9 ENR+3 TMA)	Yes	11 sectors sufficient during summer season CONF 11D6 (8 ENR+3 TMA) CONF 12A6 open during winter season

NETWORK OPERATIONS REPORT – 2019

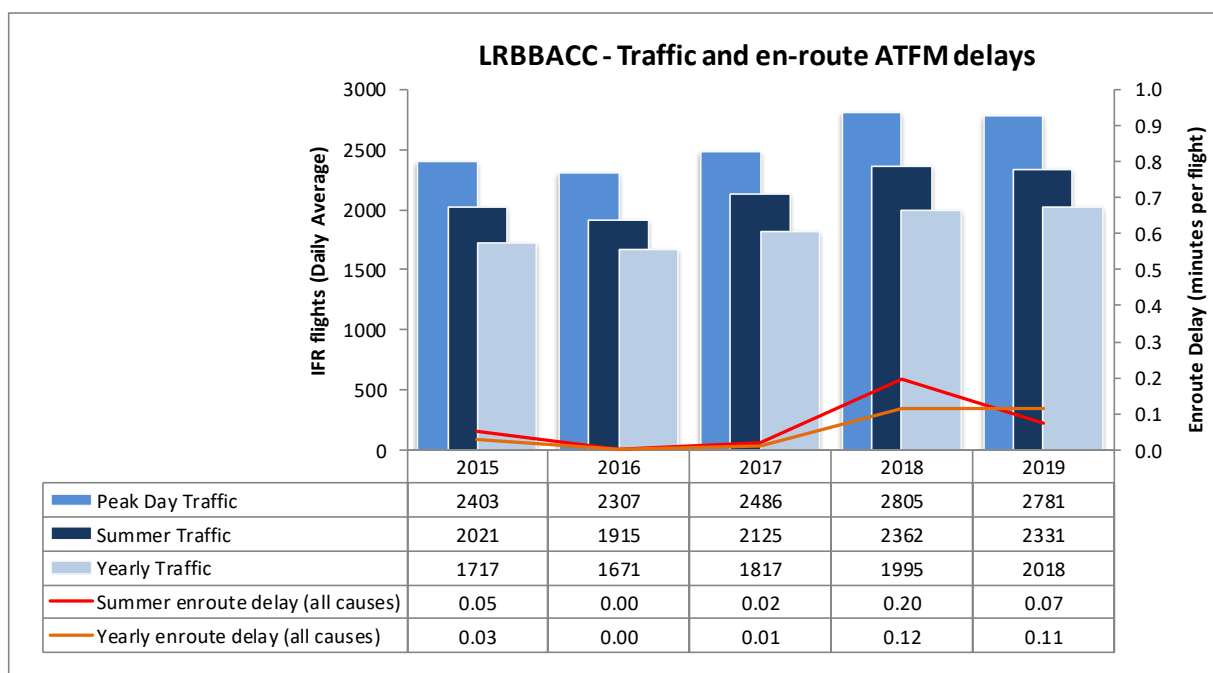
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LPPCMAD	149	33.0%
2019	LPPCWEST	97	21.5%
2019	LPPCCEU	83	18.4%
2019	LPPCNOL	26	5.7%
2019	LPPCNXUPP	23	5.1%
2019	LPPCWL365	22	5.0%



47. ROMANIA - BUCHAREST ACC

Traffic & Delay



2019 Realisation of Capacity Plan

Bucharest ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.6%	+5%	+1.1%	0.11	0.01			
Summer	B: 5.5%		-1.3%	0.07		183 (+0%)	183 (+0%)	No
	L: 2.9%							

Average enroute ATFM delay per flight decreased from 0.20 minutes per flight in Summer 2018 to 0.07 minutes per flight in Summer 2019.

54% of the Summer delays were due to the reason Weather, 38% due to Equipment and 8% due to Special event.

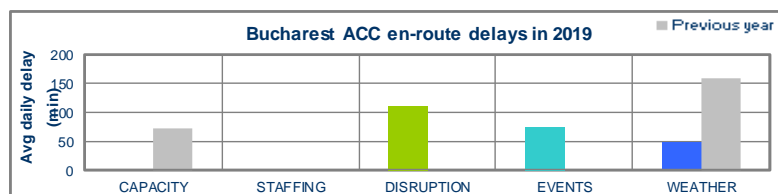
The ACC capacity baseline was assessed to be at 183 the same level as in Summer 2018. During the measured period, the peak 1 hour demand was 153 flights and the peak 3 hour demand was 145.

Operational actions	Achieved	Comments
Stepped Implementation of FRA in accordance with ConOps	Yes	Finalised with SEEFRA implementation in November 2019
Improved ATFCM, including use of occupancy counts	Yes	
ATS route network and sectorisation improvements	Yes	
eNM/ANSP Summer 2019 Measures Traffic Re-distribution through LRBB in support of LOVV/EDUU/EDYY	Yes	
LoAs and ATS Instructions for Bucharest ACC Sectors review on regular basis	Yes	
Staff increased in line with capacity requirements	Yes	
Automated Support for Traffic Load (Density) Management (FCM06)	Yes	Progress continued, as planned, for implementation during the winter 2021/2022
Automated Support for Traffic Complexity Assessment (FCM06)	Yes	Progress continued, as planned, for implementation during the winter 2021/2022
New ATM System implementation – phase 1	Yes	
Maximum configuration: 14 sectors if necessary	Not required	12 sectors were opened as the traffic demand did not require a configuration with 14 Sectors

Allocation of and Reasons for En-route Delay

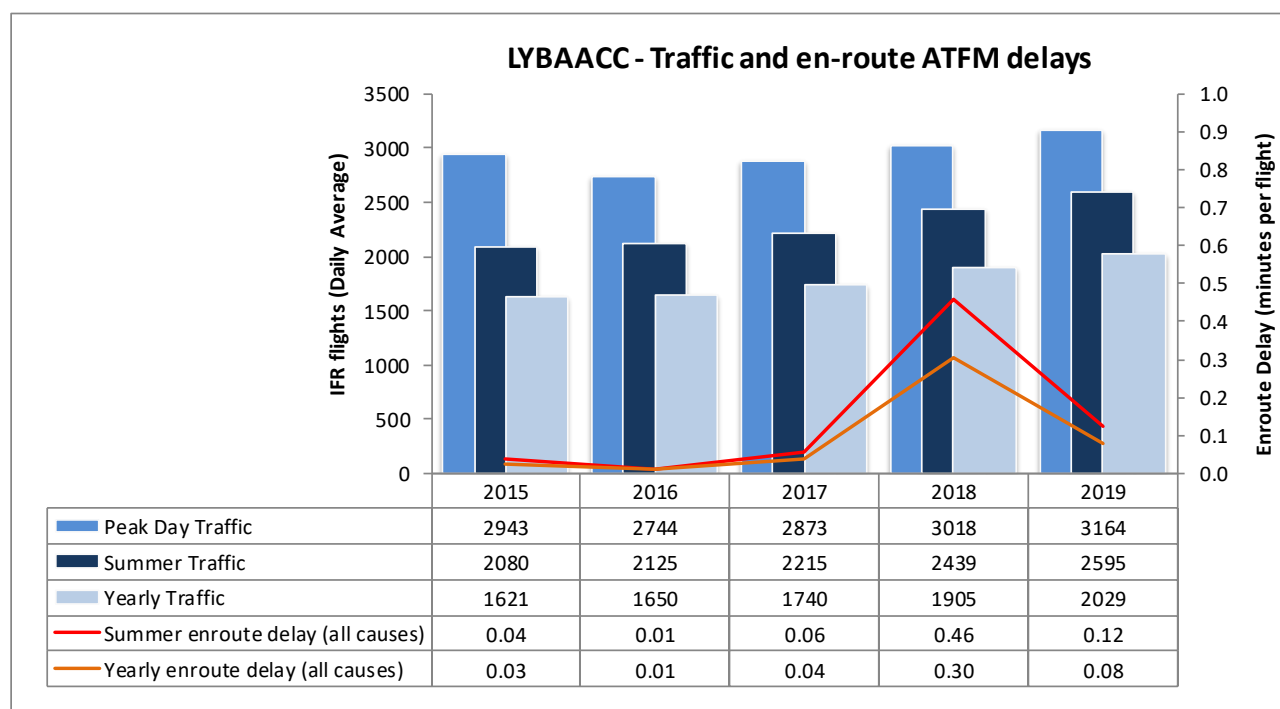
NETWORK OPERATIONS REPORT – 2019

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LRBBBBM15	112	48.3%
2019	LRBBBBM68	85	36.8%
2019	LRBBBBM67	14	6.2%
2019	LRBBBBM9	11	4.8%
2019	LRBBBBM89	5	2.3%
2019	LRBBKNL15	3	1.3%



48. SERBIA & MONTENEGRO - BELGRADE ACC

Traffic & Delay

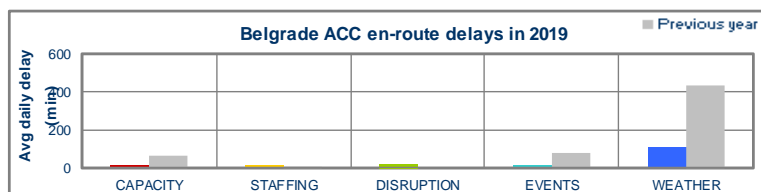


2019 Realisation of Capacity Plan

Beograd ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.8%	No significant impact	+6.5%	0.08	0.10			
Summer	B: 4.6%		+6.4%	0.12		194 (+6%)	186 (+2%)	No
Summer 2019 performance assessment								
En-route delay decreased from 0.46 minutes per flight in Summer 2018 to 0.12 minutes per flight in Summer 2019. 68% of the Summer delays were for Weather, 11% for Equipment, 8% for ATC capacity, 7% for ATC staffing, and 5% for Special Event. The ACC capacity baseline was measured with ACCESS at 186. The peak 1 hour demand was 180 and the peak 3 hour demand was 169 during the measurement period.								
Operational actions				Achieved	Comments			
Consolidation of SECSI Operations				Yes				
Start of FUA Operations				Yes	Montenegro – NO – planned for 23/04/2020			
OLDI complementary messages				Yes				
DPS HW upgrade				Yes				
Maximum configuration: 11 sectors				Yes				

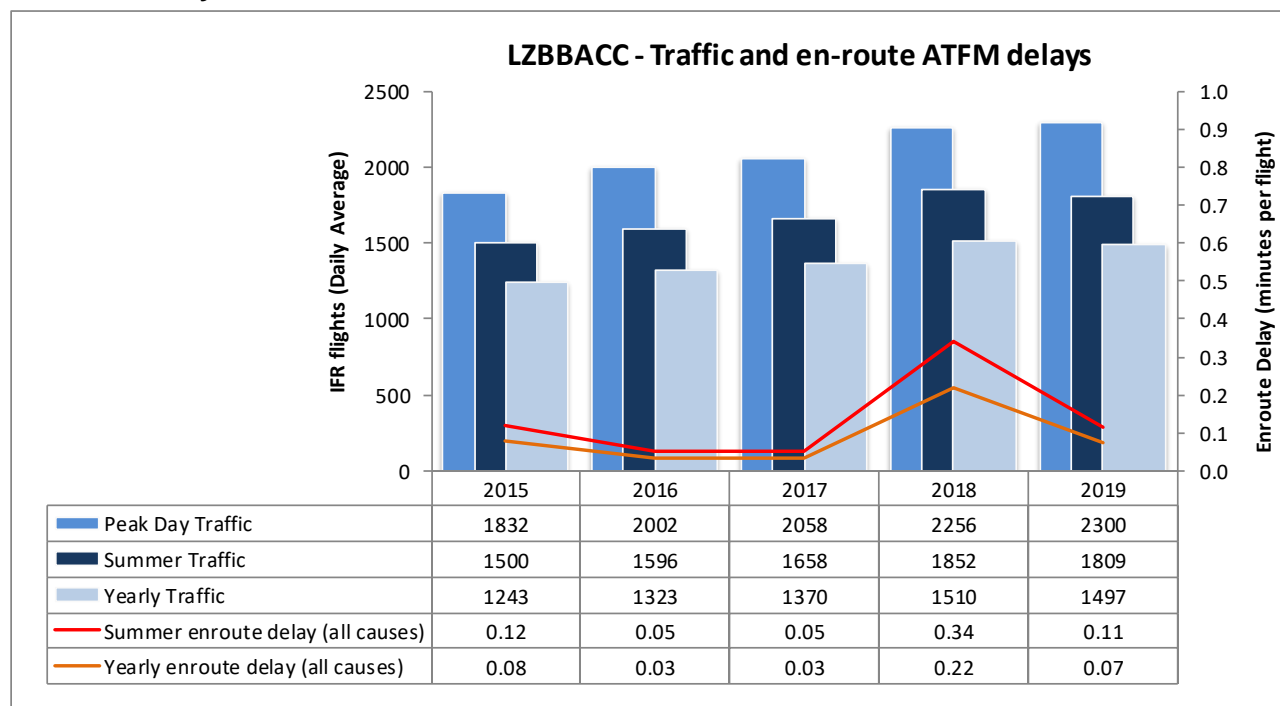
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LYBAUN	39	24.3%
2019	LYBATWS	39	24.1%
2019	LYBAUW	20	12.6%
2019	LYBAUWS	13	8.0%
2019	LYBATN	13	7.9%
2019	LYBATWES	6	4.0%



49. SLOVAK REPUBLIC - BRATISLAVA ACC

Traffic & Delay



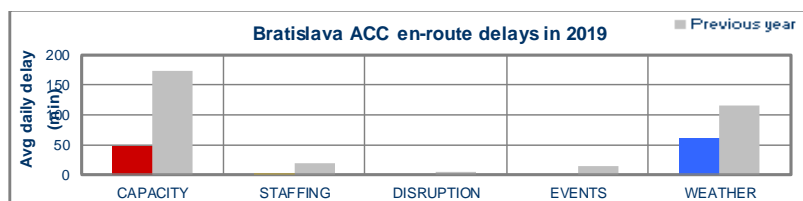
2019 Realisation of Capacity Plan

2019 Reallocation of Capacity Plan								
Bratislava ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.5%	-25%	-0.8%	0.07	0.10	140 (+2%)	142 (+4%)	No
Summer	B: 5.7% L: 3.3%		-2.3%	0.11				
<p>The average en-route delay per flight decreased from 0.34 minutes per flight in Summer 2018 to 0.11 minutes per flight in Summer 2019.</p> <p>57% of the Summer delays were for the reason Weather and 43% for the reason ATC Capacity.</p> <p>The ACC capacity baseline was measured with ACCESS at 142, 4% higher than in 2018. During the measured period, the average peak 1 hour demand was 132 and the average peak 3 hour demand was 123.</p>								
Operational actions				Achieved	Comments			
SEENFRA Implementation				Yes				
BRAFRA				Yes				
Improved ATFCM techniques, including STAM				Yes				
Continuous improvements of the route network and sectorisation				Yes				
Enhanced sectorisation according to FABCE airspace plan				Yes				
Continuous recruitment to increase staff level				Yes				
HW/SW Upgrade				Yes				
Optimisation of sector opening times				Yes				
Maximum configuration: 5 sectors				Yes	5 sectors opened			
Remedial measures				Achieved	Comments			
Intensive recruitment				Yes				
Implementation of the eNM/ANSPs proposed measures				Yes				
Central/South East Europe airspace restructuring project				Yes				

NETWORK OPERATIONS REPORT – 2019

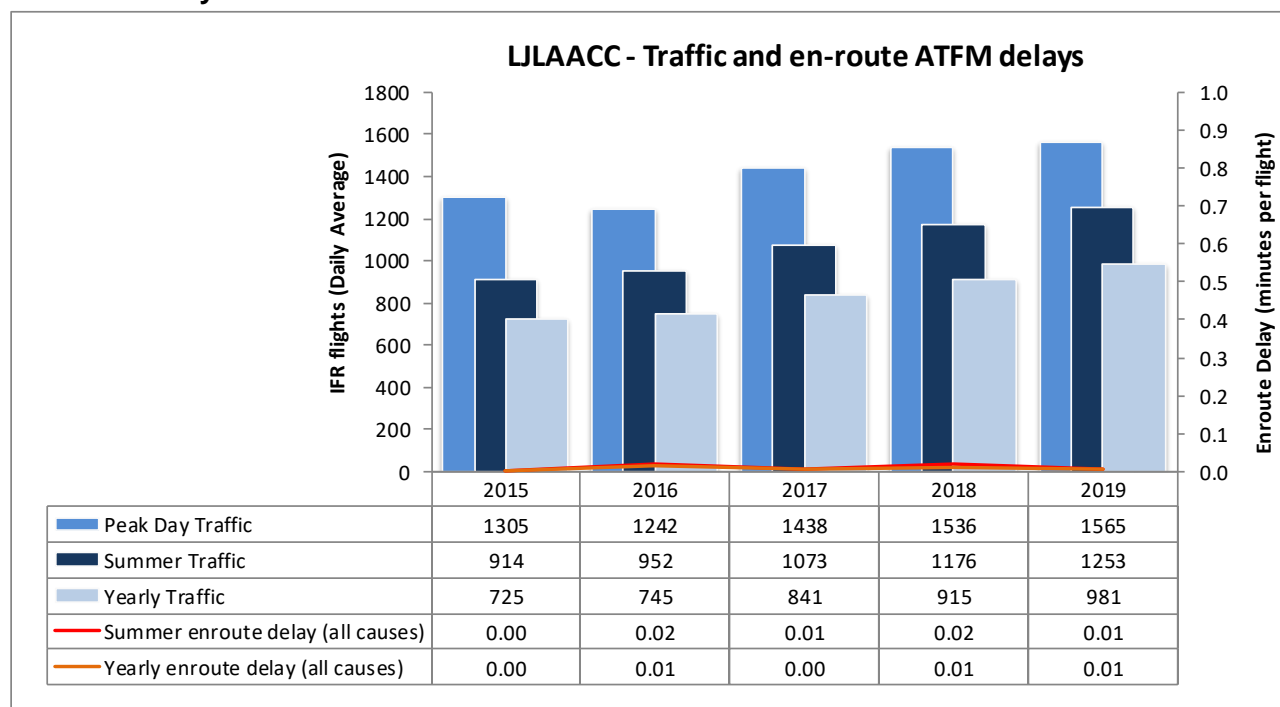
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LZBBU3	61	55.7%
2019	LZBBL35	21	19.7%
2019	LZBBU36	16	14.3%
2019	LZBBU	5	4.8%
2019	LZBBL33	2	2.2%
2019	LZBBU37	2	2.2%



50. SLOVENIA - LJUBLJANA ACC

Traffic & Delay



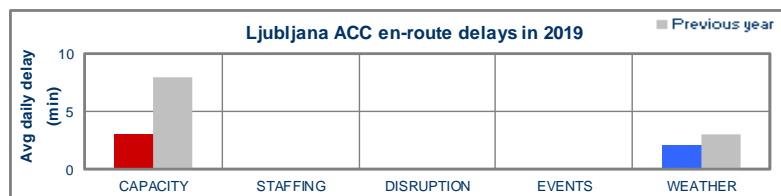
2019 Realisation of Capacity Plan

7	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.0%	+11%	+7.3%	0.01	0.22	99 (+6%)	98 (+5%)	No
Summer	B: 4.9% L: 2.8%		+6.6%	0.01				
Summer 2019 performance assessment								
The average en-route delay per flight slightly decreased from 0.02 minutes per flight in Summer 2018 to 0.01 minutes per flight during Summer 2019.								
52% of the Summer delays were due to ATC capacity and 48% due to weather.								
The capacity baseline was estimated with ACCESS at 98. The peak 1 hour demand was 92 and the peak 3 hour demand was 84 during the Summer 2019.								
Operational actions				Achieved	Comments			
Stepped implementation of FRA according to the FAB CE Airspace Plan, SAXFRA project, SECSI FRA project and new FRA related initiatives, if any, will be reflected in FAB CE Airspace Plan				Yes				
Enhanced ATFCM techniques, including STAM				Yes	STAM used on FAB level.			
ATS route network deleted, traffic organisation changes will depend on the changes in flows resulting from FRA projects in the region (SECSI FRA, FRAIT, SEENFRA...)				Yes				
Enhanced sectorization according to the FAB CE Airspace Plan				Yes				
Additional ATCOs will be recruited as necessary				Yes	Training started for 3 new ATCOs.			
Minor system upgrades as necessary				Yes				
Sector capacity assessment and increase approximately 5-7% for certain sectors				Yes				
Flexible sector configurations, adapting regularly based on demand				Yes	Added 2 new configurations.			
Maximum configuration: 5 sectors				Yes	Was available on Saturdays.			

NETWORK OPERATIONS REPORT – 2019

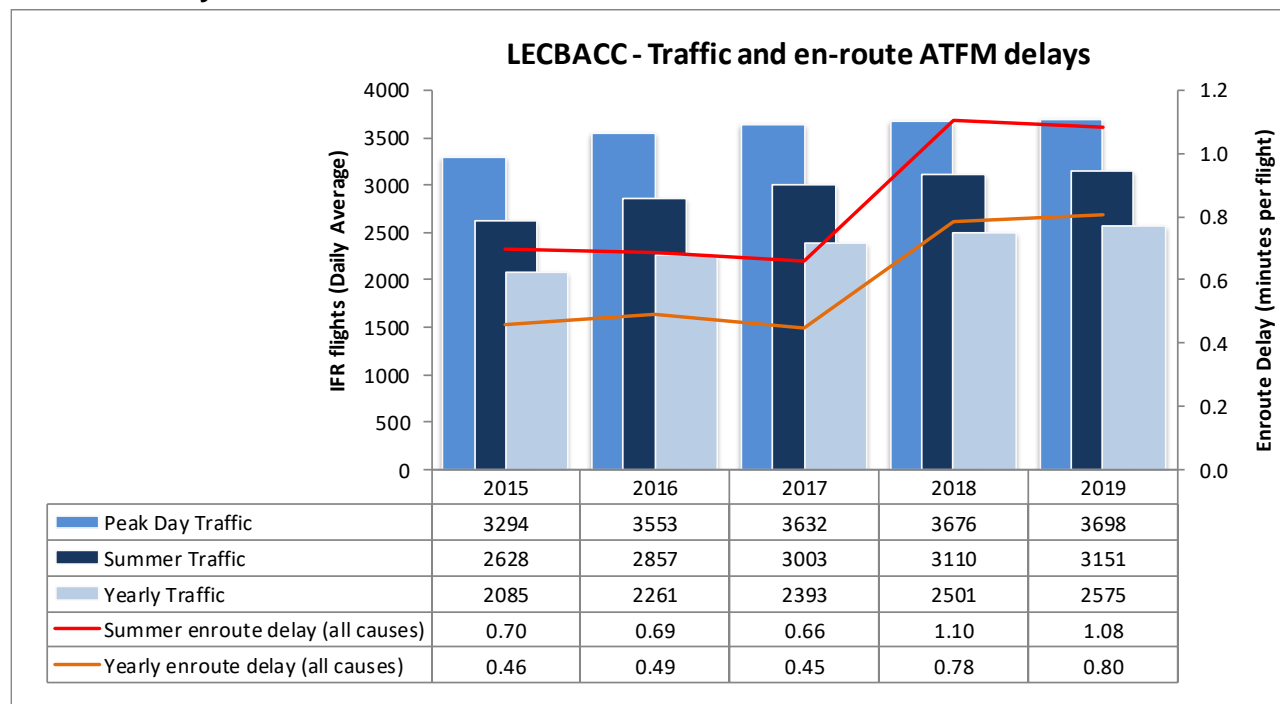
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LJLAONE	4	72.4%
2019	LJLA3566	1	11.8%
2019	LJLA3766	0	7.6%
2019	LJLA3336	0	6.7%
2019	LJLA0034	0	1.5%



51. SPAIN - BARCELONA ACC

Traffic & Delay



2019 Realisation of Capacity Plan

Barcelona LECBACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.5%	No significant impact	+3.0%	0.80	0.21			
Summer	B: 6.0% L: 4.4%		+1.3%	1.08		164 (+0%)	164 (+0%)	Yes

Summer 2019 performance assessment

Average en-route delay per flight slightly decreased from 1.10 minutes per flight in Summer 2018 to 1.08 minutes per flight in Summer 2019.

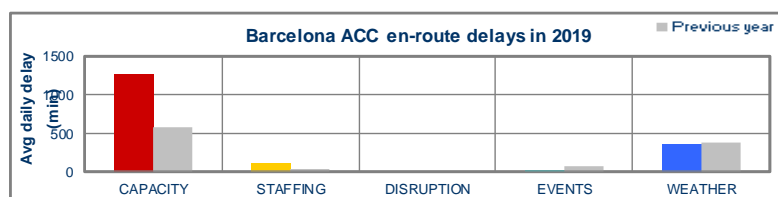
70% of the delays were for the reason ATC Capacity, 25% for Weather, 5% for the reason ATC Staffing.

The ACC capacity baseline was measured with ACCESS/Reverse CASA at 164. During the measured period, the peak 1 hour demand was 170 and the peak 3 hour demand was 161.

Operational actions	Achieved	Comments
LARA	No	Technical issues encountered operational use expected early 2020
Improved ATFCM, in line with AF4 of PCP	Yes	
New NATPI traffic organisation (improved LFBB-LECB/measures summer 2019)	Yes	
Improved LoA LFBB-LECB	Yes	
eTANDEM EVEREST	Yes	
SATCA version 3.Z80	Yes	
Optimised sector configurations & sector capacities	Yes	
Improvement of BALSE sector	Yes	
Maximum configuration: 13 sectors	Yes	13 sectors were opened
Remedial measures	Achieved	Comments
Improved ATFCM techniques	Yes	
Continuous monitoring of the traffic evolution	Yes	
Adaptation of the ATCO recruitment levels	Yes	
France/Spain airspace restructuring project	Yes	

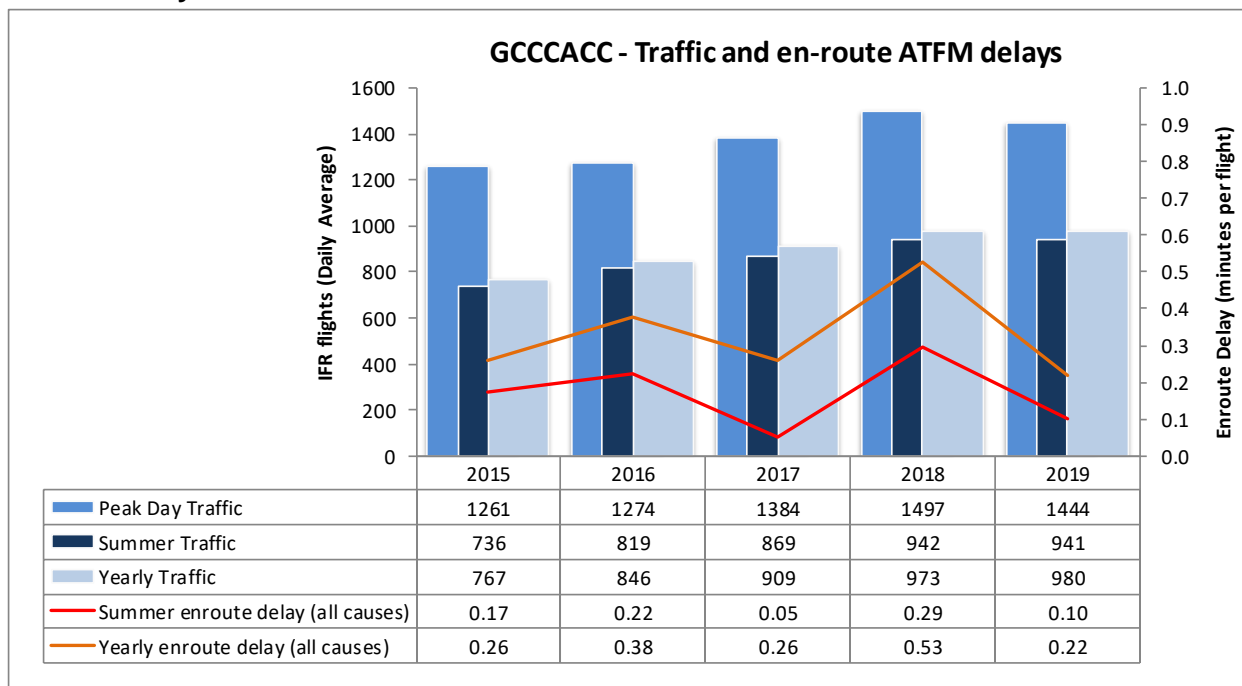
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LECBCCC	376	21.6%
2019	LECBBAS	306	17.6%
2019	LECBMNI	163	9.4%
2019	LECBLVU	119	6.8%
2019	LECBG23	109	6.3%
2019	LECBGOI	103	5.9%



52. SPAIN - CANARIAS ACC

Traffic & Delay

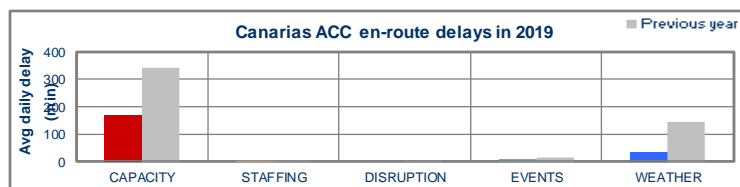


2019 Realisation of Capacity Plan

Canarias ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.4% B: 4.8% L: 3.0%	No significant impact	+0.7%	0.22	0.27			
Summer			-0.1%	0.10		79 (+1%)	78 (+0%)	No
Summer 2019 performance assessment								
Average en-route delay per flight decreased from 0.29 minutes per flight in Summer 2018 to 0.10 minutes per flight in Summer 2019. 86% of the delays were for the reason ATC Capacity, 11% for Weather, and 2% for the reason ATC Staffing. The ACC capacity baseline was measured with ACCESS at 78. During the measured period, the peak 1 hour demand was 59 and the peak 3 hour demand was 53.								
Operational actions				Achieved	Comments			
LARA				No	Technical issues encountered operational use expected early 2020			
Improve capacity in GCLP. Redesign of MAP				Yes				
Improved ATFCM, in line with AF4 of PCP				Yes				
Net increase of ATCOs continues				No				
SACTA versión 3.Z5.80				Yes				
Optimised sector configurations & sector capacities				Yes				
Improvement of NE sectors				Yes				
Maximum configuration: 10 (5 APP + 5 ENR)				Yes	10 sectors (5 APP + 5 ENR)			

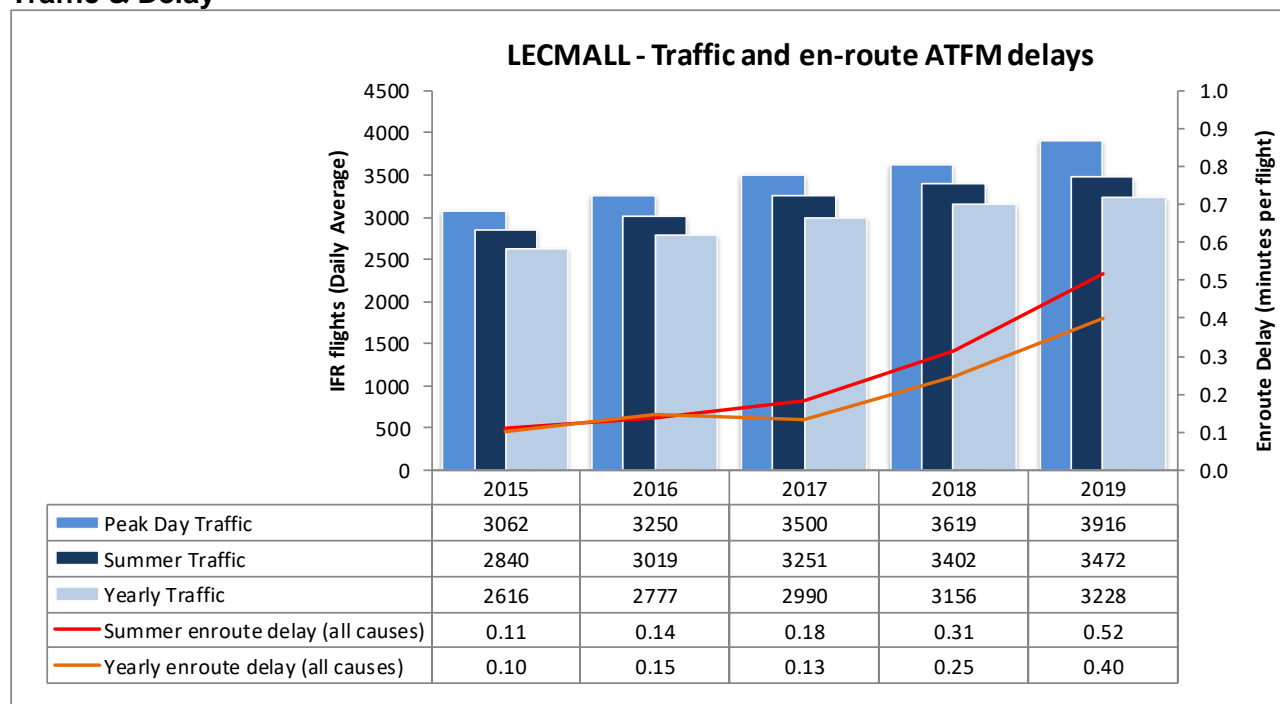
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	GCCCCRNE	114	53.6%
2019	GCCCCINB	21	10.1%
2019	GCCCCIGC	14	6.4%
2019	GCCCCOCE	12	5.4%
2019	GCCCCFCW	12	5.4%
2019	IPERA	11	5.1%



53. SPAIN - MADRID ACC

Traffic & Delay



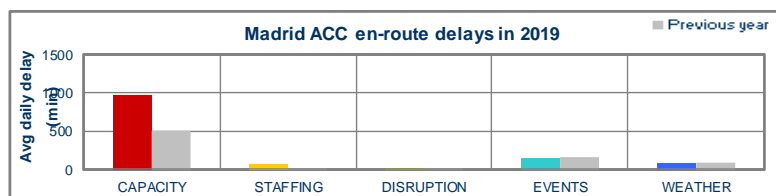
2019 Realisation of Capacity Plan

2019 Reconfiguration of Capacity Plan								
Madrid ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 4.6% B: 3.9% L: 2.4%	No significant impact	+2.3%	0.40	0.14			
Summer			+2.0%	0.52		231 (+1%)	219 (-4%)	Yes
Summer 2019 performance assessment								
<p>Average en-route delay per flight increased from 0.31 minutes per flight in Summer 2018 to 0.52 minutes per flight in Summer 2019. 76% of the delays were for the reason ATC Capacity, 10% for Weather, 7% for the reason Other, and 5% for the reason ATC Staffing.</p> <p>The ACC capacity baseline was measured with ACCESS at 219. During the measured period, the peak 1 hour demand was 228 and the peak 3 hour demand was 215.</p>								
Operational actions				Achieved	Comments			
LARA				No	Technical issues encountered operational use expected early 2020			
Improved APP procedures in south configuration				Yes				
Reduced ARR separation from 4 to 3 NM				No	Delayed until 2020			
Improved ATFCM, in line with AF4 of PCP				Yes				
Improvement of SANTIAGO sector				Yes				
SACTA versión 3.Z5.80				Yes				
eTANDEM EVEREST				Yes				
Optimised sector configurations & sector capacities				Yes				
Maximum configuration: 17				Yes	17 sectors opened			

Allocation of and Reasons for En-route Delay

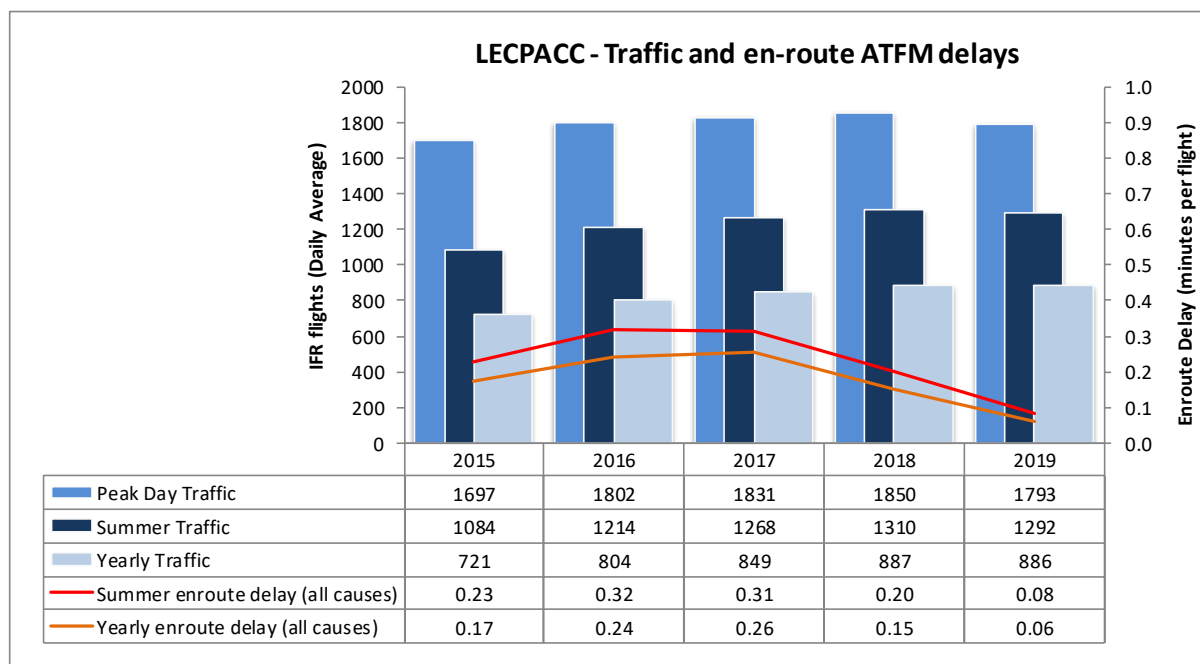
NETWORK OPERATIONS REPORT – 2019

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LECMBLI	267	20.6%
2019	LECMSAN	173	13.3%
2019	LEGMTZ	111	8.5%
2019	LECMPAU	100	7.7%
2019	LECMZGZ	74	5.7%
2019	LECMDGU	62	4.8%



54. SPAIN - PALMA ACC

Traffic & Delay

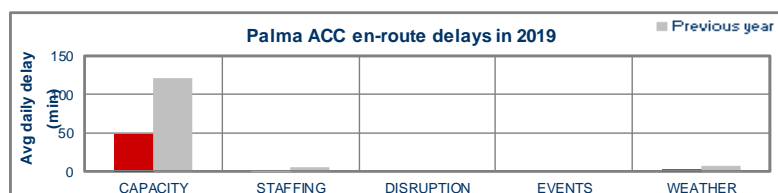


2019 Realisation of Capacity Plan

Palma ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 5.2% B: 4.5% L: 3.1%	No significant impact	-0.1%	0.06	0.17			
Summer			-1.4%	0.08		108 (+0%)	109 (+1%)	No
Summer 2019 performance assessment								
Average enroute delay per flight decreased from 0.20 minutes in Summer 2018 to 0.08 minutes per flight in Summer 2019. 88% of the delays were for the reason ATC Capacity, 8% for Weather and 4% for ATC Staffing.								
The ACC capacity baseline was measured with ACCESS at 109. During the measured period, the peak 1 hour demand was 99, the peak 3 hour demand was 93.								
Operational actions				Achieved	Comments			
LARA				No	Technical issues encountered operational use expected early 2020			
Improved ATFCM, in line with AF4 of PCP				Yes				
NET increase of ATCOs continues				Yes				
SACTA versión 3.Z5.80				Yes				
EVEREST				Yes				
Optimised sector configurations & sector capacities				Yes				
Maximum configuration: 8				Yes	8 sectors opened			

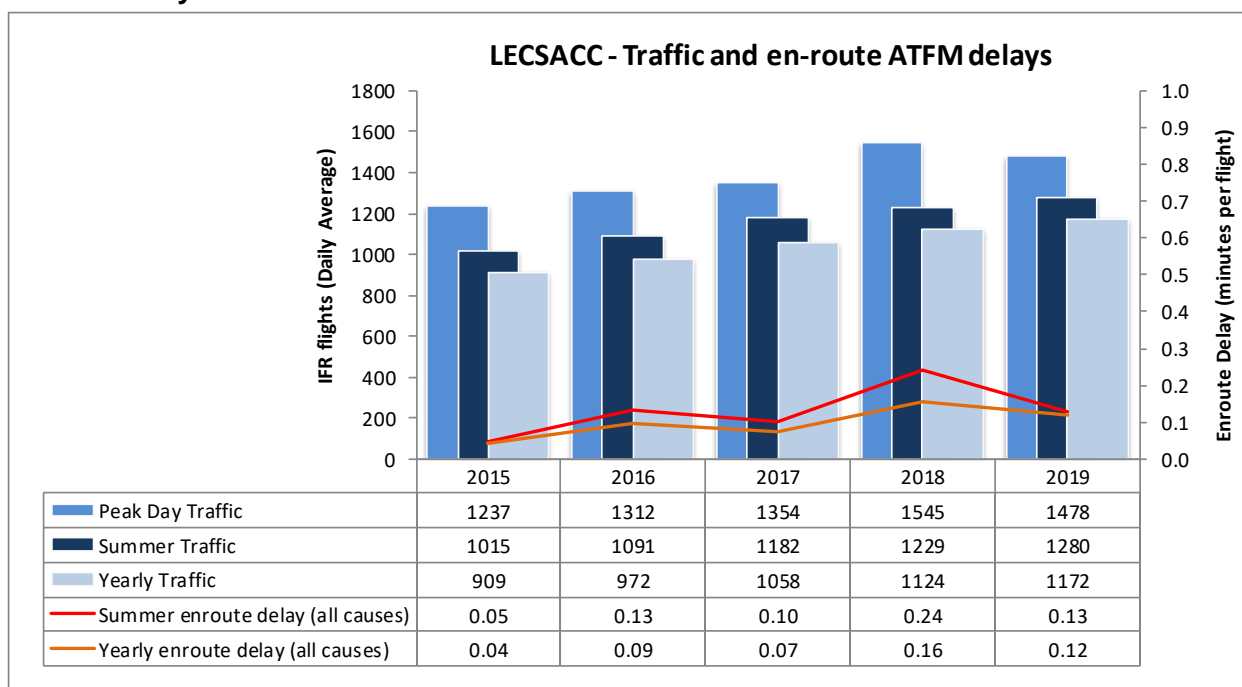
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LECPMXX	47	86.4%
2019	LECPGIX	4	8.0%
2019	LECPXX	1	2.7%
2019	LECPGX	1	2.7%
2019	LECPF1X	0	0.2%



55. SPAIN - SEVILLA ACC

Traffic & Delay



2019 Realisation of Capacity Plan

Sevilla ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 6.8%	+4%	+4.3%	0.12	0.13			
Summer	B: 6.5%		+4.1%	0.13		103 (+2%)	103 (+2%)	No
	L: 4.9%							

Summer 2019 performance assessment

Average en-route delay decreased from 0.24 min/flight in Summer 2018 to 0.13 min/flight in Summer 2019.

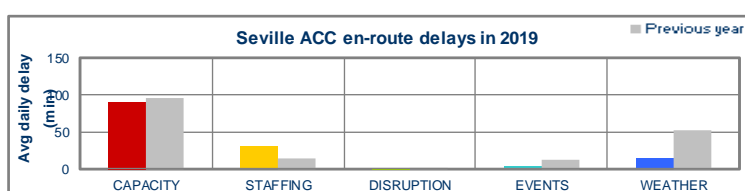
69% of the delays were for the reason ATC Capacity, 17% for Weather and 10% for ATC Staffing.

The ACC capacity baseline was measured with ACCESS at 103. During the measured period, the peak 1 hour demand was 97 and the peak 3 hour demand was 87.

Operational actions	Achieved	Comments
LARA	No	Technical issues encountered operational use expected early 2020
Improved ATFCM, in line with AF4 of PCP	Yes	
New ATCOs to maintain current number	Yes	
SACTA versión 3.Z5.80	Yes	
Optimised sector configurations & sector capacities	Yes	
Splitting of LECSSEV	Yes	
Maximum configuration: 9 sectors	Yes	8 sectors were sufficient

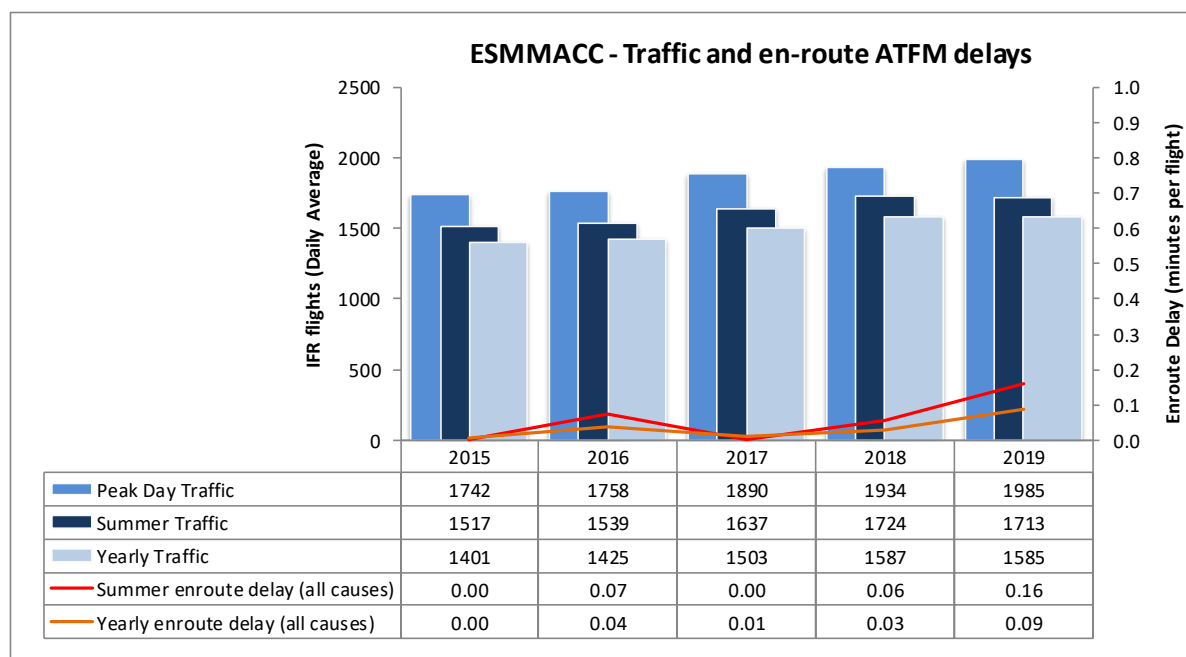
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LECSMA4	39	27.7%
2019	LECSSES	24	17.2%
2019	LECSRTA	23	16.1%
2019	LECSNO1	15	10.3%
2019	LECSNCS	10	7.3%
2019	LECSAPT	9	6.3%



56. SWEDEN - MALMÖ ACC

Traffic & Delay



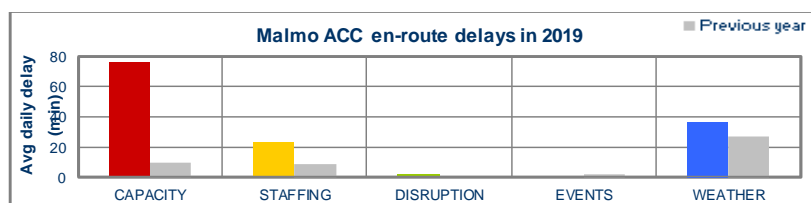
2019 Realisation of Capacity Plan

Malmö ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.7%	No significant impact	-0.1%	0.09	0.06			
Summer	B: 2.8% L: 1.3%		-0.6%	0.16		136 (+1%)	133 (-1%)	No
Summer 2019 performance assessment								
<p>The average en-route delay per flight increased from 0.06 minutes per flight in Summer 2018 to 0.16 minutes per flight in Summer 2019.</p> <p>55% of the Summer delays were due to ATC Capacity, 27% due to Weather, 17% due to ATC Staffing and 1% due to Equipment.</p> <p>The ACC capacity baseline was estimated with ACCESS to be at 133. During the measured period, the average peak 1 hour demand was 130 and the average peak 3 hour demand was 123.</p>								
Operational actions				Achieved	Comments			
Optimising the use of FRA when military areas are active				Yes				
Improved ATFCM, working with occupancy counts				Yes				
Continuous improvements on the ATS route network and FRA sectorisation				Yes				
DFL from 355 to 365				Yes				
Maintain appropriate level of staffing to open up to 11 sectors				Yes	Level of staffing allowed to regularly open 10 sectors but was not adequate to open 11 sectors extensively as required by traffic demand levels			
Minor updates of COOPANS				Yes				
Sector configurations adapted to traffic demand				Yes				
Maximum configuration: 11 (2 sector groups)				Yes	Due to staffing levels, 11 sectors only possible during limited periods of time			
Remedial measures				Achieved	Comments			
Adaptation of the ATCO recruitment levels				Yes	Recruitment and training ongoing			

NETWORK OPERATIONS REPORT – 2019

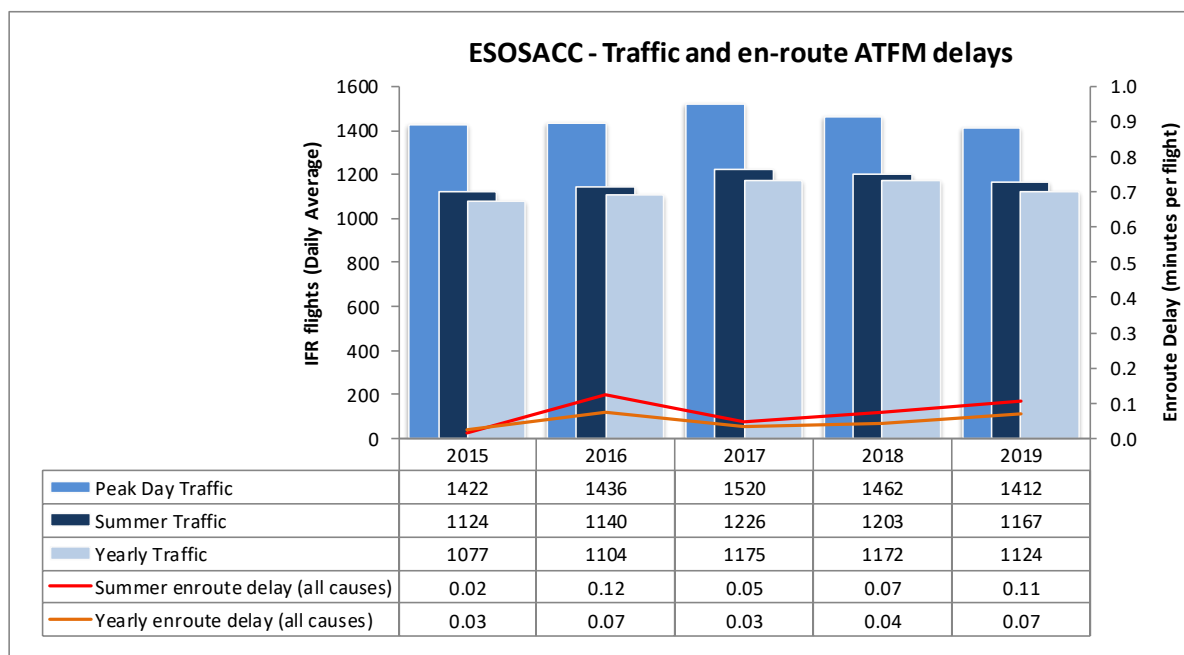
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	ESMM89	84	60.6%
2019	ESMM23W	12	8.9%
2019	ESMMKL	12	8.8%
2019	ESMM67	11	8.1%
2019	ESMM23	8	6.1%
2019	ESMM67Y	7	5.1%



57. SWEDEN - STOCKHOLM ACC

Traffic & Delay

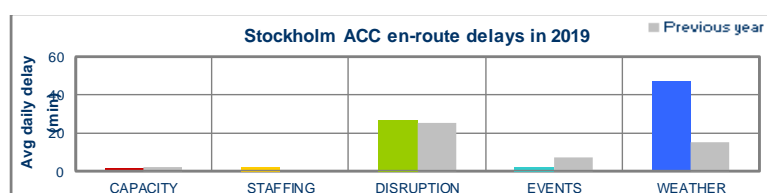


2019 Realisation of Capacity Plan

Stockholm ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 1.6% B: 0.6% L: -0.6%	No significant impact	-4.1%	0.07	0.07			
Summer			-3.0%	0.11		113 (+1%)	112 (+0%)	No
Summer 2019 performance assessment								
The average en-route delay per flight increased from 0.07 minutes per flight in Summer 2018 to 0.11 minutes per flight in Summer 2019.								
75% of the Summer delays were due to Weather, 19% due to Equipment, 3% due to Airspace management and 3% due to ATC Staffing.								
The ACC capacity baseline was estimated to be at 112. During the measured period, the average peak 1 hour demand was 91 and the average peak 3 hour demand was 84.								
Operational actions				Achieved	Comments			
Optimising the use of FRA when military areas are active				Yes				
Improved ATFCM, working with occupancy counts				Yes				
Continuous improvements on the ATS route network and FRA sectorisation				Yes				
Maintain appropriate level of staffing to open up to 10 sectors				Yes				
Minor updates of COOPANS				Yes				
Sector configurations adapted to traffic demand				Yes				
Maximum configuration: 5 (N) + 5 (S)				Not required	4 (N) + 4 (S) were sufficient			

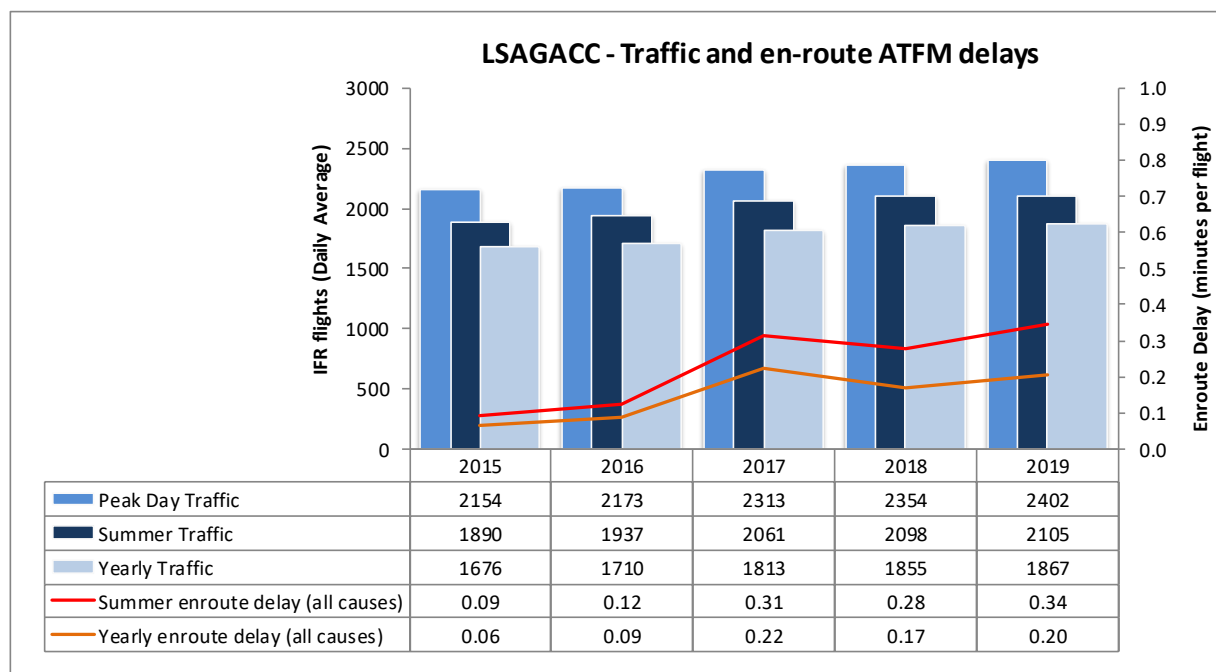
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	ESSATMA	31	39.3%
2019	ESOSALL	23	28.9%
2019	ESOS3	13	16.9%
2019	ESOS2	7	8.5%
2019	ESSAEWS	2	2.1%
2019	NILUG	1	1.6%



58. SWITZERLAND - GENEVA ACC

Traffic & Delay

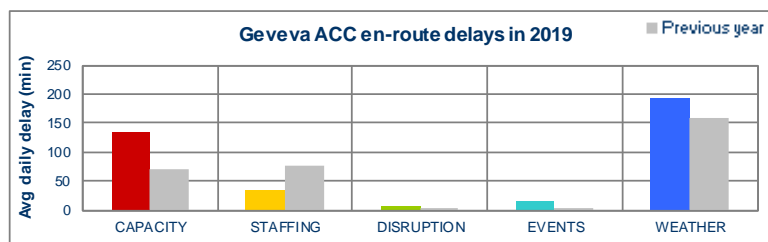


2019 Realisation of Capacity Plan

Geneva ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.3%	+8%	+0.7%	0.20	0.19			
Summer	B: 2.7%		+0.3%	0.34		165 (+4%)	160 (+1%)	No
L: 1.6%								
Summer 2019 performance assessment								
The average en-route delay per flight increased from 0.28 minutes per flight in summer 2018 to 0.34 minutes per flight in summer 2019.								
53% of the Summer delays were for the reason Weather, 35% for ATC Capacity, 7% for the reason ATC Staffing, 4% for Airspace Management and 1% for Equipment.								
Note that according to the Network Delay Sharing mechanism for the eNM/ANSP S19 measures, some delay will be removed from the Geneva ACC figures.								
The capacity baseline was measured using ACCESS/Reverse CASA at 160. During the measured period, the peak 1 hour demand was 160, and the peak 3 hour demand was 149.								
Operational actions				Achieved	Comments			
ATFCM/ASM Step 2 : CDM procedures for Airspace Request Levels 2 and 3				Ongoing				
Crystal TWR/APP – Traffic and complexity prediction tool				Yes	Running in shadow mode since August 2019			
LSGG PAGE-1 (electronic strip)				No	Postponed to spring 2020			
Improved ATFCM Procedures and STAM				Yes	Continuous effort			
Crystal – Traffic and complexity prediction tool				Yes	Continuous effort			
New sectorisation				No	Lower sectors: Postponed to spring 2020 Upper sectors: Postponed to 2022			
Cross qualification of ATCOs (Upper/Lower)				Yes	5 in 2019			
Recruitment as necessary to maintain the required staffing levels				Yes	10 ATCOs in training (2 foreign recruits, 8 trainees)			
Virtual centre				Yes	Integration of multiple QNH zones into the radar tracking and air situation display systems			
Maximum configuration: 9 sectors				Yes	9 (6 upper sectors + 3 lower sectors)			

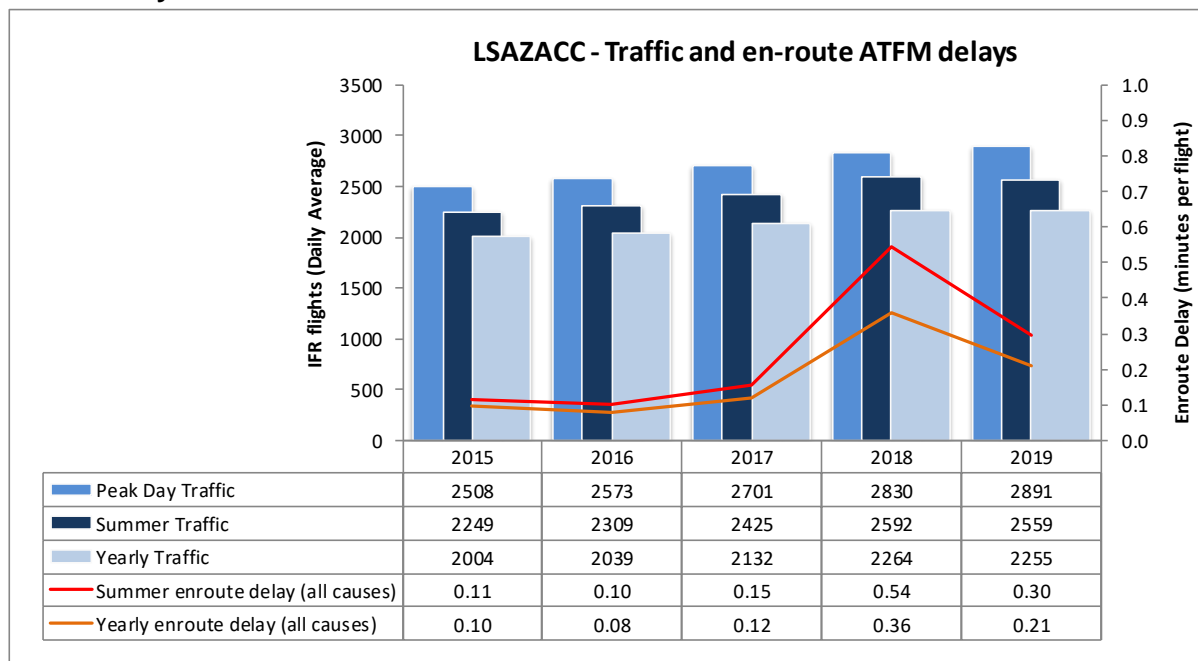
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LSAGL5	189	49.7%
2019	LSAGL4	52	13.6%
2019	LSAGL12	45	11.9%
2019	LSAGL34	27	7.1%
2019	LSAGL67	26	6.9%
2019	LSAGL567	10	2.6%



59. SWITZERLAND - ZURICH ACC

Traffic & Delay

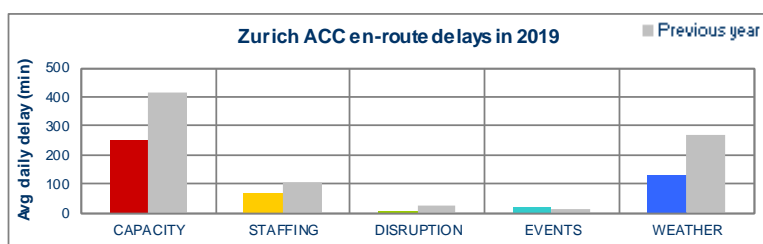


2019 Realisation of Capacity Plan

Zurich ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.6%	No significant impact	-0.4%	0.21	0.18			
Summer	B: 3.1% L: 1.8%		-1.3%	0.30		187 (+0%)	188 (+1%)	No
Summer 2019 performance assessment								
<p>The average en-route delay per flight decreased from 0.54 minutes per flight in Summer 2018 to 0.30 minutes per flight in Summer 2019.</p> <p>57% of the Summer delays were for the reason ATC Capacity, 29% for Weather, 12% for ATC Staffing, 2% for special Event and 1% for Equipment.</p> <p>Note that according to the Network Delay Sharing mechanism for the eNM/ANSP S19 measures, some delay will be removed from the LSAZ figures.</p> <p>The capacity baseline was measured using ACCESS at 188. During the period June/July, the peak 1 hour demand was 189, and the peak 3 hour demand was 179.</p>								
Operational actions				Achieved	Comments			
FABEC ATFCM/ASM Step 2 : CDM procedures for Airspace Request Levels 2 and 3				Ongoing				
LSZH ARSI				Yes	Step 2			
Improved ATFCM Procedures and STAM				Yes	Continuous effort			
Crystal – Traffic and complexity prediction tool				Yes	ACC: Continuous effort. TWR/APP: in shadow mode since August 2019			
Recruitment as necessary to maintain the required staffing levels				Yes	18 ATCOs in training (5 foreign recruits, 13 trainees)			
Virtual centre				Yes	Integration of multiple QNH zones into the radar tracking and air situation display systems			
CAPAN 2017 follow-up, adaptation of EC/h capacities				Yes				
Maximum configuration: 10 sectors				Yes	10 sectors opened (4 lower + 6 upper)			
Remedial measures				Achieved	Comments			
Adaptation of the ATCO recruitment levels				Yes	Reinforced training plan in line with recruitment policy			
Continuous monitoring of the traffic evolution				Yes	Daily roster based on DDR2/STATFOR forecast			
FABEC airspace restructuring project				Ongoing				

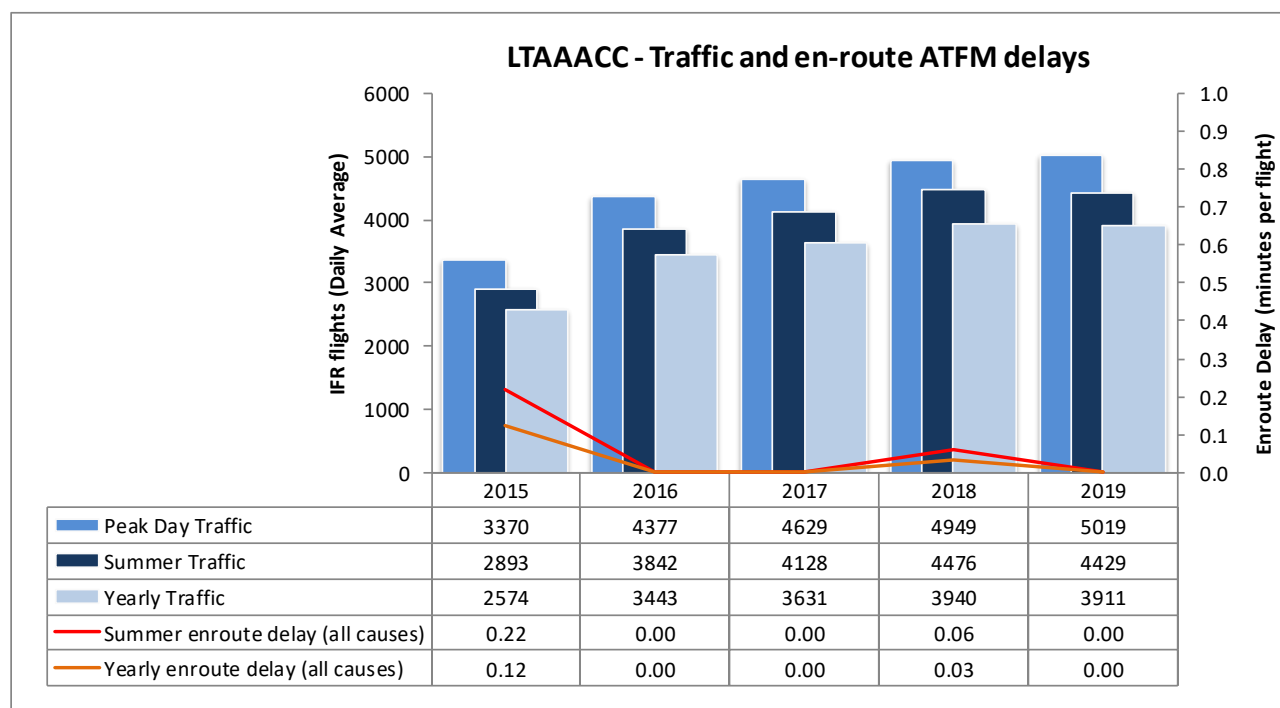
Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	LSAZM12	95	20.2%
2019	LSZHTMA	87	18.5%
2019	LSAZM34	78	16.6%
2019	LSAZM5	49	10.4%
2019	LSAZM567	36	7.8%
2019	LSZBTA	26	5.6%



60. TURKEY - ANKARA /ISTANBUL ACC

Traffic & Delay

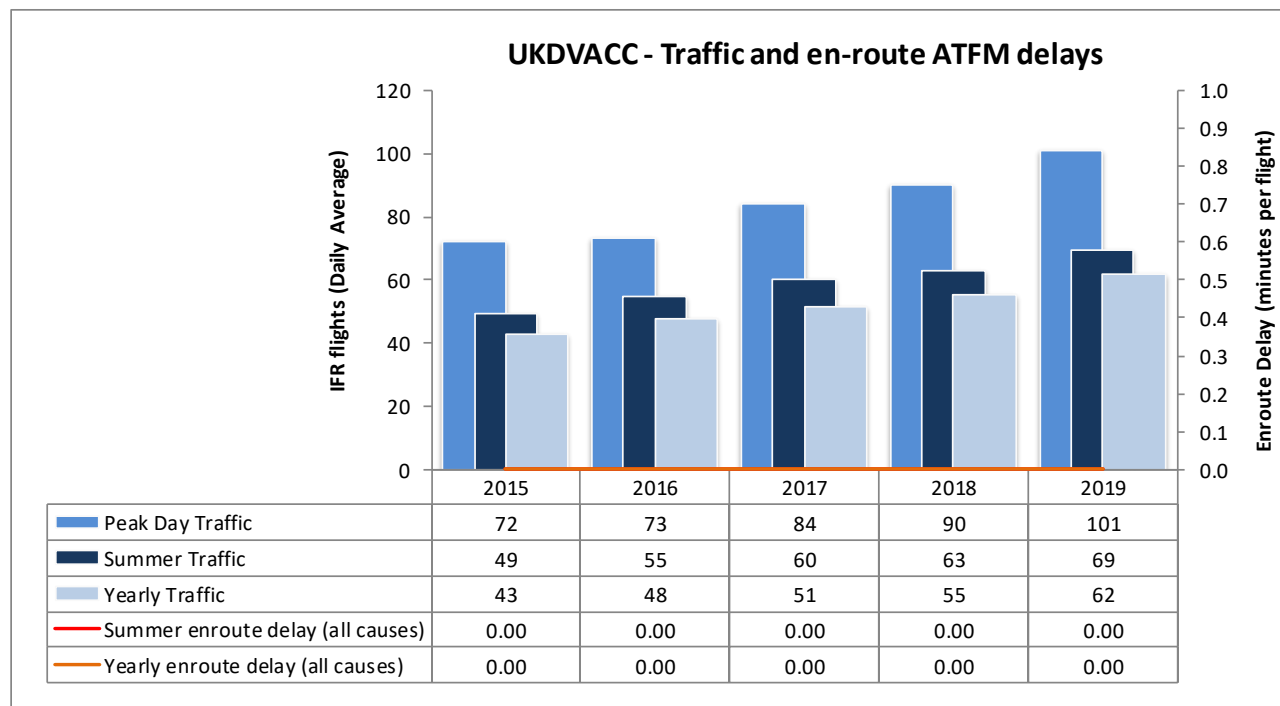


2019 Realisation of Capacity Plan

2019 Reallocation of Capacity Plan								
Ankara ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 3.8%	+4%	-0.7%	0.00	0.15	288 (+15%)	250 (+0%)	No
Summer	B: 2.1% L: -1.0%		-1.1%	0.00				
Summer 2019 performance assessment								
There were no en-route delays in Ankara ACC in 2019. The capacity baseline of 250 was calculated with ACCESS. During the same period, the average peak 1 hour demand was 234 and the peak 3 hour demand was 223. The capacity provided during Summer 2019 was sufficient to cope with the traffic demand.								
Operational actions				Achieved	Comments			
Stepped implementation of free route operations above FL290				On going	Implementation of night free route operations will start in 2021; airspace design on-going			
Improved civil/military coordination				Yes				
Istanbul area ATC/TMA Center				Yes	Completed in October 2018. Full operation foreseen in 2019			
Improved ATFCM, including STAM				Yes				
ATS route structure development				Yes				
Additional controllers (45 per year for en-route)				Yes				
New airport in Istanbul from beginning 2019 phase 1B				Yes				
Independent parallel runway and new ground infrastructure at LTFJ				On-going	Start of parallel runway operations in November 2020			
Maximum configuration: 38 sectors, 23 sectors open foreseen to be sufficient for Summer 2019				Yes	19 sectors were sufficient			

61. UKRAINE - DNIPRO ACC

Traffic & Delay

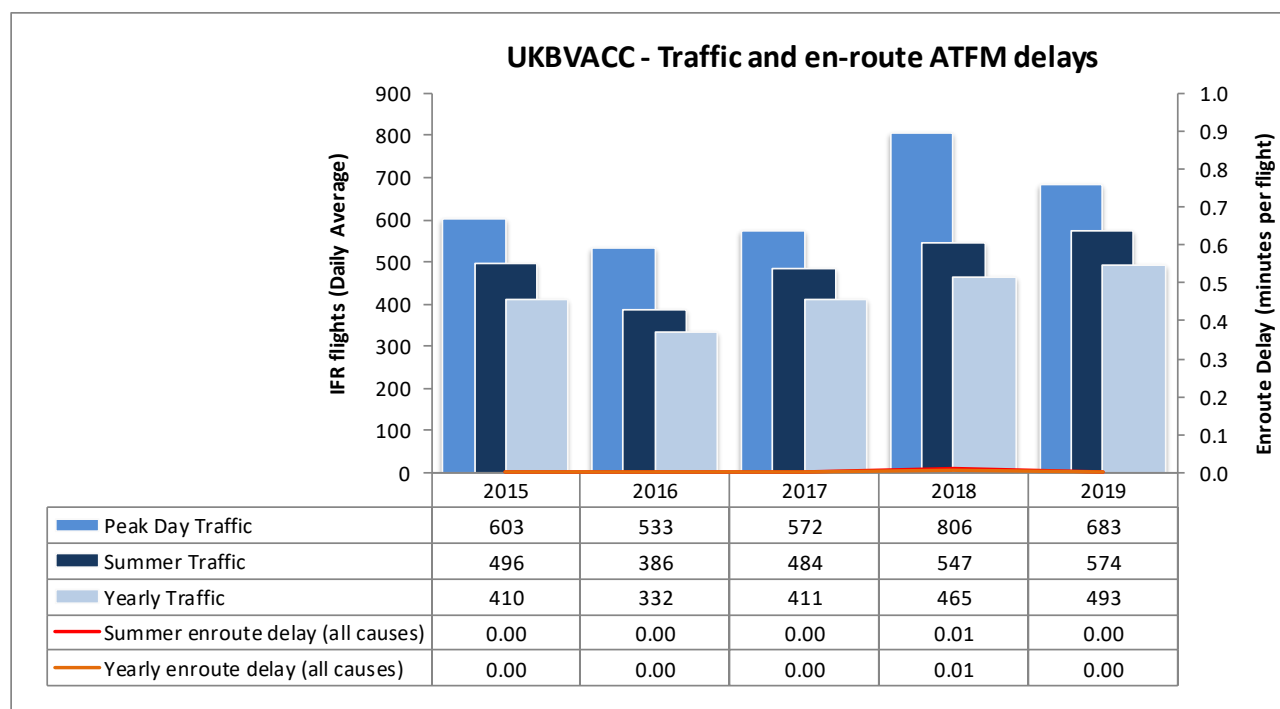


2019 Realisation of Capacity Plan

Dnipro ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 10.7%	+4%	+12.5%	0.00	0.01	Sufficient	54 (+0%)	No
Summer	B: 8.9% L: 7.7%		+10.1%	0.00				
Summer 2019 performance assessment								
Average enroute ATFM delay remained at zero, as in Summer 2018.								
The ACC capacity baseline was estimated at 54, the same level as last year. During the measured period, the average peak 1 hour demand was 7 and the average peak 3 hour demand was 5.								
Operational actions				Achieved	Comments			
FRAU Step 1 Scenario 1.b, phase 2 – FRA KIDRO within Kyiv ACC + Dnipro ACC (excl. sector DVB) H24/7 FL275-660.				Yes	Implemented on 23/05/2019			
Implementation of Full rolling ASM/ATFCM process and ASM information sharing.				Ongoing	In accordance with AOM 19.3			
Implementation of ASM Management of Real-Time Airspace Data.				Ongoing	In accordance with AOM 19.2			
Sufficient capacity to meet demand				Yes				
Maximum configuration: 6 sectors				Yes	5 sectors were sufficient			

62. UKRAINE - KYIV ACC

Traffic & Delay

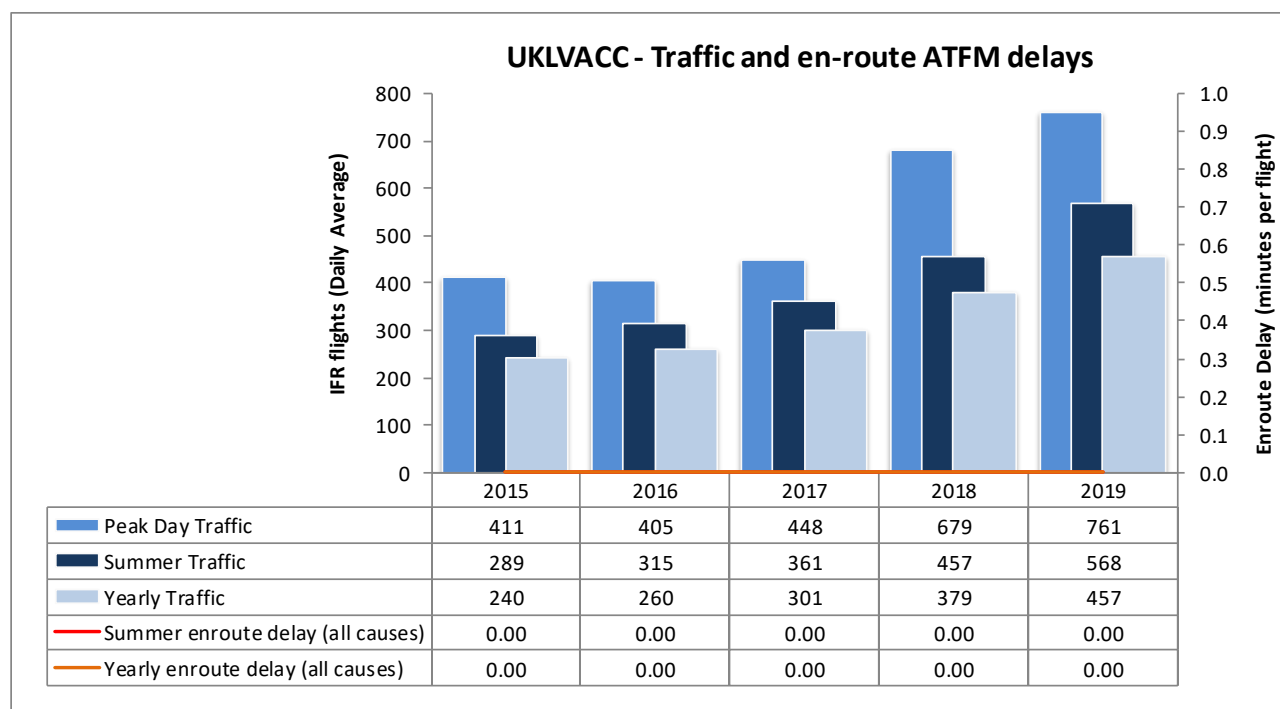


2019 Realisation of Capacity Plan

Kyiv ACC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 12.3%	+43%	+6.1%	0.00	0.01			
Summer	B: 11.1% L: 7.8%		+5.0%	0.00		Sufficient	73 (+0%)	No
Summer 2019 performance assessment								
Average enroute ATFM delay decreased from 0.01 minutes per flight in Summer 2018 to zero minutes per flight during the same period in 2019.								
The ACC capacity baseline was estimated at 73, the same level as last year. During the measured period, the average peak 1 hour demand was 39 and the average peak 3 hour demand was 34.								
Operational actions				Achieved	Comments			
FRAU Step 1 Scenario 1.b, phase 2 – FRA KIDRO within Kyiv ACC + Kyiv ACC + Dnipro (excl. sector DVB) H24/7 FL275-660.				Yes	Implemented on 23/05/2019			
Implementation of Full rolling ASM/ATFCM process and ASM information sharing.				Ongoing	In accordance with AOM 19.3			
Implementation of ASM Management of Real-Time Airspace Data.				Ongoing	In accordance with AOM 19.2			
Sufficient capacity to meet demand				Yes				
Maximum configuration: 7 sectors				Yes	6 sectors were sufficient			

63. UKRAINE - L'VIV ACC

Traffic & Delay

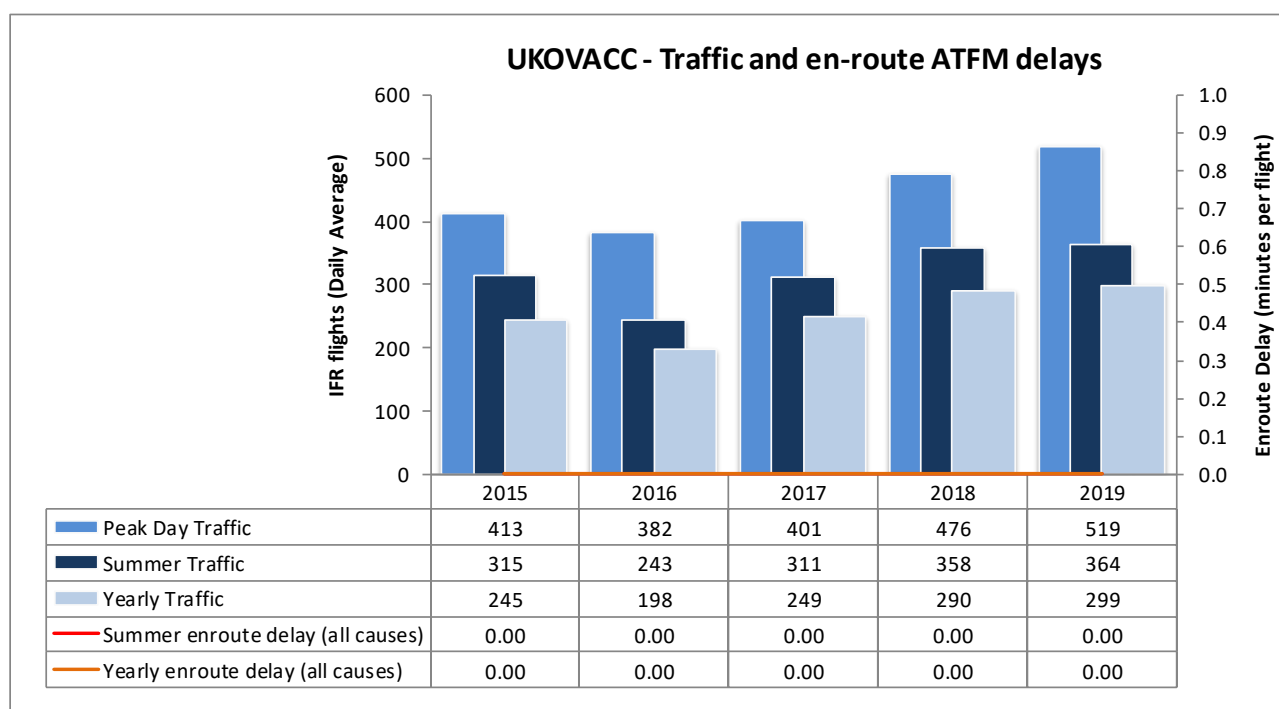


2019 Realisation of Capacity Plan

L`Viv ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 13.1%	+14%	+20.6%	0.00	0.01			
Summer	B: 12.7% L: 10.3%		+24.2%	0.00		Sufficient	72 (+0%)	No
Summer 2019 performance assessment								
Average enroute ATFM delay remained at zero, as in Summer 2018.								
The ACC capacity baseline was estimated at 72, the same level as last year. During the measured period, the average peak 1 hour demand was 46 and the average peak 3 hour demand was 41.								
Operational actions				Achieved	Comments			
FRAU Step 1 Scenario 1.b phase 1 within L`viv ACC H24/7 FL275-660				Yes	Implemented on 06/12/2018			
Implementation of Full rolling ASM/ATFCM process and ASM information sharing.				Ongoing	In accordance with AOM 19.3			
Implementation of ASM Management of Real-Time Airspace Data.				Ongoing	In accordance with AOM 19.2			
Sector configurations management, ATFCM measures development				Yes				
Maximum configuration: 4 sectors				Yes	3 sectors were sufficient			

64. UKRAINE - ODESA ACC

Traffic & Delay



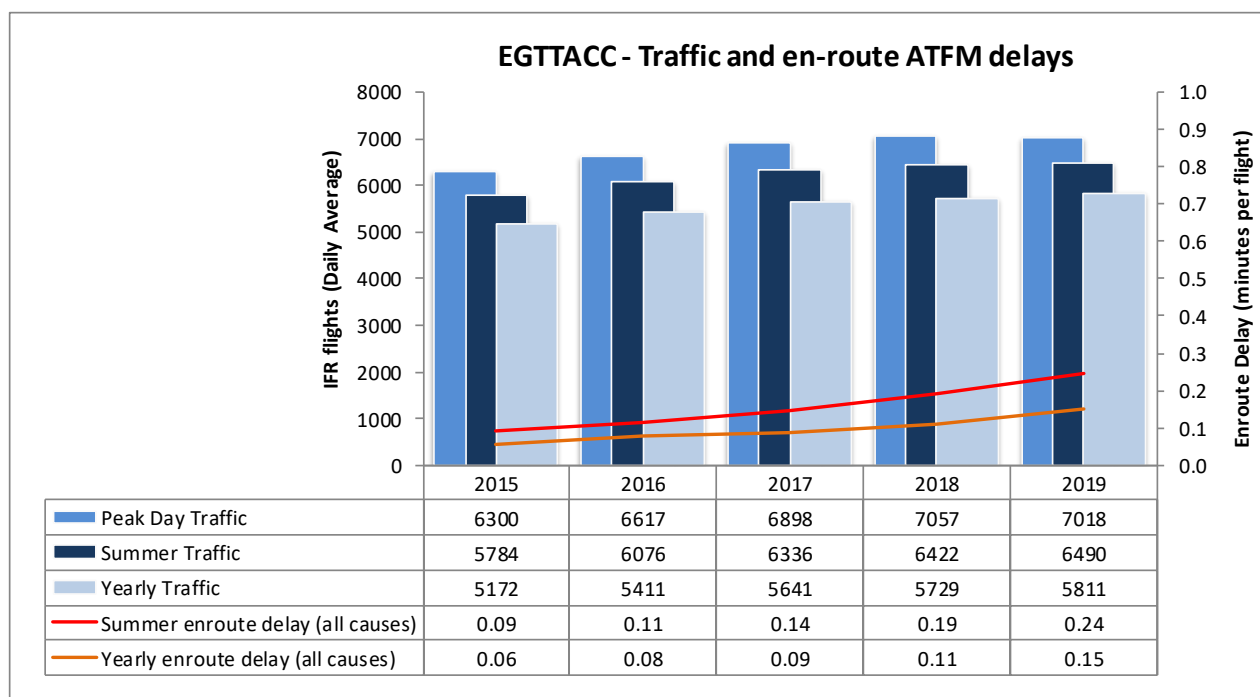
2019 Realisation of Capacity Plan

Odesa ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 10.3%	+40%	+3.2%	0.00	0.01			
Summer	B: 8.2% L: 4.4%		+1.7%	0.00		Sufficient	61 (+0%)	No
Summer 2019 performance assessment								
Average enroute ATFM delay remained at zero, as in Summer 2018.								
The ACC capacity baseline was estimated at 61, the same level as last year. During the measured period, the average peak 1 hour demand was 24 and the average peak 3 hour demand was 21.								
Operational actions				Achieved	Comments			
FRAU Step 1 Scenario 1.b phase 3 – FRA within Odesa ACC (UTA Odesa-North only) H24/7 FL275-660				Ongoing	Postponed till autumn 2020 due to expected implementation of new ATM system for Odesa ACC			
Implementation of Full rolling ASM/ATFCM process and ASM information sharing.				Ongoing	In accordance with AOM 19.3			
Implementation of ASM Management of Real-Time Airspace Data.				Ongoing	In accordance with AOM 19.3			
Sufficient capacity to meet demand				Yes				
Maximum configuration: 5 sectors				Yes	4 sectors were sufficient			

65. UNITED KINGDOM - LONDON ACC

Traffic & Delay

NETWORK OPERATIONS REPORT – 2019



2019 Realisation of Capacity Plan

London ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 2.4%	No significant impact	+1.4%	0.15	0.18			
Summer	B: 1.8% L: 0.2%		+1.1%	0.24		467 (+1.5%)	460 (+0%)	No

Average enroute delay per flight increased from 0.19 minutes per flight in Summer 2018 to 0.24 minutes per flight in Summer 2019 (May to October inclusive).

37% of the Summer delays were for the reason Weather, 30% for ATC Staffing, 26% for ATC Capacity and 7% for the reason Airspace Management.

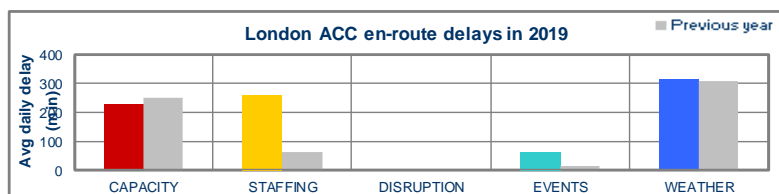
The capacity baseline of 460 was calculated with ACCESS. During the period June/July, the peak hour demand was 461, the peak 3 hour demand was 416.

Operational actions	Achieved	Comments
Project Lightening	Yes	Implemented 28/02
Improved ATFCM, including STAM	Yes	
UK / Ireland FAB initiatives	Yes	
RP2/RP3 Airspace Development Programme	Yes	Several airspace changes implemented
AD5	Yes	Implemented 08/11
Maturing Queue Management programme	Yes	Cross border XMAN for Gatwick (Oct)
Flexible use of existing staff (including cross-sector training) more closely related to sector demand	Yes	
On-going recruitment to maintain agreed business service levels	Yes	
Complexity reduction and improved traffic presentation between sectors / ANSPs	Yes	
Traffic Management Improvements	Yes	
Adaptation of sector configurations to demand	Yes	
Training for new controller working positions	No	Postponed to 2020-2022
Training for AD5	Yes	
Maximum configuration: 23 sectors	Yes	

Allocation of and Reasons for En-route Delay

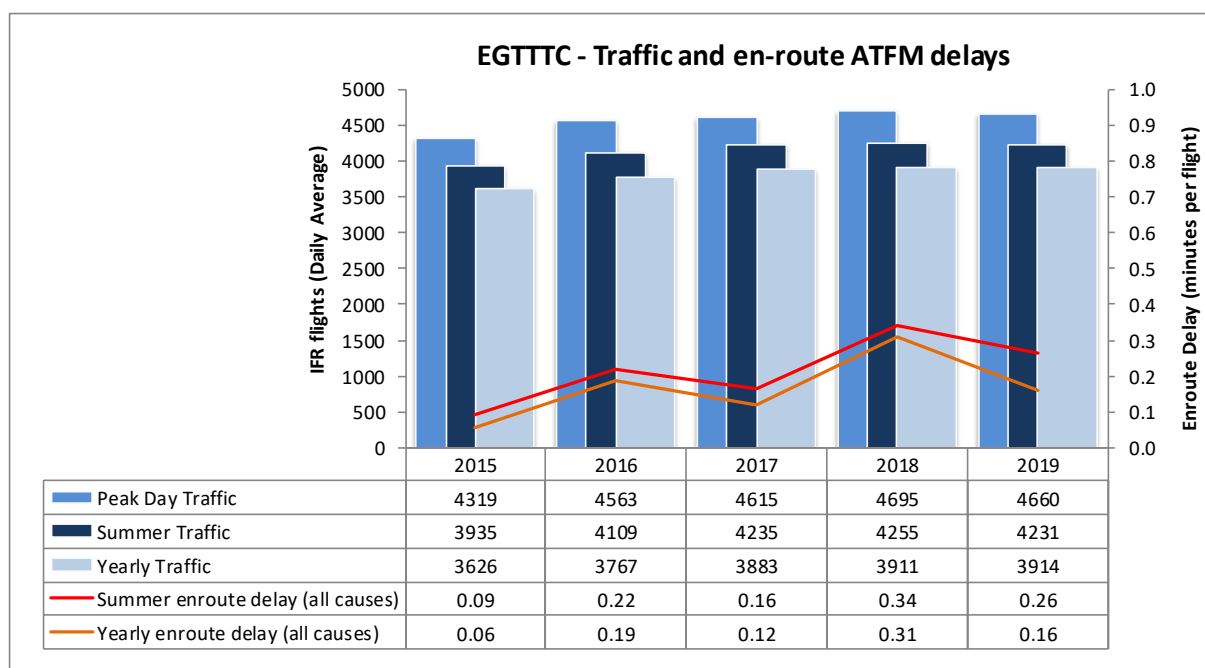
NETWORK OPERATIONS REPORT – 2019

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EGTTNOR	74	8.5%
2019	EGTTBCB	69	8.0%
2019	EGTTCLW	57	6.5%
2019	EGTT02LUE	47	5.5%
2019	EGTT17LYD	46	5.4%
2019	EGTTHRE	40	4.6%



66. UNITED KINGDOM - LONDON TC

Traffic & Delay



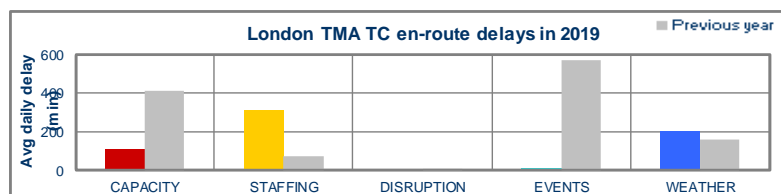
2019 Realisation of Capacity Plan

London TC	Traffic evolution (2019 vs 2018)		En-route Delay (min. per flight)			Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 1.7%	No significant impact	+0.1%	0.16	0.10			
Summer	B: 1.2% L: -0.4%		-0.5%	0.26		298 (+3%)	305 (+6%)	No
Average enroute delay per flight decreased from 0.34 minutes per flight in Summer 2018 to 0.26 minutes per flight in Summer 2019. 47% of the Summer delays were due to the reason ATC Staffing, 35% due to Weather, and 17% due to ATC Staffing. The ACC capacity baseline was measured with ACCESS at 305. During the period June/July, the peak hour demand was 301, the peak 3 hour demand was 275.								
Operational actions				Achieved	Comments			
Improved ATFCM, including STAM				Yes				
RP2/RP3 Airspace Development Programme				Yes	Several airspace changes implemented			
AD5				Yes	Implemented 08/11			
Developing Queue Management programme				Yes				
Flexible use of existing staff				Yes				
On-going recruitment to maintain agreed business service levels				Yes				
Adaptation of sector configurations to demand				Yes				
Traffic management improvements				Yes				
Complexity reduction and improved traffic presentation between sectors / ANSPs				Yes				
Maximum configuration: 17				Yes				

Allocation of and Reasons for En-route Delay

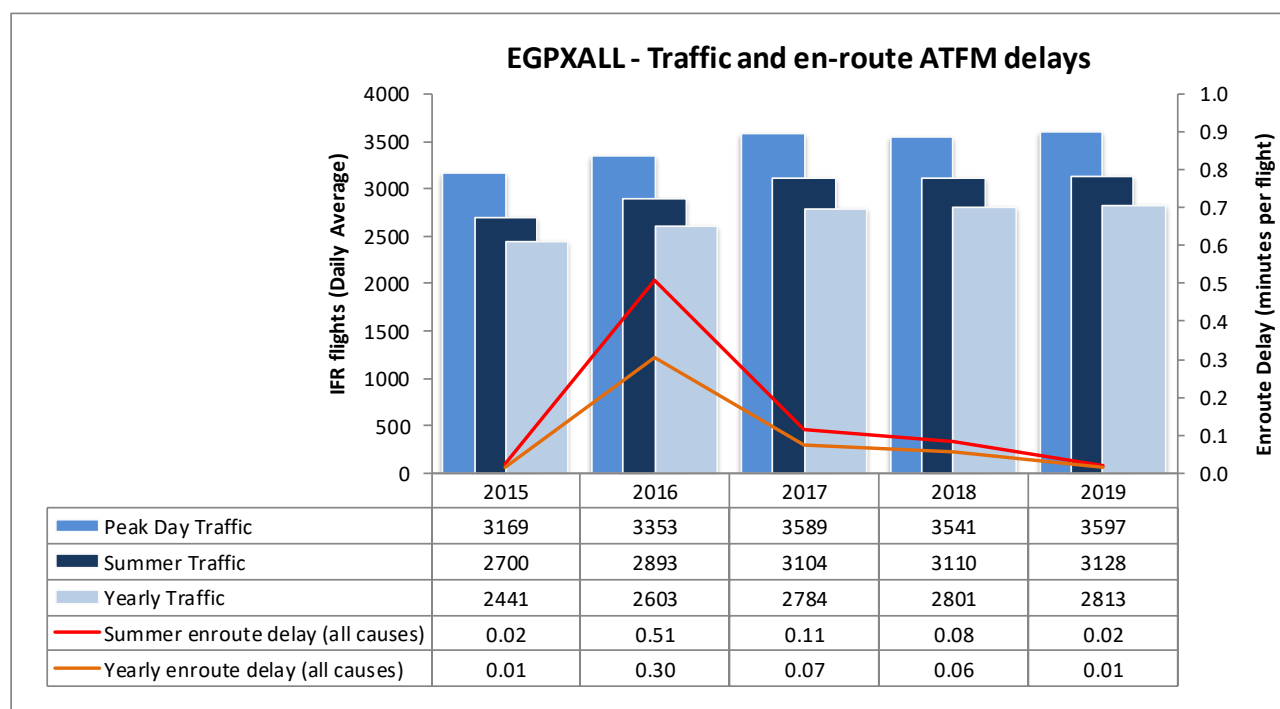
NETWORK OPERATIONS REPORT – 2019

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EGTTRELO	209	33.1%
2019	EGTTWLT	87	13.8%
2019	EGTTTSE	74	11.8%
2019	EGTTSAJ	42	6.7%
2019	EGTTDAR	41	6.4%
2019	EGTTTGD	26	4.1%



67. UNITED KINGDOM - PRESTWICK ACC

Traffic & Delay

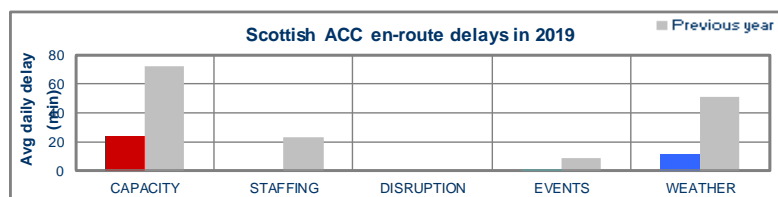


2019 Realisation of Capacity Plan

Prestwick ACC	Traffic evolution (2019 vs 2018)			En-route Delay (min. per flight)		Capacity (2019 vs 2018)		
	Traffic Forecast		Actual Traffic	All reasons	ACC Reference Value	Planned	Achieved	Capacity gap?
	Current Routes	Shortest Routes						
Year	H: 1.4%	No significant impact	+0.4%	0.01	0.14			
Summer	B: 0.7% L: -0.6%	No significant impact	+0.6%	0.02		242 (+1%)	240 (+0%)	No
Average enroute delay per flight decreased from 0.08 minutes per flight in Summer 2018 to 0.02 minutes per flight in Summer 2019. 59% of the Summer delays were due to the reason ATC Capacity, 34% due to Weather, and 4% due to Airspace Management. The ACC capacity baseline was measured with ACCESS at 240. During the period June/July, the peak hour demand was 227, the peak 3 hour demand was 212.								
Operational actions				Achieved	Comments			
Project Lightning				Yes				
Improved ATFCM, including STAM				Yes				
PLAS3				Yes				
UK / Ireland FAB initiatives				Yes				
CPDLC				Yes				
Developing Queue Management programme				Yes				
Flexible use of existing staff				Yes				
On-going recruitment to maintain agreed business service levels				Yes				
Adaptation of sector configurations to demand				Yes				
Traffic management improvements				Yes				
Complexity reduction and improved traffic presentation between sectors / ANSPs				Yes				
Maximum configuration: 20				Not required	18 sectors were opened			

Allocation of and Reasons for En-route Delay

Year	Reference Location	Avg Daily ER Delays	% of Total ACC ER Delay
2019	EGPXHUM	12	32.2%
2019	EGPXXTLA	6	15.4%
2019	EGPXRAT	4	11.9%
2019	EGPXDXS	4	10.9%
2019	EGPXMNT	3	8.9%
2019	EGPXMN	3	8.1%



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