



# Monthly Network Operations Report

## Overview December 2023



SUPPORTING EUROPEAN AVIATION



NETWORK  
MANAGER





## 1. SUMMARY

Traffic in December (744,976 flights) was 7.7% higher than December 2022. Network traffic was aligned with the latest EUROCONTROL lowest scenario. In week 51, 10 million flights for the year were reached on Christmas Eve. A total of 10,162,862 flights were recorded in 2023 (+9.8% compared to 2022).

On average the network saw 24,031 flights/day in December, some 2,000 flights/day more than December 2022. The peak day was Friday 15 December (27,789 flights). The Intra NM SW axis saw the 5.4% growth compared to December 2022 and SE axis had +4.1%.

The war in Ukraine continues to affect overflights in several countries. The EUROCONTROL NM continues to help manage the aviation crisis caused by the war.

Ryanair was the busiest operator with, on average, 2,375 movements per day and with no flights on 25 December; they were followed by easyJet (1,371), Turkish Airlines (1,317), Lufthansa (969) and Air France (899). Six aircraft operators in the Top 10 had double-digit growth compared to December 2022.

The busiest airport was Istanbul/iGA (1,305 flights/day), followed by London/Heathrow (1,226 flights/day), Paris/Charles de Gaulle (1,203 flights/day), Amsterdam/Schiphol (1,186 flights/day) and Frankfurt/Main (1,082 flights/day).

Network departure punctuality (65.2%) and arrival punctuality (70.3%) decreased compared to November 2023. Punctuality on the domestic routes was higher than the network level. However, SE axis departure (64.5%) and arrival (67.3%) punctuality were lower than the network level. Departure punctuality for 2023 was 65.3% and arrival 70.6%.

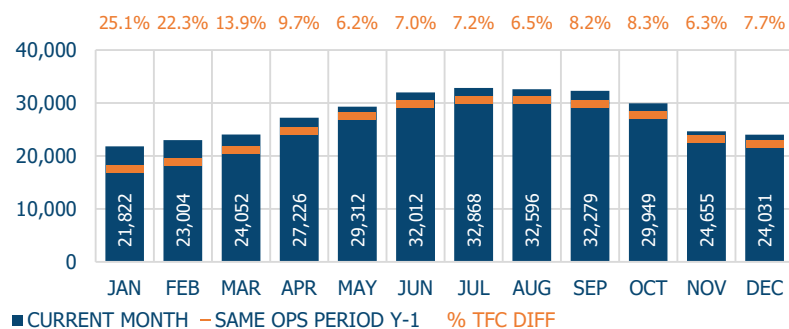
Seasonal weather (mainly low visibility and winds) affected airport punctuality, especially at Amsterdam/Schiphol and London/Heathrow airports. For ground operations, the network average actual turnaround time remained higher than scheduled.

There were 897,491 minutes of ATFM delay in December, 14.4% higher than December 2022, but fewer than in November 2023. En-route accounted for 46.6% of these ATFM delays, and airports for 53.4%. The average en-route ATFM delay per flight for the network was 0.6 minutes in December and en-route ATFM delay per flight for 2023 was 1.8 minutes. Flow measures in December were mainly due to airport weather and en-route ATC capacity. Storm Pia hit Northern Europe from 21 to 24 December and generated high ATFM delays. Direct actions taken by the NM Operations Centre (NMOC) reduced en-route ATFM delays by 16.7% and airport ATFM delays by 10.3%.

While network horizontal flight efficiency improved in December, there was more en-route fuel burn due to a higher proportion of heavier aircraft in the network.

## 2. Traffic evolution

Last 12 months average daily traffic

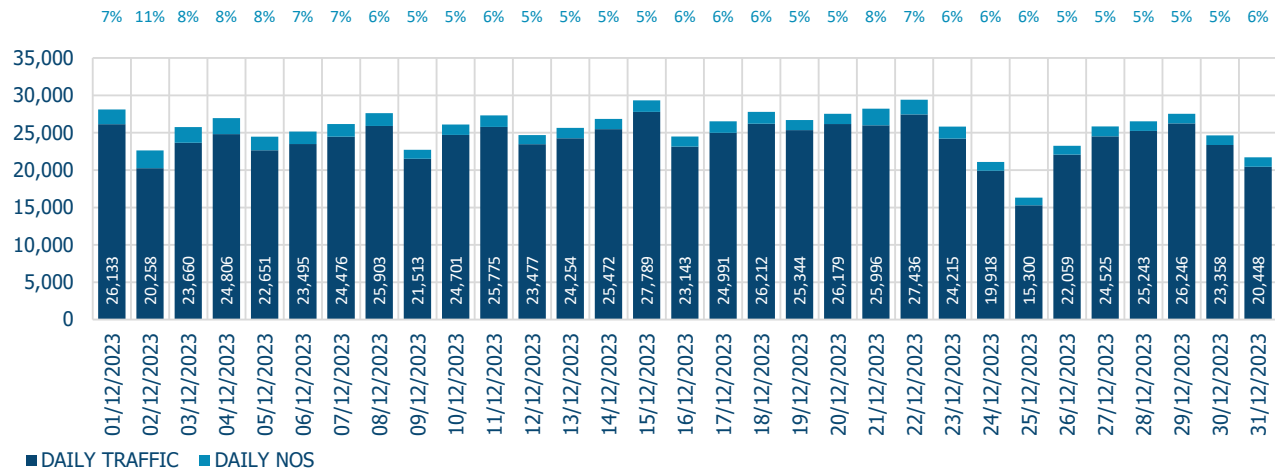


There were 744,976 flights throughout Europe in December 2023, 7.7% up compared to the same period last year. December 2023 traffic was aligned with EUROCONTROL's lowest forecast. A total of 10,162,862 flights were recorded in 2023 (+9.8% compared to 2022).



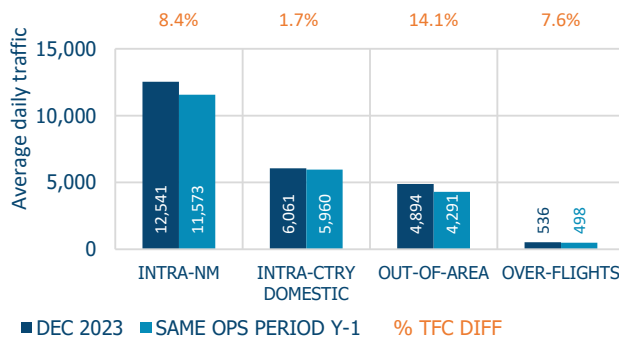
In December 2023 (vs December 2022), Mainline (+12.6%), Low-cost (+10.7%) and Regional (+0.9%) were the only market segments contributing to NM area flight growth. The All-cargo segment declined by -8.5% owing mainly to fewer daily departures in Germany (-22), France (-20), Sweden (-14) and Italy (-12). The Charter segment decreased by -6.5% partly due to daily flight decreases on the flows to and from Türkiye – Russia (-7), Türkiye – the Middle-East (-6), Türkiye – Israel (-6) and Israel – Israel (-6). Although down by -1.8% compared to December 2022, Business Aviation continued to be the only segment ahead of December 2019 flight volume, at 105% in December 2023.

## Daily network traffic evolution

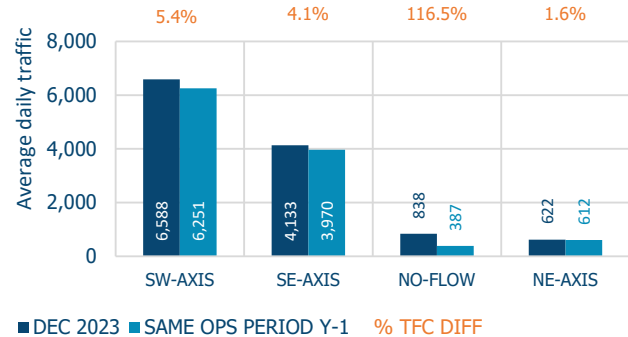


On average, 6.0% of scheduled traffic did not operate in December (see Non-Operated Schedules, NOS, above). The busiest day was Friday 15 December (27,789 flights). The lowest traffic level was on 25 December, which was partially due to Ryanair not flying on Christmas day. Winter weather disrupted traffic levels in the first week.

## Traffic per flow

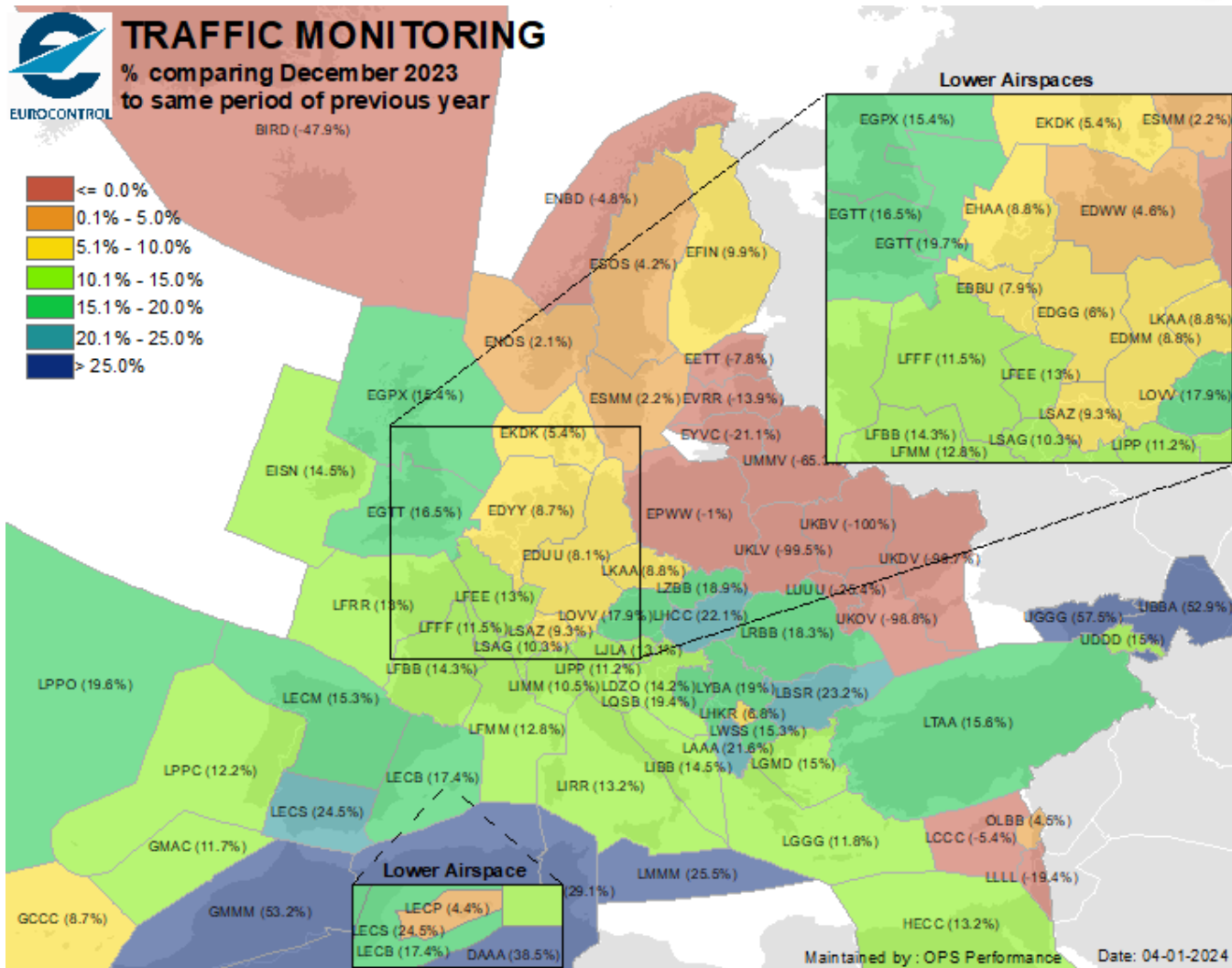


## Intra-NM daily traffic



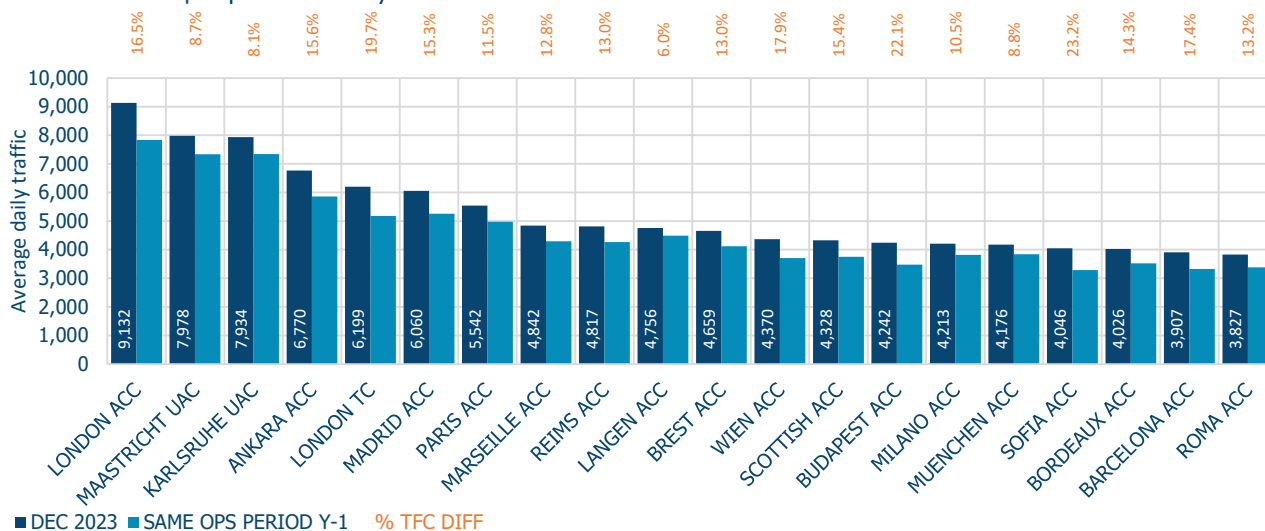
There were 204,218 flights in the Intra-NM SW-Axis traffic flow; 187,878 domestic flights; 128,113 flights in the Intra-NM SE-Axis.

Strong Intra-NM (+970 flights/day) growth and Out-of-Area (+600 flights/day) growth influenced the network growth of 7.7%.



The designations employed do not imply the expression of any opinion whatsoever on the part of EUROCONTROL concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries

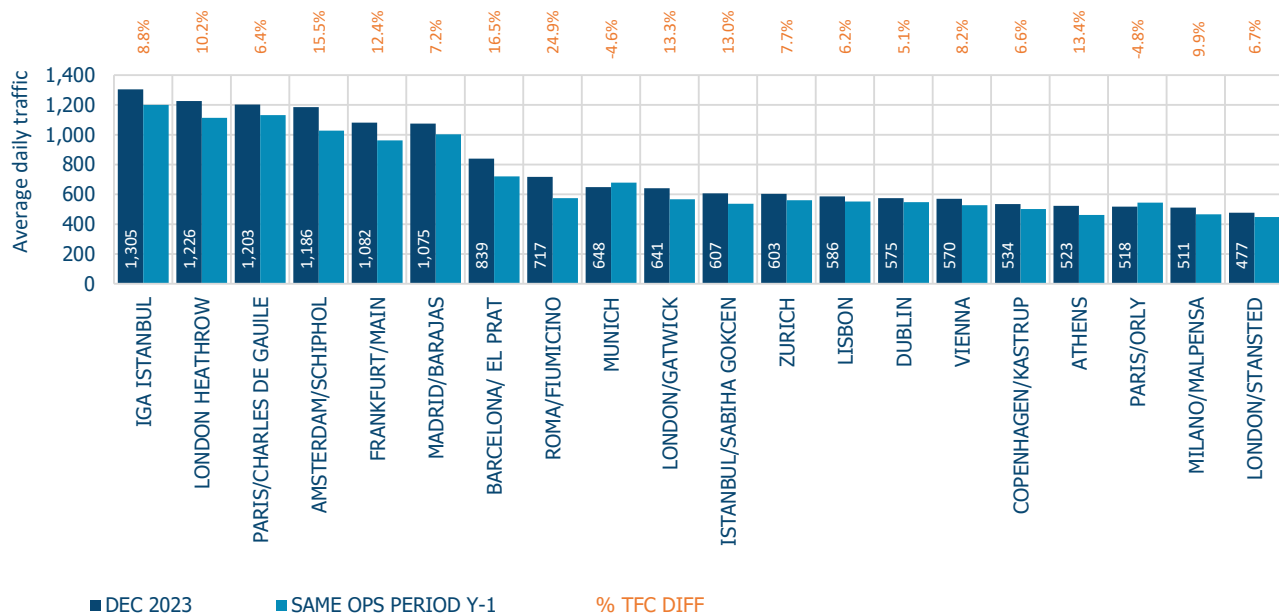
### December 2023 | Top 20 ACC daily traffic



London ACC was the busiest ACC followed by Maastricht UAC, Karlsruhe UAC and Ankara ACC. All Top 20 ACCs had positive variation in December, even double-digit growth compared to December 2022.

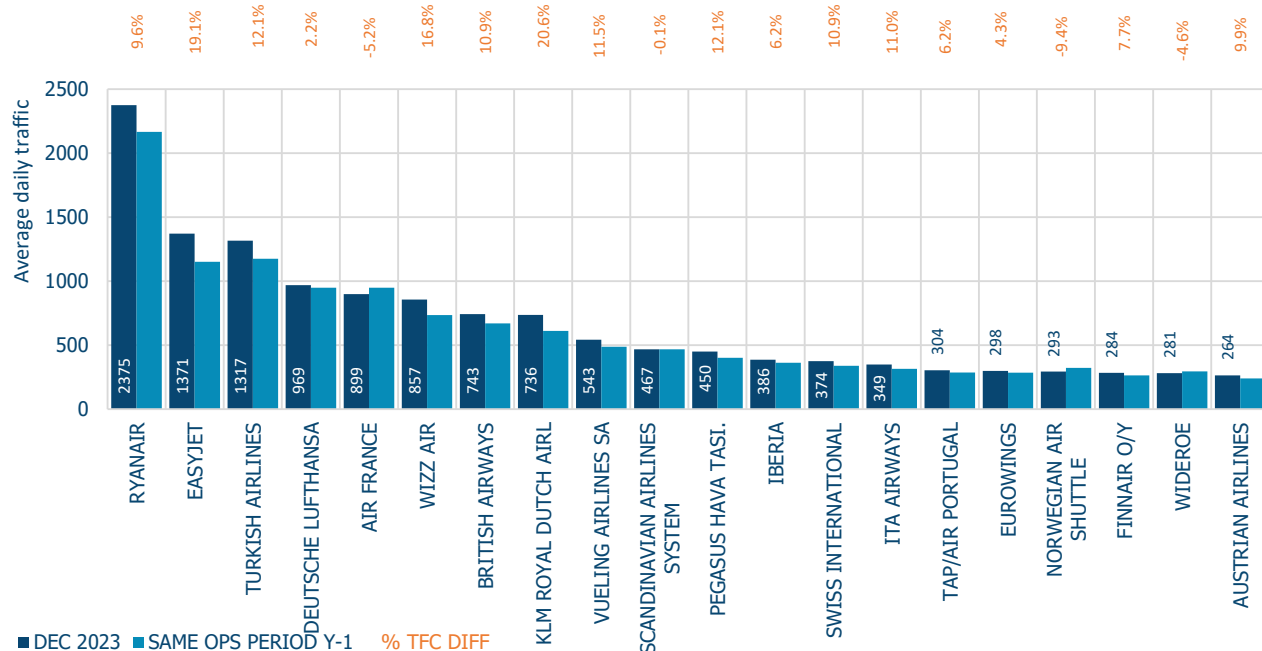


### December 2023 | Top 20 Airports daily traffic



Eight airports had a double-digit percentage growth compared to last year. Istanbul/iGA was the busiest airport with, on average, 1,305 flights per day followed by London/Heathrow (1,226 flights/day), Paris/Charles de Gaulle (1,203 flights/day), Amsterdam/Schiphol (1,186 flights/day), and Frankfurt/Main (1,082 flights/day). Heavy snowfall and freezing rain impacted operations strongly at Munich airport in the first week of December. Low visibility at Paris/Orly airport on 17 December and ATC industrial action explained the traffic decrease of -4.8%.

### December 2023 | Top 20 Air Operator groups daily traffic

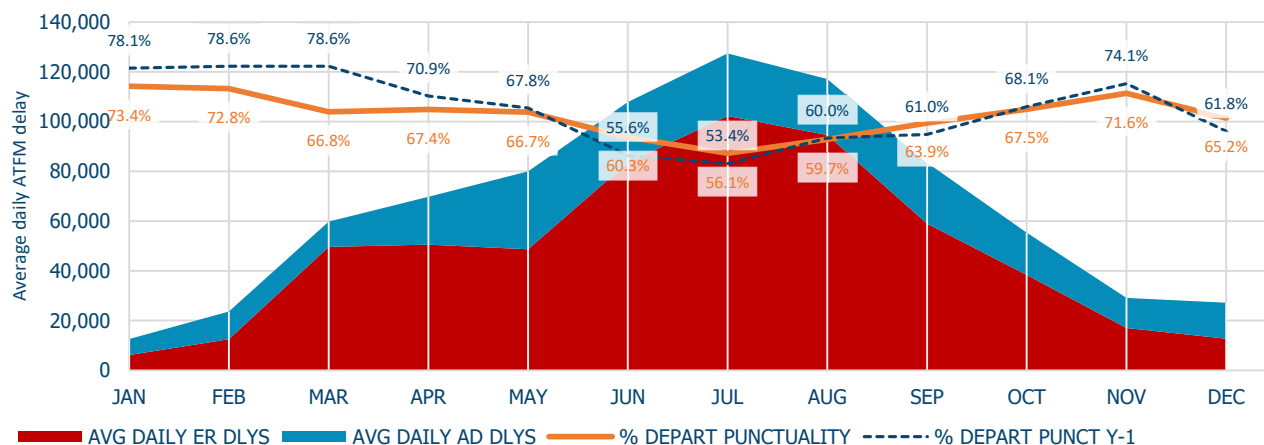


Several air operators had a double-digit percentage growth compared to last year. Ryanair was the busiest operator with, on average, 2,375 movements per day, followed by easyJet (1,371), Turkish airlines (1,317), Lufthansa (969), and Air France (900). Air France, Scandinavian airlines and Norwegian Air Shuttle traffic decreased compared to December 2022.



## 3. Departure Punctuality

Network departure punctuality and ATFM delay

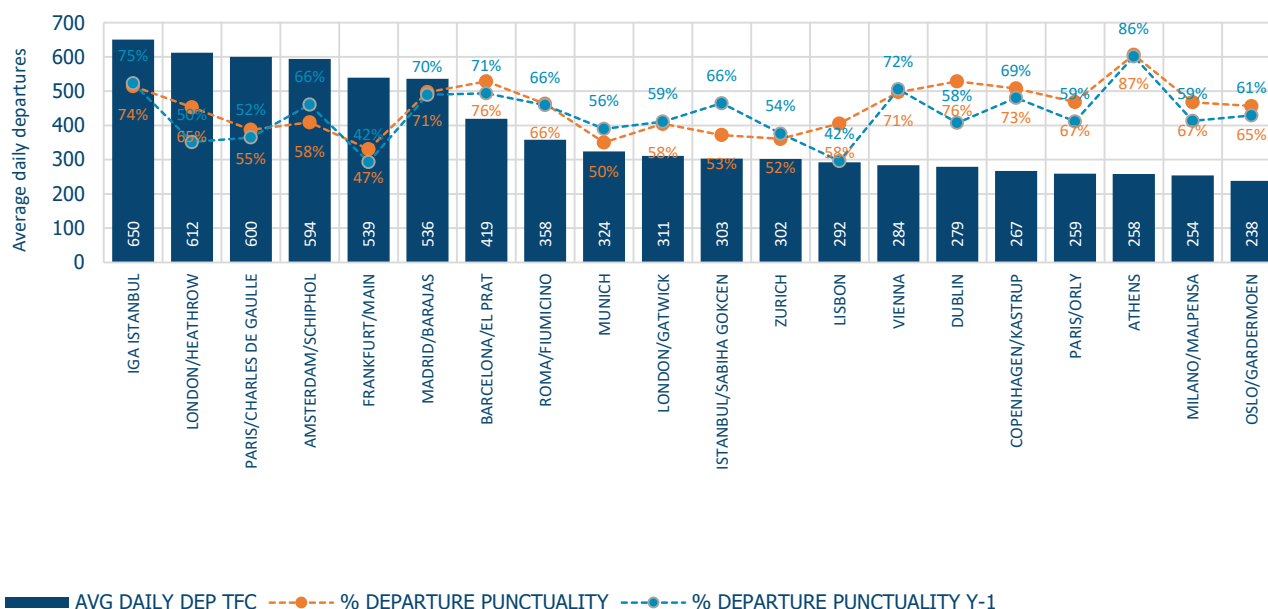


Network departure punctuality decreased by 6.4 p.p in December compared to November, reaching an average monthly figure of 65.2%. This was 3.4 p.p. above the 2022 level. SE axis departure punctuality (64.5%) was lower than the network level (-0.7 p.p.).

\*This view of operational punctuality can be tracked in near real-time by aircraft operator and airport level in the [NORTI Dashboard](#) and in [MIRROR](#). Archived data can be found in the [FATHOM interactive dashboard](#).

The Central Office for [Delay Analysis CODA reports](#) provide further detailed analysis of airline reported delay reasons.

December 2023 | Top 20 Airport departure traffic and punctuality



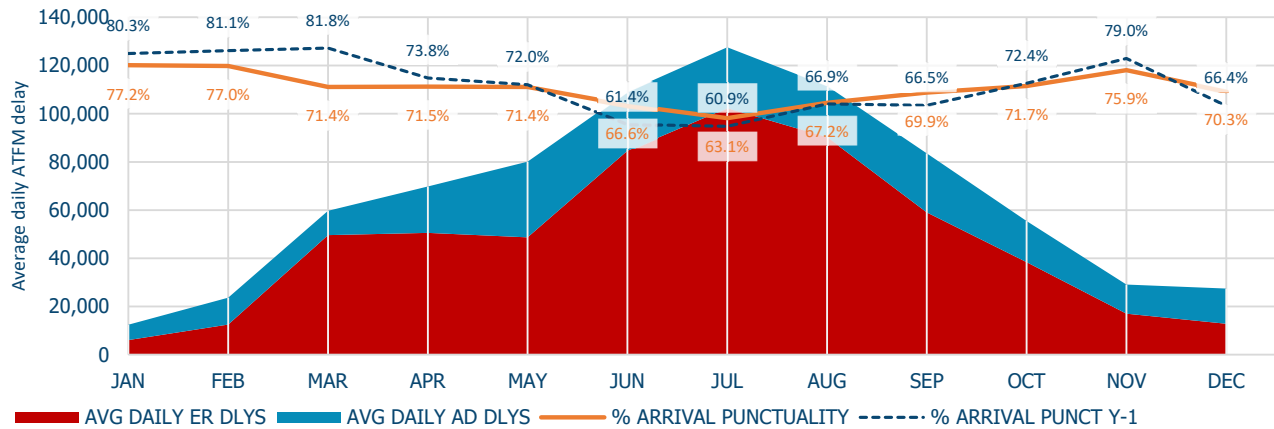
Munich airport saw significant disruption due to heavy snowfall and freezing rain that impacted the airport between 01 and 06 December, recorded ATFM were low as the airport saw significant numbers of cancelled flights. London Heathrow suffered delays due to weather (mainly high winds) throughout December. Amsterdam Schiphol was badly affected by strong winds throughout the month. ATC industrial action in France from 17 to 19 December affected punctuality at Paris CDG.





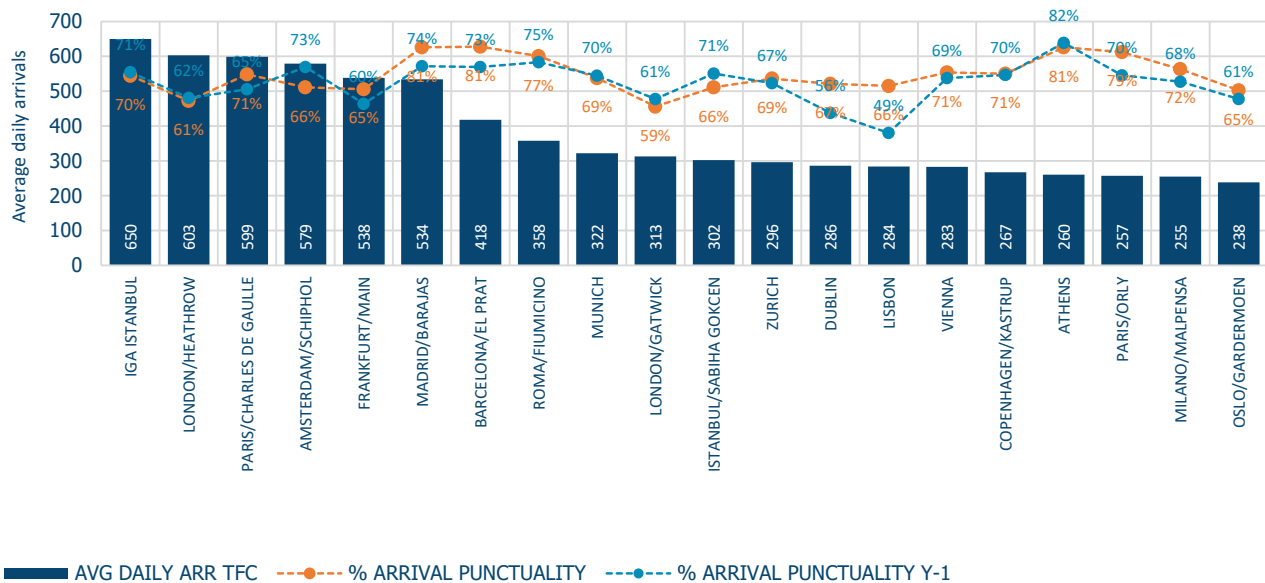
## 4. Arrival Punctuality

Network arrival punctuality and ATFM delay



Network arrival punctuality decreased by 5.6 p.p. in December compared to November. It averaged 70.3% and was higher than the same period in 2022 (+3.9 p.p.). SE axis arrival (67.3%) was lower than the network level (-3.0 p.p.).

December 2023 | Top 20 Airport arrival traffic and punctuality



Following the trend of departure punctuality, many airports were impacted by poor weather throughout December. Lisbon continues to suffer from systemic daily aerodrome capacity delays, this was also combined with weather (mainly low visibility) with 10 December a notably poor day. London Gatwick also saw delays due to weather combined with ATC staffing and aerodrome capacity.



## 5. Operations

### Network Manager

The EUROCONTROL Network Manager (NM) continued to support operations affected by the Ukrainian war. It maintained airspace closures and NM systems supporting EU Sanctions Regulation for the Russian Federation and Belarus.

Hamas' attack on Israel on Saturday 7 October has affected flights to/from and via Israel. EASA first issued a Conflict Zone Information Bulletin (CZIB) for the airspace of Israel on Sunday 8 October. NM provided a consolidated view of relevant NOTAMs on the NOP Portal and the EUROCONTROL Network Manager Operations Centre (NMOC) is working 24/7 to implement State required airspace restrictions and in support to daily airline operations for routings and delay mitigation. Navigation Interference has intensified in the region. Aircraft are experiencing navigation failures, jamming and spoofed signals as notified by aircraft in Nicosia FIR, Cairo FIR, Amman FIR, and confirmed by Cyprus aviation authorities and the ICAO MID office.

Munich a/d: Light snow began falling the morning of Thursday 30 November and by the next day Friday 01 December the airfield began to struggle with maintaining the availability of ground services. The number of movements began to be impacted from midday Friday 01 December. Almost no flights operated in-out of Munich airport Saturday 02 December, with limited operations for the next few days (230 Sunday, 330 Monday, 160 Tuesday, 510 Wednesday). The airfield did not begin to return to a semblance of normal operations until Wednesday 06 December with 510 movements, 300 fewer than the previous Wednesday.

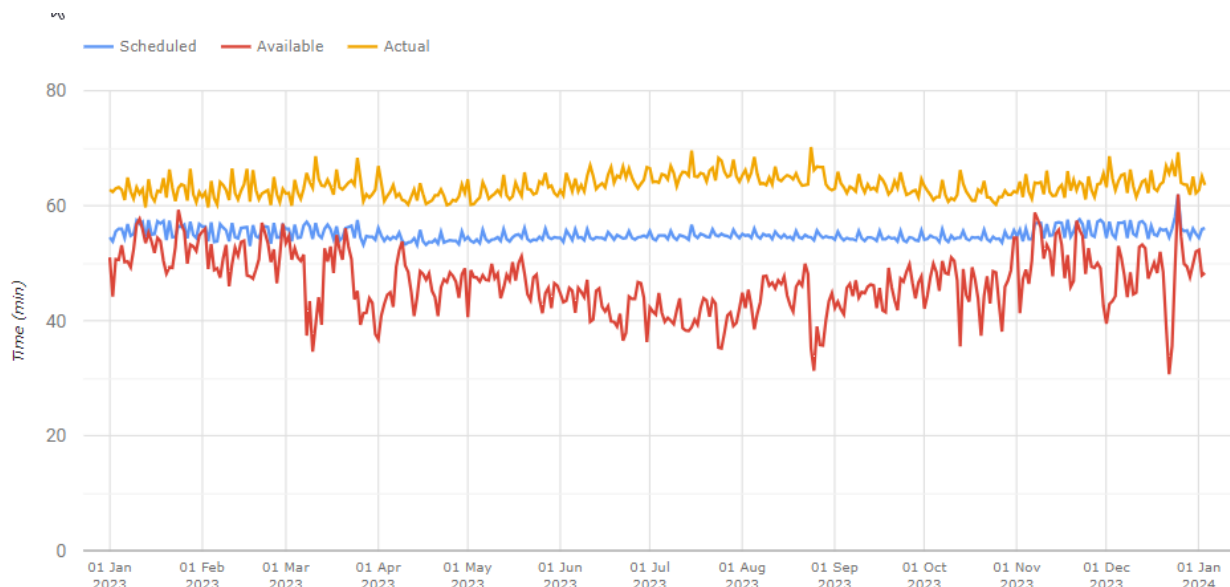
ATC industrial action took place in Paris ACC between 18:00 UTC on 17 December until 07:00 UTC on 19 December. NMOC supported operators to find alternative routes avoiding Parisian airspace and adjacent ACCs with managing on-loaded extra flights.

A volcanic eruption began late on the 18 December in the vicinity of the town of Grindavik on Iceland's Reykjanes Peninsula, resulting in a number of inbound flights diverting back to their airfield of departure and the cancellation of ATC Industrial Action planned for 20 December.

Direct actions taken by the NM Operations Centre (NMOC) reduced en-route ATFM delays by 16.7% and airport ATFM delays by 10.3%.

### Ground

MIRROR's(i) indicator shows that the network (average) available turnaround time was better when compared to the same period last year where cold weather heavily impacted performance. In December 2023, the actual turnaround time remained above the scheduled turnaround time. Two notable changes in available turnaround time occurred on 22 December where Storm Pia affected the network, as well as the 25 December where there are traditionally fewer flights.







## Network

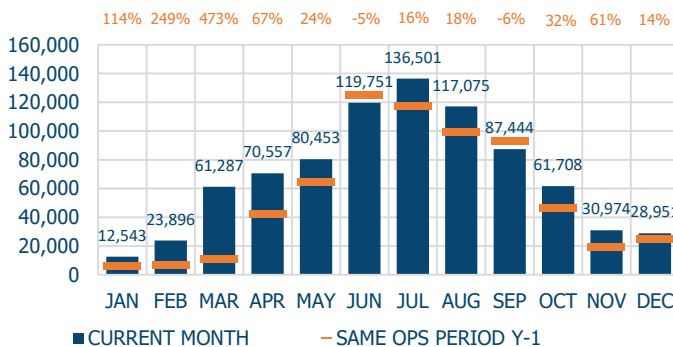
There were 897,491 minutes of ATFM delay in December, 14.4% higher compared to December 2022.

En-route delays accounted for 46.6% of these ATFM delays, and airports for 53.4%.

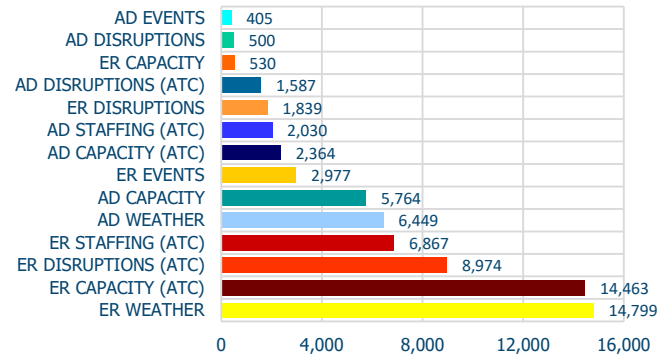
The average en-route ATFM delay per flight for the network was 0.6 minutes in December and en-route ATFM delay per flight for 2023 was 1.8 minutes.

Note that December ATFM delays were relatively low compared to summer.

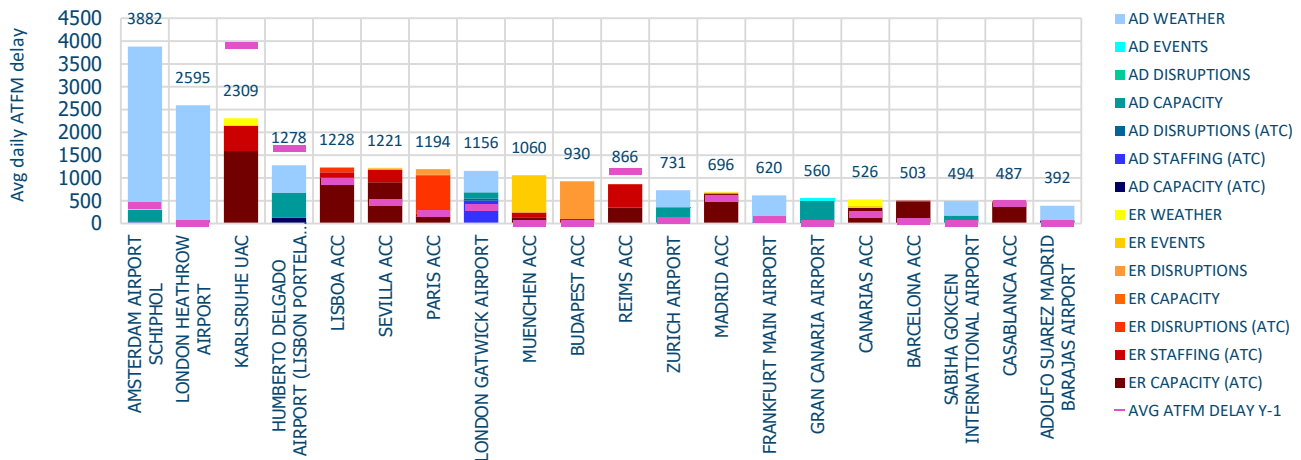
Last 12 months average daily ATFM delays



Jan-Dec 2023 | Reasons for ATFM delays



Top 20 delay reference locations in December 2023



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

- Strong winds and low visibility impacted operations strongly at Amsterdam/Schiphol airport and London/Heathrow airports; Storm Pia hit Northern Europe from 21 to 24 December and generated high ATFM delays;
- ATC capacity issues in Karlsruhe, Lisbon and Sevilla ACCs;
- ATC disruptions delays in Paris ACC due to industrial action in France from 17 to 19 December;
- Budapest ACC reported additional demand due to the Ukrainian crisis generated ATFM delays and generated additional delays;
- Staffing shortage in Karlsruhe and Reims ACCs.



## Significant Events

### Event

- MIDAS project implementation phase generated 2,638 minutes of ATFM delay at Malaga airport;
- Transition phase to new ATM System ICAS2 in München ACC generated 25,285 minutes of ATFM delay.

### Technical

- Electrical supply issues in Paris ACC from 11 to 21 December generated 3,291 minutes of ATFM delay;
- Flight plan system issue in at London/Gatwick airport on 12 December generated 1,332 minutes of ATFM delay;
- Communication system issues in Brest ACC on 13 and 15 December generated a total of 3,190 minutes of ATFM delay;
- Communication system issue in Lisbon ACC on 19 December generated 3,239 minutes of ATFM delay;

### Industrial action

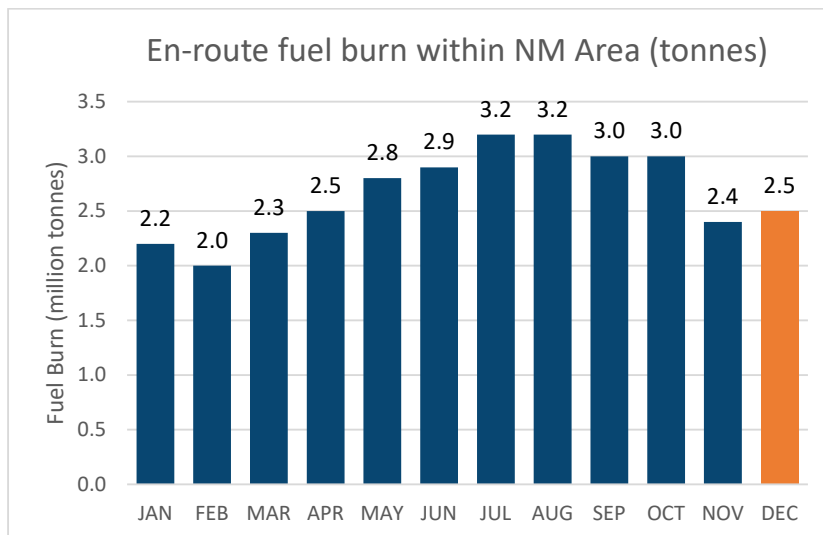
- The Icelandic Air Traffic Controller Association declared ATC industrial action for Keflavik and Reykjavik airports for the hours 04:00 - 10:00 UTC daily on the 12, 14, 18 and 20 December. The strike for the 20 December was cancelled in response to the volcanic eruption which began on 18 December. The action which did occur generated 840 minutes of ATFM delay;
- ATC industrial action in France from 17 to 19 December generated 24,199 minutes of en-route ATFM delay and 2,512 minutes of airport ATFM delay.
- ATC industrial action at Lanzarote and Fuerteventura airports throughout the month generated 2,724 minutes of ATFM delay.

### Other

- Electrical failure at Melun airport between 22 and 31 December generated 3,097 minutes of ATFM delay in Paris ACC.

## 6. Flight Efficiency

### Fuel burn



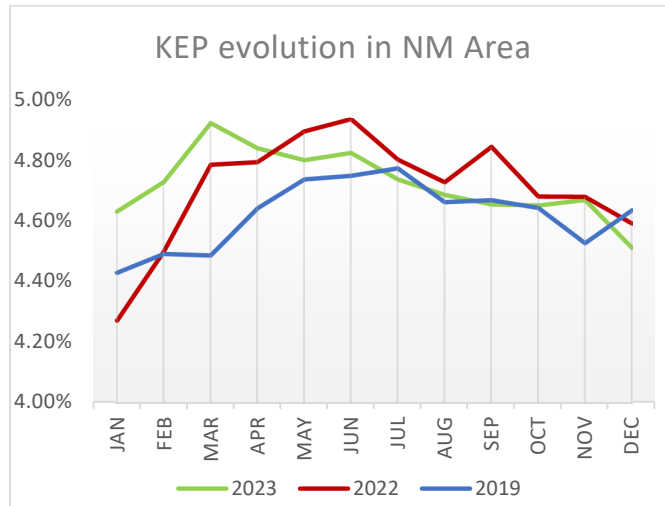
NM estimates that 2.5 million tonnes of fuel was burnt in the en-route flight phase in the NM area in December. Total NM Area en-route fuel burn in December increased slightly compared to November, despite fewer flights. Fuel burn per flight and per minute were higher in December. Traffic levels for Narrow body and Wide Body categories increased between November and December.



## Horizontal Flight Efficiency

### HORIZONTAL FLIGHT EFFICIENCY

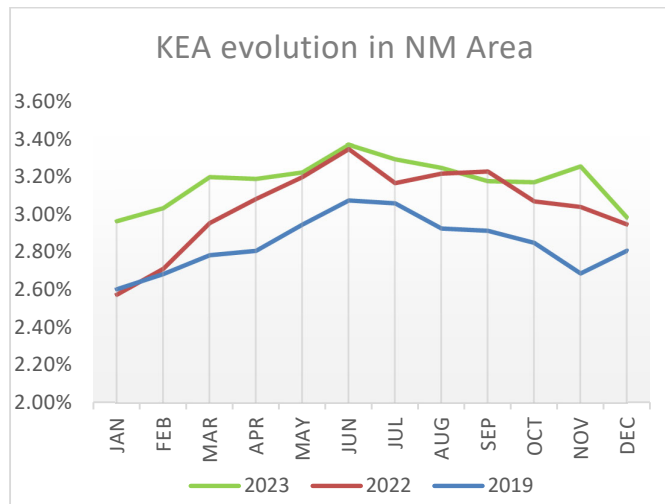
There are two horizontal flight efficiency KPIs<sup>(ii)</sup>. The indicators provide a measure of the average en-route additional distance with respect to the great circle distance. One is based on last filed flight plan (KEP) and the other on actual trajectory (KEA). KEP was lower than 2022 in December 2023 and KEA was almost at the same level as 2022. NM is assessing the reasons for the fall in KEA since March – to be reported in the annual NOR, end Q1.



KEP indicator followed the same pattern than KEA at the start of the year. During summer it improved slightly over 2022, getting close to the 2019 level during July - Nov, despite the on-going Ukrainian airspace closure.

Over the past period, several airspace design-related changes improved connectivity, allowing better routing options in the network.

These new options were planned by AOs, leading to a better KEP. In addition, NM worked closely with AOs/CFSPs to further improve their flight planning.



KEA indicator increased in March mainly due to French strikes. It remained high during the summer, at the level of 2022, and started to increase again from October. December 2023 was higher than previous years but just above 2022.



## 7. Notice

### Traffic and Delay Comparisons

All traffic and delay comparisons are between report month and equivalent operational period of the previous year.

### Traffic Monitoring

Country traffic counts are based on arrivals and departures traffic, overflights are excluded.

### NM Area

All figures presented in this report are for the geographical area that is within Network Manager's responsibility (NM area). For further information on the NM Area go to the Reporting Assumptions and Descriptions document available on the EUROCONTROL website at <https://www.eurocontrol.int/network-performance>

### Regulation Reason Groupings

For further information on the NM Area and the regulation reason groupings, go to the Reporting Assumptions and Descriptions document available on the EUROCONTROL website at <https://www.eurocontrol.int/network-performance>

### ATFM Statistics dashboard

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

### Network Operations Analysis document

NM will maintain the NOR Overview for the foreseeable future. NOR Analysis remains suspended. ATFM statistics provides an alternative source of network traffic and ATFM delays.

<https://www.eurocontrol.int/dashboard/air-traffic-flow-management-statistics-dashboard>

And stakeholders can use FATHOM for a more detailed view of their operational performance.

<https://www.eurocontrol.int/tool/network-manager-interactive-analysis-tool>

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<sup>i</sup> To request access to MIRROR see the EUROCONTROL [MIRROR project page](#) for more details.

<sup>ii</sup> More information on KEP and KEA, see [ANS performance page](#).



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