

Performance Review Body Advice on the Union-wide targets for RP4

Annex III – Summary of the follow-up discussions
with ANSPs at network delay hotspots

March 2024

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1 INTRODUCTION

- 1 In accordance with Article 9 (2) of the Implementing Regulation (EU) 2019/317 (herein referred to as the Regulation), the Commission shall consult stakeholders and other relevant parties on the indicative Union-wide target ranges.
- 2 The Performance Review Body (PRB) advice on the Union-wide target ranges for the fourth reference period (RP4) was published on the 29th September 2023. Stakeholders were subsequently consulted through an online survey (open from the 4th October 2023 to the 1st December 2023) as well as during an event in Brussels held on the 8th November 2023.
- 3 During the consultation process, some Air Navigation Service Providers (ANSPs) and Member States raised concerns about the issues around recruiting and training air traffic controllers (ATCOs) at a pace which would allow the resolution of any shortage by the start of RP4. Given that ATCO resources are an important factor for delivering sufficient capacity, the PRB followed-up on this subject within the consultation process.
- 4 This Annex to the PRB advice on Union-wide targets for RP4 provides a summary of the follow-up discussions.
- 5 This Annex consists of the following sections:
 - Section 2 describes the methodology applied during the follow-up discussions;
 - Sections 3 to 8 summarise the discussions with the relevant parties; and
 - Section 9 provides a conclusion on the outcome of these discussions.

2 METHODOLOGY OF THE FOLLOW-UP DISCUSSIONS

2.1 Selection criteria

- 7 The PRB applied two metrics to establish the criteria for selecting the Member States/ANSPs for follow-up discussions:
 - The share of en route ATFM delays due to shortage of ATCOs compared to the total amount of en route ATFM delays;
 - The contribution of ANSPs to the Union-wide sum of en route ATFM delay minutes.
- 8 En route ATFM delays due to the shortage of ATCOs are reported under two delay codes: Code C for ATC capacity and Code S for ATC staffing. Code C (ATC capacity) is used when the ANSP is experiencing an overall shortage of controllers and is thus unable to staff enough sectors to accommodate the traffic demand. Code S (ATC staffing) is used when the ANSP has enough ATCOs, but (due to short-term and/or tactical problems) it is unable to allocate them to the required sectors.¹
- 9 The first selection criterion was based on the share of en route ATFM delays under delay codes C and S compared to the total amount of en route ATFM delays of the ANSP. The PRB considered the data available at the time of the RP4 target ranges consultation event: The full year of 2022, and the January-September period of 2023. The 2023 data did not include post-operational adjustments in delay attributions. However, this did not significantly affect the selection. ANSPs were selected if the combined ATC capacity and ATC staffing delays were at least 60% of the en route ATFM delays in either 2022 or 2023.
- 10 The second selection criterion considered the overall delay contribution of ANSPs. This was used to identify those that generated a significant amount of the total delay in the network. The same period as for the first criterion was used. The PRB defined the threshold of significance at 5%, meaning that ANSPs with a total contribution of over 5% of the total Union-wide delay minutes were selected.
- 11 ANSPs that met one of the two criteria were invited for a follow-up discussion. The summary of the results of the selection is shown in Table 1. The

selection criteria and the process of the follow-up discussions were presented at the 37th meeting of the National Supervisory Authorities (NSAs) Coordination Platform Performance Working Group on 30th November 2023. All NSAs were given the opportunity to provide input to the PRB.

ANSP	Capacity and Staffing delay ratio		Delay minute contribution	
	2022	2023	2022	2023
Croatia Control	66%	43%	3%	3%
DFS	58%	45%	39%	27%
DSNA	32%	34%	25%	41%
ENAIRE	65%	63%	5%	6%
HASP	62%	73%	1%	5%
Hungaro-Control	84%	16%	6%	6%

Table 1 - Summary of the results of the selection of ANSPs for the follow-up discussions. 2023 data covers the period of January-September and does not consider post-ops adjustments.

2.2 Approach

- 12 The objective of the follow-up discussions was to gather more information on ATCO recruitment and training as well as on the strategies of ANSPs to deal with shortages.
- 13 The PRB proposed to the NSAs of the selected Member States to also invite other relevant ANSP experts to join the discussions. All NSAs accepted the invitation, and ANSP experts were present in all the discussions.
- 14 To structure the discussions, the PRB sent, in advance, five questions to each NSA:
 - Please describe the current issues and problems at the ACCs regarding ATCO headcounts and/or rostering;
 - Describe the recruitment and training pipeline of ATCOs as it is, and the plans for the period

¹ Detailed information on ATFM delay codes can be found in the <https://www.eurocontrol.int/publication/atfcm-operations-manual>.

of 2023-2025 (please indicate past conversion rates of recruits, and parameters of training (length of the training phases, success rates, etc.);

- Please describe your rostering system in broad terms (shift length, flexibility of shifts and rosters, etc.);
- Please indicate any objective obstacles that cannot be overcome by the start of RP4 (such as proven limitation of training capacity);
- Please describe the planned measures to resolve the issues and problems as soon as possible.

15 The discussions were conducted in a semi-structured form where information over all the five questions was provided, together with additional insights and statements from the ANSPs and NSAs. The six discussions took place between 19th December 2023 and 11th January 2024. All interviews were conducted virtually.

16 The following sections provide a structured overview of the outcomes of these discussions. The summaries cover the most important aspects discussed. Certain sensitive information has been omitted, and all participating NSAs and ANSPs have approved the respective summaries and agreed to the publication of the those in this Annex. General remarks and position statements regarding the target ranges and/or the target setting process for RP4 expressed during the interviews have been captured in the comment response document (Annex I).

3 SUMMARY OF THE FOLLOW-UP DISCUSSIONS WITH CROATIA

17 The interview with Croatia took place on the 21st of December 2023.

3.1 *Description of current issues and problems related to capacity performance and ATCO headcounts and/or rostering*

18 Croatia Control reported that the unforeseen traffic growth and the increasing uncertainty around key planning parameters were the key reasons for issues with capacity performance.

19 In relation to the growth of traffic, Croatia Control registered an unexpected surge in traffic especially on the South-East axis, resulting in traffic levels more than 15% above 2019 levels (thus above the forecasted level during the 2023 summer period). Croatia Control stated that this traffic growth rate was beyond the rate of ATCO uptake.

20 Further to the unexpected and high traffic growth, Croatia Control reported that the combination of shifting traffic patterns and the severe impact of adverse weather increased traffic complexity. Given that neither the changes in the traffic flows nor the occurrence of adverse weather phenomena can be forecasted strategically, planning ATCO resources is becoming more challenging.

3.2 *Recruitment and training of ATCOs*

21 Croatia Control raised concerns about the recruitment of applicants for the open ATCO positions. While all present training classes have been successfully filled, the number of applicants dropped sharply from around 60-100 times more than the open positions to around 25 times more. Croatia Control noted that if this decreasing trend continues in future years, Croatia Control may experience difficulties in filling open positions.

22 Croatia Control described in detail the recruitment and training process of ATCOs, which is between 24-36 months depending on when the trainees enter the unit training phase of the process (each trainee must go through a peak summer season before acquiring a licence).

23 The conversion rate of the recruitment process and the success rates of the training phases before the pre-on-the-job (pre-OJT) training phase reported by Croatia Control were reasonably high,

while the success rate of the pre-OJT phase was reported to be relatively lower.

24 Croatia Control specified that, as of 2020, the training of controllers has been carried out in-house. In addition, there were no stops in the training of controllers due to the COVID-19 pandemic. Croatia Control is taking between 12 and 20 new ATCO students each year resulting in a continuous presence of approximately 40 to 50 students undergoing training at various stages within the training process.

25 Croatia Control explained that training is mostly carried out during off-peak periods of the year and that all instructors, including those of the ab initio training, are licenced controllers (representing around 25-30% of the total number of ATCOs).

3.3 *Rostering scheme*

26 Croatia Control described the rostering scheme of controllers in detail. The scheme is based on a five-year strategic plan, broken down into yearly rosters. These are updated every four months, and there are also monthly and weekly update cycles. The key element of the rostering scheme of Croatia Control is flexibility and seasonality. The number of available sectors for opening depends largely on the traffic demand. During winter months it can vary up to 7 sectors, while during the summer of 2023, Croatia Control opened even 13 sectors, but for a very short time.

27 Croatia Control uses 11 different shifts in the rostering scheme, on average eight hours long based on the basic cycle of 4 working days followed by two days of rest.

28 Croatia Control considered the rostering scheme sufficiently flexible to enable good capacity performance.

3.4 *Objective obstacles that cannot be overcome by the start of RP4*

29 Croatia Control highlighted three factors which may act as obstacles to improving capacity: Traffic growth above the rate of ATCO uptake, increasing seasonality and uncertainty, and the future implementation of the new Air Traffic Management (ATM) system.

- 30 In relation to traffic growth, Croatia Control noted that if traffic continues to grow in 2024 at the rate experienced during 2023, it will not be possible to resolve the ATCO shortage currently experienced in the early years of RP4 despite best efforts in training.
- 31 Croatia Control also pointed out that the increasing seasonality and traffic complexity made it harder to cope with traffic growth, as during the peak summer periods training new controllers became increasingly more challenging.
- 32 Finally, Croatia Control reported plans to introduce a new ATM system in 2028 which would likely require a temporary reduction of sector capacities, as well as significant efforts in the training and familiarisation of ATCOs.

3.5 *Planned measures to rectify the situation*

- 33 In order to mitigate the impact of the factors presented, Croatia Control set out measures related to improving the throughput of the training process, conducted two studies on sector capacities, and planned the introduction of new simulation tools besides the new ATM system.
- 34 As for improving the training process, apart from continuing the training at full capacity, Croatia Control managed to reduce the duration of the training of ATCOs by around 10% in 2023, with plans to increase the pool of instructors further, thereby better distributing the workload of training among licensed controllers.
- 35 Croatia Control also had planned two CAPAN studies planned for the upcoming period.² The first study (planned for 2024) aims to the reorganisation and use of military airspace zones, while the second study is planned in conjunction with the transition to the new ATM system in 2028. Croatia Control noted that as an outcome of the previous CAPAN study conducted in 2022 sector capacities were successfully increased.
- 36 Croatia Control also mentioned measures to reorganise the lower airspace and as well as how approach control services are provided.

²² Information about CAPAN studies can be found here: <https://www.eurocontrol.int/methodology/capacity-analysis-methodology>.

4 SUMMARY OF THE FOLLOW-UP DISCUSSIONS WITH FRANCE

37 The interview with France took place on 20th December 2023.

4.1 *Description of current issues and problems related to capacity performance and ATCO headcounts and/or rostering*

- 38 DSNA highlighted several factors adversely affecting capacity performance. Firstly, during the period between 2010 and 2020, the French government mandated all government organisations to cut their costs and reduce the number of personnel. These measures were implemented at DSNA, leading to a decrease in the number of ATCOs and consequently a significant capacity gap as traffic started to increase. Despite the efforts in training controllers, the general length of the training process, the normal attrition of controllers, and the impact of the COVID-19 pandemic on the training process, there were further reductions in ATCO numbers. DSNA stated that they turned this trend around in 2021, with the effect that they expect a steady increase in the number of controllers in the coming years.
- 39 DNSA noted that the mobility scheme of French ATCOs enabled the migration of controllers between ACCs and this further amplified the lack of controllers in Paris and Reims ACCs. Controllers in Paris and Reims tended to move to Marseille and Bordeaux ACCs.
- 40 DSNA also reported that there are limitations in the flexibility of the rostering scheme, which impacts on how efficiently ACCs can operate and may lead to higher levels of required staffing.
- 41 While not affecting the early years of RP4, DSNA stated that they will be faced with an ageing ATCO population with a retirement wave of around one-third of the ATCOs between 2028 and 2035.
- 42 Finally, DNSA was of the view that the transitioning to the new ATM system at each of the ACCs also presents a challenge in terms of capacity performance. As seen during the implementation of the system in Reims ACC, technical difficulties during the deployment may result in long periods of degraded capacity at the affected sectors and, thus, high levels of delays.

4.2 *Recruitment and training of ATCOs*

- 43 DSNA reported no challenges in the recruitment of ATCO trainees and finding enough applicants for open positions. Furthermore, following the reduction of controllers in the past, DSNA has now secured a five-year recruitment plan, approved by the government, to ensure the steady uptake of controllers.
- 44 As explained by DSNA, the length of the training of ATCOs varies between three and five years, depending on the ACC the trainees are assigned to. The more complex and overloaded/understaffed ACCs have less training capacity and require more training time. The basic training in France is combined with area, approach, and tower control, as well as civil engineer training including a master's degree. Trainees graduating from the ab initio training are assigned to the different ATS units (ACCs, towers, approach centres), with a focus on the three ACCs with the largest lack of ATCOs: Reims, Paris, and Marseille.
- 45 DSNA reported reasonably high success rates for each phase of the training, making the process relatively effective. The two main bottlenecks noted by DSNA in relation to the training process – apart from the general length – were that according to the current local regulation, ab initio training instructors at the academy are required to have a valid ATCO licence and that the training phase is placing a huge burden on the most understaffed ACCs due to the nature of the on-the-job training.
- 46 DSNA reported that both recruitment and training was ongoing at full capacity, with an annual uptake of 160 ATCOs maximum. Further to this, DSNA stated that it is exploring options to shorten the duration of the training by conducting certain parts of the unit training on suitable simulators, instead of actual live operations.

4.3 *Rostering scheme*

- 47 DSNA presented the rostering scheme of ATCOs in detail, explaining the limitations and constraints of the scheme. Rostering is based on teams of controllers and according to limitations to the maximum number of working hours per controller over the year, the maximum number of working hours

over a week and a seven-day rolling period, and a set number of statutory leave days.

- 48 The composition of each shift for the controllers is constrained by national requirements and labour agreements (e.g. break times, and rest periods). While all these set parameters still allow ACCs to define schemes which can accommodate seasonality and differences between weekdays and weekends, the scheme allows for limited flexibility in the shifts themselves, as reported by DSNA.
- 49 In addition to the above, the current labour agreement does not allow ATCOs to work overtime. Instead, ATCOs may be called upon for eight extra working days during the summer peak period, provided that these extra days are given back as leave days during the off-peak period of the year.
- 50 DSNA recognised the importance of improving the flexibility of the rostering scheme and reported that there are ongoing discussions between the social partners.

4.4 *Objective obstacles that cannot be overcome by the start of RP4*

- 51 As for objective obstacles to capacity improvement, DSNA reported four items. Firstly, due to the training capacity of both the ab-initio training academy and the limited capability of ATS units in the unit training and integration of new controllers, DSNA considers that the lack of ATCO staff cannot be resolved by DSNA until the start of RP4.
- 52 Secondly, DSNA states that the implementation of the new ATM system at Paris, Brest, and Bordeaux ACCs will have a detrimental impact on capacity performance (even with a smooth transition) due to the need for the re-training of controllers and the associated temporary reduction of sector capacities.

- 53 Thirdly, DSNA identified the length of the training and the social acceptance of the use of more simulation-based training as an obstacle.

- 54 Finally, the overall setup of the national civil servant employment scheme of France was seen by DSNA as a constraining factor as to how flexibility and efficiency could be improved.

4.5 *Planned measures to rectify the situation*

- 55 In response to the abovementioned issues, DSNA reported that they were engaged in the negotiation of a new labour agreement for the period of 2023-2027 with a focus on: I) reducing the length of the training, II) increasing flexibility in the rostering scheme, and III) improving the mobility scheme of ATCOs between ACCs to enhance predictability and planning. DSNA also reported that the discussions are also covering a rationalisation of the organisation of ATS units with the aim of merging some of the approach control centres and replacing full ATC services at some towers by aerodrome flight information services (AFIS). DSNA noted that the negotiations between the social partners are expected to conclude during the spring of 2024.

- 56 While the implementation of the new ATM system is listed as part of the issues DSNA is facing in the coming years, it is also seen as a key vehicle of improving sector capacity figures at the ACCs.

- 57 Finally, DSNA highlighted an important improvement regarding the national legislation about industrial actions which will allow for better planning of ATFM regulations and thus contribute to the reduction of delays.

5 SUMMARY OF THE FOLLOW-UP DISCUSSIONS WITH GERMANY

58 The interview with Germany took place on 19th December 2023.

5.1 *Description of current issues and problems related to capacity performance and ATCO headcounts and/or rostering*

59 DFS reported different factors influencing their capacity performance in the past years. Most recently, traffic concentration over the South-East axis in the European network posed an increasing impact on the already constrained sector groups in the Southern part of the area of responsibility of Karlsruhe Upper Area Control Centre (UAC). Traffic level in these sectors was around 24% higher on an annual basis compared to 2019.

60 As a result of the outbreak of the war in Ukraine, military operations increased in Germany with fixed military-only air corridors being introduced during the early months of the conflict in 2022. Despite their limited usage in 2023, the higher level of military activity contributes to an increase in traffic complexity, which has adverse effects on capacity creating delays in saturated sectors.

61 Another key problem behind the delay situation, as reported by DFS, was a lack of controllers at some of the control centres. While this problem was recognised already in 2018, DFS reported that the training processes initiated in 2019 suffered temporary suspensions due to the restrictions introduced by the State during 2020 and partly in 2021 in the context of the COVID-19 pandemic, which resulted in an almost three-year delay in the influx of ATCOs. This effectively translated into 120 controllers missing from the operations until 2026. DFS underlined the fact that the recruitment of new applicants was nonetheless kept at the maximum.

62 DFS reported that, contrary to the traffic recovery in the upper airspace, traffic in the lower airspace has not yet recovered to the levels before the COVID-19 pandemic, and forecasts show that this lower level of traffic will be the new normal for the lower airspace ACCs of Bremen, München, and Langen. Despite the slower recovery of traffic, München ACC still generated a significant amount of delay in 2023 due to the technical issues associated with transitioning to the new iCAS system.

These technical issues required a temporary reduction of sector capacities by up to 30%. DFS expected a return to full capacity (or even beyond) in the second quarter of 2024.

63 Due to this decrease in traffic levels in the lower airspace, together with the constantly high training efforts, the staff shortage at these ACCs will not translate into a significant capacity gap if the transition to the new ATM system is carried out successfully.

5.2 *Recruitment and training of ATCOs*

64 DFS explained that the recruitment and training process of ATCOs are carried out by the training academy of DFS for the ab-initio training, and by the ATS units for the unit training phase. The training of controllers requires approximately two years depending also on the environment they are assigned to (it may require more time to get all endorsements in more complex environments).

65 DFS reported that at the time of the interview, there were around 400 ATCO trainees in the pipeline, almost equally distributed between the ab-initio and unit training phases. 70% of these were being trained for area control centres (as opposed to towers), with a foreseen increase in the proportion of ACC controller trainees to around 76% of all trainees.

66 As for the training academy, DFS reported that the capacity of the academy was being fully utilised already, which allows for the training of 136 trainees per annum. DFS also foresaw this rate of training for the coming years. However, this translates into a net increase of 15-20 ATCO full time equivalents (FTEs) annually, given the attrition of ATCOs working in operations (e.g. retirements, health issues).

67 DFS reported no issues around recruiting controllers and/or finding the required number of applicants for the open positions. The success rates of the different phases of the training process were reported to be relatively high, making the training process relatively effective. Especially, regarding a direct comparison, success rates of around 85-90% for the upper area control and terminal as well as success rates of 70-75% for the lower area

ACCs made further improvement correspondingly hard to attain.

- 68 Mobility of controllers between ACCs (either voluntary or initiated by DFS) was not considered significant in Germany, due to the highly specialised training, especially in Karlsruhe UAC.

5.3 Rostering scheme

- 69 DFS presented the rostering scheme of ATCOs in detail, consisting of multiple levels of plans: The annual planning is finished by autumn for the upcoming year to cover all plannable leaves. A strategic plan covering the entire year is revised 60 days before operations to account for changes in the planned leaves, days off, and other activities such as training for the controllers. This is then updated 30 days in advance to determine duty on-off times for controllers. The final rostering plan is then revised during the last 48-24 hours before the day of operations and is kept constantly up to date during the day of operation.
- 70 DFS explained that the rostering scheme is based on 15-minute time blocks, allowing for highly flexible schemes and shifts (e.g. DFS managed to temporarily increase the number of daily shifts by 80 during some of the special events in 2023 such as the Air Defender).
- 71 Also, increases through extra shifts for special events mean that those shifts are not available during the rest of the year due to an annual limitation of such means.
- 72 Overall, DFS stated that the rostering scheme was an enabler of good capacity performance.

5.4 Objective obstacles that cannot be overcome by the start of RP4

- 73 DFS noted three main obstacles which limited their ability to achieve capacity targets in the coming years.
- 74 Due to the delay in the training of controllers, DFS stated that it is impossible to close the gap of 120 ATCOs (especially in Karlsruhe) by the start of RP4, even with the full utilisation of the training academy of DFS.
- 75 DFS also claimed that the increasing unpredictability causing an unexpectedly high volume of traffic in some of the sectors is another major issue which may not be overcome in the next one or two years.

- 76 Finally, in DFS's view, the temporary reductions of capacity for the transition to the new ATM systems at the ACCs will continue to contribute to generate delay in RP4.

5.5 Planned measures to rectify the situation

- 77 DFS reported several measures and initiatives to improve capacity performance and contain delays. Apart from continuing the training at full capacity of the academy, DFS is also exploring options to train controllers outside DFS as well to speed up the process. DFS is also considering ways of redistributing parts of the training process between the training academy and Karlsruhe to increase training capacity.
- 78 In addition to these measures focused on ATCO shortage, DFS is also planning several airspace management measures, such measures to improve the vertical distribution of traffic as well as to restructure the airspace in a way that allows for Langen and Bremen ACCs to share some of the workload borne by Karlsruhe UAC.
- 79 DFS stated that, in relation to ATM system implementations, because of the difficulties in München ACC and also given the focus on staff shortage, the implementation of the new system at Bremen ACC has been postponed to 2027-2028. In München ACC, a continuous ramp-up of sector capacities is expected, reaching the levels before the transition in the second quarter of 2024. DFS does not express an exact estimate for the possible increase in sector capacities due to the implementation of the new system in München, as it is the first implementation of this instance in lower airspace. Nevertheless, there are expectations as regards the capacity benefits coming from the advanced functionality and the improved interoperability of the new system.
- 80 Finally, DFS reported that a mandatory procedure for the periodic validation of ACC sector capacities has been established, so that the benefits of the different measures can accurately be captured and that the network-wide planning processes can utilise the updated capacity values in due time.

6 SUMMARY OF THE FOLLOW-UP DISCUSSIONS WITH GREECE

81 The interview with Greece took place on 11th January 2024.

6.1 *Description of current issues and problems related to capacity performance and ATCO headcounts and/or rostering*

82 HASP reported that the major driver behind the under-capacity observed in the past years was mainly the shortage of controllers, due to the constraints on how HASP was able to recruit new controllers. This resulted in a 20-40% gap of missing controllers compared to the ideal situation (depending also on the implementation of the new system). This was largely because ATCOs needed to be recruited through a lengthy public recruitment process set out by the national legislation and the recruitment and training plans had to be negotiated with the government every year, thus resulting in delayed implementation and lack of flexibility in the process.

83 HASP noted that traffic recovery was faster than forecasted after the COVID-19 pandemic, especially flights to and from Greek airports. Moreover, Russia's war of aggression against Ukraine also contributed to higher-than-expected traffic growth.

84 HASP added that the COVID-19 pandemic delayed the recruitment and training of controllers, making the ATCO situation more difficult in recent years.

6.2 *Recruitment and training of ATCOs*

85 HASP reported a significant improvement in the process of recruiting new ATCOs, with the introduction of a three-year government-approved recruitment plan covering the period of 2024-2027 together with the introduction of the possibility to keep applicants in an applicant pool during these three years. HASP reported no special difficulties in finding enough applicants to fill in the open positions.

86 As for the training process, HASP explained that the training of controllers was carried out in-house. The length of the training depends on the specificities of the ATS units but, in general, four to six months of initial training is followed by a unit training phase to acquire the first

rating/endorsement, which lasts for one year approximately. Thus, resulting in an overall duration of around 14-18 months.

87 HASP noted that the capacity to train and integrate controllers into the ATS units was sufficient and that this is not imposing a constraint on the planned uptake of controllers in the future years.

88 The conversion rates and the success rates reported by HASP were reasonably high. During the unit training phase of the training, ATCO trainees could be flexibly reallocated to less complex working environments in case they experienced difficulties in the training, thereby keeping overall success rates relatively high. Moreover, ATCO candidates must possess particularly high educational qualifications according to national legislation.

89 As for the recruitment and training pipeline, HASP had 35 new ATCOs joining in during the summer of 2023, around half of which were assigned at the ACCs. HASP expects that 92 more controllers will enter into operations during 2024 and early 2025, out of which 40 allocated to the ACCs. For future years, a similar rate of ATCO uptake is planned, conditional on the traffic growth and the new system implementation.

6.3 *Rostering scheme*

90 Without providing details, HASP reported that as of 2022 an agreement has been reached between the government and the social partners to enable additional flexibility in the rostering scheme and additional overtime of ATCOs may be utilised in peak periods.

91 HASP noted that a similar agreement is expected to be negotiated for 2024, and that this additional flexibility in the rostering and extra overtime in the coming years would enable HASP to improve capacity performance.

6.4 *Objective obstacles that cannot be overcome by the start of RP4*

92 HASP expressed concerns about the traffic growth experienced and foreseen at several of the Greek airports and noted that capacity problems at the airports are likely to remain in the coming years due to airport-specific issues.

93 On the other hand, HASP noted that if ATCO training plans were realised successfully, the ATCO shortage could be resolved during the first years of RP4. Moreover, the timely implementation of the new system would enable HASP to cope with the growth of traffic throughout the reference period.

6.5 *Planned measures to rectify the situation*

94 Apart from the ongoing recruitment and training of ATCOs and the introduction of changes to the recruitment process, HASP also plans to transfer controllers from approach and tower positions to the ACCs to help resolve the lack of controllers.

95 Further to this, the procurement and implementation of the new ATM and VCR system was also reported to be a significant enabler in improving capacity performance allowing for the introduction of additional ACC sectors as well as a likely reduction in separation minima (currently ten nautical miles). HASP noted that the government approval of the new ATM and VCR system procurement was expected in early 2024. According to HASP, the development and full implementation of the systems would then take three years and would be accompanied by a CAPAN study to ensure that benefits in sector capacities are appropriately captured.

96 HASP reported plans to introduce PBN operations at 30 Greek airports, developments in terminal manoeuvring areas, a project aimed to increase the capacity of the 17 busiest airports, and the construction of a new airport in Crete which would become the second largest airport in Greece.

7 SUMMARY OF THE FOLLOW-UP DISCUSSIONS WITH HUNGARY

97 The interview with Hungary took place on 8th January 2024.

7.1 *Description of current issues and problems related to capacity performance and ATCO headcounts and/or rostering*

98 HungaroControl reported three main reasons behind the capacity problems experienced in the past years: i) The shortage of controllers due to the impact of COVID-19, ii) the unexpected traffic growth due to Russia's war of aggression against Ukraine, and iii) the limitations of the rostering scheme to handle traffic seasonality.

99 As for the impact of COVID-19 on the training of controllers, HungaroControl reported that, although the training was not stopped by the ANSP, the government-imposed restrictions on social distancing led to the suspension of the process. This resulted in unusually high attrition of ATCO trainees, and thus fewer new controllers entering the operations. At the same time, the rate of retirement did not decrease and HungaroControl reported that several ATCOs left operations for other European ANSPs as well. This resulted in HungaroControl not being able to increase the number of ATCOs.

100 HungaroControl noted that the growth of traffic was significantly above the forecasted level and that already in 2022, the maximum number of hourly movements in the ACC was more than 7% above the 2019 figure. For 2023 the same ratio was almost 19%. Further to this, and due to the closure of the airspace over Ukraine, the traffic flows previously crossing Ukraine are now all concentrated in the Eastern part of Hungary, not only increasing traffic demand beyond all expectations but also significantly increasing traffic complexity.

101 Finally, HungaroControl highlighted that given the general shortage of ATCOs and the unexpected increase in traffic and complexity, the existing rostering system was lacking the flexibility required to cope with the cumulative fatigue of controllers, the high seasonality between summer and winter periods (a 120% difference between summer and winter peak traffic), and the need for licenced ATCOs as instructors in the second phase of the training process.

102 HungaroControl specified that to mitigate some of the negative impacts arising from these issues, in 2022 sector capacities were increased by 10 to 20% in the ACC, the accuracy of meteorological forecasts was increased, and the cooperation with military stakeholders intensified.

7.2 *Recruitment and training of ATCOs*

103 HungaroControl presented detailed recruitment and training plans as well as an overview of the recruitment and training process of controllers. The total length of the training process is around 21 months (92 weeks) and the overall training capacity of the academy is 30-32 trainees each year, out of which 20 to 24 controllers are allocated to the ACC.

104 HungaroControl reported relatively low success rates for the current training process due to the higher-than-usual attrition of trainees during the period of COVID-19. However, the expected success rate of the 2022 training programme is significantly higher and should allow for a relatively efficient training process.

105 HungaroControl noted that around 15 new controllers are expected to join operations during the fall of 2024, targeting the number of 125 controllers by the end of 2024 (-8% lower than what is considered ideal).

106 As regards the recruiting of controllers, HungaroControl reported around 20 times more applicants than open positions and noted that some difficulties have been experienced in terms of the selection process.

7.3 *Rostering scheme*

107 HungaroControl provided a detailed overview of the rostering scheme of controllers, which is based on five-day tours, each including a day shift, a night shift, a recovery period of 24 hours in between and a rest period of three days, with an additional option of introducing extra day shifts during the summer period.

108 According to HungaroControl, the key limiting factor was the length of the shifts and the rules maximising the number of hours in position for the ATCOs defined in the rostering scheme, which

affected how efficiently ATCO working hours could be utilised.

- 109 HungaroControl noted that during summer periods additional extra shifts of 9-12 hours are used to cope with peak traffic, and also emphasised that despite the mentioned limitations ATCO productivity was still best in class in Europe.

7.4 *Objective obstacles that cannot be overcome by the start of RP4*

- 110 As regards the objectives to resolve capacity issues by the start of RP4, HungaroControl pointed out that the need to cope with the rapidly increasing traffic, to intensify the training of new controllers, and the cumulative fatigue of existing controllers limited the ability of HungaroControl to increase capacity more rapidly.
- 111 In addition, the attrition of ATCOs also had an increasing uncertainty with more controllers leaving HungaroControl to work for other European ANSPs.

7.5 *Planned measures to rectify the situation*

- 112 HungaroControl reported that the focus in capacity improvement measures was on the training of new controllers to enable the opening of 11 sectors during the summer peak periods (compared to the eight sectors now possible). HungaroControl considered that, despite all the challenges, if a 10% increase in the number of ATCOs working in operations would be achieved in the next two years, the ATCO shortage issue could largely be resolved.
- 113 As for the rostering scheme, HungaroControl reported an ongoing project focusing on introducing more flexibility and enabling a higher availability of ATCOs during the summer peak periods, although it also noted that such changes are also subject to negotiations with the social partners.
- 114 Updates to the ATM system were carried out regularly, introducing tools such as the traffic complexity analysis tool to help the planning of the ATCO workload.
- 115 HungaroControl reported that the introduction of the “Capacity sharing” concept is also being explored (i.e. active utilization of foreign ATCOs from ACCs where capacity surplus exists due to Russia’s war of aggression against Ukraine).

8 SUMMARY OF THE FOLLOW-UP DISCUSSIONS WITH SPAIN

116 The interview with Spain took place on 19th of December 2023.

8.1 *Description of current issues and problems related to capacity performance and ATCO headcounts and/or rostering*

117 ENAIRE reported that traffic levels on average were higher than the forecasted level in 2023, being already above the level of 2019 (initially, this was only expected by 2025-2026). There was also an unexpected shift in traffic patterns. Traffic in the Southern part of the country, mostly affecting Sevilla ACC, increased by 15%. In previous years this kind of traffic shift was unseen, but in 2023 this became a permanent phenomenon.

118 This traffic increase, together with the shift in flow patterns, meant that not all traffic demand could be accommodated without delays by ENAIRE. In the performance plan for RP3, ENAIRE stated that it did not plan a significant increase in the number of ATCOs in OPS FTEs. Having realised the increase in traffic, ENAIRE implemented measures to hire and train additional controllers, and once these measures are fully realised, the number of controllers may be around 15% above the levels planned by the end of RP3.

8.2 *Recruitment and training of ATCOs*

119 ENAIRE stated that the recruitment of ATCOs is approximately a 5–6-month long process, with the total training of controllers taking 17 months until they acquire their licence. ENAIRE is not taking part in the ab-initio training, while it is only hiring controllers with all the required licences and endorsements. The unit training at the ATS units lasts 3 months for towers and 6 months for area control centres at ENAIRE.

120 ENAIRE reported no issues with the availability of applicants for vacant controller positions with more than 20 times more applicants than open positions. Similarly, no issues were reported as regards the conversion rates of the hiring process or the success rates of the different phases of the training of ATCOs.

121 In general, ENAIRE concluded that the recruitment and training of controllers were in line with the updated plans. Recruitment and training plans are

also under periodic reviews based on the traffic growth figures of the regular STATFOR forecast updates. ENAIRE was of the view that its recruitment and training process had some buffer, should the need to bring in more ATCOs arise.

8.3 *Rostering scheme*

122 ENAIRE introduced the rostering scheme of ATCOs as based on a five-plus-three-days cycle, where five days of work for each ATCO is followed by three days of rest. The rostering scheme and its flexibility are limited by the general constraints set out by the national legislation, defining shift lengths, break periods, etc. ENAIRE noted that the labour agreement between ENAIRE and the labour unions has some limiting factors in terms of flexibility.

123 ENAIRE reported that the new labour agreement establishes the concept of stand-by shifts, a service that can be used for any circumstance, where controllers are ready to be called upon, but are not present at ENAIRE premises until the situation so requires. ENAIRE expects significant improvements in terms of flexibility and the utilisation of ATCOs from this development in the coming years.

124 ENAIRE concluded that, despite the constraints imposed by legislation, the rostering scheme was appropriate to handle the foreseen traffic demand and was not a limiting factor in capacity performance.

8.4 *Objective obstacles that cannot be overcome by the start of RP4*

125 ENAIRE did not report any obstacles or major hindrances to capacity provision that could not be resolved by the start of RP4. However, despite realising all the capacity improvement plans and eliminating any shortage of ATCOs it would still not realistic to expect zero delays, as unforeseen fluctuation and unexpected growth of traffic together with external factors may still create capacity constraints.

8.5 *Planned measures to rectify the situation*

126 ENAIRE described in detail the plans to eliminate the ATCO shortage at ACCs. ENAIRE already recruited 90 and 91 ATCOs during 2022 and 2023,

and an additional 137 ATCOs were in the recruitment pipeline at the end of 2023, effectively entering operations during 2024 and early 2025 depending on the training and contracting process.

- 127 ENAIRE stated that it will continue the recruitment and training process as necessary, with a training capacity of 90-130 people each year, plus some additional training capacity for ATCOs moving between different units. ENAIRE foresaw this influx of ATCOs as sufficient to cover the attrition of controllers through retirement and other reasons of leaving operations.
- 128 If training plans presented at the meeting are realised by ENAIRE, the number of ATCOs in OPS at the end of RP3 would be around 15% above the planned figures in the RP3 performance plan, which would be in line with the foreseen capacity increase required to meet demand.

9 CONCLUSIONS

- 129 The additional evidence and information presented during the follow-up interviews showed that the consulted ANSPs and NSAs are aware of the existing issues around capacity provision and have devised plans to resolve these and increase capacity.
- 130 The planned measures of the consulted ANSPs focusing on ATCO training and recruitment are challenging but, if carried out in full and on time, could close most of the capacity gap during the early years of RP4. The only exceptions being DFS and DSNA, where the planned increase in ATCO numbers may not be sufficient to fully resolve the existing issues by 2027. However, it remains clear that there are significant uncertainties as regards the volatility of traffic flows and the traffic growth which might reduce the impact of capacity improvement measures.
- 131 Furthermore, apart from ATCO recruitment and training, the consulted ANSPs may also need to carry out updates to their ATM systems, improve the rostering of ATCOs to enable more productivity, and ensure that social negotiations and appropriate change management processes support these developments.
- 132 The PRB welcomes the fact that almost all consulted ANSPs have carried out and planned capacity assessment studies together with the Network Manager to ensure that capacity improvement measures are safely translated into increasing sector capacities. The practice put in place by the German NSA and DFS for the periodic validation of sector capacities may be useful to implement at all capacity constrained ANSPs.
- 133 The PRB recommends that ANSPs having a significant ATCO shortage and having reached their limitations in ATCO training capacity should explore the possibilities of using excess ATCO capacity present at different parts of the European network.
- 134 Finally, the implementation of the presented capacity improvement measures will be monitored closely during the PRB annual monitoring process in the following years.