



ÉPÍTÉSI ÉS KÖZLEKEDÉSI MINISZTERIUM
LÉGÜGYI KOCKÁZATÉRTÉKELÉSI HATÓSÁGI FŐOSZTÁLY

Tárgy: Teljesítményterv-tervezet elfogadásáról szóló tájékoztatás

A BIZOTTSÁG (EU) 2025/1050 HATÁROZATA (2025. május 19.) az 549/2004/EK európai parlamenti és tanácsi rendelet értelmében Magyarország által benyújtott teljesítményterv-tervezetben szereplő teljesítménycélok és az egységes európai égbolt teljesítmény- és díjszámítási rendszerének negyedik referencia-időszakára vonatkozó uniós szintű teljesítménycélok közötti összhangról, című határozat alapján a Magyarország által benyújtott teljesítményterv-tervezetben szereplő teljesítménycélok összhangban vannak A BIZOTTSÁG (EU) 2024/1688 VÉGREHAJTÁSI HATÁROZATA (2024. június 12.) a légiforgalmi szolgáltatási hálózatra vonatkozó uniós szintű teljesítménycélokra a 2025. január 1-jétől 2029. december 31-ig tartó negyedik referencia-időszakra történő meghatározásáról című határozatban megállapított uniós szintű teljesítménycélokkal.

Az egységes európai égbolt teljesítmény- és díjszabási rendszerének létrehozásáról, valamint a 390/2013/EU és a 391/2013/EU végrehajtási rendeletek hatályon kívül helyezéséről szóló (EU) 2019/317 bizottsági végrehajtási rendelet (2019. február 11.) 16. cikkének a) pontja alapján Magyarország a teljesítményterv tervezetét változtatás nélkül elfogadja és az elfogadott teljesítménytervet közzéteszi. Magyarország az (EU) 2025/1050 bizottsági határozat "Általános megfontolások" 26. pontjában foglalt észrevételekre az alábbiak szerint válaszol:

A magyar hatóságok gondosan figyelembe vették az Európai Bizottság a magyar teljesítménytervnek az uniós szintű teljesítménycélokval való összhangjáról szóló határozatában megjelent észrevételeit a terminál léginavigációs szolgáltatásokra vonatkozó kapacitáscélokval kapcsolatban.

Az Európai Bizottság észrevételeinek elemzése után a Magyar Állam arra a következtetésre jutott, hogy noha az RP4-re javasolt terminál kapacitási célok, amelyeket járatonként 0,10 percben kerültek meghatározásra, kis mértékben magasabbak a 2024-ben mért tényleges teljesítménynél, meg kell jegyezni, hogy a negyedik referencia-időszakban a működési környezet komplexitása növekedni fog:

1. Mindenekelőtt megváltozik a forgalmi helyzet. A Budapesti Repülőtér a forgalom folyamatosan növekszik, ami összhangban van a magyar kormány 2024-ben meghatározott, utas- és cargoforgalmat is érintő célkitűzéseivel.
2. Másodszor, Európa kontinentális területein a globális felmelegedés miatt gyakoribb a kedvezőtlen, zivataros időjárás, mint a harmadik referencia-időszakban.



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3. Végül, a növekvő átrepülő forgalom miatt egyre nagyobb a műszaki problémák és a kényszerleszállások kockázata, amire az elmúlt időszakban is volt példa.

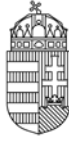
A teljesítményterv leadást megelőzően az érdekelt felekkel folytatott konzultáció során a légtérfelhasználók részéről nem merültek fel aggályok a terminál késési célértékekkel kapcsolatban.

Továbbá a terminál szegmensben a pénzügyi ösztönző rendszer szerint Magyarország nem választotta a modulációt, azaz a büntetés vagy a bónusz összegének kiszámításakor minden okot (beleértve az időjárást is) figyelembe veszünk. Alacsonyabb célérték esetén már a nagyon csekély (3-5 nap) rossz időjárás is veszélyeztetheti a célérték elérését. Magyarország úgy véli, hogy méltányos a célértéket ésszerű szinten meghatározni annak érdekében, hogy a kapacitásösztönző rendszer szimmetrikus legyen, ahogyan azt a Bizottság (EU) 2019/317 végrehajtási rendelete elvárja.

Összefoglalva: figyelembe véve a növekvő forgalmat és az egyre komplexebb működési környezetet, Magyarország úgy döntött, hogy a negyedik referencia-periódusra vonatkozó teljesítménytervét változtatás nélkül elfogadja.

A Légi közlekedési Hatóság honlapján közzétett fő Teljesítményterv dokumentumon kívül további táblázatokat csak kérésre küldünk.

Kérjük, hogy kérésüket az aviation.risk@ekm.gov.hu címre küldjék el a kérvényező nevének, beosztásának, szervezetének, e-mail címének és telefonszámának feltüntetésével.



MINISTRY OF CONSTRUCTION AND TRANSPORT
AVIATION RISK ASSESSMENT DEPARTMENT

Subject: Information on the adoption of a draft Performance Plan

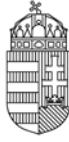
Based on COMMISSION DECISION(EU) 2025/1050 of 19 May 2025 on the consistency of the performance targets included in the draft performance plan submitted by Hungary pursuant to Regulation (EC) No 549/2004 of the European Parliament and of the Council with the Union-wide performance targets for the fourth reference period of the Single European Sky performance and charging scheme, the performance targets contained in the draft performance plan submitted by Hungary are consistent with the Union-wide performance targets for the fourth reference period set out in COMMISSION IMPLEMENTING DECISION (EU) 2024/1688 of 12 June 2024 setting Union-wide performance targets for the air traffic management network for the fourth reference period from 1 January 2025 to 31 December 2029.

Based on Article 16 (a) of Commission Implementing Regulation (EU) 2019/317 (11 February 2019) laying down a performance and charging scheme in the single European sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013 Hungary adopts the draft performance plan without changes and publishes the adopted performance plan. Hungary replies to the observations in point (26) in "General Considerations" of Commission Decision (EU) 2025/1050 as per below:

The Hungarian authorities carefully considered the additional remarks of the European Commission regarding the capacity targets for terminal air navigation services in its decision on the consistency of the Hungarian Performance plan with the union-wide performance targets.

After analysing the comments of the European Commission, the Hungarian State concluded that while it is true that the proposed terminal capacity targets for RP4 that are set at 0,10 minute per flight are by a small margin higher than the actual performance recorded in 2024, it should be noted that the operational environment is expected to get ever more complex in RP4:

1. First and foremost, the traffic situation will be different. At Budapest Airport traffic is growing continuously, which is supported by the government's policy set out in 2024 for passenger and cargo traffic as well.
2. Secondly, adverse weather in the continental area of Europe is more general than in RP3 due to global warming.
3. Lastly, with increasing en-route traffic, there is an increasing risk of technical problems and forced landings, as there have been examples in recent days.



MINISTRY OF CONSTRUCTION AND TRANSPORT
AVIATION RISK ASSESSMENT DEPARTMENT

The Hungarian authorities received no user concerns in stakeholder consultation regarding the level of the terminal delay target.

Furthermore, according to the financial incentive scheme in the terminal segment, Hungary did not choose to modulate, i.e. all causes (including weather) are considered when the penalty or bonus amount is calculated and with a lower target even very minor (3-5 days) bad weather can already jeopardize the achievement of the target. Hungary considers that it is fair to set the target at a reasonable level to make sure that the capacity incentive scheme is a symmetrical one, as it is expected by Commission Implementing Regulation (EU) 2019/317.

In summary, considering the increasing traffic and the complex operational environment, Hungary decided to adopt the performance plan for the fourth reference period without changes.

In addition to the main Performance Plan document, which is published on Civil Aviation Authority website, additional tables will be sent only by request.

Please forward your requests to aviation.risk@ekm.gov.hu indicating the name, position, organization, e-mail and telephone number of the requestor.

Performance Plan

Hungary

Fourth Reference Period (2025-2029)

Status: Draft performance plan (Art. 12 of IR 2019/317)

Date of issue: 10.02.2025

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Signatories

Performance plan details	
State name	Hungary
Status of the Performance Plan	Draft performance plan (Art. 12 of IR 2019/317)
Date of issue	10.02.2025
Date of adoption of Draft Performance Plan	
Date of adoption of Final Performance Plan	

We hereby confirm that the present performance plan is consistent with the scope of Implementing Regulation (EU) No 2019/317 pursuant to Article 1 of Regulation (EU) No 2019/317 and Article 7 of Regulation (EC) No 549/2004.

Name, title and signature of representative

János LÁZÁR Minister of Construction and Transport	  (electronically signed)
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Additional comments	
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Document change record

Version	Date	Reason for change

SECTION 1: INTRODUCTION

1.1 The situation

- 1.1.1 - List of ANSPs and geographical coverage of services
- 1.1.2 - Other entities in the scope of the Performance and Charging Regulation as per Article 1(2) last para.
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1 - INTRODUCTION

1.1 - The situation

NSA(s) responsible for drawing up the Performance Plan	Hungarian National Supervisory Authority Ministry for Construction and Transportation ANS/ADR Supervisory Department
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1.1.1 - List of ANSPs and geographical coverage and services

Number of ANSPs	2		
ANSP name	Services	Type of entity	Geographical scope
HungaroControl	ATM (including ATC, FIS, FMP, AMC), AIS, CNS	ATSP/CNSP	Budapest FIR
HungaroMet (Meteorological Service)	MET	METSP	Budapest FIR

Cross-border arrangements for the provision of ANS services*

* To be reported in the performance plan: any cross-border area or group of adjacent cross-border areas of a size above 500 km², unless the area or group of areas concerned has fewer than 7,500 controlled flight movements on average per year

Number of cross-border area(s) where the ANSP(s) of the Member State provide(s) services in another State's charging zone(s)*	0
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* HungaroControl provides services in the KFOR sector, this is out of the scope of the Performance scheme

Number of cross-border area(s) where ANSP(s) from another State provide(s) services in the charging zone(s) covered by the performance plan	1
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Cross-border service provision in the charging zone(s) covered by the performance plan

ANSP Name	Name of the cross-border area(s)	Charging zone in which services are provided
Austro Control	ATC in the Hungarian airspace	Hungary

1.1.2 - Other entities in the scope of the Performance and Charging Regulation as per Article 1(2) last para.

Number of other entities	2	
Entity name	Domain of activity	Rationale for inclusion in the Performance Plan
Hungarian NSA	NSA	Determined cost of NSA is included in the cost base chargeable to Airspace users. NSA is responsible for Performance plan development, target setting, oversight of ANSPs, other functions as required by the regulation.
EUROCONTROL	NM, CRCO	Determined cost of EUROCONTROL is included in the cost base as it is chargeable to Airspace users.

1.1.3 - Charging zones (see also 1.4-List of Airports)

En-route	Number of en-route charging zones	1
En-route charging zone 1	Hungary	
Terminal	Number of terminal charging zones	1
Terminal charging zone 1	Hungary - TCZ	

1.1.4 - Other general information relevant to the plan

Relevant local circumstances with high significance for performance target setting
The draft RP4 Performance Plan reflects the situation caused by the war and at the same time it aims to ensure that the quality of services will be maintained or improved despite the reroutings.

Additional information
The Ukrainian war has had a significant impact. in the operational and the economic context as well of the service provision of ANS in Hungary.

Operational: due to the closure of the Ukrainian airspace and the war-related sanctions, there have been reroutings in the Hungarian airspace, having a net positive and ever growing impact on the number of overflights. Traffic to and from Russia and Ukraine is missing, on the other hand, reroutings to and from North Europe, and the Far East (and other parts of Asia), as well as new routes between Russia and non-EU states have brought a significant amount of additional traffic. The size of this impact has further increased in 2023 and 2024, as the traffic between Europe and Asia (mainly China) started to gain momentum. The Hungarian ANSP experienced a very strong recovery, and this was only in part a consequence of the reroutings, there was also a very strong increase of the organic traffic on the South-East axis. Especially in the summer, when leisure traffic from Western Europe to Greece and Türkiye creates high demand on our flow.

In addition to the already high demand, ANS provision was impacted by the war in one more way: there were military airspaces to decrease capacity and to increase complexity in the Hungarian airspace.

Variability (seasonality) of the traffic is increasing too, causing an increasing tension and need for balancing between cost-efficiency and capacity performance. A local circumstance completely out of our control.

ENV, CAP KPIs were also impacted by the traffic growth. Since traffic demand (especially in the summer) is significantly higher than the available capacity, from May to October regulations are effective around the clock, resulting in record levels of ATFM delay minutes in 2023 and 2024. Due to these regulations, reroutings have a growing impact on the environment as well.

ATCO training was ramped up (the number of trainees was increased to the maximum training capacity to react to the explosion of traffic demand. However, in the short run (i.e. through 2023-2024) capacity problems have deteriorated - and despite of the PRB's original expectations, Hungary is not in the position to start RP4 with adequate resources (a fact, that - after further discussions - was acknowledged by the Commission and PRB as well). Even the increased number of trainees will not be enough to serve this traffic we are currently facing. HungaroControl has started to explore further options to provide the necessary number of ATCOs. The situation is worsened by accelerated emigration of ATCOs to other countries, mainly in Western Europe.

According to the STATFOR forecast, this level of traffic is the new reality for Hungary, however it will take some time to accommodate resources. In RP4, all the stakeholders of the Hungarian performance plan are dedicated to solve the issues caused by the drastic changes in the business environment, however national reference values will most probably not be reached before the end of RP4. We ask the Commission and PRB to acknowledge that the adaptation takes time and extra efforts.

1.2 - Traffic Forecasts

1.2.1 - En route

En route Charging zone 1

Hungary

En route traffic forecast

Local forecast

Local Forecast	2022A	2023A	2024	2025	2026	2027	2028	2029	CAGR 2024-2029
IFR movements (thousands)	897	1 034	1 084	1 111	1 170	1 203	1 237	1 265	3,1%
IFR movements (yearly variation in %)		15,3%	4,9%	2,4%	5,3%	2,8%	2,9%	2,2%	
En route service units (thousands)	3 184	3 726	3 900	3 993	4 209	4 329	4 453	4 551	3,1%
En route service units (yearly variation in %)		17,0%	4,7%	2,4%	5,4%	2,9%	2,8%	2,2%	

Specific local factors justifying not using the STATFOR base forecasts
(provide justification below or refer to Annex D for more detailed explanation)

In 2024 and 2025 STATFOR 2024 May 2-year forecast as the latest available STATFOR forecasts, from 2026, STATFOR Base (2024Feb forecast)

NOTE: Section 1.3 (Stakeholder Consultation) should include details on the consultation with airspace users' representatives and ANSPs concerned on the rationale for not using the STATFOR base forecasts.

1.2.2 - Terminal

Terminal Charging zone 1

Hungary - TCZ

Terminal traffic forecast

STATFOR February 2024 (Base)

STATFOR February 2024 (Base)	2022A	2023A	2024	2025	2026	2027	2028	2029	CAGR 2024-2029
IFR movements (thousands)	49	54	60	64	66	69	71	73	4,2%
IFR movements (yearly variation in %)		9,6%	10,8%	6,8%	4,1%	3,6%	3,7%	3,0%	
Terminal service units (thousands)	64	72	79	88	91	95	99	102	5,2%
Terminal service units (yearly variation in %)		10,9%	11,0%	10,3%	4,4%	4,3%	3,7%	3,2%	

1.3 - Stakeholder consultation

1.3.1 - Overall outcome of the consultation of stakeholders on the performance plan

Description of main points raised by stakeholders and explanation of how they were taken into account in developing the performance plan

The stakeholder consultation was held with the active participation of user representatives (mainly IATA), staff representatives (ATCO trade union) as well as the NSA and the ANSP. The NSA introduced the current situation in Hungary: the level of additional traffic caused by the war in the Ukraine, the capacity situation, where despite all the measures planned and implemented for RP3 there is significant backlog of ATCO headcount, predominantly due to the ca. 25% higher traffic in RP3, and due to unplanned leaves, eg. several ATCOs were recruited by other ANSPs. On the other side, Hungary is one of the countries with the lowest unit rates and airspace users are benefiting from the 36% – in the respective comparator group – below average unit cost level.

As regards traffic forecast: Hungary used the STATFOR base scenario from February 2024 for the years 2026-2029, and the May 2024 update for 2025 as the latest STATFOR forecast available. Stakeholders had no objection regarding the forecasts used.

Regarding safety a comment about a possible earlier implementation of level D in safety risk management was raised by IATA (EU-wide targets are planned to be met first in 2028). Hungary explained that due to the new methodology, certain time is needed to implement new processes, however, all targets will be met by the end of RP4. According to the union-wide target decision the target levels should be achieved by the end of the period.

There was no other comment regarding safety, the proposed target, and the response given during the meeting was noted.

Regarding environment the extensive possibility to use free route airspaces, the planned timeline for merging adjacent FRA areas was introduced by the ANSP. No stakeholder had any comment regarding the proposed targets in environment.

In capacity KPA: Hungary has presented to the stakeholders about the current traffic situation, the immense additional traffic caused by the war in the neighbourhood. The NSA explained, that in line with Commission Implementing Decision (EU) 2024/1688 (19) in justified cases, like the Ukrainian-Russian war EC allows deviation from the reference values, which is the legal basis for the Hungarian proposal. The Hungarian capacity target for en-route is consequently higher – especially in the first years of RP4 – and the local reference value as target is foreseen to be met first in 2029. The proposed targets were extensively substantiated by the planned ATCO trainings, the ATM operational measures introduced, the launched initiatives for ATCO mobility. The composition of the current delay figures was also explained (where 80% of the delay is caused by weather and disruptions due to the conflict).

IATA was questioning the disproportional increase of ACC ATCO FTE in comparison to traffic evolution (2029/2019 – 60% vs 42%), for which in response the ANSP pointed that ATCO shortage started earlier, already in 2018-2019, leading to significantly higher delays than planned. Consequently, the planned pace of capacity increase of the reference period needs to be greater than the forecasted traffic growth for RP4. Moreover, not only did the level of traffic increase, but the complexity of the airspace, seasonality, and volatility of demand also rose, all of which justify and lead to the indicated need. The issue was not further challenged.

IATA inquired whether all temporary measures (involvement of ATCOs on other duties, re-training, overtime) are exhausted to solve the capacity shortage. HungaroControl stated that the mentioned temporary measures have been introduced already and in addition to those even ATCO mobility was implemented (re-training two ATCOs from Lithuania). The issue was not further challenged.

IATA was concerned about the symmetric nature of the capacity incentive scheme. They had however no objection to the 1% penalty.

IATA also had questions about the possible impact of the end of the war on ATCO capacity. It was explained that in line with STATFOR base forecast, that was prepared with the assumption that the war is not over before the end of RP4, the performance plan is based on the assumption, that capacity has to be sufficient to this scenario. Also, HungaroControl assessed that even after a ceasefire, due to the extensive infrastructural damage, the Ukrainian airspace is unlikely to be used for years, and in the meantime capacity is likely to be needed for the increasing general traffic. The launched initiative about ATCO mobility (eg the two Lithuanian ATCO's) is also supporting flexibility of capacity management. Even more remote are the chances of reopening the Trans Siberian route as this would not only require a ceasefire but also the easing of the embargo of the use of the Russian airspace. The issue was not further challenged.

Regarding the Cost-efficiency KPA: Hungary has explained the new methodology for cost allocation between en-route and terminal, and also the adjustments done to the baseline, for which there was no objection from the stakeholders.

The proposed cost-efficiency target shows the immense need for capacity increasing measures to tackle the significant delay caused by the reroutings due to the war, and the generally increasing traffic. Taking the capacity-increasing measures (Capex, ATCO training, ATCO staff costs, and ATCO mobility) into account, the Hungarian long-term cost-efficiency trend overperforms the EU target. Furthermore, this is the case even though the Hungarian cost-efficiency is already outstandingly better than the average of the comparator group.

It was also explained, that Hungary has followed the PRB guidance – although it introduced less favourable parameters in some cases (eg. ERP), than previously used – except for one parameter, the risk-free rate, where the new PRB approach is based on historical figures, rather than actual (thus forward-looking) numbers, the latter should be used by Hungary in line with international valuation practices (and also with previous RPs).

The Hungarian presentation also explained the biggest Capex planned for RP4, which is about the renewal of the ATM system, and the possible accounting treatment, and its relation to future cost exempt calculation was also presented.

AUs raised concerns that the amount of capacity building investment costs included in the draft performance plan is overestimated. They asked about more information on the classification of capacity building investments. Users questioned the related costs of drone detection, MSPSR radars

and SDO related functions included in the cost base. Besides giving more information on the capacity related dimensions of the planned CAPEX program, and also making clear that general investments in infrastructure (such as IT) are also essential to implement new capacity increasing functions, the ANSP also confirmed, that the cost of drone passive system is exclusively ATM safety-related, the inclusion of SDO related functions is a legal obligation set under the EU framework, and the SDOs are mature enough to be deployed. MSPSR radar is a second layer of safety, consequently it is not only needed for capacity, but for the safe operation as well.

AUs representatives believe that the Cost of Capital should be calculated based fully on the recent PRB guidance, they do not support the current methodology. HungaroControl stressed that in case of the risk free rate, they consider the forward-looking method (which had been used in previous performance plans without any concerns coming from stakeholders) to be appropriate. IATA stated that in a volatile environment the past is the best estimation for the future. HungaroControl stressed that each of the parameters of the PRB method were tested by them, and consequently many parameters – where the PRB proposal was assessed to be acceptable – were used, however the risk-free rate is out of range. Moreover, Hungary emphasized that the application of actual market data is in line with capital market practises and principles as well as when HungaroControl borrow funds from commercial banks, the pricing is determined by current conditions (i.e. future trends) and will not be based on 10-year average, historic figures. HungaroControl also referred to one of the most influential professors in this field, Aswath Damodaran, who also recommends the cost of capital calculation to be based on current market rates.

IATA asked about the early retirement scheme (since it was an element used for the baseline adjustment). HungaroControl provided information about the scheme, and also stressed, that the correction was fully in line with the previous RP3 submission, where in its assessment the item was also treated by the PRB as justified.

Hungary stressed in its presentation that a one-size-fits-all approach is not appropriate and the achieved level of cost-efficiency shall be duly taken into account when assessing the plan. Traffic and complexity increased significantly due to war-related re-routings and military airspaces and capacity needs to be increased at all costs to support the performance of the total network. This should be considered as a local circumstance and costs of capacity building should qualify as a legitimate deviation from the EU-wide target.

The representative of the union suggested that the main focus should be given to the Safety and the Capacity KPA and not cost efficiency. They think that the current capacity shortage is a consequence of the continuous pressure on costs in the recent years, which is even more detrimental in case of ANSPs operating already at significantly lower unit cost level, than others.

The CEO of HungaroControl in his closing remarks stressed also that the primary interest of airlines is a safe and on-time service. HungaroControl is dedicated to address the issue of delays stemming from the disproportional increase of flights. The impact of the war (which was unexpected) should be duly considered as well, that creates an unforeseen capacity damping on the Hungarian airspace. Though current costs are relatively low in Hungary, but the standard of living is increasing, and the closing wage gap is also leading to additional costs.

1.3.2 - Specific consultation requirements of ANSPs and airspace users on the performance plan

Topic of consultation	Applicable	Results of consultation
Establishment of determined costs included in the cost base for charges	Yes	The Cost base and the DUC trend was presented to the stakeholders. The topic was discussed thoroughly. Hungary considers the draft plan as in compliance with long-term EU targets, taking capacity increasing measures, already achieved level of efficiency and local circumstances into account. The plan addresses relevant capacity issues, provides the necessary financial basis, and supports the achievement of EU targets. IATA had specific questions regarding Cost of capital calculation, and the extent capacity building costs were taken into account, which were all explained by the ANSP. As a result the performance plan is complemented in response to the concerns raised, but no adjustment of the targets were deemed to be necessary.
New and existing investments, and in particular new major investments, including their expected benefits	Yes	The level of investments was in general not questioned. IATA mainly questioned the way of classification of capacity building costs. Further information was requested on the classification of investment projects (contributing to capacity building or not). Hungary will include an extended explanation for each major investment in the plan focusing on their capacity building features.
Charging policy	Yes	No change envisaged, except for the change in ENR-TNC allocation.
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	1% of DC is suggested by Hungary. IATA did not have any objections related to the maximum value for the incentive scheme, but urged Hungary to consider the introduction of an asymmetric scheme (only penalty).

Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	Stakeholders had no objection related to the dead band.
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	Yes	A modulation of the en-route capacity performance targets was presented. Users did not have any objection on the modulation.
Establishment or modification of charging zones	No	
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	No	
Where applicable, decision to apply the simplified charging scheme	No	
Where applicable, decision to diverge from the STATFOR base forecast	No	

1.3.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	HungaroControl, HungaroMet
Dates of main meetings / correspondence	11/09/2024
Main issues discussed	RP3 traffic/ delay situation and consequences. RP4 traffic forecast (basically STATFOR base). Safety, Environment and Capacity targets. Staff planning (number of ATCOs). Capacity incentive schemes (maximum financial advantages and disadvantages, dead band and modulation in case of ENR). Cost-efficiency targets - justification for the deviation from the long-term EU-wide targets. Allocation key. Baseline value and adjustments to the baseline (traffic, impact of the modification of the allocation key). Cost of capital calculation. Investments (specifically capacity-building). Local circumstances (comparator group, impact of the Ukrainian war, capacity issues in RP3, high number of unplanned leaves in ACC ATCOs in OPS). The CEO of HungaroControl in his closing remarks stressed that the primary interest of airlines is a safe and on-time service. Costs are relatively low in Hungary, but the standard of living is increasing, leading to additional costs. HungaroControl is convinced that delay is even more important to airlines than ANS costs. The impact of the war (which was unexpected) should be considered as well. Being responsible and serving the users, HungaroControl aims to have a safe plan and a capacity plan, which is a responsible and reliable one. (Other, detailed remarks from the ANSP on items raised by users are included in 1.3.1. and below, under #2 Airspace users "Points of disagreement and reasons".)
Actions agreed upon	The ANSP will provide more information in the draft performance plan on the classification of capacity building projects.
Points of disagreement and reasons	The NSA prepared the plan considering the current traffic and operational situation in Hungary. Since the utmost goal currently is the building up of the appropriate level of capacity in order to support the European Network, the RP4 plan has to focus first and foremost – besides safety – on capacity aspects. The ANSP is committed to improve the capacity situation, and supported the NSA's approach.
Final outcome of the consultation	No change is requested from the ANSP on the plan.

Additional comments

#2 - Airspace Users	
Stakeholder group composition	IATA, LH Group, Ryanair, Qatar, Austrian Airlines
Dates of main meetings / correspondence	11/09/2024
	RP3 traffic/ delay situation and consequences. RP4 traffic forecast (basically STATFOR base). Safety, Environment and Capacity targets. Staff planning (number of ATCOs). Capacity incentive schemes (maximum financial advantages and disadvantages, dead band and

Main issues discussed	capacity, measure schemes (minimum investment strategies and incentives), cost-benefit and modulation in case of ENR). Cost-efficiency targets - justification for the deviation from the long-term EU-wide targets. Allocation key. Baseline value and adjustments to the baseline (traffic, impact of the modification of the allocation key). Cost of capital calculation. Investments (specifically capacity-building). Local circumstances (comparator group, impact of the Ukrainian war, capacity issues in RP3, high number of unplanned leaves in ACC ATCOs in OPS). Early retirement scheme.
Actions agreed upon	More details were requested on the classification of capacity building projects. It will be incorporated in the Performance Plan as part of Annex E. Comments in writing were invited to be submitted until the end of the week of the consultation (13/9/2024 CoB), but no additional questions were received.
Points of disagreement and reasons	Safety KPA: IATA is concerned about the progress of safety risk management. It was explained that due to the new methodology, certain time is needed to implement new processes, however, all targets will be met by the end of RP4 as it is targeted by the Commission. The explanation was no further challenged by the users. Capacity KPA: IATA questioned whether all temporary measures (ATCOs on other duties, re-training, overtime) are already exhausted to solve the capacity shortage. HungaroControl presented the measures introduced already, stating that the mentioned temporary measures have been introduced already. IATA stated that increase in the ATCO FTE and the increase of traffic is not proportional (60% vs 42% 2029/2019). It was explained that already in 2019 Hungary had high delays, as a consequence of lower-than-adequate ATCO numbers. Furthermore, not only the level of traffic increased, but also the complexity of the airspace, and seasonality, thus volatility of demand as well, which all justify and lead to the indicated need. The issue was not further challenged. IATA also had questions about the possible impact of the end of the war on ATCO capacity, and how flexibility can be ensured. It was explained that STATFOR base forecast was prepared with the assumption that the war is not over before the end of RP4, thus the Hungarian capacity planning has to be in line with this scenario. Moreover, HungaroControl assessed that even after a ceasefire, the Ukrainian airspace is unlikely to be used for years, and in the meantime capacity is likely to be needed for the increasing general traffic. The launched initiative about ATCO mobility (eg the two Lithuanian ATCO's) is also supporting flexibility of capacity management. The issue was not further challenged. Incentive scheme - IATA urged Hungary to consider the introduction of an asymmetric scheme (no bonus). Cost-efficiency targets - AUs stressed that the amount of capacity building investment costs included in the draft performance plan is overestimated. In a response to this, the capacity increasing nature of individual projects were highlighted, making clear that general investments in infrastructure (such as IT) are also essential to implement new capacity increasing functions. In addition to this, an expanded explanation is included in the final submission of the performance plan. AUs representatives believe that the Cost of Capital should be calculated based fully on the recent PRB

	guidance, they do not support the current methodology though. HungaroControl stressed that in case of the risk free rate they consider the forward-looking method (which had been used in previous RPs, and guidance of the PRB) to be appropriate. IATA thinks that in a volatile environment the past is the best estimation for the future. IATA indicated that the debt premium of HungaroMet is lower than the one of HungaroControl, which needs explanation. Regarding this, Hungary draws the attention to the fact, that the risk profile of the meteorological service provider is different, since it does not run the traffic risk. Moreover, Hungary emphasized that the application of actual market data is in line with capital market practises and principles as well as when HungaroControl borrow funds from commercial banks, the pricing is determined by current conditions (i.e. future trends) and will not be based on 10-year average, historic figures. HungaroControl also referred to one of the most influential professors in this field, Aswath Damodaran, who also recommends the cost of capital calculation to be based on current market rates, since these are a better reflection of prevailing economic conditions and market expectations for inflation, growth, and monetary policy, while historical averages can be influenced by past economic conditions that may not be relevant to the current environment. Users questioned the related costs of drone detection, MSPSR radars and SDO related functions included in the cost base. The ANSP confirmed, that the cost of drone passive system is exclusively ATM safety-related, the inclusion of SDO related functions is a legal obligation set under the EU framework, and the SDOs are mature enough to be deployed. MSPSR radar is a second layer of safety, consequently it is not only needed for capacity, but for the safe operation as well.
Final outcome of the consultation	Overall – after the explanations given – airspace users did not have objections regarding the prosed targets in safety, environment and capacity. They had remaining concerns regarding cost-efficiency, specifically regarding Cost of Capital and the amount of capacity building investments.

Additional comments

#3 - Professional staff representative bodies	
Stakeholder group composition	CONTROL MLISZ
Dates of main meetings / correspondence	11/09/2024
Main issues discussed	ATCO union asked about the planned rostering system changes. They also asked that staff representative bodies are included in Change management processes. In general the representative of the union suggested that the plan should focus on the Safety and Capacity KPAs. The planned ATCO training is supported by the union.
Actions agreed upon	The NSA was asked to present the draft performance plan to the staff representatives on a wider forum.
Points of disagreement and reasons	
Final outcome of the consultation	Staff representation supported the plan, and emphasized the urgent need for capacity increasing measures.

Additional comments

#4 - Airport operators	
Stakeholder group composition	
Dates of main meetings / correspondence	
Main issues discussed	

Actions agreed upon	
Points of disagreement and reasons	
Final outcome of the consultation	

Additional comments

#5 - Airport coordinator	
Stakeholder group composition	
Dates of main meetings / correspondence	
Main issues discussed	
Actions agreed upon	
Points of disagreement and reasons	
Final outcome of the consultation	

Additional comments

#6 - Other (specify)	
Stakeholder group composition	
Dates of main meetings / correspondence	
Main issues discussed	
Actions agreed upon	
Points of disagreement and reasons	
Final outcome of the consultation	

Additional comments

1.4 - List of airports subject to the performance and charging Regulation

1.4.1 - Airports as per Article 1(3) (IFR movements $\geq 80\,000$)

ICAO code	Airport name	Charging Zone	IFR air transport movements			
			2021	2022	2023	Average
LHBP	Budapest	Hungary - TCZ	54 543	97 982	107 397	86 641

1.4.2 Other airports added on a voluntary basis as per Article 1(4)

Number of airports	0		
ICAO code	Airport name	Charging Zone	Additional information

Additional comments

1.5 - Services under market conditions

Number of services under market conditions	0
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1.6 - Process followed to develop and adopt a FAB Performance Plan

Description of the process
Not applicable

1.7 - Establishment and application of a simplified charging scheme

Is the State intending to establish and apply a simplified charging scheme for any charging zone/ANSP?	No
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SECTION 2: INVESTMENTS

2.0 - Summary of investments

2.1 - Investments - HungaroControl

- 2.1.1 - Summary of investments
- 2.1.2 - Detail of new major investments
- 2.1.3 - Other new and existing investments

2.2 - Investments - HungaroMet (Meteorological Service)

- 2.2.1 - Summary of investments
- 2.2.2 - Detail of new major investments
- 2.2.3 - Other new and existing investments

Annexes of relevance to this section

ANNEX E. INVESTMENTS

NOTE: The requirements as per Annex II, 2.2.(c) are addressed in item 4.1.3

2.0 - Summary of Investments

HungaroControl

	Total value of the asset (capex or contractual leasing value) (in national currency)	Value of the assets allocated to ANS in the scope of the performance plan (in national currency)	Elements for the calculation of the determined costs of investments (net book value (NBV), depreciation and cost of leasing) (in national currency)				
			2025	2026	2027	2028	2029
New major investments for RP4 (Table A)	36 425 510 324	33 098 855 813	Average NBV 6 393 236 925 Depreciation 12 887 671 Cost of leasing 0	13 575 166 793 455 013 908 0	19 760 544 275 1 025 053 940 0	25 485 147 508 1 139 777 595 0	29 453 607 165 4 025 283 591 0
Other new investments for RP4 (below 5M€) (Table B)	58 059 702 194	35 386 293 025	Average NBV 4 218 863 646 Depreciation 328 142 058 Cost of leasing 30 112 632	10 970 324 623 1 466 059 661 128 388 334	15 648 082 567 2 639 266 470 333 041 613	17 019 448 838 3 878 804 351 332 926 323	18 606 207 138 4 631 644 464 458 072 141
Major investments from RP3 (Tables C + D)	40 698 440 189	25 621 732 582	Average NBV 14 594 422 533 Depreciation 2 681 910 056 Cost of leasing 0	11 880 703 903 3 041 297 412 0	8 839 406 501 3 041 297 393 0	6 092 283 499 2 452 948 610 0	3 848 159 700 2 035 298 988 0
Existing investments from previous reference periods (Table E)	25 798 147 485	0	Average NBV 18 952 853 216 Depreciation 5 054 989 586 Cost of leasing 2 289 235 833	14 423 020 402 3 999 660 535 2 364 227 684	10 768 275 500 3 304 829 268 2 288 932 160	7 910 848 911 2 410 023 911 2 235 100 548	5 868 996 022 1 673 681 867 2 147 526 249
Total for the ANSP in RP4	160 981 800 191	94 106 881 420	Average NBV 44 159 376 320 Depreciation 8 077 929 372 Cost of leasing 2 319 348 464	50 849 215 721 8 962 031 516 2 492 616 018	55 016 308 844 10 010 447 071 2 621 973 773	56 507 728 756 9 881 554 467 2 568 026 871	57 776 970 025 12 365 908 910 2 605 598 390

HungaroMet (Meteorological Service)

	Total value of the asset (capex or contractual leasing value) (in national currency)	Value of the assets allocated to ANS in the scope of the performance plan (in national currency)	Elements for the calculation of the determined costs of investments (net book value (NBV), depreciation and cost of leasing) (in national currency)				
			2025	2026	2027	2028	2029
New major investments for RP4 (Table A)	0	0	Average NBV 0	0	0	0	0
			Depreciation 0	0	0	0	0
			Cost of leasing 0	0	0	0	0
Other new investments for RP4 (below 5M€) (Table B)	1 000 000 000	625 000 000	Average NBV 93 940 590	177 003 490	240 517 653	288 269 631	321 206 062
			Depreciation 9 062 500	27 187 500	45 312 500	63 437 500	81 562 500
			Cost of leasing 0	0	0	0	0
Major investments from RP3 (Tables C + D)	0	0	Average NBV 0	0	0	0	0
			Depreciation 0	0	0	0	0
			Cost of leasing 0	0	0	0	0
Existing investments from previous reference periods (Table E)	2 553 119 553	0	Average NBV 673 466 957	537 674 623	428 764 683	345 437 505	300 632 617
			Depreciation 156 125 516	127 596 497	101 437 905	76 418 536	24 758 094
			Cost of leasing 0	0	0	0	0
Total for the ANSP in RP4	3 553 119 553	625 000 000	Average NBV 767 407 547	714 678 113	669 282 336	633 707 136	621 838 679
			Depreciation 165 188 016	154 783 997	146 750 405	139 856 036	106 320 594
			Cost of leasing 0	0	0	0	0

2.1 - Investments - HungaroControl

Complementary information may be provided in ANNEX E

2.1.1 - Investments from RP4

Table A - Number of new major investments (i.e. above 5 M€) for RP4

Ref. #	Name of new major investments (i.e. above 5 M€) for RP4	Total value of the asset (capex or contractual leasing value) (in national currency)	Value of the assets allocated to ANS in the scope of the performance plan (in national currency)	Elements for the calculation of the determined costs of investments (net book value (NBV), depreciation and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Planned date of entry into operation	Allocation (%)*		
											En route*	Terminal*	
				2025	2026	2027	2028	2029					
A1	MATIAS Build 14	21 065 537 666	17 739 492 500	Average NBV Depreciation Cost of leasing	5 412 696 279 460 274 0	8 328 099 892 4 000 000 0	10 513 334 567 9 293 151 0	14 748 967 353 56 966 277 0	18 039 463 571 2 544 008 786 0	7	2028.12.31	90%	10%
A2	MSPSR primary radar development	4 756 082 125	4 756 082 125	Average NBV Depreciation Cost of leasing	304 995 000 0 0	2 627 387 113 0 0	4 385 179 923 519 208 604 0	3 865 260 075 520 631 093 0	3 345 340 227 519 208 604 0	software: 7, hardware: 15	2026.03.31 and 2026.10.31	49%	51%
A3	Navigation infrastructure upgrade	3 499 569 000	3 499 569 000	Average NBV Depreciation Cost of leasing	0 0 0	360 249 750 0 0	1 183 677 750 0 0	2 110 034 250 0 0	3 036 151 053 479 393 0	20	2029.12.31	90%	10%
A4	ANS I-III VCS upgrade	2 949 075 000	2 949 075 000	Average NBV Depreciation Cost of leasing	0 0 0	318 037 500 0 0	1 214 325 000 0 0	2 370 421 017 807 966 0	2 800 813 284 294 907 500 0	10	2028.12.31	90%	10%
A5	Network equipment development	2 181 600 000	2 181 600 000	Average NBV Depreciation Cost of leasing	173 786 301 12 427 397 0	577 616 548 90 712 110 0	887 407 890 200 505 205 0	1 110 298 192 264 514 192 0	1 248 124 932 370 632 329 0	5	continuous	90%	10%
A6	Drone passive scout system	1 973 646 533	1 973 037 188	Average NBV Depreciation Cost of leasing	501 759 345 0 0	1 363 775 990 249 003 898 0	1 576 619 145 296 046 980 0	1 280 166 621 296 858 067 0	983 714 098 296 046 980 0	software: 5, hardware: 10	2026.02.28	0%	100%
Subtotal of new major investments from RP4		36 425 510 324	33 098 855 813	Average NBV Depreciation Cost of leasing	6 393 236 925 12 887 671 0	13 575 166 793 455 013 908 0	19 760 544 275 1 025 053 940 0	25 485 147 508 1 139 777 595 0	29 453 607 165 4 025 283 591 0				
* En route/Terminal allocation within the scope of the Regulation. The total % En route+terminal should be equal to 100%.													

* En route/Terminal allocation within the scope of the Regulation. The total % En route+terminal should be equal to 100%.

Table B - Other new investments (below 5M€) from RP4

	Total value of the asset (capex or contractual leasing value) (in national currency)	Value of the assets allocated to ANS in the scope of the performance plan (in national currency)	Elements for the calculation of the determined costs of investments (net book value (NBV), depreciation and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Planned date of entry into operation	Allocation (%)*	
										En route*	Terminal*
			2025	2026	2027	2028	2029				
Subtotal of other new investments from RP4	58 059 702 194	35 386 293 025	Average NBV	4 218 863 646	10 970 324 623	15 648 082 567	17 019 448 838	18 606 207 138			
			Depreciation	328 142 058	1 466 059 661	2 639 266 470	3 878 804 351	4 631 644 464	90%	10%	

Subtotal of existing investments from previous RPs	25 798 147 485	Average NBV	18 952 853 216	14 423 020 402	10 768 275 500	7 910 848 911	5 868 996 022	86%	14%
		Depreciation	5 054 989 586	3 999 660 535	3 304 829 268	2 410 023 911	1 673 681 867		
		Cost of leasing	2 289 235 833	2 364 227 684	2 288 932 160	2 235 100 548	2 147 526 249		

* En route/Terminal allocation within the scope of the Regulation. The total % En route+terminal should be equal to 100%.

2.1.4 - Detail of new major investments for RP4 from table A

NOTE: Section 1.3 (Stakeholder Consultation) should include details on the consultation with airspace users' representatives on new major investments.

Name of new major investment 1		MATIAS Build 14		Reference #		A1		Total value of the asset			21 065 537 666	
Main category of the investment				New ATM system	Overhaul of existing ATM system		Other ATM		CNS	Infrastructure	Ancillary	Other
					x							
Description of the asset				The upgraded MATIAS system fulfils the CP1 regulation with the new FDP and HMI capabilities. By this development the system will be able to exchange flight information during the pre-tactical and tactical phases by ATC systems and Network Manager using the SWIM yellow Profile. Also the required services will be implemented to support the exchange of flight information using the blue SWIM Profile. The new FDP will be designed to process the air derived flight data provided through ADS-C EPP service. This includes potential interface with the datalink system to access to the aircraft flight data. New Trajectory Prediction sub system will also be developed to integrate such additional information. Air Ground communication capability will need to be upgraded to allow an increased capacity for new foreseen exchanges. The upgraded system will have the technological basis for developing dynamic cross-border function. The upgraded MATIAS system will also have contingency, test and simulator capabilities.								
Is the investment mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?		Yes		SESAR CP1: Family 5.3.1 - Aeronautical Information Exchange <i>Consume the information provided by the local ASM support system</i>								
For investments in new ATM systems and major overhauls of ATM systems, information on the consistency of the investment with the European ATM Master Plan				SDO 4.1, 5.1, 6.1								
Level of impact of the investment		Network level		Low								
		Local level		Significant		Safety Major	Environment Negligible		Capacity Significant		Cost Efficiency Negligible	
Quantitative impact per KPA				It will improve the civil-military coordination giving greater flexibility according to the airspace users' needs, ensuring a close and								

This development will back up the airspace users to fly their preferred trajectory — satisfying their business needs — and to perform continuous descent and climb, generating environmental benefits both in terms of emissions and noise.

It will enable the dynamically adjusted airspace configuration in response to capacity and demand needs.

The required SWIM Infrastructure Components will be deployed supporting SWIM information exchanges using the SWIM TI Profiles in accordance with SWIM principles in the role of either service provider or service consumer.

Trajectory information sharing will be possible on ANSP, NM and airspace users and ground/ground dissemination of the trajectory information through flight object exchange.

CAPACITY ENHANCEMENT ASPECTS (description requested by airspace users): Next generation HMI: The system will have a new enhanced HMI that will allow for additional capacity enhancement with sophisticated information display capability while fully considering human factors.

users' representatives

increase capacity and flight safety. Through training of trainers and regular trainings, it is possible to run simulations that enable them to handle more traffic. The new simulator will also be able to test new capacity-boosting processes before implementation, allowing the new process to produce the highest-capacity solution possible.

ADS-C increases the information available to ATCOs by broadcasting on-board information, which reduces frequency occupancy (as information does not need to be requested from pilots), thereby increasing capacity. Building on this technology, new alerts can be built and better descents can be provided at optimal times to assist and optimise the ATCO's work, thus also affecting capacity. The future possibility to develop the dynamic cross-border functions also have positive impact on capacity. The improvement in capacity will also have an impact on cost efficiency, as it will increase productivity, so that with increased traffic, fewer ATCOs can deliver the required service. However, it is a long term impact, therefore we marked the quantitative impact as negligible. The same goes for all the other investments below with significant or major capacity impact.

The update is necessary also because previous versions of the system don't get support from the manufacturer.

Joint investment / partnership	No	If yes, please provide reference to joint project and/or indicate reference to cross-border initiatives
Joint investment / partnership		

Name of new major investment 2	MSPSR primary radar development																						
Main category of the investment	<table><tr><td>New ATM system</td><td>Overhaul of existing ATM system</td><td>Reference #</td><td>A2</td><td colspan="3">Total value of the asset</td></tr><tr><td></td><td></td><td></td><td>Other ATM</td><td>CNS</td><td>Infrastructure</td><td>Ancilliary</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>x</td><td></td><td>Other</td></tr></table>	New ATM system	Overhaul of existing ATM system	Reference #	A2	Total value of the asset						Other ATM	CNS	Infrastructure	Ancilliary						x		Other
	New ATM system	Overhaul of existing ATM system	Reference #	A2	Total value of the asset																		
				Other ATM	CNS	Infrastructure	Ancilliary																
					x		Other																
Description of the asset	Multi-Static Primary Surveillance Radar (MSPSR) is most modern independent surveillance technology that uses a distributed DVB-T (TV) and FM (Radio) transmitter and receiver architecture to detect aircraft, even when they are not equipped with cooperative surveillance systems such as transponders. Eurocontrol CNS roadmap shows this technology will gain a significant role from 2030 onwards. Hungarocontrol as an air navigation service provider is providing at least double secondary and single primary SUR layer in order to meet the related Eurocontrol requirements for TMAs (EUROCONTROL STANDARD DOCUMENT FOR RADAR SURVEILLANCE IN ENROUTE AIRSPACE AND MAJOR TERMINAL AREAS SUR.ET1.ST01.1000-STD-01-01). The TAR-1 radar primary subsystem's lifetime will be expired in 2026. TAR-1 terminal radar will be replaced by MSPSR for ensuring the primary layer of surveillance. Furthermore, the development of the current primary surveillance coverage of the en-route airspace provided by Kőröshegy and Püspökladány radar with two Multi-Static Primary Surveillance Radars (MSPSR) will be deployed within this investment. This development will ensure safe surveillance continuity and the most modern technology for both terminal and en-route primary surveillance at highest possible service level.																						

Is the investment mandated by a SES Regulation (i.e. PCP/CP1/interoperability)? If yes please provide description/reference	No
For investments in new ATM systems and major overhauls of ATM systems, information on the consistency of the investment with the European ATM Master Plan	
Level of impact of the investment	Network level Local level
Quantitative impact per KPA	Low Significant
Results of the consultation of airspace users' representatives	Safety Major Environment Significant Capacity Major Cost Efficiency Major Benefits: the system provides non-cooperative surveillance of non-emitting aircrafts. The system helps to decrease EM load to environment as MSPSR doesn't transmit high-energy EM waves. CAPEX costs are lower than the traditional PSR radars. OPEX costs are much lower than traditional primary radars due to the lack of moving parts and high energy signal transmission (receiver only) MSPSR provides a minimum separation of 3 and 5 NM in the TMA area in case of secondary layer loss of function (overinterrogation, MIL jamming exercise, etc.). Higher update rate compared to traditional radar Increased situational awareness No additional frequency load, it uses available pulses for tracking Without further frequency load, the capability is improved to handle more traffic. 3D capability (X-Y distance, Altitude) No rotating parts, smaller environment load (for instance oil replacement no need) <i>Future-proof technology</i> If yes, please provide reference to joint project and/or indicate reference to cross-border initiatives
Joint investment / partnership	No

Name of new major investment 3	Navigation infrastructure upgrade					3 499 569 000	
Main category of the investment	New ATM system	Overhaul of existing ATM system	Other ATM	CNS	Infrastructure	Ancillary	Other
Description of the asset	The investment is needed as the VOR/DME infrastructure (providing position signals to aircrafts) reaches its end of lifecycle in 2029. Currently en-route operation is supported by 9 VOR (Very High Frequency Omnidirectional Range Station) and DME (Distance Measuring Equipment) infrastructure, which will be replaced and rationalised. Although performance based navigation with GPS priority has increased significantly in the recent years, the reliability of GPS signals are vulnerable due to both solar wind activities and human action, hence contingency ground surveillance infrastructure remains crucial for aircrafts. Hungary as a neighbouring country to the Ukrainian conflict is highly impacted by these GPS signal interruptions, explaining the importance of VOR/DME infrastructure to ensure flight safety.						
Is the investment mandated by a SES Regulation (i.e. PCP/CP1/interoperability)? If yes please provide description/reference	No						
For investments in new ATM systems and major overhauls of ATM systems, information on the consistency of the investment with the European ATM Master Plan							
Level of impact of the investment	Network level Local level						
Quantitative impact per KPA	Low Major	Safety Significant	Environment Negligible	Capacity Significant	Cost Efficiency N/A		

Results of the consultation of airspace users' representatives		Benefits: The purpose of the investment is to maintain a high level of service in accordance with the regulations by carrying out the necessary developments. Provide adequate DME/DME and VOR/DME coverage for airspace users. With reliant and resilient VOR/DME infrastructure HungaroControl has the capability to serve higher traffic.	
Joint investment / partnership	No	If yes, please provide reference to joint project and/or indicate reference to cross-border initiatives	

Name of new major investment 4		ANS I-III VCS upgrade		Reference #		A4		Total value of the asset		2 949 075 000	
Main category of the investment				New ATM system		Overhaul of existing ATM system		Other ATM		CNS	
										x	
Description of the asset		Currently there is an old version of analog Voice Communication System (VCS) in operation in Budapest ATS centre as a backup solution without VOIP (Voice over Internet Protocol) capability, which is close to end of its lifecycle. Therefore the aim of the asset is to implement a new main VCS system replacing the currently operating one and to use the current main VCS system as a backup system in the future, replacing the non-VOIP capable old VCS backup system.									
Is the investment mandated by a SES Regulation (i.e. PCP/CP1/interoperability)?		No									
If yes please provide description/reference											
For investments in new ATM systems and major overhauls of ATM systems, information on the consistency of the investment with the European ATM Master Plan											
Level of impact of the investment		Low									
Network level		Significant									
Local level											
Quantitative impact per KPA		Safety Significant		Environment Negligible		Capacity Significant		Cost Efficiency Negligible			
Results of the consultation of airspace users' representatives		Benefits: This implementation ensures continuous capability to maintain the unchanged level of safety of ATC service provision during possible problem or failure of the main VCS system. With better quality of VoIP capable voice communication, the capability is improved to handle more traffic.									
Joint investment / partnership	No	If yes, please provide reference to joint project and/or indicate reference to cross-border initiatives									

Name of new major investment 5		Network equipment development		Reference #		A5		Total value of the asset		2 181 600 000	
Main category of the investment				New ATM system		Overhaul of existing ATM system		Other ATM		CNS	
										x	
										Infrastructure	
										Ancillary	
										Other	
		HungaroControl has more than a thousand devices within its network infrastructure, which continuous and reliable operation is crucial									

Description of the asset		for the ATM (among others e.g. radar and communication connectivity). For safe operation, it is extremely important to keep the devices at a high standard. The development will ensure that they remain supported by the supplier and we can use new features to maintain the security and technological requirements. In this procurement, we will purchase equipment for data centre devices, network devices under the air traffic control video recording system, and camera switches for remote control towers. The ordered devices will support higher operational security and network operation, and by this improve the overall available capacity of HungaroControl.				
Is the investment mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? If yes please provide description/reference	No					
For investments in new ATM systems and major overhauls of ATM systems, information on the consistency of the investment with the European ATM Master Plan						
Level of impact of the investment	Network level	N/A				
	Local level	Major				
Quantitative impact per KPA		Safety Major	Environment N/A	Capacity Significant	Cost Efficiency N/A	
Results of the consultation of airspace users' representatives		Benefits: The procurement provides continuous and secure operation in the next years, as part of necessary IT infrastructure, with a special attention of cybersecurity.				
Joint investment / partnership	No	If yes, please provide reference to joint project and/or indicate reference to cross-border initiatives				

Name of new major investment 6		Drone passive scout system		Reference #	A6		Total value of the asset			1 973 646 533	
Main category of the investment		New ATM system	Overhaul of existing ATM system	Other ATM	CNS	Infrastructure	Ancillary	Other			
									x		
Description of the asset		With the spread of unmanned aerial vehicles and because of the vicinity of Budapest Liszt Ferenc International Airport to Budapest, departing and arriving aircrafts (specifically in the final approach path) experience an increasing amount of risk due to intentional or unintentional drone usage. This risk makes the surveillance and display of the drones inevitable, so that the safe and secure management of airspaces can be done by HungaroControl. In accordance with the strategic goals of HungaroControl Pte. Ltd. Co. this investment makes the recognition of drone traffic possible within the airspace with the further development of air traffic service procedures and technological background. As a result of the radar procurement, after the realization of all the development phases, the company will be able to display the cooperative and non-cooperative drones within the airspace covered by the technology. Furthermore, a video recording system will support drone movement analytics.									
Is the investment mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?		No									
If yes please provide description/reference											
For investments in new ATM systems and major overhauls of ATM systems, information on the consistency of the investment with the European ATM Master Plan											
Level of impact of the investment		Network level	Low								
		Local level	Major								

Quantitative impact per KPA		Safety	Environment	Capacity	Cost Efficiency
Results of the consultation of airspace users' representatives		Major	N/A	N/A	N/A
		Benefits: The intended investment contributes largely to the safety and security of the landing aircraft, as it has been seen on several occasions within international aviation how the operation of major international aerodromes have been severely limited or even suspended by unauthorized drone operations. Thus, the contribution of the investment is that it ensures business continuity, preventing loss of capacity. Further, being aware of drone movements in the critical areas also enhances the level of safety of air traffic management. This item was already planned for RP3, but the procurement was delayed. Since CAPEX is falling under cost exempt regulation, no double-charging arises due to the updated schedule.			
Joint investment / partnership	No	If yes, please provide reference to joint project and/or indicate reference to cross-border initiatives			

2.1.5 - Details on other new investments for RP4 from table B

Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period	
The below 10 investments summarises 26,9% of our CAPEX for the next 5 years, together with 6 major investments we have provided detailed description on 75,23% of our investment plan.	

Ref. #	Name of other new investments for RP4	Master Plan reference (if any)	Total value of the asset (capex or contractual leasing value) (in national currency)	Value of the assets allocated to ANS in the scope of the performance plan (in national currency)	Elements for the calculation of the determined costs of investments (net book value (NBV), depreciation and cost of leasing) (in national currency)					Description	
						2025	2026	2027	2028		2029
B1	IT infrastructure (incl. Client equipment, Storage, Microsoft licence, Server upgrade, Firewall infrastructure HW)		6 616 390 883	6 616 390 883	Average NBV	448 928 251	1 325 271 667	1 940 422 083	2 045 578 937	2 974 395 444	IT infrastructure ensures smooth operation both in ATM related and support areas. Due to end of life cycle we replace storage platform and other IT equipment. Network equipment is needed for Polaris MAG ATM Backup system. Some recurring service fee e.g. Microsoft licence are also included.
					Depreciation	14 260 381	288 659 670	560 129 500	838 156 791	929 394 197	
					Cost of leasing						
B2	SMR Radar		1 376 235 000	1 376 235 000	Average NBV	80 955 000	768 846 270	1 293 208 439	1 127 834 009	962 459 578	Lifecycle replacement to provide primary ground surveillance at LHBP. Primary ground surveillance makes it possible on a safe way to operate LHBP under certain meteorological conditions without serious traffic limitation. This is also the fundament of the runway incursion and conflict monitoring safety nets.
					Depreciation	0	452 461	165 148 200	165 600 661	165 148 200	
					Cost of leasing						
					Average NBV	304 281 017	863 469 180	1 053 821 147	905 466 013	757 110 878	Lifecycle replacement to provide secondary
					Depreciation	30 254 795	60 573 379	148 152 186	148 558 083	148 152 186	

B3	WAM Budapest TMA	1 218 725 414	1 209 204 500	Cost of leasing								surveillance in the IMA or LHBP. Terminal radar will be replaced by WAM. The new system will be more robust and redundant than the current radar. The power consumption of the WAM will be lower. The system reduces the usage of the 1030-1090MHz band and provides less RF radiation.
B4	Polaris MAG Build 2	865 062 000	865 062 000	Average NBV	0	287 968 500	689 181 208	740 465 986	616 716 412			The aim of the asset is to continue the development of the ATM backup system to ensure continuous capability to maintain the unchanged level of safety of ATC service provision during the evacuation of the airspace in case of major failure of the main ATM system in the SWIM based environment as well. Further very important aims of the new ATM Backup system to display the drone operations for the air traffic controllers and to provide actual operational ATC information for the ATC during the normal regular operation. The ATM Backup system will also have contingency, test and upgraded simulator capabilities.
				Depreciation	0	0	62 636 583	123 918 862	123 580 286			
				Cost of leasing								
B5	ATM-R infrastructure server development	922 887 000	922 887 000	Average NBV	0	0	0	0	461 190 654			The servers of the ATM-R platform need to be replaced to keep high standards for operation of the existing ATM service in Hungary. The content of procurement is 34 pcs HPE servers and related components.
				Depreciation	0	0	0	0	505 692			
				Cost of leasing								
B6	A-SMGCS integrated upgrade	786 420 000	786 420 000	Average NBV	104 085 000	400 920 000	650 185 356	627 843 255	470 343 797			Implementation of an upgraded operational and contingency TWR system, as a further development of HungaroControl's existing A-SMGCS system. The upgraded A-SMGCS software fulfills the CP1 regulation with the new FDP and HMI capabilities. By this development the system will be able to exchange flight information during the pre-tactical and tactical phases by ATC systems and Network Manager using the SWIM yellow profile. This enhanced flight information exchange can reduce frequency occupancy, thereby increasing capacity. Also the system will adapt to the new meteorological interface requirements according to CP1.
				Depreciation	0	0	79 719 288	157 714 915	157 284 000			
				Cost of leasing								
				Average NBV	400 704 542	707 347 085	550 063 085	392 563 627	235 064 170			The upgraded AIS/AIM system fulfills the CP1 regulation with the new capabilities.
				Depreciation	430 915	157 284 000	157 284 000	157 714 915	157 284 000			

2.2 - Investments - HungaroMet (Meteorological Service)

Complementary information may be provided in ANNEX E

2.2.1 - Investments from RP4

Table A - Number of new major investments (i.e. above 5 M€) for RP4	0
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Table B - Other new investments (below 5M€) from RP4

	Total value of the asset (capex or contractual leasing value) (in national currency)	Value of the assets allocated to ANS in the scope of the performance plan (in national currency)	Elements for the calculation of the determined costs of investments (net book value (NBV), depreciation and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Planned date of entry into operation	Allocation (%)*		
										En route*	Terminal*	
			2025	2026	2027	2028	2029					
Subtotal of other new investments from RP4	1 000 000 000	625 000 000	Average NBV	93 940 590	177 003 490	240 517 653	288 269 631	321 206 062			90%	10%
			Depreciation	9 062 500	27 187 500	45 312 500	63 437 500	81 562 500				
			Cost of leasing	0	0	0	0	0	0			

* En route/Terminal allocation within the scope of the Regulation. The total % En route+terminal should be equal to 100%.

2.2.2 - Investments from RP3

Table C - Number of major investments (i.e. above 5 M€) from RP3 performance plan	0
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Table D - Number of major investments (i.e. above 5 M€) added during RP3	0
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2.2.3 - Existing investments from previous reference periods

Table E - Existing investments from previous RPs

	Total value of the asset (capex or contractual leasing value) (in national currency)	Value of the assets allocated to ANS in the scope of the performance plan value) (in national currency)	Elements for the calculation of the determined costs of investments (net book value (NBV), depreciation and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Planned date of entry into operation	Allocation (%) ³⁰		
			2025	2026	2027	2028	2029			En route ³¹	Terminal ³²	
Subtotal of existing investments from previous RPs	2 553 119 553	0	Average NBV	673 466 957	537 674 623	428 764 683	345 437 505	300 632 617			90%	10%
			Depreciation	156 125 516	127 596 497	101 437 905	76 418 536	24 758 094				
			Cost of leasing	0	0	0	0	0	0	0		

* En route/Terminal allocation within the scope of the Regulation. The total % En route+terminal should be equal to 100%.

2.2.4 - Detail of new major investments for RP4 from table A

Not applicable

2.2.5 - Details on other new investments for RP4 from table B

Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period										
From 1 January 2022, HungaroMet took over all aeronautical meteorological activities of HungaroControl and all related material resources, rights and obligations necessary for the operation of Budapest Liszt Ferenc International Airport and the provision of air traffic services in Hungarian airspace. The meteorological sensors and IT tools required for the high-level operation of the meteorological measurements and aviation weather forecasting will be procured. To enhance flight safety during the period, aviation meteorological measuring equipments, software, and IT devices will be purchased. We develop telecommunications lines and network devices, expand the meteorological equipment park, and procure measuring devices for high availability.										
Ref. #	Name of other new investments for RP4	Master Plan reference (if any)	Total value of the asset (capex or contractual leasing value) (in national currency)	Value of the assets allocated to ANS in the scope of the performance plan (in national currency)	Elements for the calculation of the determined costs of investments (net book value (NBV), depreciation and cost of leasing) (in national currency)					Description
					2025	2026	2027	2028	2029	
B1					Average NBV					
					Depreciation					
					Cost of leasing					
B2					Average NBV					
					Depreciation					
					Cost of leasing					
B3					Average NBV					
					Depreciation					
					Cost of leasing					
B4					Average NBV					
					Depreciation					
					Cost of leasing					
B5					Average NBV					
					Depreciation					
					Cost of leasing					
B6					Average NBV					
					Depreciation					
					Cost of leasing					
B7					Average NBV					
					Depreciation					
					Cost of leasing					
B8					Average NBV					
					Depreciation					
					Cost of leasing					
B9					Average NBV					
					Depreciation					
					Cost of leasing					
B10					Average NBV					
					Depreciation					
					Cost of leasing					

SECTION 3: PERFORMANCE TARGETS AND MEASURES FOR THEIR ACHIEVEMENT

3.1 - Safety targets

3.1.1 - Safety KPI #1: Level of Effectiveness of Safety Management achieved by ANSPs

3.2 - Environment targets

3.2.1 - Environment KPI #1: Horizontal en route flight efficiency (KEA)

3.3 - Capacity targets

3.3.1 - Capacity KPI #1: En route ATFM delay per flight

3.3.2 - Capacity KPI #2: Terminal and airport ANS ATFM arrival delay per flight

3.3.3 - ATCO Planning

3.4 - Cost-efficiency targets

3.4.1 - Cost-efficiency KPI #1: Determined unit cost (DUC) for en route ANS

En Route Charging Zone #x

3.4.2 - Cost-efficiency KPI #2: Determined unit cost (DUC) for terminal ANS

Terminal Charging Zone #x

3.4.3 - Cost allocation ATSP/CNSP

ATSP/CNSP #x

3.4.4 - Cost allocation METSP

METSP #x

3.4.5 - Cost allocation NSA

3.4.6 - Determined costs assumptions

ANSP #x

3.4.7 - Pension assumptions

3.4.8 - Interest rate assumptions for loans financing the provision of air navigation services

3.4.9 - Additional determined costs related to measures necessary to achieve the en route capacity targets

3.4.10 - Restructuring costs

3.5 - Additional KPIs / Targets

3.6 - Description of KPAs interdependencies and trade-offs including the assumptions used to assess those trade-offs

3.6.1 - Interdependencies and trade-offs between safety and other KPAs

3.6.2 - Interdependencies and trade-offs between capacity and environment

3.6.3 - Interdependencies and trade-offs between cost-efficiency and capacity

3.6.4 - Other interdependencies and trade-offs

Annexes of relevance to this section

ANNEX A. REPORTING TABLES & ADDITIONAL INFORMATION (EN-ROUTE)

ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL)

ANNEX F. BASELINE VALUES (COST-EFFICIENCY)

ANNEX H. RESTRUCTURING MEASURES AND COSTS

ANNEX M. COST ALLOCATION

ANNEX J. OPTIONAL KPIs AND TARGETS

ANNEX O. JUSTIFICATIONS FOR THE LOCAL SAFETY TARGETS

ANNEX P. JUSTIFICATIONS FOR THE LOCAL ENVIRONMENT TARGETS

ANNEX Q. JUSTIFICATIONS FOR THE LOCAL CAPACITY TARGETS

ANNEX R. JUSTIFICATIONS FOR THE LOCAL COST-EFFICIENCY TARGETS

ANNEX U. VERIFICATION BY THE NSA OF THE COMPLIANCE OF THE COST BASE

SECTION 3.1: SAFETY KPA

3.1 - Safety targets

3.1.1 - Safety KPI #1: Level of Effectiveness of Safety Management achieved by ANSPs

- a) Safety national performance targets
- b) Justifications for the local safety performance targets
- c) Main measures put in place to achieve the safety performance targets

Annexes of relevance to this section

ANNEX O. JUSTIFICATIONS FOR THE LOCAL SAFETY TARGETS

3 - PERFORMANCE TARGETS AT LOCAL LEVEL

3.1 - Safety targets

3.1.1 - Safety KPI #1: Level of Effectiveness of Safety Management achieved by ANSPs

a) Safety performance targets

Number of Air Traffic Service Providers		1				
Hungarocontrol		2025	2026	2027	2028	2029
		Target	Target	Target	Target	Target
	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	D	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C
Additional comments						

b) Justifications for the local safety performance targets

Union wide safety performance targets are the drivers of our safety performance improvement. HungaroControl safety targets were set for RP4 according to the maturity of our SMS, and the gap analysis we have conducted in 2024 for RP4 EoSM. On the basis of the gap analysis we expect to complete safety policy and objectives, safety assurance safety promotion and safety culture targets with a relatively small investment. Our specific focus will be placed on the improvement of risk management processes, which may take approximately 3 years to implement according to our action plan. We have set our business plan to cover the required resources and the enhancement of our capabilities.

* Refer to Annex O, if necessary.

c) Main measures put in place to achieve the local safety performance targets

To achieve performance targets we have started an EoSM gap analysis in 2024 and we are developing an action plan. Actions will include the necessary steps, deadline and owners for all areas where there are gaps identified. As to the analysis the following elements are covered: safety culture (e.g.improvement of management and staff discussion fora); safety policy (e.g.review of safety responsibilities and accountabilities, review of organisational changes); safety assurance (e.g. risk based audit planning,) and safety promotion (e.g. review of safety management competency checks);risk management (e.g. review of internal and external interfaces related procedures, review of hazard identification process, implement methods and tools for tracking the hazards, review of human factor pool expert competency). Improvement of the cyber security activities in accordance with Part-IS and NIS2 is also on the agenda. HungaroControl has developed the V. Safety Program 2025-2029 which covers among others HC SMS development actions in Technology, HF related issues, Compliance and performance monitoring, training, risk management, cybesecurity, and Safety Culture in order to achieve RP4 targets.

* Refer to Annex O, if necessary.

SECTION 3.2: ENVIRONMENT KPA

3.2 - Environment targets

3.2.1 - Environment KPI #1: Horizontal en route flight efficiency (KEA)

- a) Environment national performance targets
- b) Justifications for the local environment performance targets
- c) Main measures put in place to achieve the environment performance targets

Annexes of relevance to this section

ANNEX P. JUSTIFICATIONS FOR THE LOCAL ENVIRONMENT TARGETS

3.2 - Environment targets

3.2.1 - Environment KPI #1: Horizontal en route flight efficiency (KEA)

a) National environment performance targets

	2025	2026	2027	2028	2029
National reference values	2,10%	2,09%	2,08%	2,07%	2,06%

	2025	2026	2027	2028	2029
National targets	Target	Target	Target	Target	Target
	2,10%	2,09%	2,08%	2,07%	2,06%

b) Justifications for the local environment performance targets

Despite the fact that hundreds of thousands of flights use the nearly 1,000 km long South East European Free Airspace (SEE FRA), a large number of overflights are forced to avoid Ukrainian airspace, which has been closed since February 2022. In addition, the sanctions against Russia force a significant number of flights bound to the Far-East, China, or India to use alternative routes, which negatively affects the horizontal flight efficiency at Hungarian, but also at European network level.

Hungary has already done its best to meet the environmental target for horizontal en route flight efficiency (KEA), but if the Russian war of aggression against Ukraine continues during RP4, there is a risk that it will not be able to meet the target set.

** Refer to Annex P, if necessary.*

c) Main measures put in place to achieve the local environment performance targets

On 5 February 2015, HungaroControl successfully launched 24/7 free route operations in Hungarian airspace (FL095 - FL660). During the years of RP3, the South-East European Free route system, which includes five countries (Bulgaria, Romania, Hungary, Slovakia, Czechia), was completed and connected to BALTIC FRA (Poland, Lithuania), creating a cross-border Free route airspace from the Black Sea to the Baltic Sea. In the next step, we will create a cross border free route between Hungary and Austria, and then we will start working with partners to merge the two major FRA systems in the region, SECSI FRA and SEE FRA. It is expected to be completed by the end of RP4.

** Refer to Annex P, if necessary.*

SECTION 3.3: CAPACITY KPA

3.3 - Capacity targets

3.3.1 - Capacity KPI #1: En route ATFM delay per flight

- a) National capacity performance targets
- b) Justifications for the local en route capacity performance targets
- c) Main measures put in place to achieve the local en route capacity performance targets

3.3.2 - Capacity KPI #2: Terminal and airport ANS ATFM arrival delay per flight

- a) National capacity performance targets
- b) Justifications for the local terminal capacity performance targets, including contribution to the improvement of the European ATM network performance
- c) Main measures put in place to achieve the local terminal capacity performance targets

3.3.3 - ATCO planning

- a) ATCOs in the scope of the performance plan
- b) ATCO planning at ACC level
- c) ATCO training

Annexes of relevance to this section

ANNEX Q. JUSTIFICATIONS FOR THE LOCAL CAPACITY TARGETS

3.3 - Capacity targets

3.3.1 - Capacity KPI #1: En route ATFM delay per flight

a) National capacity performance targets

	2025	2026	2027	2028	2029
National reference values	0,29	0,21	0,18	0,14	0,14

	2025	2026	2027	2028	2029
National targets	Target 0,85	Target 0,55	Target 0,20	Target 0,20	Target 0,14

b) Justifications for the local en route capacity performance targets

As we have already stated before, to ensure adequate capacity, the simultaneous presence of 3 elements is necessary:

- 1.) modern ATM system,
- 2.) airspace structure and sectorisation based on traffic needs,
- 3.) existence of an adequate number of ATCO staff,

If any of these three elements are not provided in an area control center, there will be a lack of capacity.

Since HungaroControl has one of the most state-of-the-art ATM systems in Europe, which will be further developed and enhanced with capacity increasing features during RP4, and also the airspace structure/sectorisation in Budapest CTA has been adapted to meet the traffic demand, the only reason why Hungary can only meet the capacity targets by the end of RP4 is the lack of ACC ATCO personnel. The planned ATM system developments during RP4 will not provide sufficient capacity increase without increasing the number of ATCOs. Both of these are needed to achieve the reference value by the end of the period.

As ATCO training takes at least 2 years, ATCO mobility is currently still at low level, while the magnitude of sudden additional traffic due to the war was immense, HungaroControl is only slowly able to catch up with the need for ever increasing number of ATCO's. That is the reason, why we ask for deviation from the national reference values. The current reference values calculated by the model of NM do not take into account the time needed for building up the necessary capacity for the Hungarian airspace, and spare capacity is not present for long time due to the over than planned traffic levels in the last 2-3 years. The Hungarian ANSP is in continuous cooperation with the NM, but despite all the measures, low level of delays is currently out of reach. Consequently, the current local reference values are highly unrealistic even if Hungary impose all the planned capacity improving measures.

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the local en route capacity performance targets

To manage the significant increase in overflight traffic in Hungarian airspace due to the Russian war of aggression against Ukraine, more ACC ATCOs are needed than planned for the end of RP3, but these ATCO trainings take time. A very intensive recruitment/training plan was set up for RP4 significantly increasing the available number of ACC ATCOs.

Considering the planned retirement of ACC licensed air traffic controllers, the new qualified ACC ATCOs of this plan is expected to be in front of radar screens till the middle of RP4.

The increased number of ATCOs in the ACC will give us the possibility to operate much more ACC sectors, than today (maximum 9 and occasionally 10). For further details see Annex Q.

In parallel, the planned ATM system developments will support the increase of the hourly throughput capacity of the existing sectors, mainly in the upper and high airspaces.

** Refer to Annex Q, if necessary.*

3.3.2 - Capacity KPI #2: Terminal and airport ANS ATFM arrival delay per flight

a) National capacity performance targets

	2025	2026	2027	2028	2029
	Target	Target	Target	Target	Target
National targets	0,1	0,1	0,1	0,1	0,1
Additional comments					
Airport level					
LHBP-Budapest	0,10	0,10	0,10	0,10	0,10
Airport contribution to national targets	100%				

b) Justifications for the local terminal capacity performance targets, including contribution to the improvement of the European ATM network performance

The ownership of Budapest Airport has changed recently, and the Hungarian government became the main owner. The announced plans show intensive development in passenger numbers and also in the offered destinations from LHBP. A plan for a new terminal also has been communicated, but all these improvements require the development of the taxiway infrastructure at the airport. HungaroControl has implemented the A-CDM with Budapest Airport which highly contributes to the airport operations efficiency and to the European ATM network performance. In addition, airport operations are planned to be integrated with Network strategic planning and day to day operations by the implementation of Departure Planning Information message (DPI).

* Refer to Annex Q, if necessary.

c) Main measures put in place to achieve the local terminal capacity performance targets

Optimization of Budapest Terminal Airspace has been completed during RP3.

Within the scope of this optimization HungaroControl has reorganized the entire TMA airspace and its procedures to meet Airspace User's needs, enhance compliance with environmental aspects, and increase terminal capacity. The new airspace concept, with the enhanced civil-military cooperation, and the redesigned SIDs and STARs will continue to have positive effects on traffic management in the years of RP4.

Continuous training of TWR and APP ATCOs is planned mainly to replace the retiring ATCOs.

* Refer to Annex Q, if necessary.

3.3.3 - ATCO planning and training

HungaroControl

a) ATCOs in the scope of the performance plan

ATCOs in the scope of the performance plan		Actual	Forecast	Planned				
		2023	2024	2025	2026	2027	2028	2029
Number of ATCO in OPS (year-end FTEs) employed by the ANSP (for services within the scope of the performance plan)	ACC	113,9	115,9	130,9	143,9	153,9	154,9	165,9
	APP	35,8	35,5	35,5	35,5	35,5	35,5	35,5
	TWR	41,5	41,5	43,5	44,5	46,5	47,5	45,5
Number of ATCOs in OPS (year-end FTEs) allocated to the en route cost base(s)		146,2	147,9	162,9	175,9	185,9	186,9	197,9
Number of ATCO on other duties (year-end FTEs) employed by the ANSP*		1,3	1,2	1,2	1,2	1,2	1,2	1,2

* The actual headcount of ATCOs on other duties is 13 in 2023 and 12 from 2024 to 2029

b) ATCO planning at ACC level

Budapest (LHCC ACC)		Actual	Forecast	Planned				
		2023	2024	2025	2026	2027	2028	2029
Number of additional ATCOs in OPS planned to start working in the OPS room (FTEs)		7	11	18	20	17	14	17
Number of ATCOs in OPS planned to stop working in the OPS room (FTEs)		8	9	3	7	7	13	6
Number of ATCOs in OPS planned to be operational at year-end (FTEs)		113,9	115,9	130,9	143,9	153,9	154,9	165,9

Additional comments

We plan to maximise the use of our training capacity. By the end of the period, we will be able to bring ATCO staffing up to a level that will allow us to serve the planned traffic with the reference value delays. Compared to the previous years Hungarocontrol plans to increase the number of new ATCO trainees in order to reduce the ATCO shortage. The number of trainees admitted is increased by around 20% for RP4 compared to the previous average number of new trainees. Furthermore, we have launched a project with the aim of improving the selection and training process. We have developed a new training course to train KFOR ATCOs, which would allow current controllers (who now have a qualification for both the KFOR and the Hungarian sector) to focus entirely on the Hungarian airspace by increasing its capacity.

c) ATCO Training

ATCO trainees of the ANSP		Actual	Forecast	Planned				
		2023	2024	2025	2026	2027	2028	2029
Number of trainees planned to enter the training program(s) during the year.		32	32	30	32	24	32	30
Number of trainees expected to complete the training program(s) during the year based on statistical estimates.		25	11	22	20	21	22	17
Number ATCO trainees at year end. *		42	56	56	58	52	54	60

* here we deducted the number of failed students as well (who leave the training program)

Description of the training process, including details on the average failure rate and the process used to allocate newly qualified ATCOs between ACC, APP and TWR positions.

Training process of HungaroControl:

Collecting the training needs taking into account the requirements of the 2015/340 EU, 2027/373 EU, 17/2008 GKM (Hungarian) regulations and the needs of ATCOs FISOs and ATOs.

Preparation of training plans and curricula, specifying the learning objectives and the assessing and evaluation methods.

Design of training programs based on training plans and curricula.

Definition of training methods, developing training materials and simulator exercises based on the training program and curricula.

Inviting instructors and preparing them to delivering training.

Implementation of the training program.

Administration and record keeping.

Evaluation/follow-up of the training program.

Incorporating the lessons learned from the follow-up into the next training program.

HungaroControl deliver different training types for ATCOs (Air Traffic Controller) FISOs (Flight Information Service Officer) and other OPS personnel, of which Initial training for ATCOs is procured to Entry Point Central Ltd, and the rest of the training (Unit and Continuation) is organised and completed by HungarControl Zrt.:

Initial training including following phases:

- Basic training (approx. 16 weeks)
- Rating training (approx. 18 weeks)

Unit training including following phases :

- Transitional training phase (approx. 5 weeks)
- Pre-on-the-job training phase (approx. 5 months)
- On-the-job training phase (approx. 8 months)

Continuation training including

- Refresher training (approx. 32 hours per two calendar years);
- Conversion training, when relevant.

The duration of the training depends on the number of trainees, the rating of the professional license and the training phase.

The planned failure rate is 1/3.

Newly qualified ATCOs are not allocated, rather they are specifically trained for ACC, APP or TWR.

SECTION 3.4: COST-EFFICIENCY KPA

3.4 - Cost-efficiency targets

3.4.1 - Cost-efficiency KPI #1: Determined unit cost (DUC) for en route ANS

En Route Charging Zone #x

- a) RP4 cost-efficiency performance targets
- b) Information on the baseline values for the determined costs and the determined unit costs
- c) Detailed justifications for the adjustments to the baseline values
- d) Justification of the consistency of the local cost-efficiency performance targets with the Union-wide targets
- e) Where a deviation from the Union-wide performance targets is observed, please indicate if the NSA considers those deviations to be necessary and proportionate
- f) Main measures put in place to achieve the targets for determined unit cost (DUC) for en route ANS
- g) Verification by the NSA

3.4.2 - Cost-efficiency KPI #2: Determined unit cost (DUC) for terminal ANS

Terminal Charging Zone #x

- a) RP4 cost-efficiency performance targets
- b) Information on the baseline values for the determined costs and the determined unit costs
- c) Detailed justifications for the adjustments to the baseline values
- d) Justifications for the local terminal cost-efficiency performance targets, including contribution to the improvement of the
- e) Main measures put in place to achieve the targets for determined unit cost (DUC) for terminal ANS
- f) Verification by the NSA

3.4.3 - Cost Allocation ATSP/CNSP

ATSP/CNSP #x

- a) Summary of services provided
- b) Allocation of costs by segment
- c) Allocation of costs related to the provision of approach services
- d) Description of other services and activities outside the scope of the performance plan and their financing
- e) Changes in cost allocation methodology
- f) Verification by the NSA

3.4.4 - Cost Allocation METSP

METSP #x

- a) Summary of services provided
- b) Allocation of costs by segment
- c) Breakdown of determined meteorological costs between direct and core costs and allocation between en route and terminal services
- d) Meteorological direct costs and allocation across charging zone(s)
- e) Meteorological core costs and allocation across charging zone(s)
- f) Changes in cost allocation methodology
- g) Verification by the NSA

3.4.5 - Cost allocation NSA

- a) Supervision costs
- b) Search and rescue costs (if reported as part of the NSA costs)
- c) Changes in cost allocation methodology
- d) Verification by the NSA

3.4.6 - Determined costs assumptions

ANSP #x

3.4.6.1 - Operating costs

3.4.6.2 - Capital costs

3.4.6.3 - Costs for VFR exempted flights

3.4.6.4 - NSA verification

3.4.7 - Pension assumptions

3.4.7.1 Total pension costs

3.4.7.2 Assumptions for the "State" pension scheme

3.4.7.3 Assumptions for the occupational "Defined contributions" pension scheme

3.4.7.4 Assumptions for the occupational "Defined benefits" pension scheme

3.4.8 - Interest rate assumptions for loans financing the provision of air navigation services

3.4.9 - Additional determined costs related to measures necessary to achieve the en route capacity targets

- a) Overall description of the measures necessary to achieve the en-route capacity targets for RP4, which induce additional costs

- b) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP4
- c) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP4 by nature by ANSP
- d) Demonstration that the deviation from the Union-wide targets is exclusively due to the additional determined costs related to measures necessary to achieve the performance targets in capacity

3.4.10 - Restructuring costs

3.4.10.1 Restructuring costs from previous reference periods to be recovered in RP4

3.4.10.2 Restructuring costs planned for RP4

Annexes of relevance to this section

- ANNEX A. REPORTING TABLES & ADDITIONAL INFORMATION (EN-ROUTE)
- ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL)
- ANNEX F. BASELINE VALUES (COST-EFFICIENCY)
- ANNEX H. RESTRUCTURING MEASURES AND COSTS
- ANNEX M. COST ALLOCATION
- ANNEX R. JUSTIFICATIONS FOR THE LOCAL COST-EFFICIENCY TARGETS
- ANNEX U. VERIFICATION BY THE NSA OF THE COMPLIANCE OF THE COST BASE

3.4 - Cost-efficiency targets

3.4.1 - Cost-efficiency KPI #1: Determined unit cost (DUC) for en route ANS

En Route Charging Zone #1 - Hungary

a) RP4 cost-efficiency performance targets

En route charging zone Name of the CZ	Baseline 2019		Baseline 2024		RP4 cost-efficiency targets (determined 2025-2029)						2029D vs. 2019B (CAGR)	2029D vs. 2024B (CAGR)
	2019 B	2024 B	2019 B	2024 B	2025 D	2026 D	2027 D	2028 D	2029 D	2029 D		
Total en route costs in nominal terms (in national currency)	32 930 518 309	51 168 799 479	32 930 518 309	51 168 799 479	56 546 795 118	60 690 298 528	64 488 364 334	67 539 801 560	73 821 035 244	73 821 035 244	9,4%	7,6%
Total en route costs in real terms (in national currency at 2022 prices)	39 314 732 136	44 358 109 907	39 314 732 136	44 358 109 907	48 031 380 812	50 440 972 480	52 287 115 801	53 440 384 198	57 581 298 864	57 581 298 864	4,3%	5,4%
Total en route costs in real terms (in EUR2022) ¹	100 702 430	113 620 753	100 702 430	113 620 753	123 029 625	129 201 656	133 930 446	136 884 477	147 491 192	147 491 192	4,3%	5,4%
YoY variation						5,0%	3,7%	2,2%	7,7%			
Total en route Service Units (TSU)	3 123 971	3 900 354	3 123 971	3 900 354	3 993 117	4 209 147	4 329 289	4 452 614	4 551 350	4 551 350	4,3%	3,1%
YoY variation						5,4%	2,9%	2,8%	2,2%			
Real en route unit costs (in national currency at 2022 prices)	12 585	11 373	12 585	11 373	12 029	11 984	12 078	12 002	12 651	12 651	0,1%	2,2%
Real en route unit costs (in EUR2022) ¹	32,24	29,13	32,24	29,13	30,81	30,70	30,94	30,74	32,41	32,41	0,1%	2,2%
YoY variation						-0,4%	0,8%	-0,6%	5,4%			

National currency

	HUF
¹ Average exchange rate 2022 (1 EUR=)	390,41
Forecast inflation index 2024 - Base 100 in 2022	121,36

b) Information on the baseline values for the determined costs and the determined unit costs

En route charging zone Name of the CZ	Baseline 2019		Baseline 2024		Actuals 2019		Forecast 2024		2019 Baseline adjustments		2024 Baseline adjustments	
	2019 B	2024 B	2019 B	2024 B	2019 A	2019 A	2024 F	2024 F				
Total en route costs in nominal terms (in national currency)	32 930 518 309	51 168 799 479	32 930 518 309	51 168 799 479	31 519 742 782	31 519 742 782	49 356 064 502	49 356 064 502	1 410 775 527	1 812 734 977	1 812 734 977	
Total en route costs in real terms (in national currency at 2022 prices)	39 314 732 136	44 358 109 907	39 314 732 136	44 358 109 907	37 584 514 668	37 584 514 668	42 747 205 618	42 747 205 618	1 730 217 468	1 610 904 289	1 610 904 289	
Total en route costs in real terms (in EUR2022) ¹	100 702 430	113 620 753	100 702 430	113 620 753	96 270 577	96 270 577	109 494 514	109 494 514	4 431 853	4 126 239	4 126 239	
Total en route Service Units (TSU)	3 123 971	3 900 354	3 123 971	3 900 354	3 161 594	3 161 594	3 900 354	3 900 354	-37 623	0	0	

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2019 baseline value for the determined costs

Number of adjustments		6
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Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
Early retirement scheme correction	HungaroControl	ANSP	Staff	573 181 050	718 881 669	1 841 374
Description and justification of the adjustment						
As in RP3 planning (as it was accepted by PRB and COM) we apply an adjustment to the 2019 cost base due to the early retirement scheme of ATCO's. The cost of state early retirement scheme was part of the RP2 cost base, but since the scheme was terminated by law after planning, the corresponding costs were classified as cost exempt in RP2. However - after consultation on possible reintroduction possibilities with the European Commission - instead of the previous state scheme an occupational scheme was decided to be reintroduced in RP3, since the underlying need for such scheme still existed, meaning that the early retirement scheme was only missing temporary from the cost base in 2019. This temporary effect was adjusted in order to allow for a fair comparison with later figures.						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
New cost allocation key	HungaroControl	ANSP	Other operating	664 950 494	833 978 584	2 136 188
Description and justification of the adjustment						

The allocation key (overhead costs to ENR and Terminal) is to be changed as of 01.01.2025. (from 86%-14% to 90%-10%, see 3.4.3 CA ATSP_CNSP#1 point e.). Staff and other operating cost are reported in this line.

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
New cost allocation key	HungaroControl	ANSP	Depreciation	132 430 683	132 430 683,12	339 214

Description and justification of the adjustment
The allocation key (overhead costs to ENR and Terminal) is to be changed as of 01.01.2025. (from 86%-14% to 90%-10%, see 3.4.3 CA ATSP_CNSP#1 point e.). Depreciation and Cost of Capital are reported in this line.

Adjustment #4	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
New cost allocation key	NSA	ISA/EUROCONTRC	Other operating	21 657 820	21 657 820	55 475

Description and justification of the adjustment
The allocation key (overhead costs to ENR and Terminal) is to be changed as of 01.01.2025. (from 86%-14% to 90%-10%, see 3.4.3 CA ATSP_CNSP#1 point e.)

Adjustment #5	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
Cost of capital - asset base calculation	HungaroControl	ANSP	Cost of capital	13 795	13 795	35

Description and justification of the adjustment
See in c.3) in line 162. The related amount is 175 million HUF, WACC was 7,9%.

Adjustment #6	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
Space weather	HungaroControl	ANSP	Other operating	18 541 685	23 254 917	59 566

Description and justification of the adjustment
Space weather costs were required to be included in the Determined cost base by the Commission during the Completeness check. In order not to distort the DUC trend, the same costs (in real terms) are included in the Baseline (both in 2019 and in 2024 respectively).

Total adjustments to the 2019 baseline value for the determined costs	Costs nominal NC	Costs real NC	Costs EUR2022
	1 410 775 527	1 730 217 468	4 431 853

c.2) Adjustments to the 2019 service units

Impact of transition to actual route flown	Actual service units (M2)	Coefficient M2/M3	Source	Actual service units (M3)	Service units adjustment
	3 161 594	-1,19%	CRCO correction factor May 2019 (on 12 months)	3 123 971	-37 623

Other adjustment to the 2019 service units	No	Service units
<Title of adjustment>		
Description and justification of the adjustment		
<Justification>		

Total adjustments to the 2019 service units		-37 623
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c.3) Adjustments to the 2024 baseline value for the determined costs

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
Cost of capital - asset base calculation	HungaroControl	ANSP	Cost of capital	372 658 000	372 658 000	954 542

Description and justification of the adjustment

There is a difference between the Cost of capital calculation compared to the determined cost of the previous reference periods (RP2-RP3), due to a change (correction) in the recognition of the pension (early retirement scheme) related obligations towards the ATCO's in the employed capital. Previously, the related liabilities were included, thus deducted as part of the net current assets, but since the scheme is funded, i.e. HungaroControl has financial assets to cover these liabilities – predominantly – in form of government issued securities, the corresponding amount was deducted as part of the interest-bearing accounts as well leading to a double-deduction, and consequently an inappropriate employed capital calculation. After exploring the inappropriate methodology, it was eliminated in order to get the right figure. If we use the liability-based approach instead of the asset-based approach of cost of capital calculation, the same conclusion will be drawn, namely Asset base is the sum of Equity, long-term liabilities decreased by the interest-bearing accounts. The Early-retirement-scheme (IEM) related obligation is a long-term provision, thus a long-term liability, therefore it should be part of the asset base. The average amount of IEM was 5212 million HUF for 2024 in the performance plan, WACC was 7.15%. According to our understanding, the 2024 European baseline value is the aggregated initial (real) cost estimate submitted in 2023 (at least with regard to Hungary). Since the initial cost estimate was based on this miscalculation, it did not contain the correction related to these pension related obligations. In order to avoid distortion, the respective amount has been added to the baseline.

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
New cost allocation key	HungaroControl	ANSP	Other operating	1 112 096 300	916 392 370	2 347 286
Description and justification of the adjustment						
The allocation key (overhead costs to ENR and Terminal) is to be changed as of 01.01.2025. (from 86%-14% to 90%-10%, see 3.4.3 CA ATSP_CNСП#1 point e.)						

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
New cost allocation key	HungaroControl	ANSP	Depreciation	247 700 098	247 700 098	634 470
Description and justification of the adjustment						
The allocation key (overhead costs to ENR and Terminal) is to be changed as of 01.01.2025. (from 86%-14% to 90%-10%, see 3.4.3 CA ATSP_CNСП#1 point e.)						

Adjustment #4	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
New cost allocation key	NSA	ISA/EUROCONTRC	Other operating	45 465 000	45 465 000	116 456
Description and justification of the adjustment						
The allocation key (overhead costs to ENR and Terminal) is to be changed as of 01.01.2025. (from 86%-14% to 90%-10%, see 3.4.3 CA ATSP_CNСП#1 point e.)						

Adjustment #5	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
Space weather	HungaroControl	ANSP	Other operating	34 815 579	28 688 820	73 485
Description and justification of the adjustment						
Space weather costs were required to be included in the Determined cost base by the Commission during the Completeness check. In order not to distort the DUC trend, the same costs (in real terms) are included in the Baseline (both in 2019 and in 2024 respectively).						

Total adjustments to the 2024 baseline value for the determined costs						
				Costs nominal NC	Costs real NC	Costs EUR2022
				1 812 734 977	1 610 904 288	4 126 239

c.4) Adjustments to the 2024 service units

Other adjustment to the 2024 service units	No
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d) Justification of the consistency of the local en route cost-efficiency performance targets with the Union-wide targets

Taking into account costs related to capacity improvement, the local cost-efficiency target is consistent with the long-term union wide target (please see details under 3.4.9. point). Moreover, consistency of the Hungarian cost-efficiency target is further supported by other factors, first of all by the immense advantage the Hungarian DUC shows compared to it's Comparator Group's average (the 2023 real DUC @2022 is 36% than the average, i.e. even without the adjustments for capacity enhancement the Hungarian DUC is likely to be still significantly below the average at the end of

RP4).

Relevant factors for the assessment of consistency:

1. Capacity related costs (data on sheet 3.4.9. point d)

As further detailed in sheet 3.4.9. two types of capacity increasing costs were identified: one related to the increase in the number of ATCOs, and one related to the improvement of technology contributing to the productivity of the provided service. Adjusting for these capacity related costs, the Hungarian DUC is in compliance with the Union-wide trend for RP4.

2. Comparator Group's average

As prescribed by the Performance regulation Annex IV the comparison of the baseline value for the determined unit cost with the corresponding average value of the comparator group should be taken into account. By this it is possible to refine the union-wide general cost-efficiency target from a one-size-fits-all approach, to a more tailor-made approach, where already achieved relative local efficiency advantages can be duly taken into account. Based on the baseline value (2023 actual figures) the Hungarian DUC is 36% lower than the comparator group's average (which is otherwise among the lowest comparator group's averages in the EU). This significant difference shows, that Hungary is considerably ahead in terms of cost efficiency compared to its comparators, and this difference should be duly acknowledged in the national target setting process. Otherwise Hungary would suffer from its relatively better performance from the past, if we have to deliver the same order of magnitude in cost efficiency improvement.

* Refer to Annex R, if necessary.

e) Where a deviation from the Union-wide performance targets is observed, please indicate if the NSA considers those deviations to be necessary and proportionate under:

Additional costs of measures necessary to achieve the capacity targets for RP4	Yes	No	Detailed in part 3.4.9 of the performance plan
Restructuring costs planned for RP4			

f) Main measures put in place to achieve the targets for determined unit cost (DUC) for en route ANS

Although the level of costs is very low in relative and absolute terms as well, the cost of of the ANSP is continuously controlled. According to currently applied HR policy, staff cost evolution is primarily driven by labour market based benchmarking. Necessary CAPEX programs are included supporting the implementation of a modern and more efficient technology. The value of WACC is moderate, and in line with current market conditions. These all support the management of the overall cost base, thus the achievement of the DUC regarding the costs.

* Refer to Annex R, if necessary.

g) Verification by the NSA

Confirmation by the NSA that the data and information included in this section have been verified in accordance with Art. 22(7) of IR 2019/317

Yes

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3.4.2 - Cost-efficiency KPI #2: Determined unit cost (DUC) for terminal ANS

Terminal Charging Zone #1 - Hungary - TCZ

a) RP4 cost-efficiency performance targets

Terminal charging zone Name of the CZ	Baseline 2024	RP4 cost-efficiency targets (determined 2025-2029)					2029D vs. 2024B (CAGR)
	2024 B	2025 D	2026 D	2027 D	2028 D	2029 D	
Total terminal costs in nominal terms (in national currency)	10 418 687 150	11 183 292 670	12 529 832 801	13 942 501 242	14 442 084 204	15 238 846 397	7,9%
Total terminal costs in real terms (in national currency at 2022 prices)	9 013 814 122	9 692 937 239	10 722 770 770	11 783 638 219	11 965 102 831	12 334 805 309	6,5%
Total terminal costs in real terms (in EUR2022) ¹	23 088 368	24 827 902	27 465 762	30 183 113	30 647 924	31 594 896	6,5%
YoY variation			10,6%	9,9%	1,5%	3,1%	
Total terminal Service Units (TNSU)	79 376	87 579	91 436	95 323	98 883	102 090	5,2%
YoY variation			4,4%	4,3%	3,7%	3,2%	
Real terminal unit costs (in national currency at 2022 prices)	113 559	110 677	117 271	123 618	121 003	120 823	1,2%
Real terminal unit costs (in EUR2022) ¹	291	283	300	317	310	309	1,2%
YoY variation				5,4%	-2,1%	-0,1%	

National currency	HUF
1 Average exchange rate 2022 (1 EUR=)	390,41
Forecast inflation index 2024 - Base 100 in 2022	121,36

b) Information on the baseline values for the determined costs and the determined unit costs

Terminal charging zone Name of the CZ	Baseline 2024	Forecast 2024	2024 Baseline adjustments
	2024 B	2024 F	
Total terminal costs in nominal terms (in national currency)	10 418 687 150	11 710 549 548	-1 291 862 398
Total terminal costs in real terms (in national currency at 2022 prices)	9 013 814 122	10 109 972 589	-1 096 158 468
Total terminal costs in real terms (in EUR2022) ¹	23 088 368	25 896 115	-2 807 747
Total terminal Service Units (TNSU)	79 376	79 376	0

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2024 baseline value for the determined costs

c.1) Adjustments to the 2024 baseline value for the determined costs					Number of adjustments	4
Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
Cost of capital - asset base calculation	HungaroControl	ANSP	Cost of capital	113 399 000	113 399 000	290 465
Description and justification of the adjustment						
The methodology of the asset base calculation has been changed, see under ENR. The related amount is 1586 million HUF, WACC was 7,15%.						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
New cost allocation key	HungaroControl	ANSP	Other operating	-1 112 096 300	-916 392 370	-2 347 286
Description and justification of the adjustment						
The allocation key (overhead costs to ENR and Terminal) is to be changed as of 01.01.2025. (from 86%-14% to 90%-10%, see 3.4.3 CA ATSP_CNISP#1 point e.)						

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
New cost allocation key	HungaroControl	ANSP	Depreciation	-247 700 098	-247 700 098	-634 470
Description and justification of the adjustment						
The allocation key (overhead costs to ENR and Terminal) is to be changed as of 01.01.2025. (from 86%-14% to 90%-10%, see 3.4.3 CA ATSP_CNISP#1 point e.)						

Adjustment #4	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2022
New cost allocation key	NSA	NSA/EUROCONTROL	Other operating	-45 465 000	-45 465 000	-116 456
Description and justification of the adjustment						
The allocation key (overhead costs to ENR and Terminal) is to be changed as of 01.01.2025. (from 86%-14% to 90%-10%, see 3.4.3 CA ATSP_CNISP#1 point e.)						

Total adjustments to the 2024 baseline value for the determined costs

Costs nominal NC	-1 291 862 398	Costs real NC	-1 096 158 468	Costs EUR2022	-2 807 747
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c.2) Adjustments to the 2024 service units

Adjustment to the 2024 service units	No
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d) Justifications for the local terminal cost-efficiency performance targets, including contribution to the improvement of the European ATM network performance

The overall intention to increase capacity has a significant impact on the value of terminal DUC as well. Although there is no EU-wide target for terminal, the short term target is met (after adjusting with capacity increasing costs) in the terminal business.

* Refer to Annex R, if necessary.

e) Main measures put in place to achieve the targets for determined unit cost (DUC) for terminal ANS

See under ENR.

** Refer to Annex R, if necessary.*

f) Verification by the NSA

Confirmation by the NSA that the data and information included in this section have been verified in accordance with Art. 22(7) of IR 2019/3172

Yes

3.4.3 - Cost allocation ATSP/CNSP - HungaroControl

Complementary information may be provided in ANNEX M

a) Summary of services provided

Air navigation services provided		Description of the services provided by the concerned entity
ATS/ATM	Yes	flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service)
Communication	Yes	the exchange of data or verbal information between aircraft and air traffic control and the ground based communication infrastructure of the ATM network.
Navigation	Yes	the process of planning, recording, and controlling the movement of an aircraft from one place to another by providing accurate, reliable and seamless position determination capability.
Surveillance	Yes	facilities and services used to determine the respective positions of aircraft to allow safe separation
Search and rescue	No	
Aeronautical Information	Yes	ICAO Annex 15 specifies that each Contracting State must provide an aeronautical information service (AIS) or delegate this to an appropriate non-governmental agency.
Meteorological services	No	
Services to OAT	No	
Cross-border ATS	Yes	Kosovo upper airspace outside of the scope of the Performance Scheme

Description of the methodology used for allocating costs of facilities or services between different air navigation services based on the list of facilities and services listed in ICAO Regional Air Navigation Plan European Region (Doc 7754) as last amended and a description of the methodology used for allocating those costs between different charging zones.

Costs outside the scope of the performance scheme are recorded under separate business unit codes. Direct costs of eligible ENR and Terminal costs are booked to either ENR or Terminal business.

Identification of costs associated with a certain activity is implemented through special accounting codes which denote a particular activity (such as ATM, Com, Nav, SUR, Administration) on the one hand, and the costs' relatedness to either core ATM business line (that is serving only en route, only terminal, common costs).

The compliance of the applied allocation methodology was confirmed by EY during the compliance review of Hungary.

b) Allocation of costs by segment

ANSP costs by segments (in nominal terms in '000 national currency)	2025	2026	2027	2028	2029
Determined costs for en route charging zone(s) in the scope of the performance plan	50 842 602	54 704 797	58 361 492	61 322 144	67 522 176
Determined costs for terminal charging zone(s) in the scope of the performance plan	10 946 211	12 285 866	13 688 746	14 181 823	14 974 599
Forecasted costs for terminal services at airports outside the scope of the performance plan					

Description of the criteria used to allocate costs between terminal and en route services in accordance with Article 22(5), including at airports outside the scope of the performance plan

Direct costs are booked to either ENR or Terminal business. Common and overhead costs are allocated with a general allocation key between ENR and Terminal business. These costs contain the approach costs presented below as well.

ATM related direct costs are allocated in the following way between en route and terminal services:

- ACC 100% en route,
- WR 100% terminal,

• PP related direct costs are allocated on the basis of composite flight hours.

CNS support costs are allocated based on composite flight hours (90.27% en route – 9.73% terminal) with the exception of the two long range en route radars (Kőrishegy, Püspökladány), which are entirely dedicated to en route services.

SAR related costs are considered 100% en route.

AIS direct costs are allocated 100% to en route ANS services in line with the provisions of ECTL Principles.

Cost related to general overheads, training, research and development are attributed to the individual ANS businesses on the basis of composite flight hours.

c) Allocation of costs related to the provision of approach services

Allocation of costs related to approach services (in nominal terms in '000 national currency)	2025	2026	2027	2028	2029
Total determined costs for approach services	2 769 820	2 961 054	3 156 327	3 376 095	3 581 157
Determined costs for approach services allocated to the en route charging zone(s)	2 505 537	2 678 743	2 855 587	3 054 550	3 240 255
Determined costs for approach services allocated to the terminal charging zone(s) within the scope of the performance plan	264 283	282 311	300 739	321 545	340 902

Description of the methodology used for establishing approach costs and allocating them between en route and terminal services, including the distance from the relevant airport(s) used for allocating approach costs and description of the operational requirements on the basis of which that distance has been defined

Costs of approach services are allocated using the general allocation key to ENR and Terminal respectively.

d) Description of other services and activities outside the scope of the performance plan and their financing

Based on the description of the services provided under item a) above, describe the nature of the activities outside the scope of the performance plan, the related costs and the arrangements in place to finance them as well as the methodology used by the NSA to ensure that these amounts are excluded from the cost bases charged to airspace user

Terminal ANS at airports (outside the scope of the performance plan)	No
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Services to OAT	No
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Other ANS	Yes
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If yes, description of the nature of the services provided and the geographical scope

Sales of AIS, radar data, FIS, drone information service provision etc. Geographical scope: Hungary.

If yes, description of the arrangements for the financing of the services provided

These activities are normally financed from the state budget and/or users of the given service. The costs associated are excluded from the cost base, or if such activity arises after submission of PP "other revenues" mechanism is used to settle eventually double-financed costs.

Non ANS	Yes
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If yes, description of the nature of activities (products and/or services) performed and the relevant markets/customers

IT services, rental of building. Negligible extent.

e) Changes in cost allocation methodology

Are there changes in the cost allocation criteria with respect to the previous reference period?

If yes, please provide the description and justification of the changes and impact(s) on the determined costs and/or baseline.

Yes

The allocation key (overhead costs to ENR and Terminal) will be changed as of 01.01.2025. (from 86%-14% to 90%-10%). The previous (RP1, RP2, RP3) allocation key was based on the average flown distances in the Hungarian airspace.

The reasons behind the need for a change in the allocation methodology:

- although the currently applied methodology is also in compliance with the list of possible allocation methodologies published in the past by Eurocontrol, the allocation based on distance flown is a static one, thus it doesn't reflect the changing relative weight of the two businesses in the operation of the ANSP,
- the new methodology on the contrary is a dynamic one, uses an output-based indicator and it clearly reflects the relative importance and weight of the two businesses, while it builds on a methodology and widely used metrics established by Eurocontrol, namely the composite flight hour. For setting the allocation key, we took the average of the past 5 years, in order not to give too much emphasis on individual years. This results in the ENR ratio being 90,27%, while the Terminal 9,73%.

The consequence of this change is that a higher portion of common ATS and overhead costs is allocated to ENR, and consequently a lower portion to Terminal. Eventually it results in a minor increase of the ENR unit rate, while a relatively big decrease in terminal costs.

		ENR 2025	ENR 2026	ENR 2027	ENR 2028	ENR 2029
Nominal DC new allocation	mHUF	56 546 795	60 690 298	64 488 364	67 539 802	73 821 035
Nominal DC old allocation	mHUF	54 974 723	58 999 075	62 679 298	65 670 062	71 726 981
Real DC new allocation	mHUF	48 031 361	50 440 972	52 287 116	53 440 384	57 581 299
Real DC old allocation	mHUF	46 713 331	49 053 547	50 837 096	51 981 675	55 961 416
Unit cost new allocation	HUF	12 029	11 984	12 078	12 002	12 651
Unit cost old allocation	HUF	11 698	11 654	11 743	11 674	12 296
Unit cost new allocation	EUR	30,81	30,70	30,94	30,74	32,41
Unit cost old allocation	EUR	29,96	29,85	30,08	29,90	31,49

f) Verification by the NSA

Confirmation by the NSA that the data and information included in this section have been verified in accordance with Art. 22(7) of IR 2019/317

Yes

3.4.4 - Cost allocation METSP - HungaroMet (Meteorological Service)

Complementary information may be provided in ANNEX M

a) Summary of services provided

Description of the services provided by the meteorological service provider, the geographical scope and the different users for which the services are provided
Met are assigned to en route and terminal services using the general allocation method. For a single and efficient service provision, from 2022 on, the complete meteorological activity is outsourced from HungaroControl to HungaroMet and the related cost are assigned to en route and terminal services.
In order to serve civil flights, as a meteorological service provider according to Article 9 of Regulation No 550/2004/EC of the European Parliament and of the Council, HungaroMet performs the functions of Meteorological Watch Office (MWO), the Airport Meteorological Office (AMO) and the Airport Management System (AMS) in Hungarian airspace. HungaroMet carries out the entire aviation meteorology activity in Hungary.

b) Allocation of costs by segment

Meteorological ANS costs (direct + core) by segments (in nominal terms in '000 national currency)	2025	2026	2027	2028	2029
Determined costs for en route charging zone(s) in the scope of the performance plan	1 557 585	1 606 421	1 697 806	1 739 401	1 757 169
Determined costs for terminal charging zone(s) in the scope of the performance plan	131 851	135 580	142 116	145 274	145 810
Forecasted costs for terminal services at airports outside the scope of the performance plan					

c) Breakdown of determined meteorological costs between direct and core costs and allocation between en route and terminal services

Description of the meteorological costs and of the methodology for allocating these costs between direct costs and the costs of supporting meteorological facilities and services that also serve meteorological requirements in general ('MET core costs')
Direct costs are 100% booked to the aviation meteorology business. The core MET costs are divided between aviation meteorology and other business branches using a general allocation key. The meteorological costs are given by the sum of two. The amount of direct costs, as well as core costs are allocated with a general allocation key between ENR and Terminal business.

d) Meteorological direct costs and allocation across charging zone(s)

Total determined direct meteorological costs allocated to the charging zones within the scope of the performance plan (in nominal terms in '000 national currency)	2025	2026	2027	2028	2029
En route charging zone 1 Hungary	545 676	567 705	604 291	628 167	607 572
Terminal charging zone 1 Hungary - TCZ	41 750	43 412	45 831	47 786	44 963
Total forecasted costs for the concerned entity	587 426	611 118	650 122	675 953	652 536

Description of the items included in the meteorological direct costs and methodology used to allocate these costs in the scope of the performance plan, as well as across charging zone(s).
Direct costs include the gross remuneration of staff performing aviation meteorology services, overtime pay, employer social security contributions, and pension costs and the cost of all other benefits. Direct costs include the purchase of goods and services necessary to provide air navigation services, their amortization costs, and capital costs. Direct costs are allocated with a general allocation key between ENR and Terminal business.

e) Meteorological core costs and allocation across charging zone(s)

Total determined core meteorological costs allocated to the charging zones within the scope of the performance plan (in nominal terms in '000 national currency)	2025	2026	2027	2028	2029
En route charging zone 1 Hungary	1 011 907	1 038 713	1 093 513	1 111 232	1 149 595
Terminal charging zone 1 Hungary - TCZ	90 103	92 170	96 287	97 490	100 848
Total forecasted costs for the concerned entity	1 102 011	1 130 883	1 189 800	1 208 722	1 250 444

Description of the items included in the meteorological core costs and methodology used to allocate these costs to civil aviation, including the proportion of meteorological core costs included in the scope of the plan as compared to total meteorological costs incurred by the entity, as well as across charging zones.
Core MET costs include general analysis and forecasting, surface and upper-air observation networks, meteorological communication systems, data processing centers and the research, training and administration that support them, their salary costs and other operating costs. Other operating expenses include outsourced services, materials, energy and utilities, building leases, fixtures and equipment, and expenses related to maintenance, insurance and travel, amortization expenses, capital expenses and extraordinary expenses. Core costs are allocated with a general allocation key between ENR and Terminal business.

f) Changes in cost allocation methodology

Are there changes in the cost allocation criteria with respect to the previous reference period?	Yes
If yes, please provide the description and justification of the changes and impact(s) on the determined costs and/or baseline.	
The allocation of core meteorological costs within HungaroMet is the same as in the previous reference period. However, the allocation between ENR	

and Terminal business was modified. It is in line with Hungarocontrol's new allocation key to ensure consistency of the cost base.

g) Verification by the NSA

Confirmation by the NSA that the data and information included in this section have been verified in accordance with Art. 22(7) of IR 2019/317

Yes

3.4.5 - Cost allocation - NSA

Complementary information may be provided in ANNEX M

a) Supervision costs

Description of the supervision activities performed by the NSA(s), the underlying assumptions used to estimate the related determined costs and the main factors explaining the variations of these costs over the reference period

Staff costs: NSA staff costs contain wages and salaries, employers' contribution to social security, training, staff and health insurance, as per a) nr. 4 article 22 Reg.2019/317.

The planned amount of costs for the reference period 2025-2029 is based on an annual inflation rate of 3%.

Pension costs: Paid according to Hungarian state tax law.

Other operating costs: Purchase of technical and other goods and services which are used for providing professional activities in NSA. The goal is to upgrade the authority's technical and computing equipment to an acceptable, up to date level. Other operating costs are furthermore rental of building, travel expenses, continuous training of staff, as per b) nr. 4 article 22 Reg.2019/317.

Depreciation: Includes regular depreciation for equipment and other assets used by NSA.

Description of the methodology used to allocate NSAs supervision costs between en route and terminal as well as across different charging zones

Since supervision is considered a common cost, the same general allocation key is used as in the case of HunagroControl (90,27% to En-route and 9,73% to Terminal).

b) Search and rescue costs (if reported as part of the NSA costs)

Description and underlying assumptions for search and rescue costs and main factors explaining the variations over the reference period

Includes professional staff training, maintaining proficiency, motor vehicle fuel and lubricants, real and practice alarms. In the reference period 2025-2029, the NSA SAR plans to provide the new type H225M helicopters for search and rescue missions. The cost of maintaining these modern technology helicopters is higher than the cost planned in the third reference period (2020 - 2024). Practices were calculated taking into account assumed inflation.

Depreciation: The annual maintenance and depreciation costs for the H225M helicopters are based on the 5-year logistics package of the helicopter procurement contract and the supplementary maintenance contract. On the basis of H225M contract logistics support there is a flat rate payment. The flat rate includes the parts/equipment needed for breakdowns, as well as maintenance, consumables and equipment to be replaced for periodic maintenance. As a new type, the purchase of other ground support equipment/tools, on-board rescue technical equipment is not indicated.

Total search and rescue costs for the entity providing search and rescue services (in nominal terms in '000 national currency)	2025	2026	2027	2028	2029
Determined costs for en route charging zone(s) in the scope of the performance plan	1 031 563	1 198 975	1 222 663	1 247 282	1 273 474
Determined costs for terminal charging zone(s) in the scope of the performance plan	0	0	0	0	0
Forecasted search and rescue costs outside the scope of the performance plan					

Description of the methodology used to allocate search and rescue costs to civil aviation and in the scope of the performance plan, including the proportion of search and rescue costs included in the scope of the plan as compared to total search and rescue costs incurred by the entity

10% of the total costs of Search and rescue are allocated to military, while 90% to civil services. As a second step, 50% of civil services is allocated to civil aviation.

Description of the methodology used to allocate search and rescue costs to civil aviation between en route and terminal as well as across different charging zones

SAR related costs are considered 100% en route.

c) Changes in cost allocation methodology

Are there changes in the cost allocation criteria with respect to the previous reference period?

If yes, please provide the description and justification of the changes and impact(s) on the determined costs and/or baseline.

Yes

Since supervision is considered a common cost, as a consequence of the modification of the general allocation key at HunagroControl, supervision costs are also allocated in the new ratio: 90,27% to En-route and 9,73% to Terminal.

d) Verification by the NSA

Confirmation by the NSA that the data and information included in this section comply with the requirements of Article 15(2) Regulation (EC) No 550/2004 and with IR 2019/317.
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Yes

3.4.6 - Determined costs assumptions - HungaroControl

3.4.6.1 - Operating costs

a) Staff costs

Number of entries	4
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#	Staff costs building blocks (in nominal terms in '000 national currency)	Description of the composition of each item	Charging zones	Actual		Forecast		Determined				
				2023	2024	2025	2026	2027	2028	2029		
1	ATCO wage (and related)	ATCO wage (and related)	En-route charging zones	9 169 767	10 641 737	11 851 267	13 400 596	14 977 518	16 394 451	17 973 508		
			Terminal charging zones	2 769 322	3 707 487	3 816 802	3 958 199	4 414 736	4 666 930	5 105 283		
2	non-ATCO wage (and related)	non-ATCO wage (and related)	En-route charging zones	9 687 601	11 819 396	12 373 422	13 172 938	13 988 044	14 770 018	15 684 236		
			Terminal charging zones	923 757	1 207 715	1 263 010	1 345 132	1 431 702	1 513 001	1 606 756		
3	KFOR staff cost	KFOR staff cost	En-route charging zones	406 592	662 048	809 767	923 461	1 042 137	1 133 590	1 225 999		
			Terminal charging zones									
4	Other staff cost	Other staff cost	En-route charging zones	774 954	1 063 331	1 140 993	1 123 230	1 143 750	1 165 724	1 208 573		
			Terminal charging zones	4 527	147 277	152 514	154 254	155 213	158 357	163 771		
Total staff costs				20 038 914	24 186 511	26 175 449	28 620 225	31 151 450	33 463 784	36 092 315		
				3 697 606	5 062 478	5 232 325	5 457 585	6 001 651	6 338 287	6 875 810		

Accounting provisions included in total staff costs	Mainly long-term employment (pension, early retirement) related expenses. Beyond those provisions it includes business-as-usual (BAU) accrued expenses (eg annual bonus).	En-route charging zones	1 616 213	1 034 319	1 309 609	1 298 260	1 279 685	1 409 626	1 978 718
		Terminal charging zones	146 455	439 576	220 697	215 297	190 478	472 244	427 846

Assumptions underlying the determined pension costs and expected evolution over Reference Period 4 (for Main ANSP please refer to tab 3.4.7)	n/a as we have only defined contribution pension	En-route charging zones							
		Terminal charging zones							

Description of the main factors explaining the planned variations of staff costs over the reference period

2023 actual and 2024 forecast (baseline) data is adjusted with the new allocation key in order to allow a fair comparison of figures.
A steady increase in the number of air traffic controllers is expected to fill the current air traffic controller capacity gap, to compensate for the expected further increase in traffic and the loss of controllers due to retirements and ATCO drain from other ANSPs. For the general/non-ATCO staff we are planning with flat numbers.
We do not plan any substantial changes in the current remuneration policy; we consider important to maintain our competitiveness in the labour market and keep the real value of the compensation package of our staff, so we planned wage evolution along these aspects.

b) Other operating costs

Number of entries	14
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#	Other operating costs building blocks (in nominal terms in '000 national currency)	Description of the composition of each item	Charging zones	Actual		Forecast		Determined				
				2023	2024	2025	2026	2027	2028	2029		
1	Initialiac	Cost of gas, electricity, heating, water	En-route charging zones	1 843 857	907 765	840 861	844 547	994 661	1 016 476	1 067 788		

1	Utilities		Terminal charging zones	192 837	91 025	94 614	99 803	100 314	102 342	107 442
2	Software	Cost of software maintenance	En-route charging zones	1 273 661	1 980 176	2 222 036	2 756 679	3 098 985	3 431 913	3 913 327
3	Travel	OPEX cost of travel (excl daily allowance)	Terminal charging zones	257 275	331 255	498 343	920 448	794 323	832 041	885 819
			En-route charging zones	182 837	336 756	383 177	387 941	398 223	395 779	378 988
			Terminal charging zones	71 353	67 477	79 628	92 466	79 688	80 528	79 854
4	Asset management fee	Usage fee of assets owned by the state	En-route charging zones	940 348	906 836	1 734 665	1 862 384	2 012 100	1 961 971	1 990 078
			Terminal charging zones	6 463	53 377	75 243	85 420	100 950	97 052	99 915
5	EPC	Cost of basic ATCO training	En-route charging zones	816 505	985 053	995 536	1 012 671	1 026 072	1 081 870	1 104 497
			Terminal charging zones	103 178	296 486	267 861	227 324	164 381	89 099	250 771
6	Supervision fee	Amount paid to the National Supervisory Authority	En-route charging zones	1 103 661	947 835	976 270	1 005 558	1 035 725	1 066 797	1 098 801
			Terminal charging zones	118 961	102 165	105 230	108 387	111 638	114 988	118 437
7	Air liability insurance	Air liability insurance	En-route charging zones	674 633	856 912	882 199	900 588	927 606	955 434	984 097
			Terminal charging zones	72 717	92 365	95 090	97 072	99 985	102 984	106 074
8	Search and rescue	Search and rescue	En-route charging zones	591 612	796 669	1 031 563	1 198 975	1 222 663	1 247 282	1 273 474
			Terminal charging zones							
9	Taxes	Taxes	En-route charging zones	1 248 008	1 115 878	1 466 959	1 650 764	1 670 310	1 669 796	1 802 914
			Terminal charging zones	134 520	120 278	158 120	177 932	180 039	179 983	194 332
10	Armed security guards	Cost of armed security at HungaroControl Headquarters	En-route charging zones	439 508	483 309	588 331	605 490	666 039	732 642	805 907
11	ATCO mobility	Capacity bought from other ANSPs	Terminal charging zones	47 374	52 095	63 415	65 264	71 791	78 970	86 867
			En-route charging zones	0	0	500 000	500 000	500 000	500 000	500 000
			Terminal charging zones							
12	Other HC	All other	En-route charging zones	3 543 481	5 711 560	4 510 307	4 605 843	4 945 392	5 182 733	5 247 000
			Terminal charging zones	576 280	1 736 348	623 524	632 512	946 281	1 108 750	1 116 512
13	Eurocontrol cost	Eurocontrol cost	En-route charging zones	2 024 731	1 919 574	2 138 775	2 174 547	2 170 679	2 164 178	2 169 415
			Terminal charging zones							
14	Space weather	Space weather	En-route charging zones			43 393	44 395	45 376	46 354	47 306
			Terminal charging zones							
			En-route charging zones							
			Terminal charging zones							
			En-route charging zones	14 682 842	16 948 322	18 314 072	19 550 382	20 713 831	21 453 224	22 383 592
			Terminal charging zones	1 580 957	2 942 870	2 061 069	2 506 629	2 649 390	2 786 736	3 046 022
Accounting provisions included in total other operating costs			En-route charging zones	-57 199	326 159	204 120	226 936	231 672	238 884	252 959
		Bad debt provision. Beyond this, provisions include BAU accrued expenses.	Terminal charging zones	-21 394	398	791	188	194	199	205
Costs for ground-ground communication services			En-route charging zones	54 940	130 232	106 326	137 333	237 361	260 574	267 645
			Terminal charging zones	5 922	14 037	61 861	115 603	31 585	34 087	34 849
Costs for air-ground communication services via terrestrial link			En-route charging zones	59 829	167 692	97 857	103 734	106 846	110 051	113 353
			Terminal charging zones	0	0	0	0	0	0	0
Costs for air-ground communications services via satellite link			En-route charging zones	0	0	0	0	0	0	0
			Terminal charging zones	0	0	0	0	0	0	0
Description of the main factors explaining the planned variations of other operating costs over the reference period										
2023 actual and 2024 forecast data is adjusted with the new allocation key.										
It is assumed that the operating costs will increase due to generally higher prices (eg energy, services). In addition to the nominal cost increase due to inflation, the following specific effects can be identified: the start of the support service related to the operation of the mirTWR (Modular Integrated Remote Tower) and the increase in the asset management fee in line with the change in the WACC.										

c) Exceptional items		Number of entries	Click to select
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#	Exceptional items building blocks (in nominal terms in '000 national currency)	Description of the composition of each item	Charging zones	Actual	Forecast		Determined				
				2023	2024	2025	2026	2027	2028	2029	
Total exceptional items			En-route charging zones	0	0	0	0	0	0	0	0
			Terminal charging zones	0	0	0	0	0	0	0	0
Accounting provisions included in total exceptional items		n/a	En-route charging zones								
			Terminal charging zones								

Description of the main factors explaining the planned variations of other exceptional items over the reference period
n/a

d) Accounting provisions		Number of entries	4
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#	List of provisions included in the determined cost (in nominal terms in '000 national currency)	Description of the composition of each item	Charging zones	Value of the provision at end 2023	Forecast		Determined			
					2024	2025	2026	2027	2028	2029
1	Staff- long term	Long-term provisions related to staff	En-route charging zones			1 229 342	1 234 151	1 222 418	1 347 133	1 911 914
			Terminal charging zones			212 487	208 242	183 891	465 206	420 456
2	Staff- Short term	Short-term provisions related to staff	En-route charging zones			80 267	64 109	57 267	62 492	66 804
			Terminal charging zones			8 210	7 054	6 587	7 038	7 390
3	OPEX- Bad debt	Bad debt provision	En-route charging zones			196 786	225 193	229 876	237 035	251 054
			Terminal charging zones			0	0	0	0	0
4	OPEX- Accruals	BAU accruals	En-route charging zones			7 334	1 743	1 796	1 850	1 905
			Terminal charging zones			791	188	194	199	205
Total exceptional items			En-route charging zones	0	0	1 513 729	1 525 196	1 511 356	1 648 510	2 231 677
			Terminal charging zones	0	0	221 488	215 485	190 672	472 443	428 051

a) Depreciation costs

Method adopted for the calculation of the depreciation cost (point 1.3 of Table 1):
If current cost accounting is applied, equivalent historical cost accounting figures have to be provided in Annex E in order to allow for comparison

Historical

b) Cost of capital

Description of the assumptions used to compute the cost of capital (point 1.4 of Table 1), including the composition of the asset base, the return on equity, the average interest on debts and the shares of financing of the asset base through debt and equity
HungaroControl used the Capital Asset Pricing Model for calculation of its Weighted Average Cost of Capital (WACC) rate for RP4. In general we applied the methodology and the proposed values of PRB except for some aspects listed below.

The methodology applied by the PRB derives the 10-year government bond yield from the average actual rates of the last 10 years. This methodology is not inline with general financial market practices, nor in line with the Performance scheme regulation, which explicitly says that return on equity "shall be based on the financial risk incurred by the air navigation service provider" and the cost of debt shall be based on the interest rate of debts. These provisions make only sense, if actual interest rates are taken into account, in other words forward-looking figures have to be used, which represent appropriately the actual risk which is taken by the owner when submitting a plan for the upcoming 5 years. The application of actual interest rates are widely accepted in the financial area. Not even previous PRB guidances were proposing the usage of 10y averages, and the background for the switch in methodology is neither explained in the new PRB guidance.

The application of past interest rate levels is moreover problematic also from the debt financing point of view, since external financing is only offered based on current market circumstances, in other words: banks are not providing loans for the next reference period other than based on actual market conditions. Since HungaroControl is aiming at optimising its financing in order to be in line with the theoretical optimal capital structure, we are currently negotiating significant amount of debt, and so it is crucial to have the WACC appropriately calculated. Consequently, for the risk free rate our genuine WACC calculation takes into account the actual market conditions. Instead of the 10y avg (4.4%); at the time of submission the yield of government bonds are around 6,5% in Hungary.

Option 1. Efficient WACC	2025-2029
Risk-free rate (Rf)	6.5%
Tax rate (t)	9.0%
Gearing (G)	33.7%
Asset beta (Ba)	54.8%
Equity beta (Be)	71.6%
Equity risk premium (ERP)	5.3%
Return on Equity (RoE)	11.3%
Risk-free rate (Rf)	6.5%
Debt premium	1.4%
Cost of Debt (CoD)	8.0%
Share of financing through equity	74.8%
WACC	10.49%

However, after discussions with the PRB, in order to take into account the risk-reducing effects of assumed deviations granted for the capacity and cost-efficiency domains in en-route, Hungary decided to use lower values, i.e. risk free rate, ERP and debt premium were reviewed for this purpose and determined lower in en-route.

Option 1. Efficient WACC	2025-2029
Risk-free rate (Rf)	6.1%
Tax rate (t)	9.0%
Gearing (G)	33.7%
Asset beta (Ba)	54.8%
Equity beta (Be)	71.6%
Equity risk premium (ERP)	4.25%
Return on Equity (RoE)	10.0%
Risk-free rate (Rf)	6.06%
Debt premium	0.9%
Cost of Debt (CoD)	7.0%
Share of financing through equity	74.8%
WACC	9.24%

Cost of capital assumptions	Description of each item
NBV fixed assets	Intangible assets and tangible assets. Assets under asset management contract are deducted.
Adjustments total assets	Proportionate part of investment costs financed by EU community funds received before the company was established in 2007 is deducted.
Net current assets	Working capital (current assets less short term liabilities), financial investments (including long term investments related to ATCO early retirement scheme) deducted as interest bearing accounts, and the relevant deferred and accrued income/expenses
Cost of capital %	9.24% (en-route) 10.49% (terminal)
Return on equity	Return on Equity (RoE) 10%/11.3% (enr/terminal)
Average interest on debts	Cost of Debt (CoD) 7.0%/8.0% (enr/terminal)
Share of financing through equity	as proposed by PRB: 74.8%

3.4.6.3 - Costs for VFR exempted flights

Description of the methodology and assumptions used to establish the costs of air navigation services provided to VFR flights, when exemptions are granted for VFR flights in accordance with Article 31(3), 31(4) and 31(5)
N/A

3.4.6.4 - NSA verification

Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the determined costs of the ANSP with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification
The NSA has verified the eligibility of the elements of the cost base and found it to be in line with the quoted regulations.

3.4.6 - Determined costs assumptions - HungaroMet (Meteorological Service)

3.4.6.1 - Operating costs

a) Staff costs

Number of entries	3
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#	Staff costs building blocks (in nominal terms in '000 national currency)	Description of the composition of each item	Charging zones	Actual		Forecast		Determined				
				2023	2024	2025	2026	2027	2028	2029		
1	Wages and salaries	Wages and salaries	En-route charging zones	507 395	591 391	779 246	811 974	881 804	910 021	938 232		
			Terminal charging zones	38 748	34 473	52 359	54 558	59 250	61 146	63 042		
2	Other benefits	Other benefits	En-route charging zones	38 191	38 928	37 146	38 706	42 035	43 380	44 724		
			Terminal charging zones	2 916	2 269	2 488	2 592	2 815	2 905	2 996		
3	Tax on wages	Tax on wages	En-route charging zones	84 566	87 529	101 302	105 557	114 634	118 303	121 970		
			Terminal charging zones	6 458	5 102	6 807	7 093	7 703	7 949	8 195		
Total staff costs				630 152	717 848	917 693	956 236	1 038 473	1 071 704	1 104 927		
			Terminal charging zones	48 122	41 845	61 654	64 243	69 768	72 001	74 233		

Accounting provisions included in total staff costs	n/a	En-route charging zones	0	0	0	0	0	0	0	0	0	0
		Terminal charging zones	0	0	0	0	0	0	0	0	0	0

Assumptions underlying the determined pension costs and expected evolution over Reference Period 4 (for Main ANSP please refer to tab 3.4.7)	only state pension, defined contribution (13% of base salaries)	En-route charging zones	84 566	87 529	101 302	105 557	114 634	118 303	121 970			
		Terminal charging zones	6 458	5 102	6 807	7 093	7 703	7 949	8 195			

Description of the main factors explaining the planned variations of staff costs over the reference period

The NSA has examined the circumstances and has decided that the granularity of the information requested here is not conducive to better monitoring and is not proportionate to the administrative burden of the extra work, and therefore will not provide the detailed information.

From 1 January 2022, HungaroMet took over all aeronautical meteorological activities of HungaroControl and the related human resources necessary for the operation of Budapest Liszt Ferenc International Airport and the provision of air traffic services in Hungarian airspace. Staff cost of the aeronautical meteorological services is fully allocated to HungaroMet. Following this transformation, HungaroMet no longer operates as a government agency, but as a 100% state-owned company, it performs its tasks in accordance with the relevant legislation.
The owner (Ministry of Energy) has decided to implement a significant pay settlement in 2024.
Pension costs: Employers' contributions to social security schemes as well as pension costs and other benefits are fully attributed to HungaroMet.

b) Other operating costs

Number of entries	2
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#	Other operating costs building blocks (in nominal terms in '000 national currency)	Description of the composition of each item	Charging zones	Actual		Forecast		Determined				
				2023	2024	2025	2026	2027	2028	2029		
1	Materials	Materials	En-route charging zones	42 134	66 035	73 819	77 805	81 073	83 992	86 680		
			Terminal charging zones	1 467	3 849	7 957	8 386	8 739	9 053	9 343		
2	Services	Services	En-route charging zones	222 408	246 117	362 887	382 483	398 547	412 895	426 107		
			Terminal charging zones	7 744	14 347	40 028	42 190	43 962	45 545	47 002		
Total other operating costs				264 542	312 152	436 706	460 288	479 620	496 886	512 787		
			Terminal charging zones	9 211	18 196	47 985	50 576	52 701	54 598	56 345		

-the average of the 1- and 3-year government bond yields in 2026,
-the 3-year government bond yield in 2027,
-the average of the 3 and 5-year government bond yields in 2028,
-the 5-year government bond yield in 2029.
Data of 16.05.2024 were applied.
A risk premium of 1 percentage point was added to the risk free rates. This premium is lower than the risk premium of HungaroControl as the meteorological service provider does not bear the traffic risk.

Cost of capital assumptions	Description of each item
NBV fixed assets	Fixed assets part of the asset base equals to 100% of the fixed assets directly related to the civil aviation (direct), and 25% for activities not directly related to the activity (core).
Adjustments total assets	N/A
Net current assets	Under net current assets the stock of probes are registered.
Cost of capital %	7.75%, 7.71%, 7.75%, 7.71%, 7.7%
Return on equity	WACC equals to RoE
Average interest on debts	No debts
Share of financing through equity	100% equity

3.4.6.3 - Costs for VFR exempted flights

Description of the methodology and assumptions used to establish the costs of air navigation services provided to VFR flights, when exemptions are granted for VFR flights in accordance with Article 31(3), 31(4) and 31(5)
n/a

3.4.6.4 - NSA verification

Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the determined costs of the ANSP with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification
The NSA has verified the eligibility of the elements of the cost base and found it to be in line with the quoted regulations.

3.4.7 - Pension assumptions

HungaroControl

3.4.7.1 Total pension costs, including retirement and pre-retirement schemes (in nominal terms in '000 national currency)

Pension costs per segment	2025D	2026D	2027D	2028D	2029D
En-route activity	5 183 878	5 728 397	6 293 609	6 834 681	7 374 135
Terminal activity	1 231 854	1 254 156	1 413 410	1 484 780	1 616 817
Other activities					
Total pension costs	6 415 732	6 982 553	7 707 018	8 319 461	8 990 953

3.4.7.2 Assumptions for the "State" pension scheme (in nominal terms in '000 national currency)

Are there different contribution rates for different staff categories? If yes, how many?	No
--	----

<Staff category name>	2025D	2026D	2027D	2028D	2029D
Total pensionable payroll to which this scheme applies					
Employer % contribution rate to this scheme					
Total pension costs in respect of this scheme	3 262 726	3 566 955	3 917 820	4 162 551	4 442 782
Number of employees the employer contributes for in this scheme	828	840	854	860	873

3.4.7.3 Assumptions for the occupational "Defined contributions" pension scheme (in nominal terms in '000 national currency)

Are there different contribution rates for different staff categories? If yes, how many?	Yes-2
--	-------

ATCO	2025D	2026D	2027D	2028D	2029D
Total pensionable payroll to which this scheme applies					
Employer % contribution rate to this scheme					
Total pension costs in respect of this scheme	2 734 356	2 966 504	3 314 016	3 658 497	4 012 475
Number of employees the employer contributes for in this scheme	213	223	240	244	252

non-ATCO	2025D	2026D	2027D	2028D	2029D
Total pensionable payroll to which this scheme applies					
Employer % contribution rate to this scheme					
Total pension costs in respect of this scheme	418 650	449 094	475 183	498 414	535 696
Number of employees the employer contributes for in this scheme	616	617	615	616	621

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP4

We do not plan any structural changes to pension costs in the RP4 period, and we are not yet aware of any changes regarding the State pension regulations.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs, separately for retirement and early retirement pension schemes

Pension costs were planned in accordance with the planned salary increases, since we have obligation to the staff in pension agreements (with TU-s) and employment contracts. Contributions for ATCO

-contribution_A1 - 9,3% of yearly base salary (IÉM 9,3)

-contribution_A2 - 3,7% of yearly base salary and 501 949 Ft fix amount increased by yearly inflation rate (Öngond.)

-contribution_A3 - 687 200 Ft fix amount increased by yearly inflation rate (NYESZR)

-contribution_A4 - 13% of yearly wage cost (IÉK 13)

Contribution for non-ATCO

-contribution_nA1 - from 675 400 Ft to 1 386 100 Ft fix amount based on the employment length increased by yearly inflation rate

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users

The "Defined contribution"-nature of the scheme generally mitigates unforeseen risks, consequently it is mainly dependent on headcount and wage evolution, which are seen generally as controllable factors.

3.4.8 - Interest rate assumptions for loans financing the provision of air navigation services

HungaroControl

Select number of loans	1
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Interest rate assumptions for loans financing the provision of air navigation services (Amounts in nominal terms in '000 national currency)					
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Other loans	2025D	2026D	2027D	2028D	2029D
Description	We plan to take a multipurpose club term loan facility, with possible revolving elements, and grace period. Exact composition and characteristic is dependent on final bank offers (inter alia: how many banks; thus number of loans is unknown currently, indication in cell H6 is technical). Currently in offer preparation phase, expected facility agreement date end of 2024, Q1 2025, expected end maturity date December 2030 with partial redemptions in 2028/2029, pre-offer indicative quotes around 8,0-8,3 % p.a.				
Remaining balance	16 307 452	16 758 069	15 876 922	16 225 298	16 870 939
Average weighted interest rate %	7,22%	7,26%	7,28%	7,25%	7,22%
Interest amount	1 177 210	1 215 982	1 155 792	1 176 352	1 217 869

Total loans	2025D	2026D	2027D	2028D	2029D
Total remaining balance	16 307 452	16 758 069	15 876 922	16 225 298	16 870 939
Average weighted interest rate %	7,22%	7,26%	7,28%	7,25%	7,22%
Interest amount	1 177 210	1 215 982	1 155 792	1 176 352	1 217 869

3.4.9 - Additional determined costs related to measures necessary to achieve the en route capacity targets

Additional costs of measures necessary to achieve the capacity targets for RP4?	Yes
If yes, number of en route charging zones concerned	1

a) Overall description of the measures necessary to achieve the en-route capacity targets for RP4, which induce additional costs

Costs beyond business as usual are necessary to build up the required capacity triggered mainly by the war-related re-routings in the Hungarian airspace. These include CAPEX-related costs as well as staff and OPEX costs of the extra ATCO staff.

b) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP4

Number of capacity measures, which induce additional costs	4
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HungaroControl					
Measure #1	2025D	2026D	2027D	2028D	2029D
Associated additional costs (nominal terms in '000 national currency)	1 159 016	1 725 362	2 393 202	2 911 339	4 243 519
Description and justification of the additional determined costs of the measure					
CAPEX-related depreciation and cost of capital. CAPEX projects were identified that are aiming to increase capacity (MATIAS Build 14, Navigation infrastructure upgrade, ANS I-III VCS upgrade, MSPSR primary radar development, Network equipment development, IT infrastructure (Storage, Fallback infrastructure), ATM-R infrastructure server development, Polaris MAG Build 2, A-SMGCS integrated upgrade, En-route radar development, Storage protection system HW development).					

HungaroControl					
Measure #2	2025D	2026D	2027D	2028D	2029D
Associated additional costs (nominal terms in '000 national currency)	1 310 881	1 309 884	1 328 852	1 382 350	1 432 152
Description and justification of the additional determined costs of the measure					
Cost of increased ATCO training (OPEX).					

HungaroControl					
Measure #3	2025D	2026D	2027D	2028D	2029D
Associated additional costs (nominal terms in '000 national currency)	500 000	500 000	500 000	500 000	500 000
Description and justification of the additional determined costs of the measure					
Cost of ATCO mobility (OPEX). Cost of capacity (ATCO's) purchased from other ANSPs for the Hungarian airspace. This item is subject to inter alia legal uncertainty, in case the costs are not spent, they will be reimbursed to airspace users under 317/2019 Article 29 (6).					

HungaroControl					
Measure #4	2025D	2026D	2027D	2028D	2029D
Associated additional costs (nominal terms in '000 national currency)	155 603	1 071 788	2 128 714	2 586 286	3 309 858
Description and justification of the additional determined costs of the measure					
Cost of new ATCOs (staff cost). Cost of additional (excess) ATCOs.					

	2025D	2026D	2027D	2028D	2029D
Total additional costs of measures ('000 national currency)	3 125 500	4 607 034	6 350 768	7 379 976	9 485 529

c) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP4 by nature by ANSP

Additional costs of measures necessary to achieve the capacity targets for RP4 (nominal terms in '000 national currency)					
---	--	--	--	--	--

Click to select	2025D	2026D	2027D	2028D	2029D
Staff	155 603	1 071 788	2 128 714	2 586 286	3 309 858
of which, pension costs	15 252	104 736	207 207	250 969	320 871
Other operating costs	1 810 881	1 809 884	1 828 852	1 882 350	1 932 152
Depreciation	481 413	749 054	1 106 146	1 368 287	2 446 866
Cost of capital	677 603	976 308	1 287 055	1 543 052	1 796 653
Exceptional items					
Total additional costs of measures	3 125 500	4 607 034	6 350 768	7 379 976	9 485 529

	2025D	2026D	2027D	2028D	2029D
Total additional costs of measures ('000 national currency)	3 125 500	4 607 034	6 350 768	7 379 976	9 485 529

Additional comments

d) Demonstration that the deviation from the Union-wide targets is exclusively due to the additional determined costs related to measures necessary to achieve the performance targets in capacity

The pictures below show the ENR real DC@2022 and ENR real DUC @2022 with and without capacity improving measures (including space weather). The dark blue lines show the original values, while the light blue lines the values after the deduction of capacity improvement costs. The grey lines show the expected short term (light) and long term (dark) trends. You could see that taking into account the capacity improving costs, Hungary is compliant with the long-term trend by the end of the period.

3.4.10 - Restructuring costs

3.4.10.1 Restructuring costs from previous reference periods to be recovered in RP4

Restructuring costs from previous reference periods approved by the European Commission?	No
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3.4.10.2 Restructuring costs planned for RP4

Restructuring costs foreseen for RP4?	No
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Additional comments

SECTION 3.5: ADDITIONAL KPIS / TARGETS

3.5 Additional KPIS / Targets

Annexes of relevance to this section

ANNEX J. OPTIONAL KPIS AND TARGETS

3.5 - Additional KPIs / Targets

Number of additional KPIs	0
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SECTION 3.6: DESCRIPTION OF KPAS INTERDEPENDENCIES AND TRADE-OFFS INCLUDING THE ASSUMPTIONS USED TO ASSESS THOSE TRADE-OFFS

3.6 - Description of KPAs interdependencies and trade-offs including the assumptions used to assess those trade-offs

- 3.6.1 - Interdependencies and trade-offs between safety and other KPAs
- 3.6.2 - Interdependencies and trade-offs between capacity and environment
- 3.6.3 - Interdependencies and trade-offs between cost-efficiency and capacity
- 3.6.4 - Other interdependencies and trade-offs

3.6 - Description of KPAs interdependencies and trade-offs including the assumptions used to assess those trade-offs

3.6.1 - Interdependencies and trade-offs between safety and other KPAs

a) With regard to the over-riding safety objectives, what pressures does your organisation experience in meeting the cost, capacity and environmental KPAs? Describe how you ensure that these pressures do not negatively impact safety within your organisation. Describe the mitigation measures that have been introduced to demonstrate that safety performance has been sustained and what monitoring has been envisaged to measure the effectiveness of those mitigations.

There is high pressure on the ANSP in meeting the Capacity and Cost-efficiency KPAs, however we do our best to achieve those while keeping the highest safety standards. The related costs of operating the Safety Management System are included in the RP4 cost-base. The ANSP's Safety indicators are already at a high level, there is a successful Safety Management System in place and as in the past, also in RP4 HungaroControl will evaluate if resources are sufficient when coping with the rapidly increasing traffic. Changes decided to improve costs, capacity or environmental performance are implemented in a way that safety risks are assessed and mitigated.

Safety aspects of capacity-increasing OPS measures in particular are strictly monitored (e.g. increasing the maximum hourly capacity, optimization of the rostering system). Regarding interdependencies with Cost efficiency, the plan is already stretching, however Safety is always a priority. A significant part of the cost-base in the performance plan is actually used to maintain safety: e.g. the upgrade of the ATM software (MATIAS Build14), ensuring ATCO staffing (including preventing unplanned leave of ATCOs), spendings on cybersecurity. This is how the ANSP can ensure the necessary capacity with the necessary service level. Monitoring of safety levels is done on a monthly basis by monitoring various safety performance parameters, HungaroControl has an integrated safety management system (safety and quality management), auditing and surveying the safety and quality processes, the ANSP have implemented risk based audits, performs appropriate risk assessment for changes to the functional system and for the occurrences. Governance of the integrated safety and quality system is independent from the line management and it is obligatory to include the safety aspect in decision-making processes.

In case the functional system is affected by any change including those induced by other KPA targets, a standard risk assessment and mitigation procedure will be applied in due course. Risk assessments are carried out according to a certified method for all changes of the functional system, also for those intended to improve other KPAs than safety (ENV, CAP, CEF). According to the safety policy of the ANSP, it is accepted that safety requirements are first to be completed regardless the other KPAs. The mitigation measures may vary case by case and the most reasonable ones will be applied. For instance: to achieve the capacity target while the traffic is increasing requires changes in the functional system where not only the technical element but the Human and Procedural parts are affected. The risk to Human Performance can be managed e.g. by the means of FRMS. The risks induced by the Procedural changes can be handled by trainings and simulations, and the risk emerging from the Equipment can be mitigated by good design criteria and thorough testing and acceptance procedures. The above mentioned measures are the outcomes of the adequate safety assessment procedures the ANSP applies.

b) What are the main assumptions used to assess the interdependencies between safety and other KPAs? Please provide a detailed analysis. Describe the analysis methodology and the data that has been used to assess the interdependencies between safety and other KPAs. What indicators, in addition to those described in the Regulation, are used for monitoring during the reference period to ensure that the targets in the KPAs of capacity, environment, and cost-efficiency are not degrading safety?

The main assumption is that safety is the first priority of ATM. Thus safety risk assessment is applied when we need to prioritise KPAs.

This kind of safety assessment is based on SME judgement. Safety performance indicators (occurrence/1million movements) are used to determine the trends. To fulfill the requirements in other KPAs, the ANSO applies technology or procedure improvement.

To identify the interdependencies amongst the KPAs, HungaroControl monitors all available information from the Safety Management System and other sources (occurrence data, rostering and fatigue statistics, delay statistics, environmental reports, financial reports) and evaluates them on the management meetings and expert working groups if deeper study needed. There are various indicators used: Audits, safety surveys, focus groups, risk assessments, maturity scores (like EoSM), losses of separation, R/T overload, runway incursions, runway crossings, usage of taxiways.

c) Describe the organisation's philosophy for managing competing priorities between the KPAs effectively – for instance delaying programmes to manage competing demands. It is expected that the organisation uses its business risk management processes to assess the consequential risks of the organisation's competing priorities to achieve its business goals.

HungaroControl's philosophy for managing competing priorities between the KPAs effectively having safety as a first priority is delaying programmes or investing in technologies. The organisation uses business, safety and enterprise risk management processes to assess the consequences on safety, finance, reputation, etc... According to the ANSP's safety policy, it is accepted that safety requirements have the priority between the KPAs.

d) What trade-offs in safety have been accepted to manage resources shortfalls in realising the organisation's objectives to meet the cost, capacity and environment KPA targets? Have trade-offs restricted the release of staff for safety activities, such as safety training (ATC training excepted), safety surveys, safety audits, safety assessments, safety studies and analyses?

All changes are implemented in accordance with the change management process and safety risks are evaluated and mitigated prior to implementation. For instance in case of staff shortage to fulfill e.g. capacity targets generate a serious dilemma for the management, however according to the answer in question b) there will be no compromise in safety. As no trade-offs are accepted for safety, planned projects can be postponed in case of staff shortages.

e) Has the State reviewed the ANSP financial and personnel resources that are needed to support safe ATC service provision through safety promotion, safety improvement, safety assurance and safety risk management in line with planned changes that will enable targets in other KPAs to be achieved? Please provide a detailed explanation.

Besides the continuous oversight, the NSA regularly (on an annual basis) checks the ANSP in regard of personnel and financial resources with a special focus on the effectiveness of the Safety Management System. The NSA also considers the changes implemented by the ANSP in order to achieve other KPA targets. Annual audits cover this issue.

3.6.2 - Interdependencies and trade-offs between capacity and environment

Ukraine's airspace bordering Hungary has been closed since February 2022 due to Russia's war of aggression, and it is not known when it will be reopened to civilian air traffic.

When the war broke out, flights that previously operated in Ukrainian airspace appeared in Hungarian airspace in search of the least circuitous alternative.

The sanctions against Russian airlines and Russia's response to them, the banning of almost all European and North American airlines, as well as many Asian airlines, from using trans-Siberian routes, have resulted in the appearance of flights in our airspace for which the Hungarian route is not obvious.

These flights have to fly much longer routes which resulted in much more emission than in normal circumstances.

The arrival of these hundreds of new flights in Hungarian airspace, in addition to the negative impact on the environment, has a serious unexpected overload for Budapest ACC.

If the war will be over during RP4, it still will take time airlines to get back to the shortest routes via the Ukrainian airspace, but nobody knows when the sanctions will be lifted and the Trans-Siberian route will be available for European and North-American, and Asian airlines.

3.6.3 - Interdependencies and trade-offs between cost-efficiency and capacity

In our view, the necessary capacity can be provided only in case if all following factors are present at the same time. These factors are Staff, Technology and Airspace structure. Two of them (Staff and Technology) requires significant investments, which can effect the cost efficiency of the ANSPs (please see 3.4.6. point), while the development of suitable airspace structure requires less additional financial resources.

The Hungarian ANSP operates one of the most advanced ATM system in Europe.

We expect to be able to ensure the required capacity in the reorganized Budapest ACC sectors, with the improved technology and appropriate ATCO staffing at the end of RP4 for which we need additional resources as explained under the capacity increasing measures..

3.6.4 - Other interdependencies and trade-offs

SECTION 4: CROSS-BORDER INITIATIVES AND SESAR IMPLEMENTATION

4.1 - Cross-border initiatives and synergies

- 4.1.1 - Cross-border areas where the ANSP provides ANS outside the State's charging zone(s) in the scope of the performance plan
- 4.1.2 - Planned or implemented cross-border initiatives at the level of ANSPs
- 4.1.3 - Investment synergies achieved at FAB level or through other cross-border initiatives

4.2 - Deployment of SESAR Common Projects (CP1)

4.3 - Change management

Annexes of relevance to this section

ANNEX N. CROSS-BORDER INITIATIVES

ANNEX V. CONSISTENCY OF INVESTMENTS WITH ATM MASTER PLAN

4.1 - Cross-border initiatives and synergies at the level of the ANSP(s)

4.1.1 - Cross-border areas where the ANSP(s) provide(s) services outside of the State's charging zone(s) in the scope of the performance plan

As indicated in section 1.1.1, the cross-border area(s) reported below are those cross-border areas or groups of adjacent cross-border areas of a size above 500 km², unless the area or group of areas concerned has fewer than 7,500 controlled flight movements on average per year.

Number of cross-border area(s) where the ANSP(s) of the Member State provide(s) services in another State's charging zone(s)	0
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4.1.2 - Planned or implemented cross-border initiatives at the level of ANSPs

Number of cross-border initiatives	1
------------------------------------	---

Initiative #1	
Name	Merging of SEE and SECSI FRA
Description	In cooperation with the Network manager the SEE FRA and the SECSI FRA member states will launch a project aiming to merge the two large cross border FRA airspaces before the end of RP4.
Expected performance benefits	The SEE FRA project under RP3 in H24 has been successfully completed and the border with BALTIC FRA has also been opened to airlines. The SECSI FRA merged with the ITAL FRA in 2024, so the merge of the two neighbouring FRA systems will be a major step forward along one of the busiest axes in the European airspace.
Additional comments	

Initiative #2	
Name	ATCO Mobility
Description	We have successfully agreed with OroNavigacija on the interim employment of some of their ATCO's in Hungary. The initiative aims at trying to find mutual benefits in order to balance out the different traffic evolutions, and the corresponding capacity needs of various ANSP's, without ultimately draining the human workforce from the other (causing potentially even bigger problems at network level).
Expected performance benefits	More traffic consistent capacity management.
Additional comments	

4.1.3 - Investment synergies achieved at FAB level or through other cross-border initiatives

Details of synergies in terms of common infrastructure and common procurement
n/a

4.2 - Deployment of SESAR Common Projects (CP1)

CP1 ATM Functionality (CP1-AF)/ Sub-functionality (CP1-s-AF)	Target date of implementation	Date of actual/expected deployment of s-AF	Description of realised and/or planned investment(s) related to the deployment of s-AF	Relevant investments (Ref. # as per section 2)	RP4 determined costs related to the sub-AF (in national currency and in nominal terms)				
					2025	2026	2027	2028	2029
CP1-AF1 - Extended AMAN and Integrated AMAN/DMAN in High-Density TMAs									
CP1-s-AF1.1 AMAN extended to en-route airspace	2024.12.31		The next major system upgrade of MATIAS (Build 14) will have the technical ability for AMAN however the date of implementation at Budapest Liszt Ferenc International Airport is not defined yet.	A1: MATIAS Build 14	5 682 521	8 776 177	11 121 419	16 041 330	44 363 485
CP1-s-AF1.2 AMAN/DMAN Integration	2027.12.31								
CP1-AF2 - Airport Integration and Throughput									
CP1-s-AF2.1 DMAN synchronised with predeparture sequencing	2022.12.31	2022.12.31	Realised: A-SMGCS integrated upgrade; A-SMGCS HW and SW		121 436 717	115 831 863	110 227 010	104 622 156	99 017 303
CP1-s-AF2.2.1 Initial airport operations plan (IAOP)	2023.12.31								
CP1-s-AF2.2.2 Airport operations plan (AOP)	2027.12.31								
CP1-s-AF2.3 Airport safety nets	2025.12.31	2025.12.31	RMCA implemented and technically available from May and in operation October 2023. CATC and CMAAC function implementation is ongoing within the mirTWR implementation program.		392 363 147	75 828 260	71 727 477	67 626 695	63 525 912
CP1-AF3 - Flexible Airspace Management and Free Route Airspace									
CP1-s-AF3.1 Airspace management and advanced flexible use of airspace	2022.12.31	2022.12.31	Realised: MATIAS Build 11; MATIAS Build 13 ANSI HW replacement PCP, new TWR interface; MATIAS Build 12; A-SMGCS HW and SW		901 613 327	577 203 473	457 920 686	140 456 988	-
CP1-s-AF3.2 Free route airspace	2025.12.31	2022.02.28	Realised: MATIAS Build 11		901 613 327	577 203 473	457 920 686	140 456 988	-
CP1-AF4 - Network Collaborative Management									
CP1-s-AF4.1 Enhanced short-term ATFCM measures	2022.12.31	2022.10.01	HungaroControl is a user of NM ATFCM tool.						
CP1-s-AF4.2 Collaborative NOP	2023.12.31	2022.11.01	Interactive rolling NOP is put into service						
CP1-s-AF4.3 Automated support for traffic complexity assessment	2022.12.31	2024.07.31	Ongoing, traffic complexity tool is put into operation in 2024						

4.3 - Change management

Change management practices and transition plans for the entry into service of major airspace changes or for ATM system improvements, aimed at minimising any negative impact on the network performance

From safety performance point of view, in accordance with the requirements of EU Regulation 2017/373, every change impacting the functional system is handled as follows. According to internal procedure for safety assessment and notification of competent authority (VRSZ) every change initiation has to be documented on a "declaration template". Each declaration of change template shall be filled and forwarded to Directorate of Safety and Quality Management and Internal Audit (RMBI). These declarations serve as inputs for notifications to the competent authority. The defined safety assessment process in VRSZ is aiming at accomplishing an adequate evaluation of the change to mitigate emerging risks and demonstrate that the change is acceptably safe. The safety assessment procedure consists of scope definition, safety planning, system description, hazard/potential hazard identification, determination of safety criteria, risk analysis and evaluation, change verification, specification of monitoring criteria, and safety monitoring. All changes affecting the functional system shall fulfill the basic criteria from safety aspect which means the functional system has to be at least as safe as it was before the change.

Two types of safety assessment procedures are distinguished depending on the result of hazard identification related to harmful effect. If no hazard is identified (which could induce a harmful effect), a simplified procedure should be followed, to demonstrate that the basic criteria are met. If any hazard is identified the whole complex process mentioned above shall be followed during the safety assessment procedure. The safety assessment processes of changes are organised by nominated persons from the units concerned (safety coordinator) who are responsible for documentation (safety case) and they are supported by safety experts of RMBI. Safety coordinators are professionals of their own domain and they are trained to perform this special safety task as well. Safety cases shall be submitted to RMBI for review and approval or denial (safety opinion). The safety opinion considers the compliance with the procedures and completeness of the process and also the conclusions of the assessments. The decision about the implementation of the given change can be taken only with the approval of the competent authority and in case of a positive safety opinion.

Major airspace changes are expected as a result of the merging of the SECSI + ITAL FRA and the SEE FRA + BALTIC FRA airspaces. This huge cross-border FRA project will be implemented in cooperation with NM. Before the implementation of the results of this large-scale project proper implementation plan will be developed.

In parallel with the merge of these FRA airspaces, review of the current sectorization shall be done and as a result a need for new cross-border sectorization might arise.

As part of these processes we will check the impact of the cross-border FRA enlargement/new cross-border sectorization from technological and human point of view. Also the legal and financial impact shall be analysed.

The technological analysis will include whether the existing surveillance and radio coverage can support these kind of operations, or there will be a need for additional technological solutions, like radar data exchange with the neighbouring ANSPs, or new radio sites shall be added.

The ATM system capabilities supporting the cross-border FRA enlargement/new cross-border sector also shall be assessed in order to have sufficient time for the necessary updates to be implemented. The environmental database of the ATM system should be modified accordingly, using the data received from the adjacent ANSPs.

As part of the human impact we have to assess the need and the scale of the theoretical and practical (simulation) training of related staff.

Relevant theoretical training material shall be created for the related ATCO staff, and also new simulation training exercises shall be written which shall include specific traffic situations typical for that portion of cross-border sectors.

From legal aspect the most important issue is that the necessary state level agreements shall be in place. This agreement shall cover the liability issues of such a cross-border sectorization, the applicable rules in that portion of airspace and ATCO licensing. Such a state level agreement shall also cover the financial issues arising from cross-border sectorization.

SECTION 5: TRAFFIC RISK SHARING ARRANGEMENTS AND INCENTIVE SCHEMES

5.1 - Traffic risk sharing parameters

- 5.1.1 Traffic risk sharing - En route charging zones
- 5.1.2 Traffic risk sharing - Terminal charging zones

5.2 - Capacity incentive schemes

- 5.2.1 - Capacity incentive scheme - Enroute
 - a) Parameters for the calculation of financial advantages or disadvantages - En route
 - b) Pivot values - En route
 - c) Modulation mechanism (if applicable)
- 5.2.2 - Capacity incentive scheme - Terminal
 - a) Parameters for the calculation of financial advantages or disadvantages - En route
 - b) Pivot values - Terminal
 - c) Modulation mechanism (if applicable)

5.3 - Optional incentives

Annexes of relevance to this section

- ANNEX G. PARAMETERS FOR THE TRAFFIC RISK SHARING
- ANNEX I. PARAMETERS FOR THE MANDATORY CAPACITY INCENTIVES
- ANNEX K. OPTIONAL INCENTIVE SCHEMES

5.1 - Traffic risk sharing

5.1.1 Traffic risk sharing - En route charging zones

Hungary			Traffic risk-sharing parameters adapted?		no	
			Service units lower than plan		Service units higher than plan	
	Dead band	Risk sharing band	% loss to be recovered	Max. charged if SUs 10% < plan	% additional revenue returned	Min. returned if SUs 10% > plan
Standard parameters	±2,00%	±10,0%	70,0%	5,6%	70,0%	5,6%

5.1.2 Traffic risk sharing - Terminal charging zones

Hungary - TCZ			Traffic risk-sharing parameters adapted?		no	
			Service units lower than plan		Service units higher than plan	
	Dead band	Risk sharing band	% loss to be recovered	Max. charged if SUs 10% < plan	% additional revenue returned	Min. returned if SUs 10% > plan
Standard parameters	±2,00%	±10,0%	70,0%	5,6%	70,0%	5,6%

5.2 - Capacity incentive schemes

5.2.1 - Capacity incentive scheme - En route

a) Parameters for the calculation of financial advantages or disadvantages - En route

En route	Expressed in	Value
Dead band Δ	%	$\pm 25,0\%$
Max bonus ($\leq 2\%$)	% of DC	1,00%
Max penalty ($\geq$ Max bonus)	% of DC	1,00%

b) Pivot values - En route

Basis for the annual setting of pivot values	Modulated
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c) Modulation mechanism (if applicable)

Section to be filled out only if the option for modulated pivot values has been selected under b) above.

Modulation mechanism of pivot values	Both A) and B)
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Based on the modulation mechanism(s) selected above, provide a detailed description of the principles and methodology used to modulate the pivot values

Option A) - Modulation based on unforeseen changes in traffic

1) the pivot value for the year N is equal to the yearly update of reference values provided by the Network Manager in the NOP	No
2) the pivot value for year N is informed by the yearly update early update of reference values by the Network Manager in the NOP	Yes
If 2) applies describe the principle and formulas on the basis of which the pivot values are calculated	
The pivot value will be based on latest information available, i.e. not only the actual NOP value, but also any more uptodate draft NOP value (if already available) or the data submitted for the draft NOP will be taken into account.	

Option B) - Modulation limiting pivot values to C, R, S, T, M, P delay codes

The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual
Explanation on the methodology used to modulate the pivot values accordingly
The ratio of CRSTMP delays shall be set by the NSA informed by the actual data of n-1 (year n-2 of the planned pivot value, e.g. 2023 for 2025), available in the reports of the Network manager.

Additional Information in the case of the combination of A) and B)

If the modulation of pivot values is based on both options A) and B) above, provide additional information on how these two modulation mechanisms are applied in combination with each other
First the NOP-based information (considering a more uptodate draft NOP value (if already available)) is taken into consideration, and then this is adjusted by the CRSTMP ratio.

5.2.2 - Capacity incentive scheme - Terminal

a) Parameters for the calculation of financial advantages or disadvantages - Terminal

Terminal	Expressed in	Value
Dead band Δ	%	25
Max bonus ($\leq 2\%$)	% of DC	1,00%
Max penalty ($\geq$ Max bonus)	% of DC	1,00%

b) Pivot values - Terminal

Basis for the annual setting of pivot values	Fixed (equal to performance targets)
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c) Modulation mechanism (if applicable)

Section to be filled out only if the option for modulated pivot values has been selected under b) above.

Modulation mechanism of pivot values	Click to select
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Based on the modulation mechanism(s) selected above, provide a detailed description of the principles and methodology used to modulate the pivot values

Option A) - Modulation based on unforeseen changes in traffic

The pivot value for year N is modulated in order to enable significant and unforeseen changes in traffic to be taken into account	Click to select
Description the principle and formulas on the basis of which the pivot values are calculated	

Option B) - Modulation limiting pivot values to C, R, S, T, M, P delay codes

The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual
Explanation on the methodology used to modulate the pivot values accordingly

Additional information in the case of the combination of A) and B)

If the modulation of pivot values is based on both options A) and B) above, provide additional information on how these two modulation mechanisms are applied in combination with each other

SECTION 6: IMPLEMENTATION OF THE PERFORMANCE PLAN

6.1 Monitoring of the implementation plan

6.2 Non-compliance with targets during the reference period

6 - IMPLEMENTATION OF THE PERFORMANCE PLAN

6.1 Monitoring of the implementation plan

Description of the processes put in place by the NSA to monitor the implementation of the Performance Plan including the yearly monitoring of all KPIs and Pls defined in Annex I of the Regulation and a description of the data sources

The NSA Hungary (CAA's ANS&ADR Supervisory Department acting as CA/NSA of Hungary, on behalf and for Minister of Construction and Transportation) is the authority responsible for monitoring the performance targets at national and European level within the scope of the Performance plan. There shall be established processes for continuous oversight of all areas within the scope of the Performance plan of Hungary for RP4. These processes contain procedures for data collection, data assessment and data validation. The monitoring at national level includes ANSP¹ annual reports, uncontrollable costs, reaching of alert thresholds (in accordance with Article 18, Reg. (EU) 2019/317) and other obligatory requirements determined within Annex VI, Reg. (EU) 2019/317 and other relevant legislation. The monitoring of progress in achieving performance targets set in Reg. (EU) 2019/317 shall be performed by dedicated NSA inspectors. The monitoring itself will be performed on a quarterly basis.

6.2 Non-compliance with targets during the reference period

Description of the processes put in place and measures to be applied by the NSA to address the situation where targets are not reached during the reference period

In case that any target is not met at national level, the NSA shall identify potential issues, apply corrective measures designed to rectify the situation and subsequently inform the European Commission in accordance with Art. 37, Reg. (EU) 2019/317. Based on all the inputs from NSAs (SAF KPA), ANSPs (CEF KPA) with cooperation with Network Manager (CAP and ENV KPA), NSA will monitor regularly all these data and react if it is required, to keep achieving the target set.

7 - ANNEXES

ANNEX A. REPORTING TABLES & ADDITIONAL INFORMATION (EN-ROUTE)
 ANNEX A.x - En route Charging Zone #x
ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL)
 ANNEX B.x - Terminal Charging Zone #x
ANNEX C. CONSULTATION
ANNEX D. LOCAL TRAFFIC FORECASTS
ANNEX E. INVESTMENTS
ANNEX F. BASELINE VALUES (COST-EFFICIENCY)
ANNEX G. PARAMETERS FOR THE TRAFFIC RISK SHARING
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ANNEX I. PARAMETERS FOR THE MANDATORY CAPACITY INCENTIVES
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ANNEX K. OPTIONAL INCENTIVE SCHEMES
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ANNEX M. COST ALLOCATION
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ANNEX Q. JUSTIFICATIONS FOR THE LOCAL CAPACITY TARGETS
ANNEX R. JUSTIFICATIONS FOR THE LOCAL COST-EFFICIENCY TARGETS
ANNEX S. INTERDEPENDENCIES
ANNEX T. OTHER MATERIAL
ANNEX U. VERIFICATION BY THE NSA OF THE COMPLIANCE OF THE COST BASE
ANNEX V. IMPLEMENTATION OF ATM MASTER PLAN
ANNEX Y. RESPONSES TO COMPLETENESS VERIFICATION
ANNEX Z. CORRECTIVE MEASURES