PRB | Performance review body of the single european sky

Performance Review Body Monitoring Report

Czech Republic - 2022

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1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2022/772 of 13 April 2022

List of ACCs 1
Prague ACC

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

Exchange rate (1 EUR=)
2017: 26.3115 CZK
2022: 24.5299 CZK

Share of Union-wide:
- **traffic (TSUs) 2022** 1.7%
- **en route costs 2022** 1.6%

Share en route / terminal costs 2022 87% / 13%

En route charging zone(s)
Czech Republic

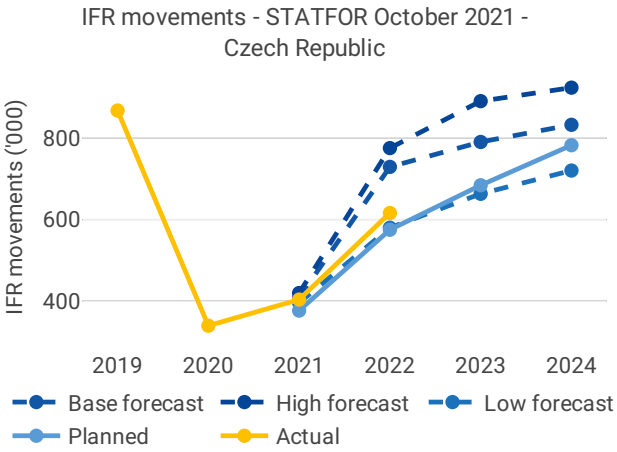
Terminal charging zone(s)
Czech Republic

Main ANSP
- ANS CR

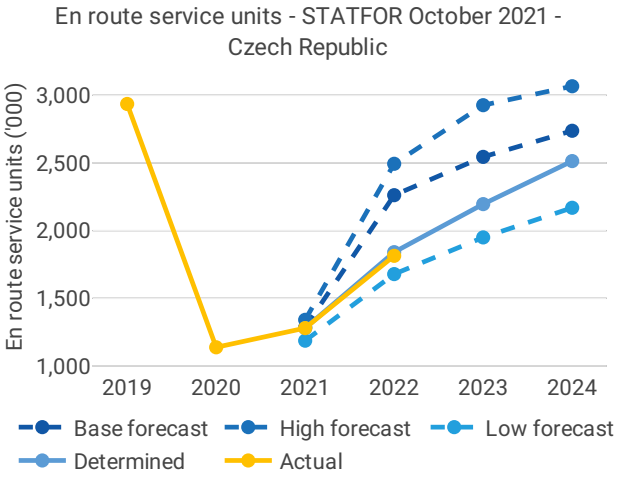
Other ANSPs
–

MET Providers
- CHMI

1.2 Traffic (En route traffic zone)

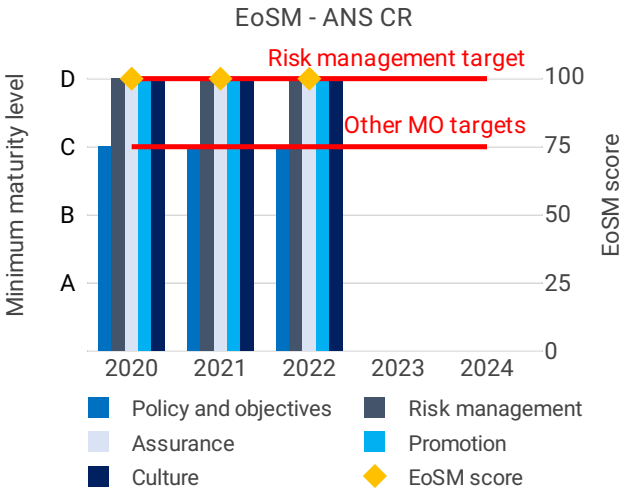


- Czech Republic recorded 616K actual IFR movements in 2022, +53% compared to 2021 (404K).
- Actual 2022 IFR movements were +7.2% above the plan (575K).
- Actual 2022 IFR movements represent 71% of the actual 2019 level (867K).



- Czech Republic recorded 1,814K actual en route service units in 2022, +42% compared to 2021 (1,280K).
- Actual 2022 service units were -1.4% below the plan (1,841K).
- Actual 2022 service units represent 62% of the actual 2019 level (2,068K).

1.3 Safety (Main ANSP)

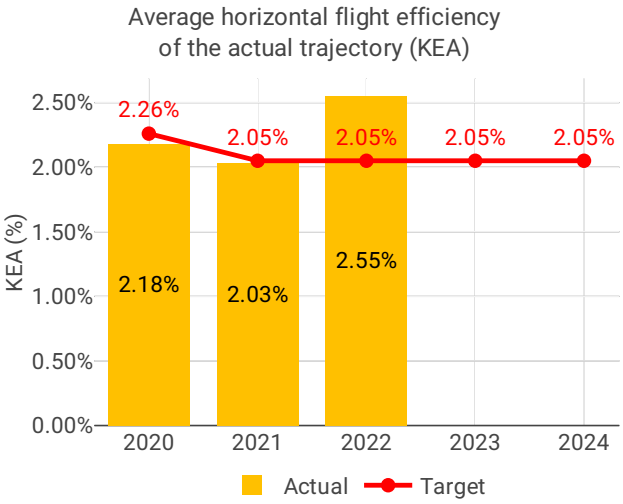


• ANS CR has already exceeded the RP3 EoSM targets in 2020. ANS CR undertook further actions to enhance its SMS function and to align it to Regulation (EU) 2017/373.

• Despite the traffic increase, the rate of runway incursions at the Prague airport (LKPR) was maintained. The rate of separation minima infringements marginally decreased in 2022. The NSA closely monitors the rate of occurrences and assesses the effectiveness of implemented measures through regular meetings of the Safety Board.

• ANS CR used the automated safety data recording systems for SMIs and RIs and was one of the few ANSPs that did so.

1.4 Environment (Member State)



• Czech Republic achieved a KEA performance of 2.55% compared to its target of 2.05% and did not contribute positively towards achieving the Union-wide target.

• The NSA states the main reason for not meeting the target is the severe impact of flight trajectories due to the Russia's war of aggression against Ukraine.

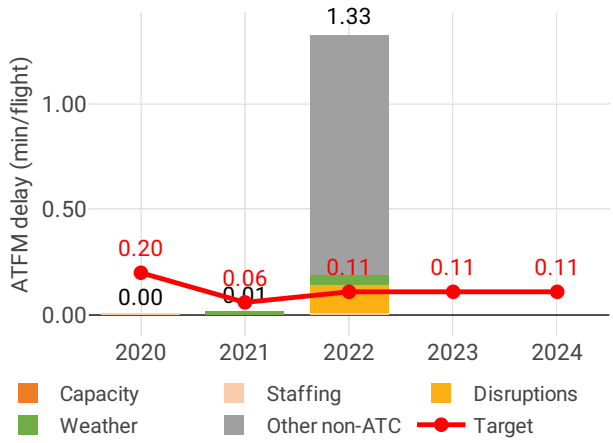
• Both KEP and SCR deteriorated in comparison with 2021. The value of these two indicators is similar, meaning airspace users plan close to the shortest route available.

• The share of CDO flights decreased by 11.58% compared to 2021.

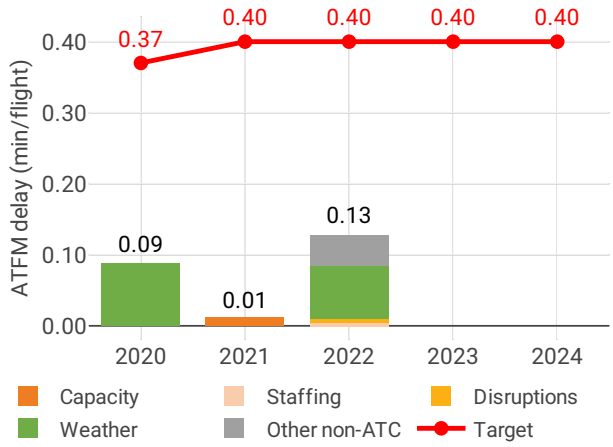
• During 2022, additional time in terminal airspace increased from 0.50 to 0.69 min/flight, while additional taxi out time increased from 1.76 to 1.90 min/flight.

1.5 Capacity (Member State)

Average en route ATFM delay per flight by delay groups



Average arrival ATFM delay per flight by delay groups



• Czech Republic registered 1.50 minutes of average en route ATFM delay per flight during 2022 which has been adjusted to 1.45 during the post-ops adjustment process.

• Average en route ATFM delay per flight was further adjusted to 1.33 minutes per flight due to the exceptional event related to Russia's war of aggression against Ukraine, still not achieving the local target value of 0.11. The discussion between the PRB and the Czech NSA regarding the adjustments due to the exceptional event related to Russia's war of aggression against Ukraine is still ongoing at the time of the publication of this report.

• The average number of IFR movements was 29% below 2019 levels in Czech Republic in 2022.

• The number of ATCOs in OPS is planned to increase by 38% in Prague ACC by the end of RP3. The actual values remained 5% below the planned level in 2022, which is mainly caused by decelerated training due to the COVID impact.

• The system implementation at Prague ACC during 2022 combined with the impact of Russia's war of aggression against Ukraine had a detrimental effect on capacity performance in Czech Republic.

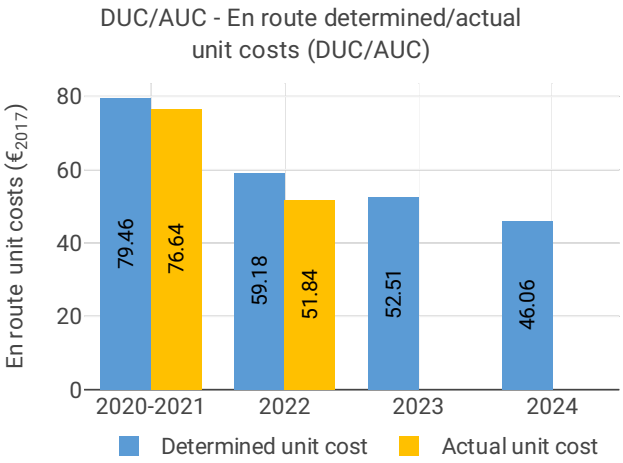
• Delays were highest between June and October, mostly driven by other reasons (system implementation).

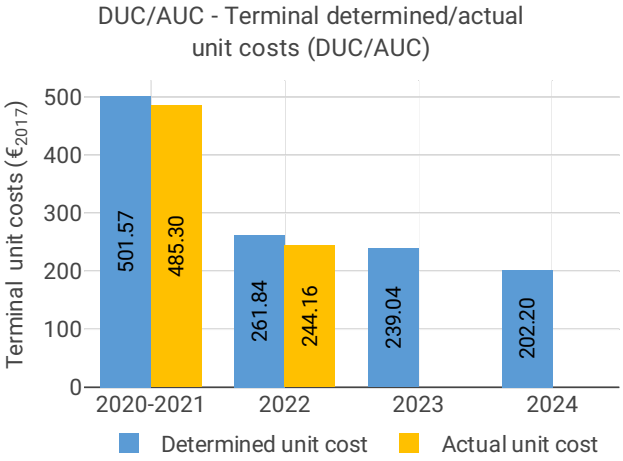
• The share of delayed flights with delays longer than 15 minutes in the Czech Republic increased by 19.41 p.p. compared to 2021 and was higher than 2019 values.

• The yearly total of sector opening hours in Prague ACC was 41,001 in 2022, showing a 58.7% increase compared to 2021. Sector opening hours are 12.5% below 2019 levels.

• Prague ACC registered 12.99 IFR movements per one sector opening hour in 2022, being 26.9% below 2019 levels.

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





• The en route 2022 actual unit cost of Czech Republic was 51.91 €2017, 12% lower than the determined unit cost (59.18 €2017).1 The terminal 2022 actual unit cost was 244.16 €2017, 6.8% lower than the determined unit cost (261.84 €2017).

• The en route 2022 actual service units (1,814K) were 1.4% lower than the determined service units (1,841K).

• The en route 2022 actual total costs were 15 M€2017 (-14%) lower than determined. All cost categories decreased except cost of capital. The decrease was mainly a result of lower staff costs (-11 M€2017, or -20%), due to a new collective agreement and lower FTEs than expected.

• ANS CR spent 30 M€2017 in 2022 related to costs of investments, 4.6% less than planned (32 M€2017), primarily due to changed timelines in some investment projects.

• Czech Republic presented a deviation from the criteria to achieve capacity targets, which was considered justified. Considering that costs are significantly lower and that the 2022 en route capacity targets have not been achieved, the situation raises serious concern. The PRB invites the NSA to analyse the discrepancies and identify their reasons and the Member State to rectify the situation to ensure that the additional means granted through the capacity deviation are used to address the capacity issues.

The en route actual unit cost incurred by users in 2022 was 73.65€, while the terminal actual unit cost incurred by users was 322.31€.2

2 SAFETY - CZECH REPUBLIC

2.1 PRB monitoring

• ANS CR has already exceeded the RP3 EoSM targets in 2020. ANS CR undertook further actions to enhance its SMS function and to align it to Regulation (EU) 2017/373.

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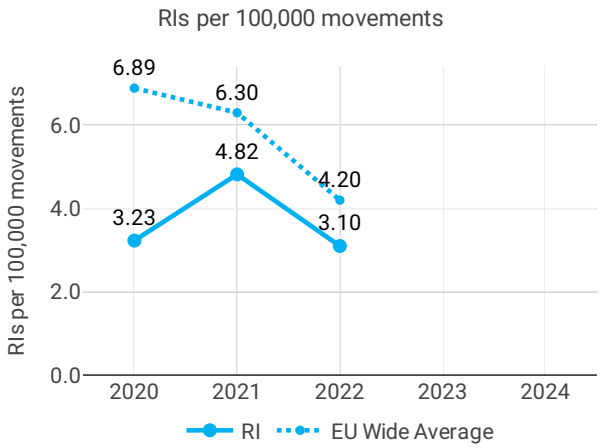
• ANS CR used the automated safety data recording systems for SMIs and RIs and was one of the few ANSPs that did so.

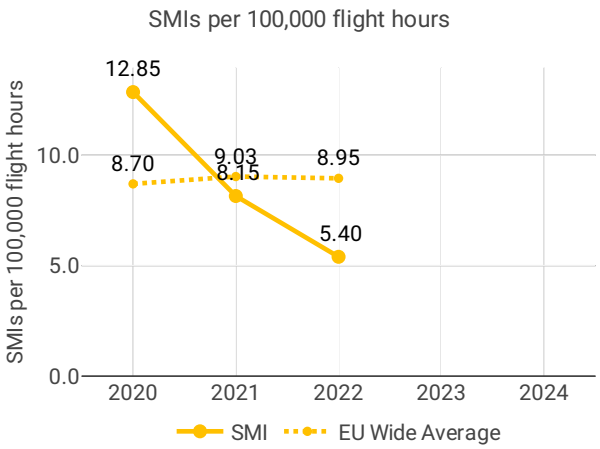
2.2 Effectiveness of Safety Management (EoSM) (KPI#1)

Focus on EoSM

All five EoSM components of the ANSP meet, or exceed, the RP3 target level already, with only one question below maximum maturity.

2.3 Occurrences - Rate of runway incursions (RIs) (PI#1) & Rate of separation minima infringements (SMIs) (PI#2)





3 ENVIRONMENT - CZECH REPUBLIC

3.1 PRB monitoring

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• The NSA states the main reason for not meeting the target is the severe impact of flight trajectories due to the Russia's war of aggression against Ukraine.

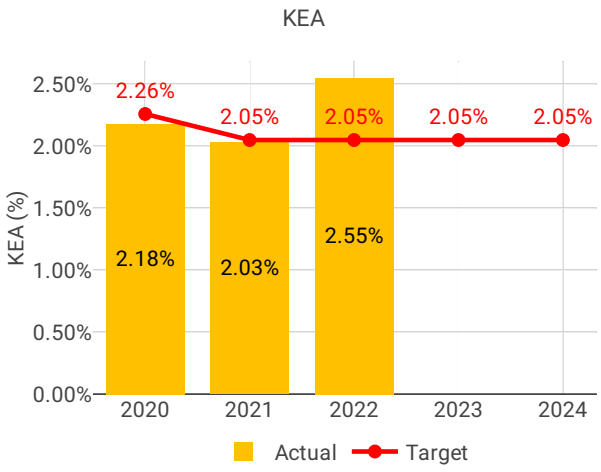
• Both KEP and SCR deteriorated in comparison with 2021. The value of these two indicators is similar, meaning airspace users plan close to the shortest route available.

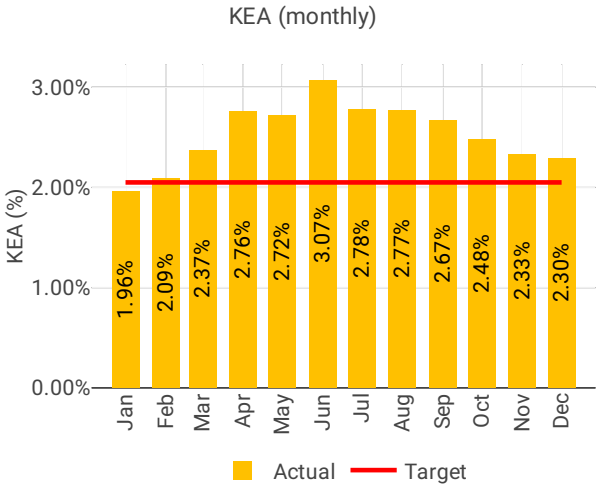
• The share of CDO flights decreased by 11.58% compared to 2021.

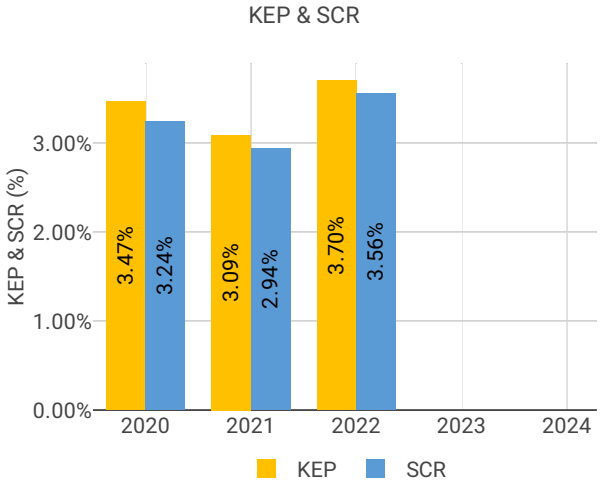
• During 2022, additional time in terminal airspace increased from 0.50 to 0.69 min/flight, while additional taxi out time increased from 1.76 to 1.90 min/flight.

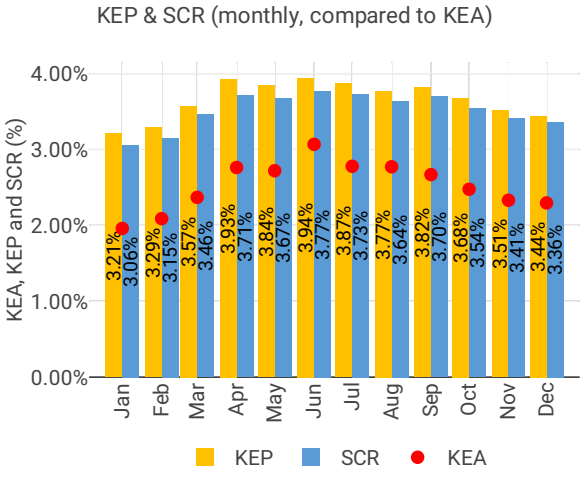
3.2 En route performance

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)



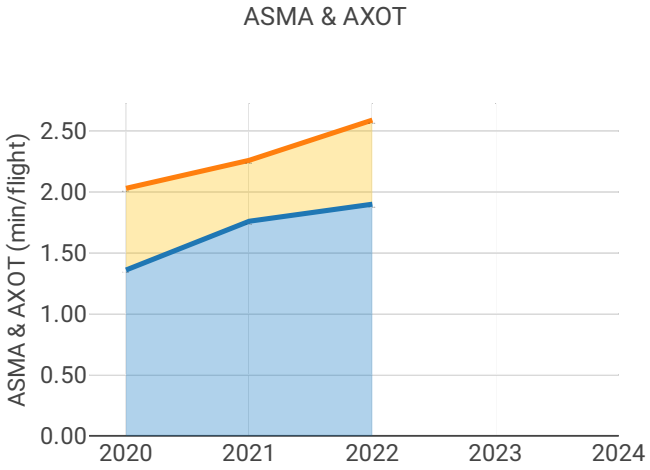


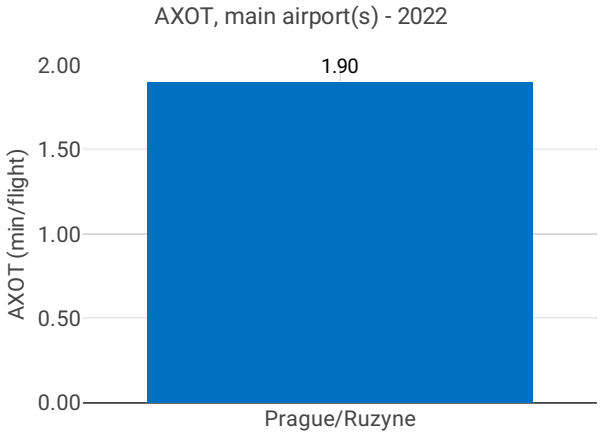


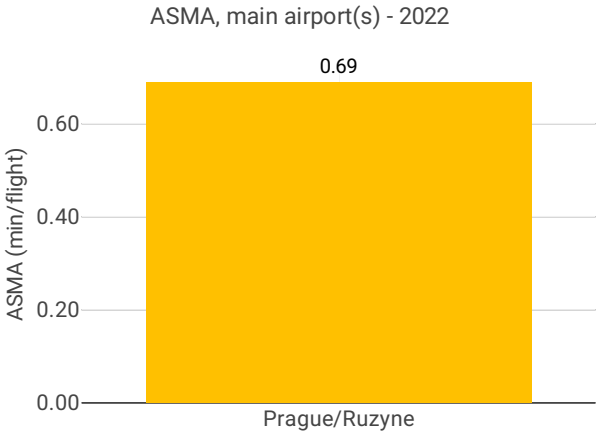


3.3 Terminal performance

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







Focus on ASMA & AXOT

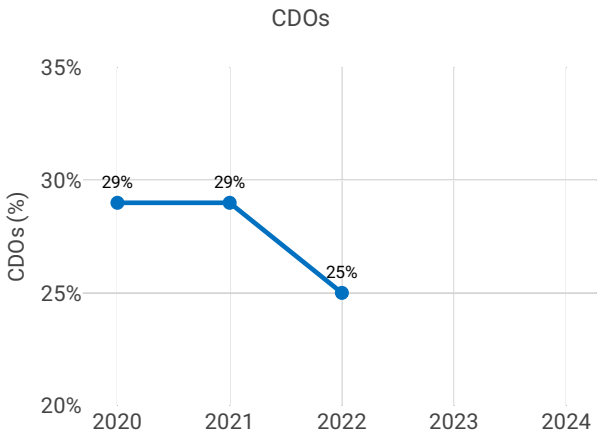
AXOT

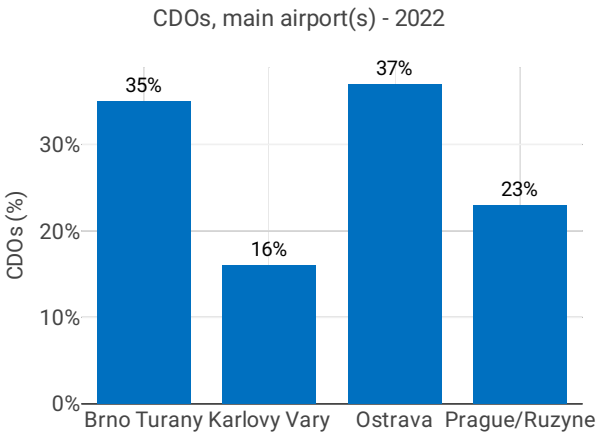
Additional taxi-out times at Prague increased in 2022 (LKPR; 2020: 1.36 min/dep.; 2021: 1.76 min/dep.; 2022: 1.9 min/dep.), but they were still 32% lower than in 2019.
According to the Czech Republic's monitoring report:
The development of PI #3 is mainly influenced by the volume of traffic and its structure (gradual return of traffic after the COVID-19 pandemic).
The PI monitoring is part of annual monitoring of the ANSP performance (on quaterly basis) to the CAA.

ASMA

The yearly average of the additional times in the terminal airspace increased in 2022 (LKPR; 2019: 1.47 min/arr.; 2020: 0.67 min/arr.; 2021: 0.5 min/arr.; 2022: 0.69 min/arr.), but they were still 53% lower than in 2019.
According to the Czech Republic's monitoring report: *No formal initiatives were implemented, but if traffic permits the aircrafts are allowed for direct routing.*
The PI monitoring is part of annual monitoring of the ANSP performance (on quarterly basis) to the CAA.

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





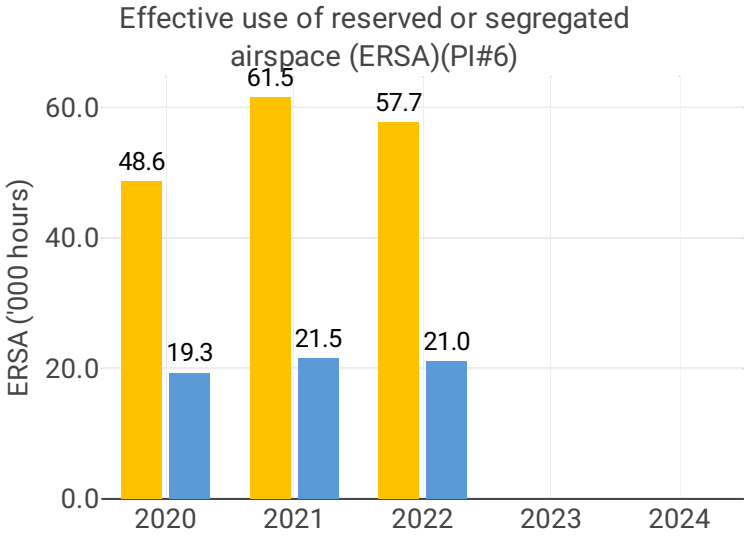
Focus CDOs

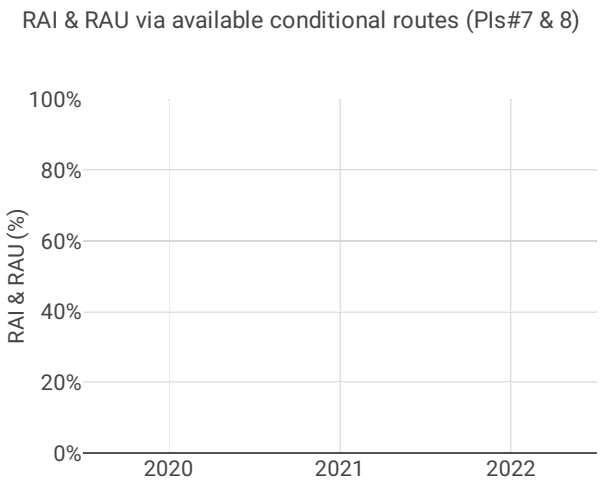
The share of CDO flights decreased at Prague to 22.9% which is lower than the overall RP3 value in 2022 (29.0%).
According to the Czech Republic's monitoring report: *There is no CDO officialy published procedure in FIR Prague, but if traffic permits clearence are issued in order to allow CDO.*
The PI monitoring is part of annual monitoring of the ANSP performance (on quaterly basis) to the CAA.

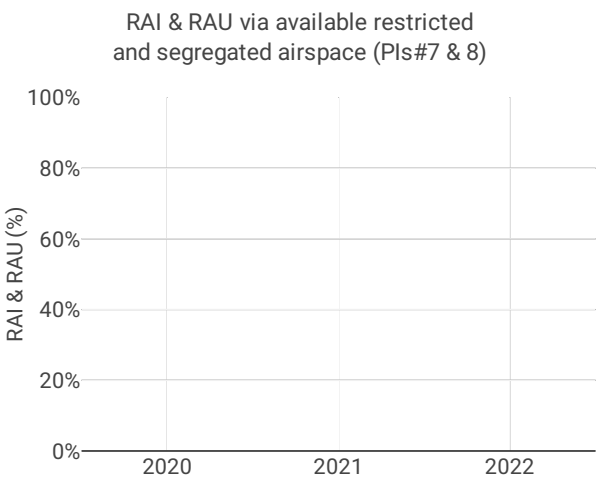
Airport level

	Additional taxi-out time (PI#3)					Additional ASMA time (PI#4)					Share of arrivals applying CDO (PI#5)				
Airport Name	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Prague/Ruzyne	1.36	1.76	1.90	NA	NA	0.67	0.50	0.69	NA	NA	28%	26%	23%	NA	NA
Karlovy Vary	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13%	16%	16%	NA	NA
Ostrava	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35%	37%	37%	NA	NA
Brno Turany	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39%	37%	35%	NA	NA

3.4 Civil-Military dimension







Focus on Civil-Military dimension

Update on Military dimension of the plan

There is a significant impact of MIL activities on the ENV indicators. The military has the lead role in the AMC, the ANSPs has no power to evaluate the airspace reservation by the military. In any case, the implementation of FUA is regularly evaluated through monitoring organized by the CAA. The administrators of the individual TRA / TSA (mostly represented by MAA) submit the evaluation of the plans and the activation of these airspaces on a monthly basis to CAA, and any deficiencies are addressed within the ASMCG meetings or individually with specific administrators, if needed.
Airspace Charter of the Czech Republic describes the competent authorities (CIV and MIL), their responsibilities and principles by which a joint civilian-military body (ASM Committee - ASMC) carries out strategic planning for the use of the Czech Republic airspace. The Charter incorporates as annexes the descriptions of processes used to provide high quality services to airspace users and ATS providers through safe, accurate and timely planning, approval and promulgation of national airspace management measures and international cooperation. The Airspace Charter was updated at the end of 2021.
The airspace of the Czech Republic is open to flights and it is divided in accordance with the rules contained in Sections 44 - 44c) of Act No. 49/1997. Pursuant to Section 44(2) of the Act, the CAA issues, in agreement with the Ministry of Defence and after consulting the Person authorized to exercise state administration in the matters related to sport flying devices, measures of general nature under the Administrative Procedure Code on division of the airspace of the Czech Republic to ensure safe conduct of flights and efficient provision of air services. In fulfilment of that mandate, the CAA takes into account, where possible, the FUA specifications described in “EUROCONTROL Specifications for the Application of the Flexible Use of Airspace (FUA)”. Consultation with airspace users, service providers and other relevant bodies is conducted with the aim of obtaining consensus, wherever possible, before making changes in the planning or design of airspace management. The consultations are performed in a transparent way following a predefined procedure. The ASMC ensures effective cooperation at all levels through the ASM Consultation Group (ASMCG). In application of Regulation (EC) No 2150/2005, the ASMC cooperates very closely with CAA and takes into account the findings and relevant corrective measures resulting from control activities (e.g. CAA, MAA, EASA). In accordance with ICAO requirements, the CAA publishes the airspace management policy and implementation of new airspace structures and follow-up procedures or their changes so that all airspace users and ATS providers have sufficient time to comply with the new requirements.
Dynamic Airspace Management is realized at ASM Level 2 and/or ASM Level 3. Areas published in AIP CR / MIL AIP or other pre-arranged areas can be used under FUA rules as AUP manageable with UUP function updates.
The ATM systems of the Czech Air forces are directly connected to the ANS CR systems in order to present current status of reserved areas to the ATCOs. The AIM/AIS provider promulgates the planning status of the airspaces concerned in AISVIEW web tool, which serves for airspace users as an information source.
On the local level the FUA is addressed within the AMC activities, on the FAB CE level the DAM/STAM projects are in progress. The AMC is newly certificated under the EU 2017/373. The regulation 2150/2005 is fully implemented within the Czech Republic.

Representatives of the NSA CZ, in cooperation with the MAA CZ, the Czech Air Force, ANS CR and other partners, dealt with the creation of NATO corridors in connection with the war in Ukraine. NATO corridors that were created within the framework of the ASM strategic level in the airspace of class "C" above FL 095 were at the beginning AMC manageable and later on they are handled as non AMC manageable, and their activation and deactivation is carried out at the tactical level.
Although similar activities were also taking place in FIRs in neighbouring states, initial coordination was very difficult due to classified information. For this reason, the necessary coordination and consultation about the possible impact of these corridors on air traffic in neighbouring FIRs did not take place. In particular, if the vertical profiles of the planned flights in the neighbouring FIR had to be changed because of the corridors, then this change also affected the entry parameters of the flight when entering our FIR and vice versa.

Military - related measures implemented or planned to improve capacity

The national tool (like LARA) was improved in a way allowing for direct communication with the NM systems (solution developed under the SESAR project).
All stakeholders (NSA, military and ANSP) are in regular discussion on possible mitigation of negative effects of military activities on the civil aviation (i.e. FUA) though the consultation Group ASM (ASMCG).
The Airspace Charter of the Czech Republic was updated at the end of 2021.
The Airspace designer (ASD) function was deployed in the beginning of 2022 and now ASD serves as a government service for professional preparation of requests and supporting documentation for all changes in the airspace structures in future.
It was agreed among the ASM stakeholders to automate the evaluation of FUA within the ANS CR systems. The first outputs should be available in 2023.
The traffic complexity manager (a tool developed with the SESAR support) was put into full operational use in 2020. The tool is predicting traffic load in particular sectors (including military activities) and thus allowing for better ATCOs usage and improvement in capacity area.
The establishment of Airspace designer function was preparing during the year 2021 to be ready at the beginning of 2022 and serves as a government service for professional preparation of requests and supporting documentation for all changes in the airspace structures in future.

Initiatives implemented or planned to improve PI#6

It was agreed among the ASM stakeholders to automate the evaluation of FUA within the ANS CR systems. The first outputs should be available in 2023.

Initiatives implemented or planned to improve PI#7

There are no data available in the Czech Republic.

Initiatives implemented or planned to improve PI#8

There are no data available in the Czech Republic.

4 CAPACITY - CZECH REPUBLIC

4.1 PRB monitoring

• Czech Republic registered 1.50 minutes of average en route ATFM delay per flight during 2022 which has been adjusted to 1.45 during the post-ops adjustment process.

• Average en route ATFM delay per flight was further adjusted to 1.33 minutes per flight due to the exceptional event related to Russia's war of aggression against Ukraine, still not achieving the local target value of 0.11. The discussion between the PRB and the Czech NSA regarding the adjustments due to the exceptional event related to Russia's war of aggression against Ukraine is still ongoing at the time of the publication of this report.

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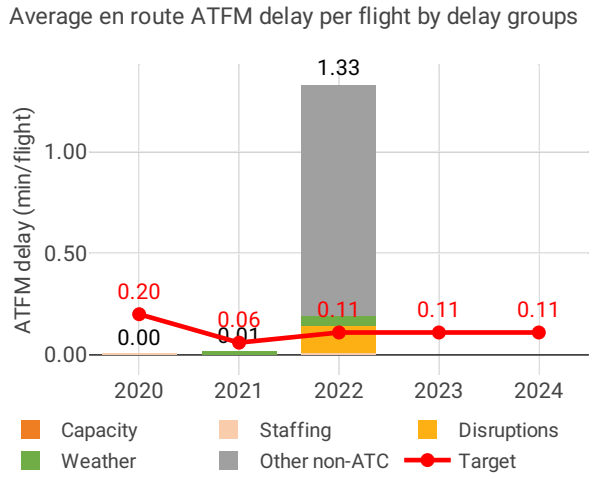
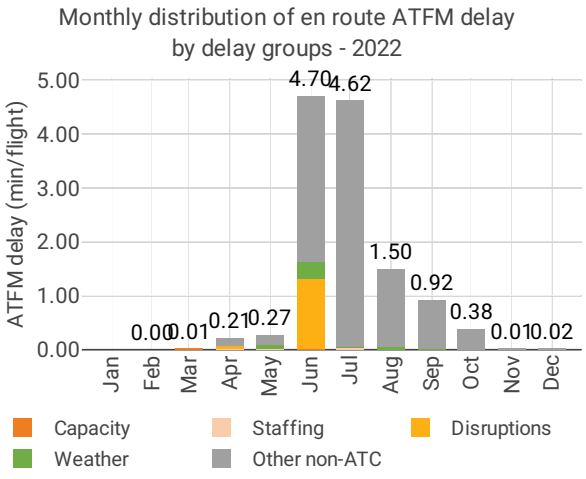
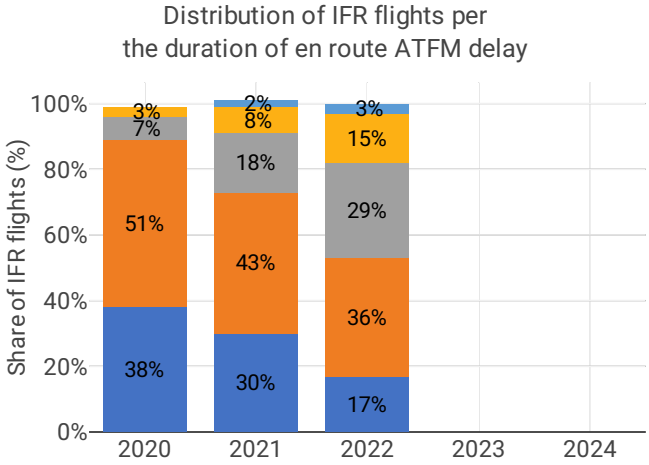
4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)







Focus on en route ATFM delay

Summary of capacity performance

The Czech Republic experienced an increase in traffic from 404k flights in 2021 to 616k flights in 2022, with 892k minutes of en route ATFM delay. Traffic levels were still below the 867k flights in 2019.
26k minutes of en route ATFM delay originating in the Praha ACC were re-attributed to DFS (13k) and DSNA (13k) via the NM post operations delay attribution process, according to the NMB agreement for eNM/S22 measures, to ameliorate capacity shortfalls in both Karlsruhe UAC and Reims ACC.
An additional 68k minutes of ATFM delay due to 'exceptional events' were excluded after consultation with the European Commission and the Network Manager, giving a final value of 730k minutes of en route ATFM delay.

NSA's assessment of capacity performance

The whole year 2022 was very unusual in terms of operational context. Civil aviation entered the year with expectations of the fading effects of the COVID-19 pandemic and an expected return of traffic volumes to the pre-crisis levels.
These expectations were matched by the newly approved revised performance plan, which focused on capacity growth and further streamlining of all processes to ensure that all users of the Czech airspace were provided with sufficient service capacity and that all commitments made in the performance plan in areas of the CAP and ENV were met.
From this perspective, the continuation of the cross-border integration of FRA and in particular the deployment of the new main ATM system, i.e. the TopSky project, were essential.
While the last impacts and constraints related to the covid-19 pandemic have almost become a thing of the past, we have had to deal with another obstacle that is almost unthinkable in the civilised world. Russia's aggression against Ukraine has not only damaged the confidence of a large part of society in a stable security arrangement in Europe, but has fundamentally affected the expected return to normalcy of civil air traffic.
This led to fundamental changes in the layout and structure of air traffic flow, which have had a negative impact on the Czech airspace. In particular, increased special MIL OPS forced AOs and ANSPs to search for alternative OPS. In order to ensure special MIL OPS, dedicated corridors of temporary segregated airspace through the entire LKAA were designed and ad-hoc activated.
For this reason, frequent changes of horizontal and vertical profiles had to be used on tactical level in order to combine the requirements of CIV and MIL users as much as possible.
As a consequence, and in combination with newly implemented ATM system Top Sky, it had despite the immediate implementation of corrective measures (in particular increased use of available ATCOs) negative impact on both capacity and enviromental performance of the ANS CR.
There was a significant lack of capacity in LKAA in 2022 due to a time-limited combination of unfavourable factors.
Firstly, ANS CR puts into OPS the new ATM system Top Sky on 24 FEB 2022.
Secondly, the Russian's war of aggression against Ukraine had very negative impact on OPS in LKAA. Remedial actions were taken already in 2022 (since August 2022, the recorded delay has been on a downward trend) and also they have been taken to significantly improve the situation in 2023.

Monitoring process for capacity performance

The monitoring process is based on quarterly monitoring reports prepared by ANS CR. These are based on the company Annual plan and cover all KPAs.
In accordance with the NM, 26k minutes of delay were deducted from LKAA FIR and allocated to DFS and DSNA within the framework of PostOPS Adjustment.
In coordination with NM, ANS CR assigned all ATFM measures in relation to Russia's war of aggression against Ukraine and new ATMS system Top Sky implementation with designation "special event". In total it represents 766k minutes.

Capacity planning

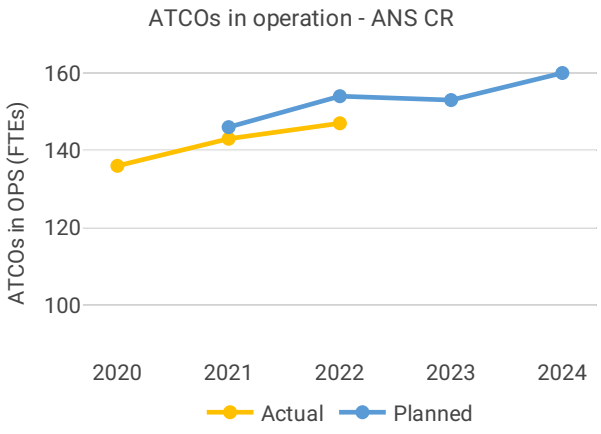
No data available

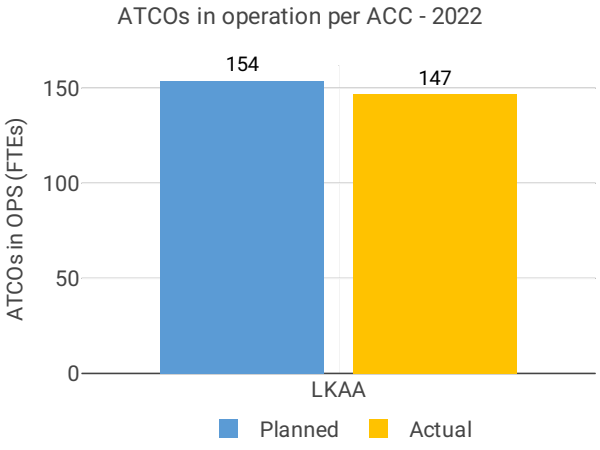
Application of Corrective Measures for Capacity (if applicable)

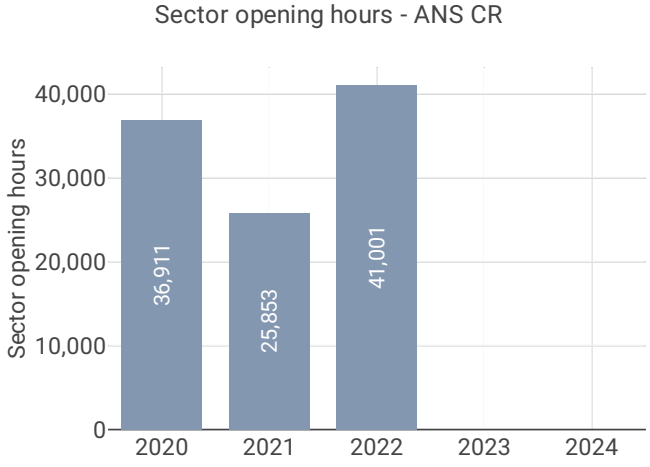
The reason for the lack of capacity in the Czech Republic airspace was a combination of unfavourable factors. ANS CR decided to stick to the plan and switch OPS to the new ATM system Tops Sky regardless Russia started its aggression against Ukraine on the same moment.
Full utilisation of operational staff with maximum use of overtime (up to the legal limit), ongoing airspace optimisation project (cross licencing and training of ATCO students on layer ''L' ').
Coordination with the Czech AirForce regarding minimization of MIL OPS impacts on civil aviation, stabilization and repairs of TopSky in cooperation with the supplier (THALES).

Additional Information Related to Russia's War of Aggression Against Ukraine Russian invasion of Ukraine have major impact on OPS in LKAA. As can be seen from the statistics, it caused significant changes in traffic flows. In addition, increased and special MIL OPS forced AOs ans ANSPs to search for alternative OPS.
In order to ensure special MIL OPS dedicated corridors of temporary segregated airspace through the entire LKAA were designed and ad-hoc activated. For this reason, frequent changes of horizontal and vertical profiles had to be used on tactical level in order to combine the requirements of CIV and MIL users as much as possible.
As a consequence, and in combination with newly implemented ATM system Top Sky, it had negative impact on ANS CR capacity performance.
In coordination with NM ANS CR assigned all ATFM measures in relation to Russia's war of aggression against Ukraine and new ATMS system Top Sky implementation with designation "special event". In total it represents 766k minutes.
FEB - 1367, MAR - 1271, APR - 53783, MAY - 28625, JUN - 239520, JUL - 278549, AUG - 88395, SEP - 52731, OCT - 20225, NOV - 395, DEC - 1196
Remedial actions to mitigate the adverse impacts on capacity performance include: full utilisation of operational staff with maximum use of overtime (up to the legal limit), ongoing airspace optimisation project, close cooperation with the NM.

4.2.2 Other indicators





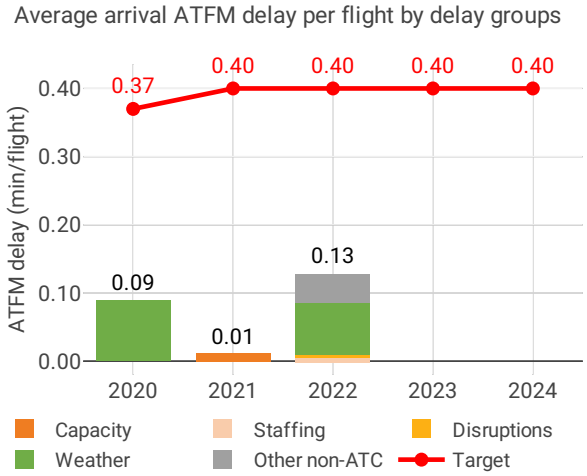


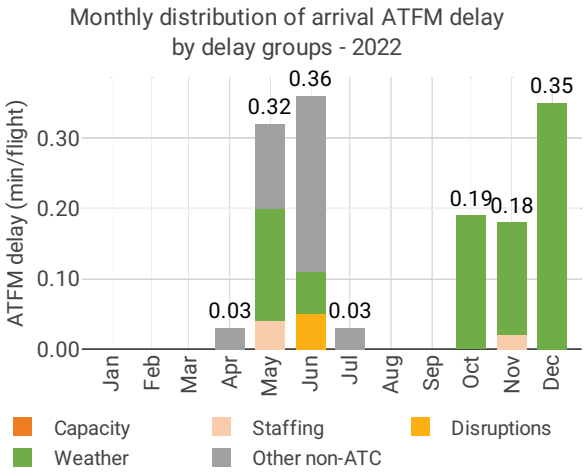
Focus on ATCOs in operations

ANS CR continues its Optimisation project to increase its performance through airspace changes and increased number of ATCOs.
The number of operational ATCOs is some 5 % below the expected level, this deviation is non-material and is caused mainly by decelerated training due to the COVID impact.

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)





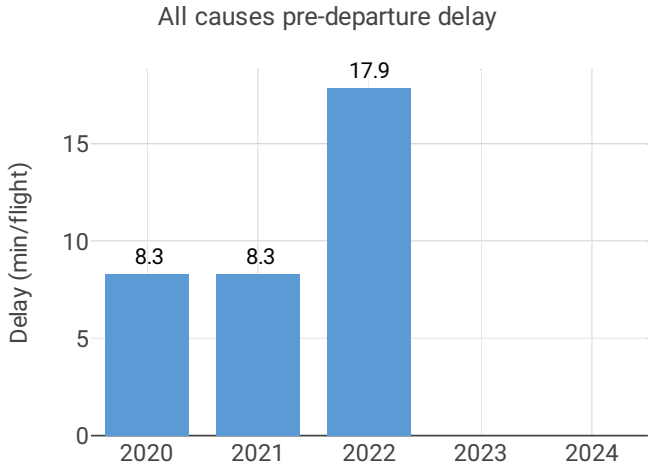
Focus on arrival ATFM delay

Czech Republic has included only Prague in their last Performance Plan for RP3 monitoring.
The Airport Operator Data Flow, necessary for the monitoring of the additional times, is correctly established at Prague and the monitoring of all environment indicators can be performed.
Traffic this airport in 2022 was still 36% lower than in 2019, even if 70% higher than in 2021.
Average arrival ATFM delays in 2022 was 0.13 min/arr, compared to 0.01 min/arr in 2021.
ATFM slot adherence has improved (2022: 96.1%; 2021: 95.3%).

Delays at Prague (LKPR: 2019: 0.18 min/arr.; 2020: 0.09 min/arr.; 2021: 0.01 min/arr.; 2022: 0.13 min/arr.)remained very low in 2022 despite an increase by 0.12 min/arr. 59% of the delays were attributed to weather, followed by 28% attributed to special events.
According to the Czech monitoring report: *Russia's aggression against Ukraine has major impact on LKPR OPS. Because of ban on flights to/from Russia and Belarus and no flight zone in Ukraine LKPR suffers from significant traffic reduction.*3. Arrival ATFM Delay – National TargetThe national target on arrival ATFM delay in 2022 was met.

The slot adherence in 2022 was 96.1%, a slight improvement with respect to 2021 (95.3%). With regard to the 3.9% of flights that did not adhere, 2.1% was early and 1.7% was late.
According to the Czech monitoring report: *The ATFM slot adherence was within the required range and was even better than in the previous year. In order to keep these levels, ANS CR monitors the value on a monthly basis and continuously educates ATCOs.*

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	2020	2021	2022	2023
Brno Turany	NA	NA	NA	NA	100.0%	98.2%	99.2%	NA%
Karlovy Vary	NA	NA	NA	NA	100.0%	100.0%	97.3%	NA%
Ostrava	NA	NA	NA	NA	100.0%	98.0%	99.4%	NA%
Prague/Ruzyne	0.09	0.01	0.13	NA	94.7%	95.3%	96.1%	NA%

	ATC pre departure delay (PI#2)				All causes pre departure delay (PI#3)			
Airport name	2020	2021	2022	2023	2020	2021	2022	2023
Brno Turany	NA	NA	NA	NA	NA	NA	NA	NA
Karlovy Vary	NA	NA	NA	NA	NA	NA	NA	NA
Ostrava	NA	NA	NA	NA	NA	NA	NA	NA
Prague/Ruzyne	0.22	NA	0.04	NA	8.3	8.3	17.9	NA

Focus on performance indicators at airport level

ATFM slot adherence

The quality of the airport data reported by Prague (the only Czech airport subject to monitoring of this indicator) is too low, preventing the calculation of this indicator.

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 Prague.

However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes.

However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:

- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport.

Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Prague was above 40% for 10 months in 2022, preventing the calculation of this indicator.

ATC pre-departure delay

Prague is the only Czech airport subject to the monitoring of this indicator.
The total (all causes) delay in the actual off block time at Prague in 2022 increased significantly compared to 2021 (LKPR: 2020: 8.30 min/dep.; 2021: 8.32 min/dep.; 2022: 17.92 min/dep.). The highest delays per flight were observed in Summer.
According to the Czech monitoring report: *Based on the data received from LKPR, the structure and a portion of the delays are as follows: ATC & En-route delay: 19,63 %; LKPR airport facilities: 0,48 %; Weather: 4,14 %; Other airport facilities: 3,34 %; Airline operators: 13,53 %; Security & Immigration: 1,98 %; Other reasons: 56,87 %.*
The part of the delay due to ATC & En-route reasons (19,63 %) is due to the limitations caused by the lack of capacity of ANSPs and in case of ANS CR the impact of War in Ukraine and implementation of new system TopSky.

All causes pre-departure delay

No data available: airport operator data flow not established, or more than two months of missing / non-validated data

5 COST-EFFIENCY - CZECH REPUBLIC

5.1 PRB monitoring

• The en route 2022 actual unit cost of Czech Republic was 51.91 €2017, 12% lower than the determined unit cost (59.18 €2017).1 The terminal 2022 actual unit cost was 244.16 €2017, 6.8% lower than the determined unit cost (261.84 €2017).

• The en route 2022 actual service units (1,814K) were 1.4% lower than the determined service units (1,841K).

• The en route 2022 actual total costs were 15 M€2017 (-14%) lower than determined. All cost categories decreased except cost of capital. The decrease was mainly a result of lower staff costs (-11 M€2017, or -20%), due to a new collective agreement and lower FTEs than expected.

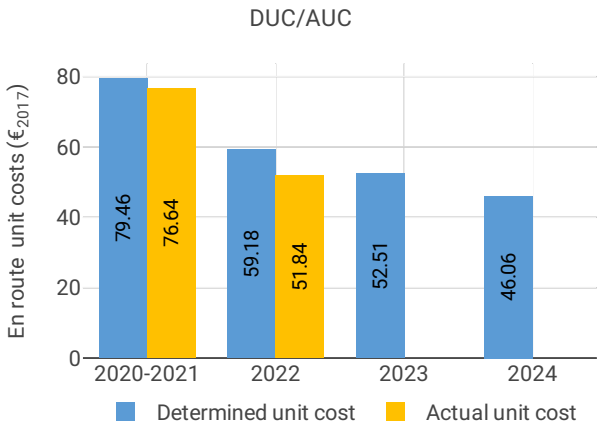
• ANS CR spent 30 M€2017 in 2022 related to costs of investments, 4.6% less than planned (32 M€2017), primarily due to changed timelines in some investment projects.

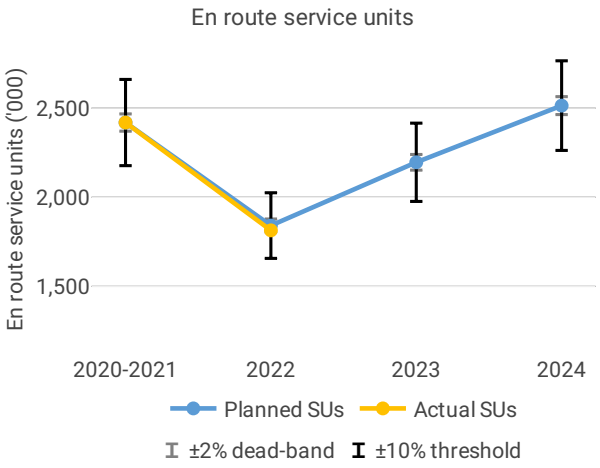
• Czech Republic presented a deviation from the criteria to achieve capacity targets, which was considered justified. Considering that costs are significantly lower and that the 2022 en route capacity targets have not been achieved, the situation raises serious concern. The PRB invites the NSA to analyse the discrepancies and identify their reasons and the Member State to rectify the situation to ensure that the additional means granted through the capacity deviation are used to address the capacity issues.

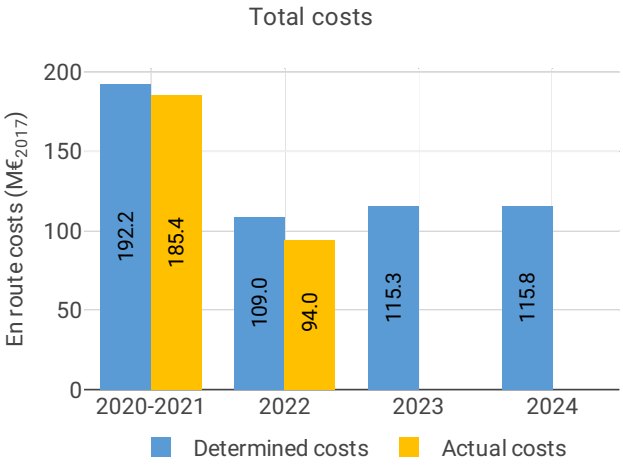
The en route actual unit cost incurred by users in 2022 was 73.65€, while the terminal actual unit cost incurred by users was 322.31€.2

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)

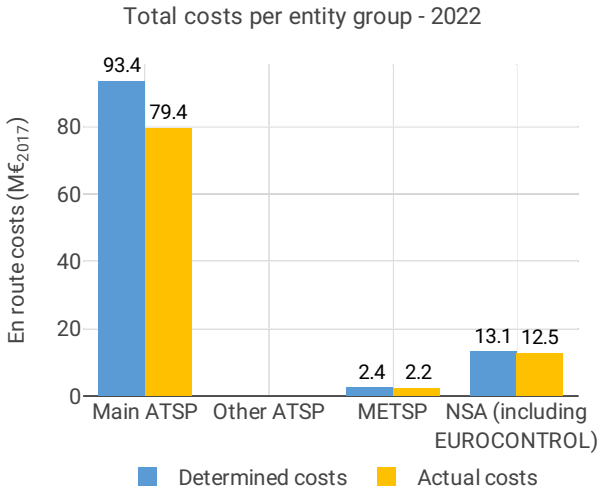


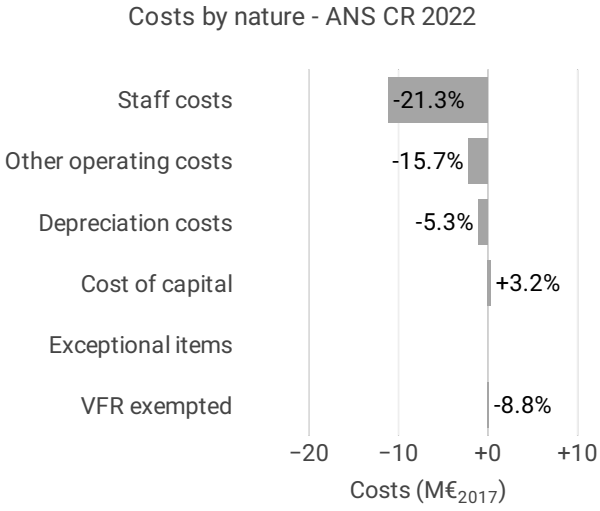




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	196	109	NA	NA
Determined costs	203	118	126	128
Difference costs	-7	-8	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	2.0%	2.0%	2.0%
Determined inflation index	NA	112.8	115	117.3
Actual inflation rate	NA	14.8%	NA	NA
Actual inflation index	NA	128.2	NA	NA
Difference inflation index (p.p.)	NA	+15.4	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the en route AUC was -12.3% (or -191.49 CZK2017, -7.28 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-13.6%,

or -388.9 MCZK2017, -14.8 M€2017) and lower than planned TSUs (-1.4%). It should be noted that actual inflation index in 2022 was +15.4 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-1.4%) falls inside the ±2% dead band. Hence loss of en route revenues is borne by the ANSPs .

En route costs by entity

Actual real en route costs are -13.6% (-14.8 M€2017) lower than planned. This is the result of lower costs for the main ANSP, ANS CR (-14.9%, or -13.9 M€2017), the NSA/EUROCONTROL (-5.0%, or -0.7 M€2017) and the MET service provider (-10.2%, or -0.2 M€2017).

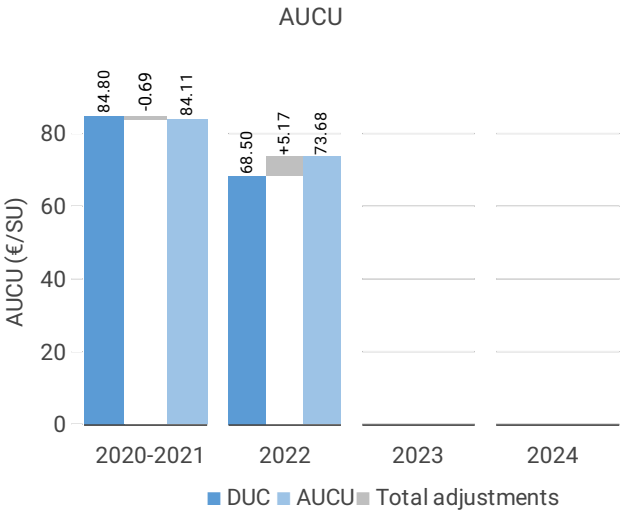
En route costs for the main ANSP at charging zone level

Significantly lower than planned en route costs in real terms for ANS CR in 2022 (-14.9%, or -13.9 M€2017) result from:

- Significantly lower staff costs (-21.1%) resulting mainly from lower than planned FTEs. This result is also affected by the impact of higher than planned inflation index (+15.4 p.p.).
- Significantly lower other operating costs (-15.6%), resulting from lower costs in many different areas. This result is also affected by the impact of higher than planned inflation index (+15.4 p.p.).
- Lower depreciation (-5.0%), due to the changes in the commissioning dates of some investment projects.
- Higher cost of capital (+3.4%), due to *"slightly higher share of financing through equity and slightly higher interest rate of liabilities together with volatility of the CZK/€ exchange rate."*
- Significantly lower deduction for VFR exempted flights (-8.8%).

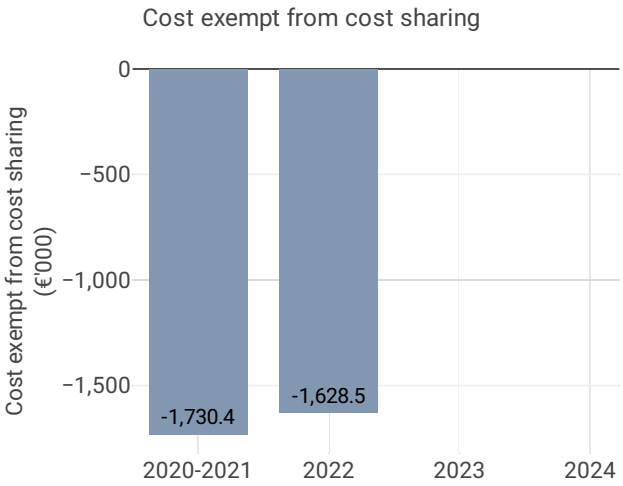
Note*:* It is understood that the relevant figures for 2022 will be slightly updated in the Monitoring Report 2023 following the correction of 2022 actual costs in the November 2023 reporting tables.

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



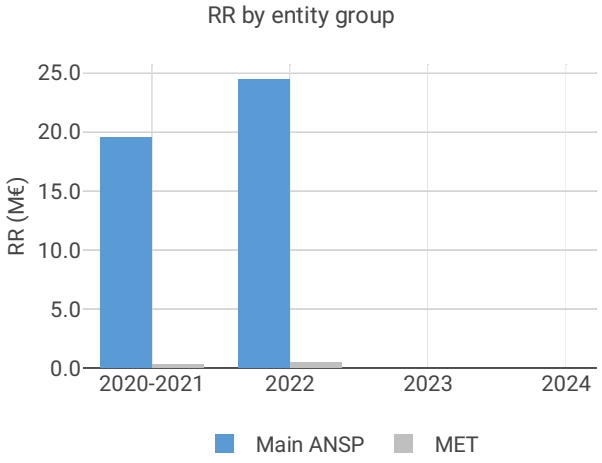
AUCU components (€/SU) – 2022

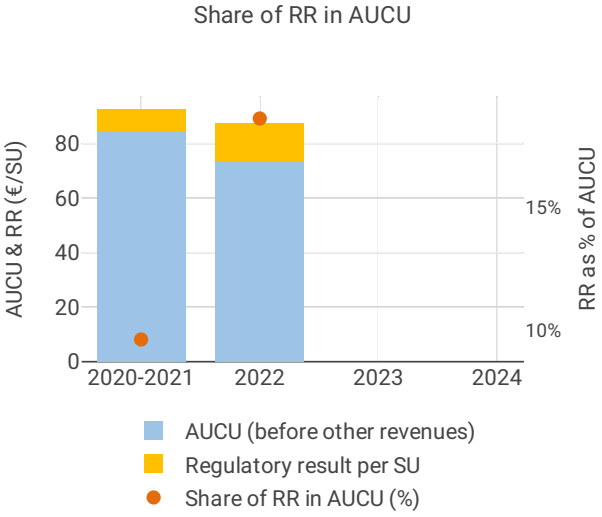
Components of the AUCU in 2022	€/SU
DUC	**68.50**
Inflation adjustment	6.15
Cost exempt from cost-sharing	-0.90
Traffic risk sharing adjustment	0.00
Traffic adj. (costs not TRS)	0.13
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-0.21
Application of lower unit rate	0.00
Total adjustments	5.17
AUCU	**73.68**
AUCU vs. DUC	**+7.6%**

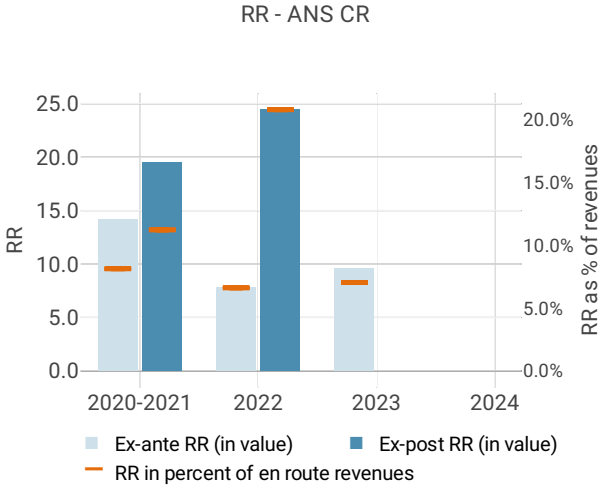


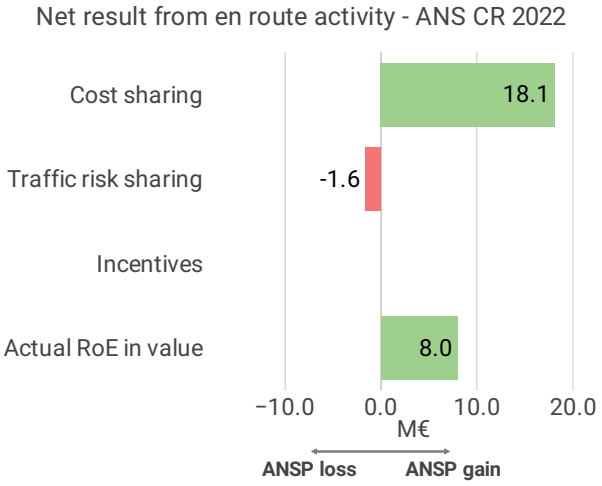
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-952.1	-0.52
Competent authorities and qualified entities costs	770.8	0.42
Eurocontrol costs	-1,387.7	-0.76
Pension costs	-59.5	-0.03
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-1,628.5**	**-0.90**

5.2.3 Regulatory result (RR)









Focus on regulatory result

ANS CR net gain on activity in the Czech Republic en route charging zone in the year 2022

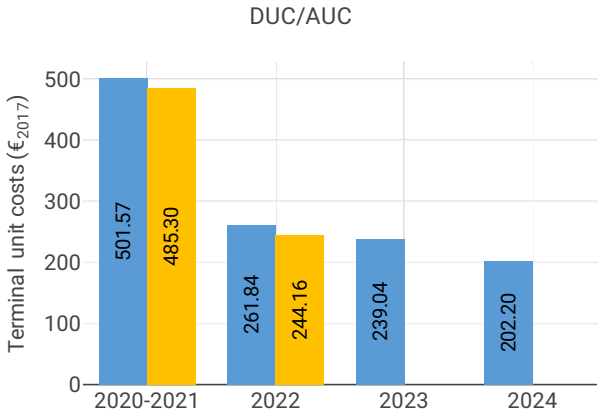
ANS CR reported a net gain of +399.0 MCZK, as a combination of a gain of +437.7 MCZK arising from the cost sharing mechanism, with a loss of -38.7 MCZK arising from the traffic risk sharing mechanism.

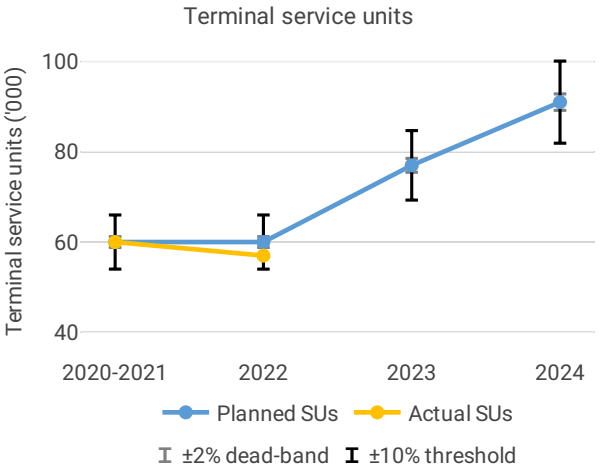
ANS CR overall regulatory result (RR) for the en route activity

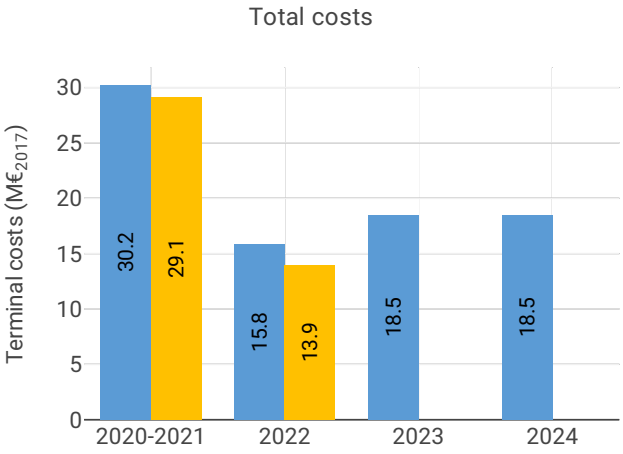
Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+399.0 MCZK) and the actual RoE (+195.3 MCZK) amounts to +594.3 MCZK (20.6% of the en route revenues). The resulting ex-post rate of return on equity is 30.4%, which is higher than the 10.0% planned in the PP.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)

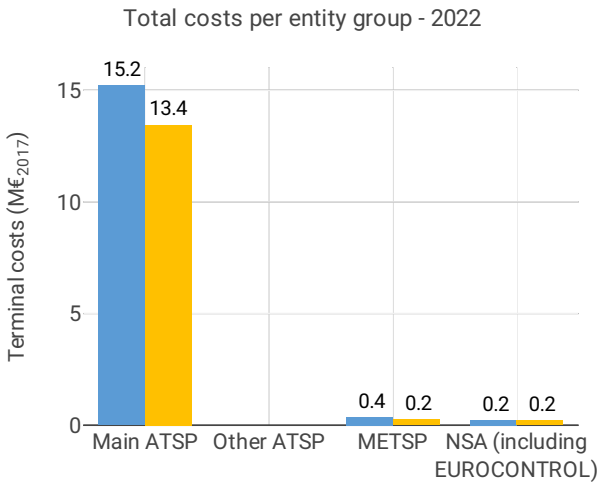


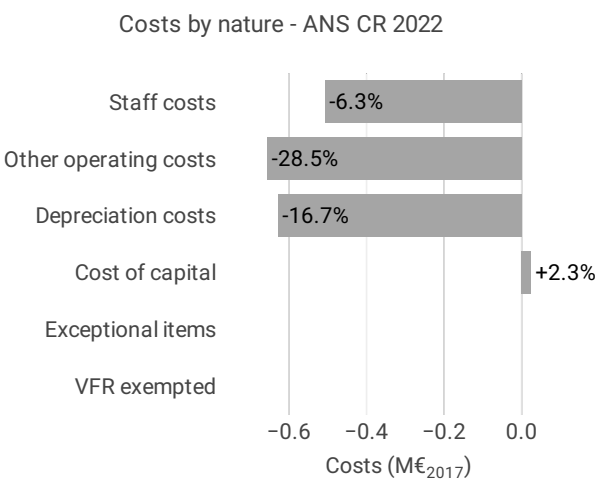




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	31	17	NA	NA
Determined costs	32	17	20	21
Difference costs	-1	-1	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	2.0%	2.0%	2.0%
Determined inflation index	NA	112.8	115	117.3
Actual inflation rate	NA	14.8%	NA	NA
Actual inflation index	NA	128.2	NA	NA
Difference inflation index (p.p.)	NA	+15.4	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the terminal AUC was -6.8% (or -465.19 CZK2017, -17.68 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned terminal costs in real terms (-12.0%, or -50.0 MCZK2017, -1.9 M€2017) and significantly lower than planned TNSUs (-5.6%). It should be noted that actual inflation index in 2022 was +15.4 p.p. higher than planned.

Terminal service units

The difference between actual and planned TNSUs (-5.6%) falls outside the ±2% dead band, but does not exceed 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, with the main ANSP (ANS CR) bearing a loss of -0.4 M€2017.

Terminal costs by entity

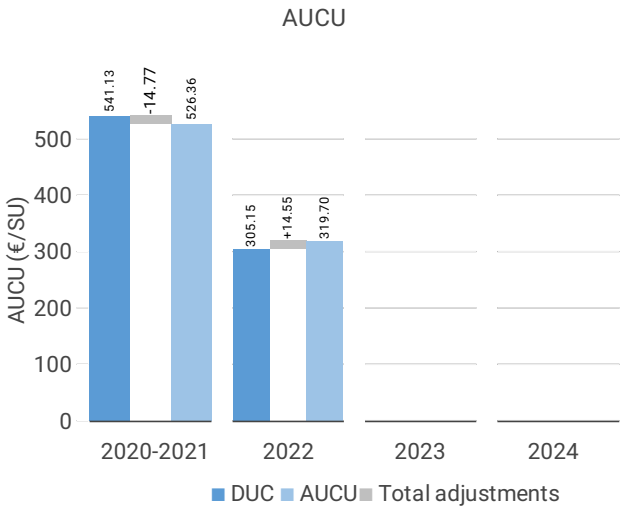
Actual real terminal costs are -12.0% (-1.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, ANS CR (-11.6%, or -1.8 M€2017), the MET service provider (-32.8%, or -0.1 M€2017) and the NSA (-3.5%, or -0.01 M€2017).

Terminal costs for the main ANSP at charging zone level

Significantly lower than planned terminal costs in real terms for ANS CR in 2022 (-11.6%, or -1.8 M€2017) result from:

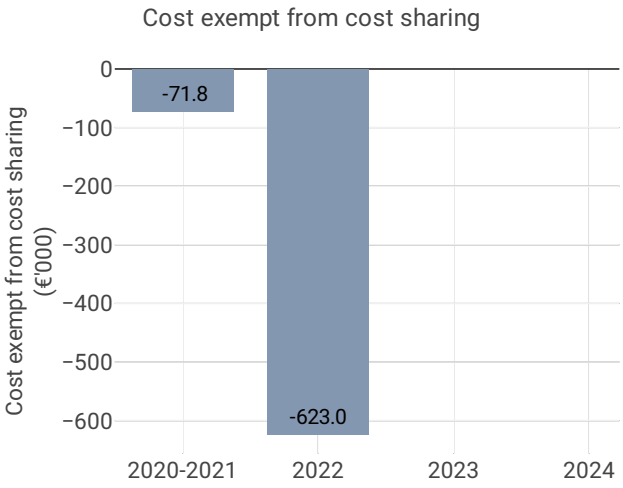
- Significantly lower staff costs (-6.3%) mainly due to the inflation index impact (+15.4 p.p.). In nominal terms, the actual staff costs are higher than planned by +6.5% due to the new collective agreement and higher than planned maximum calculation cap for payment of social security premium.
- Significantly lower other operating costs (-28.5%), resulting from lower costs in many different areas. This result is also affected by the impact of higher than planned inflation index (+15.4 p.p.).
- Significantly lower depreciation (-16.7%), due to the changes in the commissioning date of some projects.
- Higher cost of capital (+2.3%) due to slightly higher share of financing through equity and slightly higher interest rate of liabilities.

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



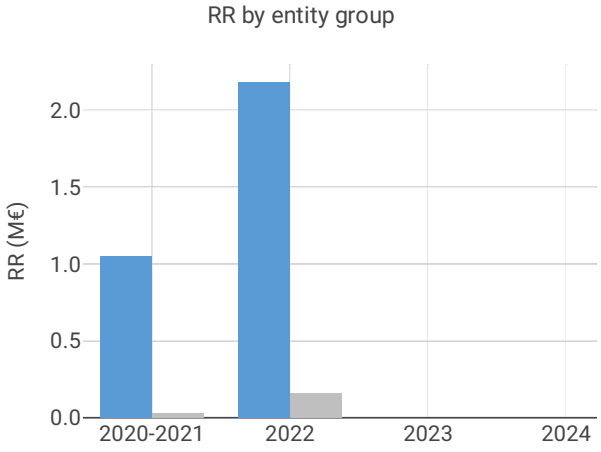
AUCU components (€/SU) – 2022

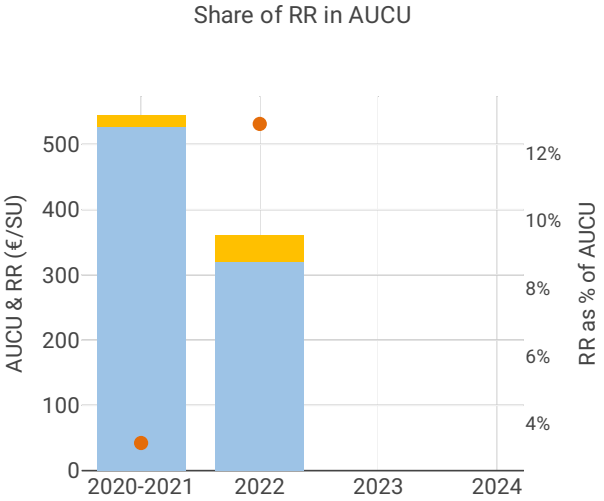
Components of the AUCU in 2022	€/SU
DUC	**305.15**
Inflation adjustment	31.09
Cost exempt from cost-sharing	-10.92
Traffic risk sharing adjustment	7.90
Traffic adj. (costs not TRS)	0.68
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	0.00
Application of lower unit rate	-14.19
Total adjustments	14.55
AUCU	**319.70**
AUCU vs. DUC	**+4.8%**

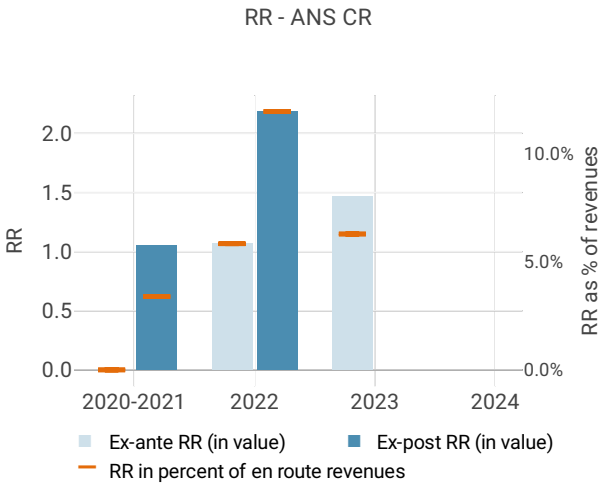


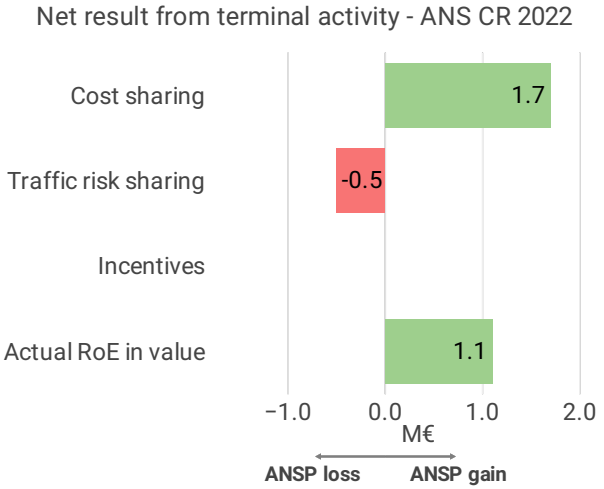
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-668.0	-11.71
Competent authorities and qualified entities costs	-8.6	-0.15
Eurocontrol costs	0.0	0.00
Pension costs	53.6	0.94
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-623.0**	**-10.92**

5.3.3 Regulatory result (RR)









Focus on regulatory result

ANS CR net gain on activity in the Czech Republic terminal charging zone in the year 2022

ANS CR reported a net gain of +30.7 MCZK, as a combination of a gain of +44.2 MCZK arising from the cost sharing mechanism, with a loss of -13.5 MCZK arising from the traffic risk sharing mechanism.

ANS CR 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 (+30.7 MCZK) and the actual RoE (+26.5 MCZK) amounts to +57.3 MCZK (12.6% of the terminal revenues). The resulting ex-post rate of return on equity is 21.6%, which is higher than the 10.0% planned in the PP.

Note 1: It should be noted that, since the Czech Republic caps the terminal UR, the ex-post RR is partially offset by the loss of revenues due to the application of the lower unit rate as per Art. 29.6 (loss of revenue as per Art. 29.6 in 2022 corresponds to -19.90 MCZK).