

# PRB assessment of RP3 performance plans Union-wide assessment report

March 2020

## Statement of the Chair

The PRB has thoroughly analysed the performance plans Member States submitted for the third reference period which started in 2020 and ends in 2024.

The PRB has concluded that most of the Member States should revise their plans because their targets are not consistent with Union-wide targets. At Union-wide level, States plan to miss the environmental targets, do not provide sufficient capacity and ask for substantially more money.

As observed in the past two years, the problems and the solution of the current inefficiencies remain the same. A few underperforming area control centres in the middle of Europe impact the overall performance, counteracting the efforts of States that have submitted solid plans. If the air navigation service providers in the core of Europe would perform like their best-performing peers, targets would be met.

The submitted performance plans indicate various issues of concern:

- Member States will not meet the environmental targets. Aviation is under severe pressure to improve its environmental performance and air traffic management must contribute to reducing the CO<sub>2</sub> output of aviation.
- There is a lack of projects to introduce fundamental structural changes during the third reference period with only a few planning for increased cross-border cooperation. The submitted plans will not decrease fragmentation.
- The air navigation service providers are asking for large amounts of additional money, mostly to add more air traffic controllers (plus 2,700 (net) throughout the third reference period). While certain area control centres will need additional controllers to manage capacity, the PRB is concerned about the scale of the planned increase. In many cases, it will delay the urgently needed modernisation of air traffic management. Member States should also be supportive of the European Union Aviation Safety Agency's plan to further harmonise the licencing requirements for air traffic controllers.
- The submitted performance plans indicate that many Member States want to invest in infrastructure, which will not have a direct impact on performance. Member States, both in their capacity as owners of the service providers and as National Supervisory Authorities, need to continue to ensure that the investments planned by their service providers deliver tangible benefits and are consistent with the European ATM Master Plan to reach the Single European Sky performance objectives.

The current traffic forecast for European aviation shows that the expected growth of flight movements during the third reference period will be lower than during the previous reference period. Member States and their air navigation service providers will have to be vigilant and plan how to cope with the expected change. Air navigation service providers need to be able to adapt to changing traffic demand.

The scrutiny the PRB has applied when assessing the performance plans should not imply that the PRB recommends the Commission to deal with every issue and to micro-manage air traffic management. The thorough assessment should foremost support the National Supervisory Authorities to identify issues, providing guidance on what they can request from the service providers. As an example, there is no justification for excessive cost of capital as asked for with the current plans that would lead to around 500 million € of extra cost for airspace users without any added value for them.

While the assessment of the plans implied a cooperation with many stakeholders, defining the recommendations to the Commission remains the sole responsibility of the PRB. I thank the colleagues from Eurocontrol and EASA for the excellent cooperation, and most of all my colleagues from the PRB and the PRB Support Team.

The PRB looks forward to working together with Member States, which will have to revise their performance plans as well as stakeholders with the goal to have the plans adopted by the end of 2020, because all stakeholders need legal certainty for their businesses.



Regula Dettling-Ott

PRB Chair

## Executive Summary

A regulation of monopolies, such as air navigation service providers, requires a plan for future performance. Together with targets, it ensures that the monopoly providers become more efficient, namely monitoring the costs while aiming at an improved quality of service.

When reviewing the performance plans, the PRB and the Commission assess whether they are consistent with the targets the Commission and Member States agreed on in 2019.

For the third reference period, the priorities are:

- The level of safety of air traffic management must be retained or improved;
- The Single European Sky must contribute to reducing CO<sub>2</sub> emissions of aviation;
- Air navigation service providers need to provide sufficient capacity responding to demand;
- Services have to be provided in a cost-efficient manner.

Assessing the performance plans Member States have submitted, the PRB noted a mixed picture: Safety is mostly excellent, referring to the aspects covered by the performance plans (effectiveness of safety management of the service provider). For the other key performance areas, the picture is sobering: At EU level, several Member States are planning to miss the targets for environment, capacity and cost-efficiency.

- **Environment:** According to the plans filed by Member States, extension of routes remains a core issue. Flying longer distances than required will cause avoidable CO<sub>2</sub> output. The Performance and Charging Regulation should be used to drive more environmentally friendly behaviour. Only one country (the UK) has used additional tools such as an incentive scheme to drive better environmental performance.
- **Capacity:** According to the plans, capacity targets will be missed with en route delay over 2.75 minutes per flight rather than 0.9 minutes per flight in the first year of the third reference period and 1.5 minutes per flight rather than 0.5 minutes per flight in 2024. Although this may seem like a small difference, such en route delays can generate further delays, as experience during the past two years has shown, through their knock-on effects on subsequent flights.
- **Cost-efficiency:** According to the plans, States are expecting to miss the Union-wide targets: they are asking that their air navigation service providers receive 3.5 billion € of extra revenue during the five years (approximately 700 million € per year), even though the Union-wide targets for cost-efficiency already factored in a substantial increase in cost.

When Member States agreed to the new Performance and Charging Regulation in 2019, they insisted that additional money would be necessary to meet the capacity targets. Accordingly, the Commission amended the target for cost-efficiency to allow for this and included a provision within the Regulation to cater for a deviation from cost-efficiency targets for the purpose of providing sufficient capacity or for restructuring. There are several Member States, among them the FABEC states, which ask for additional money without providing sufficient capacity. From the PRB's point of view, this will preclude applying the exemption.

The submitted plans demonstrate limited willingness of Member States to use instruments of economic regulation to steer behaviour of their air navigation service providers, although the Performance and Charging Regulation provides for them, in particular incentives schemes. Most of the incentive schemes included in the submitted plans have low thresholds making it easy to trigger bonus payments and with penalties that have no real impact. As the Regulation – which the

Member States have accepted – requires incentive schemes with a “material impact”, the PRB recommends rejecting plans lacking such schemes.

Given the above results, the PRB recommends the Commission to ask the majority of Member States to revise their plans. Many of them will have to make a comparably small effort to improve, while others will have to address fundamental issues.

## Table of Contents

<b>Statement of the Chair</b> .....	<b>2</b>
<b>Executive Summary</b> .....	<b>4</b>
<b>1 Introduction</b> .....	<b>8</b>
1.1 About this report .....	8
1.2 Reviewing performance during the second reference period (RP2).....	8
<b>2 Development and assessment of performance plans</b> .....	<b>10</b>
2.1 Development of performance plans .....	10
2.2 Receipt of performance plans .....	10
2.3 Completeness checks.....	10
2.4 Assessment process.....	10
2.5 Interpretation of the Regulation .....	11
2.5.1 Deviations from the STATFOR base traffic forecast .....	11
2.5.2 Using the new EASA acceptable means of compliance.....	11
2.5.3 Targets on environment and capacity and incentive schemes.....	12
2.5.4 Cost-efficiency .....	12
2.5.5 Change management .....	13
2.5.6 Impact of interpretations of the Regulation .....	13
<b>3 Safety</b> .....	<b>14</b>
3.1 Union-wide targets for RP3.....	14
3.2 Approach to the assessment.....	14
3.3 Result of the assessment of the Effectiveness of Safety Management .....	14
3.4 Proposed measures for achievement of draft safety targets.....	16
3.5 Summary of the safety KPA.....	17
3.6 Recommendations for the safety KPA .....	17
<b>4 Environment</b> .....	<b>19</b>
4.1 Union-wide targets for RP3.....	19
4.2 Measures for achievement of national or FAB performance targets .....	20
4.3 Incentive schemes.....	21
4.4 Summary of the environment KPA.....	22
4.5 Recommendations for the environment KPA .....	22
<b>5 Capacity</b> .....	<b>23</b>
5.1 Union-wide targets for RP3.....	23
5.2 Measures for achievement of national or FAB performance targets .....	26
5.3 Local targets on average arrival ATFM delay per flight .....	29
5.4 Incentive schemes.....	30
5.5 Summary of the capacity KPA.....	31
5.6 Recommendations for the capacity KPA .....	32
<b>6 Cost-efficiency</b> .....	<b>33</b>
6.1 Union-wide en route targets for RP3.....	33
6.1.1 Union-wide cost-efficiency targets for RP3 and Member States' performance plans.....	33
6.1.2 Criteria for the assessment of performance plans and targets at national level.....	34
6.1.3 Assessment against the cost-efficiency criteria.....	34
6.2 En route traffic forecasts used in the performance plans .....	36
6.2.1 Traffic risk sharing.....	37
6.3 Cost analysis for en route.....	37

6.3.1	2019 forecast and 2019 baseline review .....	37
6.3.2	Planned determined costs - 2019 forecast compared to 2024 determined costs .....	38
6.3.3	Staff costs .....	39
6.3.4	Costs of investments (i.e. depreciation, cost of capital and cost of leasing) .....	40
6.3.5	Cost of capital .....	44
6.3.6	Cost allocation methodology between en route and terminal services .....	47
6.4	Union-wide terminal determined unit costs (DUC) for RP3 .....	48
6.5	Summary .....	48
6.6	Recommendations for the cost-efficiency KPA .....	49
<b>7</b>	<b>Interdependencies and trade-offs.....</b>	<b>51</b>
7.1	Interdependencies relating to the safety KPA .....	51
7.2	Interdependencies between the environment and capacity KPA .....	51
7.3	Interdependencies between capacity and cost-efficiency .....	51
<b>8</b>	<b>Network Manager .....</b>	<b>52</b>
<b>9</b>	<b>The military dimension .....</b>	<b>53</b>
<b>10</b>	<b>Summary of recommendations.....</b>	<b>54</b>
<b>11</b>	<b>Next steps for RP3.....</b>	<b>55</b>
11.1	Adoption of performance plans .....	55
11.2	Monitoring activities .....	55

## 1 Introduction

### 1.1 About this report

- 1 The Performance Review Body (PRB) of the Single European Sky (SES) has prepared this report to assess the draft performance plans submitted by Member States of the European Union and one Functional Airspace Block (FAB) for the third reference period (RP3), which runs from 2020 to 2024.<sup>1</sup> It provides a summary of the Union-wide assessment of the draft performance plans and describes how the PRB has approached the assessment and the issues identified during this work.
- 2 This report is supplemented by the detailed assessment of the PRB in a factbook<sup>2</sup> for each Member State.
- 3 The results of the assessment will support the European Commission in its Decision to recommend to the 74<sup>th</sup> meeting of the Single Sky Committee in March 2020 regarding the consistency or inconsistency of the draft performance plans.
- 4 In preparation of the development of the Member States' performance plans, in October 2018, the PRB advised the Commission on setting the targets for the third reference period<sup>3</sup> for the airspace controlled by the EU28 plus Norway and Switzerland.<sup>4</sup>
- 5 The PRB updated its advice in February 2019, following consultation with stakeholders and following STATFOR's updated seven-year traffic forecast. The Commission proposed Union-wide performance targets to the 71<sup>st</sup> meeting of the Single Sky Committee on 26-27 March 2019. On 29 May 2019, the European Commission adopted these targets after a positive opinion was provided by the Member States.<sup>5</sup>

### 1.2 Reviewing performance during the second reference period (RP2)

- 6 Setting the targets for RP3, the PRB considered the performance and compliance with the Union-wide targets for RP2.
- 7 For **safety**, RP2 showed very strong results, with the system able to cope with increasing traffic.
- 8 Regarding **environment**, Member States did not achieve the Union-wide targets for RP2 with performance worsening in the second part of RP2.
- 9 En route air traffic management provides efficient routes across Europe, but air traffic management and the industry more broadly must do more to tackle the impact of aviation on the environment. There are over ten million flights in European airspace each year. Each small improvement can therefore make a significant difference to emissions.
- 10 En route air traffic flow management (AFTM) delays have been over three times higher than the Union-wide target in both 2018 and 2019 and as a consequence, increasing the **capacity** became a top priority for European aviation. The increase in delay is disproportionate to the increase in traffic movements observed since the previous traffic peak in 2008. Moreover, the costs of such delays are borne by airspace users and ultimately the passengers.

---

<sup>1</sup> Commission Implementing Regulation (EU) 2019/317 of 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.

<sup>2</sup> The assessment was carried out using factbook templates to analyse the information and data provided within the performance plans

<sup>3</sup> Advice to the Commission in the setting of Union-wide performance targets for RP3, Performance Review Body (October 2018).

<sup>4</sup> On 31 January 2020, the United Kingdom left the European Union. At the time of writing, it is unclear whether the UK will remain part of the SES framework following the so-called transition period or whether it will become a third country, which remains in the Eurocontrol area but outside the scope of the Single European Sky framework.

<sup>5</sup> Commission Implementing Decision (EU) 2019/903 of 29 May 2019 setting the Union-wide performance targets for the air traffic management network for RP3 starting on 1 January 2020 and ending on 31 December 2024.



- 11 These delays and associated costs are being generated, principally, by large Member States in the core of the European air traffic management (ATM) network. Analysis shows that for those air navigation services providers (ANSPs) that fail to provide sufficient capacity, much of the delay is caused by capacity and staffing causes. Such reasons are largely within the control of the ANSPs and the poor performance is partly the consequence of management decisions taken by ANSPs during RP2.
- 12 Overall, the total cost of ANS provision has remained flat during RP2. This means that ANSPs handled the (slightly) increased traffic movements during RP2 at a similar cost, leading to improved cost-efficiency. ANSPs have substantially increased revenues, because the calculation of charges is based on the number of flights they handle and the weight of the aircraft. However, the PRB notes that ANSPs generally have underspent during RP2 rather than investing the revenue received to provide additional capacity.
- 13 Traffic is forecasted to grow throughout RP3, although at a lower rate than during RP2. This will require air navigation service providers to further increase capacity and, in some instances, tackle structural causes of capacity bottlenecks. Employing additional air traffic controllers is one way to add capacity, but other options such as reducing the fragmentation of airspace and equipment, deploying new technology and ensuring efficient use of air traffic controller resources should be prioritised. At the same time, ANSPs will have to ensure they can adapt in case traffic will not increase as expected or that it may even decrease.

## 2 Development and assessment of performance plans

### 2.1 Development of performance plans

- 14 The National Supervisory Authorities (NSAs) of the Member States play a vital role in the development of performance plans.
- 15 On 30 April 2019, the PRB and the Commission provided Member States with a template for the development of their performance plans. The template was pre-filled with information available for each Member State and FAB.
- 16 According to Commission Implementing Regulation (EU) 2019/317 (Performance and Charging Regulation), each Member State was required to hold a consultation meeting with stakeholders, which took place between June and September 2019. In addition to airspace users and other stakeholders, these consultation meetings were attended by representatives of the PRB, the Commission and Eurocontrol.

### 2.2 Receipt of performance plans

- 17 All performance plans for RP3 were due for submission no later than 30 September 2019. The majority were submitted on time. They were filed using the ESSKY platform.<sup>6</sup>

### 2.3 Completeness checks

- 18 On receipt of the performance plans, and in accordance with the Regulation, the PRB and the Commission assessed the completeness of the draft performance plans and verified whether they contain all the elements needed to assess compliance with the requirements.<sup>7</sup> The PRB and the Commission found that almost all draft performance plans were incomplete for various reasons, including:
  - Lack of justification of specific points within the plan. For example, in some cases the required justification for deviation from the environment reference values was not included.
  - Inclusion of cost elements not deemed eligible under the Performance and Charging Regulation.
  - Lack of local targets for a key performance area (KPA).
  - Lack of the measures that would be implemented to support the improvements in performance sought over the reference period, as required by the Regulation.
- 19 In accordance with the Regulation, the Commission requested Member States to submit updated draft performance plans by 21 November 2019. The majority of completed plans were received by this date.

### 2.4 Assessment process

- 20 The PRB assessed the performance plans, in close collaboration with the Network Manager, the Performance Review Unit (PRU) of Eurocontrol and the European Union Aviation Safety Agency (EASA). Figure 1 presents the high level RP3 performance plan assessment timeline to date.
- 21 Completing the assessment, the PRB submitted its recommendations to the Commission.

---

<sup>6</sup> The ESSKY platform is a web-based portal provided by the Commission to enable Member States to provide information, data and communication related to the Single European Sky.

<sup>7</sup> Requirements listed in Article 10(2) and 10(4) and, where applicable, Article 10(3) and 10(5) of Implementing Regulation (EU) 2019/317.

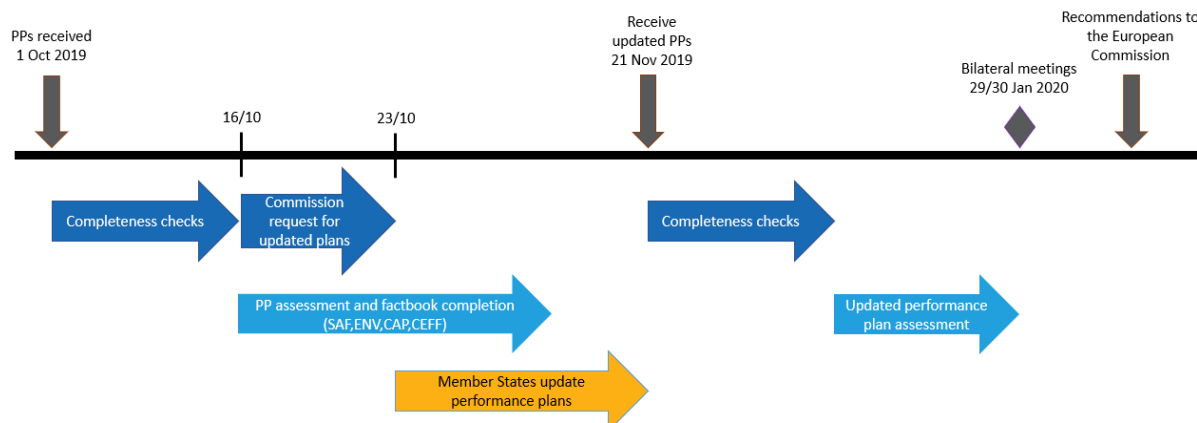


Figure 1 - Timeline for the assessment of the draft performance plans.

## 2.5 Interpretation of the Regulation

- 22 The Performance and Charging Regulation applicable in the third reference period is a new legislation, adopted in May 2019. As with any legal text, it contains provisions which require interpretation to be established over time. Some of them cover issues relevant for the assessment of the performance plans.
- 23 The following subsections elaborate on the issues, some of which may need further clarification, namely with respect to deviations from reference values for the capacity and environment KPAs.

### 2.5.1 Deviations from the STATFOR base traffic forecast

- 24 Article 10, (2) (f) and (g) of the Performance and Charging Regulation require the performance plans to be based on Eurocontrol's STATFOR base traffic forecast. It also allows National Supervisory Authorities to use other forecasts if they fulfil the following criteria:
  - Consult with airspace users and air navigation service providers concerned.
  - Set out in the draft performance plan the reasons for using a different forecast.
  - Only deviate where specific local factors are not sufficiently addressed by Eurocontrol's STATFOR base traffic forecast.
  - Apply the same forecast for all key performance areas (KPAs).
- 25 Member States must prove that these criteria are met.

### 2.5.2 Using the new EASA acceptable means of compliance

- 26 Member States are required to set targets for the key performance area of safety for each calendar year of RP3. EASA has published Acceptable Means of Compliance (AMC) and Guidance Material (GM) defining the requirements to be achieved for the maturity levels for each management objective. The Notice of Proposed Amendment (NPA) 2019-10(B) was published on 19 September 2019. EASA plans to publish this material formally in the first quarter of 2020.
- 27 The PRB has considered the timing of this publication and the difficulties associated with comparing the guidance material and acceptable means of compliance for RP2 with the new material for RP3. A performance plan starting at a lower level in RP3 than finishing at the end of RP2 (for example, finishing RP2 at Level D and targeting Level C for the first year of RP3) will not necessarily result in a PRB recommendation to the Commission to reject the plan. However, Member States

should ensure that the maturity of safety management systems do not degrade at the start of the third reference period.

- 28 The PRB has also assumed that compliance with Commission Implementing Regulation (EU) 2017/373<sup>8</sup> for both NSAs and ANSPs would ensure that developments in other key performance areas:
- would not compromise safety; and
  - would be implemented following change management practices sufficient to control the impact at network level.

### 2.5.3 Targets on environment and capacity and incentive schemes

- 29 The assessment criteria set out in points 1.2 and 1.3 of Annex IV of the Performance and Charging Regulation consider the consistency between the draft performance targets and the national or FAB reference values in respect of each calendar year of RP3. While there is flexibility in the Regulation that allows additional determined costs to achieve the capacity targets, the regulation does not contain provisions that envisage deviations from the national or FAB reference values for environment or capacity.
- 30 The PRB has assessed the national or FAB environment and capacity targets of the submitted performance plans and compared them with the respective reference values. Member States not targeting to achieve their reference values for every year of the reference period will be recommended to revise their plans.
- 31 The Performance and Charging Regulation includes provisions for mandatory financial incentive schemes for the achievement of performance targets in the capacity KPA, both for en route and terminal air navigation services. The Regulation also enables Member States to establish such financial incentive schemes to support the achievement of performance targets in the environment KPA. In some cases, the reference values defining consistency with the Union-wide values reflect poorer performance than was achieved by Member States in 2019. Where these reference values are used as the targets, it may be easier for an ANSP to achieve the required performance and trigger the incentive mechanism to receive additional revenue. The PRB recommends the Commission to assess whether this is consistent with the current Regulation. Incentive mechanisms should have a material impact, target improved performance and prevent underperformance.

### 2.5.4 Cost-efficiency

- 32 Point 1.4 of the Annex IV of the Performance and Charging Regulation provides four criteria (criteria (a) to (d)) to assess the cost-efficiency of en route determined unit cost for RP3.
- 33 Criteria (a) and (b) ensure that the trend of local determined unit cost is consistent with the Union-wide trends. Criterion (a) assesses the consistency of this trend over the third reference period, while criterion (b) assesses it over the second and third reference period combined. Criterion (c) assesses the consistency of the baseline for the determined unit cost with the relevant comparator group.<sup>9</sup>
- 34 Point 1.4 of Annex IV of the Performance and Charging Regulation does not stipulate whether a performance plan should meet all the criteria of paragraphs (a) to (c) or a subset of them. The PRB

<sup>8</sup> Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight.

<sup>9</sup> The comparator groups of air navigation service providers with a similar operational and economic environment, for the purposes of assessing performance targets in the key performance area of cost-efficiency.

has considered the various options and their effects without prejudging how the Commission will ultimately apply the provision.

- 35 The PRB has assumed that a Member State must comply with two of the three criteria ((a) to (c)) to be consistent with the Union-wide trends.
- 36 The fourth criterion, criterion (d), allows for a deviation from the Union-wide trend and long-term trend (a) to (c) to:
- allow the achievement of the performance targets in the key performance area of capacity;
  - implement restructuring measures leading to restructuring costs provided they will deliver a net financial benefit to airspace users at the latest in the subsequent reference period.
- 37 The PRB has assumed that criterion (d)(i) can only be considered in relation to draft performance plans which deviate from at least one of the Union-wide cost-efficiency trends and which include capacity targets which are consistent with the Union-wide targets.

#### 2.5.5 Change management

- 38 The Member States were required to describe the change management practices and transition plans for the entry into service of major airspace changes or for changes to ATM Functional Systems aiming at minimising any negative impact on the network performance.
- 39 Most of the performance plans have included information about the change management procedures at the ANSP and at the NSA level. The change management procedures are based on standard change management processes. Few Member States declared that they apply the procedures compliant with the Commission Implementing Regulation (EU) 2017/373 without further elaboration.
- 40 The PRB has assumed that change management procedures compliant with the Commission Implementing Regulation (EU) 2017/373 are sufficient means to address any negative impact from changes on network performance. The NSAs and EASA would oversee the application of such procedures.

#### 2.5.6 Impact of interpretations of the Regulation

- 41 The interpretations of the provisions described in Section 2.5.2 and Section 2.5.3 can lead to cases where the PRB could recommend to revise an element of a performance plan rather than approving it. Instead, the PRB recommends that such plans may be approved, and that they are placed on a “watchlist” to scrutinise the performance of these Member States for the given element as part of the PRB monitoring report.
- 42 The “watchlists” are presented in the following sub-sections for each key performance area:
- Recommendations for the safety KPA – Section 3.6;
  - Recommendations for the environment KPA - Section 4.5;
  - Recommendations for the capacity KPA – Section 5.6;
  - Recommendations for the cost-efficiency KPA - Section 6.6.

### 3 Safety

#### 3.1 Union-wide targets for RP3

- 43 The Performance and Charging Regulation for RP3 retained one Union-wide safety key performance indicator from the RP2 regulation: The effectiveness of safety management (EoSM) of air navigation service providers. As shown in Table 1, the targets were defined as a minimum maturity level to be achieved within five separate management objectives.<sup>10</sup>

	2024 Maturity Level
Safety Policy and Objectives	C
Safety Risk Management	D
Safety Assurance	C
Safety Promotion	C
Safety Culture	C

Table 1 - Union-wide targets for the five management objectives for the effectiveness of safety management.

- 44 The key performance indicator for RP3 is based on a revised definition of maturity levels and is aligned with the CANSO Standard of Excellence in Safety Management Systems as well as ICAO Annex 19.

#### 3.2 Approach to the assessment

- 45 The PRB has coordinated a common view with EASA on the completeness and consistency of the draft performance plans.
- 46 The PRB compared the targets within each draft performance plan with the Union-wide targets. The PRB also considered that the measures within each plan should enable the Member States to achieve the targets at the end of RP3, i.e. the measures should reflect the improvements needed over RP3 based on the starting level in 2020 and the targets thereafter.
- 47 Where targets were not proposed for each year of RP3, it was not possible to assess whether the measures proposed would be sufficient. The PRB considered these plans to be incomplete and, therefore, inconsistent.
- 48 The PRB agreed with EASA whether the proposed measures were sufficient. In several cases, the PRB proposed recommendations to the Member States to complement the proposed measures.

#### 3.3 Result of the assessment of the Effectiveness of Safety Management

- 49 All Member States have adopted the Union-wide safety EoSM targets with Level D for safety risk management and Level C for other management objectives by 2024 at the latest. One Member State, Latvia, plans to exceed RP3 targets in one or more management objectives.
- 50 All Member States, except for FABEC, have included targets for the Effectiveness of Safety Management for each year of RP3. The FABEC Member States (Belgium, France, Germany Luxembourg, the Netherlands and Switzerland) did not provide the targets for 2020-2023. The PRB recommends revising this performance plan, providing levels for all five years and the associated measures required to achieve any increases in performance during the reference period.

<sup>10</sup> The levels of achievement for the five management objectives range from Level "A" (lowest maturity) to Level "E" (highest maturity). For further details please refer to the 'PRB assessment of performance plans for RP3 – Technical Guide'.

- 51 Most Member States started at a level which appears consistent with the maturity level achieved at the end of RP2 and consistent with Commission Implementing Regulation (EU) 2017/373.
- 52 Five Member States (Cyprus, Estonia, Ireland, Finland and the UK) plan to achieve all the RP3 safety targets already in the first year of RP3.
- 53 12 Member States (Bulgaria, Czech Republic, Greece, Hungary, Latvia, Malta, Norway, Poland, Portugal, Romania, Slovenia and Spain) will need to improve the maturity of the Safety Risk Management during RP3, while they plan to achieve the RP3 targets for other management objectives in the first year of RP3.
- 54 There were few exceptions to the above:
- Austria, Croatia, Denmark and Slovakia defined starting levels conservatively and lower than what the PRB would have expected. Austria, Croatia and Slovakia plan to achieve the RP3 targets during the last year of RP3 and Denmark in 2023. The PRB recommends the approval of the safety elements of these performance plans but will monitor these Member States to ensure that the maturity of the safety management does not degrade between RP2 and RP3.
  - Cyprus and Poland defined maturity levels at the start of RP3 that require measures to be implemented during the last year of RP2 and first year of RP3. The PRB will monitor these Member States to ensure that additional measures will be implemented, should they be required to reach the RP3 targets.
- 55 Figure 2 shows the number of Member States fulfilling the targets for each management objective in the course of RP3.<sup>11</sup>
- 56 17 Member States start RP3 at the target level for all management objectives except Safety Risk Management, demonstrating that most improvement is required within this management objective.
- 57 FABEC (seven ANSPs) did not provide levels for 2020-2023 with targets only for 2024. Four Member States adopted a conservative level at the beginning of RP3, proposing gradual progress towards the targets. These eleven ANSPs account for most of the progress during RP3 to achieve the targets and explain the accelerated increase in achievement of targets during 2023 and 2024.
- 58 For the UK, the PRB considers that the performance plan should include all ANSPs within the scope of the Performance and Charging Regulation and, therefore, the PRB considers the UK performance plan to be inconsistent in the safety KPA.<sup>12</sup>

---

<sup>11</sup> FABEC did not provide targets for years 2020–2023, which contributes to the steep increase of ANSPs achieving the target levels in 2024.

<sup>12</sup> For example Air Navigation Solutions provide services at Gatwick and Edinburgh airports, but are not included within the UK performance plan.



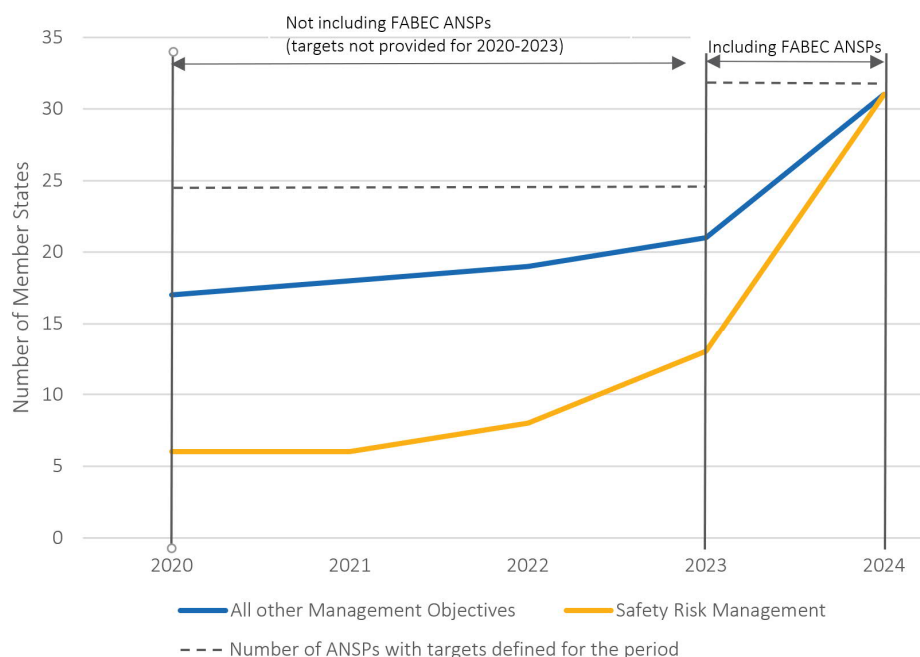


Figure 2 - Evolution of ANSPs target achievement over RP3 for each management objective.

### 3.4 Proposed measures for achievement of draft safety targets

- 59 The PRB compared the draft performance targets with the Union-wide targets. In doing so, the PRB also assessed the measures required to improve the maturity levels of the effectiveness of safety management over RP3.
- 60 There were different approaches to including measures for improving the effectiveness of safety management across all of the performance plans. This diversity made it difficult to assess compliance with the Regulation across different ANSPs.
- 61 Most of the Member States considered compliance with Commission Implementing Regulation (EU) 2017/373 as an effective measure and consequently considered compliance as an enabler to improve EoS maturity. In line with the assessment undertaken during the target setting for RP3, the PRB agrees that compliance with Commission Implementing Regulation (EU) 2017/373 should ensure Member States achieve the RP3 targets for all management objectives, except safety risk management. For safety risk management, measures additional to those defined by Commission Implementing Regulation (EU) 2017/373 are required. Member States need to confirm achieved maturity as part of their oversight in the early part of RP3. They should also consider additional measures to ensure reaching the RP3 targets for all management objectives. Some Member States have already included such additional measures in their draft performance plans.
- 62 Poland defined targets for all their ANSPs including those operating at aerodromes with fewer movements than the threshold defined in Article 1(3) of the Performance and Charging Regulation (80,000 IFR movements per year). However, measures for achieving the targets were focussed on PANSAs, the largest ANSP. The PRB thus concluded that the plan is consistent with the targets.



### 3.5 Summary of the safety KPA

63 In summary, the PRB assessment concluded that:

- All Member States have set their targets of effectiveness of safety management at the Union-wide level at or before the end of RP3.
- All performance plans, except for the one submitted by FABEC (ANSPs in Germany, France, Belgium, Luxembourg, MUAC, the Netherlands, Switzerland), defined the evolution of the EoSM maturity level target for each year in RP3. The UK needs to revise its performance plan to include all relevant ANSPs under the scope of the Performance and Charging Regulation.
- Measures defined to improve EoSM levels over RP3 are for most Member States based on compliance with Commission Implementing Regulation (EU) 2017/373 and do not focus on the improvements to management objectives required during RP3. 18 Member States were therefore added to the PRBs “watchlist” to ensure sufficient measures are implemented to achieve the targets, to monitor that maturity levels do not degrade between RP2 and RP3 and to monitor the planned starting levels in RP3.

### 3.6 Recommendations for the safety KPA

64 The PRB recommendations as a result of the assessment of the draft performance plan is shown in Table 2.

Recommend to approve for the safety KPA		Recommend not to approve for the safety KPA (Incomplete and therefore inconsistent)
Without comment	With specific PRB monitoring points (“Watchlist”)	
Greece	Austria	Belgium/Luxembourg
Ireland	Bulgaria	France
Lithuania	Croatia	Germany
Portugal	Cyprus	The Netherlands
Sweden	Czech Republic	Switzerland
	Denmark	UK
	Estonia	
	Finland	
	Hungary	
	Italy	
	Latvia	
	Malta	
	Norway	
	Poland	
	Romania	
	Slovakia	
	Slovenia	
	Spain	

Table 2 – PRB recommendation, safety KPA.

- 65 The PRB, in coordination with EASA, recommends that one draft performance plan relating to a single Member State and one FAB performance plan should be revised to include the effectiveness of safety management maturity levels for all management objectives for all five years of RP3 (FA-BEC) and for all applicable ANSPs (the UK).
- 66 For the other 23 performance plans that the PRB recommends for approval with regards to the safety KPA, 18 have elements that EASA and the PRB will monitor during RP3 to:
- Ensure that the maturity levels do not degrade between RP2 and RP3.
  - Ensure that maturity levels at the start of RP3 are achieved through measures implemented in the last year of RP2 or in the first year of RP3.
  - Achieve compliance with Commission Implementing Regulation (EU) 373/2017 and complement defined measures in line with the PRB recommendations, in particular for Safety Risk Management.

## 4 Environment

### 4.1 Union-wide targets for RP3

67 Article 3 of Commission Implementing Decision (EU) 2019/903 defines the Union-wide targets for the environment KPA. The targets for KEA are shown in Table 3.<sup>13</sup>

	2020	2021	2022	2023	2024
KEA	2.53%	2.47%	2.40%	2.40%	2.40%

Table 3 - Union-wide environment targets for RP3.

68 The Union-wide targets were broken down into national and FAB reference values by the Network Manager in Part 2 of the June 2019 European Route Network Improvement Plan (ERNIP).<sup>14</sup>

69 Most Member States plan to achieve their national reference values and, therefore, plan a performance that is in line with the Union-wide targets.

70 Eight Member States plan targets that are less ambitious than their ANSP reference values. These are the FABEC Member States, Malta, Poland and the UK. The FABEC States plan to miss their reference values by 0.5 percentage points, although their performance plan indicates they aim at a jointly improved use of Free Use of Airspace (FUA) to achieve synergies between individual Member States.

71 Figure 3 shows the effect of the compiled national and FAB targets compared to the Union-wide targets. Between 2020 and 2022, the difference between the targets of the performance plans and the Union-wide targets will increase from 0.19 percentage points in 2020 to 0.25 percentage points in 2022. The gap then closes but a difference of 0.13 percentage points is planned to remain for the final year of RP3 (2024). Missing the targets will result in excess routings for each year of RP3.

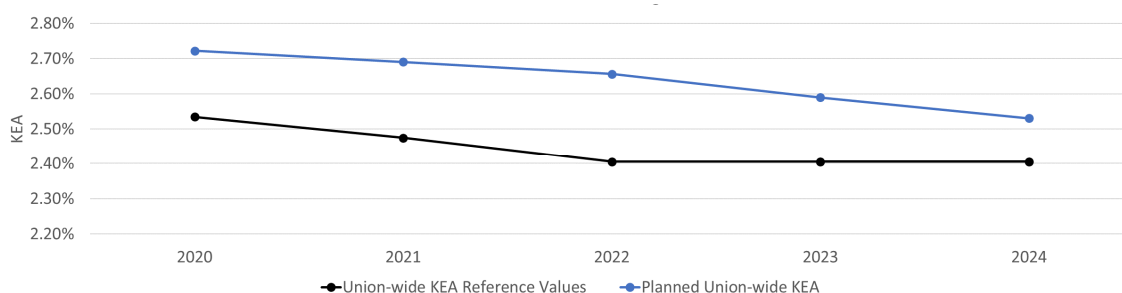


Figure 3 – Impact of the Member States planning to achieve less ambitious environmental performance than required by the Union-wide targets.

72 Table 4 shows the environment targets for the ANSPs of the Member States that adopted less ambitious targets than their reference values.

73 Of these eight Member States and one cross-border ANSP (MUAC), Malta and the Netherlands deviate marginally. The Netherlands plans to achieve the 2024 RP3 target and deviates during the intermediate three years (2021, 2022 and 2023). Malta plans to achieve its national reference value in 2020 but then lowers its ambition slightly for the rest of the reference period.

<sup>13</sup> The Key performance Environment indicator based on Actual trajectory.

<sup>14</sup> European Route Network Improvement Plan (ERNIP) - Part 2: European ATS Route Network - Version 2019-2024 - Edition June 2019.

		2020	2021	2022	2023	2024
France (DSNA)	Planned KEA Target	3.33%	3.33%	3.33%	3.15%	3.00%
	Reference Values	2.90%	2.83%	2.75%	2.75%	2.75%
	Difference	0.43%	0.50%	0.58%	0.40%	0.25%
Germany (DFS)	Planned KEA Target	3.24%	3.24%	3.24%	3.10%	2.95%
	Reference Values	2.81%	2.73%	2.65%	2.65%	2.65%
	Difference	0.43%	0.51%	0.59%	0.45%	0.30%
MUAC	Planned KEA Target	2.29%	2.29%	2.29%	2.20%	2.15%
	Reference Values	1.99%	1.92%	1.85%	1.85%	1.85%
	Difference	0.30%	0.37%	0.44%	0.35%	0.30%
Switzerland (skyguide)	Planned KEA Target	4.78%	4.78%	4.78%	4.65%	4.50%
	Reference Values	4.62%	4.53%	4.45%	4.45%	4.45%
	Difference	0.16%	0.25%	0.33%	0.20%	0.05%
The Netherlands (LVNL)	Planned KEA Target	7.22%	7.22%	7.22%	7.20%	7.18%
	Reference Values	7.22%	7.20%	7.18%	7.18%	7.18%
	Difference	0.00%	0.02%	0.04%	0.02%	0.00%
Belgium (skeyes)	Planned KEA Target	7.12%	7.12%	7.12%	7.12%	7.12%
	Reference Values	7.09%	7.09%	7.05%	7.05%	7.05%
	Difference	0.03%	0.03%	0.07%	0.07%	0.07%
Poland (PANSA)	Planned KEA Target	1.85%	1.84%	1.83%	1.82%	1.81%
	Reference Values	1.67%	1.66%	1.64%	1.64%	1.64%
	Difference	0.18%	0.18%	0.19%	0.18%	0.17%
Malta (MATS)	Planned KEA Target	1.46%	1.46%	1.46%	1.46%	1.46%
	Reference Values	1.46%	1.45%	1.44%	1.44%	1.44%
	Difference	0.00%	0.01%	0.02%	0.02%	0.02%
UK (NATS)	Planned KEA Target	4.06%	4.05%	4.04%	3.88%	3.72%
	Reference Values	3.53%	3.39%	3.25%	3.25%	3.25%
	Difference	0.53%	0.66%	0.79%	0.63%	0.47%

Table 4 - Summary of planned targets and national reference values for the eight Member States that plan to achieve less ambitious environmental performance than required. MUAC is not considered as a Member State but its contribution to the FABEC performance plan is presented.

## 4.2 Measures for achievement of national or FAB performance targets

- 74 Paragraph 1 of Article 14 of Commission Implementing Regulation (EU) 2019/317 specifies that the Commission may complement the assessment process with a review of the measures for achieving national or FAB performance targets in each KPA.
- 75 The PRB reviewed the measures planned by Member States. Such measures should include the projects defined in the European Route Network Improvement Plan (ERNIP) of the Network Manager, which are designed to improve the environmental performance across the Single European Sky. The PRB assessed the Member States' commitment to the implementation of these projects within the performance plans and found that most Member States intend to complete major free route area (FRA) projects as detailed in the ERNIP. Only Austria, Cyprus, France, Czech Republic, Greece and the UK either did not provide sufficient information to determine whether the Member State committed to offer free route airspace by 2022 or did not comment on this issue at all.

76 The performance plans also included the following reasons why Member States believe the targets might not be achievable for the environment KPA:

- **Airspace user route choices:** Member States frequently highlight airspace users' route choices as an uncontrollable factor that affects their ANSPs' ability to deliver performance according to the national reference values.

Paragraph 1 of Article 32 Commission Implementing Decision (EU) 2019/903 allows Member States to modulate their air navigation service charges to 'reduce the environmental impact of flying', thereby enabling Member States to apply some influence on routes chosen by airspace users.

No Member States included the option to modulate charges to support achieving the environmental targets.

- **Military airspace requirements:** Active temporary reserved areas (TRAs)/temporary segregated areas (TSAs) can require airspace users to fly up to 20 additional nautical miles per flight. Increasing cooperation between civil and military air traffic management can help meet the needs of the military, while minimising the impact on civil airspace users.

Austria, Bulgaria, Czech Republic, Denmark, Estonia, FABEC, Finland, Italy, Lithuania, Portugal, Romania, Spain and Sweden included an improved Flexible Use of Airspace (FUA) concept in their performance plans.

- **Free route airspace deployment (FRA):** The PRB considered the deployment of free route airspace, as mandated by ATM Functionality 3 (AF3) in the pilot common project (PCP)<sup>15</sup>, to be a significant factor in enabling the achievement of the Union-wide targets. Most Member States have committed to, or already do, offer free route airspace often beyond the requirements of the PCP. The ERNIP includes recommendations for where FRA should be deployed, which the PRB considered to be measures required to achieve the reference values.

Austria, Cyprus, Czech Republic, France, Greece and the UK submitted performance plans that did not commit to or were ambiguous regarding the offering of PCP-compliant free route airspace before the end of 2022. They plan to operate a fixed route network beyond 2022. Some Member States expect this to delay the potential environmental benefits until the end of RP3, and some do not believe it will have as great an impact as expected by the ERNIP.

- **Weather disturbances:** Adverse weather may force airspace users to fly longer distances. Turbulence, icing, strong winds and clouds are a few examples of weather that may cause an airspace user to extend the route for safety and comfort.

The targets for RP3 already account for weather-related impacts on horizontal flight efficiency and they are reflected in the Union-wide targets shown in Table 3 and the national and FAB reference values. Therefore, Member States should not add additional tolerance for weather related route extension.

### 4.3 Incentive schemes

77 Paragraph 1 of Article 14 of Commission Implementing Regulation (EU) 2019/317 specifies that the Commission may complement the assessment process with a review of the incentive scheme or schemes.

<sup>15</sup> Commission Implementing Regulation (EU) No 716/2014.

- 78 Paragraph 4 of Article 11 of Commission Implementing Decision (EU) 2019/903 enables Member States to incentivise its ANSP(s) to achieve their environment targets. Applying an optional incentive scheme for the environment KPA, where appropriate, can provide momentum and incentivise ANSPs to prioritise the environment KPA since revenue would be placed at risk.
- 79 Only one Member State chose to incentivise its ANSP on environmental performance. The UK plans to apply an incentive on the 3Di performance indicator in its draft performance plan.<sup>16</sup>

#### 4.4 Summary of the environment KPA

- 80 Most Member States plan to set their environment targets in accordance with the European Route Network Improvement Plan of the Network Manager (ERNIP). Only FABEC, Malta, Poland and the UK plan to deviate from it.
- 81 The choice of routes by airspace users, civil-military coordination, weather disturbances and network inefficiencies were common causes of concern that Member States cited as impediments to achieving their environment targets.
- 82 The Network Manager listed major projects in the ERNIP that will help Member States achieve the environmental targets. Most Member States committed to all the projects recommended to them, which included implementing free route airspace and route optimisation projects.

#### 4.5 Recommendations for the environment KPA

- 83 The PRB recommendations as a result of the assessment of the performance plan are shown in Table 5.

Recommend to approve (consistent)		Recommend not to approve (inconsistent)
Without comment for the environment KPA	With specific PRB monitoring points ("Watchlist")	
Austria	Bulgaria	FABEC
Croatia	Cyprus	Malta
Czech Republic	Greece	Poland
Denmark	Italy	UK
Estonia	Lithuania	
Finland	Sweden	
Hungary		
Ireland		
Latvia		
Norway		
Portugal		
Romania		
Slovakia		
Slovenia		
Spain		

Table 5 – PRB recommendation, environment KPA.

<sup>16</sup> 3 Dimensional inefficiency. NATS's KPI for its environmental performance that accounts for horizontal and vertical inefficiencies. <https://www.nats.aero/environment/3di/>

## 5 Capacity

### 5.1 Union-wide targets for RP3

84 The Union-wide targets for the KPA of capacity are presented in Table 6.

	2020	2021	2022	2023	2024
Union wide targets on average en route ATFM delay (minutes per flight)	0.9	0.9	0.7	0.5	0.5

Table 6 - Union-wide targets for average en route ATFM delay.

85 According to the plans submitted by Member States, the Union-wide delay targets will not be achieved throughout RP3 as presented in Figure 4. However, the planned values show the same trends as the targets: higher delays during the first two years of RP3 followed by improved performance during the three remaining years. The plans also show that most Member States plan their capacity to meet the targets, but a few Member States are planning such high delays that the performance of the entire network will miss the targets by a substantial margin.

86 In 2020, the planned Union-wide en route ATFM delay per flight is over one minute per flight higher than the actual delay in 2019 and 1.87 minutes above the Union-wide target. The planned ATFM en route delay performance throughout RP3 is worse than in 2019, except for in 2024 where performance will be marginally better at 1.5 minutes of delay per flight.

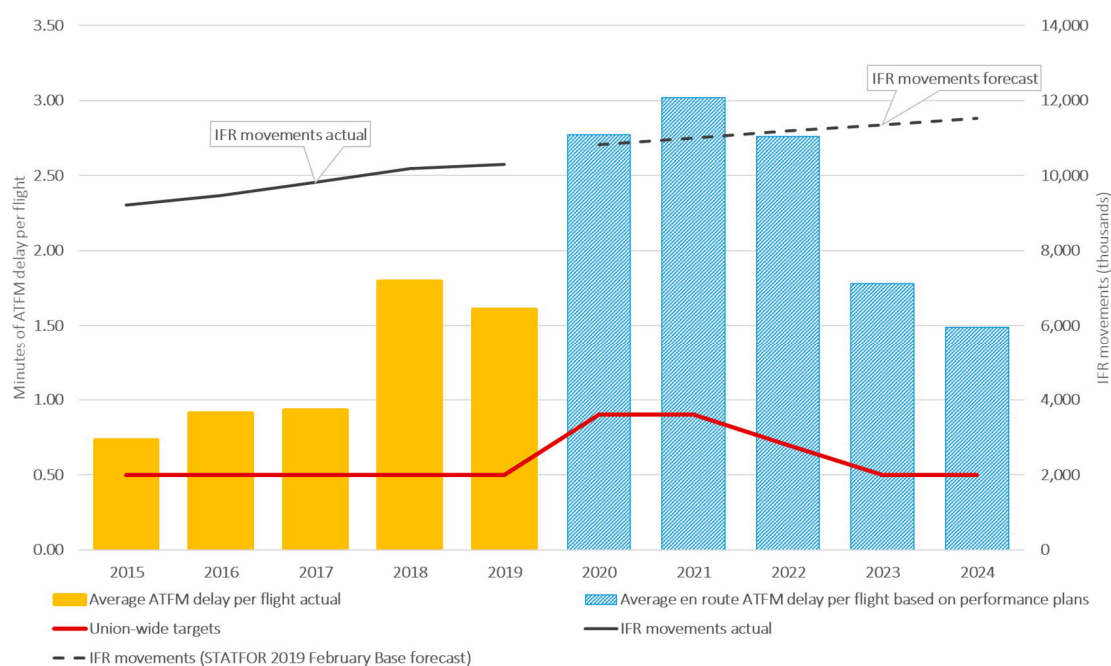


Figure 4 - Evolution of Union-wide en route ATFM delay targets, IFR movements and actual performance.

87 Based on the targets proposed in the draft performance plans, which cover 30 en route ANSPs, 15 of those ANSPs plan to meet their reference values for 2020, four plan to outperform these reference values, whilst 11 plan to generate an ATFM delay higher than their reference values. The deviation is larger than 0.5 minutes of ATFM delay per flight in six out of those 11 targets, as shown in Figure 5.



88 FABEC has submitted a FAB level performance plan, thus performance targets for the key performance area of capacity are assessed at FAB level. However, to allow for a better understanding of the situation, the breakdown values of the FAB level capacity targets are used for comparison purposes in this section, and members of FABEC are highlighted.

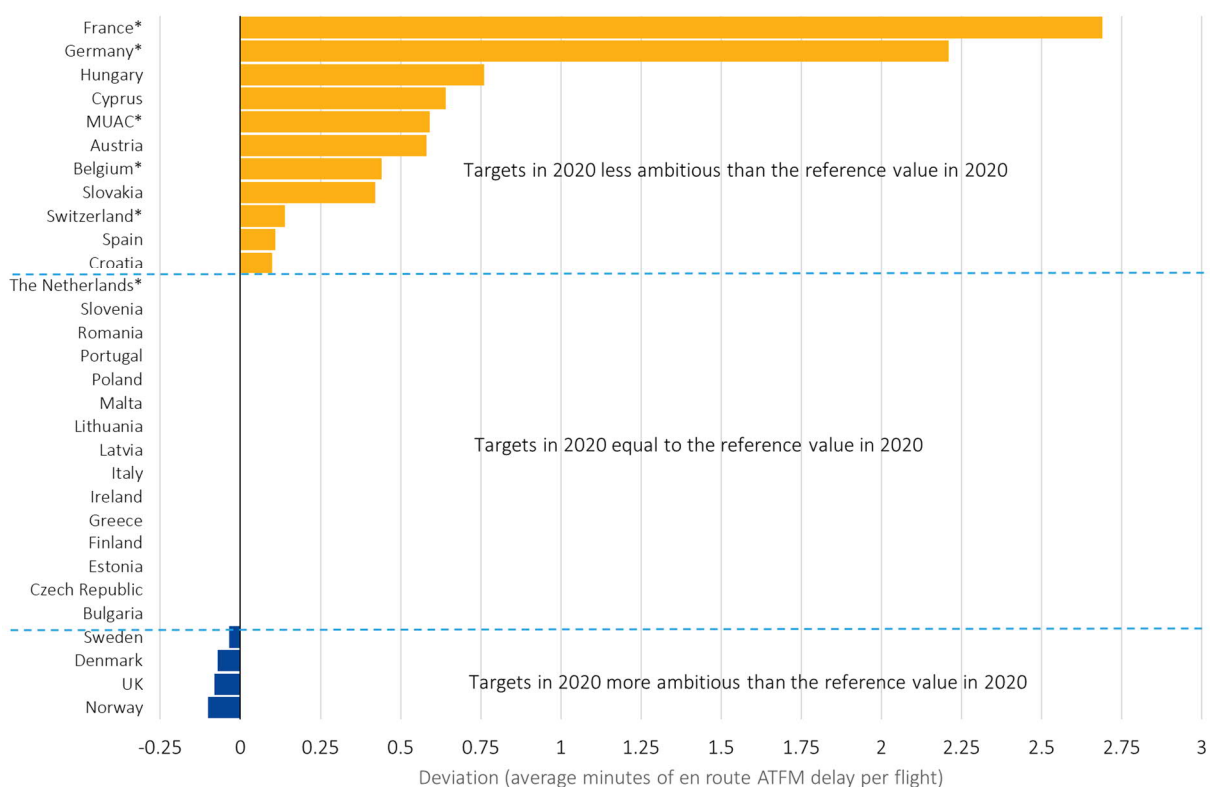


Figure 5 - Deviation of proposed en route ATFM delay targets from NOP reference values, 2020.

- 89 There is a significant improvement by the end of the third reference period, where eight proposed targets deviate from their respective reference values, and where only four of those deviations are greater than 0.5 minutes of ATFM delay per flight. The performance plans for Austria and Switzerland show worsening performance over RP3. Switzerland's plan shows the highest en route ATFM delay per flight in Europe in 2024, followed by France, Germany and Austria.
- 90 The additional delay resulting from the planned performance targets between 2020 and 2024 corresponds to over 92.6 million minutes of additional en route ATFM delay over the third reference period. This translates into additional yearly cost for airlines of 2,024M€, 2,332M€, 2,307M€, 1,453M€, and 1,144M€ respectively, which adds up to 9,261M€ in total over RP3.<sup>17</sup>
- 91 20 draft performance plans include targets equal to the corresponding reference values, and two propose more ambitious targets for 2024, as presented in Figure 6. However, significantly more ambition is required from several Member States to close the capacity gap.

<sup>17</sup> An estimated value of €100 per minute of delay is used and is based on the Standard Inputs for Eurocontrol Cost-Benefit Analyses, Edition 8.0, 2018 January, p. 14., ATFM Delay cost per minute.



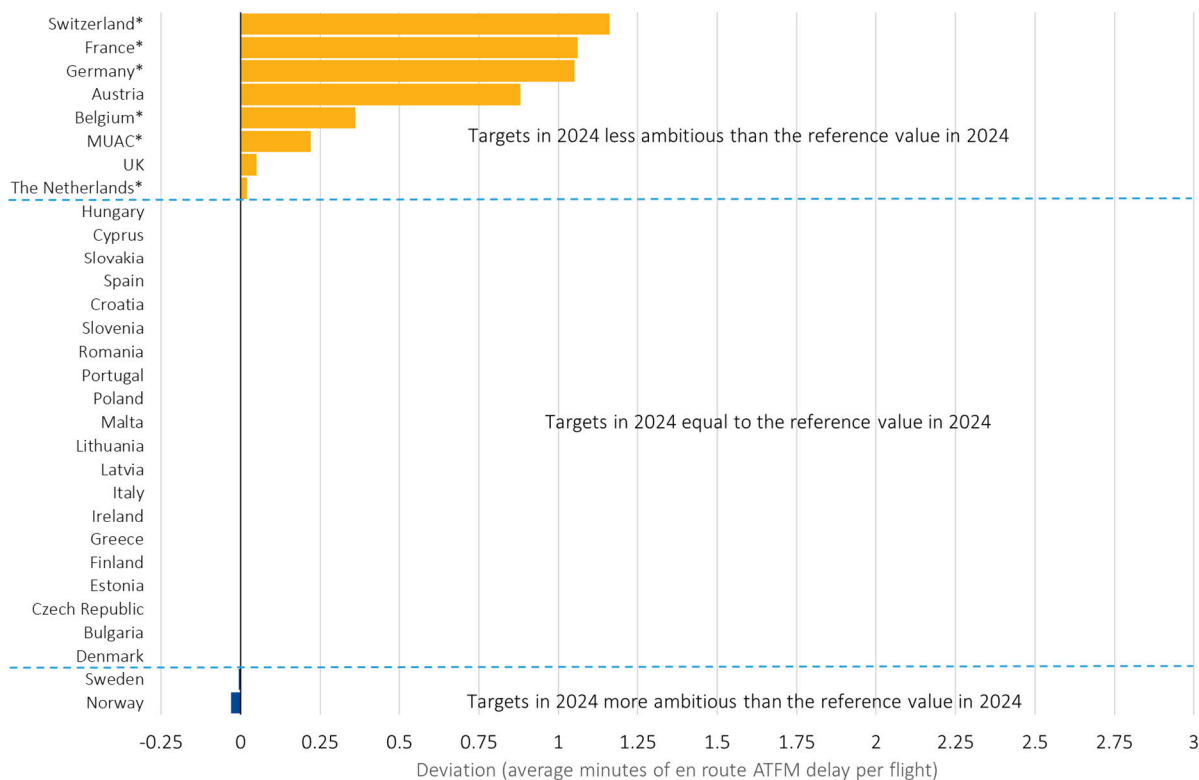


Figure 6 - Deviation of proposed en route ATFM delay targets from NOP reference values, 2024.

- 92 The contribution of Member States to the total en route ATFM delay in 2020 according to the targets contained in the draft performance plans and calculated based on the STATFOR seven-year forecast from February 2019 is shown in Figure 7.
- 93 More than 70% of total delay is attributable to only three Member States/ANSPs, 80% of total delay is generated by six Member States/ANSPs, while 90% of total delay is generated by ten Member States/ANSPs. The remaining 20 Member States/ANSPs are responsible for 10% of total delay. Most of the delay is generated within the core area of Europe, where the traffic volumes and complexity are the highest.

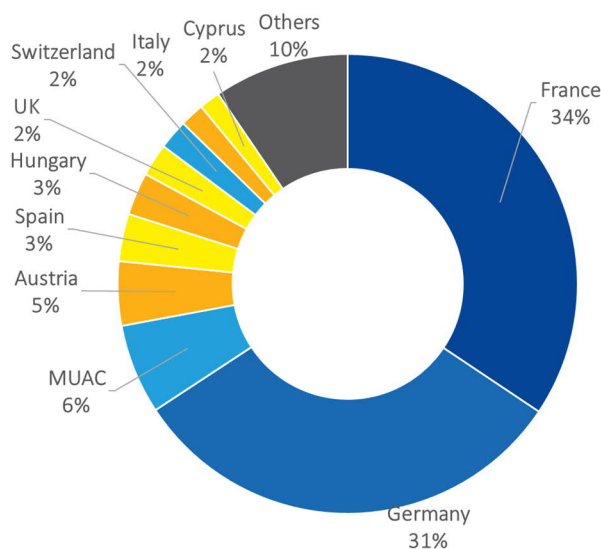


Figure 7 - Contribution to total en route ATFM delay minutes generated in 2020.

94 In 2024, there are shifts in the relative weights of contributions, especially for Austria and Switzerland, which double their contributions compared to 2020. In 2024, 70% of total delay is attributable to four Member States/ANSPs, 80% of total delay is generated by five Member States/ANSPs, whereas 90% of total delay is generated by nine Member States/ANSPs. The remaining 10% of total delay is generated by 21 Member States/ANSPs.

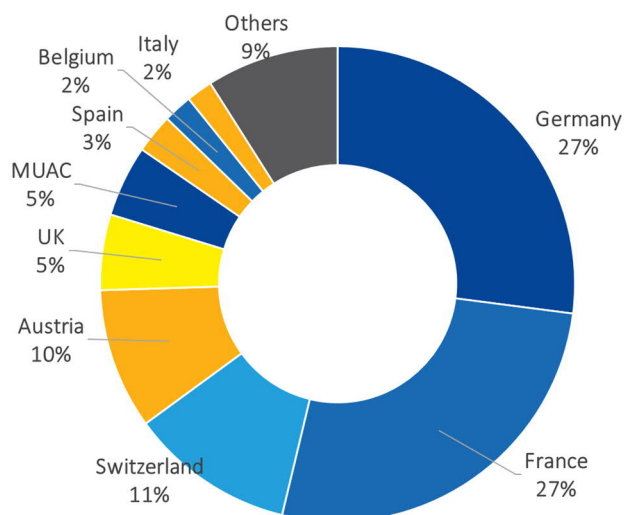


Figure 8 - Contribution to total en route ATFM delay minutes generated in 2024.

## 5.2 Measures for achievement of national or FAB performance targets

95 During the second reference period, the main contributing factors of en route ATFM delay were the lack of ATC capacity and ATC staffing. The share of these delay causes was between 55% and 68% in all years of the second reference period. This indicates that the main reasons behind the capacity shortage is the lack of air traffic controllers (ATCOs) and the problems associated with air-space structures and sector capacities.

- 96 Hence, most of the performance plans have included capacity enhancement measures with regards to recruiting, training and cross-training ATCOs. Although not obliged by the Commission Implementing Regulation (EU) 2019/317, Member States and FABs were asked to submit their plans regarding the changes in the number of ATCOs (expressed in full-time equivalents or FTEs) working as operational controllers in area control centres (ACCs) together with their performance plans (the performance plan template has the tables created for this information). Some Member States did not provide the requested data whilst others only provided data on an aggregated level, not for each ACC.
- 97 The Union-wide picture of the planned changes in the number of ATCOs is shown in Figure 9. The increase over the third reference period is 21.1%, whereas compared to the actual baseline of 2018, Member States have planned for an increase of 23.9%. Year-on-year increase in the third reference period varies between 2% and 7%, reaching its maximum already in 2020, and gradually decreasing until 2024.

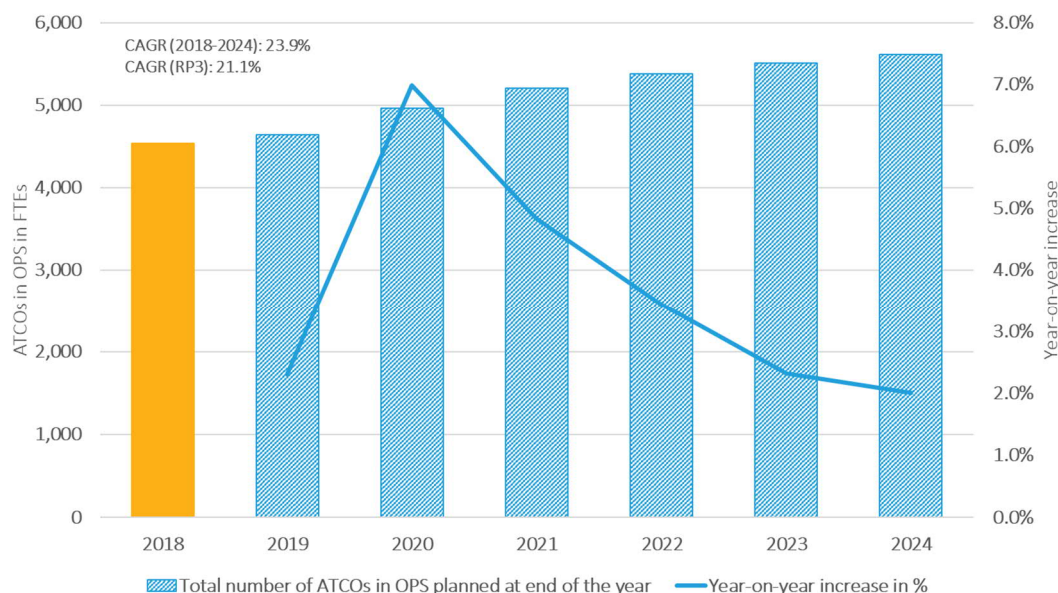


Figure 9 - Evolution of total number of ATCOs in OPS between 2018 and 2024 (excluding FABEC and UK). Source: performance plans.

- 98 In absolute terms, the reported figures translate into the overall increase of more than 1,000 full time equivalent (FTE) ATCOs during the third reference period, not including FABEC and UK. The estimated increase in FABEC and the United Kingdom is an additional 1,500 to 1,700 FTEs.<sup>18</sup>
- 99 The PRB notes that this estimated increase of over 2,500 FTEs in controllers in operation at ACCs is the net increase of FTEs. The actual number of new ATCOs that will have to be trained by ANSPs in the course of the third reference period will be even higher to replace retiring ATCOs.
- 100 Figure 10 shows the distribution of the increase in ATCO FTEs across those Member States which have provided these figures in their performance plans. All Member States which have provided figures plan for an increase. For those areas where historical capacity performance is good and no issues are foreseen for the upcoming reference period, the increase is only marginal and is mainly a means of providing additional resilience.

<sup>18</sup> Based on discussions at bilateral meetings with Member States and ANSPs and additional information from RP3 consultation meetings.

- 101 Member States with more controllers are planning for a larger increase in absolute terms, with Italy and Spain accounting for more than one third of it.
- 102 The analysis shows a different result when the planned increase is compared to the baseline value of 2019, as shown on Figure 10. Member States with the highest increase relative to their baseline FTE values are Bulgaria, Czech Republic, Croatia, Cyprus, Hungary, Poland, Portugal and Slovakia. These Member States are all planning for an increase in ATCO FTEs of over 30% throughout the third reference period (and are highlighted orange in Figure 10).

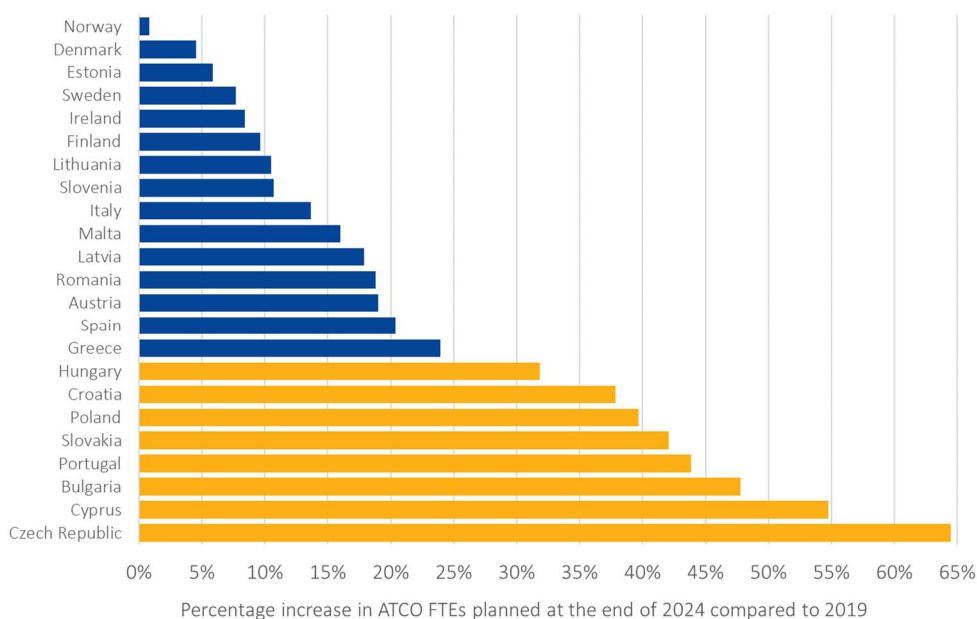


Figure 10 - Planned changes in the number of ATCO FTEs over the third reference period.<sup>19</sup>

- 103 Although the ambition of these Member States to close the capacity gap is welcomed, it will require substantial effort to train the required controllers. It is unclear how feasible it is for ANSPs to train and deploy such a high number of air traffic controllers over RP3, particularly given the most intense recruitment is in the first three years of the reference period and ANSPs will also need to ensure that large increases do not negatively impact the safety of operations and the provision of capacity. This must be monitored closely by the NSAs.
- 104 In addition to training controllers, most of the Member States adopted airspace restructuring projects as measures for enhancing capacity in their capacity plans. Airspace restructuring usually includes sector reconfiguration and/or airspace integration in free route airspace areas.
- 105 The actual plans related to airspace restructuring are provided in the Network Operations Plan of June 2019. The Network Manager and ANSPs concerned by airspace issue agreed on airspace restructuring plans to address bottlenecks in FABEC, Central/South-East and South-West areas and are continuously working together to identify possible improvements to airspace structure.
- 106 The PRB acknowledges the improvements these efforts may generate but highlights that in order to successfully address the capacity shortage, more cross-border airspace optimisation efforts are needed, especially in the core area of the network.

<sup>19</sup> Expressed as a percentage of the planned number of ATCOs in OPS at the end of 2019.

### 5.3 Local targets on average arrival ATFM delay per flight

107 Article 1(3) stipulates that the Performance and Charging Regulation applies to terminal ANS provided at airports that have more than 80,000 IFR movements per year. The Regulation requires targets to be set for the average arrival ATFM delay per flight at those respective airports. They form part of the assessment criteria for performance plans (2.1(b) of Annex IV). Out of the 31 Member States<sup>20</sup> which have submitted a performance plan (members of FABEC are counted separately for information purposes), 24 included national targets on average arrival ATFM delay per flight.

108 11 Member States have set national targets on arrival ATFM delay which are higher (less ambitious) in 2020 than the targets set for 2019. Out of these, eight Member States have also set targets for 2024 which are higher (less ambitious) than the targets set for 2019 (Figure 11).

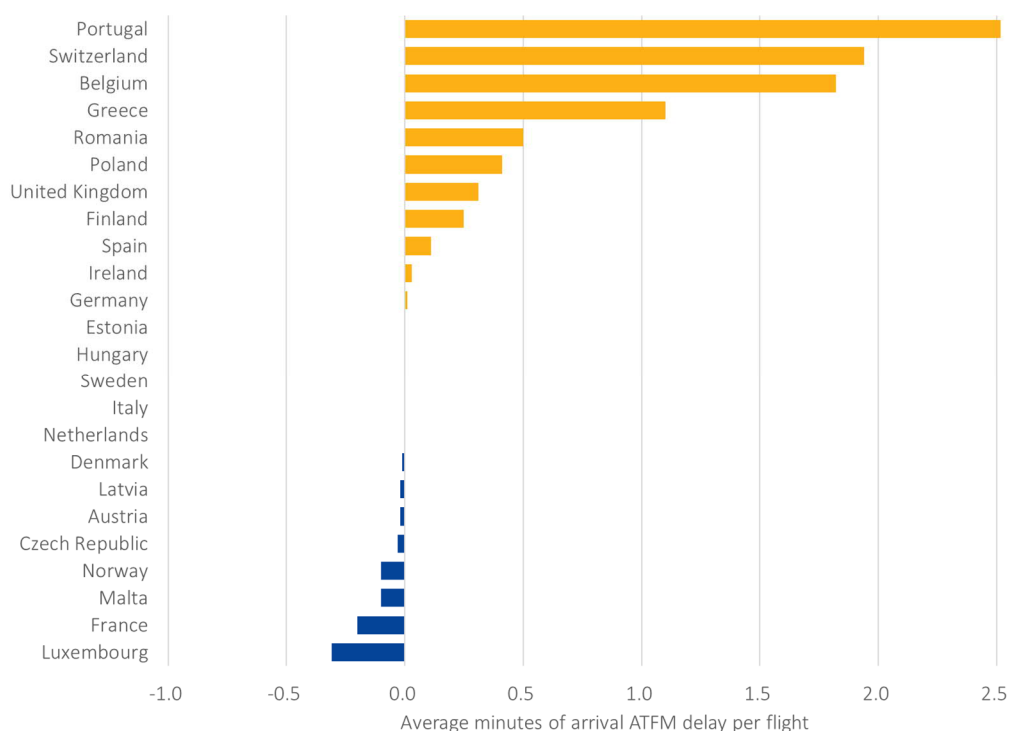


Figure 11 - Difference between the national targets on average arrival ATFM delay per flight in 2020 and 2019.

109 Five Member States have adopted targets for 2020 which are equal to those of 2019. Three out of the five maintain these targets until 2024, thus maintaining the status quo. Figure 11 and Figure 12 provide an overview of the ambition of the Member States, as regards to setting the targets for average arrival ATFM delay per flight, compared to targets of the final year of the second reference period.

<sup>20</sup> Luxembourg is counted here separately from Belgium, as targets on terminal capacity are set on national level.

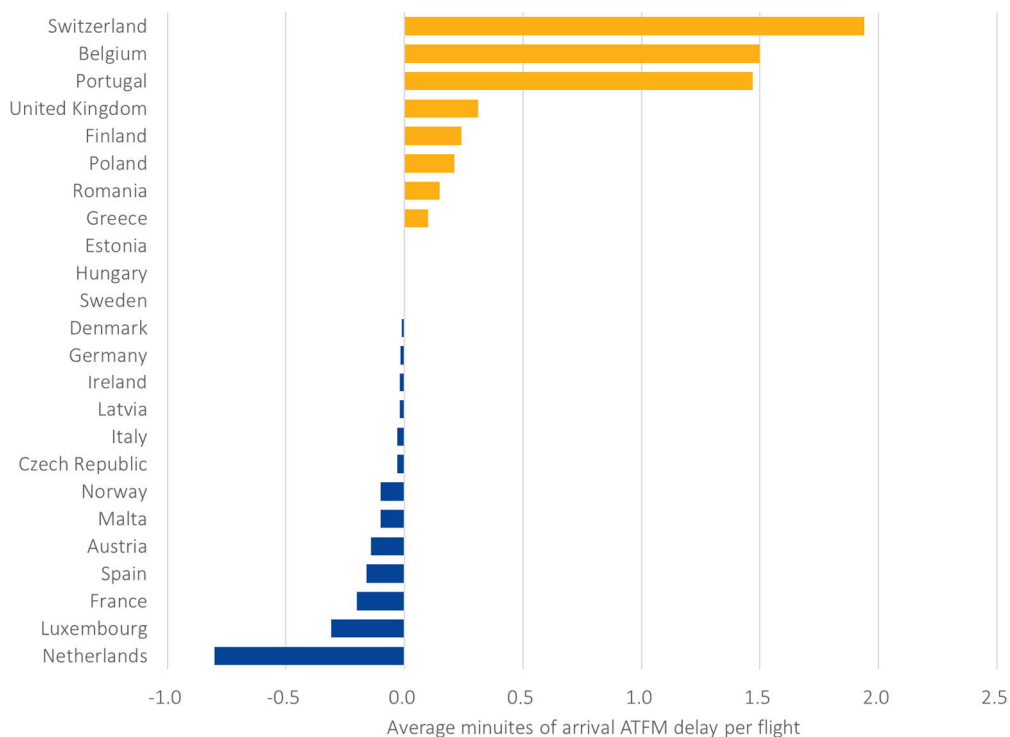


Figure 12 - Difference between the national targets on average arrival ATFM delay per flight in 2024 compared to 2019.

#### 5.4 Incentive schemes

- 110 Article 11(3) of the Performance and Charging Regulation defines the requirements for incentive schemes. The Regulation stipulates that performance plans must contain an incentive scheme with regard to the achievement of en route and terminal capacity targets.
- 111 All but one Member State have included the incentive schemes in their performance plans. In this specific case, the PRB recommends the performance plan to be updated to be compliant.
- 112 Figure 13 provides an overview of the maximum bonus and penalty values, as proposed in the performance plans (FABEC members are counted separately for information purposes). Most of the Member States proposed a maximum bonus of 0.5% of total determined costs of the ANSP and used the same value for penalties. Only seven Member States plan to use an incentive scheme with a maximum penalty of at least 1% of determined costs.
- 113 Out of the 30 en route ATFM delay incentive schemes, ten are asymmetric, with maximum penalties higher than maximum bonuses. Four ANSPs will face a penalty-only incentive scheme.

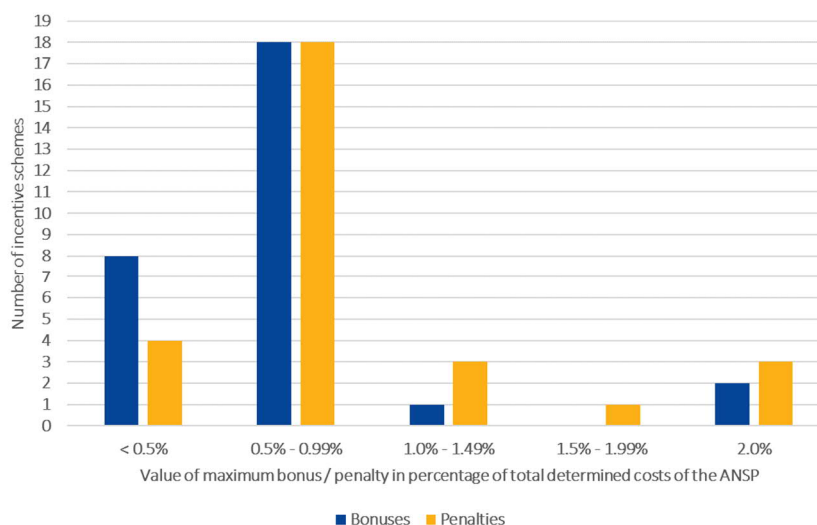


Figure 13 - Frequency of maximum bonus and penalty values of en route ATFM delay incentive schemes.

- 114 In the cases where maximum penalties are below 1.0% of determined costs, the incentive schemes have very limited effectiveness and may not be considered to have a material impact on revenue.<sup>21</sup>
- 115 The PRB supports asymmetric incentive mechanisms, weighted strongly towards penalties where ANSPs have historically good capacity performance, and with close to zero delay forecast by the NOP for the years of the third reference period.
- 116 The PRB also highlights that incentive schemes should not generate partial, or even full bonuses in cases where the en route ATFM delay targets are in line, or higher, than corresponding NOP delay forecast values. In these cases, the ANSP will be able to reach those targets with a reasonably high probability and without any additional effort to improve the quality of service.

## 5.5 Summary of the capacity KPA

- 117 The performance targets for RP3, as proposed by the Member States, do not result in reaching the Union-wide targets for average en route ATFM delay per flight in any calendar year of the reference period. There are areas of significant improvement in the proposed targets. However, many Member States do not plan to close the capacity gap and for some the capacity gap is widening. Most of the delay will still be generated by France and Germany throughout RP3.
- 118 The most important measure Member States are planning to improve capacity is the intensive recruitment and training of controllers. The number of controllers in operations at ACCs is expected to grow by at least 20% over RP3, which is a considerable challenge. Airspace restructuring programmes will also play a key role in reducing delays.
- 119 Proposed local targets for average arrival ATFM delay per flight show a mixed ambition of Member States. Many Member States propose targets which deteriorate from past performance and the performance of similar airports.
- 120 The incentive schemes introduced for capacity KPA have in general a very limited material impact on the revenues of ANSPs. There are a handful of positive examples for incentive schemes, but for

<sup>21</sup> Particularly when incentive schemes are combined with (a) a pivot value set at the performance targets and (b) the Network Operations Plan (2019 June edition 2.1) (NOP) delay forecast, indicating a reasonably high probability of meeting or outperforming those targets.

most ANSPs, the incentive schemes will not have a sufficient material impact to drive improved performance.

## 5.6 Recommendations for the capacity KPA

121 The PRB recommendations as a result of the assessment of the performance plan is shown in Table 7.

Recommend to approve (consistent)		Recommend not to approve (inconsistent)
Without comment	With specific PRB monitoring points ("watchlist")	
Denmark	Bulgaria	Austria
Estonia	Czech Republic	Croatia
Finland	Greece	Cyprus
Ireland	Italy	FABEC
Norway	Latvia	Hungary
	Lithuania	Malta
	Poland	Slovakia
	Portugal	Spain
	Romania	United Kingdom
	Slovenia	
	Sweden	

Table 7 – PRB recommendation, capacity KPA.



## 6 Cost-efficiency

### 6.1 Union-wide en route targets for RP3

122 The targets for the cost-efficiency key performance area are as follows:

“year-on-year change of the determined unit cost (DUC) for en route air navigation services of -1.9% for 2020, -1.9% for 2021, -1.9% for 2022, -1.9% for 2023 and -1.9% for 2024.”

123 This year-on-year change is calculated starting from the Union-wide baseline value for the determined unit cost set as follows:

- The baseline value for determined costs shall be set at 7,047,092,000€<sub>2017</sub>.<sup>22,23</sup>
- The baseline value for the determined unit cost shall be set at 50.65€<sub>2017</sub>.<sup>22</sup>

124 Table 8 presents the computed Union-wide cost-efficiency DUC for RP3 according to the percentage decrease (-1.9%), the traffic forecast and the baseline value as defined in Implementing Decision 2019/903.

	2020	2021	2022	2023	2024
<b>Union-wide determined unit cost for en route air navigation services (€<sub>2017</sub>)</b>	49.68	48.74	47.81	46.91	46.02

Table 8 - Union-wide determined unit cost for RP3 according to the -1.9% decrease criterion.

#### 6.1.1 Union-wide cost-efficiency targets for RP3 and Member States' performance plans

125 The Performance and Charging Regulation provided an option for Member States to establish and apply a simplified charging scheme for the duration of an entire reference period.<sup>24</sup> No Member States requested to apply this provision.

126 Figure 14 represents the cost-efficiency Union-wide targets for RP3 as defined in the Commission Decision 2019/903 of 29 May 2019 compared to the aggregated results of the draft performance plans. It also shows the RP2 determined unit costs and the RP2 determined costs against the actual values from 2015 to 2019.

<sup>22</sup> Union law applies to the United Kingdom at a date prior to the date of entry into force of this Implementing Decision.

<sup>23</sup> As required by the Performance and Charging Regulation all costs are expressed in €<sub>2017</sub> except depreciation, cost of capital, capital expenditure (CAPEX), NSA and Eurocontrol costs.

<sup>24</sup> Article 34 of Commission Implementing Regulation (EU) 2019/317 of 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.

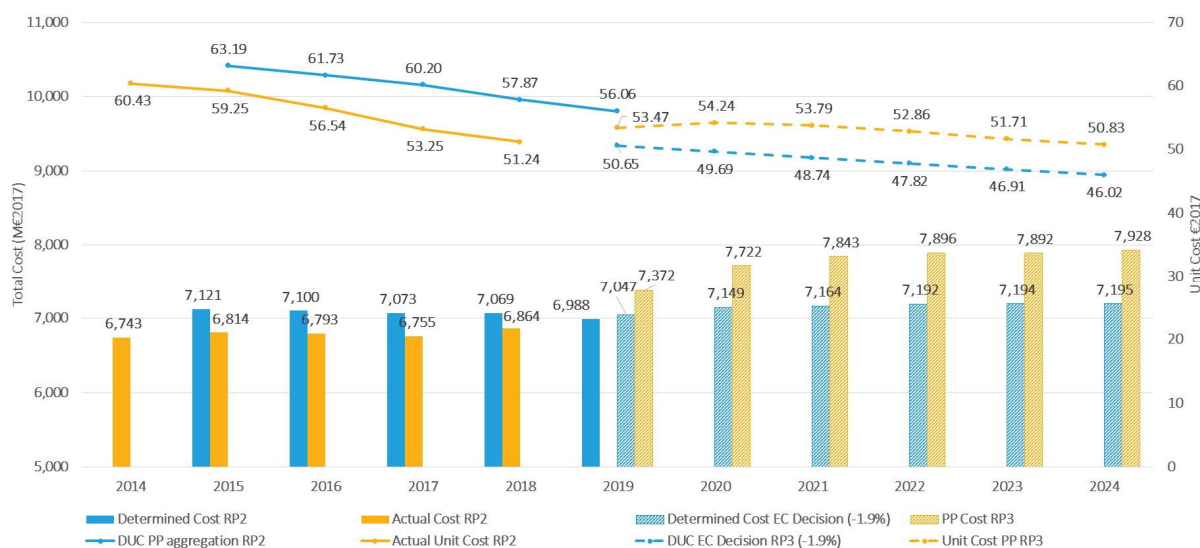


Figure 14 - RP3 Union-wide cost-efficiency targets for RP3.

127 The PRB observes that:

- The Union-wide determined unit cost (DUC) as planned by the aggregated Member States' draft performance plans is consistently higher than the Union-wide targets.
- The Union-wide DUC computed as the aggregation of the draft performance plans starts at 53.47€<sub>2017</sub> in 2019 and decreases 1% per year on average.
- The 2019 baseline aggregated value (i.e. 7,372.1M€<sub>2017</sub>) from the draft performance plans is 325M€<sub>2017</sub> (or +4.6%) above the baseline as defined in the Commission Implementing Decision (7,047M€<sub>2017</sub>).

### 6.1.2 Criteria for the assessment of performance plans and targets at national level

128 The PRB assessed the cost-efficiency according to Section 1.4 of Annex IV of the Performance and Charging Regulation. The assessment identified whether the trends and the baseline value for the determined unit cost for each charging zone were consistent with the provisions within this Annex.<sup>25</sup>

### 6.1.3 Assessment against the cost-efficiency criteria

129 When undertaking the analysis of the criteria for the assessment of draft performance plans and targets at national level, as per Section 1.4 of Annex IV of the Regulation:

- Eight Member States meet the short-term trend (criterion a);
- Five Member States meet the long-term trend (criterion b);
- 13 Member States have a lower 2019 baseline than their comparator group (criterion c)
- 15 Member States were subject to the analysis on the deviation for achieving capacity targets (criterion d i)); and
- Four Member States invoke a deviation for restructuring costs (criterion d ii)).

<sup>25</sup> The criteria are summarised in Section 2.5.4.

- 130 Austria, Czech Republic, Finland, Slovakia, Slovenia, Spain, and the UK pass the assessment by directly fulfilling at least two criteria from (a) to (c) or through the deviation defined in criterion (d). Table 9 shows the Member States' assessment against the cost-efficiency criteria.

	Criterion a: Short-term trend (-1.9%)	Criterion b: Long-term trend (-2.7%)	Criterion c: Lower than comparator group	Criterion d i): Deviation for capacity	Criterion d ii): Deviation for restructuring costs
Austria	-2.10%	-2.10%	-21.5%		
Belgium <sup>26</sup>	1.80%	2.70%	+13%		
Bulgaria <sup>27</sup>	-2.20%	-1.20%	-32.3%	X	
Croatia	-1.90%	-2.00%	+12.2%		
Cyprus	1.50%	-1.20%	-12.6%		
Czech Republic	-2.00%	-1.20%	+14.3%	X	
Denmark	-1.70%	-1.30%	+41%	X	
Estonia	-0.50%	3.00%	+10%	X	
Finland	0.60%	-2.00%	-10%	X	
France	-1.40%	-1.60%	-0.6%		
Germany	-0.80%	-2.00%	+11.7%		
Greece	3.40%	1.60%	+3%	X	
Hungary	5.80%	1.40%	-29%	X	
Ireland	2.70%	1.40%	-50%	X	X
Italy <sup>27</sup>	-2.10%	-2.90%	+8.9%		
Latvia	3.50%	0.70%	-19.9%	X	
Lithuania	-0.80%	-2.00%	+39%	X	
Malta	-0.40%	1.90%	-17%	X	
The Netherlands	0.90%	0.40%	-15.3%		X
Norway	-0.50%	0.20%	+6.2%	X	X
Poland	-1.0%	0.60%	+10%	X	
Portugal	2.50%	1.10%	-13.0%	X	
Romania	1.60%	0.20%	-18%	X	
Slovakia	-2.40%	-3.10%	+17%		
Slovenia	-1.90%	-2.70%	+44%		
Spain <sup>28</sup>	-0.90%	-3.40%	-16.7%		
Sweden	-1.20%	0.00%	+24%	X	
Switzerland	-1.30%	-1.80%	+27.4%		X
United Kingdom	-3.5%	-3.5%	+7.3%		

Table 9 – Local targets results per Member State.

<sup>26</sup> Luxembourg is together with Belgium in the same charging zone for the analysis of the en route local targets.

<sup>27</sup> Bulgaria and Italy are both highlighted in orange. The PRB observes inconsistencies in their baseline values, which contribute to them achieving the short-term trend criterion.

<sup>28</sup> Spain has two charging zones: Spain Continental and Spain Canarias. The local targets for Spain shown in Table 9 correspond to Spain Continental. Spain Canarias' local targets are: -1.5% (criterion a), -4.3% (criterion b) and -21.7% (criterion c). Spain has presented a cost deviation from the Union-wide determined unit cost trend (criterion d) which is analysed for Spain as a whole (Continental + Canarias).

## 6.2 En route traffic forecasts used in the performance plans

131 Figure 15 represents the different Service Units (SU) forecasts used by Member States. 15 Member States used the STATFOR February 2019 base forecast: Cyprus, Czech Republic, Denmark, Finland, Greece, Ireland, Malta, Portugal, Romania, Slovakia, Slovenia, Spain,<sup>29</sup> Sweden, Switzerland and the United Kingdom. Four Member States used STATFOR October 2019 base forecast for traffic: Austria, Estonia, Germany and Norway. The remaining ten Member States used their own customised forecast: Belgium, Bulgaria, Croatia, France, Hungary, Italy, Latvia, Lithuania, the Netherlands and Poland.

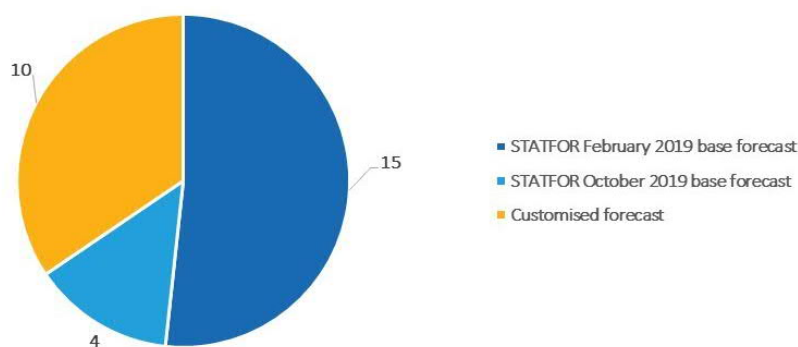


Figure 15 - Overview of the traffic forecasts used by number of Member States.

- 132 Figure 16 shows the difference between en route service units (SU) forecasts included in the draft performance plans compared to the STATFOR February 2019 base scenario and the STATFOR October 2019 base scenario.
- 133 The STATFOR October 2019 base forecast projects traffic to grow at largely the same rate as in the STATFOR February 2019 base forecast during RP3 (2.37% compared with 2.36% per year CAGR, respectively, between 2019 and 2024). However, the October forecast starts from a lower value, which creates the gap observed between the two forecasts in Figure 16.
- 134 The aggregate service units in the draft performance plans for RP3 grow faster, at 2.5% per year. As a result, the rate of reduction for the DUC is artificially higher compared to the growth of service units defined in the STATFOR forecasts, making the Union-wide trends easier to achieve.

<sup>29</sup> Both Spain Continental and Canarias.

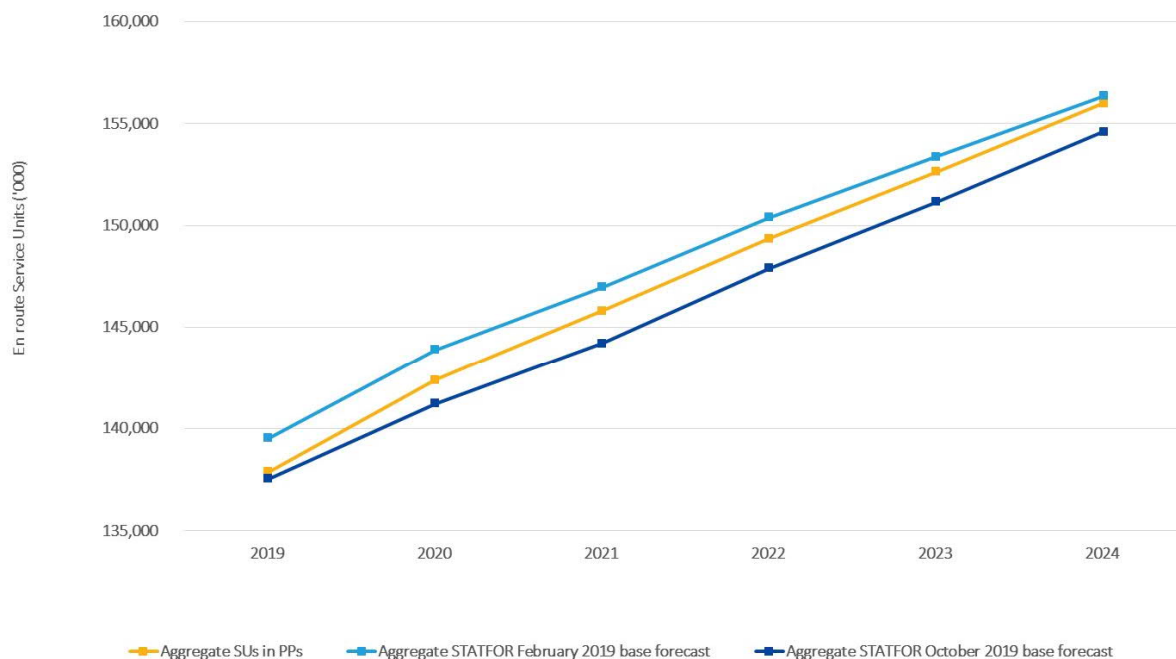


Figure 16 - Comparison of service units considering various traffic forecasts.

### 6.2.1 Traffic risk sharing

135 None of the Member States proposed to modulate the standard values of the traffic risk sharing mechanism in their draft performance plans.<sup>30</sup>

## 6.3 Cost analysis for en route

### 6.3.1 2019 forecast and 2019 baseline review

136 The 2019 cost forecast and baseline are important elements to be set, since they define the starting point for the evolution of the determined costs (and determined unit costs) over the reference period. By setting an artificially high starting point, the Member State may reach the DUC trend reduction target more easily. Deviations which lead to an artificially high baseline have been identified within the assessment and considered within the PRB recommendations.

137 The aggregated difference between the 2019 forecast costs and the 2018 actual costs amounts +413.6M€<sub>2017</sub> (or +6%) for en route. The contribution to this difference per Member State is shown in Figure 17. Belgium presents the greatest difference as a percentage (+20.7%), whilst Germany presents the greatest absolute difference in costs between 2019 forecast and 2018 actuals in absolute terms.

<sup>30</sup> According to the Performance and Charging Regulation, Member States shall set up values of the traffic risk sharing parameters referred to in Article 27(2) and (3) and, in the event that the national supervisory authority has adapted the values for these parameters in accordance with Article 27(5), justifications should be provided for those values.

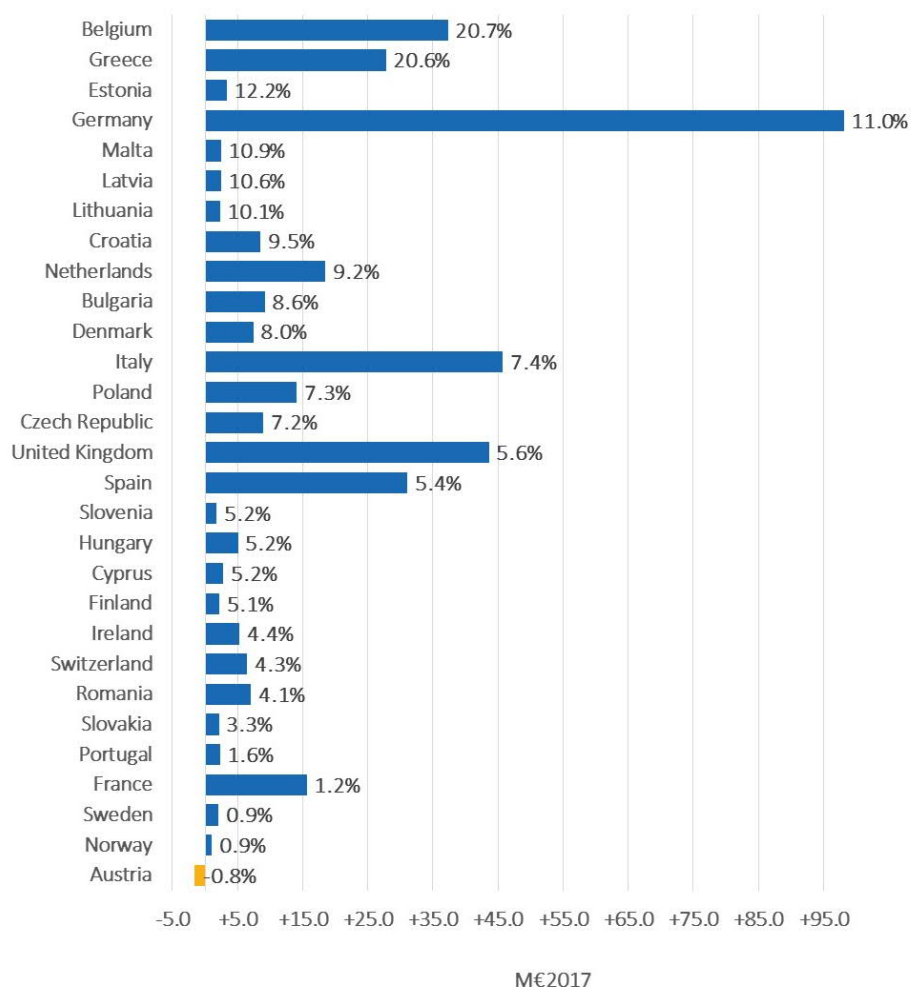


Figure 17 – 2019 forecast v. 2018 actual costs by Member State for en route ordered by % difference.

- 138 The aggregated difference between the 2019 cost baseline reported in the draft performance plans and the 2019 forecast costs amounts to an additional 94.9M€<sub>2017</sub> (or +1.3%).
- 139 Most of the Member States reported a 2019 baseline that is consistent with the 2019 forecast. Only seven Member States reported a 2019 baseline that deviates from the 2019 forecast (Denmark, Germany, Greece, Hungary, Norway, Poland and Sweden) and Portugal decreased the 2019 baseline compared to the 2019 forecast.

### 6.3.2 Planned determined costs - 2019 forecast compared to 2024 determined costs

- 140 The determined costs in 2024 are 671M€<sub>2017</sub> (or +9.2%) higher than the cost forecast in 2019, with the majority of the costs being generated by the ANSPs (+609.2M€<sub>2017</sub> or +9.3%).

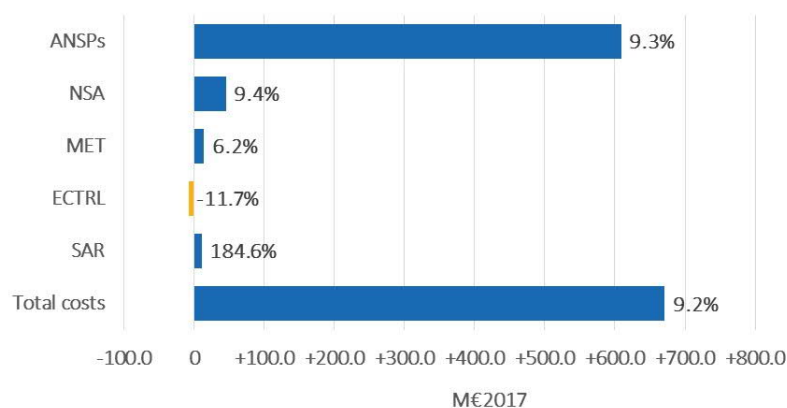


Figure 18 - 2024 Determined costs v. 2019 forecast by entity for en route.

141 The difference between the 2024 determined costs and the 2019 cost forecast is driven largely by an increase in staff costs (+513M€<sub>2017</sub> or +12%), as shown in Figure 19.

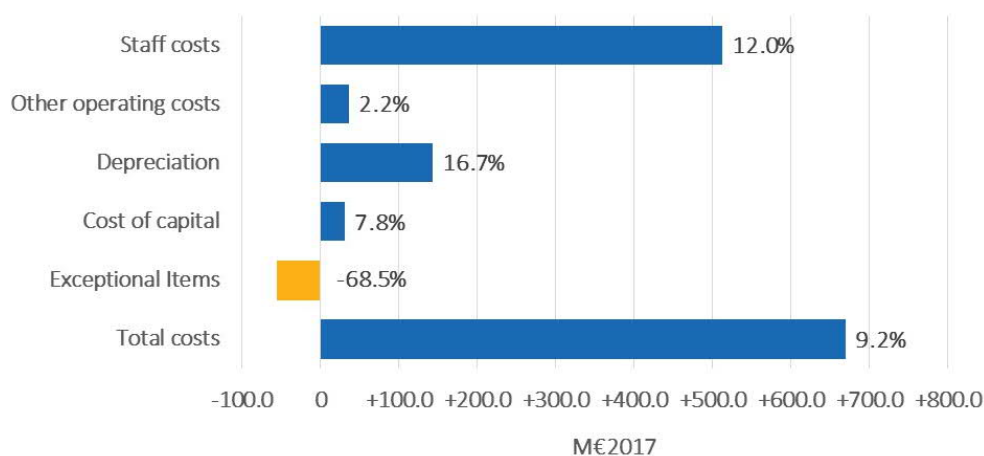


Figure 19 - 2024 Determined costs v. 2019 forecast by nature for en route.

142 All Member States plan to increase their costs from 2019 to 2024 ranging from +1% to +66% over the period, except for the United Kingdom that plans a decrease in costs.

143 France, Germany, Italy, Spain and the United Kingdom are the five Member States reporting the highest costs over RP3. They represent 58% of the total determined costs from 2020 to 2024 (or 22,894.3M€<sub>2017</sub>). FABEC represents 34.4% of the aggregated total determined costs from 2020 to 2024.

### 6.3.3 Staff costs

144 Member States plan for staff cost to account for approximately 60% of the total determined cost during RP3, which is about the same proportion as during RP2.

145 Figure 20 shows the en route actual staff costs during RP2 and the determined planned staff costs during RP3, including pension costs.<sup>31</sup> The pension costs represent a constant share of the staff costs of 19.4% on average during RP3.

<sup>31</sup> The pension costs over RP2 were not provided as a breakdown of the staff costs, therefore these are not shown in the chart. This changes in RP3 as per article 22 paragraph 4 point a) of the Regulation EU 317/2019 Performance and Charging Scheme.



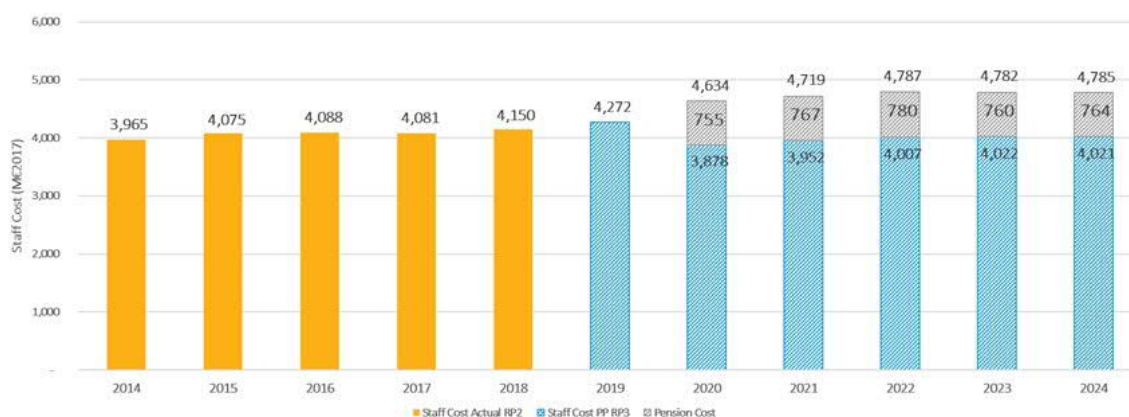


Figure 20 - Union-wide staff costs over RP2 and planned for RP3 for en route services.

146 The PRB notes the considerable number of additional ATCOs planned in the Czech Republic performance plan and the associated feasibility and cost of such an increase. The PRB will closely monitor this aspect of performance during RP3.

### 6.3.4 Costs of investments (i.e. depreciation, cost of capital and cost of leasing)

147 Figure 21 shows the planned total determined costs relating to investments for all Member States. These include depreciation, cost of capital and cost of leasing for en route and terminal services. These are reported in three categories: new major investments<sup>32</sup>, other new investments and existing investments.

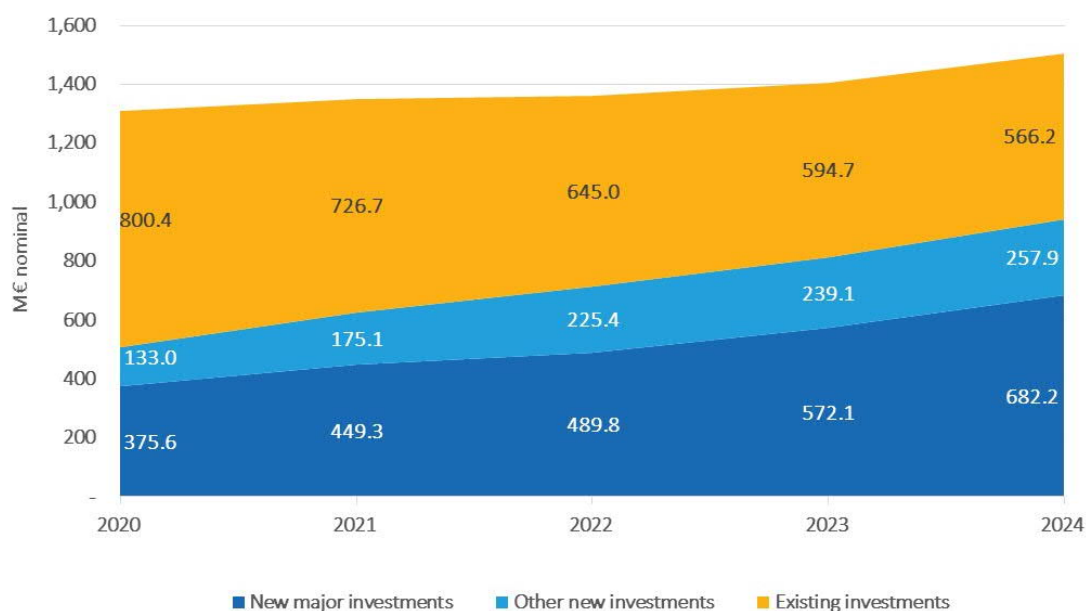


Figure 21 - Union-wide determined costs of investments over RP3 for en route and terminal.

148 In 2020, the largest portion of the total determined costs of investments as planned by Member States covers existing investments (800.4M€ or 60% of the total costs of investments) due to the depreciation of RP2 investments, whereas towards the end of the period, Member States plan to

<sup>32</sup> Art. 2(13) of Regulation 2019/317 'major investment' means the acquisition, development, replacement, upgrade, or leasing of fixed assets representing a total value over the whole lifetime of the assets greater than EUR 5 million in real terms.



invest the highest portion of the total determined costs for new major investments (682.2M€ or 45% of the total costs of investments).

149 Table 10 presents the breakdown between the determined costs of investments for new (i.e. major and other) and existing investments per year. The planned determined costs of new investments (3,559.5M€) are similar to the costs of existing investments (3,333M€). The planned determined costs of new investments do not exceed the allocated CAPEX to air navigation services (ANS), which amounts to 6,609,7M€.

	2020	2021	2022	2023	2024
<b>Determined costs of total investments - nominal (,000€)</b>	<b>1,309.0</b>	<b>1,351.1</b>	<b>1,360.2</b>	<b>1,405.9</b>	<b>1,506.3</b>
<b>New – major and other</b>	508.6	624.4	715.2	811.2	940.1
<b>Existing</b>	800.4	726.7	645	594.7	566.2

Table 10 – Union-wide determined costs of investments (new v. existing) over RP3.

150 Figure 22 presents the planned determined costs of investments across Member States over RP3 for en route and terminal.<sup>33</sup> The highest determined costs for investments over RP3 are planned by France (1,675.1M€) by far, followed by Germany (721.6M€), the United Kingdom (667M€), Spain (656.7M€) and Italy (627.8M€).<sup>34</sup> The determined costs of investments for the five largest Member States are planned to amount to 4,348.2M€, which represents almost 62.7% of the total determined costs of investments at Union-wide level.

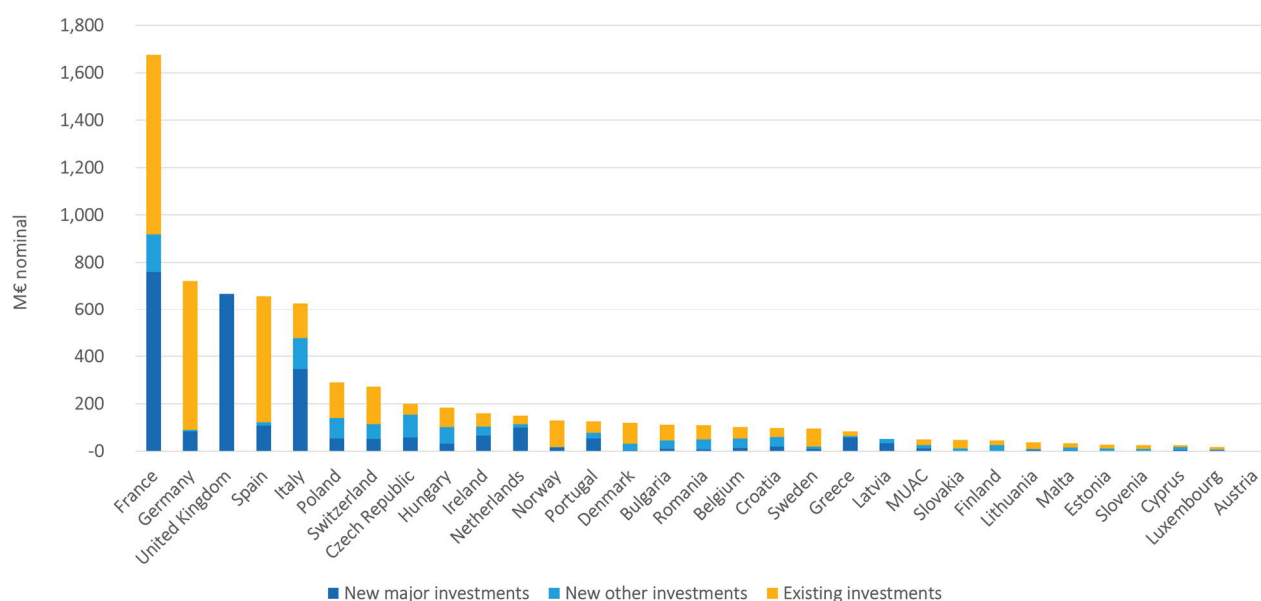


Figure 22 - Determined costs of investments across Member States over RP3 for en route and terminal.

<sup>33</sup> The data presented in Figure 22 does not include the determined costs of investments for Austria, as they have not been reported in the submission of the performance plan for RP3. The determined costs of investments reported by Switzerland include a deduction (-59.2M€) of the cost of investments given that some investments are not financed by the users of the Swiss FIR.

<sup>34</sup> The determined costs reported by Germany include an "experience-based DFS management correction" (-171.7M€), which shows reduced depreciation figures.

## CAPEX

- 151 CAPEX for new major investments and other new investments at Union-wide level allocated for ANS (en route and terminal) planned for RP3 amounts to 6,609.7M€, out of which 4,850.5M€ (or 73.4%) is planned for new major investments, while 1,759.2M€ (26.6%) is planned for other new investments.<sup>35</sup> When comparing to the previous period, the total planned CAPEX at Union-wide level for RP2 amounted to 5,569.7M€, of which 7% has not been realised according to the data available for RP2 to date.<sup>36</sup> Member States plan to invest more in RP3 than in the previous period.
- 152 Table 11 presents the main categories of new major investments planned for RP3 en route and terminal: systems (i.e. ATM, CNS, tower support system, information services – AIM/AIS), buildings (i.e. administrative and/or operational buildings and infrastructure for simulation), and other categories such as drones, data centres, SAR (search and rescue) or maintenance.
- 153 At Union-wide level, Member States mainly plan to invest in systems (61.2% of RP3 CAPEX), particularly in ATM systems (39.8% of RP3 CAPEX). This was also the case for RP2 investments: major investments in the past period were 4-Flight, CoFlight (9.3% of RP2 CAPEX), iCAS, iTEC (7.2% of RP2 CAPEX) and COOPANS, TopSky (2.3% of RP2 CAPEX).<sup>36</sup>

Category	Investment type	CAPEX (M€ nominal)	CAPEX (%)
<b>Systems</b>		<b>2,968</b>	<b>61.2%</b>
	ATM - Other ATM systems	601.3	12.4%
	ATM - iCAS, iTEC (Indra)	706.0	14.6
	ATM - 4-Flight, CoFlight (Thales)	362.6	7.5%
	ATM - COOPANS, TopSky (Thales)	197.6	4.1%
	ATM – MATIAS (Thales)	50.3	1.0%
	ATM - ATM System 2015+ (Indra)	8.6	0.2%
	ATM – Pegasus ATM (Thales)	6.2	0.1%
	CNS - Datalink systems	794.4	16.4%
	Tower support systems	174.8	3.6%
	Information services - AIM/AIS	62.2	1.4%
<b>Buildings</b>		<b>594.4</b>	<b>12.3%</b>
	Administrative/operational buildings, infrastructure and systems	590.2	12.2%
	Infrastructure for simulation	4.2	0.1%
<b>Other</b>	<b>Drones detection systems, data centres, SAR, airspace change programs, or maintenance and monitoring systems<sup>37</sup></b>	<b>1,287.9</b>	<b>26.6%</b>
<b>Total</b>		<b>4,850.5</b>	<b>100%</b>

Table 11- Categories of new major investments planned for RP3 en route and terminal.

<sup>35</sup> CAPEX is defined as the value of the assets allocated to ANS in the scope of the draft version of the Performance Plan (section 2.1.1. Summary of investments of the draft Performance Plans).

<sup>36</sup> PRB Monitoring Report 2018 (October 2016), Annex IV – CAPEX report.

<sup>37</sup> The PRB recommends to the Member States to remove the costs for drone detection systems from the draft Performance Plans.

154 41% of the investments reported in the RP3 performance plans contribute to achieving capacity targets at Union-wide level. The most common benefits to capacity provided by the investments according to the performance plans are the following:

- New systems or tools serve as enablers of more resilient air navigation services (making the provision of capacity less dependent on weather or other exogenous factors);
- New investments provide maintenance or improve existing systems or infrastructure ensuring greater capacity by providing improved radar coverage, providing extra space to accommodate new controller working positions or by increasing bandwidth;
- New investments enable the implementation of new operational concepts to enhance capacity (i.e. system allowing for more precise flight planning, better sectors management etc.);
- New investments ensure continuity of air traffic services and surveillance, constitute back up/contingency systems in case of a major ATM system failure.

155 Figure 23 shows the CAPEX (bars) and the related determined costs (yellow line) for new investments (major and other) over RP3 across Member States for en route and terminal. The figure also indicates the determined costs for all the investments (new and existing from RP1 and RP2, red dots). For the majority of the Member States, the determined costs for new investments are lower than the CAPEX for RP3. This is due to the distribution of RP3 investments' depreciation during the future reference periods (i.e. RP4, RP5), given the long lifecycle of the assets used to provide ANS.

156 However, in the case of Czech Republic, Italy and Latvia, the determined costs for new investments almost equal the RP3 CAPEX. These States' charges include depreciation and cost of capital for the full amount of the value of the assets allocated to ANS during RP3, which is not fully consistent with the lifecycle of the assets they report (i.e. the amortisation for Italian assets is ten years, for Czech assets is seven years on average and for Latvian assets is ten years).

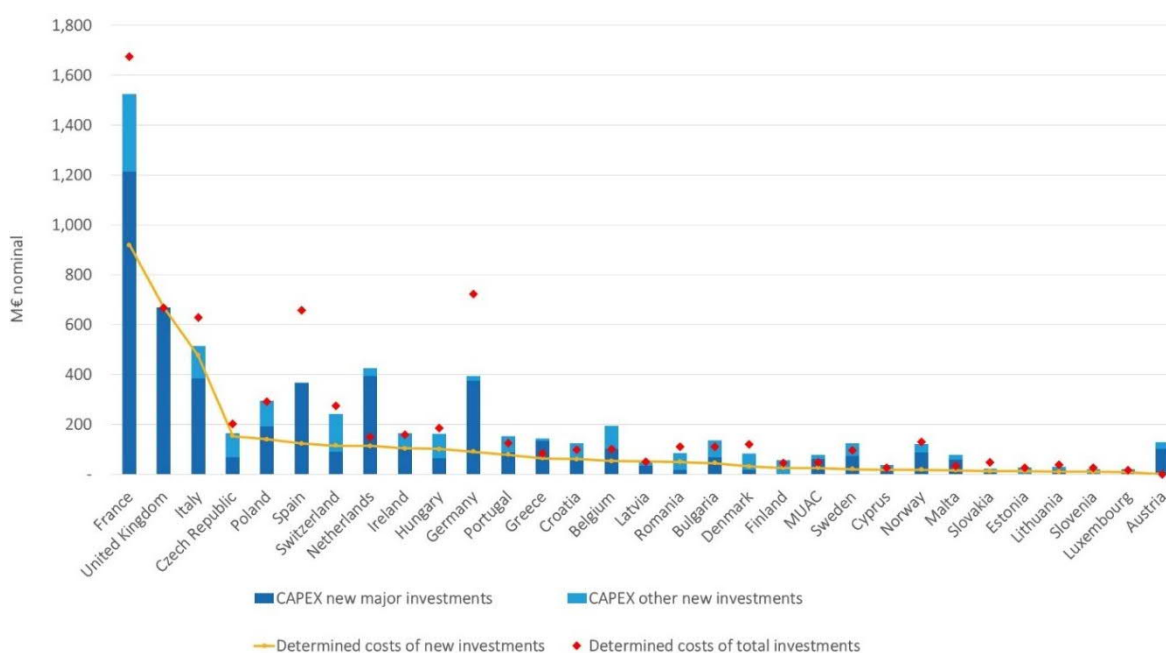


Figure 23 - Planned CAPEX over RP3 across Member States for en route and terminal.

157 The largest CAPEX planned is reported by France (1,523.5M€), the United Kingdom (667M€), Italy (513.4M€), and the Netherlands (423.8M€). The Netherlands reported an unusually higher CAPEX over RP3 compared to other larger Member States, such as Germany (392.8M€) and Spain (364.7M€) due to the replacement of their AAA ATM system by iCAS and SESAR Deployment of Trajectory Based Operations, its maintenance and the expansion of the facilities to accommodate this.<sup>38</sup> FABEC plans to invest a total of 2,869.9M€ over RP3, representing 43.4% of the total CAPEX planned for RP3 at Union-wide level.

158 21 Member States plan to invest in projects linked to the PCP, while ten Member States did not report investments to be linked to the PCP (Czech Republic, Cyprus, Estonia, Finland, Malta, Luxembourg, Poland, Slovakia, Slovenia and Switzerland).

### 6.3.5 Cost of capital

159 Figure 24 shows the Union-wide value of cost of capital for en route as planned by the main ANSPs of the Member States in the draft performance plans. The PRB compared this to the efficient cost of capital based on the report published by the PRB "Study on Cost of Capital" and the maximum risk exposure borne by ANSPs over RP3.<sup>39</sup> The Union-wide cost of capital reported by the ANSPs is higher than the efficient cost of capital and the maximum risk exposure over RP3.

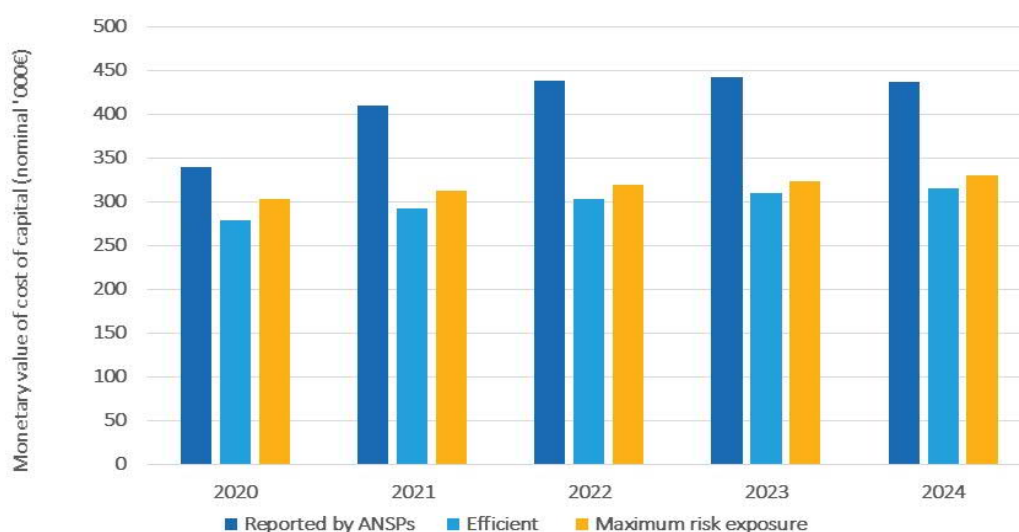


Figure 24 – Union-wide cost of capital over RP3.

160 According to Table 12, the Union-wide cost of capital reported by the main ANSPs amounts to 2,065.5M€ over RP3. The efficient cost of capital amounts to 1,498.5M€ over RP3. The reported cost of capital is 567M€ higher than the efficient cost of capital over RP3. This represents 17% of the total deviation between the determined costs reported by the States in the draft performance plans and the costs computed in line with Commission Decision defining the targets for RP3.

<sup>38</sup> LVNL has planned restructuring costs for several reasons, one of them being the replacement of LVNL's main system, AAA, by the new iCAS system.

<sup>39</sup> Report available at: [https://webgate.ec.europa.eu/eusinglesky/sites/eusinglesky/files/cost\\_of\\_capital\\_methodology\\_review.pdf](https://webgate.ec.europa.eu/eusinglesky/sites/eusinglesky/files/cost_of_capital_methodology_review.pdf)

- 161 This difference indicates that the cost of capital reported by some ANSPs may be excessive. The main contributors to this excess are the main ANSPs for Italy (+239.6M€), Germany (+236.6M€), Poland (+57.6M€), Bulgaria (+30.5M€) and Denmark (+12.9M€).
- 162 The monetary value of the return on equity has been compared to the total determined costs to indicate the level of return that the main ANSPs are embedding in the determined costs. The ANSPs embedding an excessive return on equity in their costs, higher than 5% of the total determined costs, are the ANSPs of Bulgaria, Denmark, Italy and Poland.<sup>40</sup>

nominal (,000€)	2020	2021	2022	2023	2024	Total
Reported by Member States	339,160	409,551	437,869	442,205	436,734	2,065,519
Efficient	278,729	291,796	303,107	309,203	315,616	1,498,449
Reported vs. efficient	60,431	117,755	134,763	133,002	121,118	567,070

Table 12 – Union-wide cost of capital over RP3.

## WACC review

- 163 The computation of the weighted average cost of capital (WACC) rate together with the regulated asset base (RAB) results in the cost of capital. The WACC rate is important because it is the indicator to measure and compare the minimum rate of return at which ANSPs produces value for its investors.
- 164 Figure 25 provides an overview on the WACC for en route reported by the main ANSPs of the Member States in the draft performance plans over RP3. The Union-wide average WACC is 5.13%. 16 ANSPs reported a WACC higher than the Union-wide average, including the ones for Italy (9.22%), Hungary (8.06%), Romania (7.64%) and Bulgaria (7.00%) among the highest. In case of the ANSPs of Italy and Bulgaria, the reported cost of capital was significantly above the efficient cost of capital and maximum risk exposure over the period 2020-2024, which is partially due to the high WACC.
- 165 The lowest WACC rate was reported by the Netherlands, due to its capital structure (i.e. fully financed by debt) and low interest rates for its loans at 1% (LVNL, the ANSP of the Netherlands, is entitled to national treasury banking).

<sup>40</sup> For Germany, it was not possible to compute the monetary value of the return on equity due to the use of an notional WACC. However, based on an estimation, the PRB believes Germany to be one of the Member States embedding a higher return on equity in the determined costs.

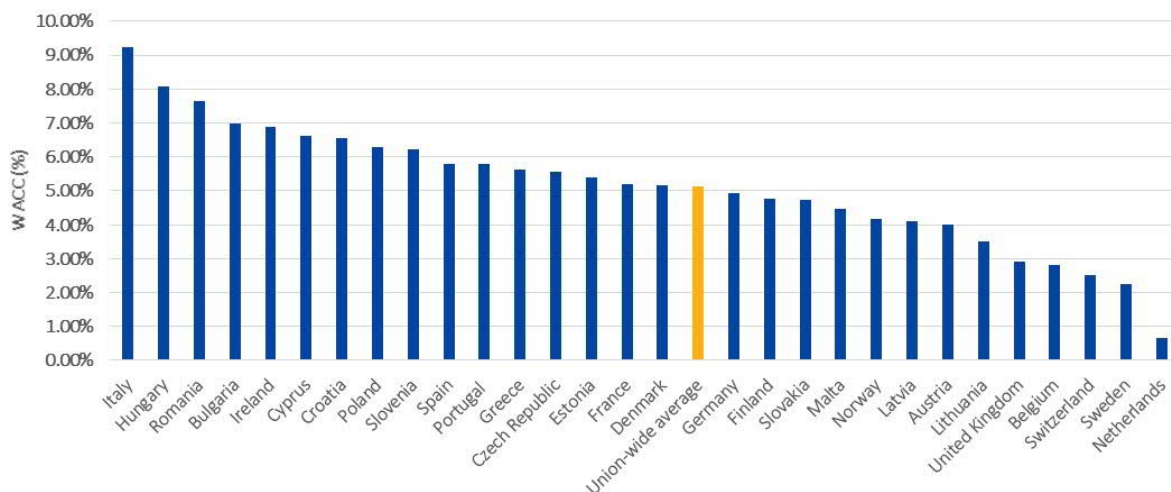


Figure 25 - WACC overview across main ANSPs of Member States over RP3.

- 166 Figure 26 shows the Union-wide capital structure reported by the main ANSPs for the calculation of the WACC. Ten ANSPs are fully financed through equity: Bulgaria, Cyprus, Czech Republic, Greece, Hungary, Italy, Lithuania, Poland, Portugal and Romania. The ANSP of the Netherlands is the only with capital based fully on debt.
- 167 18 ANSPs established their capital structure as a combination of equity and debt (i.e. Austria, Belgium, Croatia, Denmark, Estonia, Finland, France, Germany, Ireland, Latvia, Malta, Norway, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom). The average share of financing through equity for these Member States is 56.4%.

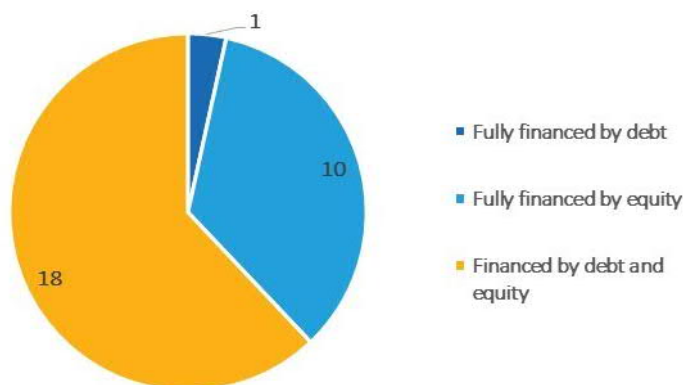


Figure 26 – Union-wide capital structure over RP3 (number of main ANSPs).

### Regulated asset base (RAB) review

- 168 The regulated asset base is important at Union-Wide level to compare across the Member States the value of the assets (i.e. fixed, current and adjustments), justifying the cost of capital to finance these assets and the need for new investments.
- 169 Figure 27 shows the overview of the RAB. The ANSP of Germany reported by far the highest asset base (9,269.8M€), followed by the one of United Kingdom (5,737.3M€), France (4,777.2M€) and Italy (4,034.8M€).



170 Issues related to the composition of the RAB were identified during the assessment of the RP3 performance plans for some ANSPs: the net current assets of Bulgaria, Cyprus, Estonia, Greece and Germany seem excessive considering the expected cash flow. The fixed asset base of Italy remains artificially constant over RP3, not reflecting the real evolution of the asset base over the period.

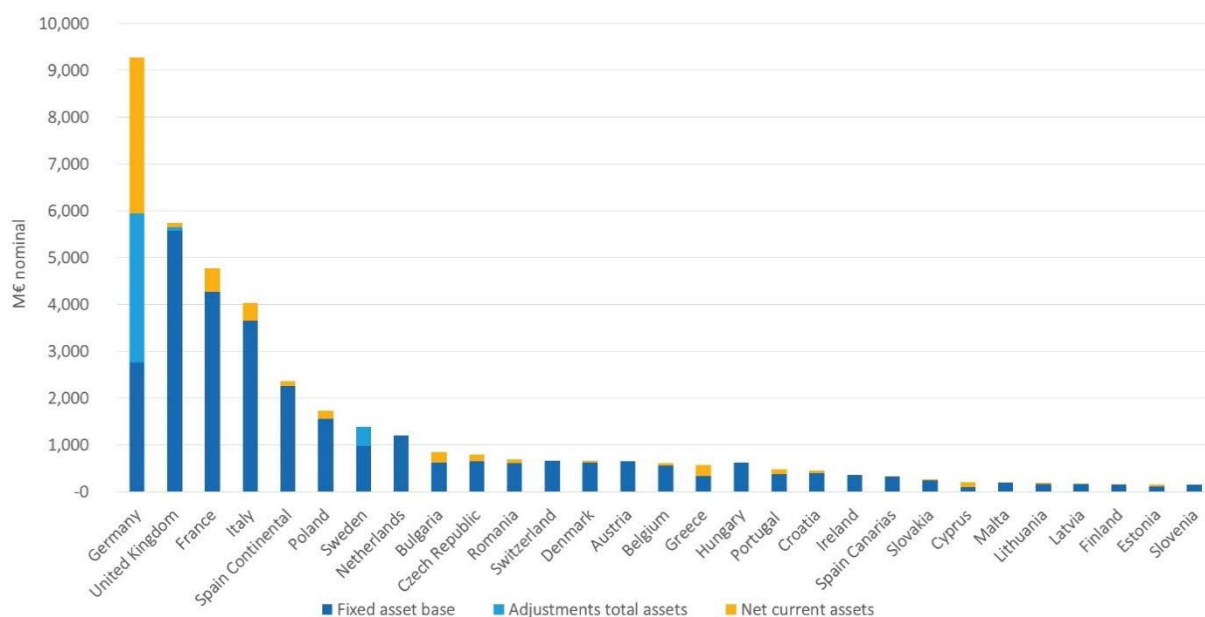


Figure 27 – Overview of the Regulated Asset Base (RAB) across main ANSPs.

### 6.3.6 Cost allocation methodology between en route and terminal services

171 The RP3 Performance and Charging Regulation requires the performance plans to describe the method for the allocation of costs between en route and terminal services and the justification of any changes in the methodology. This helps to identify any potential cross-subsidies between en route and terminal services.

172 Most States did not change the allocation of costs between en route and terminal services from RP2 to RP3. Four Member States did change the allocation from RP2 to RP3, impacting the baseline and/or the costs over RP3:

- Belgium changed the cost allocation for approach services and NSA supervision. This change in the methodology corresponds to a total transfer of 14.1M€<sub>2017</sub> from the terminal charging zones to the en route charging zone that impacts the baseline.
- Norway changed the allocation from ATCO composite hours (50% en route/50% terminal) to a distance-based allocation key (80% en route/20% terminal). The change in the cost allocation methodology and criteria increases of 18.4M€<sub>2017</sub> the en route cost baseline.
- Portugal modified the allocation between en route and terminal, namely for the MET provider and NSA. The cost baseline was adjusted to incorporate the effect of a change in allocation criteria, decreasing the baseline and en route cost base.
- Romania updated the cost allocation methodology with respect to RP2. The change in allocation of MET costs from 75% to 80% en route impacts the RP3 en route total cost by +0.33% on average. The APP/TWR combined cost are embedded in different services detailed in the Reporting Tables, therefore a precise calculation of the impact on the total cost is difficult to perform.

### 6.4 Union-wide terminal determined unit costs (DUC) for RP3

- 173 Annex IV Point 2.1 (c) of the Regulation establishes the elements subject to review in the draft performance plans regarding the national performance targets on terminal DUC: (i) comparison with the en route determined unit cost trend at local level; (ii) comparison with the level and trend of actual performance during the reference period which precedes the reference period covered by the performance plan; and (iii) at airport level, comparison of performance with similar airports. This implies that States are expected to introduce local targets to contribute to the improvement of the ATM network.
- 174 Table 13 shows the average Union-wide DUC for terminal services over RP3 as aggregation of the performance plans. The DUC decreases from 2020 to 2022 and increases until the end of the period.

	2020	2021	2022	2023	2024
Determined unit cost for terminal air navigation services (€2017) as aggregation of performance plans	152.47	152.73	151.26	152.54	153.14

Table 13 - Union-wide DUC for terminal services for RP3 (aggregation of performance plans).

- 175 Figure 28 represents the Union-wide DUC for RP3 from the results of the draft performance plans compared to RP2 (determined and actual unit costs). It also shows the RP2 determined and actual costs against the values reported in the draft performance plans.
- 176 The PRB observes that the DUC for terminal computed as the aggregation of the draft performance plans starts at 162.39€<sub>2017</sub> in 2019 and decreases 1.2% per year on average. This is due to an increase in costs of 0.5% per year on average (or 36.4M€<sub>2017</sub>) coupled with an increase in service units of 1.7% per year on average (735,604 SU). Terminal cost increase is much lower than en route, despite terminal being more labour intensive than en route service provision.

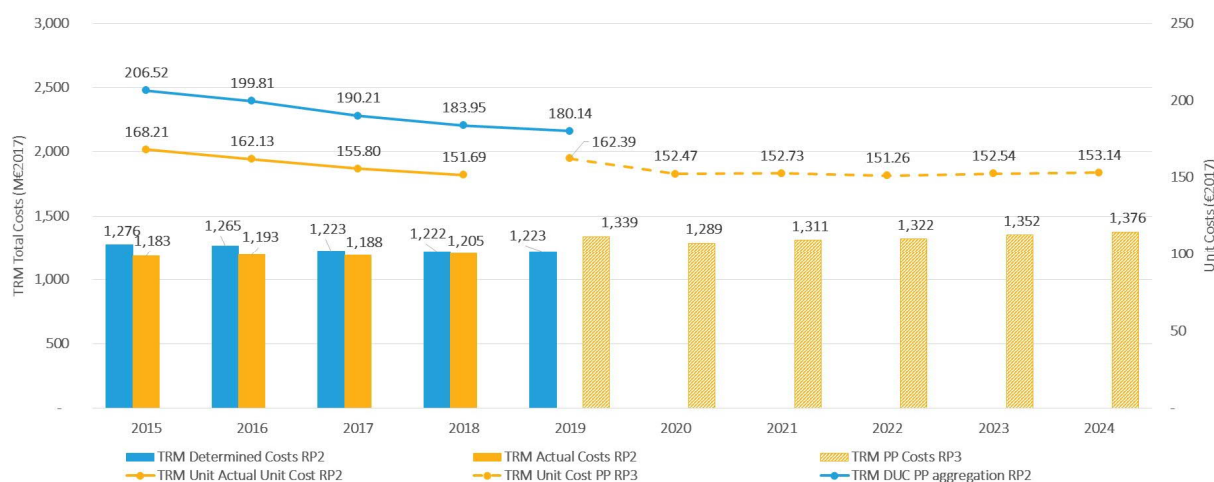


Figure 28 - RP3 Union-wide total and unit costs for terminal for RP3.

### 6.5 Summary

- 177 At Union-wide level, the determined unit cost as planned by Member States in the draft performance plans are consistently higher than the Union-wide targets.



- 178 The 2019 baseline aggregated value (i.e. 7,372.1M€<sub>2017</sub>) from the draft performance plans is 325M€<sub>2017</sub> (or +4.6%) above the baseline as defined in the Commission Implementing Decision (7,047M€<sub>2017</sub>).
- 179 The Member States fulfilling at least two criteria of Annex IV Point 1.4 of the Regulation from (a) to (c), considering as well a deviation for criterion (d), and thus passing the assessment against the cost criteria are Austria, Czech Republic<sup>41</sup>, Finland, Slovakia, Slovenia, Spain and the United Kingdom.
- 180 The aggregate service units forecast from the performance plans for RP3 grows faster than the aggregated STATFOR February 2019 base and October 2019 base forecast. As a result, the rate of reduction for the DUC is artificially higher compared to the growth of service units defined in the STATFOR forecasts, making the Union-wide trends easier to achieve.
- 181 The determined costs in 2024 are 671M€<sub>2017</sub> (or +9.2%) higher than the cost forecast in 2019, with the majority of the costs being generated by the ANSPs (+609.2M€<sub>2017</sub> or +9.3%). This is driven largely by an increase in staff costs (+513M€<sub>2017</sub> or +12%).
- 182 The planned determined costs of new investments (3,559.5M€) are similar to the costs of existing investments (3,333M€). The planned CAPEX over RP3 amounts to 6,609.7M€, compared to the total planned CAPEX at Union-wide level for RP2 of 5,569.7M€. Member States plan to invest more in RP3 than in the previous period.
- 183 The reported cost of capital is 567M€ higher than the efficient cost of capital over RP3. This represents 17% of the total deviation between the determined costs reported by the States in the draft performance plans and the costs computed in line with the Union-wide targets. Member States can improve their performance in this cost category that does not contribute to improving performance.
- 184 The DUC for terminal computed as the aggregation of the draft performance plans starts at 162.39€<sub>2017</sub> in 2019 and decreases 1.2% per year on average. This is due to an increase in costs of 0.5% per year on average (or 36.4M€<sub>2017</sub>) coupled with an increase in service units of 1.7% per year on average (735,604 SU). Terminal cost increases are much lower than en route, despite terminal being more labour intensive than en route service provision.

## 6.6 Recommendations for the cost-efficiency KPA

- 185 The PRB recommendations as a result of the assessment of the Performance plan are shown in Table 14.

---

<sup>41</sup> Czech Republic are added to the 'Watchlist' for RP3 on account of the staff cost associated with the number of additional ATCOs in the performance plan

Recommend to approve the cost-efficiency KPA (consistent)		Recommend to not approve the cost efficiency KPA (inconsistent)	
Without comment	With specific PRB monitoring points ("watchlist")		
Austria	Czech Republic	Belgium <sup>42</sup>	Italy
Finland		Bulgaria	Latvia
Slovakia		Croatia	Lithuania
Slovenia		Cyprus	Malta
Spain		Denmark	The Netherlands
United Kingdom		Estonia	Norway
		France	Poland
		Germany	Portugal
		Greece	Romania
		Hungary	Sweden
		Ireland	Switzerland

Table 14 – PRB recommendation, cost-efficiency KPA.

<sup>42</sup> Luxembourg is together with Belgium in the same charging zone for the analysis of the en route local targets.

## 7 Interdependencies and trade-offs

### 7.1 Interdependencies relating to the safety KPA

- 186 Member States in general argue that their current safety management processes will ensure that safety levels are not compromised when implementing changes to airspace, staffing or ATM Functional Systems. In line with the EASA view, the PRB considers this a valid approach to ensure that no trade-offs are made affecting safety and that the NSAs and EASA would oversee the application of such procedures.
- 187 Most of the Member States further underlined that the ANSPs declared to have sufficient resources to perform required safety activities and that any shortfall in staff would be alleviated through various other means (reduction of capacity, rescheduling the training activities or overtime working hours). Member States did not, generally, confirm that the resources at the NSA are sufficient to oversee the changes to be implemented by the ANSPs.
- 188 FABEC Member States did not provide the relevant information on addressing the interdependencies and trade-off between safety and other KPAs due to lack of the guidance on the indicators of interdependencies between KPAs during RP2. Therefore, FABEC Member States argue that they were unable to develop the approach for RP3.
- 189 Only a few Member States have developed specific metrics at the ANSP level to formally address/control any trade-off of safety against other criteria (such as Bulgaria).

### 7.2 Interdependencies between the environment and capacity KPA

- 190 The PRB cross-checked the targets and measures in the environment KPA with those in the capacity KPA, particularly for Member States highlighting capacity issues as a reason for not planning to achieve the environment reference values. If a Member State noted that the capacity situation may negatively impact its horizontal flight efficiency, yet at the same time its capacity plans were less ambitious than the reference values according to the capacity KPA assessment, the interdependency claim was not considered to be an adequate justification for the deviation.

### 7.3 Interdependencies between capacity and cost-efficiency

- 191 The PRB cross-checked the targets set for capacity (i.e. en route ATFM target delay) and the cost-efficiency short and long-term trends. Deviations from the cost-efficiency trend criteria have been analysed and evaluated only when the Member State set the capacity targets equal to the reference values as indicated in the Network Operations Plan. If the performance plans were less ambitious than the capacity reference values, the PRB did not accept that the interdependency between cost-efficiency and capacity was a valid justification to deviate from the cost-efficiency trends.

## 8 Network Manager

- 192 The European Commission established the Network Manager (NM) function under the Single European Sky (SES) II legislative package. The network functions are further laid down in Commission Implementing Regulation (EU) 2019/123.
- 193 The role of the NM is to address operational issues and respond to the request of users for the seamless provision of expeditious air navigation services. The European Commission re-nominated Eurocontrol to undertake the NM functions between 2020 and 2029. The Performance and Charging Regulation states that the Network Manager should prepare a Network performance plan. In September 2019, the draft Network performance plan (NPP) was endorsed by the Network Management Board and submitted to the Commission.
- 194 The PRB carried out completeness checks according to point 1 of Annex V of the Performance and Charging Regulation, which sets out the criteria for assessment of the NPP. No issues regarding missing and/or incomplete elements were found, however, some observations are summarised in the NPP assessment report, which was subsequently provided to the Commission.

## 9 The military dimension

- 195 To achieve the performance targets, an effective operational partnership between all stakeholders is required, including military and civil airspace users (Recital 26 of the Performance and Charging Regulation). One of the most important ways to improve the performance of air traffic management is the optimised cooperation between the military and civil service providers by using the concept of flexible use of airspace (FUA). It ensures that airspace is allocated according to the needs of military and civil airspace users. This is especially important in areas that offer free route airspace (FRA), since military zones can prevent airlines from choosing their preferred routes between the entry and exit points.
- 196 Under a concept established by Eurocontrol, different levels are defined to deliver the flexible use of airspace, namely how and under which conditions military airspace is released for civil use (Local and sub regional airspace management support system, otherwise known as LARA).
- 197 The current legal framework does not oblige Member States to include specific information on how they will coordinate military and civil flights during RP3. 16 Member States included some information on how they will coordinate military and civil flights.
- 198 The planned measures of the States submitting information remain mostly general and document the intention to intensify civil-military cooperation, without indicating specific targets. It is important for National Supervisory Authorities to assess what percentage of the airspace reserved for military use is released for civil use and how effectively this released airspace is actually used. Based on such data, the performance plans could quantify the planned impact on environmental performance (shorter routes) and on capacity (reducing delays).
- 199 The major initiatives planned by Member States are the implementation of the aforementioned support system provided by the Network Manager, real time data exchange by military and civil service providers, training of airspace management personnel, reduction of buffer zones between military and civil traffic and relocation of military training zones.

## 10 Summary of recommendations

- 200 Figure 29 presents a summary of the PRB’s assessment of the draft performance plans for RP3. Elements of the performance plans the PRB recommends being approved but added to the PRB’s “watchlist” for close monitoring during RP3 are highlighted with an orange symbol.
- 201 Based on the PRB’s interpretation of the Performance and Charging Regulation and the assessment of the draft performance plans, the PRB recommends that three plans are approved (Czech Republic, Finland and Slovenia) and the remainder to be revised.

Member State	Overall assessment	KPA status			
		SAF	ENV	CAP	CEF
Austria	✗	✓ (!)	✓	✗	✓
Belgium/Luxembourg	✗	✗	✗	✗	✗
Bulgaria	✗	✓ (!)	✓ (!)	✓ (!)	✗
Croatia	✗	✓ (!)	✓	✗	✗
Cyprus	✗	✓ (!)	✓ (!)	✗	✗
Czech Republic	✓	✓ (!)	✓	✓ (!)	✓ (!)
Denmark	✗	✓ (!)	✓	✓	✗
Estonia	✗	✓ (!)	✓	✓	✗
Finland	✓	✓ (!)	✓	✓	✓
France	✗	✗	✗	✗	✗
Germany	✗	✗	✗	✗	✗
Greece	✗	✓	✓ (!)	✓ (!)	✗
Hungary	✗	✓ (!)	✓	✗	✗
Ireland	✗	✓	✓	✓	✗
Italy	✗	✓ (!)	✓ (!)	✓ (!)	✗
Latvia	✗	✓ (!)	✓	✓ (!)	✗
Lithuania	✗	✓	✓ (!)	✓ (!)	✗
Malta	✗	✓ (!)	✗	✗	✗
Netherlands	✗	✗	✗	✗	✗
Norway	✗	✓ (!)	✓	✓	✗
Poland	✗	✓ (!)	✗	✓ (!)	✗
Portugal	✗	✓	✓	✓ (!)	✗
Romania	✗	✓ (!)	✓	✓ (!)	✗
Slovakia	✗	✓ (!)	✓	✗	✓
Slovenia	✓	✓ (!)	✓	✓ (!)	✓
Spain	✗	✓ (!)	✓	✗	✓
Sweden	✗	✓	✓ (!)	✓ (!)	✗
Switzerland	✗	✗	✗	✗	✗
UK	✗	✗	✗	✗	✓

Figure 29 – Summary of the PRB assessment across the KPAs.

## 11 Next steps for RP3

### 11.1 Adoption of performance plans

- 202 This report provides the PRB's recommendations to the Commission regarding the draft performance plans submitted by Member States. The Commission will review this advice and draft Commission Decisions for those targets contained within draft performance plans that the Commission considers consistent and those the Commission considers inconsistent in accordance with assessment criteria as set out in the Performance and Charging Regulation.
- 203 The Commission will consult Member States in an advisory procedure on the Decisions relating to plans considered to be inconsistent during the 74<sup>th</sup> meeting of the Single Sky Committee in late March 2020. For those Member States whose plan is considered consistent, the Member States concerned will be required to adopt and publish its performance plan in accordance with Article 16. The Member States with plans found to be inconsistent will start a process to provide a revised draft performance plan as set out in Article 14(3).
- 204 Following such a revision, should the Commission find that there are doubts about the consistency of the revised performance targets contained in the revised draft performance plan with the Union-wide performance target, it may initiate a detailed examination of those performance targets and the relevant local circumstances.
- 205 The Regulation requires that during this period the submitted draft performance plans will be used as the basis for charging airspace users.

### 11.2 Monitoring activities

- 206 Setting targets and approving performance plans is an important step in the regulation of air traffic management. A strong monitoring process is required to ensure that the plans are implemented effectively and drive performance towards the goals of the Single European Sky.
- 207 NSAs are responsible for monitoring the performance of air navigation services provided in their airspace (Article 37) and propose remedial measures should the agreed levels of performance not be achieved (Article 10), and the PRB will be monitoring that such actions are being taken.
- 208 The NM will also play a key role to improve performance throughout RP3, as the Performance and Charging Regulation states that the Network Manager is obliged in accordance with Article 5 to bring to the attention of the Commission, without undue delay, to any circumstances where performance targets are not met or risk not being met or where significant and persistent drops in operational performance are observed.
- 209 Furthermore, Article 10 of the Commission Implementing Regulation (EU) 2019/123 states that remedial measures to be taken by operational stakeholders are to be proposed should the levels of performance agreed be not achieved.
- 210 The PRB will commence the monitoring activities for RP3 in 2020. The first formal monitoring report will be published in 2021, following the completion of the first year of RP3. However, the PRB has created a "watchlist" for those Member States where the PRB has highlighted some key concerns or risks that are considered crucial to the achievement of the targets within the performance plans. This will be monitored by the PRB during 2020 and throughout RP3.
- 211 This is a PRB initiative to make the monitoring process for RP3 more robust. This, however, also requires a commitment from each Member State to ensure that the performance plans are fully implemented, with NSAs highlighting issues as they arise and putting in place measures to rectify them as quickly as is possible.