PRB | Performance review body of the single european sky

Performance Review Body Monitoring Report

France - 2022

This report is automatically generated from: sesperformance.eu

Performance Review Body of the Single European Sky | Rue de la Fusée 96, Office 50.659, 1130 Brussels
Office Telephone: +32 (0)2 234 7824 | cathy.mannion@prb.eusinglesky.eu | prb-office@prb.eusinglesky.eu | eu-single-sky.transport.ec.europa.eu

TABLE OF CONTENTS

1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2023/176 of 14 December 2022

List of ACCs 5
- Bordeaux ACC
- Brest ACC
- Marseille ACC
- Paris ACC
- Reims ACC

No of airports in the scope of the performance plan:
- **≥80'K** 6
- **<80'K** 52

Exchange rate (1 EUR=)
- 2017: 1 EUR
- 2022: 1 EUR

Share of Union-wide:
- **traffic (TSUs) 2022** 17.4%
- **en route costs 2022** 20.6%

Share en route / terminal costs 2022 85% / 15%

En route charging zone(s)
- France

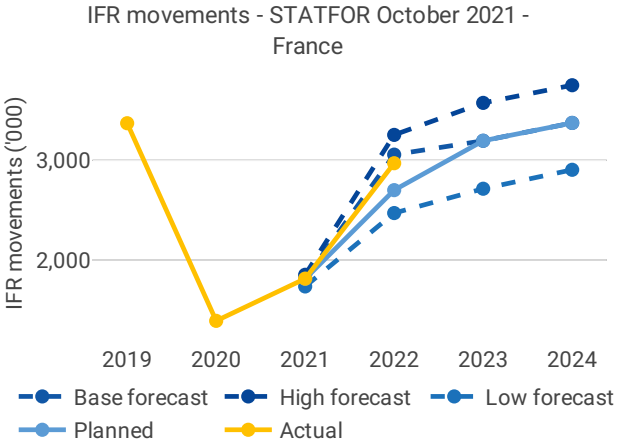
Terminal charging zone(s)
- France Zone 1
- France Zone 2

Main ANSP
- DSNA

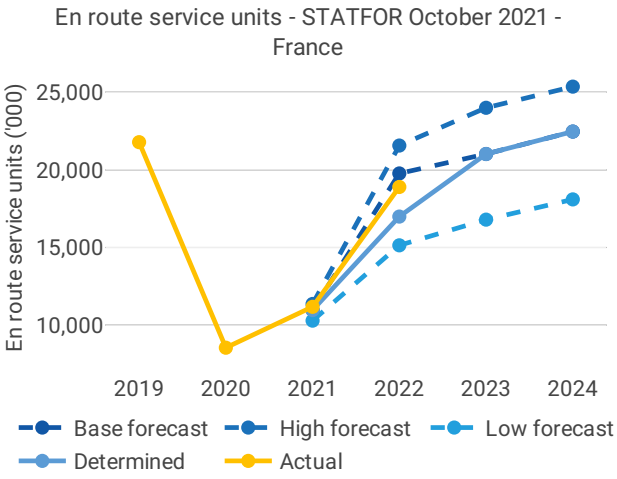
Other ANSPs
–

MET Providers
- Météo France

1.2 Traffic (En route traffic zone)

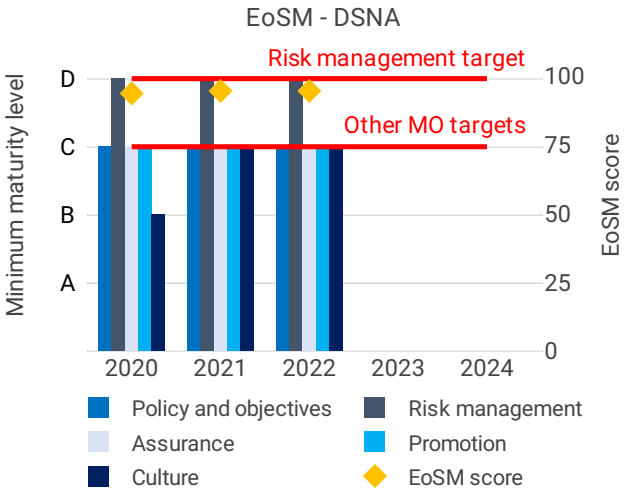


- France recorded 2,971K actual IFR movements in 2022, +64% compared to 2021 (1,813K).
- Actual 2022 IFR movements were +10% above the plan (2,701K).
- Actual 2022 IFR movements represent 88% of the actual 2019 level (3,372K).



- France recorded 18,898K actual en route service units in 2022, +69% compared to 2021 (11,181K).
- Actual 2022 service units were +11% above the plan (16,990K).
- Actual 2022 service units represent 87% of the actual 2019 level (21,782K).

1.3 Safety (Main ANSP)



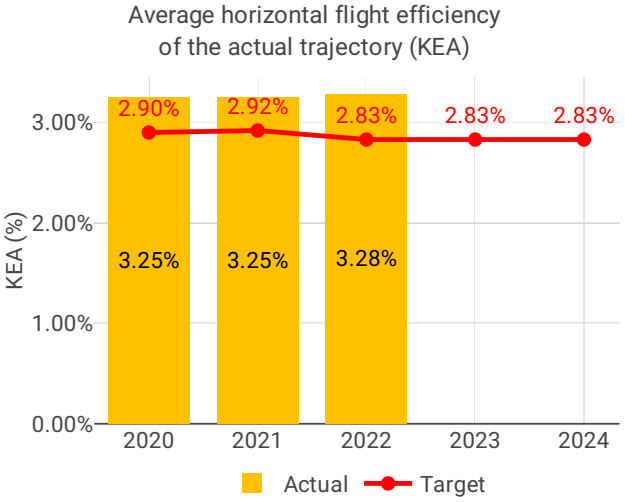
• DSNA achieved the RP3 targets in 2021 and maintained this level in 2022.

• France recorded an increase in the rate of runway incursions relative to 2021 and a decrease in the rate of separation minima infringements. Although DSNA observed the decrease of the SMIs with ANS contribution in 2022 relative to 2021, the occurrence number was still high (304) with a rate of 1.5 SMIs per 10,000 flight hours. DSNA should continue assessing occurrences and risk mitigate them according to their SMS, if necessary.

• DSNA monitors and analyses the safety data using automated recording tools for separation minima infringements. The French NSA oversight addresses those elements.

• DSNA could improve its safety management by implementing automated safety data recording systems for runway incursions.

1.4 Environment (Member State)



• France achieved a KEA performance of 3.28% compared to its target of 2.83% and did not contribute positively towards achieving the Union-wide target. KEA performance has remained at similar levels since 2020.

• The NSA states that 2022 performance was affected by 4-FLIGHT implementation in Reims and Marseille ACCs, traffic volatility, weather issues and industrial action.

• Both KEP and SCR improved in 2022. The NSA states that 50% of the French airspace is now covered by FRA, thus improving KEP.

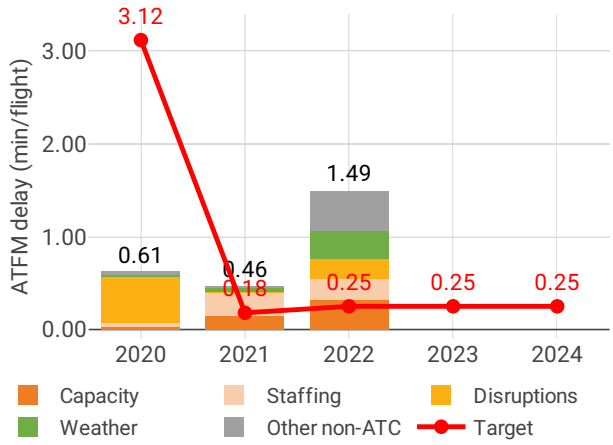
• The share of CDO flights decreased by 9.35% compared to 2021.

• During 2022, additional time in terminal airspace increased from 0.67 to 0.92 min/flight, while additional taxi out time increased from 1.65 to 2.35 min/flight.

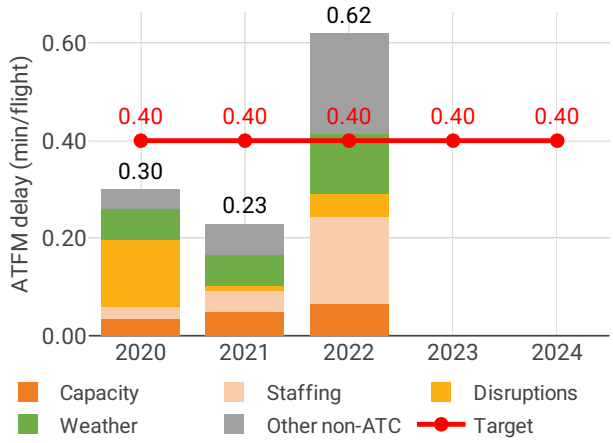
• Additional taxi out time data for Marseille airport has not been reported for 2022 despite being subject to monitoring as per the Regulation.

1.5 Capacity (Member State)

Average en route ATFM delay per flight by delay groups



Average arrival ATFM delay per flight by delay groups



• France registered 1.22 minutes of average en route ATFM delay per flight during 2022 which has been adjusted to 1.49 during the post-ops adjustment process, thus not achieving the local target value of 0.25.

• The average number of IFR movements was 12% below 2019 levels in France in 2022.

• The number of ATCOs in OPS is expected to increase in Bordeaux, Marseille, Paris, and Reims ACCs, with no significant increase in Brest ACC. In 2022, the actual values remained below the planned ones in Bordeaux ACC, while they were above the plans in Brest, Marseille, and Reims ACCs. There has been a significant decrease in the number of ATCOs in OPS in Paris ACC, with the actual value being below the 2022 plan.

• Capacity performance in France was heavily affected by the system transition in Reims ACC.

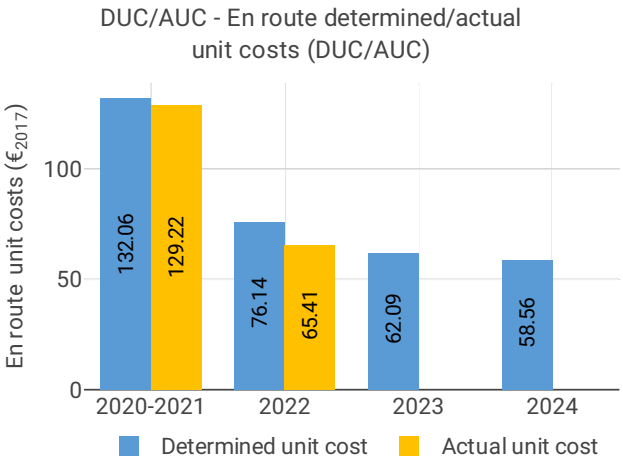
• Delays were highest between April and October, mostly due to adverse weather conditions, other reasons (system implementation) and ATC Staffing issues.

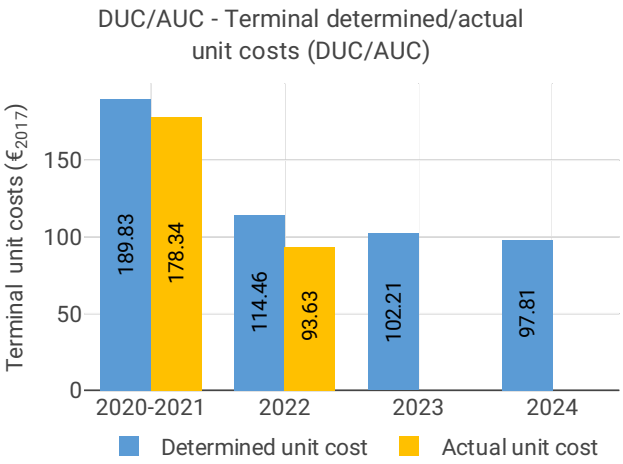
• The share of delayed flights with delays longer than 15 minutes in France increased by 10.95 p.p. compared to 2021 and was higher than 2019 values.

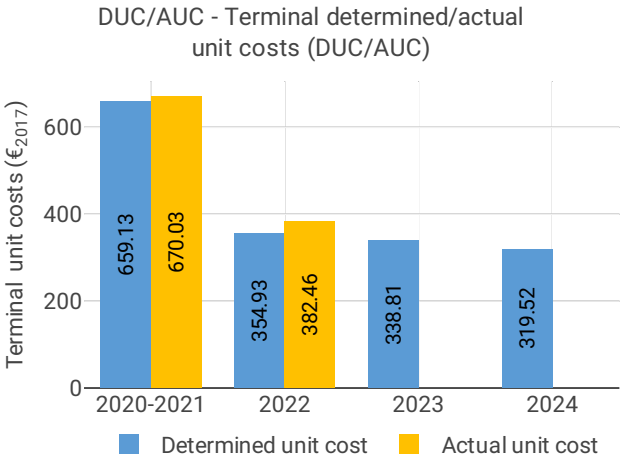
• The yearly total of sector opening hours in Bordeaux ACC was 76,947 in 2022, showing a 4.7% decrease compared to 2021. Sector opening hours are 4.7% above 2019 levels. The yearly total of sector opening hours in Reims ACC was 66,715 in 2022, showing a 46.8% increase compared to 2021. Sector opening hours are 3.6% below 2019 levels. The yearly total of sector opening hours in Paris ACC was 82,674 in 2022, showing an 11.8% increase compared to 2021. Sector opening hours are 19.7% below 2019 levels. The yearly total of sector opening hours in Marseille ACC was 104,717 in 2022, showing a 14.3% increase compared to 2021. Sector opening hours are 4.0% above 2019 levels. The yearly total of sector opening hours in Brest ACC was 63,386 in 2022, showing a 28.8% increase compared to 2021. Sector opening hours are 22.5% below 2019 levels.

• Bordeaux ACC registered 10.84 IFR movements per one sector opening hour in 2022, being 18.9% below 2019 levels. Reims ACC registered 13.57 IFR movements per one sector opening hour in 2022, being 8.7% below 2019 levels. Paris ACC registered 12.56 IFR movements per one sector opening hour in 2022, being 5.6% above 2019 levels. Marseille ACC registered 9.79 IFR movements per one sector opening hour in 2022, being 14.9% below 2019 levels. Brest ACC registered 14.82 IFR movements per one sector opening hour in 2022, being 9.7% above 2019 levels.

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







• The en route 2022 actual unit cost of France was 65.36 €2017, 14% lower than the determined unit cost (76.14 €2017). The terminal zone 1 2022 actual unit cost was 93.63 €2017, 18% lower than the determined unit cost (114.46 €2017), while the terminal zone 2 2022 actual unit cost was 382.46 €2017, 7.8% higher than the determined unit cost (354.93 €2017).

• The en route 2022 actual service units (18,898K) were 11% higher than the determined service units (16,990K).

• In 2022, the en route actual total costs were 59 M€2017 lower (-4.5%) than determined, mainly due to a reduction in staff cost (-35 M€2017, or -4.8%), as a result of higher inflation than planned, and lower depreciation cost (-24 M€2017, or -15%), mainly due to postponement of investments.

• DSNA spent 202 M€2017 in 2022 related to costs of investments, 8.3% lower than determined (221 M€2017) mainly due to the postponement of investments and some investment costs that have been transferred to OPEX costs.

• The en route actual unit cost incurred by users in 2022 was 77.04€, while the terminal zone 1 actual unit cost incurred by users was 191.48€ and 271.69€ for terminal zone 2.

2 SAFETY - FRANCE

2.1 PRB monitoring

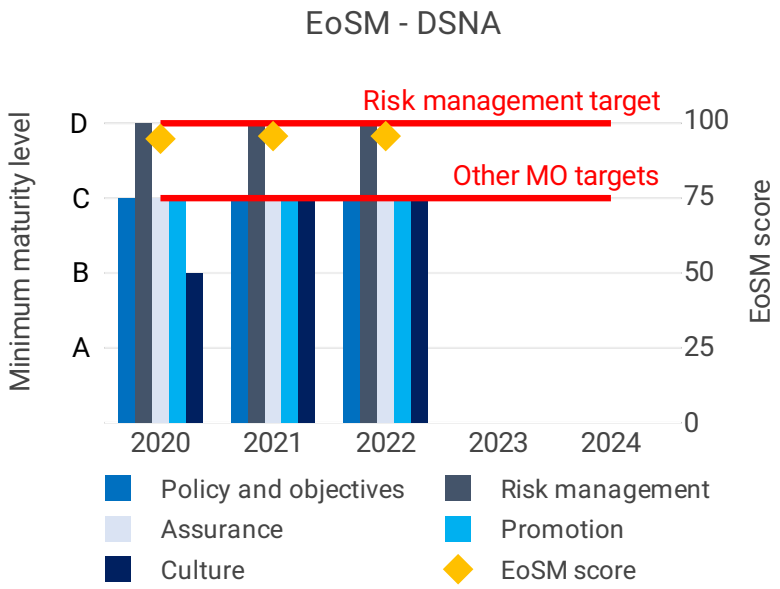
• DSNA achieved the RP3 targets in 2021 and maintained this level in 2022.

• France recorded an increase in the rate of runway incursions relative to 2021 and a decrease in the rate of separation minima infringements. Although DSNA observed the decrease of the SMIs with ANS contribution in 2022 relative to 2021, the occurrence number was still high (304) with a rate of 1.5 SMIs per 10,000 flight hours. DSNA should continue assessing occurrences and risk mitigate them according to their SMS, if necessary.

• DSNA monitors and analyses the safety data using automated recording tools for separation minima infringements. The French NSA oversight addresses those elements.

• DSNA could improve its safety management by implementing automated safety data recording systems for runway incursions.

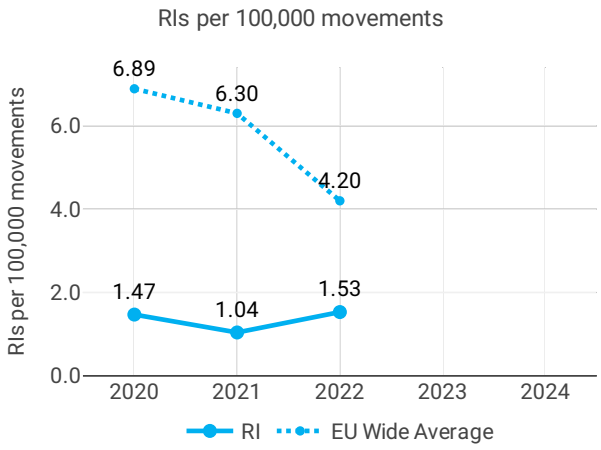
2.2 Effectiveness of Safety Management (EoSM) (KPI#1)

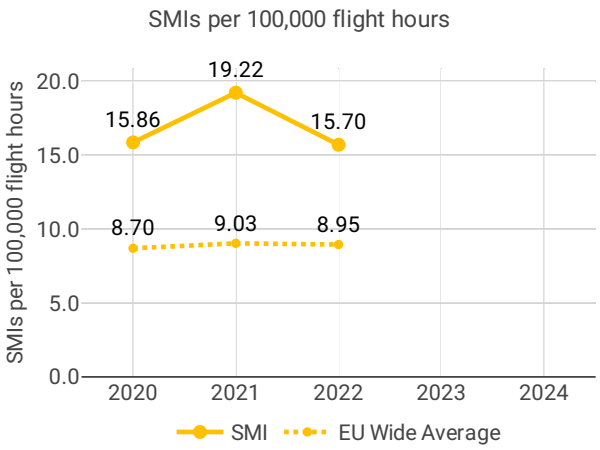


Focus on EoSM

All five EoSM components of the ANSP meet the RP3 target level. The level was maintained compared with 2021.

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





3 ENVIRONMENT - FRANCE

3.1 PRB monitoring

• France achieved a KEA performance of 3.28% compared to its target of 2.83% and did not contribute positively towards achieving the Union-wide target. KEA performance has remained at similar levels since 2020.

• The NSA states that 2022 performance was affected by 4-FLIGHT implementation in Reims and Marseille ACCs, traffic volatility, weather issues and industrial action.

• Both KEP and SCR improved in 2022. The NSA states that 50% of the French airspace is now covered by FRA, thus improving KEP.

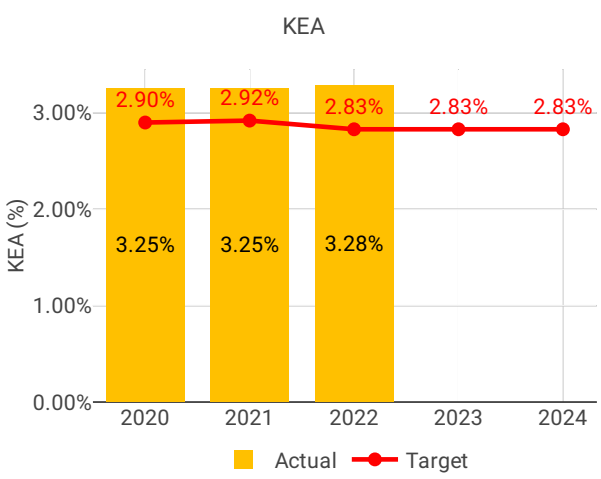
• The share of CDO flights decreased by 9.35% compared to 2021.

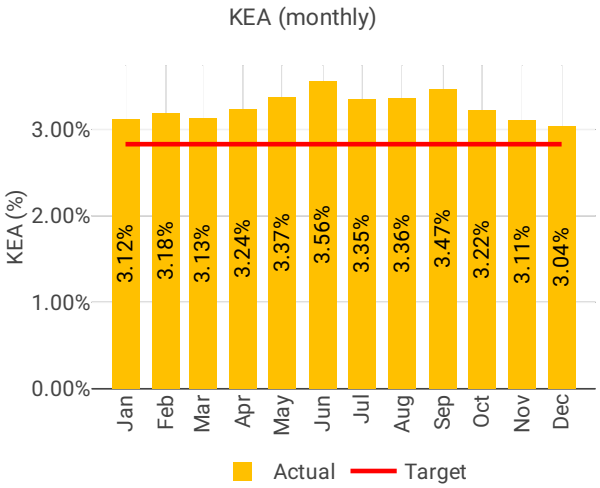
• During 2022, additional time in terminal airspace increased from 0.67 to 0.92 min/flight, while additional taxi out time increased from 1.65 to 2.35 min/flight.

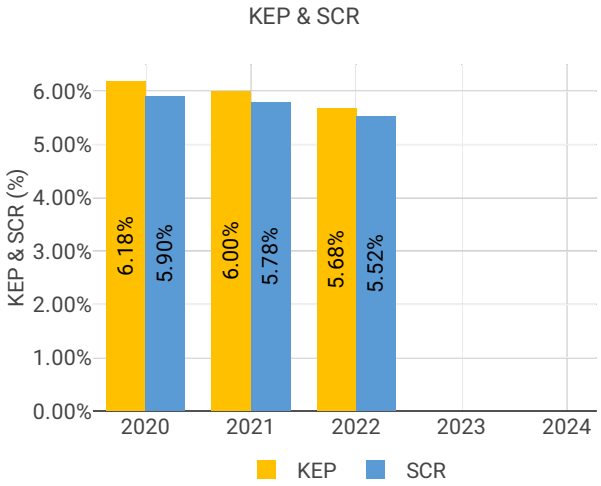
• Additional taxi out time data for Marseille airport has not been reported for 2022 despite being subject to monitoring as per the Regulation.

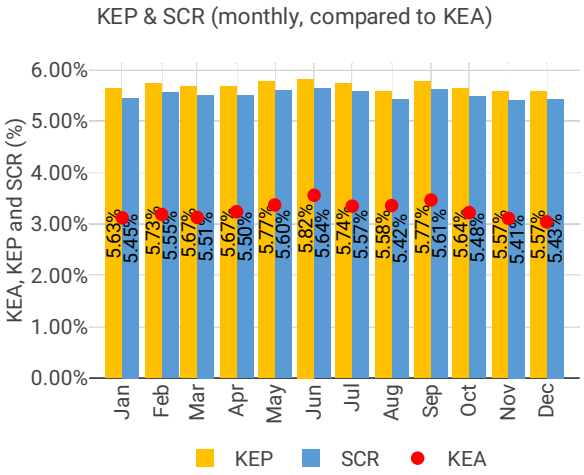
3.2 En route performance

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)



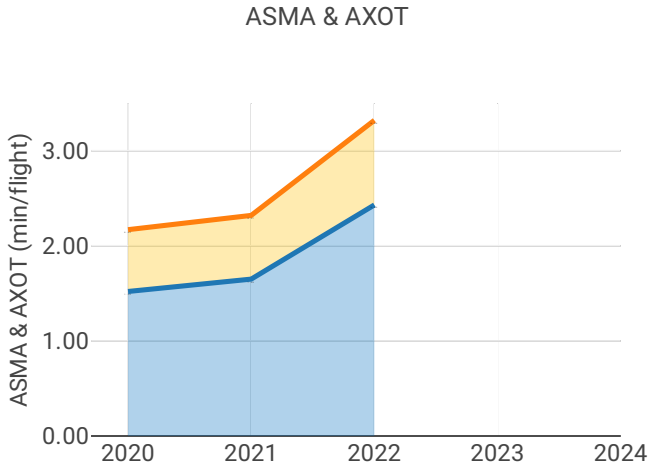


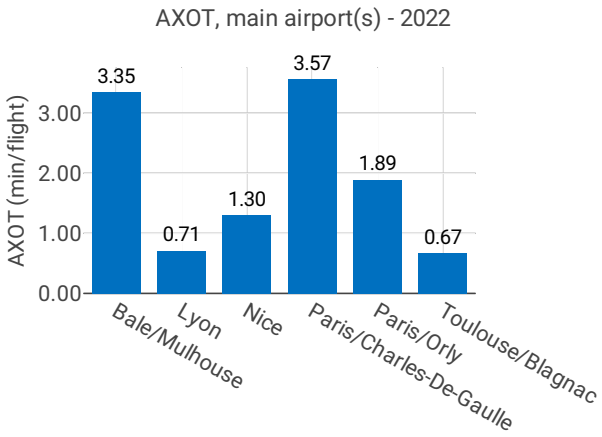


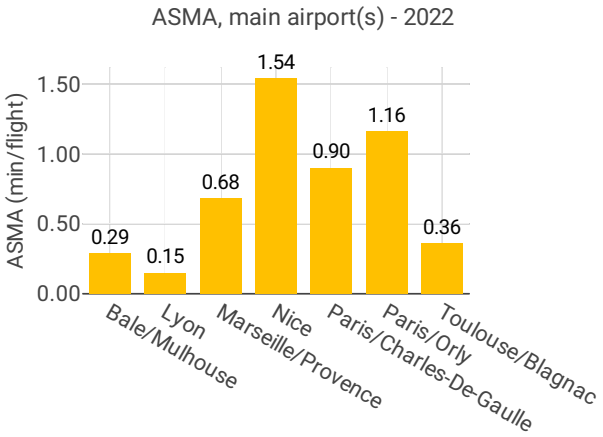


3.3 Terminal performance

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







Focus on ASMA & AXOT

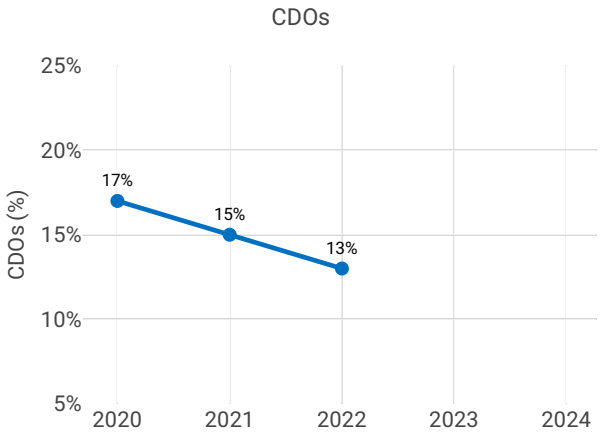
AXOT

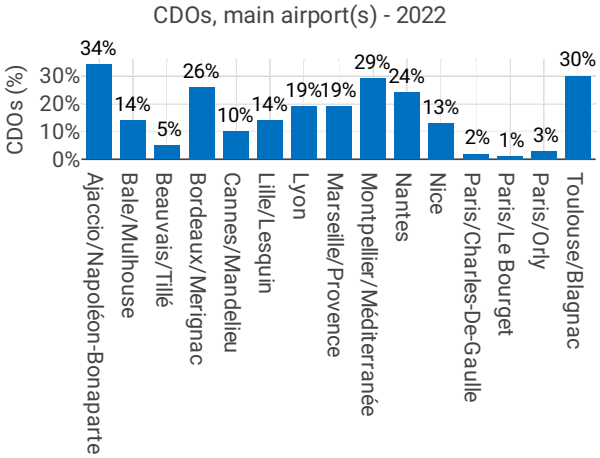
The additional taxi-out times in 2022 remained at most French monitored airports below the SES average of 2.52 min/dep. Paris Charles de Gaulle on the other hand suffered the most significant increase (LFPG: 2019: 3.77 min/dep.; 2020: 2.17 min/dep.; 2021: 2.25 min/dep; 2022: 3.57 min/dep) reaching values close to pre-pandemic and the 4th highest among SES monitored airports in 2022. According to the French monitoring report: Performance evolution is linked with the traffic increase till 2020 (2020&2021 traffic levels where very low due to the traffic collapse related to covid-19 travel bans) and general 2022 ATC performance impacted by the high traffic recovery and volatility ; however 2022 figures are better than 2019 figures and better than during the whole RP2 with equivalent traffics, showing general progress on the taxi-out time phase at French airports. Regarding the data quality for Marseille airport, the French NSA reports: The Airport data flow (APDF) has been implemented at Marseille airport in 2019 with some technical issues regarding block data. Beginning 2020, when within the framework of a project on implementing A-CDM concept at Marseille airport additional exchanges took place regarding lacking information (AOBT/AIBT) and how to provide it through the airport data flow but it could not be implemented during the covid 19 phase. Eurocontrol has contacted Marseille airport authorities to tackle the issue in 2022 and beginning 2023. The French NSA will support Eurocontrol and Marseille airport in order to identify remaining issues and implement the on block data provision as soon as possible.

ASMA

The additional ASMA in 2022 increased slightly at Marseille(LFML) and Paris Charles de Gaulle (LFPG) and remained very similar at Lyon (LFLL) and Toulouse (LFBO). At these 4 airports the result for 2022 is better than the average SES performance of 1.06 min/arr. At Paris Orly there was a more significant increase (LFPO: 2019: 1.04 min/arr.; 2020: 0.82 min/arr.; 2021: 0.64 min/arr.; 2022: 1.16 min/arr.) surpassing the 2019 values. And at Nice, where the traffic recovered better than at the rest of French airports, additional times increased once again (LFMN; 2019: 1.76 min/arr.; 2020: 0.86 min/arr.; 2021: 1.38 min/arr.; 2022: 1.54 min/arr.) According to the French monitoring report: Performance evolution is linked with the traffic increase till 2020 (2020&2021 traffic levels where very low due to the traffic collapse related to covid-19 travel bans) and general 2022 ATC performance impacted by the high traffic recovery and volatility ; however 2022 figures are generally equivalent or better than 2019 figures and generally equivalent or better than during the whole RP2 with equivalent traffics, showing general progress on the additional time in terminal airspace phase at some French airports. This also is closely linked to working methods and the sequencing of approaches, some actions are undertaken by DSNA to achieve “quick wins” where possible.

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





Focus CDOs

For 13 out of the 58 airports, the share of CDO flights was above the RP3 overall value in 2022 (29.0%). In 2022, 12.6% of the arrivals performed a CDO compared to 13.9% in 2021.

The Paris airports have a remarkably low share of CDO flights. The 3 airports with the lowest share of CDO flights in 2022 are French, followed by Frankfurt. As in 2020 and 2021, Paris-Le Bourget (LFPB) has the lowest share of CDO flights of all airports monitored during 2022 (0.6%).

According to the French monitoring report: *DSNA has an objective to drastically increase the CDO rate (from FL75) to reduce noise on all major airports, and remove as much level-offs as possible.*

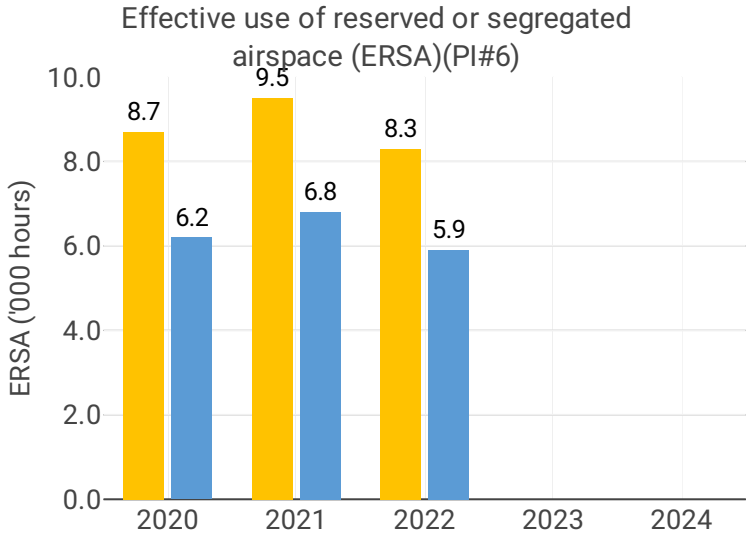
Launch of PBN to ILS projects in LFPG, LFPO, LFLL, LFMN, with significant CDO rate improvement targeted.

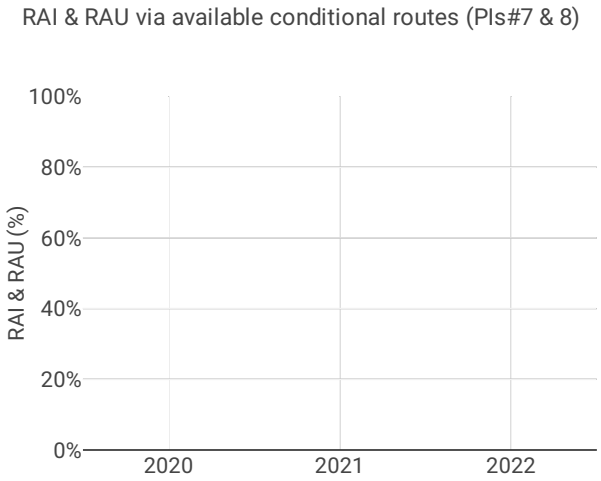
TF Green operations led to some vertical improvements with Green descent projects : improvements on certain legs from top of descent (CDO fuel).

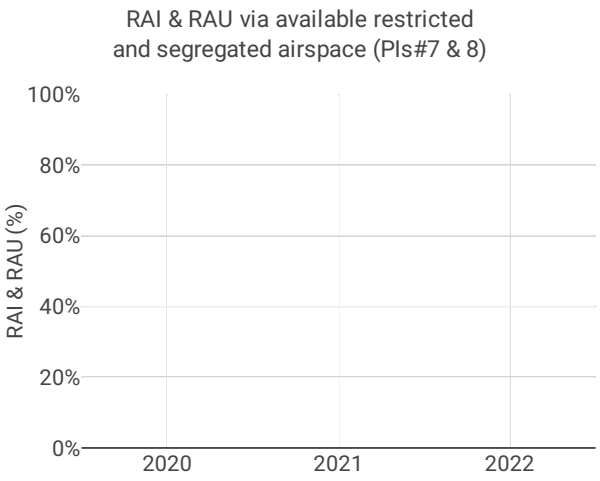
Airport level

	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
Bale/Mulhouse	1.87	2.61	3.35	NA	NA	0.41	0.47	0.29	NA	NA	18%	13%	14%	NA	NA
Lyon	0.51	0.55	0.71	NA	NA	0.33	0.18	0.15	NA	NA	22%	17%	19%	NA	NA
Marseille/Provence	NA	NA	NA	NA	NA	0.51	0.54	0.68	NA	NA	27%	23%	19%	NA	NA
Nice	0.77	1.10	1.30	NA	NA	0.86	1.38	1.54	NA	NA	20%	13%	13%	NA	NA
Paris/Charles-De-Gaulle	2.17	2.25	3.57	NA	NA	0.66	0.62	0.90	NA	NA	4%	3%	2%	NA	NA
Paris/Orly	1.22	1.27	1.89	NA	NA	0.82	0.64	1.16	NA	NA	3%	3%	3%	NA	NA
Toulouse/Blagnac	0.43	0.45	0.67	NA	NA	0.54	0.37	0.36	NA	NA	30%	27%	30%	NA	NA
Albert/Bray	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29%	31%	20%	NA	NA
Agen/La-Garenne	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21%	13%	12%	NA	NA
Bordeaux/Merignac	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	32%	27%	26%	NA	NA
Bergerac/Roumanière	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15%	13%	19%	NA	NA
La-Rochelle/Ile de Ré	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26%	22%	20%	NA	NA
Poitiers/Biard	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16%	12%	18%	NA	NA
Limoges/Bellegarde	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30%	31%	32%	NA	NA
Pau/Pyrénées	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23%	17%	24%	NA	NA
Tarbes-Lourdes/Pyrénées	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	63%	64%	53%	NA	NA
Biarritz/Bayonne-Anglet	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26%	21%	22%	NA	NA
Rodez/Marcillac	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17%	16%	19%	NA	NA
Dole/Tavaux	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13%	12%	9%	NA	NA
Metz-Nancy/Lorraine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9%	8%	14%	NA	NA
Bastia/Poretta	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40%	33%	33%	NA	NA
Calvi/Sainte-Catherine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38%	34%	32%	NA	NA
Figari/Sud-Corse	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	35%	32%	34%	NA	NA
Ajaccio/Napoléon-Bonaparte	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	39%	32%	34%	NA	NA
Chambéry/Aix-les-Bains	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9%	14%	8%	NA	NA
Clermont-Ferrand/Auvergne	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22%	16%	21%	NA	NA
Annecy/Meythet	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15%	13%	11%	NA	NA
Grenoble/Isère	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19%	20%	20%	NA	NA
Châteauroux/Déols	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12%	10%	12%	NA	NA
Lyon/Bron	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10%	7%	8%	NA	NA
Cannes/Mandelieu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13%	9%	10%	NA	NA
Saint-Etienne/Bouthéon	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11%	12%	14%	NA	NA
Istres/Le-Tubé	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	31%	24%	22%	NA	NA
Carcassonne/Salvaza	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19%	19%	21%	NA	NA
Perpignan/Rivesaltes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	43%	39%	33%	NA	NA
Montpellier/Méditerranée	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33%	30%	29%	NA	NA
Béziers/Vias	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28%	25%	27%	NA	NA
Avignon/Caumont	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15%	13%	11%	NA	NA
Beauvais/Tillé	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8%	7%	5%	NA	NA
Châlons/Vatry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27%	28%	26%	NA	NA
Rouen/Vallée-de-Seine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29%	28%	30%	NA	NA
Tours/Val-de-Loire	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	48%	46%	32%	NA	NA
Paris/Le Bourget	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1%	1%	1%	NA	NA
Toussus/Le-Noble	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5%	5%	5%	NA	NA
Lille/Lesquin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29%	24%	14%	NA	NA
Brest/Bretagne	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33%	33%	32%	NA	NA
Dinard/Pleurtuit-Saint-Malo	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19%	12%	16%	NA	NA
Deauville/Normandie	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11%	11%	12%	NA	NA
Lorient/Lann-Bihoué	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30%	28%	28%	NA	NA
Caen/Carpiquet	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11%	10%	10%	NA	NA
Rennes/St-Jacques	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53%	49%	45%	NA	NA
Quimper/Pluguffan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28%	25%	37%	NA	NA
Nantes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27%	23%	24%	NA	NA
Saint-Nazaire/Montoir	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20%	22%	24%	NA	NA
Brive/Souillac	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15%	20%	21%	NA	NA
Strasbourg/Entzheim	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17%	14%	14%	NA	NA
Hyères/Le-Palyvestre	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	31%	22%	18%	NA	NA
Nîmes/Garons	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19%	20%	18%	NA	NA

3.4 Civil-Military dimension







Focus on Civil-Military dimension

Update on Military dimension of the plan

For obvious flight safety reasons, military activities must be segregated from civil flows which has an impact on both horizontal (HFE) and vertical flight efficiency (VFE).
Because ASM manageable areas form an integral part of the nominal system, military airspace reservations shall be considered as part of the performance baseline rather than a key factor degrading environmental KPIs.
As a result of implementation of the FUA concept the impact of military activities using Restricted Airspace -RSA on civil performance is highly minored when associated with an efficient ASM process:
At strategic level (HLAPB) by designing areas in accordance with A-FUA concept (MVPA/VGA structures), especially for congested airspaces.
At pre-tactical level (AMC), by managing these areas in a dynamic way, with an associated level 2 CDM process, validated by HLAPB.
At tactical level (ACC/Regional Military Control Centre) by activating/deactivating areas as close as possible to actual use and allowing crossing or direct routes when possible (in accordance with TRA status), with an associated level 3 CDM process validated by HLAPB.
At each level, HLAPB, AMC or ACC/Regional Military Control Centre, a key factor of efficiency is a trust-driven civil-military cooperation. As a counterpart, AOs and CFSPs must be reactive and take efficiently into account available or released airspaces. At last, ANSP have also to adapt the route network to create more DCTs within military areas.
Finally, local circumstances (e.g. constrained airspace, proximity of international hubs, etc….) as well as a large number of military missions that differ from one State to another must be taken into account.

Therefore, airspace needs (e.g. airspace requirements for the 5th generation fighters) and related ASM procedures of the States differ and standardized objectives cannot be defined.

Military - related measures implemented or planned to improve capacity

FABEC States are working on mid-term improvements regarding implementation of ASM level 1, 2, and 3 procedures. Some local initiatives regarding ASM/ATFCM convergence, like the traffic Light Scheme concept in France are promoted at FABEC level, as well as at ECAC level in the EUROCONTROL OEP framework. Another major improvement is the interconnection of the existing ASM tools (e.g. LARA, STANLY_ACOS) at FABEC Level, to enhance regional coordination among FABEC AMCs as well as with the NM.

Initiatives implemented or planned to improve PI#6

Initiatives implemented or planned to improve PI#7

No validated data available for 2022 … the data on previous cycles were kindly provided by Eurocontrol and processed by the FR NSA without further assessment by interested parties including MIL FR.
In the course of the 2022 monitoring exercise, a similar request has been issued in parallel to Eurocontrol and involved parties within FR to compute data with the help of PRISMIL tool. An active coordination between FR experts, Eurocontrol PRISMIL Team and NMIR support highlighted some biases in the information that could be retrieved.
A better understanding of the issue should put FR in a position to compute and provide the data from 2023 onward making use of existing tools and involving additional experts from DSNA.

Initiatives implemented or planned to improve PI#8

No validated data available for 2022 … the data on previous cycles were kindly provided by Eurocontrol and processed by the FR NSA without further assessment by interested parties including MIL FR.
In the course of the 2022 monitoring exercise, a similar request has been issued in parallel to Eurocontrol and involved parties within FR to compute data with the help of PRISMIL tool. An active coordination between FR experts, Eurocontrol PRISMIL Team and NMIR support highlighted some biases in the information that could be retrieved.
A better understanding of the issue should put FR in a position to compute and provide the data from 2023 onward making use of existing tools and involving additional experts from DSNA.

4 CAPACITY - FRANCE

4.1 PRB monitoring

• France registered 1.22 minutes of average en route ATFM delay per flight during 2022 which has been adjusted to 1.49 during the post-ops adjustment process, thus not achieving the local target value of 0.25.

• The average number of IFR movements was 12% below 2019 levels in France in 2022.

• The number of ATCOs in OPS is expected to increase in Bordeaux, Marseille, Paris, and Reims ACCs, with no significant increase in Brest ACC. In 2022, the actual values remained below the planned ones in Bordeaux ACC, while they were above the plans in Brest, Marseille, and Reims ACCs. There has been a significant decrease in the number of ATCOs in OPS in Paris ACC, with the actual value being below the 2022 plan.

• Capacity performance in France was heavily affected by the system transition in Reims ACC.

• Delays were highest between April and October, mostly due to adverse weather conditions, other reasons (system implementation) and ATC Staffing issues.

• The share of delayed flights with delays longer than 15 minutes in France increased by 10.95 p.p. compared to 2021 and was higher than 2019 values.

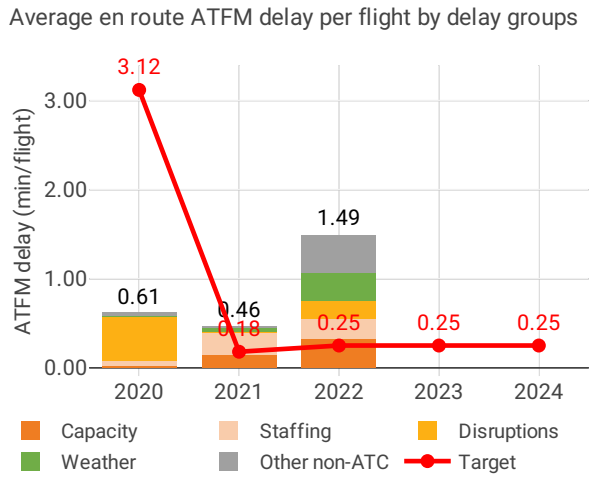
• The yearly total of sector opening hours in Bordeaux ACC was 76,947 in 2022, showing a 4.7% decrease compared to 2021. Sector opening hours are 4.7% above 2019 levels. The yearly total of sector opening hours in Reims ACC was 66,715 in 2022, showing a 46.8% increase compared to 2021. Sector opening hours are 3.6% below 2019 levels. The yearly total of sector opening hours in Paris ACC was 82,674 in

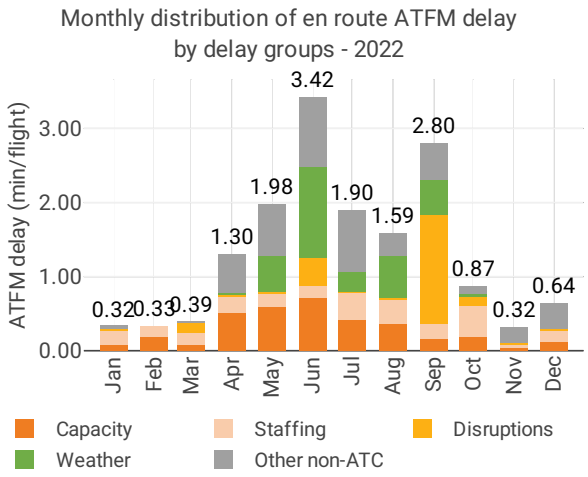
2022, showing an 11.8% increase compared to 2021. Sector opening hours are 19.7% below 2019 levels. The yearly total of sector opening hours in Marseille ACC was 104,717 in 2022, showing a 14.3% increase compared to 2021. Sector opening hours are 4.0% above 2019 levels. The yearly total of sector opening hours in Brest ACC was 63,386 in 2022, showing a 28.8% increase compared to 2021. Sector opening hours are 22.5% below 2019 levels.

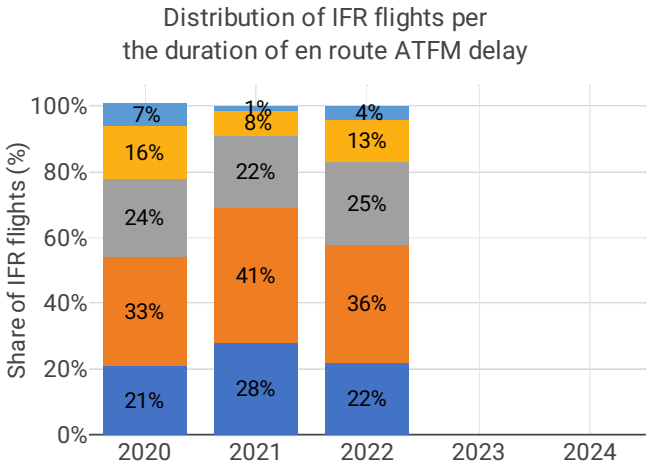
• Bordeaux ACC registered 10.84 IFR movements per one sector opening hour in 2022, being 18.9% below 2019 levels. Reims ACC registered 13.57 IFR movements per one sector opening hour in 2022, being 8.7% below 2019 levels. Paris ACC registered 12.56 IFR movements per one sector opening hour in 2022, being 5.6% above 2019 levels. Marseille ACC registered 9.79 IFR movements per one sector opening hour in 2022, being 14.9% below 2019 levels. Brest ACC registered 14.82 IFR movements per one sector opening hour in 2022, being 9.7% above 2019 levels.

4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)







Focus on en route ATFM delay

Summary of capacity performance

France did not achieve the required en route capacity performance in 2022. There were 2 971k flights handled in the airspace of France in 2022, a significant increase on the 1 813k flights handled in 2021, but less than the 3 372k flights handled in 2019.
There were 4.3 million minutes of en route ATFM delay in France- during 2022, including 765k minutes that were attributed to DSNA (from other ANSPs) during the Network Manager's post operations attribution process, due to the eNM/S22 measures.
For comparison, in 2019, DSNA handled 3 372k flights with 4.5 million minutes of en route ATFM delay.

Performance in 2022 was significantly affected by the implementation of 2 major ATM system upgrades in Reims ACC and Marseille ACC, which account for approximately one third of ATFM delays.

NSA's assessment of capacity performance

In 2022, traffic recovery has reached 89,3% of 2019 traffic for the full year and 92% of 2019 traffic during the Summer period with peaks at or above 2019 traffic levels for some sectors.
The capacity target for en route has not been met, 1,49 min/flight vs 0,25 min/flight, mainly due to the impact of new ATM system (4-FLIGHT) implementation in two ACCs (Reims and Marseille) together with related transition plans but also to due impact of industrial action in September. Some ACCs are still experiencing some staff shortages (Paris, Reims, Marseille).
Corrective actions have been identified and discussed with DSNA and will be implemented in order to mitigate the main delay causes (implementation of NOP corrective measures, addressing ATCO shortages, defining and implementing densified rostering schemes and additional flexibility, reduction of ATCO training time, negotiation of a new social agreement, implementing lessons learnt from 4-FLIGHT implementations in Reims and Bordeaux etc.)

Monitoring process for capacity performance

The French NSA monitoring process is twofold: on the top of the FABEC general monitoring process described in the French performance plan and in the previous 2020 and 2021 RP3 FABEC performance monitoring reports (cf. these documents), a national process has been established based on the following:
- The French NSA is regularly provided with various reports, analysis and data such as FABEC monthly capacity reports (including DSNA data), weekly/monthly/yearly capacity DSNA-OPS directorate reports, PRU monthly dashboards which enable to closely monitor the performance evolution and cross-check data;
- The French NSA is invited to and participates in the capacity planning meetings organized during winter by the NM with DSNA to prepare NOP updates (including discussion on remedial measures, traffic and delays forecast for DSNA ACC, Summer DSNA sector opening schemes etc.);
- The French NSA is invited to and participates in the two yearly Strategic airspace user meetings held by DSNA (beginning of Summer & Winter) where strategic evolutions, OPS projects, ongoing performance, investment plan and HR updates are presented by DSNA to the airspace users which can react and express their views and concerns if any;
- The French NSA has included in its yearly surveillance programme an OPS performance review : regarding capacity, on top of previous meeting participation and data & reports analysis, a dedicated meeting is organized in April/May with DSNA/OPS directorate in order to analyse the previous year performance, define and validate ongoing or new remedial and corrective measures to be taken by DSNA to address issues and underperformance, have a view on ongoing year capacity provision, prepare the yearly FR performance monitoring report to be submitted 1st June ; a follow-up meeting is organized by the French NSA in October/November to follow-up remedial measure implementation; analyse Summer performance, and discuss future performance.

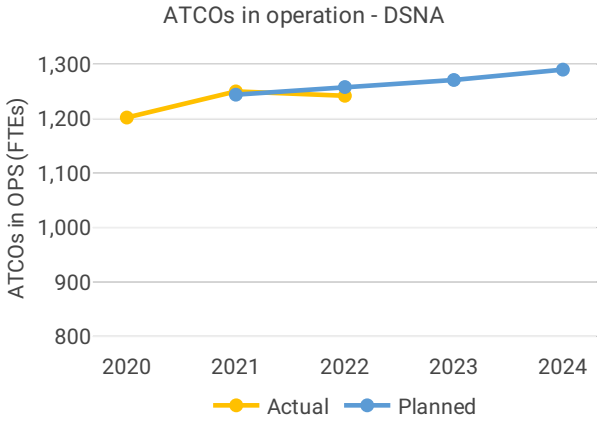
Capacity planning

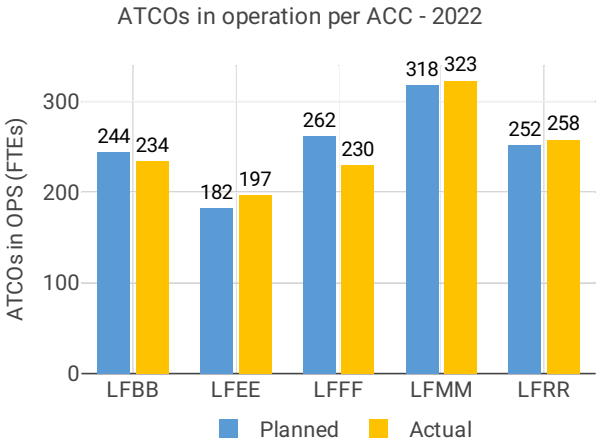
Since April 2020, a weekly Rolling NOP, published every Friday has been introduced through which NM coordinates with all partners to ensure capacity is available at ACCs and in the airspace they manage, and on the ground at airports, to meet the expected traffic demand from the airlines on each day of the next six weeks enabling to coordinate all operational stakeholders throughout the pandemic to ensure that network actors can plan their recovery effectively based on predicted traffic levels.
A first version of the new 2023-2027 NOP has been released in May 2023. It includes the capacity planning for DSNA ACCs and is still to be updated and finalized in June 2023 with the latest available capacity information and remedial measures for all DSNA ACCs concerned by capacity issues.
DSNA is of course part of this process and contributes to the provision for a consolidated European network view of the evolution of the air traffic, enabling the planning of the service delivered in the recovery phase to match the expected air traffic demand in a safe, efficient and coordinated manner.
It should be also noted that the French NSA, upon its request, has been associated to this process and attends since RP2 the NM - DSNA capacity planning meetings in order to be informed of the outcome of previous NOP remedial measures, French ACCS capacity issued and NM delays forecast for French ACCs, any new measures proposed either by DSNA or the NM to mitigate capacity issues.

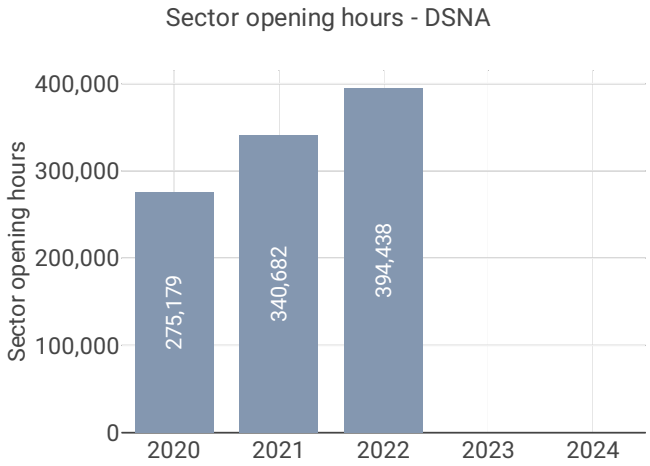
Application of Corrective Measures for Capacity (if applicable)

Traffic recovery for DSNA has reached 89,3% of 2019 traffic for the full year and 92% of 2019 traffic during the Summer period with peaks at or above 2019 traffic levels for some sectors.
Delays due weather and to some staffing and capacity issues remain at Paris, Marseilles and Reims ACCs even if capacity and staffing delays have been reduced compared to 2019 (divided by two).
Some 2022 DSNA delays are also due to industrial actions (twice 2019 delays due to industrial actions).
The main reason for 2022 delays (1/3 of 2022 ER delays) is the impact on Marseilles and Reims ACCs of the training, validation and implementation of the new ATM system 4-FLIGHT and associated transition plans. Most of delays were incurred at Reims where this new system has been implemented for the 1st time 4th April 2022.
Due to technical issues on the core FDPS system which needed to be corrected by the manufacturer or to be taken into account for the development of an updated version of the software to be implementaed at a later stage, the transition plan has been extended (until November 2022) and some capacity reductions have been maintained longer than expected, in particular in the lower sectors (under FL 345).
Lesson learnt from Reims ACC 4-FLIGHT implementation and software corrections done by the manufacturer to mitigate some technical issues identified during the Reims ACC implementaiton in April enabled Marseille to implement 4-FLIGHT 6th December 2022 with less impact on the traffic.
Recommendations to the ANSP: A specific meeting was organized with DSNA in order to gather both explanations and information about remedial measures already launched and identify potential additional measures that could be implemented by DSNA in 2023 and beyond to tackle non temporary capacity issues.
The following recommendations / course of actions have been discussed and agreed with DSNA:
- General remedial measures already identified, coordinated with the Network Manager and published in the NOP 2023-2027 for the 5 French ACC should be implemented as soon as possible;
- A set of specific remedial measures put in place by DSNA or already planned in 2023 to mitigate identified non temporary issues at the French ACCs have been presented to the French NSA and are listed in the table below: the French NSA will be kept informed by DSNA of their timely implementation, of the expected benefit and of any issue in the implementation plan, and a follow-up meeting will be organized before the end of 2023;
- An analysis of potential risks on 2023 and beyond underperformance has been carried over and required potential remedial measures to address such a situation have been discussed; they are also addressed in the final chapter of the en route capacity tab of the monitoring together with the actions taken by the NSA to monitor future performance through its surveillance program.Planned remedial actionsActions already performed by ANSP to address capacity performance issues
It should also be noted that during year 2023 a national pension scheme reform has been announced by the French Government and should be discussed 1st half of the year. Internally, a new social agreement for the 2023 - 2027 period will be discussed between DGAC, the French ministries of Finance, Public administration and Transport and the Unions, with the aim to sign it and implement it before the end of the year.
These two social events could lead to industrial actions and social unrest having an impact on DSNA performance. In this case all possible collaborative decision management processes shall be used with the airspace users, the network manager and neighbouring ANSPs in order to mitigate as much as possible the impact on the users.
In addition a special coordination will take place between NM, DFS and DSNA to prepare Summer 2023 regarding additional flights to be rerouted from Karlsruhe ACC to Reims ACC in order a address some staffing issues at Karlsruhe.

4.2.2 Other indicators





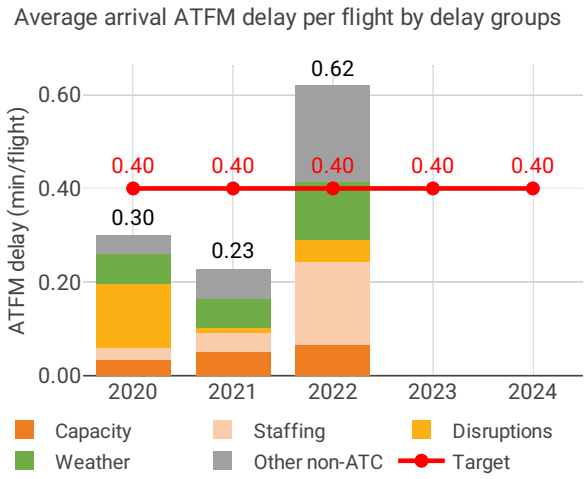


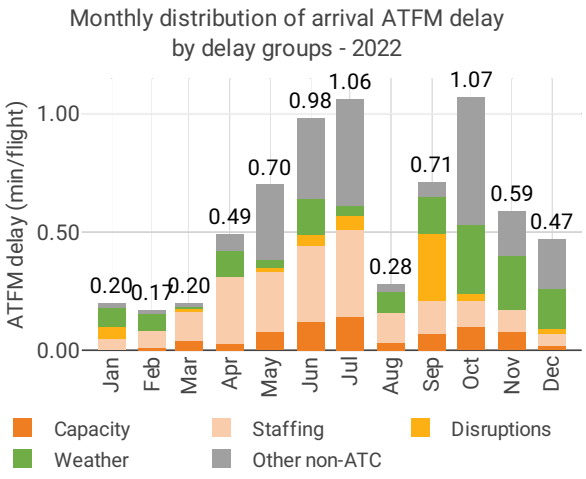
Focus on ATCOs in operations

Regarding ATCO planning, the plans are and will always be subject to change; in addition, the details of the planned evolution of ATCO numbers within an ANSP with several ACCs are socially sensitive.
However, ATCO hiring and assignment is one of the major driver for current capacity and staffing issues solving. ACE figures are provided and can be referred to. Nevertheless, the French NSA considers that they cannot be considered as a commitment where planning figures are requested, due to the high level of uncertainties related to such ATCO recruitement plans management. These figures, even when provided on annual basis, can only be regarded as snapshot information, i.e. a situation at one point in time which does not guarantee a realistic view throughout the entire duration of RP3.
There are many factors with a high level of uncertainty that have an impact on the ATCO planning: first of all, the social agreements in place in an ANSP play a major role in the availability of ATCOs to fulfill the OPS needs (a new social agreement is currently under discussion and should be signed before end 2023 ; certain provisions - recruitment levels, flexibility and rostering, staff retention incentives - could have an impact on futures values).
Then, there are classical uncertainty factors of general staff planning like the actual rate of retirement, the absence rate of employees, as well as maternity and parent leave. Moreover, ATCOs mobility has become a severe issue recently, moreover when understaffed ACC are concerned.

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)





Focus on arrival ATFM delay

For France, the scope of the RP3 monitoring comprises a total of 58 airports. However, in accordance with IR (EU) 2019/317 and the traffic figures, only 6 of those airports must be monitored for pre-departure delays. 52 of these 58 airports are grouped into a basket ("LFXX") for monitoring and target setting purposes. The Airport Operator Data Flow, necessary for the monitoring of the pre-departure delays, is established for the 6 airports required. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay at Paris Charles de Gaulle, with more than 50% of the reported delay not allocated to any cause.
The traffic at the ensemble of these 58 airports in 2022 was still 15% below the 2019 levels, despite the 43% increase with respect to 2021.
Average arrival ATFM delays in 2022 was 0.62 min/arr, compared to 0.23 min/arr in 2021.
ATFM slot adherence has improved (2022: 89.2%; 2021: 88.4%).

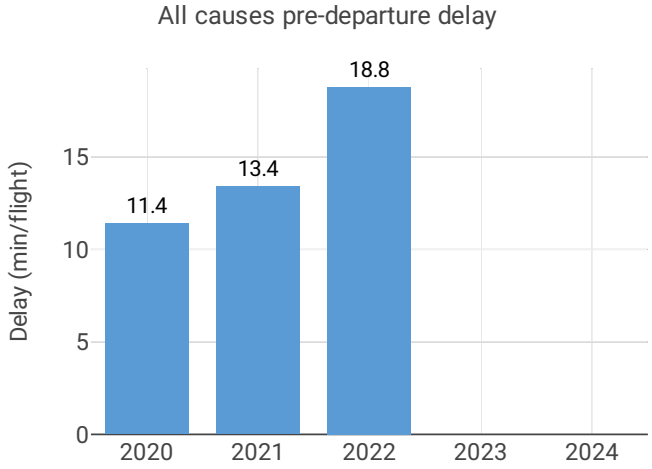
The average arrival ATFM delays have increased at 5 of the 6 main French airports.
The highest increase was observed at Paris Orly (LFPO) where they averaged 1.74 min/arr., one of the highest values in the SES area in 2022. 45% of these delays at Orly were attributed to Aerodrome Capacity issues, followed by 25% attributed to Weather and 14% to ATC Staffing.
Nice (LFMN) also observed a moderate increase resulting in 0.85 min/arr. 73% of these delays were attributed to ATC Staffing issues.
The rest of the main French airports remained below the SES average for arrival ATFM delay in 2022 (0.52 min/arr.)
The French monitoring report lists 5 measures and remedial actions (see table below)3. Arrival ATFM Delay – National TargetThe national target on arrival ATFM delay in 2022 was not met, with actual arrival ATFM delays at 0.62 min/arr. in average, and the national target set at 0.40 min/arr. According to the French monitoring report, this is mainly due to the following reasons: - During the previous years, in order to address the en route staffing and capacity issues due to ATCO shortages in some DSNA ACCs, priority has been given to recruiting, training and assigning staff to the 5 French ACCs. In that context, some DSNA approaches and towers are now progressively also experiencing locally staff shortages (for example Paris-Orly, Basel or Bordeaux airports…);With the 2022 traffic progressively catching up pre covid levels, some airports located in touristic areas (such as the South-East of France: Nice and Marseille airports for example, but also Corsica airports) have faced a strong increase in traffic, with Summer traffic close to 2019 levels and high peak-hours in some cases ; meanwhile Toulon approach has been transferred to Nice approach in 2023, also having a significant impact on Nice ATC capacity this year.
- Paris-Orly airport has also been impacted by construction work on taxiways and by staff shortage and the new rostering scheme couldn't be implemented in 2022;
- However, it should be noted that weather and industrial action and aerodrome capacity (main non-CRSTMP delays causes for 2022) represent 45% of the French terminal delays in 2022.

Regarding the recommendations to the ANSP to rectify the situation, the French NSA reports:
A specific meeting has been organized with DSNA in order to gather both explanations and information about remedial measures already launched and identify potential additional measures that could be implemented by DSNA in 2023 and beyond to tackle non temporary terminal capacity issues.
The following recommendations / course of actions have been discussed and agreed with DSNA:
- A set of specific remedial measures put in place by DSNA or already planned in 2023 to mitigate identified non temporary issues at the French approaches and towers have been presented to the French NSA and are listed in the table below: the French NSA will be kept informed by DSNA of their timely implementation, of the expected benefit and of any issue in the implementation plan, and a follow-up meeting will be organized before the end of 2023;
- An analysis of potential risks on 2023 and beyond underperformance has been carried over and required potential remedial measures to address such a situation have been discussed; they are also addressed in the final chapter of the terminal capacity tab of the monitoring together with the actions taken by the NSA to monitor future performance through its surveillance programSee comments and remedial measures listed above, which, for most of them address the whole RP3 timeframe including risks which are likely to lead to performance targets not being achieved in 2023 and 2024. It should also be noted that during year 2023 a national pension scheme reform has been annouced by the French Government and should be discussed 1st half of the year. Internally, a new social agreement for the 2023 - 2027 period will be discussed between DGAC, the French ministries of Finance, Public administration and Transport and the Unions, with the aim to sign it and implement it before the end of the year. These two events, socially sensitive, could lead to industrial actions and social unrest having an impact on DSNA performance. In this case all possible collaborative decision management processes shall be used with the airspace users, the network manager and neighboring ANSPs in order to mitigate as much as possible the impact on the users.The French NSA will closery monitor the implementation of the above listed remedial measures by DSNA and assess their impact on the en route capacity performance through its suveillance program ; should any additional measures be necessary, it will be studied and discussed accordingly with DSNA in order to asses their feasibility, their potential impact on other performance area KPIs, their benefits and the related implementation timeline. The French NSA will be involved in the discussions regarding the social agreement dicsussions and their implementation.

National level and main national individual airports involved are above the 80% threshold of compliance. The national average was 89.2%, slightly better than in 2021 when the adherence was 88.4%. With regard to the 10.8% of flights that did not adhere, 5.1% was early and 5.8% was late.
The French monitoring report explains: *Globally, DSNA has reported to the NSA some issues in relation with the adherence to CTOT. Root causes as well as corrective measures have been identified and already been partially implemented to improve the performance.*
They address both systemic elements applicable to many airports and specific items to solve the situation in Marseille where the 80% threshold was not met in 2022.
Several causes are noticed with regard to the adherence to CTOT:
- 2 to 5 minutes structural difference between the actual take-off time and the ATOT issued via FSA message. Operational and technical options are investigated to solve it.
- Strong demand on parking stands in relation with seasonal traffic or platform infrastructures (limited number of taxiways).
- ATM system related issues:
– technical : update rates (especially for new CTOT) in CHMI and ATC systems not synchronised (as a work around, investigation of using NMP FLOW as an additional tool)
– operational : information disseminated on 3 tools to be monitored by ATCOs
- Conflicting priorities between aircraft operators requesting and accepting any slot improvement and the departure sequence put in place by ATCOs.
On the specific case of Marseille, all the flights subject to a slot extension request by TWR were on the NM list (NMIR sources) of flights that did not adhere to their slot.
Numerous requests / interactions from TWR are likely to induce an overload on certain key personnel contributing to the FMP. A refresher training has been performed to FMP staff on applicable procedures as well as raising TWR staff awareness on that aspect and request them to focus coordination with the FMP on essential items (a list of routine / non-essential items was drafted and communicated) only in such sit-

uations.
As a baseline, DSNA will strengthen the awareness of ATCOs in towers and approaches on the importance of aiming at precisely adhering to CTOT versus -5 minutes practice in case of departure ahead of CTOT.
Ultimately, many actions will be undertaken by DSNA in favour of the TWR-APP in 2023:
- Organisation of the REX (lesson learnt) ATFCM TWR-APP 2022 : work on the state of play and national coordination which led to the creation of a network of experts with a national POC for the TWR-APP;
- Participation to a Taxi Time WG at the European network level;
- Launch of a national communication campaign on ATFM in the course of the preparation of the TWR-APP summer 2023 season;
- On site tailor-made training delivered by FMP staff and Direction of operations headquarter staff at the request of the TWR units.
- Immersion days in FMPs organised by some FMPs for the benefit of TWR units.

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	2023	2022	2020	2021	2023	2022
Agen/La-Garenne	NA	NA	NA	NA	79.2%	85.7%	NA%	NA
Ajaccio/Napoléon-Bonaparte	NA	0.05	NA	0.05	76.4%	71.3%	NA%	74.3%
Albert/Bray	NA	0.00	NA	NA	44.0%	72.7%	NA%	89.2%
Annecy/Meythet	0.16	0.06	NA	0.36	74.9%	82.3%	NA%	88.8%
Avignon/Caumont	0.23	0.02	NA	0.28	78.7%	84.8%	NA%	87.5%
Bale/Mulhouse	0.41	0.05	NA	0.21	87.4%	89.2%	NA%	89.5%
Bastia/Poretta	0.00	0.06	NA	0.12	80.7%	87.0%	NA%	88.4%
Beauvais/Tillé	0.05	0.01	NA	0.01	72.6%	89.3%	NA%	89.6%
Bergerac/Roumanière	NA	0.14	NA	NA	81.8%	89.4%	NA%	92.1%
Biarritz/Bayonne-Anglet	0.05	0.15	NA	0.20	88.8%	93.0%	NA%	92.1%
Bordeaux/Merignac	0.77	0.07	NA	0.17	91.5%	89.7%	NA%	89.4%
Brest/Bretagne	NA	0.05	NA	0.00	97.0%	83.8%	NA%	80.2%
Brive/Souillac	NA	NA	NA	NA	95.7%	85.6%	NA%	90.0%
Béziers/Vias	NA	NA	NA	NA	68.5%	70.7%	NA%	70.8%
Caen/Carpiquet	NA	0.00	NA	NA	94.2%	92.3%	NA%	92.7%
Calvi/Sainte-Catherine	0.07	0.28	NA	0.28	82.1%	87.3%	NA%	91.2%
Cannes/Mandelieu	2.97	3.00	NA	2.86	93.4%	90.2%	NA%	94.9%
Carcassonne/Salvaza	NA	0.00	NA	NA	81.8%	84.3%	NA%	86.4%
Chambéry/Aix-les-Bains	1.67	0.08	NA	0.94	89.3%	82.5%	NA%	82.0%
Châlons/Vatry	0.50	0.78	NA	0.80	78.0%	86.1%	NA%	90.0%
Châteauroux/Déols	NA	NA	NA	NA	86.7%	84.9%	NA%	85.9%
Clermont-Ferrand/Auvergne	0.00	0.01	NA	0.00	81.5%	86.9%	NA%	83.7%
Deauville/Normandie	NA	NA	NA	0.15	90.0%	88.6%	NA%	86.7%
Dinard/Pleurtuit-Saint-Malo	NA	NA	NA	NA	61.3%	93.2%	NA%	92.7%
Dole/Tavaux	NA	NA	NA	NA	59.4%	77.5%	NA%	84.4%
Figari/Sud-Corse	0.18	1.24	NA	0.34	80.3%	76.8%	NA%	86.4%
Grenoble/Isère	0.50	0.02	NA	0.58	93.6%	85.2%	NA%	90.4%
Hyères/Le-Palyvestre	0.06	0.04	NA	1.28	81.1%	88.3%	NA%	88.9%
Istres/Le-Tubé	NA	NA	NA	NA	66.7%	68.4%	NA%	82.3%
La-Rochelle/Ile de Ré	NA	NA	NA	0.00	81.2%	89.2%	NA%	84.4%
Lille/Lesquin	0.33	0.01	NA	0.05	86.1%	87.7%	NA%	90.7%
Limoges/Bellegarde	0.19	0.11	NA	1.30	93.4%	92.4%	NA%	87.9%
Lorient/Lann-Bihoué	NA	NA	NA	NA	88.8%	88.3%	NA%	87.1%
Lyon	0.03	0.00	NA	0.04	84.5%	84.1%	NA%	86.8%
Lyon/Bron	0.01	NA	NA	0.00	89.5%	83.8%	NA%	87.4%
Marseille/Provence	0.10	0.01	NA	0.24	78.3%	83.4%	NA%	77.8%
Metz-Nancy/Lorraine	NA	NA	NA	NA	82.5%	84.6%	NA%	91.4%
Montpellier/Méditerranée	0.01	NA	NA	0.00	75.1%	84.6%	NA%	84.9%
Nantes	0.24	0.08	NA	0.05	91.6%	91.3%	NA%	91.9%
Nice	0.13	0.39	NA	0.85	87.7%	88.8%	NA%	87.6%
Nîmes/Garons	NA	0.02	NA	0.07	83.4%	82.5%	NA%	88.3%
Paris/Charles-De-Gaulle	0.11	0.22	NA	0.45	95.4%	94.7%	NA%	93.9%
Paris/Le Bourget	0.60	0.53	NA	1.84	94.2%	95.3%	NA%	95.1%
Paris/Orly	0.96	0.25	NA	1.74	87.3%	90.4%	NA%	88.5%
Pau/Pyrénées	1.45	0.00	NA	NA	85.9%	87.6%	NA%	88.1%
Perpignan/Rivesaltes	0.07	0.03	NA	0.01	77.4%	77.0%	NA%	83.7%
Poitiers/Biard	NA	NA	NA	NA	87.8%	72.5%	NA%	71.0%
Quimper/Pluguffan	NA	NA	NA	NA	84.7%	90.6%	NA%	90.0%
Rennes/St-Jacques	NA	NA	NA	NA	78.7%	86.7%	NA%	89.2%
Rodez/Marcillac	NA	NA	NA	NA	88.5%	82.5%	NA%	85.2%
Rouen/Vallée-de-Seine	NA	0.27	NA	0.04	NA	83.9%	NA%	79.2%
Saint-Etienne/Bouthéon	NA	NA	NA	NA	79.6%	86.8%	NA%	90.1%
Saint-Nazaire/Montoir	NA	NA	NA	NA	97.2%	94.7%	NA%	94.7%
Strasbourg/Entzheim	0.03	0.01	NA	0.00	79.6%	88.9%	NA%	90.1%
Tarbes-Lourdes/Pyrénées	NA	0.02	NA	0.04	90.5%	91.3%	NA%	89.7%
Toulouse/Blagnac	0.16	0.26	NA	0.06	90.2%	89.0%	NA%	89.1%
Tours/Val-de-Loire	0.00	0.11	NA	9.32	50.0%	0.0%	NA%	66.7%
Toussus/Le-Noble	0.97	0.89	NA	2.94	77.7%	88.3%	NA%	89.3%

	ATC pre departure delay (PI#2)				All causes pre departure delay (PI#3)			
Airport name	2020	2021	2023	2022	2020	2021	2023	2022
Agen/La-Garenne	NA	NA	NA	NA	NA	NA	NA	NA
Ajaccio/Napoléon-Bonaparte	NA	NA	NA	NA	NA	NA	NA	NA
Albert/Bray	NA	NA	NA	NA	NA	NA	NA	NA
Annecy/Meythet	NA	NA	NA	NA	NA	NA	NA	NA
Avignon/Caumont	NA	NA	NA	NA	NA	NA	NA	NA
Bale/Mulhouse	0.13	0.12	NA	0.25	8.6	11.5	NA	14.3
Bastia/Poretta	NA	NA	NA	NA	NA	NA	NA	NA
Beauvais/Tillé	NA	NA	NA	NA	NA	NA	NA	NA
Bergerac/Roumanière	NA	NA	NA	NA	NA	NA	NA	NA
Biarritz/Bayonne-Anglet	NA	NA	NA	NA	NA	NA	NA	NA
Bordeaux/Merignac	NA	NA	NA	NA	NA	NA	NA	NA
Brest/Bretagne	NA	NA	NA	NA	NA	NA	NA	NA
Brive/Souillac	NA	NA	NA	NA	NA	NA	NA	NA
Béziers/Vias	NA	NA	NA	NA	NA	NA	NA	NA
Caen/Carpiquet	NA	NA	NA	NA	NA	NA	NA	NA
Calvi/Sainte-Catherine	NA	NA	NA	NA	NA	NA	NA	NA
Cannes/Mandelieu	NA	NA	NA	NA	NA	NA	NA	NA
Carcassonne/Salvaza	NA	NA	NA	NA	NA	NA	NA	NA
Chambéry/Aix-les-Bains	NA	NA	NA	NA	NA	NA	NA	NA
Châlons/Vatry	NA	NA	NA	NA	NA	NA	NA	NA
Châteauroux/Déols	NA	NA	NA	NA	NA	NA	NA	NA
Clermont-Ferrand/Auvergne	NA	NA	NA	NA	NA	NA	NA	NA
Deauville/Normandie	NA	NA	NA	NA	NA	NA	NA	NA
Dinard/Pleurtuit-Saint-Malo	NA	NA	NA	NA	NA	NA	NA	NA
Dole/Tavaux	NA	NA	NA	NA	NA	NA	NA	NA
Figari/Sud-Corse	NA	NA	NA	NA	NA	NA	NA	NA
Grenoble/Isère	NA	NA	NA	NA	NA	NA	NA	NA
Hyères/Le-Palyvestre	NA	NA	NA	NA	NA	NA	NA	NA
Istres/Le-Tubé	NA	NA	NA	NA	NA	NA	NA	NA
La-Rochelle/Ile de Ré	NA	NA	NA	NA	NA	NA	NA	NA
Lille/Lesquin	NA	NA	NA	NA	NA	NA	NA	NA
Limoges/Bellegarde	NA	NA	NA	NA	NA	NA	NA	NA
Lorient/Lann-Bihoué	NA	NA	NA	NA	NA	NA	NA	NA
Lyon	0.17	0.21	NA	0.32	12.0	11.9	NA	20.0
Lyon/Bron	NA	NA	NA	NA	NA	NA	NA	NA
Marseille/Provence	NA	0.05	NA	0.13	9.6	9.9	NA	18.0
Metz-Nancy/Lorraine	NA	NA	NA	NA	NA	NA	NA	NA
Montpellier/Méditerranée	NA	NA	NA	NA	NA	NA	NA	NA
Nantes	NA	NA	NA	NA	NA	NA	NA	NA
Nice	0.21	0.38	NA	0.52	7.5	10.5	NA	18.4
Nîmes/Garons	NA	NA	NA	NA	NA	NA	NA	NA
Paris/Charles-De-Gaulle	NA	NA	NA	NA	12.9	17.1	NA	21.3
Paris/Le Bourget	NA	NA	NA	NA	NA	NA	NA	NA
Paris/Orly	0.33	0.49	NA	1.25	13.4	12.5	NA	17.3
Pau/Pyrénées	NA	NA	NA	NA	NA	NA	NA	NA
Perpignan/Rivesaltes	NA	NA	NA	NA	NA	NA	NA	NA
Poitiers/Biard	NA	NA	NA	NA	NA	NA	NA	NA
Quimper/Pluguffan	NA	NA	NA	NA	NA	NA	NA	NA
Rennes/St-Jacques	NA	NA	NA	NA	NA	NA	NA	NA
Rodez/Marcillac	NA	NA	NA	NA	NA	NA	NA	NA
Rouen/Vallée-de-Seine	NA	NA	NA	NA	NA	NA	NA	NA
Saint-Etienne/Bouthéon	NA	NA	NA	NA	NA	NA	NA	NA
Saint-Nazaire/Montoir	NA	NA	NA	NA	NA	NA	NA	NA
Strasbourg/Entzheim	NA	NA	NA	NA	NA	NA	NA	NA
Tarbes-Lourdes/Pyrénées	NA	NA	NA	NA	NA	NA	NA	NA
Toulouse/Blagnac	0.17	0.21	NA	0.28	8.9	8.3	NA	13.1
Tours/Val-de-Loire	NA	NA	NA	NA	NA	NA	NA	NA
Toussus/Le-Noble	NA	NA	NA	NA	NA	NA	NA	NA

Focus on performance indicators at airport level

ATFM slot adherence

The share of unidentified delay reported by Charles de Gaulle (LFPG) was above 40% for more than 2 months in the year, preventing the calculation of this indicator for this airport.

The French NSA reports, based on the alternative data source from the airlines (Aircraft Operator Data Flow), following ATC pre-departure delay figures for Charles de Gaulle (2020: 0.48 min/dep; 2021: 0.62 min/dep; 0.92 min/dep). This data source however does not cover all flights so these figures are only available for information purposes.

The data quality at Marseille (LFML) and Toulouse (LFBO) has improved and the calculation of ATC

pre-departure delay is possible for 2022.
The most significant deterioration was observed at Paris Orly (LFPO; 2021: 0.54 min/dep.; 2022: 1.25 min/dep.) resulting in the third highest among the SES monitored airports.
According to the French monitoring report: *Performance evolution is linked with the traffic increase evolution till 2020 and general ATC performance ; however 2022 figures are generally equivalent or better than 2019 figures and generally equivalent or better than during the whole RP2 with equivalent traffics, showing general progress on the additional time in terminal airspace phase at some French airports, except for LFMN and LFPG where traffic recovery has been stronger than expected.*
In 2022 we can see that despite the increase in traffic, CDG has improved its reporting ([DLY_89] + [DLY_OTHER]), particularly since May 2022, but unfortunately, the quality threshold for unidentified delays has never fallen below 40%, the 1st condition for publication. CDG currently mainly uses the code [ZZZ], which indicates that they have no information about the origin of the various delays. This situation will be examined in detailed with DSNA OPS department in order to improve this data provision in 2023.

ATC pre-departure delay

The total (all causes) delay in the actual off block time at French airports in 2022 increased significantly at all French airports monitored for this indicator. The values range from 13.08 min/dep for Toulouse(LFBO) to 21.34 min/dep. for Paris Charles de Gaulle (LFPG).
The highest delays per flight at these airports were observed in Summer and December.
According to the French monitoring report: *An additional reason is also the impact of the en route delays due to the 4-FLIGHT implementation in Reims ACC, but also the impact of capacity shortages at Karlsruhe ACC.*
Staff shortages where also experienced at airports (either in France or abroad) which had a strong impact on this performance indicator.

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 - FRANCE

5.1 PRB monitoring

• The en route 2022 actual unit cost of France was 65.36 €2017, 14% lower than the determined unit cost (76.14 €2017). The terminal zone 1 2022 actual unit cost was 93.63 €2017, 18% lower than the determined unit cost (114.46 €2017), while the terminal zone 2 2022 actual unit cost was 382.46 €2017, 7.8% higher than the determined unit cost (354.93 €2017).

• The en route 2022 actual service units (18,898K) were 11% higher than the determined service units (16,990K).

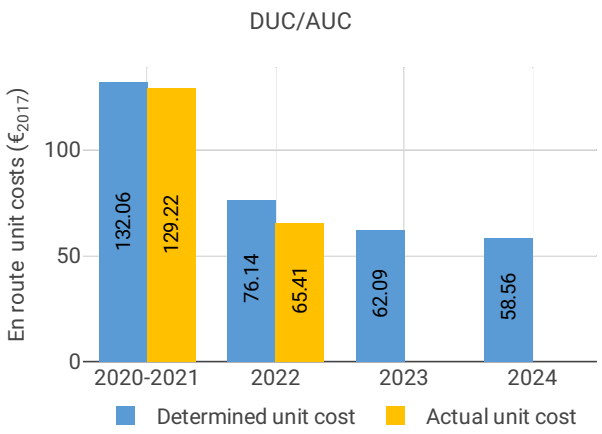
• In 2022, the en route actual total costs were 59 M€2017 lower (-4.5%) than determined, mainly due to a reduction in staff cost (-35 M€2017, or -4.8%), as a result of higher inflation than planned, and lower depreciation cost (-24 M€2017, or -15%), mainly due to postponement of investments.

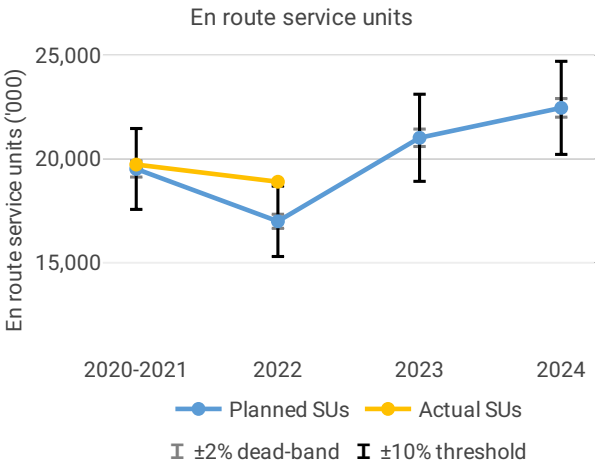
• DSNA spent 202 M€2017 in 2022 related to costs of investments, 8.3% lower than determined (221 M€2017) mainly due to the postponement of investments and some investment costs that have been transferred to OPEX costs.

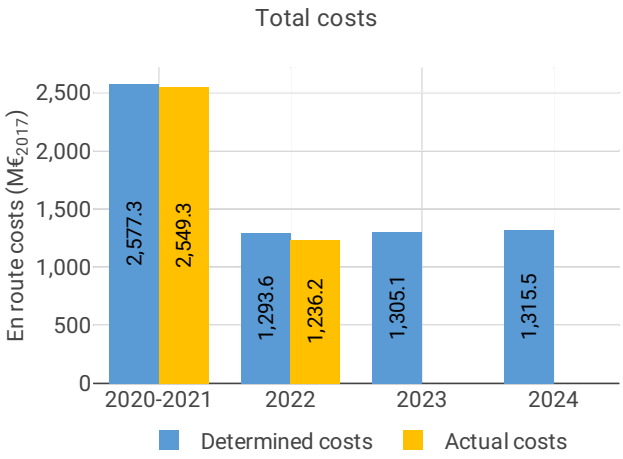
• The en route actual unit cost incurred by users in 2022 was 77.04€, while the terminal zone 1 actual unit cost incurred by users was 191.48€ and 271.69€ for terminal zone 2.

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)

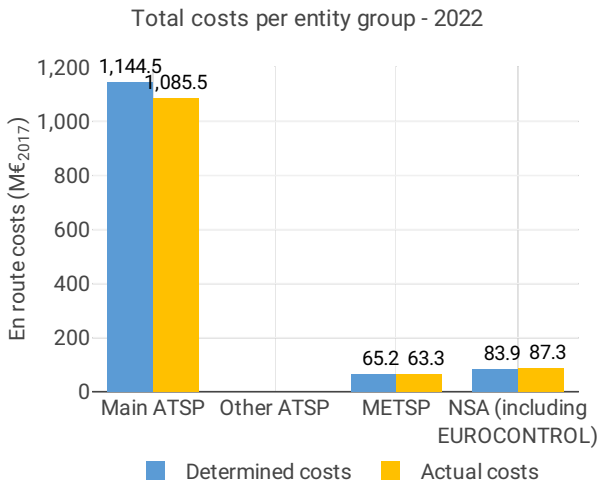


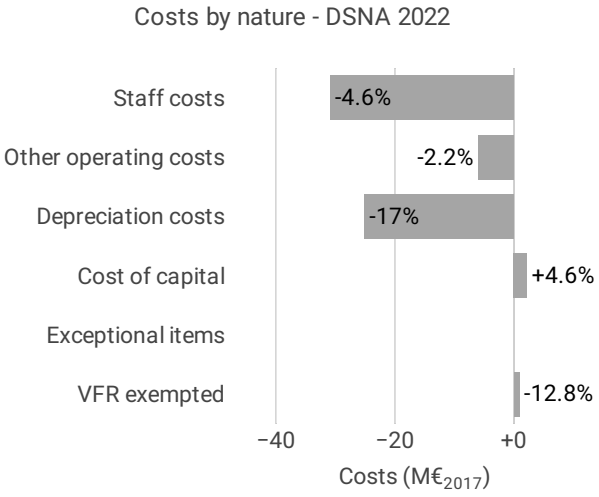




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	2,650	1,355	NA	NA
Determined costs	2,668	1,357	1,382	1,407
Difference costs	-18	-1	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	1.2%	1.3%	1.4%
Determined inflation index	NA	106.3	107.7	109.3
Actual inflation rate	NA	5.9%	NA	NA
Actual inflation index	NA	112.4	NA	NA
Difference inflation index (p.p.)	NA	+6.1	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the en route AUC was -14.2% (or -10.78 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+11.2%) and lower than planned en route costs in real terms (-4.5%, or -58.5 M€2017). It should be noted that the actual inflation index in 2022 was +6.1 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+11.2%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (DSNA) retaining an amount of +47.1 M€2017.

En route costs by entity

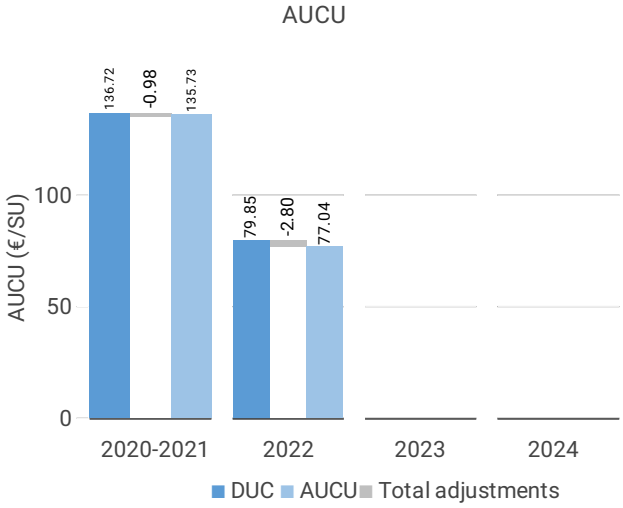
Actual real en route costs are -4.5% (-58.5 M€2017) lower than planned. This is the result of lower than planned costs for the main ANSP, DSNA (-5.2%, or -59.0 M€2017) and the MET service provider (-2.9%, or -1.9 M€2017) and higher than planned costs for the NSA/EUROCONTROL (+2.8%, or +2.4 M€2017).

En route costs for the main ANSP at charging zone level

Significantly lower than planned en route costs in real terms for DSNA in 2022 (-5.2%, or -59.0 M€2017) result mainly from a higher than planned inflation:
- Lower than planned staff costs (-4.6%) mainly due to the inflation index impact (+6.1 p.p.) since in nominal terms the costs are in line with the planned (+0.9%).
- Lower than planned other operating costs (-2.2%) in real terms but higher in nominal terms (+3.5%) reported to be mainly due to the increase in energy prices,
- Significantly lower than planned depreciation costs (-17.0%), "*mainly in relation with the postponement of commissioning from 2022 to 2023, late commissioning in 2022 of the operations of 2021 and the transfer of part of the investment costs to project-related OPEX costs*" as reported in the additional information to the June 2023 reporting tables,
- Higher than planned cost of capital (+4.6%), mainly due to a higher than planned asset base and higher average interest on debt,
- Significantly lower than planned deduction for VFR exempted flights (-12.8%).

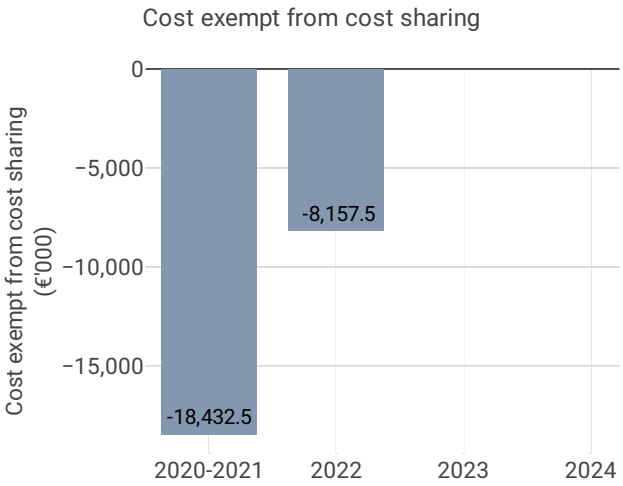
Note: It is understood that DSNA operating costs include costs of investments that are not capitalised (T3 TECH).

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



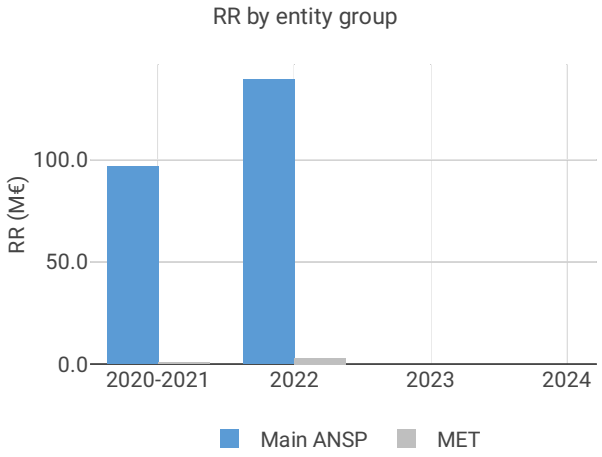
AUCU components (€/SU) – 2022

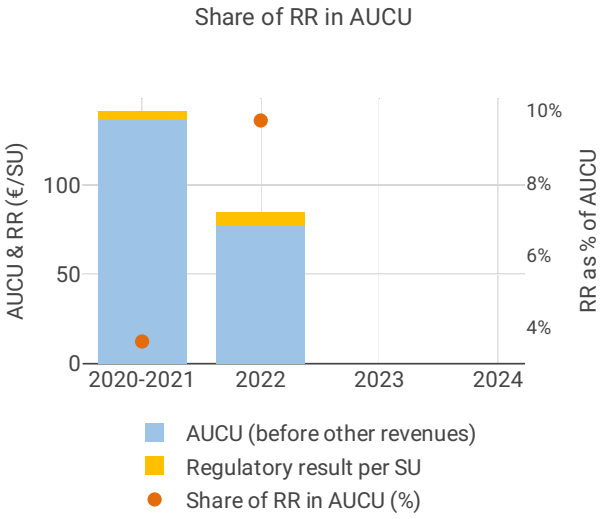
Components of the AUCU in 2022	€/SU
DUC	**79.85**
Inflation adjustment	3.23
Cost exempt from cost-sharing	-0.43
Traffic risk sharing adjustment	-4.35
Traffic adj. (costs not TRS)	-0.91
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-0.34
Application of lower unit rate	0.00
Total adjustments	-2.80
AUCU	**77.04**
AUCU vs. DUC	**-3.5%**

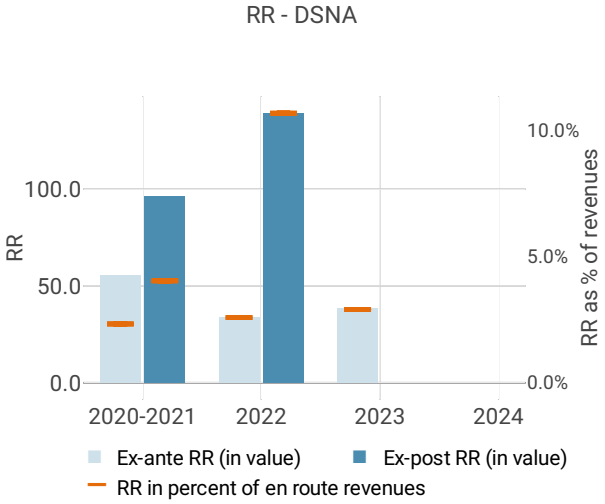


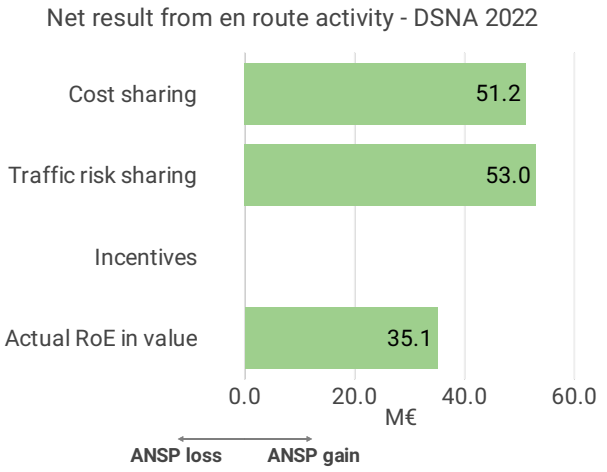
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-11,550.0	-0.61
Competent authorities and qualified entities costs	-665.0	-0.04
Eurocontrol costs	4,057.5	0.21
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-8,157.5**	**-0.43**

5.2.3 Regulatory result (RR)









Focus on regulatory result

DSNA net gain on activity in the France en route charging zone in the year 2022

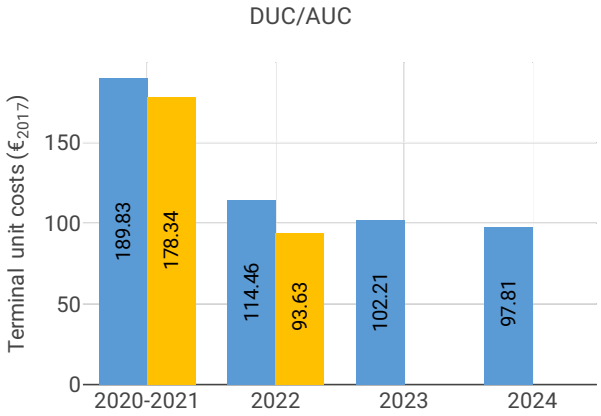
DSNA reported a net gain of +105.1 M€, as a combination of a gain of +52.1 M€ arising from the cost sharing mechanism, with a gain of +53.0 M€ arising from the traffic risk sharing mechanism.

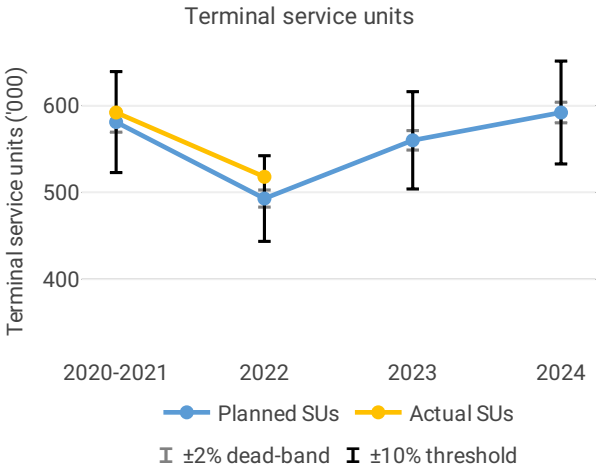
DSNA overall regulatory results (RR) for the en route activity

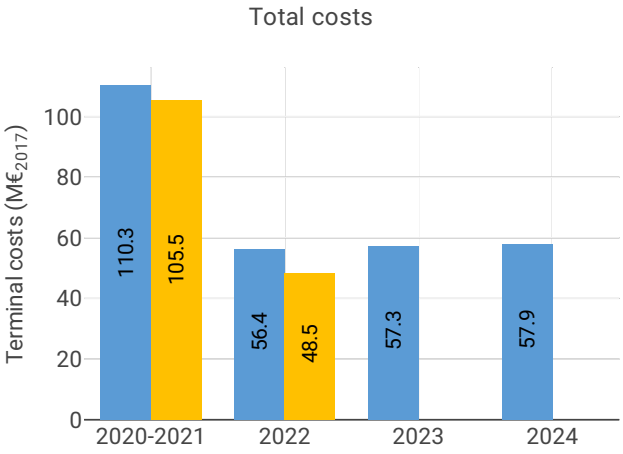
Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+105.1 M€) and the actual RoE (+35.1 M€) amounts to +140.2 M€ (10.8% of the en route revenues). The resulting ex-post rate of return on equity is 64.8%, which is higher than the 16.2% planned in the PP.

5.3 Terminal charging zone - France Zone 1

5.3.1 Unit cost (KPI#1)

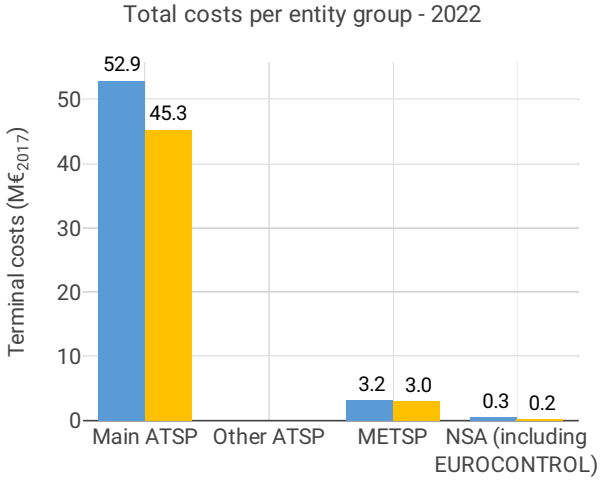


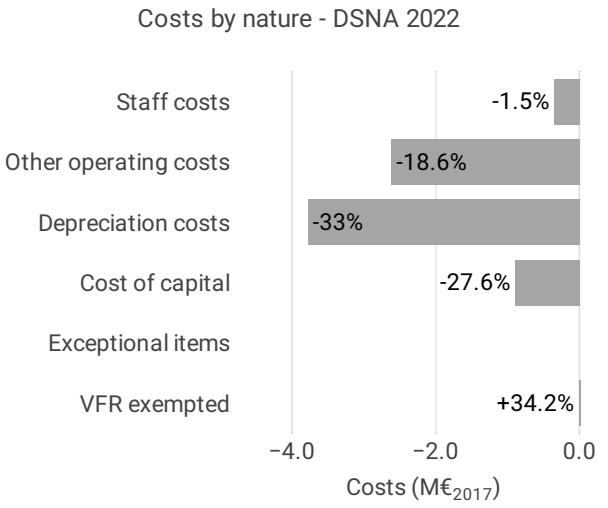




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	110	53	NA	NA
Determined costs	114	59	60	62
Difference costs	-5	-6	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	1.2%	1.3%	1.4%
Determined inflation index	NA	106.3	107.7	109.3
Actual inflation rate	NA	5.9%	NA	NA
Actual inflation index	NA	112.4	NA	NA
Difference inflation index (p.p.)	NA	+6.1	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the terminal AUC was -18.2% (or -20.83 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned terminal costs in real terms (-14.0%, or -7.9 M€2017) and significantly higher than planned TNSUs (+5.1%). It should be noted that the actual inflation index in 2022 was +6.1 p.p. higher than planned.

Terminal service units

The difference between actual and planned TNSUs (+5.1%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (DSNA) retaining an amount of +1.4 M€2017.

Terminal costs by entity

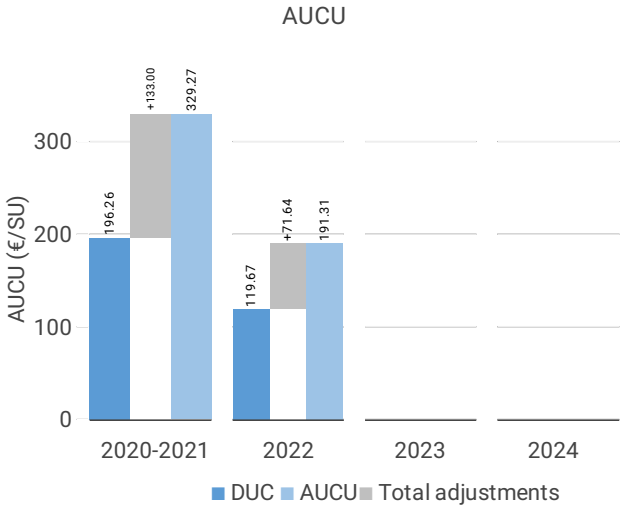
Actual real terminal costs are -14.0% (-7.9 M€2017) lower than planned. This is the result of lower costs for the main ANSP, DSNA (-14.4%, or -7.6 M€2017), the MET service provider (-6.7%, or -0.2 M€2017) and the NSA (-23.3%, or -0.1 M€2017).

Terminal costs for the main ANSP at charging zone level

Significantly lower than planned terminal costs in real terms for DSNA in 2022 (-14.4%, or -7.6 M€2017) mainly resulting from higher than planned inflation:
- Slightly lower than planned staff costs (-1.5%) due to the inflation index impact (+6.1 p.p.) since in nominal terms the costs are higher than planned (+4.2%),
- Significantly lower than planned other operating costs in real terms (-18.6%) due to lower operational expenditure associated to investments,
- Significantly lower than planned depreciation costs (-33.0%) "*due to the redefinition and prioritization of SYSAT programme with a new ATM system for major airports: iATS project at Orly in 2024 and AVVISO system at CDG. The SYSAT contract has been redefined end 2021 / beginning 2022 and some 2022 planned expenditures postponed accordingly*" as reported in the NSA Monitoring Report 2022,
- Significantly lower than planned cost of capital (-27.6%), "*in line with the decrease of the depreciation costs"* as reported in the additional information to the June 2023 reporting tables,
- Significantly higher than planned deduction for VFR exempted flights (+34.2%).

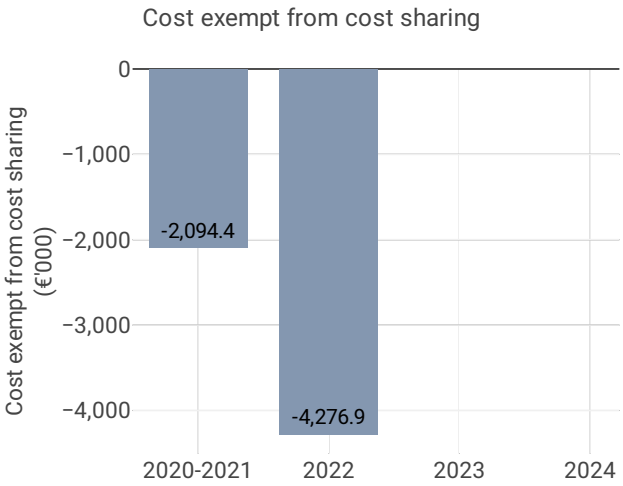
Note: It is understood that DSNA operating costs include costs of investments that are not capitalised (T3 TECH).

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



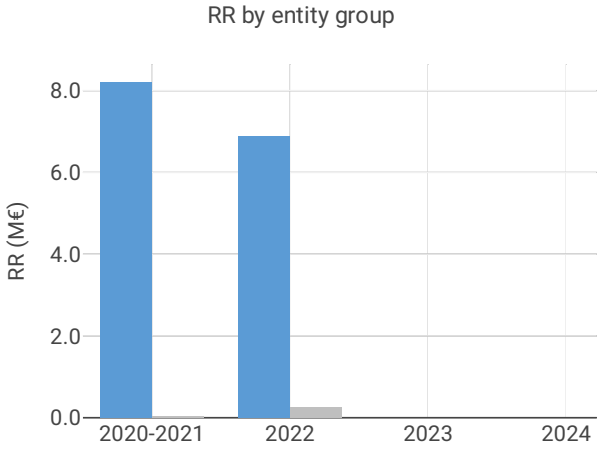
AUCU components (€/SU) – 2022

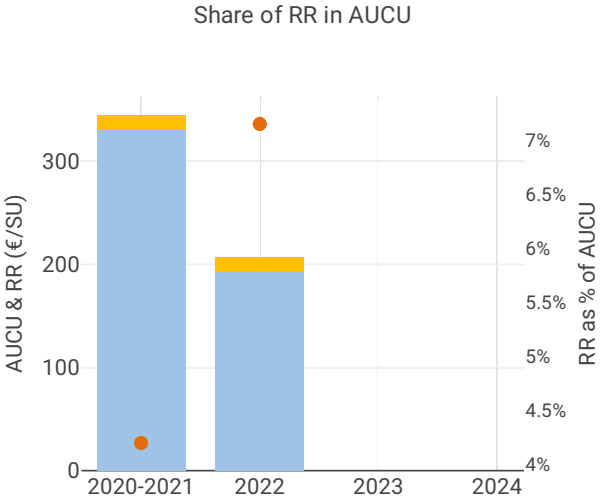
Components of the AUCU in 2022	€/SU
DUC	**119.67**
Inflation adjustment	4.80
Cost exempt from cost-sharing	-8.26
Traffic risk sharing adjustment	-2.30
Traffic adj. (costs not TRS)	-0.36
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	79.41
Other revenues	-1.64
Application of lower unit rate	0.00
Total adjustments	71.64
AUCU	**191.31**
AUCU vs. DUC	**+59.9%**

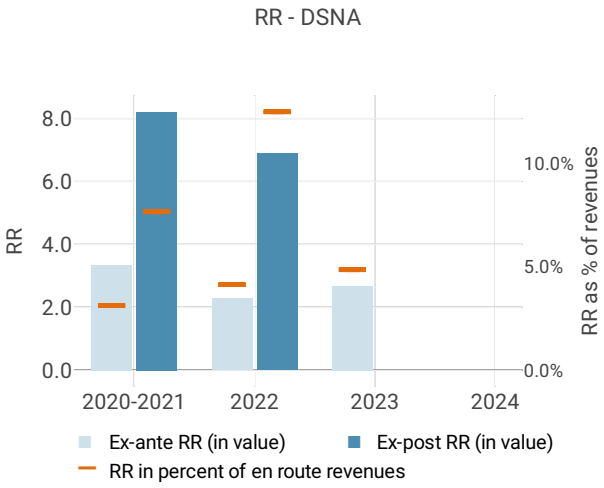


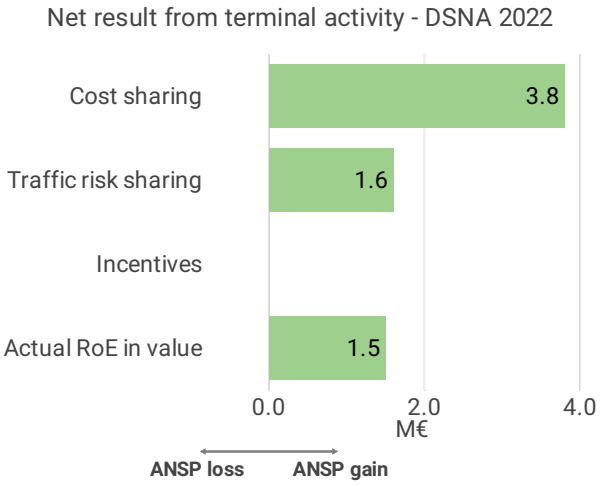
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-4,210.0	-8.14
Competent authorities and qualified entities costs	-66.9	-0.13
Eurocontrol costs	0.0	0.00
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-4,276.9**	**-8.26**

5.3.3 Regulatory result (RR)









Focus on regulatory result

DSNA net gain on activity in the France terminal charging zone 1 in the year 2022

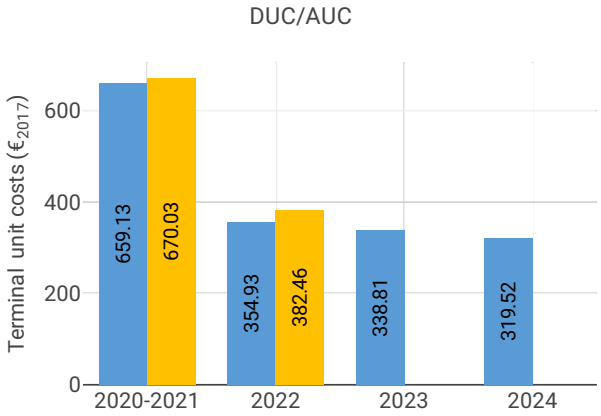
DSNA reported a net gain of +5.5 M€, as a combination of a gain of +3.9 M€ arising from the cost sharing mechanism, with a gain of +1.6 M€ arising from the traffic risk sharing mechanism.

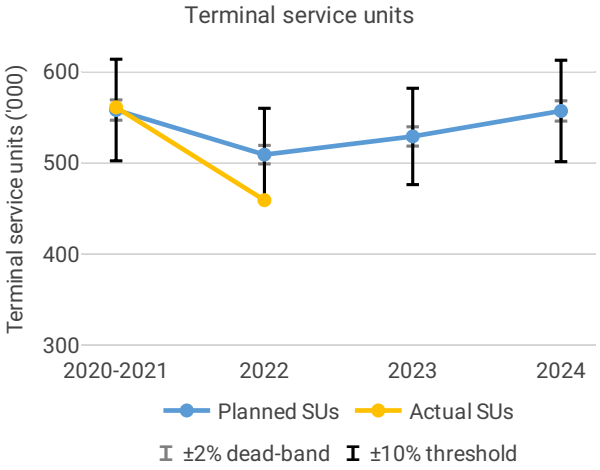
DSNA overall regulatory results (RR) for the terminal charging zone 1 activity

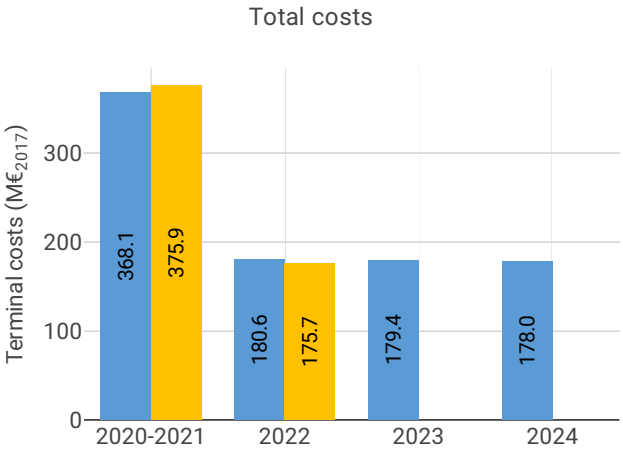
Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+5.5 M€) and the actual RoE (+1.5 M€) amounts to +7.0 M€ (12.7% of the terminal revenues in the Terminal Charging Zone 1). The resulting ex-post rate of return on equity is 76.6%, which is higher than the 16.2% planned in the PP.

5.4 Terminal charging zone - France Zone 2

5.4.1 Unit cost (KPI#1)

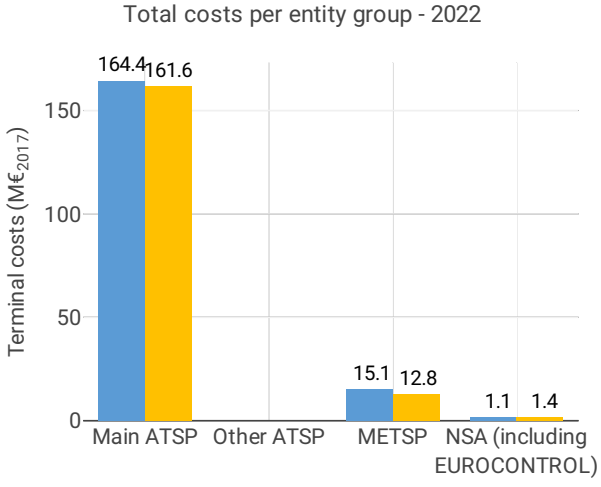


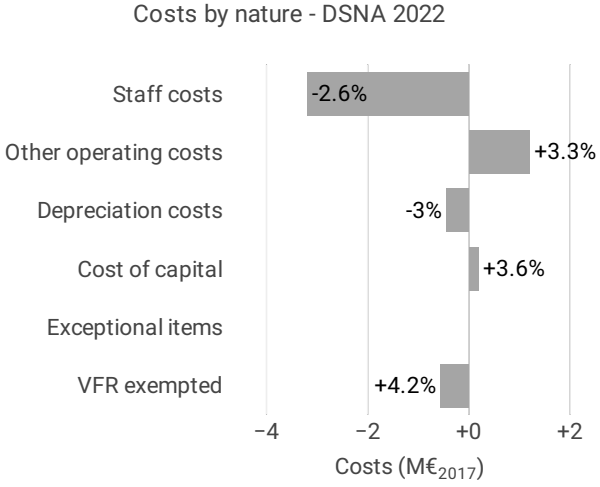




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	392	194	NA	NA
Determined costs	382	190	191	192
Difference costs	10	4	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	1.2%	1.3%	1.4%
Determined inflation index	NA	106.3	107.7	109.3
Actual inflation rate	NA	5.9%	NA	NA
Actual inflation index	NA	112.4	NA	NA
Difference inflation index (p.p.)	NA	+6.1	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the terminal AUC was +7.8% (or +27.54 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-9.7%) and lower than planned terminal costs in real terms (-2.7%, or -4.8 M€2017). It should be noted that the actual inflation index in 2022 was +6.1 p.p. higher than planned.

Terminal service units

The difference between actual and planned TNSUs (-9.7%) 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 ANSP (DSNA) bearing a loss of -6.6 M€2017.

Terminal costs by entity

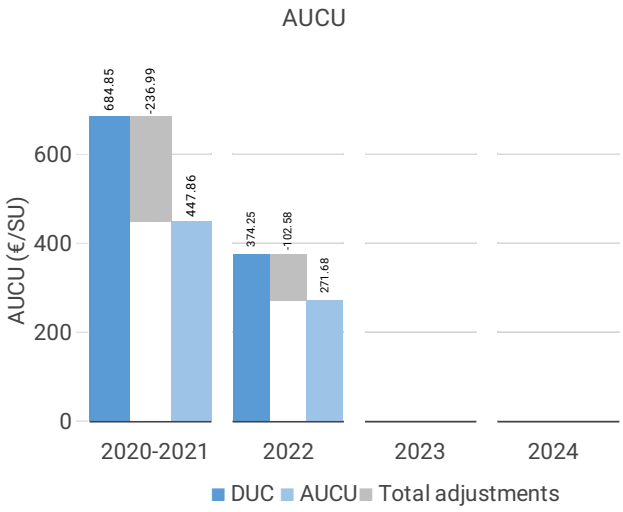
Actual real terminal costs are -2.7% (-4.8 M€2017) lower than planned. This is the result of lower costs for the main ANSP, DSNA (-1.7%, or -2.8 M€2017) and the MET service provider (-15.4%, or -2.3 M€2017) and higher costs for the NSA (+28.1%, or +0.3 M€2017).

Terminal costs for the main ANSP at charging zone level

Slightly lower than planned terminal costs in real terms for DSNA in 2022 (-1.7%, or -2.8 M€2017) mainly resulting from higher than planned inflation:
- Lower than planned staff costs (-2.6%) due to the inflation index impact (+6.1 p.p.) since in nominal terms the costs are higher than planned (+2.9%),
- Higher than planned other operating costs (+3.3%) in real terms and (+9.2%) in nominal terms, reported to be mainly due to the increase in energy prices,
- Lower than planned depreciation costs (-3.0%),
- Higher than planned cost of capital (+3.6%) due to a higher than planned asset base and higher average interest on debt.
- Higher than planned deduction for VFR exempted flights (+4.2%).

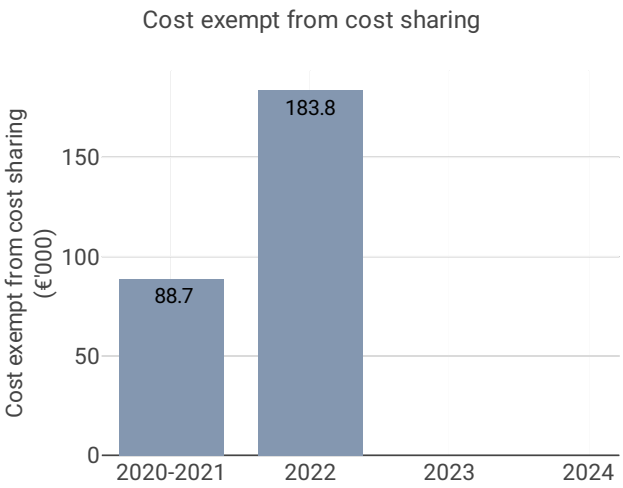
Note: It is understood that DSNA operating costs include costs of investments that are not capitalised (T3 TECH).

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



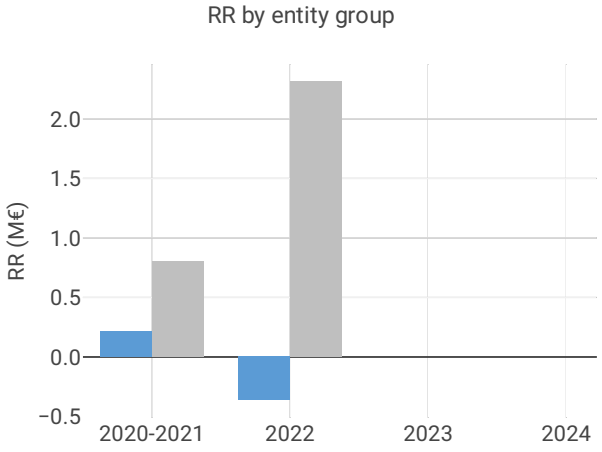
AUCU components (€/SU) – 2022

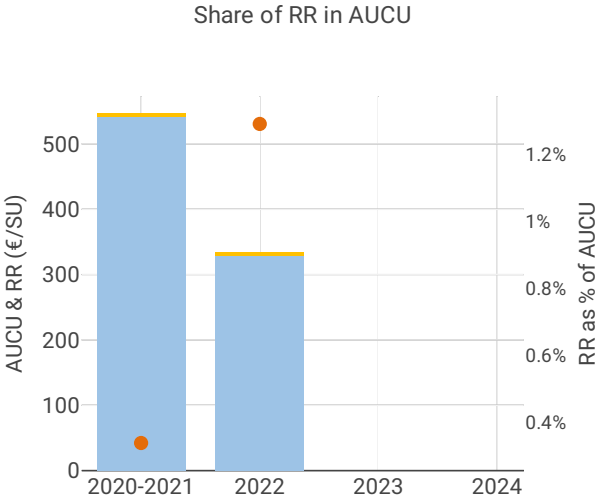
Components of the AUCU in 2022	€/SU
DUC	**374.25**
Inflation adjustment	20.72
Cost exempt from cost-sharing	0.40
Traffic risk sharing adjustment	20.30
Traffic adj. (costs not TRS)	3.56
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	-89.44
Other revenues	-58.11
Application of lower unit rate	0.00
Total adjustments	-102.58
AUCU	**271.68**
AUCU vs. DUC	**-27.4%**

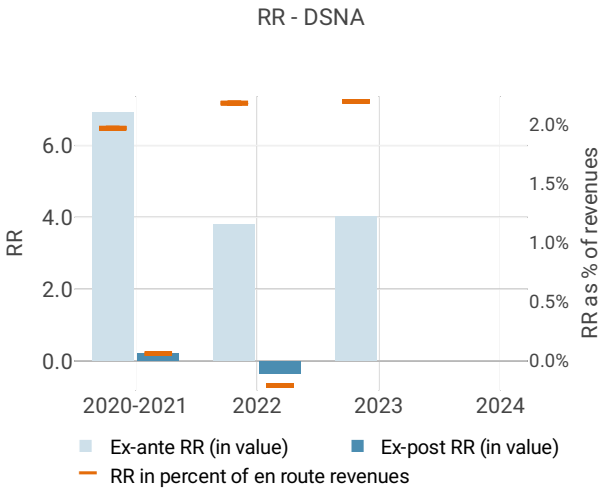


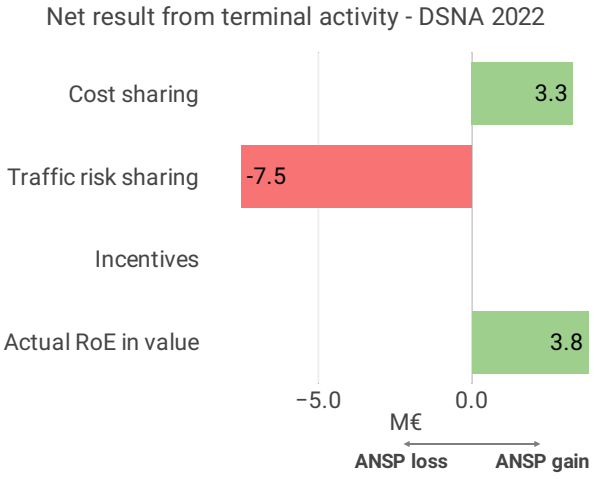
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-120.2	-0.26
Competent authorities and qualified entities costs	303.9	0.66
Eurocontrol costs	0.0	0.00
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**183.8**	**0.40**

5.4.3 Regulatory result (RR)









Focus on regulatory result

DSNA net gain on activity in the France terminal charging zone 2 in the year 2022

DSNA reported a net loss of -4.2 M€, as a combination of a gain of +3.3 M€ arising from the cost sharing mechanism, with a loss of -7.5 M€ arising from the traffic risk sharing mechanism.

DSNA overall regulatory results (RR) for the terminal charging zone 2 activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-4.2 M€) and the actual RoE (+3.8 M€) amounts to -0.4 M€ (-0.2% of the terminal revenues in the Terminal Charging Zone 2).