PERFORMANCE REVIEW BOARD
of the Single European Sky

Performance Review Board
Monitoring Report
Sweden - 2024

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Contents

1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2022/2423 of 5 December 2022

List of ACCs 2
Malmo ACC
Stockholm ACC

No of airports in the scope of the performance plan:
- **≥80'K** 1
- **<80'K** 0

Exchange rate (1 EUR=)
2017: 9.63311 SEK
2024: 11.4238 SEK

Share of Union-wide:
- **traffic (TSUs) 2024** 2.2%
- **en route costs 2024** 0.8%

Share en route / terminal costs 2024 95% / 5%

En route charging zone(s)
Sweden

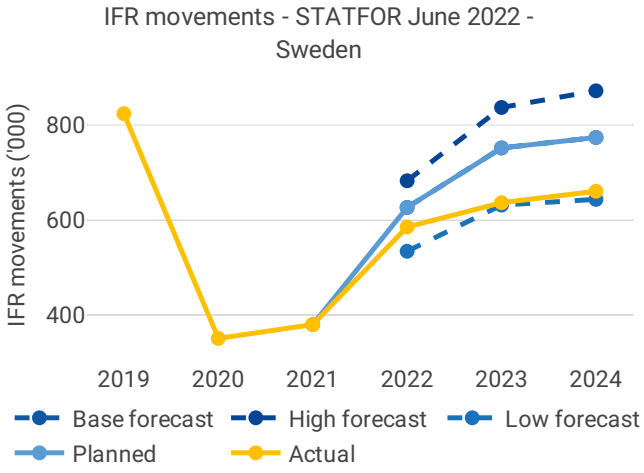
Terminal charging zone(s)
Sweden

Main ANSP
- LFV

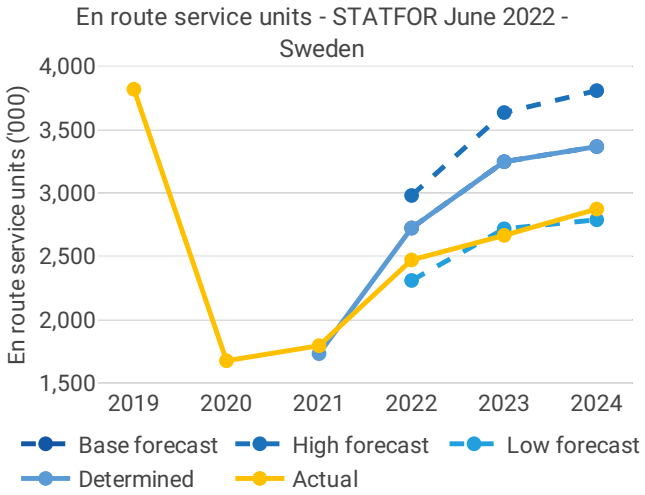
Other ANSPs
- SDATS
- ACR
- ARV - Arvidsjaur
- Swedavia

MET Providers
- SMHI

1.2 Traffic (En route traffic zone)

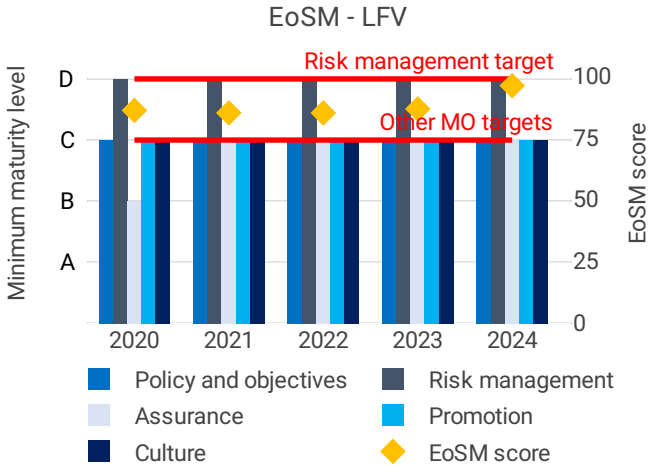


- Sweden recorded 660K actual IFR movements in 2024, +3.8% compared to 2023 (636K).
- Actual 2024 IFR movements were -14.6% below the plan (773K).
- Actual 2024 IFR movements represent 80% of the actual 2019 level (823K).



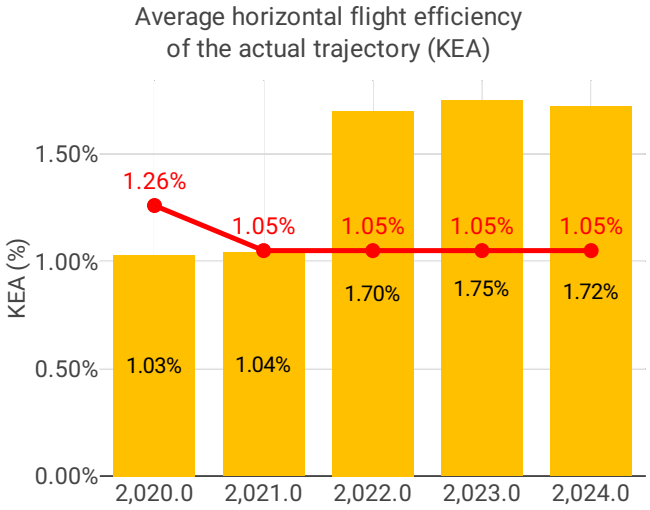
- Sweden recorded 2,874K actual service units in 2024, +7.8% compared to 2023 (2,666K).
- Actual 2024 service units were -14.6% below the plan (3,367K).
- Actual 2024 service units represent 75% of the actual 2019 level (3,820K).

1.3 Safety (Main ANSP)



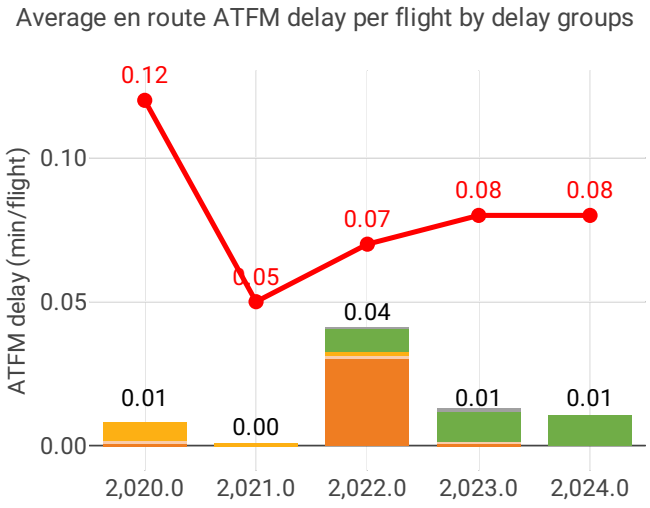
- LFV achieved the RP3 EoSM target levels in 2021 and has maintained the levels since then.
- SDATS achieved the EoSM RP3 targets in 2023 and maintained the levels in 2024.
- ARV – Arvidsjaur and ACR implemented significant improvements for Safety Risk Management and achieved EoSM RP3 targets for all Management Objectives in 2024.
- Sweden recorded stable performance with respect of safety occurrences with a slight decrease in the rate of runway incursions and separation minima infringements compared to 2023.

1.4 Environment (Member State)



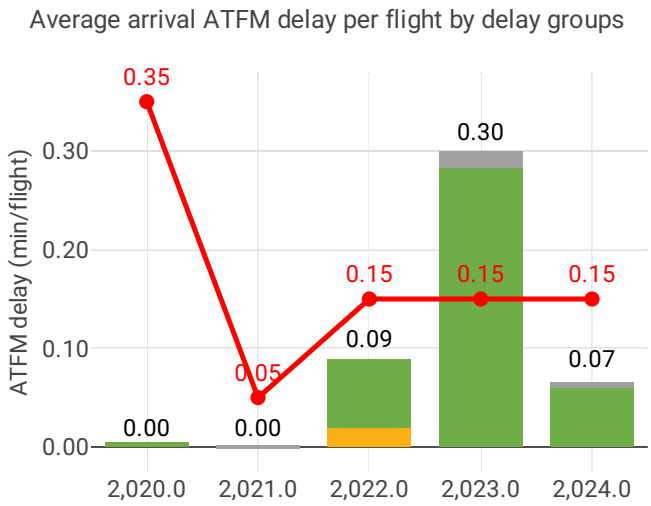
- Sweden achieved a KEA performance of 1.72% compared to its target of 1.05% and did not contribute positively towards achieving the Union-wide target.
- The NSA states that KEA worsened due to traffic avoiding Russian airspace (including Kaliningrad), which is causing extended trajectories.
- Both KEP and SCR remained stable compared to 2023.
- The share of CDO flights increased from 50.21% to 52.52% in 2024.
- Both additional taxi out time and additional time in terminal airspace remained stable in 2024 compared to 2023.

1.5 Capacity (Member State)



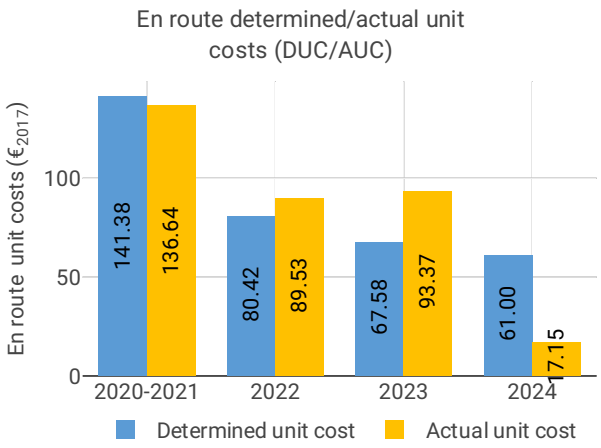
- Sweden registered 0.01 minutes of average en route ATFM delay per flight during 2024, which remained 0.01 after the post-ops adjustment process, thus achieving the local target value of 0.08. Delay levels in Sweden remained unchanged year-on-year.
- Delays were highest in June and July, due to adverse weather conditions.

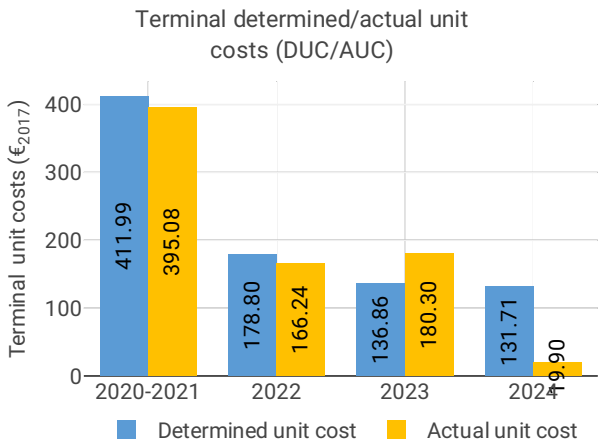
- The share of delayed flights with delays longer than 15 minutes in Sweden increased by 7 percentage points compared to 2023 and was higher than 2019 values.
- The average number of IFR movements was 22% below 2019 levels in Sweden in 2024.
- The number of ATCOs in OPS is 145, being below the 2024 plan in Stockholm by 28 FTEs. The number of ATCOs in OPS is 137, being below the 2024 plan in Malmo by 19 FTEs.
- The yearly total of sector opening hours in Stockholm ACC was 29,458, showing a 2.8% decrease compared to 2023. Sector opening hours are 33.5% below 2019 levels. The yearly total of sector opening hours in Malmo ACC was 48,815, showing a 11.8% decrease compared to 2023. Sector opening hours are 15.1% below 2019 levels.
- Malmo ACC registered 9.57 IFR movements per one sector opening hour in 2024, being 5.0% below 2019 levels. Stockholm ACC registered 10.47 IFR movements per one sector opening hour in 2024, being 13.1% above 2019 levels.



- Sweden registered an average airport arrival ATFM delay of 0.07 minutes per flight in 2024, thus achieving the local target of 0.15 minutes.
- Compared to 2023, average arrival ATFM delays in Sweden were 78% lower in 2024, while the number of IFR arrivals increased by 1%.
- The main reason for delays was weather, accounting for 91% of total delays.

1.6 Cost-efficiency (En route/Terminal charging zone(s))





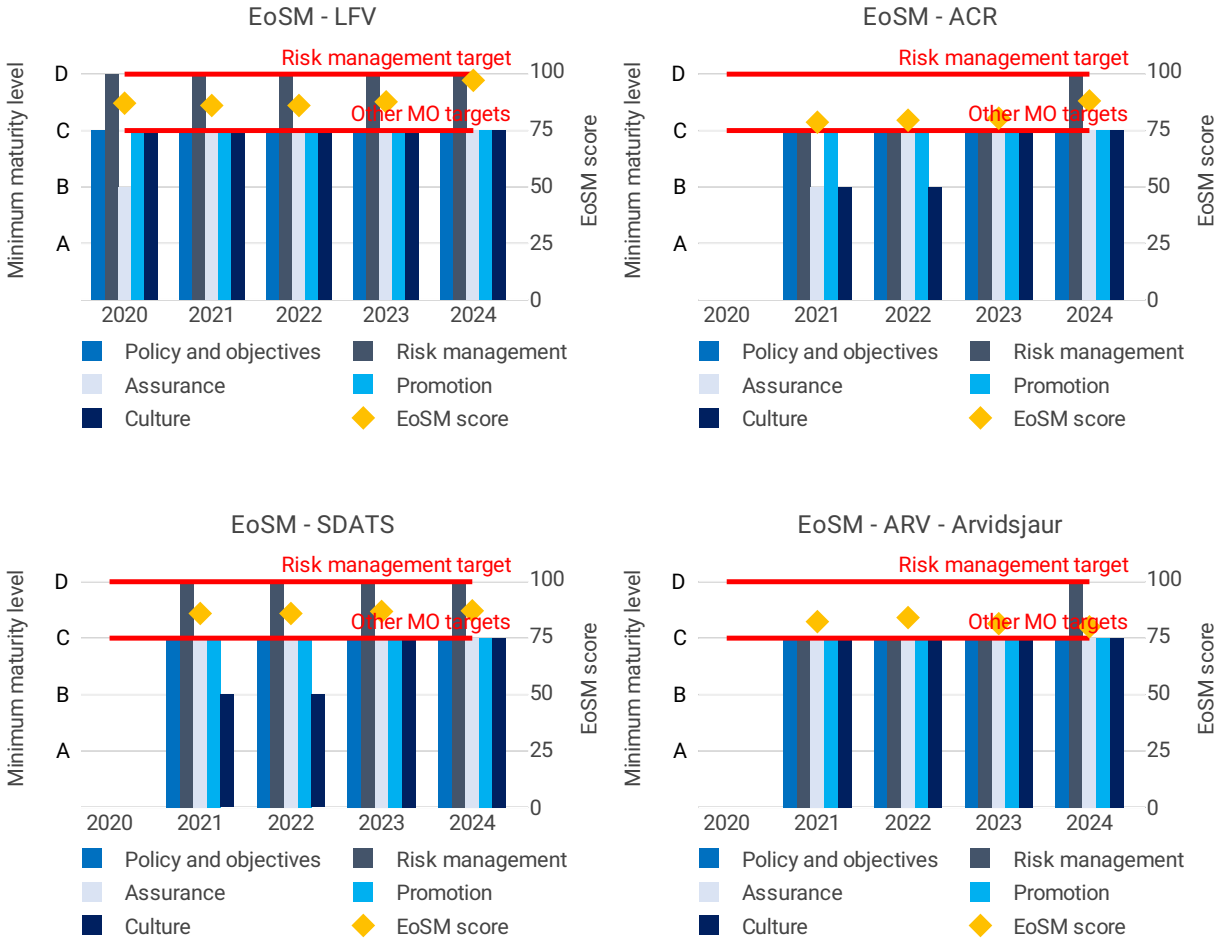
- The en route 2024 actual unit cost of Sweden was 17.15€2017, -72% lower than the determined unit cost (61.00€2017). The terminal 2024 actual unit cost was 19.90€2017, -85% lower than the determined unit cost (131.71€2017).
- The en route 2024 actual service units of Sweden (2.9M) were -15% lower than the determined service units (3.4M), mainly due to shifted traffic flows caused by Russia's war of aggression against Ukraine.
- The en route 2024 actual total costs were -156M€2017 (-76%) lower than the determined. This difference is driven by negative exceptional costs for LFV. Although no exceptional costs had been planned, the actual exceptional costs were -185M€2017, which was due to a one-time effect on pension costs resulting from increased interest rates that reduced the pension debt. When excluding this item, the en route 2024 actual total costs for Sweden are +28M€2017 (+14%) higher than planned.
- LFV spent 20M€2017 in 2024 related to costs of investments for both en route and terminal charging zones, +11% higher than determined (18M€2017). The difference is driven by higher depreciation costs under the RTS-Swedavia program, resulting from a combination of higher total investment and depreciation period shorter than originally planned.
- The en route actual unit cost incurred by users in 2024 was 10.25€ (-82% lower than the 2024 DUC), while the terminal actual unit cost incurred by users in 2024 was 18.30€ (-86% lower than the 2024 DUC). The difference between the AUCU and the DUC is mostly resulting from the cost risk sharing adjustment for both en route and terminal charging zones.
- Sweden should take additional measures to manage the cost-risk associated with pensions for RP4 in view of wide fluctuations in actual pension costs observed during RP3.

2 SAFETY - SWEDEN

2.1 PRB monitoring

- LFV achieved the RP3 EoSM target levels in 2021 and has maintained the levels since then.
- SDATS achieved the EoSM RP3 targets in 2023 and maintained the levels in 2024.
- ARV – Arvidsjaur and ACR implemented significant improvements for Safety Risk Management and achieved EoSM RP3 targets for all Management Objectives in 2024.
- Sweden recorded stable performance with respect of safety occurrences with a slight decrease in the rate of runway incursions and separation minima infringements compared to 2023.

2.2 Effectiveness of Safety Management (EoSM) (KPI#1)



Focus on EoSM

LFV: All five EoSM components of the ANSP meet the RP3 target level. The level was maintained compared with 2023 ACR:All five EoSM components of the ANSP meet the RP3 EoSM target level. In 2024, significant improvement was observed for “Safety Risk Management” enabling this area to reach the target level. SDATS: All five EoSM components of the ANSP meet the 2024 target level. The level was maintained compared with 2023. AFAB: All five

EoSM components of the ANSP meet the RP3 EoSM target level. In 2024, significant improvement was observed in "Safety Risk Management" enabling this area to reach the target level.

LFV achieved the RP3 EoSM target levels in 2021 consistent with the performance plan by improving Safety Assurance from maturity level B to C. Other Management Objectives were already at the RP3 target maturity level. LFV has maintained the levels since then.

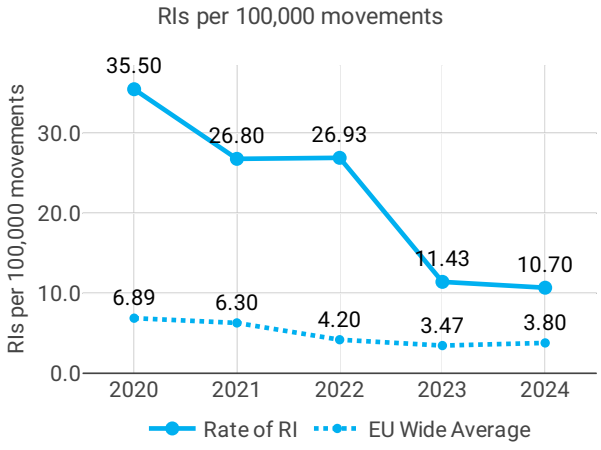
SDATS started in 2021 with only one Management Objective (Safety Culture) being below the RP3 targets and followed the performance plan reaching level C in 2023. SDATS retained these levels in 2024 hence achieving the RP3 targets.

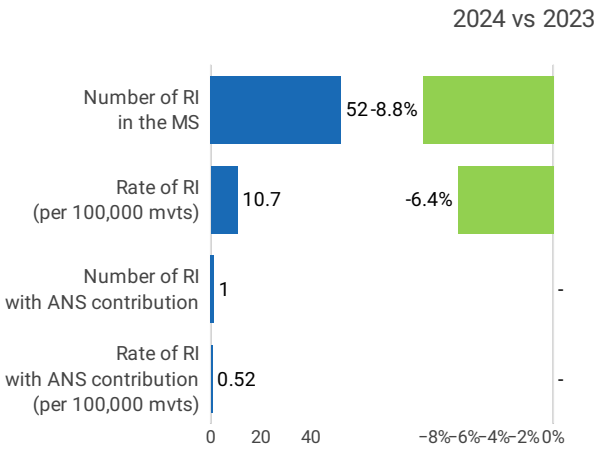
ARV – Arvidsjaur began2021 needingto improve two of the five Management Objectives by one level to achieve the RP3 targets and planned to implement these improvements by 2023. Overall ARV followed this plan, reaching level C on Safety Assurance one year ahead and level D one year behind the plan.

Since 2023, ACR has been working with improvements of the SMS, stemming from an audit in 2022, to develop and to increase achievements in all aspects of safety and SMS. ACR reached level C in all Management Objectives in 2023 and further improved Safety Risk Management in 2024 to reach the RP3 targets by the end of RP3. In general, ACR followed their plan established at the beginning of RP3.

2.3 Safety occurrences

2.3.1 Rate of runway incursions (RIs) (PI#1)





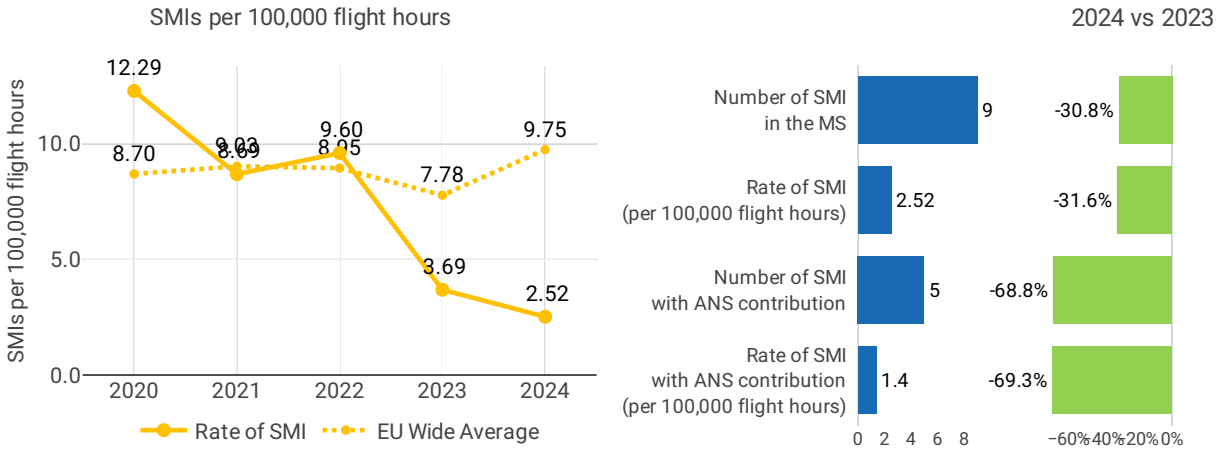
Rate of RIs per 100,000 airport movements - Sweden				
#	Airport name	APT movements	Number of RI	Rate RI per 100,000
1	Stockholm - Arlanda	190,683	1	0.52

Focus on runway incursions

Sweden has seen a downwards trend in the rate of RIs reported at Member State level since the start of RP3, reducing the rate to under one-third by 2024. However, some of the reduction in the rate was caused by a change in reporting. For data presented from 2023, only occurrences with a safety impact were recorded. This may explain the decrease of the rate between 2022 and 2023. Despite the decrease, in 2024 the rate remained above the Union-wide average.

RIs with an ANS contribution remained low in 2024, with one occurrence causing an increase in the rate compared with 2023, when no RIs with ANS contribution were reported. The number of RIs remained low throughout RP3.

2.3.2 Rate of separation minima infringements (SMIs) (PI#2)



Rate of SMI with ANS contribution per 100,000 flight hours

		Flight hours					Number of SMIs				
#	ANSP	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
1	LFV	199,288	218,597	333,262	352,610	358,344	2	19	21	13	5
2	ACR	NA	NA	0	0	NA	NA	NA	10	3	NA
3	ARV - Arvidsjaur	NA	NA	0	0	NA	NA	NA	0	0	NA
4	SDATS	NA	NA	0	0	NA	NA	NA	0	0	NA

		Rate of SMI per 100,000 flight hours					% variation in rate of SMIs				
#	ANSP	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
1	LFV	1	9	6	4	1		+766%	-28%	-41%	-62%
2	ACR	NA	NA	NA	NA	NA					
3	ARV - Arvidsjaur	NA	NA	NA	NA	NA					
4	SDATS	NA	NA	NA	NA	NA					

Focus on separation minima

Sweden has shown a downwards trend in the rate of SMIs at a Member State level. The data is affected by the same change in classification as described for RIs and some decreased between 2022 and 2023 can, at least partly, be explained by this change. Between 2023 and 2024, the rate decreased by 30%.

At the ANSP level, only LFV reported SMIs with ANS contribution. After a peak in 2021, the trend of the rate has been downwards with a decrease in the rate between 2023 and 2024 of around -66%.

2.3.3 Quality of occurences reporting

The number of occurrences reported at Member State level seems consistent with the occurrences reported at the ANSP level for SMIs and RIs. For data presented from 2023 only occurrences with a safety impact are recorded.

2.4 Use of automated safety data recording system (ASDRS) (PI#3)

Use of automated safety data recording system - 2024	
For RIs	**For SMIs**
✗	✓

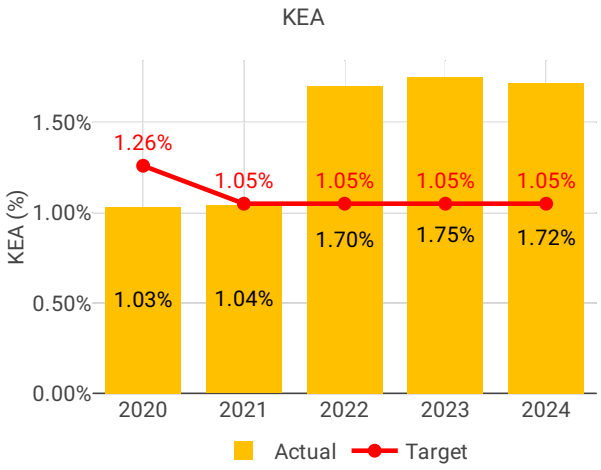
3 ENVIRONMENT - SWEDEN

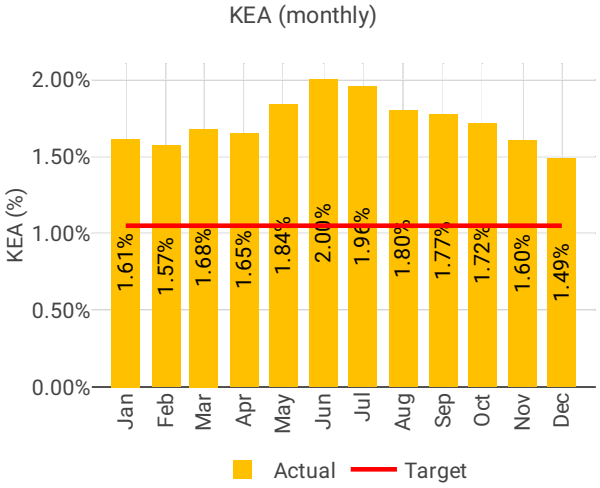
3.1 PRB monitoring

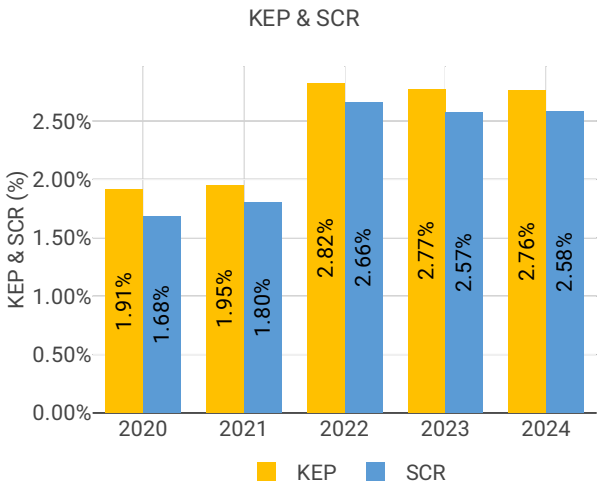
- Sweden achieved a KEA performance of 1.72% compared to its target of 1.05% and did not contribute positively towards achieving the Union-wide target.
- The NSA states that KEA worsened due to traffic avoiding Russian airspace (including Kaliningrad), which is causing extended trajectories.
- Both KEP and SCR remained stable compared to 2023.
- The share of CDO flights increased from 50.21% to 52.52% in 2024.
- Both additional taxi out time and additional time in terminal airspace remained stable in 2024 compared to 2023.

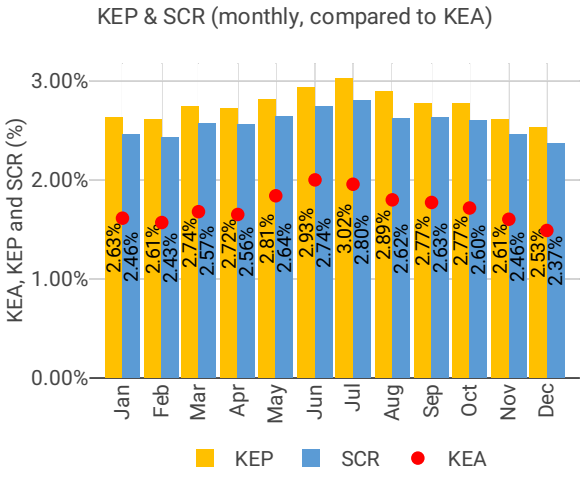
3.2 En route performance

3.2.1 Horizontal flight efficiency of the actual trajectory (KEA) (KPI#1), of the last filed flight plan (KEP) (PI#1) & shortest constrained route (SCR) (PI#2)



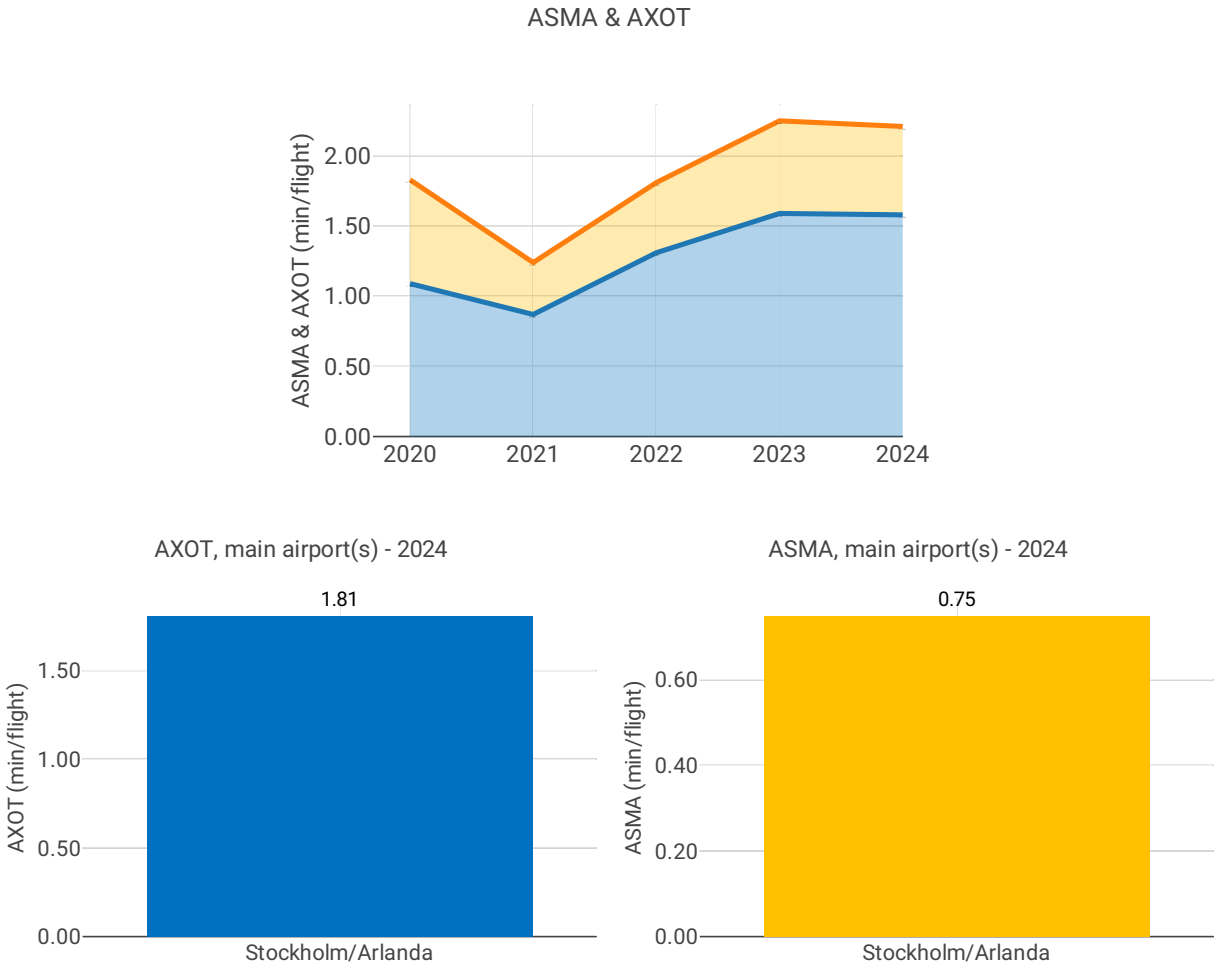






3.3 Terminal performance

3.3.1 Additional taxi-out time (AXOT) (PI#3) & Arrival Sequencing and Metering Area (ASMA) time (PI#4)



Focus on ASMA & AXOT

AXOT

The additional taxi-out times at Stockholm in 2024 are practically the same as in 2023(ESSA; 2019: 2.05 min/dep.; 2020: 1.3 min/dep.; 2021: 0.94 min/dep.; 2022: 1.52 min/dep.; 2023: 1.82 min/dep.; 2024: 1.81 min/dep.) and well below the SES average of 2.91 min/dep.

According to the Swedish monitoring report: *Arlanda is planned to start A-CDM validation with NMOC/Eurocontrol by the end of this year. By this meaning; we will then start optimize the push back sequence with a pre- departure sequencer (PDS) with inputs based on local constrains at the airport (departure rate/runway maintenance etc).*

The PDS will allocate a TSAT (Target Start Up Time) to every flight and hence reduce queuing and taxiway congestion, instead the departing aircrafts will be held on stand and can commence push- back within TSAT window -/+5 min. Regarding the performance aspects, these are monitored, at least, once a year through the AMR process. Internal target at Swedavia: For 90% of starts, AXOT should not exceed EXOT+ 3 minutes.

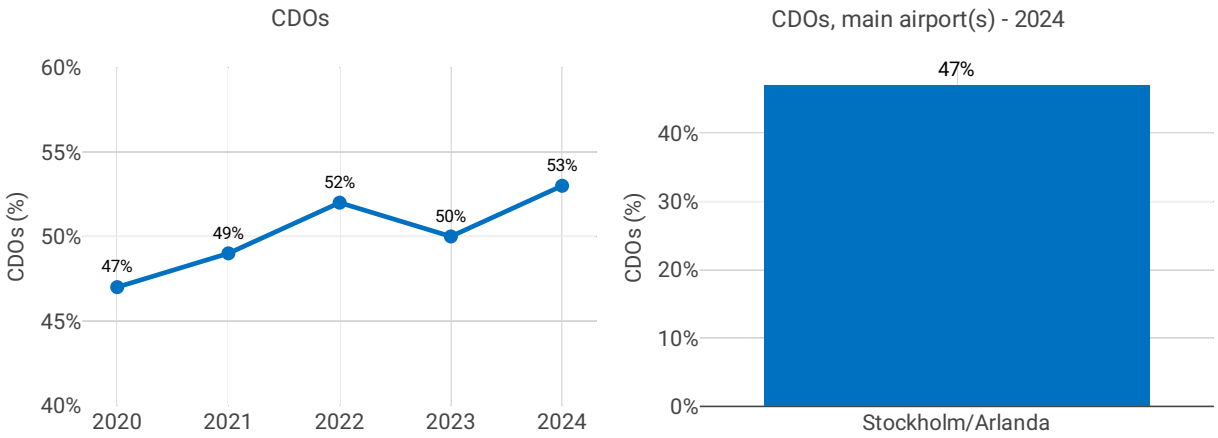
ASMA

As observed for the additional taxi-out times, the additional time in the terminal area at Stockholm Arlanda decreased slightly in 2024 (ESSA; 2019: 1.15 min/arr.; 2020: 0.83 min/arr.; 2021: 0.43 min/arr.; 2022: 0.6 min/arr.; 2023: 0.79 min/arr.; 2024: 0.75 min/arr.) and remained below the SES average of 1.28 min/arr.

According to the Swedish monitoring report: *LFV and Swedavia is conducting the Swea project with the aim of modernizing traffic flows in the Stockholm area. This will result in a major redesign of traffic flows in Stockholm TMA and adjacent ACC sectors. The redesign is planned to be implemented in the fall of 2026.*

Parallel approaches (Established on RNP-AR + ILS) will be implemented during the autumn of 2025.

3.3.2 Share of arrivals applying continuous descent operations (CDOs) (PI#5)



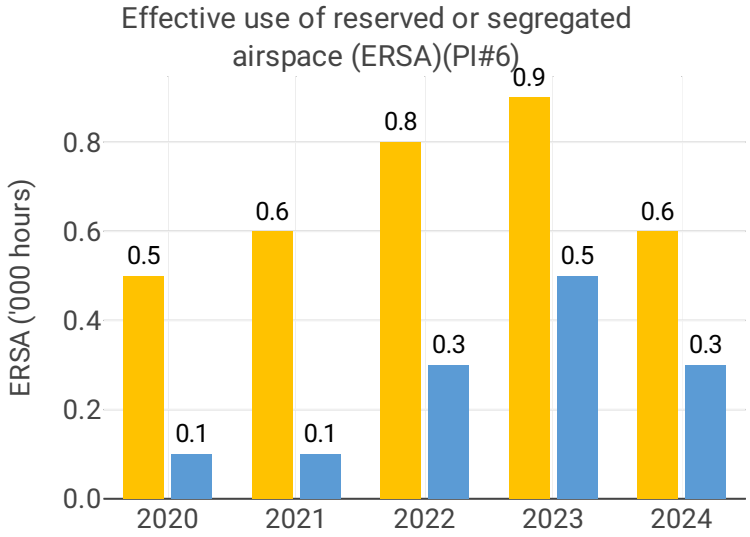
Focus CDOs

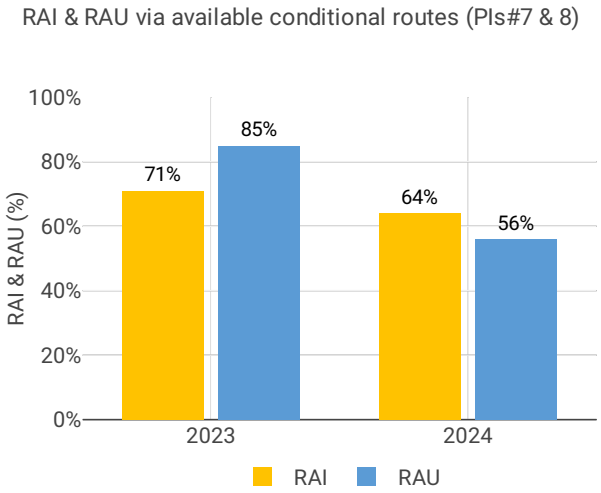
The share of CDO flights at Stockholm (ESSA) increased from 45.8% to 48.7% in 2024 which is again above the overall RP3 value in 2024 (29.3%).

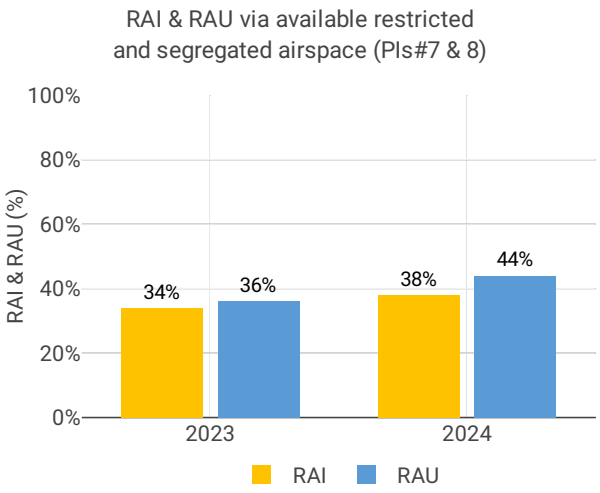
According to the Swedish monitoring report: *Implementation of additional RNP-AR approaches is increasing predictability for arriving traffic and hence improving vertical efficiency. In the autumn of 2025 parallel approaches (Established on RNP-AR + ILS) is planned for implementation. This will hopefully improve both horizontal and vertical flight efficiency.*

Airport level															
	Additional taxi-out time (PI#3)					Additional ASMA time (PI#4)					Share of arrivals applying CDO (PI#5)				
Airport	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Stockholm/ Arlanda	1.30	0.94	1.52	1.82	1.81	0.83	0.43	0.60	0.79	0.75	43%	44%	48%	46%	47%

3.4 Civil-Military dimension







Focus on Civil-Military dimension

Update on Military dimension of the plan

The application of the A-FUA concept in Sweden is slightly different compared to the application in other countries due to the fact that Sweden uses PCA (Prior Coordination Area). Swedish PCAs are not defined in CACD hence PCAs will not be allocated via the AUP/UUP process. AMC Sweden has the possibility to cluster adjacent PCAs to maximize the utilisation of the airspace for the civilian and military airspace users. Therefore ATC can coordinate the passage of flights (in most cases) through active PCAs in order to achieve a more environment friendly routing of the traffic. With this methodology the environmental impact from the military dimension is very small compared to if flights always had to fly around the active area.

Military - related measures implemented or planned to improve capacity

The measurement method for monitoring the utilisation rate of activated areas has been refined in order to clarify where there may be possible improvement measures. Ref 2.2.2.F PI #6 about initiatives. With fully adopition to CP1 ARES/SWIM there are possibilities to get

even more accurate figures. A project is underway to realize the SWIM/ARES requirements of the CP 1 regulation with the aim of simplifying and digitizing the workflows for activation and deactivation of areas in segregated airspace. This will have a positive effect in dereasing workload in ASM level 2 and level 3. Still valid as the project is ongoing.

Initiatives implemented or planned to improve PI#6

The report sent in to ASM Level 1 from LFV gives the expression that there is an ambition to implement digital tools and aids to facilitate a better record keeping function regarding the usage of reserved or segregated airspace. The NSA intendes to continue to demand relevant information and statistics to be able to monitor the different PI's efficiently, but also to improve the coordination and cooperation between the NSA and the ANSP (LFV) in this regard.

Initiatives implemented or planned to improve PI#7

LFV does not currently have measurement methods established to be able to produce a basis for the requested reporting. LFV has been in contact with IFPS to see if they could help in this matter. Unfortunately they could not help us.

Initiatives implemented or planned to improve PI#8

LFV does not currently have measurement methods established to be able to produce a basis for the requested reporting. LFV has been in contact with IFPS to see if they could help in this matter. Unfortunately they could not help us.

4 CAPACITY - SWEDEN

4.1 PRB monitoring

- Sweden registered 0.01 minutes of average en route ATFM delay per flight during 2024, which remained 0.01 after the post-ops adjustment process, thus achieving the local target value of 0.08. Delay levels in Sweden remained unchanged year-on-year.
- Delays were highest in June and July, due to adverse weather conditions.
- The share of delayed flights with delays longer than 15 minutes in Sweden increased by 7 percentage points compared to 2023 and was higher than 2019 values.
- The average number of IFR movements was 22% below 2019 levels in Sweden in 2024.
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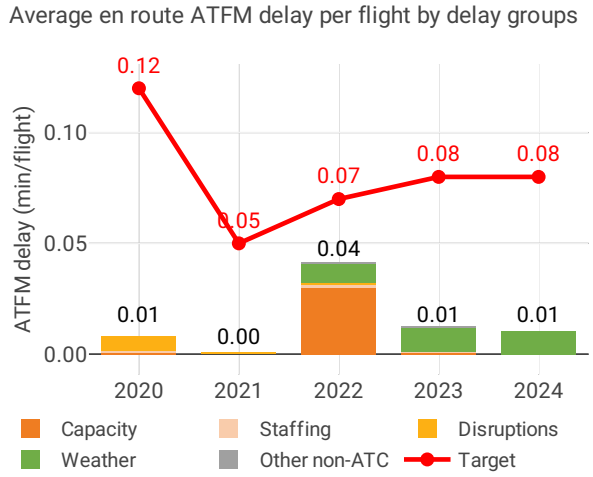
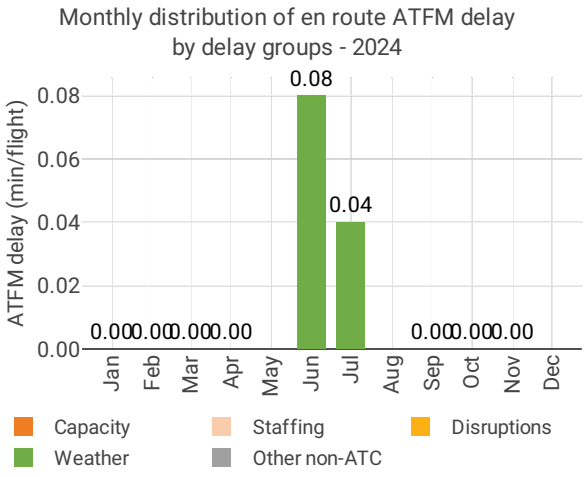
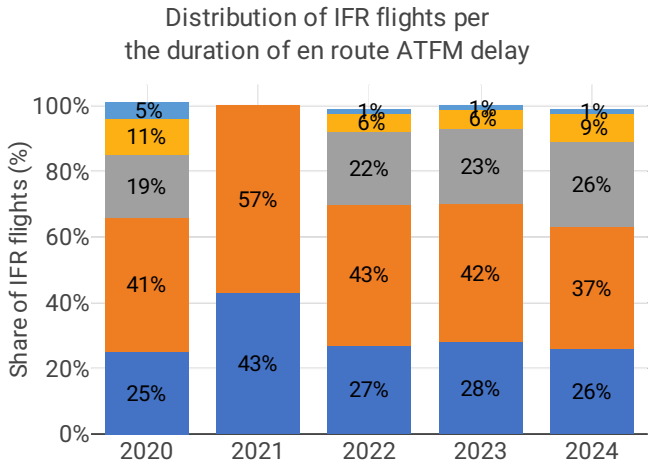
- Sweden registered an average airport arrival ATFM delay of 0.07 minutes per flight in 2024, thus achieving the local target of 0.15 minutes.
- Compared to 2023, average arrival ATFM delays in Sweden were 78% lower in 2024, while the number of IFR arrivals increased by 1%.
- The main reason for delays was weather, accounting for 91% of total delays.

4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)







Focus on en route ATFM delay

Summary of capacity performance

Sweden experienced an increase in traffic from 636k flights in 2023 with 7k minutes of en route ATFM delay, to 659k flights in 2023 with just 6k minutes of en route AFTM delay.

For reference, in 2019, Sweden handled 831k flights with 35k minutes of en route ATFM delays.

NSA's assessment of capacity performance

On the domestic market for aviation, the international flights experienced growth while the domestic market was very weak and declining.

Operational issues. The restricted airspace over Russia continued to bring down the Service unit levels during 2024. Also the conflict Israel/Lebanon canceled flights to/from Sweden, and there was likely an effect of the overflights aswell to some extent.

The KPI target is met. The traffic has to be taken into consideration, where the volumes has been significantly lower. However the performance has been excellent and the ANSP has caused no delays, the minor delay occurrences are due to weather.

Monitoring process for capacity performance

SE NSA monitors through the yearly AMR process, aswell as continously via ansperformance.eu and through the NOP-documentation. Where there are questions from the NSA, they are directed to LFV. In-depth analysis are carried out when considered relevant, and especially in the process of Reference period planning.

Capacity planning

For evaluation of the capacity planning during RP3 it has to be re-called that the actual traffic was lower than forecast applied for RP3. During 2024 the traffic was ~ 15 percent lower so this of course is one explanatory parameter. However to some extent new routes, especially around Kaliningrad added on complexity in 2022. Regardless of the mentioned parameters for assessment, the capacity performance has been very satisfactory. For RP4 the targets ranges from 0,18 down to 0,11 in 2029. From RP4 Sweden will apply a modulation to the incentive scheme based on NOP.

Application of Corrective Measures for Capacity (if applicable)

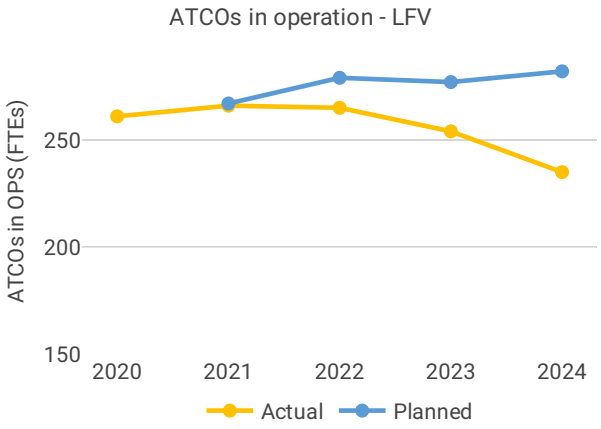
Not applicable

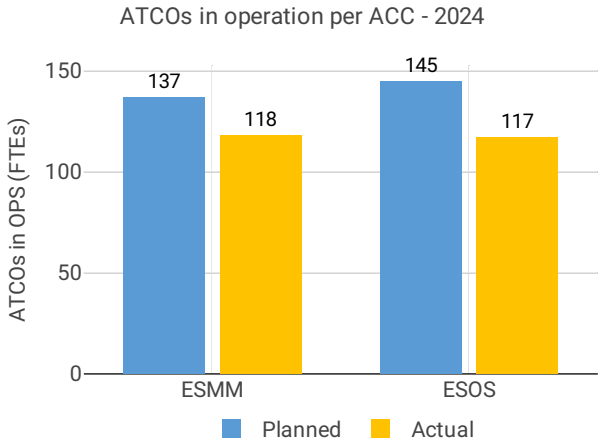
En route Capacity Incentive Scheme

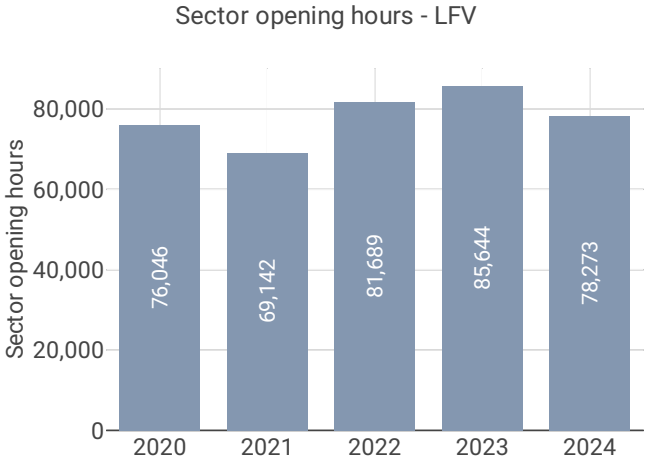
LFV: With an actual capacity performance of 0.01 minutes per flight, against a target of 0.08, Sweden reports that the ANSP is due a bonus of SEK 15 957 300

In accordance with Article 3(3)(a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4.2.2 Other indicators







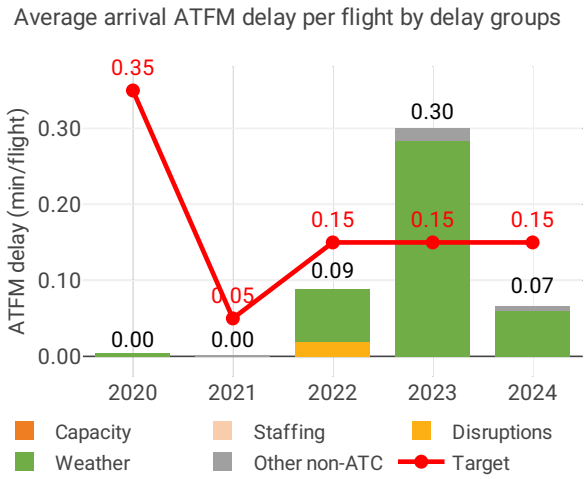
Focus on ATCOs in operations

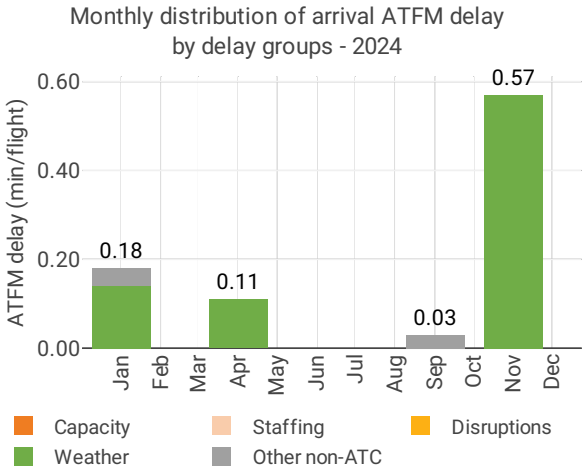
The number of ATCOS turns out lower than planned, according to lower succes rate of ATCO students, ATCOs leaving LFV and ATCOs retiring in advance. This was made possible without capacity problems, since the traffic volumes turned out lower than estimated and the volume of parential leave was far beyond recent years depending on the demographics of the ATCOs.

With less parential leave, fewer ATCOs employed are needed to reach the same number of FTEs.

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)





Focus on arrival ATFM delay

Sweden only has Stockholm (ESSA) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the capacity indicators can be performed. Traffic at this airport in 2024 was still 18% lower than the 2019 levels, with a small increase of 1% with respect to 2023.

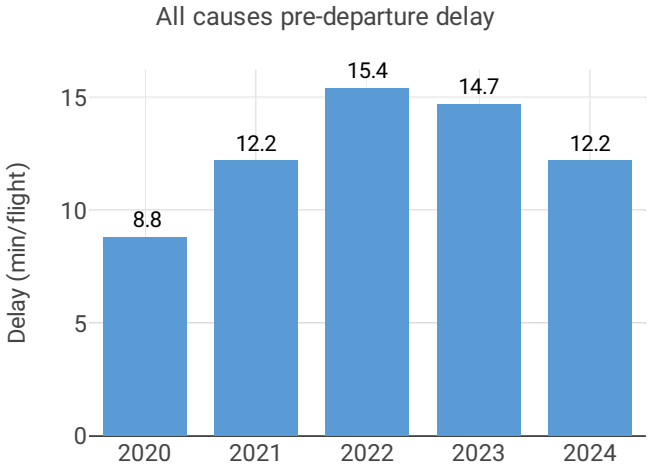
Average arrival ATFM delay in 2024 was 0.07 min/arr, lower compared to 0.30 min/arr in 2023 or 0.09 min/arr in 2022. The national target was met. ATFM slot adherence remained very high (2023: 97.8%; 2023: 98.6%).

Average arrival ATFM delay at Stockholm in 2024 decreased with respect to the two previous years (ESSA: 2022: 0.09 min/arr; 2023: 0.30 min/arr; 2024: 0.07 min/arr) 91% of these delays were attributed to Weather and 9% to Aerodrome Capacity.

According to the Swedish monitoring report: *Almost all arrival delay into Arlanda caused by adverse weather (snow/CB activity). 2023 was a year with a lot of adverse weather conditions in Stockholm TMA. Some small arrival delays were caused by AD Capacity (non-ATC). There were no changes affecting capacity in Stockholm TMA due to Russian war, and no arrival delay into Arlanda caused due to Russia's war on Ukraine. Arrival delay in 2022 was caused mainly by adverse weather, some minor ATC staffing and minor ATC technical incidents. For 2024 there is nothing to report.*

The Swedish performance plan sets a national target on arrival ATFM delay for 2024 of 0.15 min/arr. This target was met with an actual performance of 0.07 min/arr. The NSA calculates a bonus of SEK 2078.

4.3.2 Other terminal performance indicators (PI#1-3)



Airport level										
	Avg arrival ATFM delay (KPI#2)					Slot adherence (PI#1)				
Airport name	**2020**	**2021**	**2022**	**2023**	**2024**	**2020**	**2021**	**2022**	**2023**	**2024**
Stockholm/Arlanda	0.00	0.00	0.09	0.30	0.07	98.2%	97.9%	97.8%	97.8%	98.6%

	ATC pre departure delay (PI#2)					All causes pre departure delay (PI#3)				
Airport name	**2020**	**2021**	**2022**	**2023**	**2024**	**2020**	**2021**	**2022**	**2023**	**2024**
Stockholm/Arlanda	0.06	0.13	0.13	0.12	0.11	8.3	11.5	15.1	14.7	11.6

Focus on performance indicators at airport level

ATFM slot adherence

Stockholm's ATFM slot compliance in 2024 was 98.6%, a slight improvement with respect to previous years. With regard to the 1.4% of flights that did not adhere, 0.6% were early and 0.8% were late.

ATC pre-departure delay

The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Stockholm.

The annual value slightly decreased with respect to previous years but it is still higher than before the pandemic (ESSA: 2019: 0.09 min/dep; 2021: 0.13 min/dep; 2022: 0.13 min/dep; 2023: 0.12 min/dep; 2024: 0.11 min/dep)

All causes pre-departure delay

The total (all causes) delay in the actual off block time at Sweden decreased in 2024 (ESSA: 2020: 8.34 min/dep.; 2021: 11.48 min/dep.; 2022: 15.14 min/dep.; 2023: 14.65 min/dep.; 2024: 11.6 min/dep.)

According to the Swedish monitoring report: *The delays were mainly caused by adverse weather conditions.*

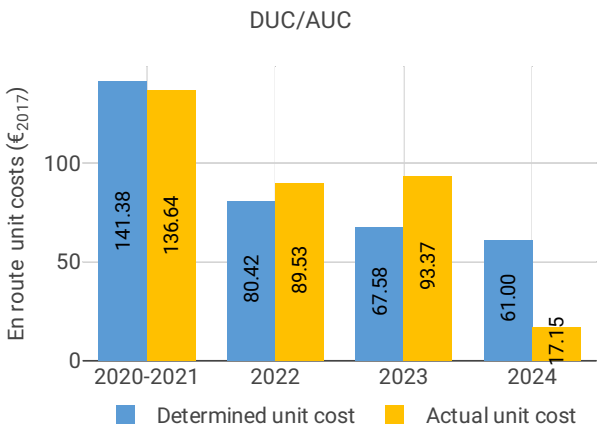
5 COST-EFFICIENCY - SWEDEN

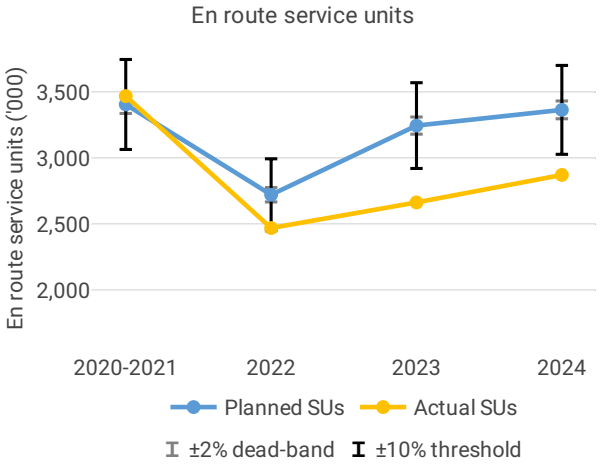
5.1 PRB monitoring

- The en route 2024 actual unit cost of Sweden was 17.15€2017, -72% lower than the determined unit cost (61.00€2017). The terminal 2024 actual unit cost was 19.90€2017, -85% lower than the determined unit cost (131.71€2017).
- The en route 2024 actual service units of Sweden (2.9M) were -15% lower than the determined service units (3.4M), mainly due to shifted traffic flows caused by Russia's war of aggression against Ukraine.
- The en route 2024 actual total costs were -156M€2017 (-76%) lower than the determined. This difference is driven by negative exceptional costs for LFV. Although no exceptional costs had been planned, the actual exceptional costs were -185M€2017, which was due to a one-time effect on pension costs resulting from increased interest rates that reduced the pension debt. When excluding this item, the en route 2024 actual total costs for Sweden are +28M€2017 (+14%) higher than planned.
- LFV spent 20M€2017 in 2024 related to costs of investments for both en route and terminal charging zones, +11% higher than determined (18M€2017). The difference is driven by higher depreciation costs under the RTS-Swedavia program, resulting from a combination of higher total investment and depreciation period shorter than originally planned.
- The en route actual unit cost incurred by users in 2024 was 10.25€ (-82% lower than the 2024 DUC), while the terminal actual unit cost incurred by users in 2024 was 18.30€ (-86% lower than the 2024 DUC). The difference between the AUCU and the DUC is mostly resulting from the cost risk sharing adjustment for both en route and terminal charging zones.
- Sweden should take additional measures to manage the cost-risk associated with pensions for RP4 in view of wide fluctuations in actual pension costs observed during RP3.

5.2 En route charging zone

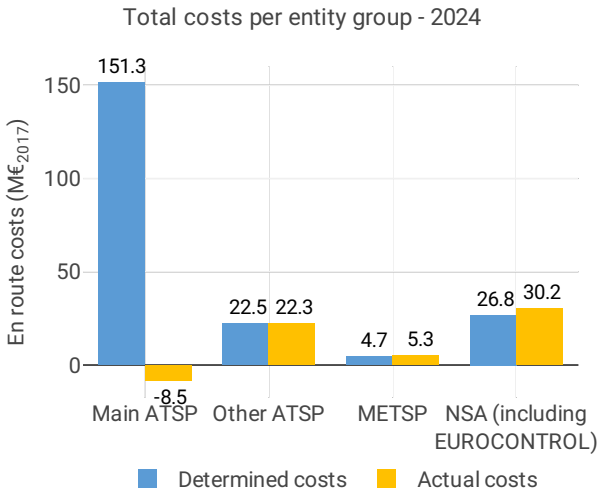
5.2.1 Unit cost (KPI#1)

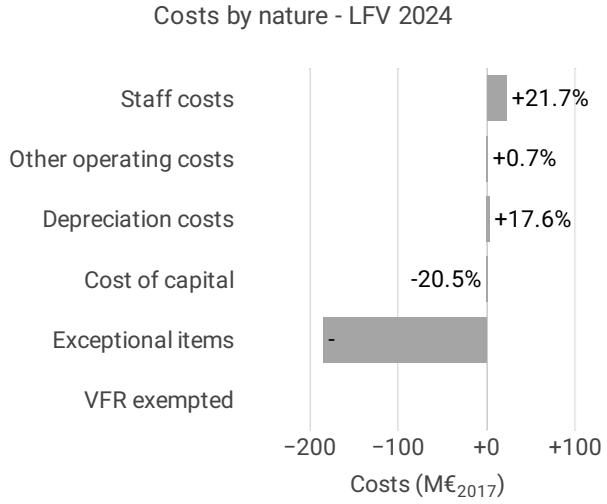




Actual and determined data				
Total costs - nominal (M€)	**2020-2021**	**2022**	**2023**	**2024**
Actual costs	496	246	292	48
Determined costs	502	240	245	232
Difference costs	-6	7	48	-184

Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	4.8%	2.2%	1.7%
Determined inflation index	NA	112.4	114.9	116.9
Actual inflation rate	NA	8.1%	5.9%	2.0%
Actual inflation index	NA	116	122.8	125.3
Difference inflation index (p.p.)	NA	+3.5	+7.9	+8.4





Focus on unit cost

AUC vs. DUC

In 2024, the en route AUC was -71.9% (or -422.37 SEK2017, -43.85 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-76.0%, or -1 503.5 MSEK2017, -156.1 M€2017) and significantly lower than planned TSUs (-14.6%). If exceptional items were excluded, the AUC in 2024 would equal to 783.66 SEK2017 and exceed planned DUC by +33.4%.

En route service units

The difference between actual and planned TSUs (-14.6%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is shared between the ANSP and the airspace users (see the main ANSP loss in Box 11).

En route costs by entity

Because of the reporting of these significant negative exceptional costs, LFV actual costs are much lower than planned (-105.6%, or -159.8 M€2017). Costs are also lower than planned for the other ANSPs (ACR, ARV and SDATS, -1.2%, or -0.3 M€2017) but higher than planned for the MET SP (+13.1%, or +0.6 M€2017) and the NSA/EUROCONTROL (+12.6%, or +3.4 M€2017). Overall, actual Sweden real en route costs are -76.0% (-156.1 M€2017) lower

than planned but would be +13.9% (+28.5 M€2017) higher if exceptional costs were excluded.

En route costs for the main ANSP at charging zone level

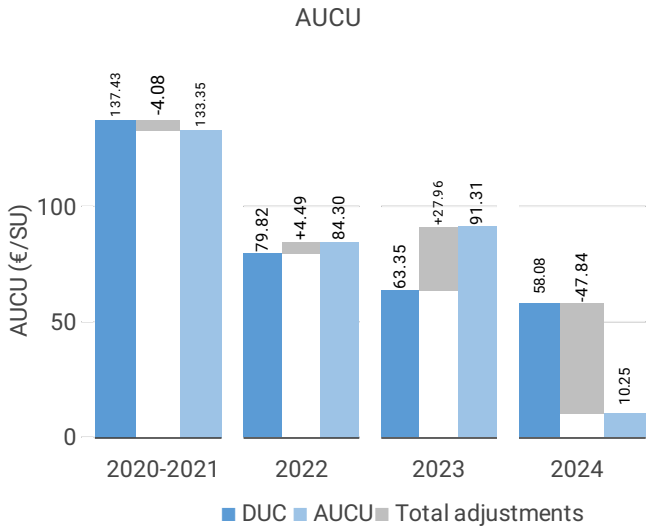
Actual real en route costs for LFV are negative (-8.5 M€2017) due to the reporting of exceptional item costs as described above. If these costs were excluded, actual 2024 costs for LFV would exceed the plan by +16.3% (+24.7 M€2017).

RP3 summary

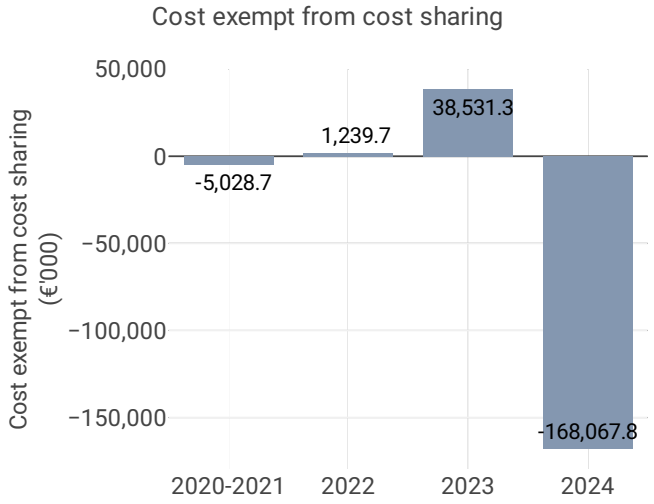
When considering the whole of RP3 (2020-2024) for Sweden en route charging zone, actual TSUs are -9.9% lower than planned, while actual costs in real terms are -11.7% lower than the determined costs (-1 271.4 MSEK2017 or -132.0 M€2017). As a result, the weighted average actual unit cost over RP3 (833.69 SEK2017 or 86.54 €2017) is -2.0% lower than planned in the PP (850.76 SEK2017 or 88.32 €2017). However, if negative exceptional item costs were excluded, the actual costs would be +4.7% above determined (+52.5 M€2017) while resulting weighted average actual unit cost (988.49 SEK2017) would exceed the plan by +16.2%.

Note 1: actual 2024 en-route costs for LFV are significantly affected by the reporting of negative exceptional item costs totalling -2.2 billion SEK reflecting a "*one-time effect on pension costs as a result of higher interest*", which will be reimbursed to airspace users through the costs exempt mechanism. Due to their magnitude, these exceptional costs significantly affect the calculations and analysis presented in this monitoring report for 2024 and the RP3 summary. For this reason, analysis in the text is also presented without considering these exceptional costs.

5.2.2 Actual unit cost incurred by the users (AUCU) (PI#1)

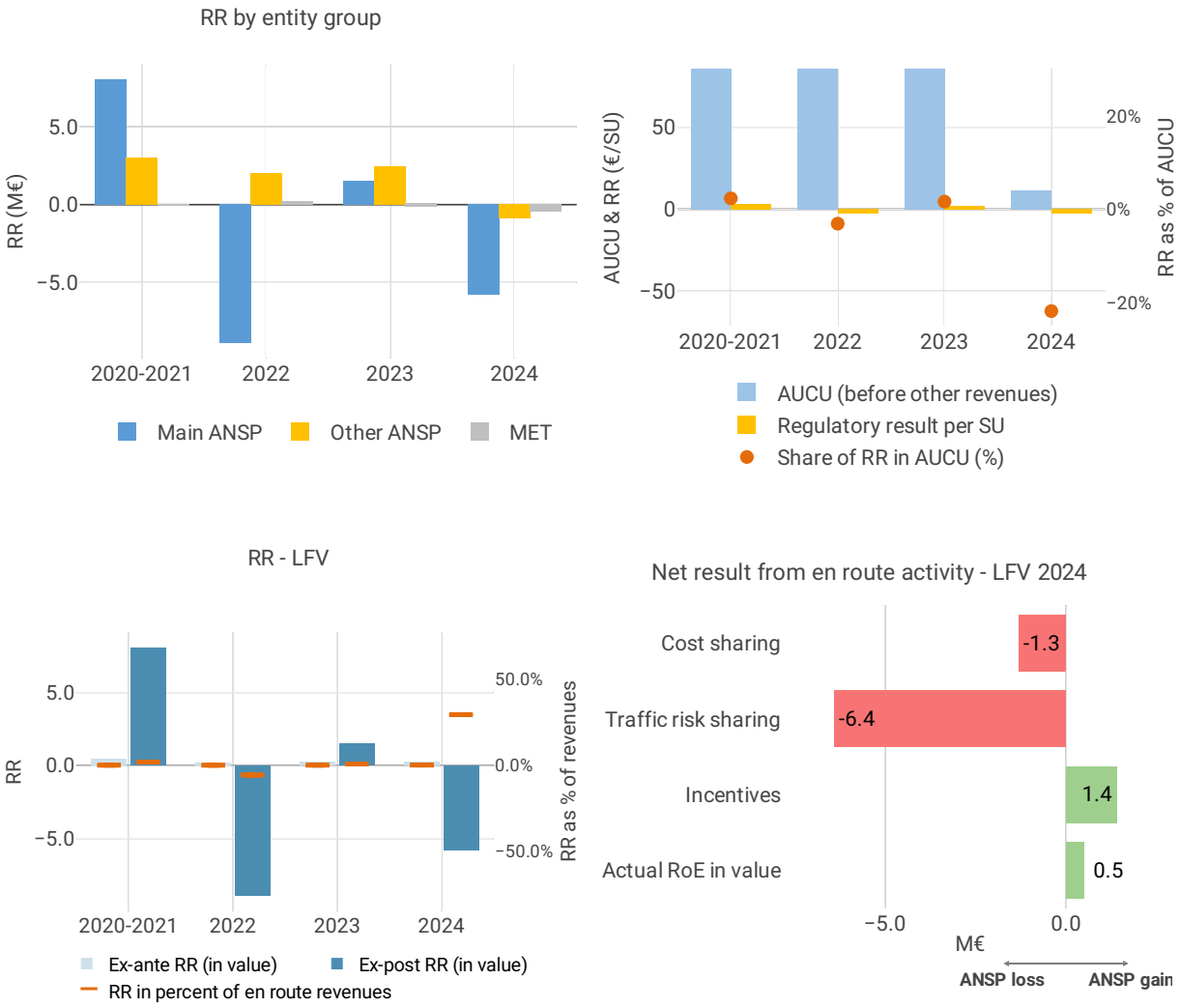


AUCU components (€/SU) – 2024	
Components of the AUCU in 2024	**€/SU**
DUC	**58.08**
Inflation adjustment	3.88
Cost exempt from cost-sharing	-58.47
Traffic risk sharing adjustment	5.93
Traffic adj. (costs not TRS)	1.47
Finantial incentives	0.49
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-1.14
Application of lower unit rate	0.00
Total adjustments	-47.84
AUCU	**10.25**
AUCU vs. DUC	**-82.4%**



Cost exempt from cost sharing – 2024		
Cost exempt from cost sharing by item - 2024	**€'000**	**€/SU**
New and existing investments	735.2	0.26
Competent authorities and qualified entities costs	1,833.9	0.64
Eurocontrol costs	1,022.5	0.36
Pension costs	-171,832.3	-59.78
Interest on loans	172.9	0.06
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-168,067.8**	**-58.47**

5.2.3 Regulatory result (RR)



Focus on regulatory result

LFV net gain/loss on activity in the Sweden en route charging zone in the year 2024

LFV reported a net loss of -71.4 MSEK, as a combination of a loss of -14.5 MSEK arising from the cost sharing mechanism, with a loss of -72.8 MSEK arising from the traffic risk sharing mechanism and a gain of +16.0 MSEK relating to financial incentives.

LFV overall regulatory result (RR) for the en route activity

Ex-post, the overall RR taking into account the net loss from the en route activity mentioned above (-71.4 MSEK) and the actual RoE (+5.2 MSEK) amounts to -66.2 MSEK (29.4% of the en route revenues). The resulting ex-post rate of return on equity is negative (-9.7%).

RP3 summary

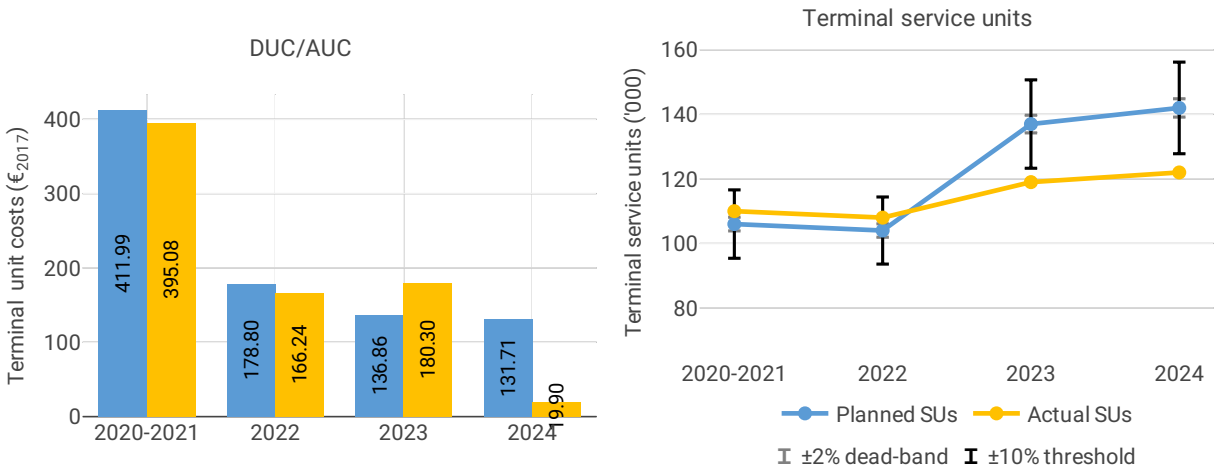
When considering the whole of RP3 (2020-2024), LFV generated a cumulative gain in respect of cost sharing of +43.2 MSEK, as actual total costs for RP3 were lower than planned. The traffic risk sharing mechanism generated a loss of -153.0 MSEK. Adding the gain of +33.1 MSEK to be retained by the ATSP in respect of financial incentives and the actual RoE (+14.9

MSEK over RP3) leads to an overall regulatory result of -61.7 MSEK, which corresponds to an average ex-post rate of return on equity of -2.2% (compared to 0.5% initially planned in the PP).

Note 2: Information reported in the en route reporting tables for LFV also includes the costs for CNS infrastructure owned by the airport operators.

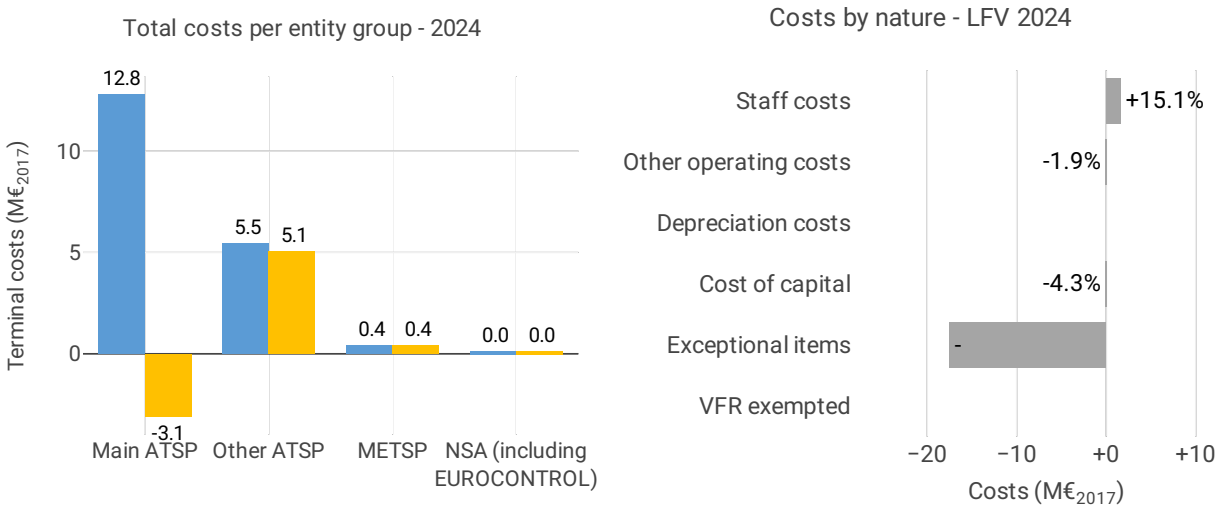
5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)



Actual and determined data				
Total costs - nominal (M€)	**2020-2021**	**2022**	**2023**	**2024**
Actual costs	46	21	26	3
Determined costs	46	21	21	22
Difference costs	0	0	5	-19

Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	4.8%	2.2%	1.7%
Determined inflation index	NA	112.4	114.9	116.9
Actual inflation rate	NA	8.1%	5.9%	2.0%
Actual inflation index	NA	116	122.8	125.3
Difference inflation index (p.p.)	NA	+3.5	+7.9	+8.4



Focus on unit cost

AUC vs. DUC

In 2024, the terminal AUC was -84.9% (or -1 077.06 SEK2017, -111.81 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned terminal costs in real terms (-87.0%, or -156.8 MSEK2017, -16.3 M€2017) and significantly lower than planned TNSUs (-14.0%). It should be noted that the actual inflation index in 2024 was +8.4 p.p. higher than planned. If exceptional items were excluded, the AUC in 2024 would equal to 1571.02 SEK2017 and exceed planned DUC by +23.8%.

Terminal service units

The difference between actual and planned TNSUs (-14.0%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users (see terminal Box 11).

Terminal costs by entity

Because of the reporting of these significant negative exceptional costs, LFV actual costs are much lower than planned (-124.2%, or -15.9 M€2017) as are the costs for the other ANSP (Swedavia, -7.3%, or -0.4 M€2017) while costs are higher for the NSA (+4.2%) and the MET service provider (+4.0%). Overall. actual real terminal costs are -87.0% (-16.3 M€2017) lower than planned but would be +6.5% (+1.2 M€2017) higher if exceptional costs were excluded.

Terminal costs for the main ANSP at charging zone level

Actual real en route costs for LFV are negative (-3.1 M€2017) due to the reporting of exceptional item costs as described above. If these costs were excluded, actual 2024 costs for LFV would exceed the plan by +12.4% (+1.6 M€2017).

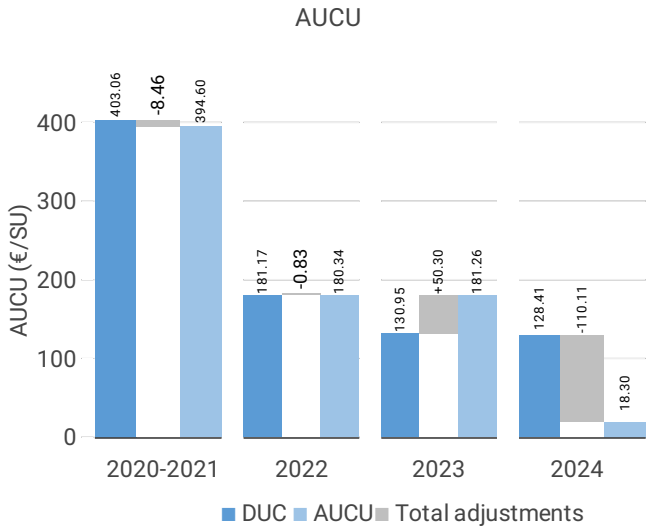
RP3 summary

When considering the whole of RP3 (2020-2024) for Sweden terminal charging zone, actual TNSUs are -6.1% lower than planned, while actual costs in real terms are -14.4% lower than the determined costs (some -138.5 MSEK2017 or -14.4 M€2017). As a result, the weighted average actual unit cost over RP3 (1 791.17 SEK2017 or 185.94 €2017) is -8.8% lower

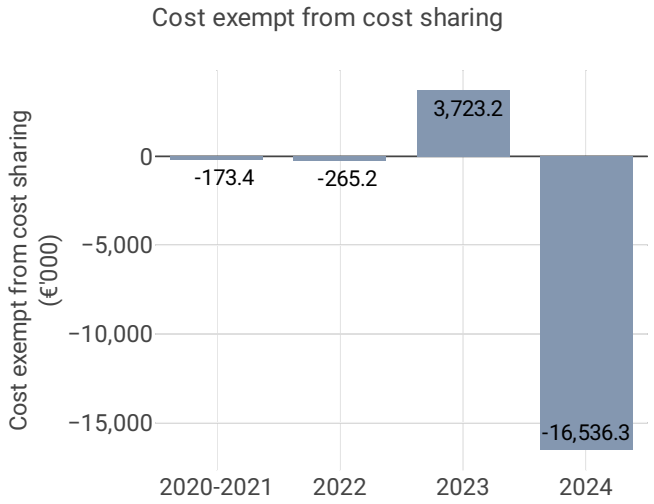
than planned in the PP (1 965.02 SEK2017 or 203.99 €2017). However, if negative exceptional item costs were excluded, the actual costs would be +3.1% above determined (+29.9 M€2017) while resulting weighted average actual unit cost (2 157.78 SEK2017) would exceed the plan by +9.8%.

Note 3: actual 2024 terminal costs for LFV are significantly affected by the reporting of negative exceptional item costs totalling -210.9 MSEK reflecting a "*one-time effect on pension costs as a result of higher interest*", which will be reimbursed to airspace users through the costs exempt mechanism. Due to their magnitude, these exceptional costs significantly affect the calculations and analysis presented in this monitoring report for 2024 and the RP3 summary. For this reason, analysis in the text is also presented without considering these exceptional costs.

5.3.2 Actual unit cost incurred by the users (AUCU) (PI#1)

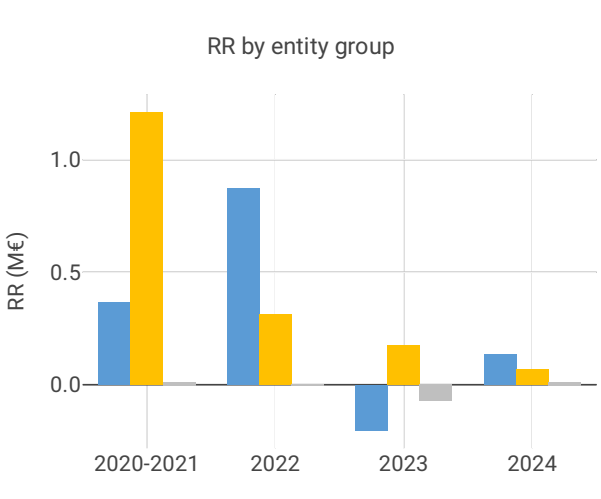


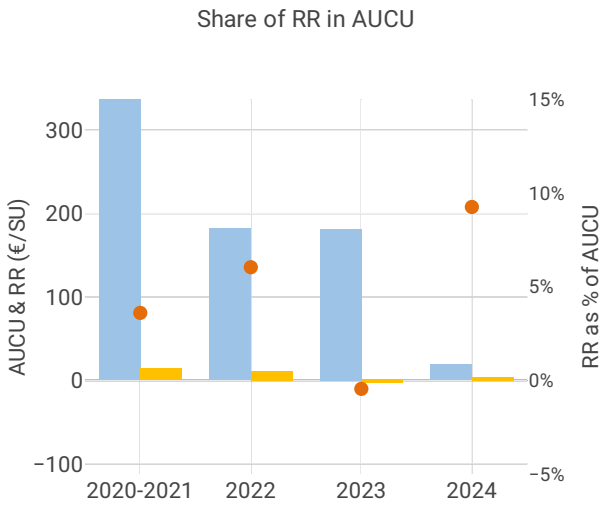
AUCU components (€/SU) – 2024	
Components of the AUCU in 2024	**€/SU**
DUC	**128.41**
Inflation adjustment	10.07
Cost exempt from cost-sharing	-135.45
Traffic risk sharing adjustment	14.04
Traffic adj. (costs not TRS)	0.49
Finantial incentives	1.49
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-0.75
Application of lower unit rate	0.00
Total adjustments	-110.11
AUCU	**18.30**
AUCU vs. DUC	**-85.7%**

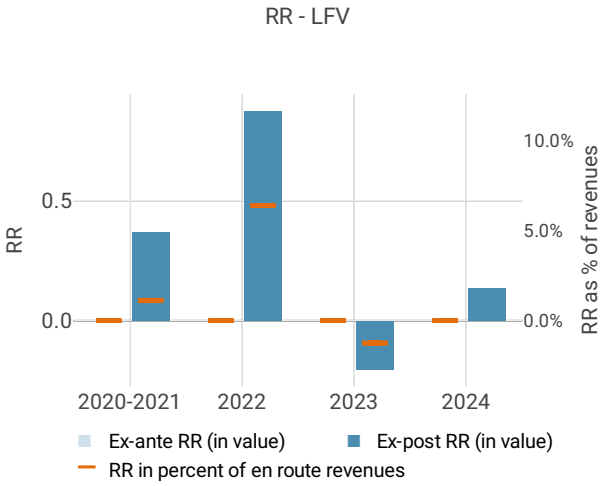


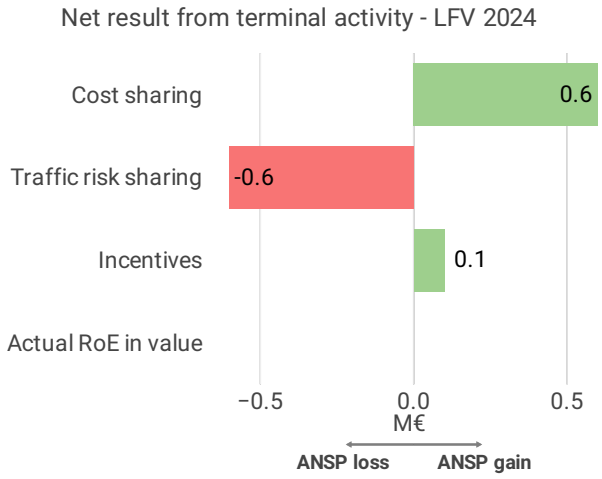
Cost exempt from cost sharing – 2024		
Cost exempt from cost sharing by item - 2024	**€'000**	**€/SU**
New and existing investments	-316.8	-2.60
Competent authorities and qualified entities costs	1.7	0.01
Eurocontrol costs	0.0	0.00
Pension costs	-16,221.2	-132.87
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-16,536.3**	**-135.45**

5.3.3 Regulatory result (RR)









Focus on regulatory result

LFV net gain/loss on activity in the Sweden terminal charging zone in the year 2024

LFV reported a net gain of +1.6 MSEK, as a combination of a gain of +6.4 MSEK arising from the cost sharing mechanism, with a loss of -6.3 MSEK arising from the traffic risk sharing mechanism and a gain of +1.5 MSEK relating to financial incentives.

LFV overall regulatory result (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+1.6 MSEK) amounts to +1.6 MSEK (-4.3% of the terminal revenues), as the RoE for LFV has been set to zero. The resulting ex-post rate of return on equity is 9.1%.

RP3 summary

When considering the whole of RP3 (2020-2024), LFV generated a cumulative gain in respect of cost sharing of +14.4 MSEK, as actual total costs for RP3 were lower than planned. The traffic risk sharing mechanism generated a loss of -0.7 MSEK. Adding the loss of -1.4 MSEK to be retained by the ATSP in respect of financial incentives leads to an overall regulatory result of +12.3 MSEK, which corresponds to an average ex-post rate of return on equity of 14.4%.