

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

ADDITIONAL INFORMATION TO REPORTING TABLES 1 – TOTAL COSTS AND UNIT COSTS

1. Determined costs and unit costs

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

DFS

Generally, total costs are allocated according to cost types and type of service. Chapter V of the Commission Implementing Regulation (EU) No 2019/317 laying down a performance and charging scheme for air navigation services describes generally how air navigation charges are established and how they are allocated to the different cost objects.

For DFS, costs included in the calculation of the unit rate are planned on the basis of the International Financial Reporting Standards (IFRS). Due to conversion to International Financial Reporting Standards IFRS, conversion effects of DFS are taken into account up to 2021 according to article 7 Regulation (EU) No. 391/2013 under “exceptional items”.

Generally, all figures are taken from appropriate accounting and reporting systems, which are also the basis for establishing the cost base.

Total costs for Germany are broken down according to

1. cost objects,
2. type of costs by nature and
3. type of service.

Total costs are charged to the cost unit “en route services” according to actual demand and also consider objectives set by the NSA. Afterwards, these total costs are divided into their particular elements:

- staff costs
- other operating costs and project costs and
- depreciation.
- Cost of capital
- Exceptional items

Finally, the cost unit “en route” is credited by the corresponding OAT-costs.

With regard to the presentation according to type of service, costs are directly allocated to the relevant cost units. The costs of communication, navigation and surveillance services are determined on the basis of services or costs directly attributable to the cost objects.

MUAC

MUAC is an Upper Area En Route Centre operating in three charging zones: Belgium-Luxembourg, Netherlands and Germany. The methodology to allocate the costs between the charging zones is based on the proportion of air traffic control personnel assigned to the control sectors serving each charging zones.

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

As for the performance plan, a fixed share of 43,9227% for 2020 of the total costs of MUAC are attributed to the German cost base. For 2021, the share is 46,6140%. The share for 2022 -2024 is not yet agreed by the MUAC Member States but based on information currently available is provisionally set up as follows:

in 2022: 47.0546%

in 2023: 47.6007%

in 2024: 47.5567%

DWD

Deutscher Wetterdienst is only providing MET air navigation services.

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

The calculation for exempted VFR-flights is based on marginal costs. The German Government reimburses DFS for the costs of services provided for en route flights under visual flight rules and therefore such costs are not included in the cost base for calculation of user charges.

For MET, costs related to VFR flights are not included in the cost base.

c) Criteria used to allocate costs between terminal and en route services, in accordance with Article 22(5);

DFS

The regulated business of DFS is based on two cost objects, Enroute and Terminal, which are not organized in separate business units. In addition, there are other non-regulated cost objects such as VFR, OAT and third-party business. The costs of the cost object VFR are reimbursed by the Federal Republic of Germany, the costs for OAT are incurred within the framework of civil-military integration and are borne by the Ministry of Defence. Each member of the board of directors of the DFS is responsible for one area of technology, operations, personnel and administration. This is the basis for the organisational structure and thus for the cost centre structure. The cost centres are the accounting object for recording credit transactions, personnel costs and depreciation. All costs incurred in these areas are allocated to the respective cost objects in the ERP system of DFS in accordance with the internal service relationships. The basis here is quantity-driven allocations based on utilisation. The actuals of the past year determined in this way form the basis for the allocation of costs to the cost objects in the following years.

The cost centres that can be attributed 100% to Enroute or Terminal are identified. Cost centres that are fully allocated to a cost object include, for example, the cost centres for air traffic control personnel, individual cost centres of the CNS service as well as material cost centres for ATM systems and clearly allocable projects. All other cost centres, regardless of whether they are assigned to the administrative or operational area, are distributed according to a fixed key that reflects the internal (real) demand - derived from the allocations in the ERP system - in analogy to the use of resources for Terminal and Enroute.

MUAC

MUAC is only providing en route services and costs are 100% allocated to the en route charging zone

DWD

The subdivision of MET costs for IFR flights into terminal and en route services is made on the basis of the service structure of the individual cost objects of the aeronautical meteorological service in accordance with the Manual on Air Navigation Services Economics (ICAO Doc. 9161/5), Appendix 5.

For RP3 the share of planned en route services is around 70%.

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

State

Costs are allocated between terminal and en route services using a ratio of 8% for terminal services and 92% for en route services as determined by the Federal Ministry of Transport (MoT).

d) Breakdown of the meteorological costs between direct costs and the costs of supporting meteorological facilities and services that also serve meteorological requirements in general ('MET core costs'). MET core costs include general analysis and forecasting, surface and upper-air observation networks, meteorological communication systems, data processing centres and supporting core research, training and administration;

The costs for meteorological services included in the cost base consist only of direct costs for meteorological facilities and services. The MET basic costs serving the general meteorological purposes are financed by the federal budget in Germany.

e) Description of the methodology used for allocating total meteorological costs and MET core costs referred to in point (d) to civil aviation and between charging zones;

MET costs are an integral part of the overall cost accounting of Deutscher Wetterdienst. A phased contribution margin calculation is applied where all costs incurred are initially recorded as individual costs.

All individual costs that can be directly allocated to services or cost objects of the meteorological service are considered as direct costs. All other input-related costs of Deutscher Wetterdienst that also cover other service categories are considered as core costs or overhead costs.

Core costs are not included in the cost bases for en route charges and terminal charges. They are therefore not part of the determined costs for en route and terminal services.

The existing cost calculation system makes it possible to further evaluate the MET direct costs incurred, in particular the distinction between IFR and VFR costs and the further allocation of IFR costs by terminal and en route.

The cost calculation permits further valuation by separately assessing direct and core costs of the MET costs. This includes, inter alia, the differentiation between costs for IFR and VFR as well as the further breakdown of IFR costs into terminal and en route services.

MET costs are allocated to IFR and VFR on the basis of an analysis considering the person-hours dedicated to providing meteorological services for the safety of aviation.

In the RP3 (2020-2024), 91.8% of all aviation MET costs are related to IFR flights and 8,2% to VFR flights.

In 2021, the share of en route services amounted to approximately 70,9% and thus increased by about 0,8% compared to the previous year due to the increased use for en route services.

f) For each entity, description of the composition of each item of the determined costs by nature and by service (points 1 and 2 of Table 1), including a description of the main factors explaining the planned variations over the reference period;

Determined costs by nature and by service

DFS	
1. Detail by nature (in nominal terms)	
1.1 Staff costs	The staff costs include all costs relating to staff. This means salary, overtime payments, contributions to social security schemes and pension costs.

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

	Personnel costs will increase over the third reference period due to planned tariff increases and additional costs for ATC staff. On the other side there will be a reduction in Non-ATC-staff of about -3% per year starting 2022 (base 2021).
of which, pension costs	For RP3 the interest rate was lowered from 3.54 % (RP2) to 2.85 %, as a result of the general development of interest rates on the market, which leads to higher costs in RP3. Pension costs do not include contributions to the state pension scheme. In addition, the pension cost development reflects the development of the staff numbers as well as tariff increases.
1.2 Other operating costs	The other operating costs include all costs for external staff, maintenance, energy, travel expenses, material and insurance costs. This cost item includes also the project costs, but not the investments. The increase from 2021 till 2024 will be +1% per year (base actual 2020).
1.3 Depreciation	Depreciation of fixed assets and future assets stemming from investments during RP3. The increase results from the iCAS-system (lower airspace-“existing investment”) coming into operation.
1.4 Cost of capital	Costs of capital consist only of the financing costs of company pensions and the costs for other financial liabilities and accruals; due to a political decision of the German Ministry of Transport, no return on equity is being charged to airspace users in order to reduce the impact of an increasing unit rate.
1.5 Exceptional items	The exceptional items contain only IFRS conversion effects charged to the airlines on a pro-rata basis. Following the change of the accounting system to IFRS, these IFRS conversion effects are proportionally spread up to 2021 according to Article 7 of Regulation (EU) No. 391/2013.
2. Detail by service (in nominal terms)	
2.1 Air Traffic Management	This service includes all costs necessary to provide the management of air traffic.
2.2 Communication	This service includes all costs for the implementation and further development of new and existing voice and data communication services as well as the provision of the service at all DFS locations.
2.3 Navigation	This service includes all costs for the implementation and further development of new and existing navigation systems. In addition, it includes costs for the provision, monitoring and verification of flight survey performance of all navigation systems and procedures in Germany.
2.4 Surveillance	This service includes all costs for the implementation and further development of new and existing surveillance systems.
2.5 Search and rescue	This service is not explicitly calculated for DFS.
2.6 Aeronautical Information	This service includes all costs for Provision of aviation consultancy services, flight plan management and collection, processing and provision of aeronautical data as well as production and publication of aeronautical information.
2.7 Meteorological services	./.
2.8 Supervision costs	./.
2.9 Other State costs	The Other State costs contain IFRS conversion effects charged to the airlines on a pro-rata basis. Following the change of the accounting system to IFRS, these IFRS conversion effects are proportionally spread up to 2021 according to Article 7 of Regulation (EU) No. 391/2013.
Adjustments beyond the provisions of the International Financial Reporting Standards adopted by the Union pursuant to Regulation (EC) No 1126/2008	
Deviation as far as the calculation of pension costs are concerned (see below).	

MUAC	
1. Detail by nature (in nominal terms)	
1.1 Staff costs	Staff costs means remunerations including family allowances and employer contributions to social security schemes (sickness, pension and unemployment schemes). Remuneration of staff: as from 2020, the increase is mainly due to indexation of remuneration (in accordance with the EUROSTAT methodology applied in the European institutions), the progressive impact linked to taxation on pension (which was not included during RP2), the additional ab initio intake and the salary package (called

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

	General Condition of Employment package) negotiated with ATCO in 2018 aiming at providing increased capacity through increased ATCO working time.
of which, pension costs	Pension costs are made of two elements: - the employer contribution fixed as a proportion of the basic salary - the taxation on pension which is progressively charged to MUAC cost base (from 60% in 2020 to 100% in 2022). This element will be included in MUAC cost-base as from 2022.
1.2 Other operating costs	Other operating costs include travel expenses, external assistance, energy, maintenance of buildings & equipment, software licenses, supplies and insurance. Other operating costs exclude investments and is stable over RP3.
1.3 Depreciation	Decrease in 2021 due to end of depreciation of FDPS in 2020. The increase of 2023 onward can be explained by the cost of Data Centre Modernization, New Access Control System, and MUSE project which will be recognized starting 2023.
1.4 Cost of capital	Paid interest for loans stable over RP3.
1.5 Exceptional items	None
2. Detail by service (in nominal terms)	
2.1 Air Traffic Management	All MUAC costs are ATM related.
2.2 Communication	Not applicable.
2.3 Navigation	Not applicable.
2.4 Surveillance	Not applicable.
2.5 Search and rescue	Not applicable.
2.6 Aeronautical Information	Not applicable.
2.7 Meteorological services	Not applicable.
2.8 Supervision costs	Not applicable.
2.9 Other State costs	Not applicable.
Adjustments beyond the provisions of the International Financial Reporting Standards adopted by the Union pursuant to Regulation (EC) No 1126/2008	
Not applicable.	

DWD	
1. Detail by nature (in nominal terms)	
1.1 Staff costs	Wages and salaries, employers' contributions to social security, employers' contributions to the pension scheme, pension accrual. Staff costs planning with an average increase of 2.0% per year. For the planning years 2022 and 2023, a reduction in staff costs was taken into account due to the planned implementation of AutoMETAR in 2022.
of which, pension costs	See below.
1.2 Other operating costs	Training costs, travel allowances, maintenance, external staff, material, operating project costs.
1.3 Depreciation	Depreciation of fixed assets and future assets from investments during RP3, e.g. commissioning AutoMETAR.
1.4 Cost of capital	An imputable interest on total assets of 0,9 % was planned according to the respective most recent guideline of the Ministry of Finance (II E 3 - O 1069/16/10001 of 13 Jul 2020). However, a political decision was taken by the Ministry of Transport of Germany to reduce the RoE to 0%. This decision was taken as part of the State effort to minimize the impact of an increasing unit rate for the airspace users.
1.5 Exceptional items	Not applicable.
2. Detail by service (in nominal terms)	
2.1 Air Traffic Management	Not applicable.
2.2 Communication	Not applicable.
2.3 Navigation	Not applicable.
2.4 Surveillance	Not applicable.
2.5 Search and rescue	Not applicable.
2.6 Aeronautical Information	Not applicable.
2.7 Meteorological services	In this line, all MET costs are reported.
2.8 Supervision costs	Not applicable.

En-route Charging Zone Germany

Reference Period 3 (2020-2024)

Version: 31 May 2022

2.9 Other State costs	Not applicable.
Adjustments beyond the provisions of the International Financial Reporting Standards adopted by the Union pursuant to Regulation (EC) No 1126/2008	
DWD is reporting costs pursuant to the national accounting standards of the German Commercial Code (Handelsgesetzbuch - HGB).	

State Costs	
1. Detail by nature (in nominal terms)	
1.1 Staff costs	<p>In the federal budget plan, costs are divided into staff and other operating cost titles. Hence, all staff titles have been included in the staff costs.</p> <p>The cost planning for RP3 is based on the tables for personnel cost rates published by the Federal Ministry of Finance (BMF II A 3 - H 1012-10/07/0001 :023) on 28 May 2021, establishing mean values for public servants per post.</p> <p>The increase of staff costs over RP3 is based on a planned increase in staff numbers at the NSA from 2020 onwards (2022: one additional post; 2023: 11,5 additional posts; 2022: 4,5 additional posts), promotions in the supervisory department in the Ministry of Transport and Digital Infrastructure and a predicted general increase in wages of 2% per year in the Ministry of Transport and Digital Infrastructure.</p>
of which, pension costs	./.
1.2 Other operating costs	<p>The other operating costs include all costs which are not directly related to staff costs.</p> <p>The cost planning for RP3 is based on the tables for other operational cost rates published by the Federal Ministry of Finance (BMF II A 3 - H 1012-10/07/0001 :023) on 28 May 2021, establishing mean values for other operational costs per post.</p> <p>These costs include both cost related to existing staff as well as planned staff.</p> <p>The increase of other operating costs over RP3 is based on a planned increase in staff numbers at the NSA (2020: 104 posts; 2021: 104 posts; 2022: 109 posts, 2023 114 posts, 2024 117 posts) as well as on a predicted general increase of 2% per year in operating costs in the supervisory department in the Ministry for Digital and Transport.</p> <p>In addition, other operating costs include contributions to the FABEC Bureau as well as to Eurocontrol (see below).</p>
1.3 Depreciation	Not applicable.
1.4 Cost of capital	Not applicable.
1.5 Exceptional items	Not applicable.
2. Detail by service (in nominal terms)	
2.1 Air Traffic Management	Not applicable.
2.2 Communication	Not applicable.
2.3 Navigation	Not applicable.
2.4 Surveillance	Not applicable.
2.5 Search and rescue	Not applicable.
2.6 Aeronautical Information	Not applicable.
2.7 Meteorological services	Not applicable.
2.8 Supervision costs	The total costs for the supervision of air navigational services in Germany are shown in this line. These costs include the costs of the German Federal Supervisory Authority for Air Navigational Services (BAF), the direct costs of the respective supervisory department in the German Federal Ministry for Digital and Transport and annual contributions to the FABEC Bureau.
2.9 Other State costs	Other State costs include contributions to the Eurocontrol budget (see below)
Adjustments beyond the provisions of the International Financial Reporting Standards adopted by the Union pursuant to Regulation (EC) No 1126/2008	
Article 12 (1) of Regulation (EC) No. 550/2004 as amended by Regulation (EC) No. 1070/2009, limits the necessity to apply international accounting standards to air navigation service providers. For the calculation of supervisory costs (NSA and MoT) the rules of the German Federal Budget Law (i.a. Bundeshaushaltsordnung, BHO) are applied instead of the IFRS.	

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

Pension costs

Note: The determined pension costs of the main ANSPs are detailed and justified in the body of the performance plan (item 3.4.3)

DFS
Assumptions underlying the determined pension costs and expected evolution over Reference Period 3
<p>When computing the costs of occupational pension schemes, a so-called imputed model is used. This model aims at calculating a predictable and stable unit rate as well as a complete funding of pension. It is based as much as possible on the IFRS standard and other IFRS norms but deviates from IFRS on the following points:</p> <ul style="list-style-type: none">• The interest rate in the future will no longer be oriented to an abstract IFRS interest rate but rather to the prospective, expected, return on assets that can be achieved in the long term for the reserves underlying the occupational pension scheme ("imputed unit rate")• Deviations between the assumed and actual interest rate reached are checked after each reference period. Pension obligations and plan assets are evaluated and netted with the "imputed unit rate", taking into account the conversion costs from the changeover of the external reporting from HGB to IFRS.• Any differences are charged to the airspace users over a 15-year period in a rolling fashion. The period corresponds to the average remaining service time of DFS staff according to IFRS. <p>It is not possible to split costs of pension schemes into regulatory capable and non-capable. Capital market-related changes of interest rate levels have a crucial influence on service and interest costs.</p> <p>For RP3 the interest rate was lowered from 3.54 % (RP2) to 2.85 %, as a result of the general development of interest rates on the market, which leads to higher costs in RP3.</p> <p>See also Performance Plan, table 3.4.3</p>

MUAC
Assumptions underlying the determined pension costs and expected evolution over Reference Period 3
<p>Pension costs include two elements:</p> <ul style="list-style-type: none">- the employer contribution fixed as a proportion of the basic salary (currently fixed at 17.5% of basic salary). According to the latest actuarial studies, this contribution rate is expected to increase up to 20% during RP3.- the taxation on pension is progressively charged to MUAC cost base (from 60% in 2020 to 100% in 2022): this taxation element is charged on a Pay as You Go basis to the former MUAC employee. Main assumptions taken are mortality tables and tax pressure in the states where MUAC pensioners reside. This element will be included in MUAC cost base as from 2022.

DWD
Assumptions underlying the determined pension costs and expected evolution over Reference Period 3
<p>Pursuant to the German Commercial Code, the DWD's calculation of pension costs relies on the entry age normal method, using the discount rate fixed by the Bundesbank for long-term obligations. Due to the modification of Article 7 of the "Gesetz zur Umsetzung der Wohnimmobilienkreditrichtlinie und zur Änderung handelsrechtlicher Vorschriften" of 11 March 2016 (BGBl. I S. 396) the commercial approach of provisions for pension obligations was amended. Therefore the DWD use a 10-year average interest rate instead of the 7-year average interest rate in their calculation of pension costs. The calculations are based on the life tables for Germany approved by the Federal Ministry of Finance. For the DWD, a general wages and salaries long-term trend of +1.5% is assumed.</p>

g) For each entity, a description and justification of the method adopted for the calculation of depreciation costs (point 1.3 of Table 1): historical costs or current costs referred to in the fourth subparagraph of Article 22(4), and, where current cost accounting is used, provision of comparable historical cost data;

DFS
<p>Tangible assets are valued at purchase price or production costs minus the cumulative scheduled depreciation. The production costs comprise prime costs and an appropriate part of the necessary material and production overhead and the depreciation of fixed assets.</p> <p>The straight-line depreciation method over the expected operating life recognised for tax or operational purposes (ATC and other facilities and equipment between 5 and 20 years, buildings between 25 and 50 years) is used. Fixed assets of minor value are always depreciated completely in the year of acquisition.</p>

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

If the attributable value of tangible assets on the effective date is below the net book value, depreciation had to be realised in case of permanent value impairment. Internally generated intangible assets are usually the result of DFS development activities and are valued at production costs minus the accumulated systematic depreciation.

Systematic depreciation is based on an expected operating life of eight years. Depreciation is realised if the attributable value is below the net book value on the effective date and the value impairment is estimated to be permanent.

MUAC

MUAC is applying the historical costs method.

DWD

The Deutscher Wetterdienst calculates the depreciation of fixed assets using the linear depreciation method. The various periods or cycles of depreciation for the larger positions are as follows:

- DWD headquarters: 50 years
- Technical installations: depending on the type between 5 to 10 years.

h) For each entity, description and underlying assumptions of each item of complementary information (point 3 of Table 1), including a description of the main factors explaining the variations over the reference period;

DFS

Costs of new and existing investments (see also performance plan item 2)

3.10 Depreciation	Covered in item 1 f) above.
3.11 Cost of capital	Covered in item 1 f) above.
3.12 Cost of leasing	No cost of leasing for investments.

MUAC

Costs of new and existing investments (see also performance plan item 2)

3.10 Depreciation	Covered in item 1 f) above.
3.11 Cost of capital	Interest from bank loans at floating rates (EURIBOR 3 to 12 months + margin). The main factor explaining the variation is the evolution of EURIBOR which is expected to remain very low in the short term. The interest loans for RP3 range from 0,28% and 0,64% considering the currently available information. In 2020, the actual effective rate stands at 0.28%.
3.12 Cost of leasing	No leasing costs.

DWD

Costs of new and existing investments (see also performance plan item 2)

3.10 Depreciation	Covered in item f) above
3.11 Cost of capital	No cost of capital.
3.12 Cost of leasing	No leasing costs.

Eurocontrol costs

3.13 Eurocontrol costs (Euro)	Costs of Eurocontrol under Part IX (Network Manager) and Part X (Pensions and PBO) are included in the cost base. The significant increase from 2019 to 2020 is mainly based on a shift from costs formerly included in Part I (General Budget of Eurocontrol) that in Germany is not included into the State cost base. From 2022 to 2024, the NSA of Germany decided to use the forecast EUROCONTROL cost-base published in May.
3.14 Exchange rate (if applicable)	Not applicable.

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

i) For each entity, description of the assumptions used to compute the cost of capital (point 1.4 of Table 1), including the composition of the asset base, the return on equity, the average interest on debts and the shares of financing of the asset base through debt and equity;

DFS	
Average asset base	
3.1 NBV fixed assets	<p>This category includes:</p> <ul style="list-style-type: none"> - Property, Plant and Equipment - Intangible assets <p>The starting point for planning the years 2021 to 2024 are the actual accounts for 2020. These amounts are rolled forward, considering the investment planning of DFS. This means, fixed assets are rolled forward considering the time of acquisition and the ordinary useful life, using the straight-line amortization method.</p>
3.2 Adjustments total assets	<p>Outstanding receivables from the conversion of the external reporting from HGB to IFRS (January, 1 2007).</p> <p>Outstanding receivables for the difference between the obligation and plan assets of the pension scheme (plan deficit/plan surplus).</p>
3.3 Net current assets	<p>This category includes:</p> <ul style="list-style-type: none"> - Inventories - Trade receivables - Outstanding carry-over borne by airspace user - Other receivables and assets - Liquid funds <p>These positions above are reduced by non-interest-bearing obligations:</p> <ul style="list-style-type: none"> - Carry-over to be returned to airspace user - Trade payables - Other liabilities (non-interest bearing) <p>The starting point for planning the years 2021 to 2024 are the actual accounts for 2020. These amounts are rolled forward, considering the planning assumptions of DFS. Various circumstances, which also have an opposing effect, lead in total to the fact that the value of net current assets increases up to the year 2022. From this point onwards, the value of net current assets continuously decreases. The main factors behind the increase of this position are an increase in cash due to the equity increase in 2021, and the Carry-over, borne by COVID 19.</p>
Cost of capital %	
3.6 Return on equity	In order to reduce the increase of unit rates, the Ministry of Transport imposed a RoE of 0% over RP3. This is also reflected in the actual figures 2021.
3.7 Average interest on debts	The interest on debts mainly results by the interest costs of the pension scheme and from the general interest income (-) and expense (+). 2021 ended with an financial income, based on well performing of commercial papers.
3.8 Share of financing through equity	<p>The values presented in the Reporting Table for RP3 should be understood as the results from several exogenous parameters, such as RoE of 0%, cost of debt and a regulated asset base in accordance with Art. 22 (4) (d) (i) IR (EU) 2019/317.</p> <p>For 2021, the share of financing through equity is not applicable as the well performing commercial papers led to a financial income (as mentioned before). Since the commercial papers are not included in the average asset base the calculated value for the share of financing through equity is not representative and would only be misleading.</p>
MUAC	
Average asset base	
3.1 NBV fixed assets	The NBV of assets has significantly decreased during RP2 due to the low investments made during that period. The NBV is expected to remain stable during the first years of RP3 and will slightly increase at the end of RP3 if large investment projects materialize (e.g. Phoenix project).

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

3.2 Adjustments total assets	Not applicable.
3.3 Net current assets	EUROCONTROL operates a unique treasury function and current assets (such as bank deposits) are managed at the level of EUROCONTROL legal entity. As a consequence, MUAC (being an operational division of EUROCONTROL) does not hold current assets and therefore does not disclose any current assets under para 3.3 of Table 1.
Cost of capital %	
3.6 Return on equity	No Equity.
3.7 Average interest on debts	EURIBOR + margin equal to approx. 1%. For 2020, the actual rates stands at 0.28%.
3.8 Share of financing through equity	Full financing through bank loans (no equity or 0% financing through equity)

DWD	
Average asset base	
3.1 NBV fixed assets	./.
3.2 Adjustments total assets	Following the decision to restrict the cost base of DWD to direct MET costs, DWD has been granted the right to report both fixed assets (property, plants, equipment and intangible assets) and net current assets (inventories) under "adjustments total assets" in order to prevent costly recalculations.
3.3 Net current assets	./.
Cost of capital %	
3.6 Return on equity	Imputable interest on total assets of 0,9% was planned however a political decision was taken by the Ministry of Transport of Germany to reduce the RoE to 0%. This decision was taken as part of The State effort to minimize the impact of increasing unit rate for the airspace user.
3.7 Average interest on debts	./.
3.8 Share of financing through equity	Fully financed through the German Federal budget.

j) Description of the determined costs of common projects (point 3.9 of Table 1).

DFS				
Determined costs of common projects (in nominal terms in '000 national currency)				
	+2021	+2022	+2023	+2024
OG.555 iCAS Programm	366.750	763.900	1.020.480	1.308.480
OT.095 iCAS München	455.925	769.250	620.000	
OT.096 iCAS LGN	942.055	1.642.898	2.160.240	991.000
OT.106 iCAS Einführung im Center Bremen	923.500	680.700	1.010.100	693.100
OT.638 FABEC Free Route Airspace	29.049			
SY.220 VAN-NG	32.000	64.000	64.000	
SY.228 CICIS	55.000	119.000	122.000	50.000
SY.562 iCAS Unterer Luftraum	796.000	1.075.300	945.800	945.800
SY.639 FABEC XMAN/AMAN	12.500	12.500	12.500	5.500
MA.00178 MA.178 AirMAGIC		14.728		
MA.00209 2017_084_AF5 SWIM PKI	8.000			
Total (Table 1 item 3.9)	3.620.779	5.142.276	5.955.120	3.993.880

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

DWD				
Determined costs of common projects (in nominal terms in '000 national currency)				
CP reference	2021	2022	2023	2024
MET-GATE	149,1	-	-	-
Adverse Weather	84,3	-	-	-
3D Radar	22,9	-	-	-
Total (Table 1 item 3.9)	256,3	-	-	-

2. Actual costs and unit costs

a) For each entity and for each cost item, a description of the reported actual costs and the difference between those costs and the determined costs, for each year of the reference period;

RP3 Monitoring – Year 2020	
ANSP: DFS	
1.1 Staff costs	Personnel costs decrease compared to the previous year. Short-term measures to reduce costs were implemented in 2020 to counter the effects of the Corona pandemic. These include suspension of new hires, partial suspension of operational training and conclusion of a collective agreement to make personnel costs more flexible in the short term.
1.2 Other operating costs	The cost increase results from many unspecified individual measures.
1.3 Depreciation	The decrease of depreciation from 2019 to 2020 mainly results because the former project iCAS Systemproject of Phase I comes to the end of the period of amortization. Additionally, the project iCAS Munich has a reduced depreciation in comparison to 2019.
1.4 Cost of capital	The costs of capital consist of the financing costs of company pensions and the costs for other financial liabilities and accruals.
1.5. Exceptional items	The exceptional items usually correspond to the IFRS conversion effects; there are no plan-actual deviations here. In 2019, the federal subsidies were additionally reported in this item.

RP3 Monitoring – Year 2021	
ANSP: DFS	
1.1 Staff costs	Personnel costs decrease compared to 2020 by 0.6%, which is also the basis for the revised performance plan. DFS continued the way starting in 2020 to react on the decrease in air traffic caused by the COVID-19-pandemic, so that over the years 2020/2021 the staff costs decreased by 1.8% compared to the PP.
1.2 Other operating costs	Due to the fact, that PP 2020 and Actual 2020 are equal the decrease in operating costs of 4.3% over 2020/2021 is stemming from the year 2021 and is effected by a number of several smaller measures and components as travel-expense, education and training, allowance on receivables.
1.3 Depreciation	Over the two years 2020 and 2021, the depreciation is in line with the performance plan.
1.4 Cost of capital	The costs of capital consist of the financing costs of company pensions and the costs for other financial liabilities and accruals. Actual costs of equity are not included. 2021 shows a negative amount stemming from a positive financial result.
1.5. Exceptional items	The exceptional items usually correspond to the IFRS conversion effects; there are no plan-actual deviations here.

RP3 Monitoring – Year 2020	
ANSP: MUAC	

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

As a preliminary note, it should be noted that part of the variations from one year to another is explained by the sharing keys used to distribute MUAC costs between the 4 Member States. For RP3, the states have decided to adjust these sharing keys annually, leading to significant variations.

For info, the following sharing keys were used for Germany:

In 2019: 46.1244%
In 2020: 43.9227%

1.1 Staff costs	Actual Staff costs significantly increased from 2019 to 2020 and were much higher than the determined costs due to the following reasons: <ul style="list-style-type: none"> • a high indexation of remuneration observed in July 2019 (+3.485%) and July 2020 (+2.87%) in accordance with the EUROSTAT methodology applied in the European Institutions. This includes a much-increased cost of living factor for the Netherlands. • effect from the "GCE remuneration package" which was negotiated with ATCO resulting in increased working time and revaluated remunerations. • increased ab initio intakes to replace ATCO's going on pensions (1/3 of ATCO population retiring within 8 years)
1.2 Other operating costs	The level of operating costs was stable between 2019 and 2020. Compared to the determined costs, the actual other operating costs, it was much decreased thanks to cost containment measures taken to respond to the COVID crisis, such as reduced ab initio trainings, freeze on recruitment, cancellation of nearly all travel costs, reduced external assistance
1.3 Depreciation	Decreased level of depreciation mainly due to the fact that, as from 2020, a sharing key is applied to the German (military) OAT thereby reducing the depreciation allocated to GAT member States
1.4 Cost of capital	Reduced costs due to the very low interest rates obtained from financial institutions on bank loans
1.5. Exceptional items	./.

RP3 Monitoring – Year 2021

ANSP: MUAC

As a preliminary note, it should be noted that part of the variations from one year to another is explained by the sharing keys used to distribute MUAC costs between the 4 Member States. For RP3, the states have decided to adjust these sharing keys annually, leading to significant annual variations.

For info, the following sharing keys were used for Germany:

In 2019: 46.1244%
In 2020: 43.9227%
In 2021: 46.614%

The sharing key for Germany increased by 6.1% between 2020 and 2021. This is the main reason why the actual costs (in the german reporting table) increased from 2020 to 2021 (from 83,201 K€ to 87,695 K€ + 5.4%), while the total MUAC costs decreased from 189,426 K€ to 188,131 K€ (-0.7%)

The costs by category of expenditure shown below are total amounts for the whole of MUAC, not broken down into amounts for the individual states.

1.1 Staff costs	<p><u>Actual 2021 compared to revised RP3 (determined) plan 2021</u></p> <p>Actual Staff costs (159,855 K€) were higher than in the revised RP3 plan (156,779K€) – 102% outturn. The main reason for the difference are:</p> <ul style="list-style-type: none"> • The inclusion of contributions to the Pension Fund (PBO sub account) which were not initially foreseen in the revised RP3 Plan • the non indexation of remuneration as at 01/07/2021 while a 2.5% increase had been foreseen (this element is not fully counterbalancing the pension contributions to the Pension Fund). <p><u>Actual 2021 compared to Actual 2020</u></p>
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En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

	<p>Actual 2021 (159,855 K€) are slightly higher than actual 2020 (157,248 K€) due to the contribution to the Pension Fund (PBO sub account) counterbalanced by the no indexation of remuneration as at 01/07/2021 and the reversal of a provision initially made in 2020 for a possible retroactive indexation of remuneration which finally did not occur.</p>																																												
1.2 Other operating costs	<p><u>Actual 2021 compared to revised RP3 (determined) plan 2021</u></p> <p>The actual other operating costs (22,185 K€) is lower than the determined costs (24,950 K€) thanks to cost containment measures taken to respond to the COVID crisis, such as reduced ab initio trainings, freeze on recruitment, cancellation of nearly all travel costs, reduced external assistance</p> <p><u>Actual 2021 compared to Actual 2020</u></p> <p>The 2021 actual operating costs is lower than the 2020 actual costs mainly due to additional savings on training, travel cost, external assistance and communications</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">2020</th> <th style="text-align: center;">2021</th> <th style="text-align: center;">GAT variance (in €)</th> </tr> </thead> <tbody> <tr> <td>Staff related : training and travel costs</td> <td style="text-align: right;">3,468,826.80</td> <td style="text-align: right;">3,064,304.04</td> <td style="text-align: right;">-404,522.76</td> </tr> <tr> <td>External assistance</td> <td style="text-align: right;">6,738,295.24</td> <td style="text-align: right;">6,169,302.18</td> <td style="text-align: right;">-568,993.06</td> </tr> <tr> <td>Accommodation</td> <td style="text-align: right;">3,911,138.03</td> <td style="text-align: right;">4,202,850.19</td> <td style="text-align: right;">291,712.16</td> </tr> <tr> <td>Communications</td> <td style="text-align: right;">1,738,448.04</td> <td style="text-align: right;">1,327,888.83</td> <td style="text-align: right;">-410,559.21</td> </tr> <tr> <td>Data processing</td> <td style="text-align: right;">6,424,504.00</td> <td style="text-align: right;">6,667,448.05</td> <td style="text-align: right;">242,944.05</td> </tr> <tr> <td>General administration</td> <td style="text-align: right;">333,587.26</td> <td style="text-align: right;">387,120.70</td> <td style="text-align: right;">53,533.44</td> </tr> <tr> <td>Finance & Insurance</td> <td style="text-align: right;">344,962.30</td> <td style="text-align: right;">371,388.04</td> <td style="text-align: right;">26,425.74</td> </tr> <tr> <td>Unrecoverable VAT</td> <td style="text-align: right;">5,175.71</td> <td style="text-align: right;">8,249.37</td> <td style="text-align: right;">3,073.66</td> </tr> <tr> <td>Miscellaneous revenue</td> <td style="text-align: right;">-32,356.12</td> <td style="text-align: right;">-13,022.17</td> <td style="text-align: right;">19,333.95</td> </tr> <tr> <td>OPERATING COSTS</td> <td style="text-align: right;">22,932,581.26</td> <td style="text-align: right;">22,185,529.23</td> <td style="text-align: right;">-747,052.03</td> </tr> </tbody> </table>		2020	2021	GAT variance (in €)	Staff related : training and travel costs	3,468,826.80	3,064,304.04	-404,522.76	External assistance	6,738,295.24	6,169,302.18	-568,993.06	Accommodation	3,911,138.03	4,202,850.19	291,712.16	Communications	1,738,448.04	1,327,888.83	-410,559.21	Data processing	6,424,504.00	6,667,448.05	242,944.05	General administration	333,587.26	387,120.70	53,533.44	Finance & Insurance	344,962.30	371,388.04	26,425.74	Unrecoverable VAT	5,175.71	8,249.37	3,073.66	Miscellaneous revenue	-32,356.12	-13,022.17	19,333.95	OPERATING COSTS	22,932,581.26	22,185,529.23	-747,052.03
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1.3 Depreciation	<p><u>Actual 2021 compared to revised RP3 (determined) plan 2021</u></p> <p>The actual depreciation (5,920 K€) is lower than the depreciation included in the revised RP3 Plan (6,165 K€) mainly due to postponement/late delivery of some investment projects</p> <p><u>Actual 2021 compared to Actual 2020</u></p> <p>The 2021 actual depreciation (5,920 K€) is much lower than the 2020 actual depreciation (9,100 K€) mainly because of the end of depreciation in 2020 of the new FDPS system.</p>																																												
1.4 Cost of capital	<p><u>Actual 2021 compared to revised RP3 (determined) plan 2021</u></p> <p>The actual cost of capital (169 K€) is lower than the cost of capital included in the revised RP3 Plan (237 K€) mainly due to postponement/late delivery of some investment projects</p> <p><u>Actual 2021 compared to Actual 2020</u></p> <p>The 2021 actual cost of capital (169 K€) is slightly higher than the 2020 actual cost of capital (144 K€) mainly due to a slight increase of interest rates on the financial markets</p>																																												
1.5. Exceptional items	./.																																												

RP3 Monitoring – Year 2020	
ANSP: DWD	
1.1 Staff costs	Actual 2020 to plan 2020:

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

	<p>The main reason for higher staff costs are the higher pension provisions based on the lower interest rates for pension provisions. Another reason are the higher staff costs for AutoMETAR than planned.</p> <p>Actual 2020 to actual 2019: The main reason for the increase of staff costs from 2019 to 2020 are the inclusion of AutoMETAR staff costs from RP3 onwards.</p>
1.2 Other operating costs	<p>Actual 2020 to plan 2020: Lower actual cost results from the higher planned costs for technical services for LLWAS.</p> <p>Actual 2020 to actual 2019: Lower costs in 2020 to 2019 because of lower costs for technical services for LLWAS.</p>
1.3 Depreciation	<p>Actual 2020 to plan 2020: Higher depreciation costs because of lower planned costs for AutoMETAR.</p> <p>Actual 2020 to actual 2019: Higher costs in 2020 to 2019 based on the inclusion from RP3 onwards of all AutoMETAR costs from RP2, which not be charged until RP3.</p>
1.4 Cost of capital	No Cost of Capital
1.5 Exceptional items	./.

RP3 Monitoring – Year 2021	
ANSP: DWD	
1.1 Staff costs	<p>Actual 2021 to plan 2021: The main reason for higher staff costs are the higher pension provisions based on the lower interest rates for pension provisions. Another reason are the higher vacation accruals due to the pandemic situation in 2021.</p> <p>Actual 2021 to actual 2020: The main reason for higher staff costs are the higher pension provisions based on the lower interest rates for pension provisions. Another reason are the higher vacation accruals due to the pandemic situation in 2021.</p>
1.2 Other operating costs	<p>Actual 2021 to plan 2021: Lower actual cost results from the higher planned infrastructure costs.</p> <p>Actual 2021 to actual 2020: Higher costs in 2021 to 2020 because of marginal higher costs for business supplies.</p>
1.3 Depreciation	<p>Actual 2021 to plan 2021: Within the scope of the procurement measure for AutoMETAR airport sensors, there were delays, so that this had an impact in 2021 in the form of deviating costs compared to the original plan for 2021. Another reason is the procurement of equipment for LLWAS, so the actual costs are higher than planned.</p> <p>Actual 2021 to actual 2020: Within the scope of the procurement measure for AutoMETAR airport sensors, there were delays, so that this had an impact in 2021 in the form of deviating costs compared to 2020. Another reason is the procurement of equipment for LLWAS, so the actual costs are higher than in 2020.</p>
1.4 Cost of capital	No Cost of Capital
1.5 Exceptional items	./.

RP3 Monitoring – Year 2020
State Costs

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

1.1 Staff costs	Due to the ongoing development of the NSA which was considerably slowed down as of the start of the 2020 Covid-19 crisis, actual staff costs were considerably lower than the planned cost.
1.2 Other operating costs	2020 actual other operating costs were lower than the planned costs foremost because of less staff than planned but also due nearly only travels cancelled with the beginning of the Covid-19-crisis in March 2020.

RP3 Monitoring – Year 2021	
State Costs	
1.1 Staff costs	Due to the continuing Covid-19 crisis development of the NSA was still slowed down in 2021 resulting in lower staff costs compared to the planned cost as per performance plan.
1.2 Other operating costs	Actual other operating costs also continue to be lower than planned costs for the same reason, i.e. the still ongoing Covid-19 crisis in 2021. This resulted again in e.g. lower travel expenses in 2021.

b) Description of the reported actual service units and a description of any differences between those units and the figures provided by the entity that is billing and collecting charges as well as any differences between those units and the forecast set in the performance plan, for each year of the reference period;

[thousands]	2020	2021	2022	2023	2024
Performance Plan	6,792	7,563			
Actual/Forecast	6,792	7,679			

c) Breakdown of the actual costs of common projects per individual project;

DWD					
Actual costs of common projects (in nominal terms in '000 national currency)					
CP reference	2020	2021	2022	2023	2024
MET-GATE	202,19	124,31			
Adverse Weather	119,21	157,66			
3D Radar	20,96	6,80			
Total (Table 1 item 3.9)	342,35	288,78			

For DFS see Item 1j

d) Justification of the difference between the determined and the actual costs of new and existing investments of the air navigation service providers, as well as the difference between the planned and the actual date of entry into operation of the fixed assets financed by those investments for each year of the reference period;

This information is provided in the FAB Monitoring Report 2020 and 2021 respectively on investments/capital expenditure.

e) Description of the investment projects added, cancelled or replaced during the reference period with respect to the major investment projects identified in the performance plan, and approved by the national supervisory authority in accordance with Article 28(4)..

This information is provided in the FAB Monitoring Report 2020 and 2021 respectively on investments/capital expenditure.

En-route Charging Zone Germany

Reference Period 3 (2020-2024)

Version: 31 May 2022

ADDITIONAL INFORMATION TO REPORTING TABLES 2 – UNIT RATE CALCULATION

a) Description and rationale for establishment of the different charging zones, in particular with regard to terminal charging zones and potential cross-subsidies between charging zones;

No different charging zones have been established.

b) Description of the policy on exemptions and description of the financing means to cover the related costs;

Not applicable.

c) Description of adjustments resulting from the traffic risk sharing mechanism in accordance with Article 27;

2020-2021

No adjustments to the standard traffic risk sharing mechanism have been put in place.

d) Description of the differences between determined costs and actual costs of year n as a result of the changes in costs referred to in Article 28(3) including description of the changes referred to in that Article;

2020-2021

Please see the report provided according to Article 28 (7).

e) Description of adjustments resulting from unforeseen changes in costs in accordance with Article 28(3) to (6);

2020-2021

Please see the report provided according to Article 28 (7).

f) Description of the other revenues, if any, broken down between the different categories indicated in Article 25(3);

2020-2021

In [Table 2 A](#) - Adjustments relating to year n, the actual amounts received in year n are shown. As far as Union assistance programmes and national public funding is concerned, the numbers correspond to the upper part of Table 4.

In [Table 2 B](#) – Calculation of the unit rate for year n(1), the actual amounts used to adjust the unit rate of that very year are shown.

13.8 (“other revenues”) includes the adjustment for public funding (both national and union). A breakdown of the years in which the revenue did occur can be found in Table 3:

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

1. Public funds received to cover staff costs and other operating costs as well as depreciation in the years 2015-2018 were distributed by 1/5 over 2020 and 2021.

Public funds received to cover staff costs and other operating costs as well as depreciation in the year 2019 are distributed by 1/4 .in 2021.

The remaining funds from RP2 to be returned will be fully returned in 2022.

2. Funding in RP3 distributed according to Article 25 (3) of the Implementing Regulation (EU) 2019/317:
 - a. Public funds covering staff costs and other operating costs will be deducted from the determined costs in year n+2.
 - b. Public funds covering depreciation costs will be deducted from the determined costs in accordance with the depreciation schedule of the financed asset (duration and annuity).
3. Public funds that are to be reimbursed following the above-mentioned mechanism are preliminarily reduced by 10% in order to keep a reserve for possible repayments to INEA after final audits. A final adjustment will take place n+2 after the respective final audit. The figures in Table 2 B, Table 3 and Table 4 lower part do show the reduced numbers.

Administrative costs that have not been included into the costs base will be reduced from the “amounts received” on an actual basis.

In any case, Germany will assure that airspace users will not be charged for the costs covered by public funds.

g) Description of the application of the financial incentive schemes referred to in Article 11(3) and 11(4) in year n and the resulting financial advantages and disadvantages; description and explanation of the modulation of air navigation charges applied in year n under Article 32 where applicable, and resulting adjustments;

Financial incentive schemes

The description and justification of the parameters of the incentive scheme defined in accordance with Article 11(3) and 11 (4) are provided in the body of the performance plan under item 5.2.

Modulation of charges

No modulation of charges in planned during RP3.

2020-2021

The actual application and relating financial advantages and disadvantages for 2020-2021 is not applicable (Exceptional measures for RP3 due to the COVID-19 pandemic (Regulation (EU) 2020/1627, Article 3 (3)).

h) Description of adjustments relating to the temporary application of a unit rate under Article 29(5);

2020-2021

The difference in revenue due to the temporary application of unit rates is distributed equally over 6 years. The distribution of the carry-over will take place n+2 continuously until 6 years or n+8.

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

i) Description of the cross-financing between en route charging zones, or between terminal charging zones, in accordance with point (e) of Article 15(2) of Regulation 550/2004;

Not cross-financing.

j) Information on the application of a lower unit rate under Article 29(6) than the unit rate calculated in accordance with Article 25(2) and the means to finance the difference in revenue;

No reduction of the rate pursuant Article 29 (6) is planned.

k) Information and breakdown of the adjustments relating to previous reference periods impacting the unit rate calculation;

Concerning DFS and DWD, the unit rate for RP3 includes in the years 2020-2024 revenues from union assistance programs or public funding from the years 2015-2018 (equal shares) and in the years 2021-2024 revenues from the year 2019.

Concerning DFS, the unit rate for RP3 includes in 2020 and 2021 the refund of the cost exempt from cost sharing which occurred during RP1 and the years 2015-2018 in RP2.

En-route Charging Zone Germany Reference Period 3 (2020-2024)

Version: 31 May 2022

ADDITIONAL INFORMATION TO REPORTING TABLE 4 – COMPLEMENTARY INFORMATION ON COMMON PROJECTS AND ON UNION ASSISTANCE PROGRAMME

Table 4 includes complementary information on common projects and on revenues from both Union assistance programmes and national public funding allocated to the charging zone.

In the upper part of the table, labelled “Amounts received”, figures include funding for staff costs, other operational costs and investments in the relevant year.

In the lower part, labelled, “Amounts reimbursed to airspace users through other revenues”, the amounts actually reimbursed in the very year are indicated. For the mechanism, see information on Table 2, f).

I) Information on the costs of common projects and other funded projects broken down per individual project, as well as of public funds obtained from public authorities for these projects.

DFS

The following table shows the planned OPEX for all relevant projects during RP3. The respective figures concerning the funding can be found in Table 4.

For the project S-ATM Robusto a negative value is included in Table 4 since the project was stopped in 2021 and the received funds were paid back to CINEA.

Project	+2021	+2022	+2023	+2024
FE.073 FUTURE	316.800	800	-	-
FE.074 LuFo VI	17.280	65.141	76.453	7.200
OG.057 SESAR 2020	625.997	422.986	10.000	-
OG.555 iCAS Programm	366.750	763.900	1.020.480	1.308.480
OT.095 iCAS München	455.925	769.250	620.000	-
OT.096 iCAS LGN	942.055	1.642.898	2.160.240	991.000
OT.106 iCAS Einführung im Center Bremen	923.500	680.700	1.010.100	693.100
OT.638 FABEC Free Route Airspace	29.049	-	-	-
SY.215 Erneuerung VOR/DME Systeme	175.125	348.750	-	-
SY.220 VAN-NG	32.000	64.000	64.000	-
SY.228 CICIS	55.000	119.000	122.000	50.000
SY.562 iCAS Unterer Luftraum	796.000	1.075.300	945.800	945.800
SY.639 FABEC XMAN/AMAN	12.500	12.500	12.500	5.500
MA.00178 MA.178 AirMAGIC	-	14.728	-	-
MA.00209 2017_084_AF5 SWIM PKI	8.000	-	-	-
	4.755.980	5.979.954	6.041.573	4.001.080

MUAC

MUAC has obtained INEA funds which were deducted in 2021 from the contributions of the 4 Member States (in proportion of the sharing of MUAC budget) as the costs have been declared eligible after the final and formal closure of the action/project by INEA.

DWD

Details of the cost of common projects for DWD can be found per individual project under 1j) of this document and in table 4 of the reporting tables.

RESOLUCIÓN de 25 de enero de 2022, de la Secretaría General de Transportes y Movilidad, por la que se adopta el Proyecto Revisado de Plan de Rendimiento de España para el tercer periodo de referencia (2020-2024).

HECHOS

El segundo paquete de medidas del Cielo Único Europeo (SES II) fija, como uno de sus objetivos principales, mejorar el rendimiento global de los servicios de navegación aérea en Europa. En este sentido, el Reglamento (CE) nº 1070/2009 del Parlamento Europeo y del Consejo, de 21 de octubre de 2009, por el que se modifican los Reglamentos (CE) nº 549/2004, (CE) nº 550/2004, (CE) nº 551/2004 y (CE) nº 552/2004 con el fin de mejorar el rendimiento y la sostenibilidad del sistema europeo de aviación, da una nueva redacción al artículo 11 del Reglamento (CE) nº 549/2004 del Parlamento Europeo y del Consejo, de 10 de marzo de 2004, por el que se fija el marco para la creación del cielo único europeo (Reglamento marco), contemplando el establecimiento de un sistema de evaluación del rendimiento para los servicios de navegación aérea y las funciones de red.

El Reglamento de Ejecución (UE) 2019/317 de la Comisión, de 11 de febrero de 2019, por el que se establecía un sistema de evaluación del rendimiento y de tarificación en el cielo único europeo y se derogaban los Reglamentos de Ejecución (UE) nº 390/2013 y (UE) nº 391/2013, desarrollaba detalladamente, para el tercer periodo de referencia RP3 (años 2020 a 2024, ambos inclusive) y posteriores, tanto el sistema de evaluación del rendimiento como el sistema de tarificación, ambos íntimamente correlacionados.

En aplicación de este marco normativo europeo:

- Se adoptó la Decisión de Ejecución (UE) 2019/903 de la Comisión, de 29 de mayo de 2019, que establecía los objetivos de rendimiento a escala de la Unión para la red de gestión del tránsito aéreo correspondientes al tercer período de referencia, que comenzó el 1 de enero de 2020 y finalizará el 31 de diciembre de 2024.
- Los Estados Miembros debieron presentar a la Comisión sus proyectos de planes de rendimiento para el tercer periodo de referencia –bien a escala nacional o de bloque funcional de espacio aéreo– hasta el 1 de octubre de 2019.
- La Comisión llevó a cabo una evaluación de la consistencia de los proyectos de planes de rendimiento presentados, a partir de la cual determinó que la totalidad de dichos planes debían ser modificados, en mayor o menor medida, para subsanar la falta de coherencia con los objetivos establecidos a escala de la Unión.

Durante el proceso de revisión posterior de los proyectos de planes de rendimiento, estalló la crisis de la pandemia por COVID-19, produciéndose una fuerte reducción del tráfico aéreo como consecuencia del descenso de la demanda y de las medidas adoptadas por los diferentes Estados para contener el brote. Esta situación tuvo un impacto directo en las medidas de aplicación del Reglamento de Ejecución (UE) 2019/317 de la Comisión, lo que forzó a paralizar el proceso de aprobación y adopción de los planes de rendimiento en curso.

En respuesta a esta situación, se adoptó el Reglamento de Ejecución (UE) 2020/1627 de la Comisión, de 3 de noviembre de 2020, sobre medidas excepcionales para el tercer período de referencia (2020-2024) del sistema de evaluación del rendimiento y de tarificación en el cielo único europeo debido a la pandemia de COVID-19.

De conformidad con este Reglamento:

- Se adoptó la Decisión de Ejecución (UE) 2021/891 de la Comisión, de 2 de junio de 2021, por la que se establecían los objetivos de rendimiento revisados a escala de la Unión para la red de gestión del tránsito aéreo correspondientes al tercer período de referencia (2020-2024), y se derogaba la anterior Decisión de Ejecución (UE) 2019/903.

- Los Estados Miembros debían preparar y presentar ante la Comisión, a más tardar el 1 de octubre de 2021, los proyectos de planes de rendimiento que contuvieran objetivos revisados que garanticen la coherencia con los nuevos objetivos establecidos a escala de la Unión.

En cumplimiento de lo dispuesto en los Reglamentos de Ejecución (UE) 2019/317 y (UE) 2020/1627 de la Comisión, la Agencia Estatal de Seguridad Aérea (AESA), como autoridad nacional de supervisión civil española, en el ejercicio de la responsabilidad que dichos reglamentos le atribuyen, ha elaborado el **Proyecto Revisado de Plan de Rendimiento de España para el tercer periodo de referencia 2020-2024 (ESPP3)**, en el que se establecen los objetivos de rendimiento de alto nivel para los servicios de navegación aérea prestados en España y las directrices de los planes de acción para cumplir con ellos, en relación con:

- a) Los servicios de navegación aérea en ruta prestados en las regiones de información de vuelo y superior (FIR/UIR) de Barcelona, Canarias y Madrid.
- b) Los servicios de navegación aérea prestados en los aeropuertos españoles (aproximación) para los que se prevea que se superen los 80.000 movimientos al año durante el tercer periodo de referencia, según las reglas de vuelo por instrumentos (IFR): Adolfo Suárez Madrid-Barajas (LEMD), Josep Tarradellas Barcelona-El Prat (LEBL), Palma de Mallorca (LEPA/LESJ), Málaga-Costa del Sol (LEMG), Gran Canaria (GCLP), Alicante-Elche Miguel Hernández (LEAL) e Ibiza (LEIB).

Adicionalmente, los objetivos de rentabilidad establecidos en el proyecto de Plan de Rendimiento se aplican a los costes determinados establecidos en el artículo 15.2, letras a) y b), del Reglamento (CE) nº 550/2004 del Parlamento Europeo y del Consejo, de 10 de marzo de 2004, relativo a la prestación de servicios de navegación aérea en el cielo único europeo. De este modo, el proyecto de Plan de Rendimiento incluye los costes determinados tanto para la provisión de los servicios de navegación aérea, como para su supervisión. En concreto, se incluyen los costes asociados a la actividad relacionada de: la Agencia Estatal de Seguridad Aérea (AESA); el Ejército del Aire, en su doble condición de proveedor de servicios de navegación aérea y de autoridad nacional de supervisión de dichos servicios; la entidad pública empresarial ENAIRE y FerroNATS; la Agencia Estatal de Meteorología (AEMET); y la Autoridad Nacional de Supervisión Meteorológica (ANSMET).

El borrador del Proyecto Revisado de Plan de Rendimiento de España fue sometido a consulta con las partes interesadas el 30 de julio de 2021, según requiere el artículo 10.4 del Reglamento de Ejecución (UE) 2019/317 y remitido a la Comisión Europea con fecha 1 de noviembre de 2021 una vez adoptado por la Secretaría General de Transportes

El 15 de octubre el servicio STATFOR de Eurocontrol publicó unas nuevas previsiones de tráfico para el periodo 2021-2027 siendo su utilización obligatoria de acuerdo a lo establecido en el artículo 10 del Reglamento (UE) 2019/317.

El 27 de octubre la Comisión Europea comunicó a España la necesidad de actualizar su Proyecto Revisado de Plan de Rendimiento como resultado de la verificación de completitud llevada a cabo con el apoyo del Performance Review Body (PRB) de acuerdo al artículo 13(1) del Reglamento (UE) 2019/317. Dicha comunicación incluye la necesidad de adoptar las nuevas previsiones de STATFOR y remitir a la Comisión Europea un Proyecto Revisado de Plan de Rendimiento actualizado no más tarde del 17 de noviembre de 2021.

La actualización del Proyecto Revisado de Plan de Rendimiento de España ha sido sometida a consulta por escrito con las partes interesadas entre los días 8 y 14 de noviembre de 2021, así como mediante reunión pública celebrada el 12 de noviembre de 2021, según requiere el artículo 10.4 del Reglamento de Ejecución (UE) 2019/317.

El 17 de noviembre de 2021 se adopta el Proyecto Revisado de Plan de Evaluación del Rendimiento de España para el tercer periodo de referencia (2020-2024) mediante Resolución de la Secretaría General de Transportes y Movilidad con el fin de darle traslado para su evaluación por parte de la Comisión Europea. Tras una revisión preliminar de la consistencia del plan por parte de la PRB previa a su

recomendación formal a la Comisión Europea, y con el fin de lograr una mayor convergencia a las metas europeas incrementando la contribución de España al sistema europeo de navegación aérea y apoyar la recuperación del sector aéreo que se ha visto afectado por los efectos de la pandemia, se asume el cumplimiento de unas metas de capacidad más exigentes, en particular para los años 2022 y 2023.

La competencia para la adopción del proyecto revisado de Plan de Rendimiento corresponde al titular de la Secretaría General de Transportes y Movilidad del Ministerio de Transportes, Movilidad y Agenda Urbana, de conformidad con lo previsto en el artículo 6.1, letra e), del Real Decreto 645/2020, de 7 de julio, por el que se desarrolla la estructura orgánica básica del Ministerio de Transportes, Movilidad y Agenda Urbana.

En su virtud, en el ejercicio de las funciones atribuidas por el artículo 6.1, letra e), del Real Decreto 645/2020, de 7 de julio, y de conformidad con lo previsto en el artículo 12 del Reglamento de Ejecución (UE) 2019/317 de la Comisión y en el artículo 3 del Reglamento de Ejecución (UE) 2020/1627 de la Comisión, dispongo:

Adoptar, a propuesta de la Agencia Estatal de Seguridad Aérea (AESA), el Proyecto Revisado de Plan de Evaluación del Rendimiento de España para el tercer periodo de referencia (2020-2024), que se incorpora como anexo, elaborado por la referida Agencia como autoridad nacional de supervisión.

La Secretaria General de Transportes y Movilidad

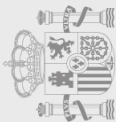
María José Rallo del Olmo



ANEXO I

**PLAN DE RENDIMIENTO DE ESPAÑA REVISADO
PARA EL TERCER PERIODO DE REFERENCIA
(RP3: AÑOS 2020 – 2024)**

FIRMADO por : RALLO DEL OLMO, M. JOSE. A fecha: 26/01/2022 01:17 PM
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ESPP3

Spain Performance Plan for RP3: 2020 – 2024 Air Navigation Services

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Contents

1.	Executive Summary	3
1.1	Context	3
1.2	Summary of KPA Proposals	5
1.2.1	Safety	5
1.2.2	Environment	6
1.2.3	Capacity	6
1.2.4	Cost-Efficiency	7
1.3	Structure of this Document	8
2.	Introduction	9
2.1	Purpose of the ESPP3	9
2.2	Regulatory Framework	9
2.3	Situation and Scope	10
2.4	Macro-Economic Scenario and Overall Assumptions	11
2.4.1	Economic Assumptions	11
2.4.2	Traffic Assumptions	11
2.4.2.1	IFR Flights – En-route	11
2.4.2.2	IFR Flights – Terminal and Airport	12
2.4.2.3	En-route Service Units	12
2.4.2.4	Terminal Service Units	12
2.5	Process to Complete ESPP3	13
3.	Safety	14
3.1	Introduction	14
3.2	SES Requirements	14
3.2.1	Level of Effectiveness of Safety Management (EoSM)	14
3.2.2	Performance Indicators for Monitoring	15
4.	Environment	17
4.1	Introduction	17
4.2	SES Requirements	17
4.2.1	Horizontal en-route Flight Efficiency (KEA)	17
4.2.1.1	Flight Efficiency Plan	19
4.2.2	Performance Indicators for Monitoring	20
5.	Capacity	21
5.1	Introduction	21
5.2	SES Requirements and Capacity KPIs	21
5.2.1	En-Route ATFM Delay per Flight	21
5.2.1.1	En-Route Capacity Plan	22
5.2.2	ARRIVAL ATFM Delay per Flight	24
5.2.2.1	Terminal Capacity Plan	26
5.2.3	Performance Indicators for Monitoring	28
5.2.4	Incentive Mechanism	28
5.2.4.1	Capacity Incentive Scheme	28
5.2.4.1.1	Formula of the incentive scheme and parameters for the calculation of financial advantages or disadvantages for en-route	29
5.2.4.1.2	Formula of the incentive scheme and parameters for the calculation of financial advantages or disadvantages for Terminal	31
6.	Cost-Efficiency	34
6.1	SES Requirements	34
6.1.1	En-Route Cost-Efficiency	34
6.1.2	Terminal Cost-Efficiency	36
6.1.3	Performance Indicators for Monitoring	37
6.1.4	Incentive Mechanism	37
6.2	ANSP Costs (ENAIRES)	38

6.2.1	STAFF and operating costs.....	38
6.2.1.1	Staff costs.....	38
6.2.1.2	Other operating costs	40
6.2.2	Investments-CAPEX.....	40
6.2.2.1	Summary of changes from the previous draft plan	41
6.2.2.2	ENAIRES’ Strategic Plan “Flight Plan 2025”	41
6.2.2.3	Volume of Investment costs planned for RP3.....	42
6.2.2.4	New & Major investment costs.....	42
6.2.2.5	Planned lifecycles	49
6.2.2.6	Common Projects Investments.....	51
6.2.3	Cost of Capital and Funding	52
6.3	Costs from Other Entities	56
6.4	Charging Policy	57
7.	Interdependencies and Trade-Offs	58
7.1	Interdependencies between Safety and other KPAs	58
7.2	Interdependencies between Capacity and Environment	58
7.3	Interdependencies between Cost-Efficiency and Capacity	59
8.	Risk Sharing and Revision Mechanism.....	61
8.1	Introduction	61
8.2	Traffic Risk.....	61
8.3	Cost Risk	61
8.4	Revision of the Performance Plan	62
9.	Terminal Navigation Services and Market Conditions	63
9.1	Introduction	63
9.2	Scope	63
9.3	Safety.....	65
9.4	Environment	66
9.5	Capacity.....	66
9.6	Cost-Efficiency	67
10.	Cross-Border Initiatives and SESAR Implementation	68
10.1	Cross Border initiatives	68
10.1.1	South West FAB joint initiatives	68
10.1.2	Other cross border initiatives	70
10.1.3	Regional AEFMP Framework	70
11.	Implementation of the Plan	71
11.1	Monitoring of the Implementation Plan.....	71
11.2	Non-compliance with Targets during the Reference Period	71
11.3	Oversight	72
12.	Public Consultation	73
13.	Acronyms	75

1. EXECUTIVE SUMMARY

The purpose of the 2020-2024 Spain Performance Plan (ESPP3) is twofold: firstly to establish the high-level revised performance targets for the Air Navigation Services provided in Spain within the scope of the plan, and secondly to set out the guidelines for the action plan to meet them.

1.1 CONTEXT

The Performance Scheme is defined in Article 11 of Regulation (EC) 549/2004 of the European Parliament and of the Council of 10 March 2004 and has been developed by subsequent implementing rules that have been applicable since 2012. The Performance scheme provides the framework to deliver better air navigation services results by setting targets and incentives in four key performance areas (KPA), over five years cycle (reference period): Safety, Environment, Capacity and Cost-Efficiency.

ENAIRES, as the public Air Navigation Service Provider, has been subject to the Performance Scheme regulation since its beginning. Ferrocarril de Nats, as a private Air Navigation Service Provider, is involved in the Performance Scheme given the provision of aerodrome control service in Alicante – Elche and Ibiza airports, the first because overpassed the threshold of 80,000 IFR movements calculated as the yearly average over the three calendar years preceding the year in which the draft performance plan was to be submitted in 2019 and the latter because it was expected to do so along the period. However, the Performance Scheme applies partially to the private provided since market conditions were declared for both airports.

The Performance Scheme is closely linked to the Charging System defined in Chapter III of Regulation (EC) 550/2004. In this sense, with the goal of enhancing performance aspects, the charging scheme should promote cost and operational efficiencies and should establish incentive schemes for air navigation service providers to support improvements in the provision of air navigation services, including the application of traffic risk sharing.

The implementing rule in force setting out the detailed rules and procedures for the implementation of the performance and charging scheme is the *Commission Implementing Regulation (EU) 2019/317 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*. Due to the extraordinary circumstances caused by the COVID-19 pandemic and its impact on the implementation of the performance and charging scheme in the third reference period, including the setting of performance targets and unit rates as well as the application of incentive schemes and risk sharing mechanisms, temporary measures needed to be taken. These temporary measures are detailed in the *Commission Implementing Regulation (EU) 2020/1627, on exceptional measures for the third reference period (2020-2024) of the single European sky performance and charging scheme due to the COVID-19 pandemic*.

Spain adopted and submitted to the Commission in 2019 the draft performance plan for the third reference period (2020-2024) taking on board the Commission Implementing Regulation (EU) 2019/317. That document which was not definitively approved by the Commission due to the outbreak of the COVID-19 pandemic was in line with the Union-wide performance targets in the key performance area of Safety and Cost-Efficiency and in line with the corresponding reference values assigned in the key performance areas of Environment and Capacity, but for the first year of the period in Capacity, where local circumstances were highlighted. Cost-Efficiency en-route KPI was consistent with the long-term determined unit cost trend due to the decreasing evolution of costs during RP1 and RP2.

Due to the COVID-19 pandemic that led to a sharp drop in air traffic created an exceptional situation which needed to be addressed with specific measures. Those measures were specified in the Commission Implementing Regulation (EU) 2020/1627 that empowered the Commission to set revised Union-wide

performance targets for the third reference period (RP3) and the special rules to do so. This process was finished with the publication of the *Commission Implementing Decision (EU) 2021/891 of 2 June 2021 setting revised Union-wide performance targets for the air traffic management network for the third reference period (2020-2024) and repealing Implementing Decision (EU) 2019/903*.

Upon the setting of revised Union-wide performance targets by the Commission for RP3, Member States had to establish performance plans containing revised performance targets for that period. Regarding this issue, Spain should develop a Revised Performance Plan including revised targets in consistency with revised EU-wide targets, set by the European Commission.

As the performance plan submitted by 2019 was consistent with the regulation in force, the revised performance plan preserves the former structure of the document and the parameters concerning the incentive mechanisms (e.g. traffic risk sharing mechanism and capacity incentive scheme). There have been two main changes with respect to the initial plan: the first one has a legal basis and consists of aligning the plan to the *Commission Implementing Decision (EU) 2021/891*, which aims at including revised performance targets themselves, and the second one is the revision of the arrival capacity targets to adapt them to the latest traffic forecast issued by STATFOR.

In line with Article 13 of Regulation (EU) 2019/317, European Commission concluded the verification of completeness of the draft performance plan submitted by Spain on 1st October. The report was sent on 27th October and required to update of the Spain's Draft Performance Plan in line with the findings raised. In particular, the new Eurocontrol STATFOR traffic forecast of 15 October was queried to be updated within the performance plan.

The two ANSPs subject to the performance and charging regulation are ENAIRE and FerroNATS. ENAIRE as the public provider for en-route, approach and aerodrome control services is entirely subject to the scope of the regulation in the areas of performance and charging. However, FerroNATS, as the private aerodrome control service provider for Alicante – Elche and Ibiza airports provides these services under market conditions. More details on this issue are addressed in Chapter 9 of this document.

Finally, AESA, as civil National Supervisory Authority, is responsible for the elaboration of the revised Performance Plan for RP3 (ESPP3). To this end, AESA has obtained data and information from all the relevant parties, including air navigation service provider under its supervision and other entities as the meteorological and military providers and their respective NSAs. In addition, AESA shall monitor the implementation of the Performance Plan during RP3.

1.2 SUMMARY OF KPA PROPOSALS

The *Commission Implementing Decision (EU) 2021/891 of 2 June 2021* set the revised Union-wide performance targets for the air traffic management network for the third reference period (2020-2024) and repealed the *Implementing Decision (EU) 2019/903*. In respect of the calendar year 2020, the Union-wide performance targets in the key performance area of Environment and Capacity were not revised and, therefore, were not included as part of its Decision that covers the remaining part of the reference period 2021-2024, so the targets shown below for 2020 are the ones included in the *Commission Implementing Decision (EU) 2019/903 of 29 May 2019* setting the Union-wide performance targets for the air traffic management network for the third reference period starting on 1 January 2020 and ending on 31 December 2024.

With respect to the Union-wide Cost-Efficiency performance target for calendar years 2020 and 2021 is presented as a single period and as from 2022 in a year-on-year basis.

The revised EU-wide performance targets for RP3 are shown in the following tables:

Revised EU-wide performance targets for RP3		2020	2021	2022	2023	2024
Safety KPA: EoSM	Safety Risk Management MO	-	-	-	-	D
	All other MOs	-	-	-	-	C
Environment KPA: KEA		2.53%	2.37%	2.37%	2.40%	2.40%
Capacity KPA: minutes of en-route ATFM delay / flight		0.90	0.35	0.50	0.50	0.50

Revised EU-wide performance targets for RP3	2020-2021	2022	2023	2024
Cost-Efficiency KPA: year-on-year change of the average Union-wide determined unit cost (DUC) for en-route ANS (*)	+120.1%	-38.5%	-13.2%	-11.5%

With the purpose of comparison, the EU-wide targets within the repealed *Commission Implementing Decision (EU) 2019/903* were:

EU-wide Performance targets for RP3		2020	2021	2022	2023	2024
Safety KPA: EoSM	Safety Risk Management MO	-	-	-	-	D
	All other MOs	-	-	-	-	C
Environment KPA: KEA		2.53%	2.47%	2.40%	2.40%	2.40%
Capacity KPA: minutes of en-route ATFM delay / flight		0.90	0.90	0.70	0.50	0.50
Cost-Efficiency KPA: year-on-year change of the average Union-wide determined unit cost (DUC) for en-route ANS (*)		-1.9%	-1.9%	-1.9%	-1.9%	-1.9%

The Spain performance targets have to be an adequate contribution to the EU-wide performance targets achievement for which detail is given in the following items.

1.2.1 SAFETY

Safety targets are set for the minimum level of the Effectiveness of Safety Management (EoSM) to be achieved by the ANSP certified to provide air traffic services. These targets are set and shall be monitored at National level, in line with *Regulation (EU) 2019/317*.

Revised Safety Targets – Spain National level		2020	2021	2022	2023	2024
Safety KPI #1: EoSM	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	C	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

As per the pandemic does not change the overall goal related to safety, which remains the highest priority and should be further improved, there are no changes to the revised objectives from the originals.

1.2.2 ENVIRONMENT

Environment targets are set for the horizontal en-route flight efficiency of the actual trajectory (KEA), which is applicable at National level.

Revised Environment Targets – Spain National level	2020	2021	2022	2023	2014
Environment KPI #1: KEA	3.23%	3.08%	3.08%	3.08%	3.08%

The local target is consistent with the reference values for Spain as proposed by the Network Manager.

The targets set in the draft performance plan in 2019 were:

Environment Targets – Spain National level	2020	2021	2022	2023	2014
Environment KPI #1: KEA	3.23%	3.07%	2.90%	2.90%	2.90%

1.2.3 CAPACITY

Capacity targets are proposed for two KPIs: en-route ATFM delay per flight attributable to ANS and arrival ATFM delay per flight attributable to terminal and airport ANS.

Arrival capacity targets are set at National level considering past performance levels. There are no EU- wide targets on this KPI. The Spanish airports included in the scope of the Performance Plan are those with more than 80,000 IFR transport movements per year Adolfo Suárez Madrid-Barajas, Josep Tarradellas Barcelona-El Prat, Palma de Mallorca, Gran Canaria, Málaga-Costa del Sol, Alicante- Elche and Ibiza airport which was expected to overpass the previous threshold during the third reference period.

An incentive mechanism is established for both the en-route capacity target and the arrival capacity target. In each case, the selected incentive mechanism consists on a linear function, with a dead band around the capacity target to be achieved. The maximum level of bonus is set at 0.0% of the determined costs and penalty is set at 0.5%. Capacity targets for the en-route ATFM delay per flight and arrival ATFM delay per flight are presented in the next table:

Revised Capacity Targets – Spain National level	2020	2021	2022	2023	2024
Capacity KPI #1: minutes of en-route ATFM delay / flight	0.47	0.12	0.20	0.19	0.19
Capacity KPI #2: minutes of arrival ATFM delay / flight (*)	0.91	0.44	0.66	0.57	0.57

(*) This Spain global target is separated at ANSP scope for incentive purposes, in consistency with the Terminal Charging Zone.

The targets set in the draft performance plan in 2019 were as shown in the table below.

Capacity Targets – Spain National level	2020	2021	2022	2023	2024
Capacity KPI #1: minutes of en-route ATFM delay / flight	0.47	0.35	0.28	0.20	0.20
Capacity KPI #2: minutes of arrival ATFM delay / flight (*)	0.91	0.82	0.73	0.64	0.64

(*) This Spain global target was separated at ANSP scope for incentive purposes, in consistency with the Terminal Charging Zone.

1.2.4 COST-EFFICIENCY

There are two KPIs in the Cost-Efficiency KPA: the determined unit cost (DUC) for en-route ANS; and the DUC for terminal ANS. The Cost-Efficiency targets for Spain at charging zone level derived from the *Commission Implementing Decision (EU) 2021/891 of 2 June 2021* are:

Revised Cost-Efficiency Targets – Spain National level		2020/2021	2022	2023	2024
Cost efficiency KPI #1: En-route DUC Spain – Continental	Real (EUR 2017) en-route DUC LE	114.59	70.47	61.17	54.14
Cost efficiency KPI #2: En-route DUC Spain - Canarias	Real (EUR 2017) en-route DUC GC	115.30	70.91	61.55	54.47
Cost efficiency KPI #3: Terminal DUC Spain	Real (EUR 2017) DUC LE TNC	248.01	152.53	132.39	117.17

In chapter 6 a detailed explanation on the Spanish consistency of the determined unit cost is included, being the cost-efficiency targets for Spain set at charging zone level as shown in the table below:

Revised Cost-Efficiency Targets – Spain National level		2020	2021	2020/2021	2022	2023	2024
Cost efficiency KPI #1: En-route DUC Spain – Continental	Nominal en-route determined costs	598,351	592,163	1,190,515	622,143	629,825	633,678
	Inflation index (base 2017)	102.50	103.60	-	104.90	106.50	108.20
	Real en-route determined costs	587,141	576,803	1,163,945	600,261	601,512	598,574
	Total en-route Service Units (000)	4,437	6,370	10,807	11,190	11,638	12,421
	Real (EUR 2017) en-route DUC	132.33	90.55	107.71	53.64	51.69	48.19
Cost efficiency KPI #2: En-route DUC Spain - Canarias	Nominal en-route determined costs	94,072	94,123	188,195	98,205	99,602	101,565
	Inflation index (base 2017)	102.50	103.60	-	104.90	106.50	108.20
	Real en-route determined costs	92,318	91,644	183,962	94,667	94,956	95,746
	Total en-route Service Units (000)	803	950	1,753	1,415	1,610	1,775
	Real (EUR 2017) en-route DUC	114.98	96.50	104.97	66.92	58.97	53.93
Cost efficiency KPI #3: Terminal DUC Spain (*)	Nominal terminal determined costs	95,965	104,577	200,542	103,842	104,879	105,254
	Inflation index (base 2017)	102.50	103.60	-	104.90	106.50	108.20
	Real terminal determined costs	93,857	101,331	195,188	99,508	99,224	98,238
	Total terminal Service Units (000)	350	497	847	841	880	924
	Real (EUR 2017) terminal DUC	268.28	203.81	230.44	118.36	112.71	106.28

(*) Considering: Gran Canaria (GCLP), Josep Tarradellas Barcelona-El Prat (LEBL), Adolfo Suárez Madrid-Barajas (LEMD), Málaga-Costa del Sol (LEMG), Palma de Mallorca (LEPA), Alicante-Elche (LEAL), Ibiza (LEIB).

The targets set in the draft performance plan in 2019 were as shown in the table below:

Cost-Efficiency Targets – Spain National level		2020	2021	2022	2023	2024
Cost efficiency KPI #1: En-route DUC Spain – Continental	Nominal en-route determined costs	669,403	672,463	688,501	700,876	708,897
	Inflation index (base 2017)	104.6	106.3	108.4	110.4	112.5
	Real en-route determined costs	646,698	641,706	647,372	650,106	648,193
	Total en-route Service Units (000)	12,172	12,436	12,709	12,937	13,166
	Real (EUR 2017) en-route DUC	53.13	51.60	50.94	50.25	49.23
Cost efficiency KPI #2: En-route DUC Spain - Canarias	Nominal en-route determined costs	102,770	104,202	107,771	110,682	112,885
	Inflation index (base 2017)	104.6	106.3	108.4	110.4	112.5
	Real en-route determined costs	99,314	99,444	101,356	102,674	103,182
	Total en-route Service Units (000)	2,060	2,115	2,171	2,223	2,277
	Real (EUR 2017) en-route DUC	48.21	47.02	46.69	46.19	45.31
Cost efficiency KPI #3: Terminal DUC Spain (*)	Nominal terminal determined costs	110,835	109,095	114,147	117,534	119,368
	Inflation index (base 2017)	104.6	106.3	108.4	110.4	112.5
	Real terminal determined costs	106,464	103,311	106,257	107,665	107,513
	Total terminal Service Units (000)	9978	1,021	1,043	1,062	1,081
	Real (EUR 2017) terminal DUC	106.69	101.18	101.84	101.40	99.46

(*) Considering: Gran Canaria (GCLP), Josep Tarradellas Barcelona-El Prat (LEBL), Adolfo Suárez Madrid-Barajas (LEMD), Málaga-Costa del Sol (LEMG), Palma de Mallorca (LEPA), Alicante-Elche (LEAL) and Ibiza (LEIB), excluding from the latter two the costs of services subject to market conditions.

1.3 STRUCTURE OF THIS DOCUMENT

This document is structured as follows:

- Chapter 2 sets out an introduction of the Spain Reviewed Performance Plan for RP3, including a brief description of the scope and economic and traffic assumptions for this period.
- Chapters 3, 4, 5, 6 introduce the reviewed targets proposals in respect of Safety, Environment, Capacity and Cost-Efficiency, including, where appropriate financial incentives.
- Chapter 7 addresses the interdependencies and possible trade-offs.
- Chapter 8 sets out the risk sharing and revision mechanism for RP3.
- Chapter 9 introduces details on the modification of the terminal charging zone.
- Chapter 10 focuses on Cross border initiatives and SESAR implementation strategies.
- Chapter 11 describes the processes to monitor the implementation of the Performance Plan.
- Chapter 12 provides an overview of the results of the consultation process.

2. INTRODUCTION

2.1 PURPOSE OF THE ESPP3

The purpose of the 2020-2024 Spain Performance Plan (ESPP3) is to establish the high-level performance targets for the Air Navigation Services provided in Spain within the scope of the plan and set out the guidelines for the action plan to meet them. This has to be done in consistency with the Performance and Charging Regulation (Regulation (EU) N° 2019/317), the exceptional measures set by the Commission in Regulation (EU) N° 2020/1627 and with the *Commission Implementing Decision (EU) 2021/891 of 2 June 2021 setting revised Union-wide performance targets for the air traffic management network for the third reference period (2020-2024) and repealing Implementing Decision (EU) 2019/903*.

2.2 REGULATORY FRAMEWORK

The ESPP3 (Spain Performance Plan for RP3) is encompassed within the framework of the European ANS Performance Scheme. The Performance Scheme is a Single European Sky initiative aimed at improving the performance of the air navigation services and network functions in Europe through:

- The establishment of European-wide targets in four key performance areas: Safety, Environment, Capacity and Cost-Efficiency.
- The elaboration of performance plans at national or FAB level, consistent with and adequately contributing to the EU-wide targets.
- Periodic monitoring, review and assessment of performance.

The principles of the Performance Scheme are established in the SES Framework Regulation (Regulation (EC) 549/2004). The detailed requirements for RP3 are contained in an implementing regulation published in February 2019:

- Performance and Charging Regulation: Commission Implementing Regulation (EU) 2019/317 laying down a performance and charging scheme for air navigation services and framework functions, repealing implementing Regulations (EU) N° 390/213 and 391/2013 that covered the Second Reference Period.

This regulation requires NSAs to draw up Performance Plans, at national or FAB level, including targets in a gate-to-gate perspective, and adopt them after consultation with relevant stakeholders. The legal framework establishes a link between performance targets and the charging scheme, through mandatory financial incentives for Capacity and Cost-Efficiency.

During the Second Reference Period, the Performance Plan (SOWEPP) was applicable at FAB level after being elaborated by the Portuguese and Spanish authorities. Nevertheless, for RP3, Portugal and Spain have decided to develop the performance plan at National level.

Due to the COVID-19 pandemic that led to a sharp drop in air traffic created an exceptional situation which needed to be addressed with specific measures. Those measures were specified in the Commission Implementing Regulation

- Commission Implementing Regulation (EU) 2020/1627 on exceptional measures for the third reference period (2020-2024) of the Single European Sky performance and charging scheme due to the COVID-19 pandemic.

This regulation empowered the Commission to set revised Union-wide performance targets for RP3 and the special rules to do so. This process was finished with the publication of the *Commission Implementing Decision (EU) 2021/891 of 2 June 2021 setting revised Union-wide performance targets for the air traffic management network for the third reference period (2020-2024) and repealing Implementing Decision (EU) 2019/903*.

2.3 SITUATION AND SCOPE

The Spanish national regulation Ley 21/2003, de 7 de julio, de Seguridad Aérea (Law No 21/2003, of 7 July, Aviation Safety and Security), sets the framework of accountabilities for the civil, military and meteorological authorities within its Title I. Each entity is responsible for the supervision of the services of its field as specified below according to specific lower-level regulations (Royal Decree):

- The Spanish Civil NSA (AESA-Agencia Estatal de Seguridad Aérea) is responsible for the supervision of the civil air navigation services provision, except meteorological ones Real Decreto 184/2008, de 8 de febrero (Royal Decree 184/2008).
- The Spanish Meteorological NSA (ANSMET within MITERD – Ministerio para la Transición Ecológica y Reto Demográfico) is responsible for the supervision of the meteorological services provision Real Decreto 500/2020, de 28 de abril (Royal Decree 500/2020).
- The Spanish Military NSA (NSA-EA – Ejército del Aire) is responsible for the supervision of the military air navigation services provision.

In addition, the Spanish Civil NSA – AESA is responsible for integrating the different contributions and drawing up the Spain Performance Plan for the Third Reference Period (ESPP3). The RP3 Spain Performance Plan (ESPP3) covers:

- The en-route air navigation services provided in the Barcelona, Canarias, and Madrid Flight Information and Upper Information Regions (FIR/UIR). In the Spanish charging scheme, two charging zones are considered, Continental and Canary Island.
- The terminal air navigation services provided at airports in Spain with more than 80,000 instrument flight rules (IFR) air transport movements per year: Adolfo Suárez Madrid-Barajas (LEMD), Josep Tarradellas Barcelona-El Prat (LEBL), Palma de Mallorca (LEPA), Málaga-Costa del Sol (LEMG), Gran Canaria (GCLP), Alicante – Elche (LEAL) and Ibiza (LEIB). The latter was included under the expectation to overpass the threshold during RP3. Those airports are related to a single charging zone.

The performance regulation requires that national targets are consistent with EU-wide targets. In addition, target setting on Cost-Efficiency applies to the determined costs established in Article 15(2)(a) and (b) of Regulation (EC) No 550/2004. Consequently, the scope of the plan covers all the accountable entities for determined costs of en-route air navigation services financed through en-route charges imposed on the users of air navigation services, in accordance with the provisions of the Performance and Charging Regulation (2019/317).

Accordingly, the list of accountable entities within the scope of the ESPP3 is set out below:

- AESA (Agencia Estatal de Seguridad Aérea): Spanish Civil NSA and national responsible coordinator for integrating the different contributions and drawing up the Performance Plan.
- ENAIRE: En-route and terminal ANSP in Spain, CNS, ATS and AIS service provider.
- AEMET (Agencia Estatal de Meteorología): MET services provider in Spain.
- ANSP-EA: costs of the Spanish Air Forces (Ejército del Aire) associated to the provision of air navigation services.
- FerroNATS: a private aerodrome control service provider for Alicante – Elche and Ibiza airports under market conditions.

- NSA-EA: costs of the Spanish Air Forces (Ejército del Aire) associated to supervision, Spanish Military National Supervisory Authority.
- ANSMET (Autoridad Nacional de Supervisión Meteorológica): costs associated to the supervision of MET services in Spain, Spanish Meteorological National Supervisory Authority.

In addition, it has to be considered that at National level, Eurocontrol costs are financed by en-route charges as well.

2.4 **MACRO-ECONOMIC SCENARIO AND OVERALL ASSUMPTIONS**

2.4.1 **ECONOMIC ASSUMPTIONS**

The inflation forecasts considered in the development of the ESPP3 cost-efficiency data are included within the table below. Actual data are source Eurostat HICP, and forecasts are in line with those of the International Monetary Fund (IMF).

In addition, GDP forecasts for Spain are included to provide a view of the economical context in which ESPP3 shall be implemented. GDP actual data and forecasts are in line with those of the IMF (World Economic Outlook Database, April 2021):

Economic Assumptions		2017	2018	2019	2020	2021	2022	2023	2024
Inflation	Spain %	2.00	1.70	0.8	-0.03	1.023	1.28	1.523	1.596
GDP (growth rate)	Spain %	2.983	2.529	2.0	-10.8	6.38	4.70	2.79	2.43

Source: IMF April 2021 World Economic Outlook.

2.4.2 **TRAFFIC ASSUMPTIONS**

2.4.2.1 **IFR Flights – En-route**

Traffic forecasts for Spain in the ESPP3 in terms of IFR flights are in line with those published by STATFOR in October 2021 (scenario base) and are set out within the table below:

IFR Flights		2020	2021	2022	2023	2024
Spain Continental	Flights (000)	780	1078	1,819	1,888	2,006
	Annual variation %	-61.0%	38.0%	69.0%	3.8%	6.2%
Spain Canarias	Flights (000)	172	214	324	334	353
	Annual variation %	-52.0%	24.0%	52.0%	3.0%	5.7%
Spain Overall	Flights (000)	854	1170	1,939	2,017	2,139
	Annual variation %	-60.0%	37.0%	66.0%	4.0%	6.1%

Source: STATFOR EUROCONTROL Seven-Year Forecast October 2021, scenario base.

2.4.2.2 IFR Flights – Terminal and Airport

Airport traffic forecasts for Spanish airports have been estimated by STATFOR, in consistency with the forecasts submitted on October 2021 (scenario base):

IFR arrival movements at airports		2020	2021	2022	2023	2024
LEMD: Adolfo Suárez Madrid-Barajas	Arrival movs, (000)	83	122	186	194	202
	Annual variation %	-61.1%	46.8%	52.7%	4.2%	4.6%
LEBL: Josep Tarradellas Barcelona-El Prat	Arrival movs, (000)	61	96	157	163	171
	Annual variation %	-64.4%	56.7%	63.7%	3.7%	5.2%
LEPA: Palma de Mallorca	Arrival movs, (000)	38	59	103	104	110
	Annual variation %	-64.8%	54.9%	73.7%	1.5%	5.2%
LEMG: Málaga-Costa del Sol	Arrival movs, (000)	28	37	66	67	70
	Annual variation %	-59.6%	29.5%	79.2%	1.0%	4.8%
GCLP: Gran Canaria	Arrival movs, (000)	33	40	58	59	61
	Annual variation %	-47.4%	23.0%	45.4%	1.3%	3.5%
LEAL: Alicante - Elche	Arrival movs, (000)	19	24	46	48	51
	Annual variation %	-63.4%	28.7%	92.8%	3.7%	7.0%
LEIB: Ibiza	Arrival movs, (000)	16	24	35	36	37
	Annual variation %	-56.9%	52.1%	45.7%	2.0%	3.9%

Source: STATFOR on the basis of EUROCONTROL Seven-Year Forecast October 2021, scenario base.

The forecast includes all 7 airports within the scope of the ESPP3: LEMD, LEBL, LEPA, LEMG, GCLP, LEAL and LEIB, which detailed figures were facilitated by STATFOR.

2.4.2.3 En-route Service Units

Traffic forecasts for Spain in the ESPP3 in terms of en-route service units are in line with those published by STATFOR in October 2021 (scenario base) and are set out within the table below:

Total en-route service units		2020	2021	2022	2023	2024
Spain Continental	SUs (000)	4,437	6,370	11,190	11,638	12,421
	Annual variation %	-61.4%	43.6%	75.7%	4.0%	6.7%
Spain Canarias	SUs (000)	803	950	1,415	1,610	1,775
	Annual variation %	-58.8%	18.3%	49.0%	13.8%	10.3%

Source: STATFOR EUROCONTROL Seven-Year Forecast October 2021, scenario base.

2.4.2.4 Terminal Service Units

Traffic forecasts for Spain in the ESPP3 in terms of terminal service units are in line with those published by STATFOR in October 2021 (scenario base) and are set out within the table below:

Total terminal service units		2020	2021	2022	2023	2024
Spain TCZ (*)	SUs (000)	350	497	841	880	924
	Annual variation %	-63.1%	42.1%	69.1%	4.7%	5.0%

Source: STATFOR on the basis of EUROCONTROL Seven-Year Forecast May 2021, scenario base.

(*) Terminal Charging Zone defined for 7 Airports: GCLP, LEBL, LEMD, LEMG, LEPA, LEAL and LEIB.

2.5 PROCESS TO COMPLETE ESPP3

This updated draft performance plan is the result of the adaptation of the plan submitted by Spain on 1st October 2021 consulted with stakeholders in an online multilateral stakeholder meeting on the 30th of July, in line with the findings raised by the EC on its verification of completeness sent on 27th October.

Comments received as a result of the written and virtual consultation have been analysed and considered in the final version of the updated draft. Feedback is available in the Appendix to this document so that the comments submitted can be traced with the content of the final Draft ESPP3.

After those steps have been taken, the ESPP3 shall follow the formal approval procedures in time for submission to the European Commission by mid-November 2021.

Further information on consultation arrangements and next steps can be found in chapter 12- Public Consultation.

3. SAFETY

3.1 INTRODUCTION

Safety is one of the utmost objectives under the Performance scheme, and Member States focus their attention on this key performance area when developing the Performance Plans, Safety remains the highest priority for air traffic management despite the pandemic situation.

In this sense, the State and in particular the Spanish NSA (AESA) has a primary duty in order to maintain the highest standards of safety in the provision and management of the air traffic services.

Therefore, this chapter presents the requirements under the performance regulation taking on board the safety key performance area, setting out the related key performance indicator (KPI).

3.2 SES REQUIREMENTS

Regarding the Safety key performance area (KPA), the Performance and Charging Regulation (EU) 2019/317 requires targets to be set at national or FAB level on the related KPI set out below:

- The effectiveness of safety management to be achieved by air navigation service providers, certified to provide air traffic services.

Targets for this KPI are set at EU-wide level, as established in *Commission Implementing Decision (EU) 2021/891 of 2 June 2021*. In this sense, these performance targets should take account of actual and targeted performance in the second reference period and go beyond minimum compliance with the requirements for the elements of the safety management system.

3.2.1 LEVEL OF EFFECTIVENESS OF SAFETY MANAGEMENT (EOSM)

The Performance and Charging Regulation (EU) 2019/317 establishes that the performance plans shall set binding national performance targets against a KPI, Effectiveness of Safety Management (EoSM). This KPI measures the level of implementation of the following components:

- a) Safety policy and objectives.
- b) Safety risk management.
- c) Safety assurance.
- d) Safety promotion.
- e) Safety culture.

The Commission published Supporting Material-RP3 Safety (K)PI Part (A), (B) and (C) available since Q3 2020 EoSM indicators are based on the questionnaires established by Supporting Material – RP3 Safety (K)PI Part (C).

Regarding the *Commission Implementing Decision (EU) 2021/891 of 2 June 2021*, the Union-wide performance targets in the key performance area of safety maintain the same level as previous EC Decision “*Commission Implementing Decision (EU) 2019/903 of 29 May 2019*” despite the pandemic situation. Those targets have to be achieved at the end of 2024 by air navigation service providers certified to provide services are set at the following levels of effectiveness of safety management:

- a) At least level C in the components “safety culture”, “safety policy and objectives”, “safety assurance” and “safety promotion”.
- b) At least level D in the component “safety risk management”.

According to the information verified by AESA by the end of 2020:

One of the ANSP within the performance scheme has already started RP3 at the maximum maturity level D in all the five EoS Components, this being a conditioned result by the continuation of compliance with the requirements associated with the maximum level by the end of the period. The other ANSP has obtained a level C in all the five Components, thus fulfilling the objective consider for the first year into the period of reference.

With due consideration to the EU-wide goals, the Spain Performance Plan targets are set out below for the en-route provider ENAIRE, since the targets for the private aerodrome control service provider are set in chapter 9:

Safety KPI #1: Level of Effectiveness of Safety Management – EoS		2020	2021	2022	2023	2024
Union-wide Targets	Safety Risk Management Component	-	-	-	-	D
	For all other Components	-	-	-	-	C
Spain en-route Targets (ANSP ENAIRE)	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	C	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

Among the key actions supporting the maintenance of the achieved targets, the following are highlighted:

- Human Performance area: consolidation of human factor as the primary element in Safety.
- Study and definition of the questionnaire model of the next general safety survey to be used in RP3, as well as establishment of the period in which the survey will be carried out.
- Innovation and Digitalization: Implementation of the “Digital Sky” strategic plan with the progressive modernization of the Communication, Navigation and Surveillance.
- Continue to carry out periodic reviews of the safety policy and actively compare it with the rest of the ANSPs.
- Reinforcement of the ENAIRE Safety Culture: Just Culture Policy will continue evolving and a new Safety Culture measure will be planned. Maintain the periodic review process (until 2025) of accountabilities and responsibilities to check their effectiveness throughout RP3.
- Continue performing an impact assessment/evaluation of the impact of the good and best practices learned adopted by the organization.

Continuous adaptation to the new normality with online sessions and virtual workshops to maintain the increase of dissemination and awareness about Safety. Implementation, promotion and exportation of NOM (Normal Operations Monitoring).

3.2.2 PERFORMANCE INDICATORS FOR MONITORING

Regarding Regulation (EU) 2019/317, Annex 1, Section 2, 1.2, there are five safety performance indicators that will be monitored during RP3, calculated for the whole calendar year and for each year of the reference period:

- a) The rate of runway incursions at airports located in a Member State.

- b) The rate of separation minima infringements within the airspace at all controlling air traffic services units in a Member State.
- c) The rate of runway incursions at an airport calculated as the total number of runway incursions with any contribution from air traffic services (ATS) or Communication, Navigation and Surveillance (CNS) services with a safety impact that occurred at that airport divided by the total number of IFR and VFR movements at that airport. The ANSP, as coordinated with NSA, applies the indicator to GCLP, LEBL, LEMD, LEMG and LEPA and presents it broken down by dependency.
- d) The rate of separation minima infringements within the airspace where the ANSP provides ATS, calculated as the total number of separation minima infringements with any contribution from ATS or CNS services with a safety impact divided by the total number of controlled flight hours within that airspace. The ANSP, as coordinated with NSA, applies the indicator to GCCC, LECB, LECL, LECM, LECP, LECS y LEMG and presents it aggregated for all the dependencies considered.
- e) Where applicable, the use of automated safety data recording systems by ANSPs as a component of their safety risk management framework.

AESA shall monitor and report on these performance indicators to the Commission in compliance with the Performance and Charging Regulation (EU) 2019/317.

4. ENVIRONMENT

4.1 INTRODUCTION

The Performance and Charging Regulation (EU) 2019/317 measures environmental performance in terms of horizontal flight efficiency, as an indicator that can be traced with pollution. In the short-term, horizontal flight efficiency can be improved through the tactical decisions provided by the air traffic controllers, such as direct routings. In the long-term, improvements can be pursued through changes in airspace design and management to provide more efficient flight trajectories and strengthening civil-military cooperation and coordination specially in the implementation of the flexible use of airspace (FUA).

Therefore, this chapter presents the requirement under the Performance Regulation taking on board the environment key performance area, setting out the related key performance indicator (KPI).

4.2 SES REQUIREMENTS

The Performance Regulation establishes one environment KPI: the horizontal en-route flight efficiency of the actual trajectory (KEA), applicable at National level. The KEA is defined as:

- The comparison between the length of the en-route part of the actual trajectory derived from surveillance data and the achieved distance, summed over all IFR flights within or traversing the local airspace.
- 'En-route' refers to the distance flown outside a circle of 40 NM around the airports.
- Where a flight departs from, or arrives at, an airport outside the local airspace, only the part inside the local airspace is considered.
- Where a flight departs from, and arrives at, an airport inside the local airspace and crosses a non-local airspace, only the part inside the local airspace is considered.
- 'Achieved distance' is a function of the position of the entry and exit points of the flight into and out of the local airspace.

The indicator is calculated for the whole calendar year and for each year of the reference period, as an average. When calculating this average, the ten highest daily values and the ten lowest daily values are excluded from the calculation.

4.2.1 HORIZONTAL EN-ROUTE FLIGHT EFFICIENCY (KEA)

The EU-wide target is to reach an average of horizontal en-route flight efficiency of at least 2.40 % in 2024 for the actual trajectory, as defined in the Performance Regulation (KEA), according to the Commission Implementing Decision (EU) 2021/891 of 2 June 2021 on European-wide targets.

Spain is committed to environmental sustainability and has recorded good results and significant improvement in the environment key performance area during RP2, exceeding the initially expected and allocated contribution to the achievement of the FAB RP2 target.

It is recognised that, at the time when the RP2 targets were set, there was limited understanding on the factors influencing the KEA KPI. Nevertheless, the improvement achieved during RP2 is 3.7% achieved mainly the latest years of the period. The first year of RP3, 2020, has represented an improvement in the indicator, decreasing to a value until 3.11%. This 15% improvement over the previous year was mainly due to the drastic reduction in traffic as a result of the COVID-19 pandemic. This has led, on the one hand, to manage a higher number of "direct to" authorizations and, on the other hand, to improve horizontal efficiency as a consequence of the suspension since April 2020 of RAD restrictions which, when active, in some cases contribute to the use of longer routes.

The understanding of the underlying factor affecting KEA has been significantly improved. Analysis has revealed that main factors affecting the worsening of KEA last years of RP2 have been:

- Prohibited, Restricted and Danger Areas and other reserved airspace where modularity, Variable Profile Areas and Dynamic mobile Areas are to be implemented.
- Lack of more direct routes including lack of CDRs aligned with the main flows of traffic.
- Unclear European guidelines in the use of tactical DCTs (route efficiency versus ATFCM predictability).
- Use of released airspace (CURA figures are low).
- National RAD restrictions.
- European Network RAD restrictions and foreign military areas close to our borders.
- TMA holdings attributed to the route inefficiency.
- Airlines planning for cheapest route vs. shortest route.

Therefore, in order to continue improving the KEA indicator, it is essential the intervention of all actors involved in Spanish air navigation.

Considering the EU-wide targets and the reference values provided by the Network Manager and published by the European Commission in the ESSKY portal, the ESPP3 targets are listed below:

Environment KPI #1: Horizontal en-route flight efficiency (KEA)	2020	2021	2022	2023	2024
Union-wide targets	2.53%	2.37%	2.37%	2.40%	2.40%
Spain Targets	3.23%	3.08%	3.08%	3.08%	3.08%

The final result of KEA in 2020 (3.11%) which represents a 15% improvement compared with the last year of RP2, as it has been described before, and has facilitated the implementation of operational and structural measures that have led to the improvement in horizontal efficiency.

At EU level, the overall assumption is that the main driver to obtain significant flight efficiency improvements is free route airspace (FRA). Consequently, it is assumed that from 2022 onwards no additional benefits are expected since FRA will be fully implemented in most countries.

At National level, Spain is expected to have an improvement curve with a different profile from that of the European Union. For Spain, improvements in horizontal efficiency will benefit from the effective implementation of the Flexible Use of Airspace (FUA) that will lead to a better airspace design and management. Combination of improvements in FUA and FRA will provide better benefits, Civil-military coordination in this process is considered fundamental. The required coordination and deployment of the ATC tools required to achieve full FRA will necessarily take time and so the benefit will only become at the end of the RP3 period, in 2023-2024.

In the case of Spain, considering the reasons for flight inefficiency, current performance and the planned dates of measures foreseen, progressing towards the targets based on the reference values provided by the NM will require the contribution and coordination of the organisations involved at State level.

Combined operation of Flexible Airspace Management and Free Route, will enable all airspace users to fly as closely as possible to their preferred trajectory, hence will improve KEA. In particular, the following topics must be addressed in order to obtain the expected benefits:

- Offering greater choice of route options.
- Greater flexibility to respond to short notice military operational requirements for existing or additional portion of airspace.
- Provision of proactive route activation/airspace reservation or restriction allocation through a collaborative decision-making process to accommodate short-term changes in routings and civil/military demands, in coordination with airspace reservation or restriction request adjusted to match the military training and operation profile.

In order to establish the processes exploiting the airspace in a dynamic manner, permitting the users flight as close as possible to the preferred trajectory (including military activity), a set of actions are listed in the following section about The Flight Efficiency Plan.

4.2.1.1 Flight Efficiency Plan

In order to achieve the established KEA targets during RP3, all operational stakeholders agree that a State level collective work is needed.

Among the key actions supporting the achievement of the targets, the following have been identified as the main contributors (namely with safety and capacity areas) to the accomplishment of this Plan:

Facilitating actions (2020-2024):

- Single CDR implementation plan, SSC Transition Plan has the objective of using only one type of Conditional Route, improving ASM procedures and optimizing the use of airspace.
- Pilot project for the management of Airspace based on structures and FUA procedures, It is a project with civil-military coordination to improve the use of airspace and associated procedures, from both points of view, civil and military, starting from specific dangerous areas and working in CDM (Collaborative Decision Making) processes.
- Strengthening of the three levels of civil military ASM coordination:
 - ASM Level 1: definition of new structures, and procedures and assessment of both existing and new ones, revision of users requirements, define temporary airspace structures and procedures to offer multiple airspace reservation and route options, including the creation and use of adjustable lateral and vertical limits of airspace to accommodate different flight paths and changes of flights.
 - ASM Level 2: strengthen of the AMC, development of clear and flexible working procedures and efficient use of ASM tools.
 - ASM Level 3: improve mutual provision of information about current status of the airspace, including activation, deactivation or reallocation to allow tactical coordination to better use of airspace released in real time. Development of coordination procedures to ensure safe flexible interaction between civil and military flights.
- Optimized use of the new RAD measures (delay vs efficiency trade-off analysis) / Dynamic RAD: assessment of new RAD measures in terms of delay vs flight efficiency. Participation in trials/CDM processes introduced by NM.

Short-term actions (2020-2022):

- Encourage use of DCT in tactical phase (as long as it is in line with European advice -efficiency vs predictability-).
- Start communications between Spanish ANSP and the European entities to adjust the following calculation criterion within the ASMA and KEA indicators algorithm: count the ASMA time from the first entry into the 40 NM cylinder, instead of the last one. In this way, the distance flown in the holding circuits that cross the cylinder (e.g. Madrid TMA) would be imputed as approach inefficiency instead of en-route inefficiency, as is currently done.
- Implementation of independent parallel approaches in Adolfo Suárez Madrid-Barajas – LEMD, to increase capacity and efficiency in Madrid TMA, and thus reduce holdings which affect KEA.

Long-term actions (2023-2024):

- Identification of strategic flows for global cost-benefit optimization, using data analysis of flight plans and real trajectories flown for the past years.

- Routes improvement in the context of Free Route and Bricks¹ Project implementation: Free Route implementation will allow the use of close to optimal trajectories, whereas Bricks project will permit a better demand / capacity tailoring avoiding re-routings thus trajectories inefficiencies.
- Capacity improvements which will reduce the potential need of re-routings in both Canarias and Barcelona airspaces.

The actions to be implemented in order to improve the horizontal en-route flight efficiency are part of a Flight Efficiency plan, in particular as part of the “European Route Network Improvement Plan” (ERNIP). In this context, the contribution to the national targets at this stage is estimated to come mainly from the following projects:

Environment: Projects with positive impact on flight efficiency					
Project	2020	2021	2022	2023	2024
Changes in CDR					
Independent parallel approaches LEMD					
New Canarias TMA organisation					
FRA implementation					
Canarias ACC sector Split (NE sector)					
BAS sector split-Barcelona ACC					
FUA measures – Civil Military coordination					

The State level collective work referred to in section 4.2.1 above, is required to deliver the projects in the table to the extent where the KEA targets can be achieved, in particular when it comes to FUA and Free Route Airspace.

There are signs of potential re-routing measures being needed at network level, in the short term, due to foreseen system changes in France and Portugal, which could affect Spain results in KEA. The potential effect at local level is still unknown.

4.2.2 PERFORMANCE INDICATORS FOR MONITORING

There are eight environment performance indicators that will be monitored during RP3:

- The average horizontal en-route flight efficiency of the last filled flight plan trajectory.
- The average horizontal en-route flight efficiency of the shortest constrained trajectory.
- The additional time in the taxi-out phase.
- The additional time in terminal airspace.
- The share of arrivals applying Continuous operation (CDO).
- The effective use of reserved or segregated local airspace, calculated as the ratio of the initial requested allocated time for reservation or segregation from general air traffic, and the final allocated time used for the activity requiring such segregation or reservation. The indicator is calculated for all airspace allocations notified to the Network Manager.
- The rate of planning via available local airspace structures, including reserved or segregated airspace and conditional routes, for general air traffic calculated as the ratio of aircraft filing flight plans via such airspace structures and the number of aircraft that could have planned through those airspace structures.
- The rate of using available local airspace structures, including reserved or segregated airspace, conditional routes, by general air traffic calculated as the ratio of aircraft flying via such airspace structures and the number of aircraft that could have planned through these airspace structures.

AESA shall monitor and report on these performance indicators to the Commission in compliance with the Performance and Charging Regulation (EU) 2019/317.

¹ Bricks project envisages multiple layers sector definition and configuration in order to better adapt available capacity to demand

5. CAPACITY

5.1 INTRODUCTION

The Performance and Charging Regulation (EU) 2019/317 measures capacity performance in terms of ATFM delays, as an indicator for traffic flows optimization according to air traffic control capacity while enabling airlines to operate safely and efficiently.

Capacity can be increased through technological improvements that support airspace modernisation, Nevertheless, any change made to operational systems will require the utmost attention to ensure safety and service continuity.

The targets included had to be updated from the values indicated in the 2019 version of the Performance Plan (ESPP3-2019), as a consequence of the impact of the COVID-19 pandemic worldwide.

According to regulation 2020/1627 of 3 November 2020, the incentive scheme will not be applicable for the years 2020 and 2021 and it is necessary to update the version of the performance plan developed in 2019 according to the current situation, the new traffic forecasts and the new targets in the capacity area.

After the drop in traffic due to COVID-19 pandemic, there is not an immediate pressure focus on increasing capacity, but on providing scalability, flexibility and resilience for service provision. This flexibility in terms of capacity means that ANSPs should offer sufficient capacity to meet actual and expected demand and be prepared for continuous uncertainties and variations in it.

The main goal must be to implement technological improvements that support airspace modernisation in order to respond to changes in demand putting capacity where and when it is needed. Always paying the utmost attention to ensure safety and service continuity.

Therefore, this chapter presents the requirement under the performance regulation taking on board the capacity key performance area, setting out the related key performance indicator (KPI).

5.2 SES REQUIREMENTS AND CAPACITY KPIS

The Performance Regulation requires targets to be set on the KPIs set out below:

- The average minutes of en-route ATFM delay per flight.
- The average minutes of arrival ATFM delay per flight attributable to terminal and airport air navigation services and caused by landing restrictions at the destination airport.

The Charging scheme also requires Member States to adopt financial incentives for their air navigation service providers in the key performance area of capacity.

5.2.1 EN-ROUTE ATFM DELAY PER FLIGHT

The Performance scheme requires that the en-route capacity target is set at National level. The en-route capacity KPI is the average minutes of en-route ATFM delay per flight, defined as:

- The en-route ATFM delay, that is, the delay calculated by the Network Manager, expressed as the difference between the estimated take-off time and the calculated take-off time allocated by the Network Manager.
- Covering all IFR flights traversing the local airspace and all ATFM delay causes, excluding exceptional events.
- Calculated for the whole calendar year and for each year of the reference period.

By the end of each year, the result of the post ops process carried out by the Network Manager, shall be taken into consideration in the final figure of the KPI.

The EU-wide target for RP3 is an average en-route air traffic flow management (ATFM) delay per flight of no more than 0.50 minutes per flight at the end of 2024, according to the Commission Implementing Decision (EU) 2021/891 of 2 June 2021 on European-wide targets.

Considering the EU-wide target and the reference values for Spain, provided by the by the Network Manager and published by the European Commission in the ESKY portal in June 2021, not being available any modification of the reference values at the time of this update, the ESPP3 en-route capacity targets remains the same value as indicated in the previous draft, and are shown in the table below:

Capacity KPI #1: En - route ATFM delay per flight	2020	2021	2022	2023	2024
Union-wide targets	0.90	0.35	0.50	0.50	0.50
Spain Targets	0.47	0.12	0.20	0.19	0.19

After the 2020 monitoring led by AESA, if all the -en-route delay minutes generated in 2020 are considered, the ERD indicator would be 0.40 with a global value of 338k minutes of delay, 77% of which have been exclusively to O-COVID-19. On the other hand, if those O-COVID-19 minutes are not taken into consideration the ERD reach a value of 0.09. Further explanations and details are given in Annex C.

The achievement of these targets in 2023 and 2024 is based on the following:

- Provision of flexibility in terms of capacity to meet expected demand through the implementation of the ENAIRE Capacity Plan (Plan de Vuelo 2025).
- Implementation of processes to better manage weather obtained either from improvements in forecasts accuracy or from better procedures and coordination, taking into account the incertitude of the evolution of local climatic conditions.

5.2.1.1 En-Route Capacity Plan

After the decline in traffic demand caused by COVID-19 crisis, capacity is not expected to be a constraint for the coming years, therefore efforts should be directed to achieve scalability and resilience. ENAIRE’s strategic Plan “Plan de Vuelo 2025” (or “Flight Plan 2025”) focus on investment of new technologies and, in parallel, on the gradual implementation of measures aimed at the improvement of constraint areas that would become an issue when traffic returns by 2023/2024.

The Capacity Plan associated to the accomplishment of the Spanish targets has been coordinated with the Network Manager and most of the measures will be included in the Network Operations Plan. Please note that at the time of this update of the revised ESPP3, the Network Operations Plan is starting the 2022-2023 cycle. A summary of such plans at ACC level, expected to provide contributions to capacity, is drafted below. The annual number of ATCOs in Ops reflected in the tables is an initial estimation made with the information currently available.

The ENAIRE’s Capacity Plan is called “Plan de Vuelo 2025”. The Plan includes the following approach:

- Modernisation of the ATM System. The evolution of the Spanish ATM system (SACTA-iTEC) will facilitate the entry in service of functionalities as Data-Link Departure Clearance (D-DCL), Wake Vortex Re-categorisation (RECAT), Time Based Separation (TBS), extended Arrival Manager (AMAN), OSF, Medium Term Conflict Detection (MTCD), integration of Mode S, Complexity Manager, etc.
- Adverse Meteorology. A better coordination and new tools will improve the accuracy of meteorological forecasts, and improved processes will minimize the impact of adverse weather conditions on the operation. Management mechanisms with users and clients will be reinforced and active contribution of the meteorological provider will be assured with its presence in the dependencies.

- **Capacity and Quality of Service.** With the objective of providing the most efficient service to the users of the Spanish airspace when traffic demand returns to former levels, this group of measures includes the increase of sector capacities, the optimisation of arrivals, the improvements of the operations mode, flow management measures, interfaces, etc.
- **Efficiency measures.** The evolution of technology will facilitate new operation modes and the adoption of measures that address optimisation of human resources management will be essential to comply with the flexible capacity deployment required in this challenging period.
- **Increase of controllers.** ENAIRE initiated by the end of RP2 a recruitment process to compensate the staff reduction suffered along several years of freezing policy, the unexpected traffic growth in the last years and the future challenges. This process continues at a more moderate rate, in order to balance “close to zero” delay objective and costs efficiency.
- **Collective agreement.** Improvement measures, as the increase of efficiency in the rostering process, will be implemented through the negotiation of the new collective agreement for Air Traffic Controllers, which will be in place by the middle of RP3.

Madrid ACC

Capacity Plan MADRID ACC (LECM)					
Project	2020	2021	2022	2023	2024
ATCOs in Ops	415	434	407	386	398
Capacity and Quality of Service & Airspace	Optimised sector configuration and sector capacities				
	FRASAI interface improvements with Lisboa and Brest		Free Route Airspace (FRA)		Cross Border Free Route with Lisboa
				Splitting of ZGZ/TER	High Sectors
	ATFM Measures				
ATM System	SACTA 3.z5.80	SACTA 4.0	<ul style="list-style-type: none"> ▪ iTEC 4.1: TTM ▪ iTEC 4.1: Complexity Manager ▪ iTEC 4.1: MTC D ▪ Stripless en-route 		
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

Barcelona ACC

Capacity Plan BARCELONA ACC (LECB)					
Project	2020	2021	2022	2023	2024
ATCOs in Ops	323	341	350	350	338
Capacity and Quality of Service & Airspace	Optimised sector configuration and sector capacities				
	PBN implementation			Free Route Airspace (FRA)	
				Splitting of BALSE sector	Marseille interface
	ATFM Measures				
ATM System	SACTA 3.z5.80	SACTA 4.0	<ul style="list-style-type: none"> ▪ iTEC 4.1: TTM ▪ iTEC 4.1: Complexity Manager ▪ iTEC 4.1: MTC D ▪ Stripless en-route 		
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

Sevilla ACC

Capacity Plan SEVILLA ACC (LECS)					
Project	2020	2021	2022	2023	2024
ATCOs in Ops	131	137	132	129	133
Capacity and Quality of Service & Airspace	Optimised sector configuration and sector capacities				
	Splitting of LECSSEV		Free Route Airspace (FRA)		Redesign of MAR sector
			ATFM Measures		
ATM System	SACTA 3.z5.80	SACTA 4.0	<ul style="list-style-type: none"> iTEC 4.1: TTM iTEC 4.1: Complexity Manager iTEC 4.1: MTC D Stripless en-route 		
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

Canarias ACC

Capacity Plan CANARIAS ACC (GCCC)					
Project	2020	2021	2022	2023	2024
ATCOs in Ops	151	161	164	164	162
Capacity and Quality of Service & Airspace	Optimised sector configuration and sector capacities				
	Improvement NW sectors		Splitting of NE sector & new cluster	Free Route Airspace (FRA)	
			Interface with Morocco		
ATFM Measures					
ATM System	SACTA 3.z5.80	SACTA 4.0	<ul style="list-style-type: none"> iTEC 4.1: TTM iTEC 4.1: Complexity Manager iTEC 4.1: MTC D Stripless en-route 		
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

Palma ACC

Capacity Plan PALMA ACC (LECP)					
Project	2020	2021	2022	2023	2024
ATCOs in Ops	137	128	120	118	121
Capacity and Quality of Service & Airspace	Optimised sector configuration and sector capacities				
			TMA redesign		
	ATFM Measures				
ATM System	SACTA 3.z5.80	SACTA 4.0	<ul style="list-style-type: none"> iTEC 4.1: TTM iTEC 4.1: Complexity Manager iTEC 4.1: MTC D Stripless en-route 		
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

5.2.2 ARRIVAL ATFM DELAY PER FLIGHT

The Performance Regulation requires that arrival capacity targets are set at National level with a breakdown at airport level for monitoring purposes. The KPI is the average minutes of arrival ATFM delay per flight attributable to terminal and airport air navigation services and caused by landing restrictions at the destination airport, defined as follows:

- The average generated arrival ATFM delay per inbound IFR flight.
- Covering all IFR flights landing at the destination airport and all ATFM delay causes, excluding exceptional events.
- Calculated for the whole calendar year and for each year of the reference period.

By the end of each year, the result of the post ops process carried out by the Network Manager, shall be taken into consideration in the final figure of the KPI.

There is no EU-wide target on arrival capacity, or any other external reference. Considering local reference, the ESPP3 arrival capacity targets and airport level allocation for Spain are set out below. The reference values per airport are established only for monitoring purposes.

Capacity KPI #2: Arrival ATFM delay per flight	2020	2021	2022	2023	2024
Spain Target – 7 Airports (*)	0.91	0.44	0.66	0.57	0.57
GCLP – Gran Canaria	0.34	0.18	0.22	0.22	0.22
LEBL – Josep Tarradellas Barcelona-El Prat	1.68	0.84	1.40	1.20	1.20
LEMD – Adolfo Suárez Madrid-Barajas	0.70	0.32	0.40	0.30	0.30
LEMG – Málaga-Costa del Sol	0.12	0.06	0.10	0.09	0.08
LEPA – Palma de Mallorca	1.40	0.66	1.00	0.90	0.90
LEAL – Alicante-Elche (*)	0.06	0.06	0.06	0.06	0.06
LEIB – Ibiza (*)	0.54	0.28	0.30	0.30	0.30

(*) This global target and reference values for Alicante - Elche and Ibiza add up the volumes were ENAIRE and FerroNATS are the ANSP to make up National and Airport level targets in consistency with the Regulation. However, ANSP scope values are presented separately for ENAIRE (section 5.2.4.1.2, for incentive purposes) and for FerroNATS (Chapter 9, target under market conditions). The Terminal Capacity Plan in section 5.2.2.1 is related to the strategy set up by ENAIRE.

Targets try to reflect an approach consistent with en-routes. The target for 2021 considers lower than usual traffic levels, 2022 reflects a relative recovery in traffic combined with ongoing improvement measures which still are not providing full benefits, expected to materialise towards the end of the period. Unfortunately, the weight of meteorological impact in the airports is still judged as important, although the expectation is to reduce it significantly through better prediction and management.

The targets showed the terminal and aerodrome services provided by ENAIRE at the five largest airports in Spain in terms of traffic, plus the terminal services to Alicante - Elche and Ibiza, where the aerodrome ATS is provided by FerroNATS. Therefore, the delay metrics corresponding to the services provided by the private ANSP are considered separately in chapter 9. Criteria have been adopted in order to distribute each cause of the ATFM Arrival delay minutes between ENAIRE and FerroNATS. As per definition of the indicator, the achievement of the abovementioned targets is responsibility of several actors, namely the airport operator and the air navigation services providers involved. Annex C provides further information on the construction of this target and the criteria used to apportion responsibilities.

In the same way that have described for en-route capacity targets, the arrival capacity target for the year 2020 are those that were proposed for the 2019 draft Performance Plan.

After the 2020 monitoring led by AESA, if all the arrival minutes of delay generated in 2020 are considered, the TAD indicator would be 0.30 with a global value of 82k minutes of delay, 19% of which have been exclusively to O-COVID-19. On the other hand, if those O-COVID-19 minutes are not taken into consideration the TAD indicator would reach a value of 0.24. Further explanations and details are given in Annexes C.

In terms of actions foreseen, the achievement of these targets in 2023 and 2024, is based on the following:

- Provision of flexibility in terms of capacity to meet expected demand through the implementation of the ENAIRE Capacity Plan (Plan de Vuelo 2025).

- Implementation of processes to better manage weather obtained either from improvements in forecasts accuracy or from better procedures and coordination, taking into account the incertitude of the evolution of local climatic conditions.

5.2.2.1 Terminal Capacity Plan

The following main projects have been considered to reduce ATFM arrival delay during RP3:

Adolfo Suárez Madrid-Barajas Airport (LEMD)

Capacity Plan ADOLFO SUÁREZ MADRID-BARAJAS AIRPORT (LEMD)					
Project	2020	2021	2022	2023	2024
Capacity and Quality of Service & Airspace	Increase of LEMD Arrival Capacity			Increase of LEMD Departure and Global Capacity Independent parallel approaches in LEMD	Implementation of new Arrival-Departure Window (ADW)
ATM System	<ul style="list-style-type: none"> ▪ SACTA-iTEC 4.0 including ▪ Stripless TWR ▪ D-DCL 		SACTA-iTEC 4.1 including: <ul style="list-style-type: none"> ▪ RECAT ▪ TBS Phase1 ▪ AMAN 2.0 		Stripless TMA
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

Josep Tarradellas Barcelona-El Prat Airport (LEBL)

Capacity Plan JOSEP TARRADELLAS BARCELONA-EL PRAT AIRPORT (LEBL)					
Project	2020	2021	2022	2023	2024
Capacity and Quality of Service & Airspace	Increase of LEBL Arrival Capacity	ATENEA Project for the improvement of the airport Capacity			
ATM System	SACTA-iTEC 4.0 including <ul style="list-style-type: none"> ▪ OSF TWR ▪ D-DCL ▪ A-SMGCS-2 		SACTA-iTEC 4.1 including <ul style="list-style-type: none"> ▪ RECAT ▪ TBS Phase1 ▪ AMAN 2.0 		Stripless TMA
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

Palma de Mallorca Airport (LEPA)

Capacity Plan PALMA AIRPORT (LEPA)					
Project	2020	2021	2022	2023	2024
Capacity and Quality of Service & Airspace		Increase of LEPA Final Approach Capacity	Increase of LEPA Departure and Global Capacity		New RNAV-1 Procedures Palma TMA New GMC position LEPA TWR
ATM System	SACTA-iTEC 4.0 including <ul style="list-style-type: none"> ▪ OSF TWR ▪ D-DCL ▪ A-SMGCS-2 		SACTA-iTEC 4.1 including <ul style="list-style-type: none"> ▪ RECAT ▪ TBS Phase1 ▪ AMAN 2.0 		Stripless TMA
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

Malaga-Costa del Sol Airport (LEMG)

Capacity Plan MALAGA- COSTA DEL SOL AIRPORT (LEMG)					
Project	2020	2021	2022	2023	2024
Capacity and Quality of Service & Airspace			Increase of LEMG departure and arrival capacity	New RNAV-1 Procedures LEMG	
ATM System	SACTA-iTEC 4.0 including ▪ D-DCL		SACTA-iTEC 4.1 including: ▪ RECAT ▪ TBS Phase1 ▪ AMAN 2.0 ▪ MLAT		Stripless TMA
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

Gran Canaria Airport (GCLP)

Capacity Plan GRAN CANARIA AIRPORT (GCLP)					
Project	2020	2021	2022	2023	2024
Capacity and Quality of Service & Airspace			Increase of GCLP Arrival, Departure and Global Capacity	New GCLP SID/STAR RNAV1 in GCTS Improved procedures in GCXO	
ATM System			SACTA-iTEC 4.0 including ▪ RECAT ▪ TBS Phase1 ▪ AMAN 2.0 ▪ Stripless		Stripless TMA
Meteo Plan	New tools and procedures		Improved coordination & data analysis		

5.2.3 PERFORMANCE INDICATORS FOR MONITORING

There are three capacity performance indicators that will be monitored during RP3:

- a) The percentage of IFR flights adhering to their ATFM departure slots at local level calculated for the whole calendar year and for each year of the reference period.
- b) The average minutes of air traffic control pre-departure delay per flight caused by take-off restrictions at the departure airport, calculated at local level.
- c) The average time, expressed in minutes, of departure delay from all causes per flight, calculated at local level.

AESA will monitor and report on these performance indicators to the Commission in compliance with the Performance and Charging Regulation (EU) 2019/317.

5.2.4 INCENTIVE MECHANISM

Regulation (EU) 2019/317 provides for the obligation to establish financial incentive mechanisms in the capacity KPA. The ESPP3 complies with the regulation by drawing up an incentive mechanism associated to the capacity target.

The incentive schemes on performance targets in the key performance area of capacity shall apply to en-route and terminal air navigation services in a non-discriminatory, transparent and effective mode during the entire period covered by the performance plan. In addition, the following principles should be met:

- They shall be proportionate to the level of ATFM delay and consist of financial advantages and financial disadvantages having material impact on revenue at risk.
- They shall be set so that the maximum financial disadvantages are at least equal to the maximum financial advantages.
- For the purpose of calculating the financial advantages and disadvantages, pivot values shall be used. The criteria used to calculate them based on the performance targets is established in this section of the plan. The national authority shall inform the Commission about these pivot values annually.
- There shall be a symmetric range around the pivot value set by the national supervisory authority, to ensure minor variations in ATFM delay do not steer in any financial advantages or disadvantages.
- Where the actual average ATFM delay per flight in year n is lower than the pivot value set for year n , this shall result in a financial advantage through an increase of the unit rate in year $n+2$.
- Where the actual average ATFM delay per flight in year n is higher than the pivot value set for year n , this shall result in a financial disadvantage through a reduction of the unit rate in year $n+2$.

Implementing Regulation 2020/1627 on exceptional measures for the third reference period due to the COVID-19 pandemic specifies at Article 3, point 3 *“the incentive schemes shall cover only the calendar years 2022 to 2024, Member States shall reflect this reduced period of the incentive schemes in their draft performance plans”*.

5.2.4.1 Capacity Incentive Scheme

The ESPP3 incentive mechanism for en-route and terminal capacity is applied at National level. The amount of the incentive is calculated based on the achievement of the ESPP3 target, expressed as a pivot value, for a given year. Incentives shall be calculated on a calendar year basis and be paid in year $n+2$.

The incentive mechanism formula consists of a linear function that relates the performance achieved in terms of ATFM delay per flight, with the amount of the bonus or penalty expressed in terms of percentage of determined costs. This linear function starts from a dead band around the target, where no incentive is applied, and spans to reach a maximum level of bonus or penalty.

The following concepts, defined by the Performance and Charging Regulation (EU) 2019/317, are described below to provide a better understanding of the incentive scheme formulas:

- **Dead band:** it defines the symmetrical range around the pivot value (modulated or not), in which the actual ATFM delay does not lead to any bonuses or penalties. It can be expressed as either a percentage of variation around the pivot value or a fraction of minutes of ATFM delay.
- **Alert threshold:** it defines the variation of the reference values as a result of the seasonal updates of the NOP in comparison to the reference values provided by the Network Manager and published by the European Commission in the ESKY portal at the time of drawing up the Performance Plan. This variation can be expressed as a percentage of variation, a fraction of minutes of en-route ATFM delay or a combination of both. The value of the alert threshold determines the level of performance as from which the maximum bonus or penalty is to be applied. The linear function goes from the limit of the dead band to the alert threshold.
- **Maximum bonus:** this value, expressed as a percentage of the determined costs of the charging zones affected by the scheme, defines the maximum bonus that the ANSP can receive if the ATFM delay is equal or lower than the lower boundary of the bonus range. It cannot be higher than the penalty.
- **Maximum penalty:** this value, expressed as a percentage of the determined costs of the charging zones affected by the scheme, defines the maximum penalty to be paid by the ANSP if the ATFM delay is equal or higher than the higher boundary of the penalty range, It cannot be higher than 2%.
- **Pivot values:** are the reference values for the calculation of the incentives. These values are based on the performance targets at National level and can be modulated for the purpose of calculating the financial advantages or disadvantages. The modulation mechanism can be applied to enable significant and unforeseen changes in traffic be taken into account (in the en-route this is reflected in the November release of year n-1 of the NOP), and/or to consider only delay causes with codes C, R, S, T, M and P of the ATFCM user manual.

5.2.4.1.1 Formula of the incentive scheme and parameters for the calculation of financial advantages or disadvantages for en-route

This section presents the main parameters of the incentive scheme for en-route that, together with the pivot values, define the financial advantages (bonus) and disadvantages (penalties) for the ANSP resulting from this scheme.

Out of all the possibilities, the option chosen is to use pivot value based on the modulation of the initial target in both possible ways according to Annex XIII, section 1.1 of Regulation (EU) 2019/317:

- a) To use the reference value from the latest available NOP (November release of year n-1), The main reason is to adapt the performance expectations of the ANSP to its actual situation in line with the possibilities of the European Network.
- b) To consider in the scope of the incentive mechanism only the delay causes attributable to the ANSP: causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual.

The modulated pivot value will be calculated starting from the latest NOP reference value. This value is multiplied by **the average weight of the delay due to ANSP attributable causes with respect to the total ATFM delay**, which the Network Manager post-ops delay allocation procedure data is closed.

The average of this delay ratio is called ADF, Attributable Delay Factor, and is generally calculated as the average of the last 4 years. However, after the results obtained in 2020 (where the exceptional event occurred due to COVID-19 pandemic modifies the tendency of minutes of delay in last years), it is necessary to open the possibility of modifying the average of last 4 years to calculate the ADF in order to ensure the adequate behaviour of the statistical model designed by AESA for the Spanish incentive scheme. Additional information regarding the ADF is provided in Annex D.

For the year 2022, the first one of the periods with the incentive scheme applying, the Attributable Delay Factor (ADF) for en-route is 76.74%.

Considering the above, the main characteristics and parameters of the function described below, are summarised in the following table defined as follows:

	Expressed in	Standard RP3 Values	Values for 2022
Dead band	fraction of min	±0.01	±0.01
Alert threshold	fraction of min	±0.05	±0.05
Max Bonus	% of DC	0.00%	0.00%
Max Penalty	% of DC	0.50%	0.50%
The pivot values for RP3 are:	Min.	Reference value NOP November year n-1 release modulated by the attributable delay factor.	0.20*0.7674=0.153

In light of the above parameters, the pivot values and financial advantages and disadvantages for en-route for the calendar years 2022 to 2024 to which the incentive scheme applies, are broken down in the following table:

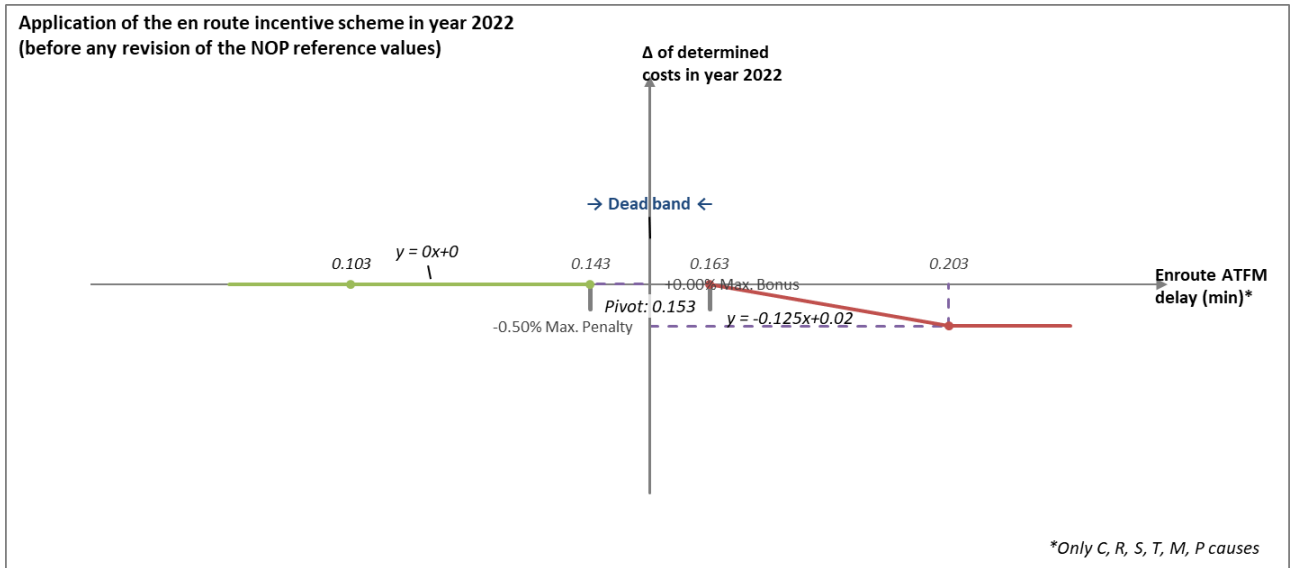
	2022	2023	2024	
Reference values (*) (min of ATFM delay per flight)	0.2	0.19	0.19	
Alert thresholds (**)	±0.050	±0.050	±0.050	
Performance Plan targets (min of ATFM delay per flight)	0.20	0.19	0.19	
Pivot values for RP3(***) (min of ATFM delay per flight)	0.153	0.146	0.146	
Financial advantages/disadvantages	Dead band range	[0.143-0.163]	[0.136-0.156]	[0.136-0.156]
	Bonus range	[0.103-0.143]	[0.096-0.136]	[0.096-0.136]
	Penalty range	[0.163-0.203]	[0.156-0.196]	[0.156-0.196]

(*) Once updated with the reference values corresponding to the adopted EU-wide targets.

(**) At the moment of drawing up the Performance Plan the Alert threshold is 0.05 for the years 2022-2024 due to Pivot values in the same years are less than 0.2 min of en-route ATFM delay. These values may change after the annual updates of the NOP reference values.

(***) Pivot value considering only ANSP attributable delay: codes C, R, S, T, M and P of the ATFCM user manual. They are the result of multiplying the reference values Performance by the ADF. Modulation applies, so these figures are only indicative as they will be updated annually on the basis of the November n-1 NOP and the calculation of the ADF applicable.

With all these values, the en-route capacity incentive formula structure for Spain during 2022 is:



The variable parameters of the formula listed below shall be notified to the EC every year by AESA prior to the start of the year in which the incentive applies:

- Pivot values, calculated on the basis of the:
 - Updated ADF (attributable delay factor).
 - Updated reference value for Spain in the November release of the NOP.
- Alert thresholds: on the basis of the pivot value.

The parameters in the incentive scheme have been selected by AESA on the basis of:

- Statistical delay analysis.
- ANSP financial risk analysis.
- Inputs received in the consultations with the stakeholders.

More information on these topics can be found within the Annex D.

5.2.4.1.2 Formula of the incentive scheme and parameters for the calculation of financial advantages or disadvantages for Terminal.

This section presents the incentive scheme on average arrival ATFM delay per flight adopted by the State and the main parameters of this incentive scheme, together with the pivot values, that define the financial advantages (bonus) and disadvantages (penalties) for the ANSP resulting from this scheme.

Out of all the possibilities, the option chosen is to use pivot value based on the modulation of the initial target in line with one of the possibilities set out in Annex XIII, section 1.1 of Regulation (EU) 2019/317:

- To consider in the scope of the incentive mechanism only the delay causes attributable to the ANSP: causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual.

The aerodrome ATS services provided by FerroNATS under market condition (see chapter 9) are not part of the Spain Terminal unit rate, nor the incentive mechanism defined by Regulation (EU) 2019/317, in consistency with Article 35.2. For this reason, the applicable terminal incentive mechanism requires a modulation of the aggregated Spain arrival capacity targets, to reflect only volumes where ENAIRE is the ANSP: all of arrival at LEMD, LEBL, LEPA, LEMG and GCLP; but only terminal services at LEAL and LEIB.

Capacity KPI #2 where ENAIRE is the ANSP	2020	2021	2022	2023	2024
Spain – 7 Airports (*)	0.89	0.43	0.65	0.56	0.56
GCLP – Gran Canaria	0.34	0.18	0.22	0.22	0.22
LEBL – Josep Tarradellas Barcelona-El Prat	1.68	0.84	1.40	1.20	1.20
LEMD – Adolfo Suárez Madrid-Barajas	0.70	0.32	0.40	0.30	0.30
LEMG – Málaga-Costa del Sol	0.12	0.06	0.10	0.09	0.08
LEPA – Palma de Mallorca	1.40	0.66	1.00	0.90	0.90
LEAL – Alicante-Elche (*)	0.04	0.04	0.04	0.04	0.04
LEIB – Ibiza (*)	0.28	0.15	0.16	0.16	0.16

(*) Modulated values reflecting only the approach environment at LEAL and LEIB, where ENAIRE is the ANSP.

Finally, considering all the above, the modulated pivot value will be calculated by multiplying by **the average weight of the delay due to ANSP-ENAIRE attributable causes with respect to the total ATFM delay,² for which the Network Manager post-ops delay allocation procedure data is closed.**

The average of this delay ratio is called ADF, Attributable Delay Factor, and is generally calculated as the average of the last 4 years. However, after the results obtained in 2020 (where the exceptional event occurred due to COVID-19 pandemic modifies the tendency of minutes of delay in last years), it is necessary to open the possibility of modifying the average of last 4 years to calculate the ADF in order to ensure the adequate behaviour of the statistical model designed by AESA for the Spanish incentive scheme. Additional information regarding the ADF is provided in Annex D.

For the year 2022, the first one with the incentive scheme applies, the Attributable Delay Factor (ADF) for arrival is 29.59%.

The main characteristics and parameters of the function described below, are summarised in the following table defined as follows:

	Expressed in	Standard RP3 Values	Values for 2022
Dead band	fraction of min	±0.02	±0.02
Alert threshold	% of pivot value	±50%	±0.096
Max Bonus	% of DC	0.00%	0.00%
Max Penalty	% of DC	0.50%	0.50%
The pivot values for RP3 are:	Min.	Target modulated by the attributable delay factor.	0.65*0.2959=0.192

In light of the above parameters, the pivot values and financial advantages and disadvantages for terminal, for the calendar years 2022 to 2024 to which the incentive scheme applies, are broken down in the following table:

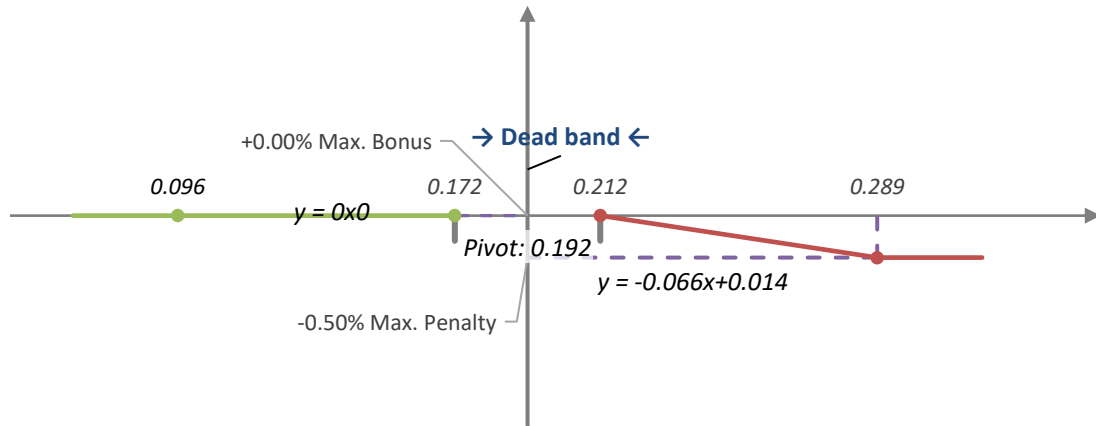
	2022	2023	2024
ENAIRE contribution to Performance Plan targets (min of ATFM delay per flight)	0.65	0.56	0.56
Alert thresholds (bonus/penalty range)	±0.096	±0.083	±0.083
Pivot values for RP3 (*) (min of ATFM delay per flight)	0.192	0.166	0.166
Financial advantages/disadvantages	Dead band range	[0.172-0.212]	[0.146-0.186]
	Bonus range	[0.096-0.172]	[0.083-0.146]
	Penalty range	[0.212-0.289]	[0.186-0.249]

(*) Pivot value considering only ANSP attributable delay: codes C, R, S, T, M and P of the ATFCM user manual. They are the result of multiplying the Performance Plan targets by the ADF. Modulation applies, so **these figures are only indicative** as they will be updated annually on the basis of the ADF applicable.

² The oversight activity of AESA has concluded that prior to August 2018, some of the delay allocated to cause G-Aerodrome Capacity was actually ATC Capacity. Consequently, and to increase the consistency of the attributable delay factor, the assumptions set out in the Annexes have been made.

With all these values, the terminal capacity incentive formula structure for Spain during 2022 is:

**Only C, R, S, T, M, P causes*



The variable parameters of the formula listed below shall be notified to the EC every year by AESA prior to the start of the year in which the incentive applies:

- Pivot values, calculated on the basis of the:
 - Updated ADF (attributable delay factor).
- Alert thresholds (bonus/penalty range): based on the pivot value.

The parameters in the incentive scheme have been selected by AESA based on:

- Statistical delay analysis.
- ANSP financial risk analysis.
- Inputs received in the consultations with the stakeholders.

More information on these topics can be found within the Annex D.

6. COST-EFFICIENCY

6.1 SES REQUIREMENTS

6.1.1 EN-ROUTE COST-EFFICIENCY

The Performance and Charging Regulation requires a target for en-route Cost-Efficiency for en-route service to be expressed in terms of the determined unit costs (DUCs) at charging zone level and in local currency. There are two en-route charging zones in Spain:

- Spain Canarias
- Spain Continental

The DUC is the ratio between the en-route determined cost and the forecast traffic in the charging zone expressed in en-route service units, expected during the period in the performance plan (RP3). En-route cost efficiency European wide performance targets, established through the Commission Implementing Decision (EU) 2021/891 of 2 June 2021 on European-wide targets, are the reference for the Spain DUC targets. They are shown in the table below:

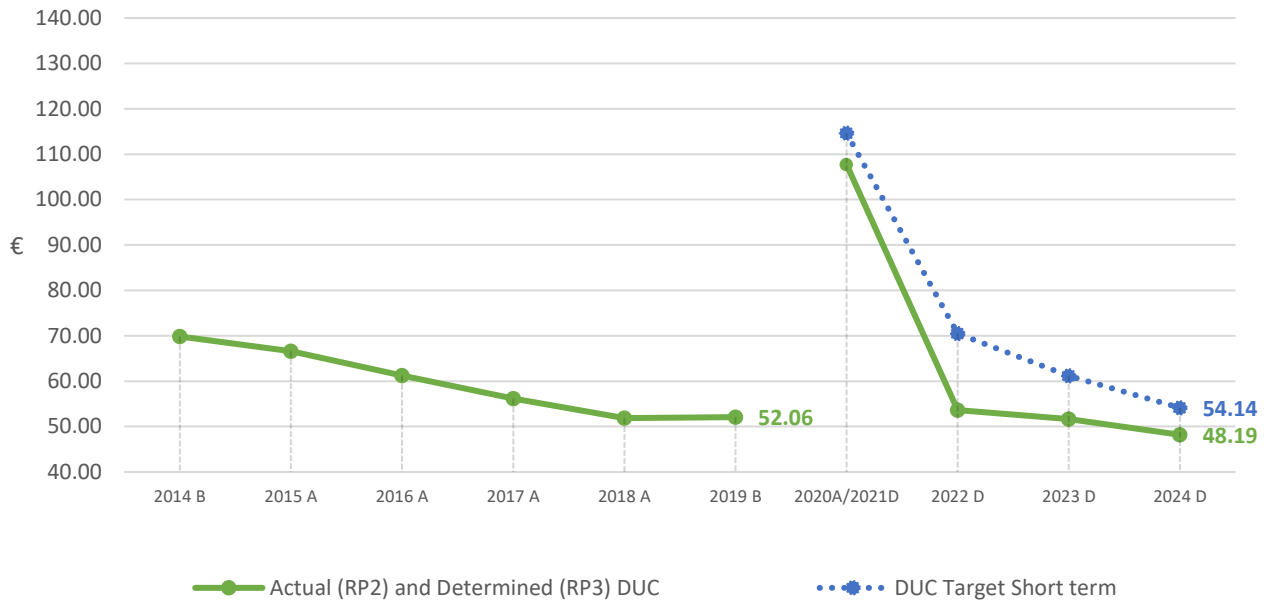
Revised Cost-Efficiency DUC – Spain National level		2020	2021	2020/2021	2022	2023	2024
Cost efficiency KPI #1: En-route DUC Spain – Continental	Nominal en-route determined costs	598,351	592,163	1,190,515	622,143	629,825	633,678
	Inflation index (base 2017)	102.50	103.60	-	104.90	106.50	108.20
	Real en-route determined costs	587,141	576,803	1,163,945	600,261	601,512	598,574
	Total en-route Service Units (000)	4,437	6,370	10,807	11,190	11,638	12,421
	Real (EUR 2017) en-route DUC Spain - Continental	132.33	90.55	107.71	53.64	51.69	48.19
Cost efficiency KPI #2: En-route DUC Spain - Canarias	Nominal en-route determined costs	94,072	94,123	188,195	98,205	99,602	101,565
	Inflation index (base 2017)	102.50	103.60	-	104.90	106.50	108.20
	Real en-route determined costs	92,318	91,644	183,962	94,667	94,956	95,746
	Total en-route Service Units (000)	803	950	1,753	1,415	1,610	1,775
	Real (EUR 2017) en-route DUC Spain – Canarias	114.98	96.50	104.97	66.92	58.97	53.93

The consistency of Cost-Efficiency targets is assessed against a trend starting from a baseline value. According to Article 9.4(a) in Regulation (EU) 2019/317, the target baseline shall be calculated on the basis of the latest costs estimates and traffic forecasts available for the year preceding the start of the reference period. Since 2019 is a closed year, consequently, the baseline is calculated with actual costs and actual traffic figures.

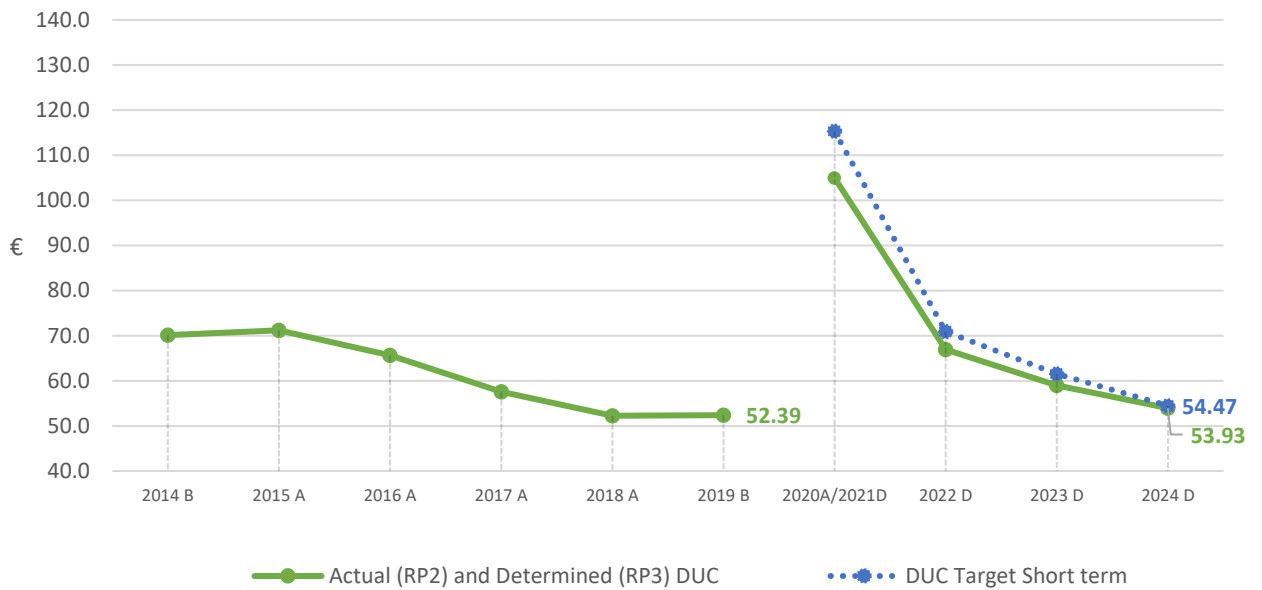
Regarding Annex IV 1(4)(a) in Regulation (EU) 2019/317, the Spanish scenario within the short term is set as represents the table below:

Revised Cost-Efficiency Targets – Spain National level		2020/2021	2022	2023	2024
Cost efficiency KPI #1: En-route DUC Spain – Continental	Real (EUR 2017) en-route DUC LE Target	114.59	70.47	61.17	54.14
	Real (EUR 2017) en-route DUC Spain - Continental	107.71	53.64	51.69	48.19
	Deviations from target	6.89	16.83	9.48	5.95
Cost efficiency KPI #2: En-route DUC Spain - Canarias	Real (EUR 2017) en-route DUC GC Target	115.30	70.91	61.55	54.47
	Real (EUR 2017) en-route DUC Spain - Canarias	104.97	66.92	58.97	53.93
	Deviations from target	10.34	3.99	2.58	0.55

LE - Spain Continental En route DUC - Consistency of Targets



GC - Spain Canarias En route DUC - Consistency of targets



Both targets prove being consistent with the baseline and trend criterion set in Annex IV, point 1.4(a): the short term determined unit cost trend. Annex IV point 1.4(b) compliance is implied.

6.1.2 TERMINAL COST-EFFICIENCY

The Performance and Charging Regulation requires a target for en-route Cost-Efficiency for en-route service to be expressed in terms of the determined unit costs (DUCs) at charging zone level and in local currency. There is one terminal charging zone in Spain within the scope of the performance plan for RP3 and therefore, subject to all the requirements set out in Regulation (EU) 2019/317:

- Spain Terminal

Spain Terminal charging zone includes the terminal air navigation services provision and national supervisory authorities’ costs of the 7 airports below:

- Adolfo Suárez Madrid-Barajas (LEMD)
- Josep Tarradellas Barcelona-El Prat (LEBL)
- Palma de Mallorca (LEPA)
- Málaga-Costa del Sol (LEMG)
- Gran Canaria (GCLP)
- Alicante-Elche (LEAL)
- Ibiza (LEIB)

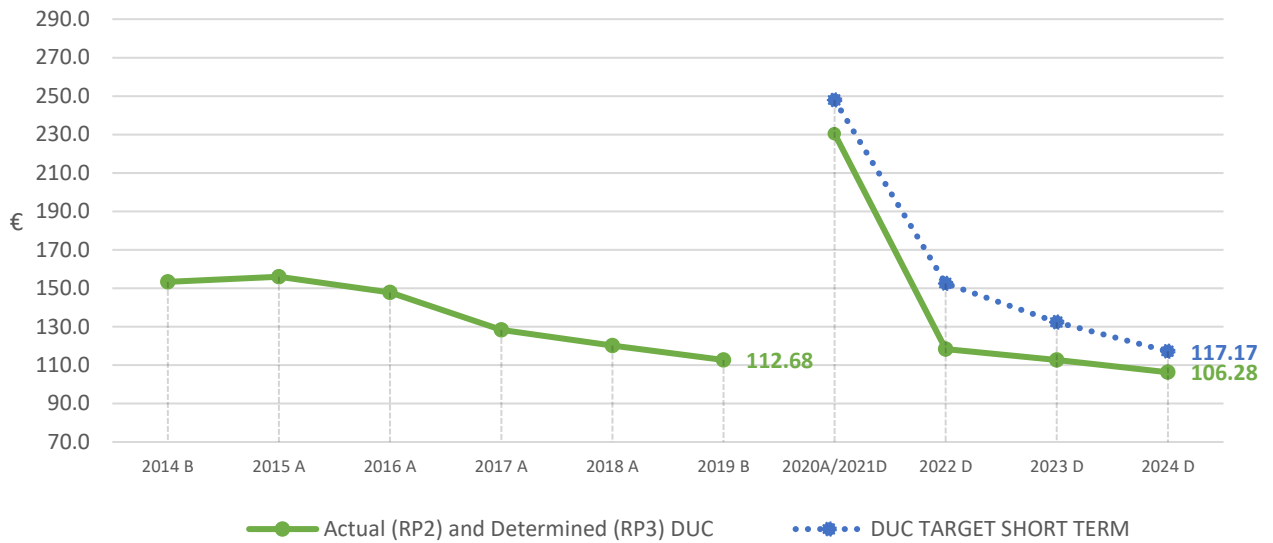
The aerodrome ATS is provided in LEAL and LEIB under market conditions. Consequently, the costs associated to that service in those locations is not included in the terminal charges cost base. More information is provided in chapter 9. The targets are consistent in line with Regulation (EU) 2019/317 (see Annex E).

Revised Cost-Efficiency DUC – Spain National level		2020	2021	2020/2021	2022	2023	2024
Cost efficiency KPI #3: Terminal DUC Spain (*)	Nominal terminal determined costs	95,965	104,577	200,542	103,842	104,879	105,254
	Inflation index (base 2017)	102.50	103.60	-	104.90	106.50	108.20
	Real terminal determined costs	93,857	101,331	195,188	99,508	99,224	98,238
	Total terminal Service Units (000)	350	497	847	841	880	924
	Real (EUR 2017) terminal DUC Spain Terminal	268.28	203.81	230.44	118.36	112.71	106.28

Regarding Annex IV 1.4.a. in Regulation (EU) 2019/317, the Spanish scenario within the short term is set as represents the table below:

Revised Cost-Efficiency Targets – Spain National level		2020/2021	2022	2023	2024
Cost efficiency KPI #3: Terminal DUC Spain	Real (EUR 2017) DUC LE TNC Target	248.01	152.53	132.39	117.17
	Real (EUR 2017) DUC Spain Terminal	230.44	118.36	112.71	106.28
	Deviations from target	17.57	34.17	19.69	10.89

LE TNC - Spain Terminal DUC - Consistency of Targets



LE-TNC target proves being consistent with the baseline and trend criterion set in Annex IV, point 1.4(a): the short term determined unit cost trend. Annex IV point 1.4(b) compliance is implied.

6.1.3 PERFORMANCE INDICATORS FOR MONITORING

There is a cost-efficiency performance indicator that will be monitored during RP3:

- The actual unit cost incurred by users separately for en-route and terminal air navigation services.

6.1.4 INCENTIVE MECHANISM

The traffic risk and cost risk parameters applicable shall be the standards, as they are reflected in Articles 27 and 28 in Regulation (EU) 2019/317. More information is provided in section 8.

6.2 ANSP COSTS (ENAIRES)

Determined costs and unit costs from the ANSP ENAIRES can be seen in the following tables:

Cost-Efficiency Targets – ENAIRES		2020/2021	2022	2023	2024
Cost efficiency KPI #1: En-route Spain Cont,	Determined costs ('000 EUR 2017)	986,160	506,577	506,433	502,461
	DUC (EUR 2017)	91.25	45.27	43.52	40.45
Cost efficiency KPI #2: En-route Spain Canarias	Determined costs ('000 EUR 2017)	135,510	70,573	70,757	71,382
	DUC (EUR 2017)	77.32	49.89	43.94	40.20
Cost efficiency KPI #3: Terminal Spain	Determined costs ('000 EUR 2017)	187,966	95,528	94,882	93,567
	DUC (EUR 2017)	221.87	113.62	107.77	101.22

ENAIRES, seriously affected by the worst crisis known to the aviation sector, reviewed its plans in the light of both temporary and structural measures, allowing to face the current situation and to contain as much as possible, the expected economic loss resulting from the pandemic.

ENAIRES has taken significant steps to reduce its costs in order to survive the severe shortfall in revenue, analysing and adapting to the economic and traffic environment in the coming years and to the scenario for the elaboration of the new Plan RP3, adopting additional efforts and efficiencies with a view to overcoming, together with other actors in the sector, the worst crisis in air transport.

It has to be pointed out that, the application of a policy of moderate charges evolution in the period by the State and ENAIRES derives, in the commitment that the unit rates for the entire period will not exceed the 2019 figures.

6.2.1 STAFF AND OPERATING COSTS

6.2.1.1 Staff costs

The Performance Plan for ENAIRES is built on the basis of the following staff costs estimates for RP3:

Overall staff expenses estimate	2019	2020	2021	2022	2023	2024
Annual %		-6.1%	1.1%	6.0%	-0.7%	-0.3%

The values for total ENAIRES staff costs in nominal terms reflects the significant measures of reduction adopted in years 2020 and 2021 and a very moderate evolution for the rest of the period, presenting figures for the latest years below 2019 actual.

The considered amounts respond mainly to the evolution of the workforce and wage estimates as well as additional efficiency improvements measures. The hypothesis of salary increase has been those of the scenario approved by the Ministry for Treasury for the period 2019-2020 (+2.75% in 2019 and +2.30% in 2020), and annual increases of 0.9% for year 2021; 0% for 2022; and 1% for the remainder RP3 years.

In addition, it should be highlighted that the salary increase mentioned includes the annual vegetative increase, an effect which is composed of wage increases due to seniority and also other factors, as the result of transfer/mobility (staff redistribution) that generate increased staff costs.

Apart from that, ENAIRES needs to recruit new controllers, in order to have the necessary staff to cope with the foreseen evolution in air traffic in optimal conditions of safety and efficiency. This will also serve to rejuvenate the staff, since ENAIRES's ATCOs have a quite high average age and with an unbalanced population pyramid.

A moderate hiring plan of ATCOs is foreseen from year 2021, taking into account the long training periods required by the controllers in order to be able to provide effective service in the ENAIRE Towers and Control Centres. Approximately 2 years elapse from the publication of a call for controller positions until the selected person starts working in an ENAIRE operational unit.

It has to be pointed out that, considering the foreseen increase of control staff in Active Reserve (RA) as well as the lower salary for new recruitments, the ATCOs expenses estimate reduced by -7% and - 8% in 2020 and 2021, compared to 2019, and presents a moderate evolution, always below 2019 actual, in the remaining years.

ENAIRE includes in its planning recruiting Non-ATCO staff that is necessary to support the service provision, with the aim of internalising resources of structural technical assistance, reducing costs as well as avoiding the loss of knowledge of ENAIRE and adapting the workforce to new technologies.

The following table provides the planned figures of number of staff resources planned, broken down per charging zone:

	2019		2020		2021		2022		2023		2024	
	ATCO	Non ATCO	ATCO	Non ATCO	ATCO	Non ATCO	ATCO	Non ATCO	ATCO	Non ATCO	ATCO	Non ATCO
Spain Continental	1,327	1,177	1,307	1,220	1,331	1,303	1,300	1,365	1,271	1,391	1,275	1,389
Spain Canarias	200	198	201	205	208	217	211	221	211	223	209	225
TNC (7 AD)	388	280	381	274	363	290	367	295	358	296	353	295
Other	184	262	179	213	172	215	174	218	173	216	172	215
TOTAL	2,100	1,918	2,067	1,912	2,074	2,025	2,051	2,098	2,013	2,125	2,009	2,124

New Collective Agreements are being negotiated both with regard to ATCOs and to the rest of personnel (non-ATCO).

The main measures taken by ENAIRE in year 2020, related to staff costs, to face the significant drop in its revenue have been the following:

- Suspension of new staff recruitments, hiring plan delayed, number of ATCOS in “Active reserve” increased, reductions in variable salary complements, containment in salary increases, reduction in the number of extra hours, as well as adjustment and prioritisation of training courses.
- Agreements with ATCO staff, to face COVID crisis, in the years 2020-2021. The main objective of those ATCOs agreements has been to adapt the resources used to deal with highly variable and uncertain air traffic, optimising the scheduling of the number of services and to decrease wage costs, through reductions in Productivity and Variable Complement as well as lowering overtime to a minimum.

The efforts to reduce costs allowed that final 2020 en-route staff costs for ENAIRE were -11% (-52 MEUR) below draft Plan RP3 determined and -5% (-20 MEUR) lower than actual 2019.

Notwithstanding the above information not to revise the costs of the Plan has been decided in support of the sector as well as to achieve a moderate evolution of charges. It should be noted that the significant increase in STATFOR traffic data published in October 2021 compared to previous forecasts, anticipating a faster recovery exceeding the 2019 traffic earlier, it is a drastic change of scenario.

The new traffic forecast will mean for ENAIRE the need for more personnel resources, especially ATCO staff, which will result in higher costs than those foreseen in the Plan.

6.2.1.2 Other operating costs

The following figures correspond to the estimates contained in ENAIRE RP3 Multiannual Plan.

Other operating expenses estimates	2020	2021	2022	2023	2024
Annual %	-7.0%	6.8%	-3.5%	-0.5%	-0.2%

During the years 2020-2024 other operating expenses barely vary with respect to 2019, reflecting efforts in the control and containment of spending, as well as highlighting the advance in the field of digital transformation and implementation of agile methods, aligned with the Information Plan.

Some specific matters that deserve to be pointed out are as follows:

- Increased repair and maintenance expenses due to maintenance and support for the operation of the Datalink equipment: Front-End Processor (DL-FEP) and ATN Router (R-ATN) in both operating and model environments, for data link services requirements for the Single European Sky. Increase in the actual reinforcement of the technical service in the Regional Directorates concerning the SACTA and ICARO systems operation, and higher expense for termination of guarantees, Increased repair and maintenance expenses due to the opening of the new Valencia TACC and the start of operation of the new building at the Regional North-Centre Directorate in 2023.
- Full deployment of the communication service with two operators to meet the needs of the ENAIRE Inter-Centre Contingency Project, new service in the link between Centralized Systems and Barcelona ACC.
- The deployment and support of digital data networks and voice technology with regard to IP, in line with the Digital Tech plan.
- Within the Digital Sky plan, the adaptation of the resources needed for the provision of voice and data communications, navigation and surveillance services, associated with ATS through ATM systems and also the provision of flight verification management service.

The main measures taken by ENAIRE in year 2020, related to other operating costs, to face the significant drop in its revenue have been the following:

- Limitation of maintenance and repair actions to the minimum necessary, reduction of variable costs related to supplies, daily activity consumable and security, decrease of externalised service and reduction in expenses related to institutional and public relations events, marketing, etc.

6.2.2 INVESTMENTS-CAPEX

This section provides a summary of ENAIRE main investment programmes during the period 2020 – 2024. With respect to the first draft plan presented in 2019, some changes can be remarked, which are explained in the following sections.

Since Regulation 2019/317 puts emphasis on the costs, the information presented here is mainly based on the Costs of Capital and Depreciation expected to be derived from the investment plan, and it is aligned with ENAIRE’s strategic plan “Flight Plan 2025”.

It has to be taken into account that ENAIRE provides services to Spanish airports out of the scope of Regulation 2019/317. Therefore, the information presented here, which, unless specified otherwise, refers only to the scope of this Regulation, may presents some differences with information presented in other fora where the whole scope of ENAIRE’s investment plan is presented. Strong focus has been put on New & Major

investments, also assuring traceability with the European regulations and policies. Investments involving U-Space future services and other non-regulated or commercial activities have also been removed from this plan.

6.2.2.1 Summary of changes from the previous draft plan

The draft performance plan presented in 2019 had a structure coherent with the reporting scheme of the Spanish Ministry's Multiannual Activity Plan (in Spanish, "PAP"). At the time, ENAIRE's strategy plan was under development and not available yet.

Year 2020 was very challenging at all levels. The approval of the national performance plans never happened since the stroke of the COVID-19 pandemic invalidated the hypothesis on which the European targets and plans had been proposed. In the meanwhile, the reduction in air traffic was seen as an opportunity to re-plan the investment projects. This revision of the plan was necessary not only in the context of a delay in some planned actions due to the impact of the worldwide crisis, but also because a change in the scope of some activities not considered in the first draft was deemed necessary. In the wider context of recovery plans for many industry sectors being launched, an acceleration of some digitalisation and modernisation initiatives made sense. Finally, in order to avoid reproducing past mistakes, in which cuts in investments resulted in lack of technical means and resources when traffic and economy recovered, the revised investment plan wagered on a countercyclical proposal.

The plan presented considers all the changes introduced in 2020 with the purpose of adapting to the new context, while still providing the highest benefits to the users and with the lowest economic impact for them. The challenge was significant but ENAIRE is proud to present now a whole picture where all such requirements are successfully met.

6.2.2.2 ENAIRE's Strategic Plan "Flight Plan 2025"

ENAIRE's strategic plan "Flight Plan 2025" constitutes its roadmap for the next years and aims to contribute to the economic recovery of the air transport sector at all levels, while fostering innovation and ensuring future growth. It is an ambitious plan, also aiming to transform ENAIRE, so that it is ready for the challenges the European environment expects to come.

In terms of projects and investment plan, Flight Plan 2025 is articulated in the following 11 "strategic plans" and 38 "initiatives" or programmes. It is important to understand that this new classification leads to a rearrangement of previously existing projects which result embedded in this new structure. Traceability with the previous 2019 investment plan is explained in the following sections, so that it is understood that no major investment appearing in the previous draft has been cancelled.

Services

PE1. Safety Plan

- 1.1 "REINFORCE"- Safety Reinforcement
- 1.2 "ANTICIPATE" Predictive SMS
- 1.3 "FACILITATE" HHFF in ATM
- 1.4 "PROTECT" – Security & Cybersecurity

PE2. "Digital Sky"

- 2.1 Digital Airspace
- 2.2 Digital Tech
- 2.3 Digital Network
- 2.4 Digital AIM
- 2.5 Civil-Military coordination

PE3. "Green Sky"

- 3.1 Fly Clean
- 3.2 Fly Quiet
- 3.3 Eco-ENAIRES

PE4. Customers & Groups of interest

- 4.1 Customer Experience
- 4.2 Flying with general aviation
- 4.3 Agenda 2030

Business development

PE5. Business development

- 5.1 TWR services development
- 5.2 Services & Products commercialisation

PE6. Future services

- 6.1 Digital TWR
- 6.2 Technical evolution towards ADSP
- 6.3 ADS-B / COMM Satelital
- 6.4 SES Digital Backbone (SDB)

PE7. Integration of new users and tech

- 7.1 U-Space (*)
- 7.2 Drone-based services (**)
- 7.3 Spatial Traffic Management (STM)

Transformation

PE8. HHRR: One Team

- 8.1 Trust
- 8.2 Create
- 8.3 Lead
- 8.4 Feel
- 8.5 Plan

PE9. Campus ENAIRES

- 9.1 Campus as excellence training center
- 9.2 ATC Training
- 9.3 TrainAir Plus

PE10. Innovation

- 10.1 Innovation Plan
- 10.2 CRIDA as engine of ENAIRES innovation

PE11. Transformation: ENAIRES 5.0

- 11.1 Change Culture
- 11.2 Corporate Communication
- 11.3 Digital Transformation
- 11.4 Organisational model

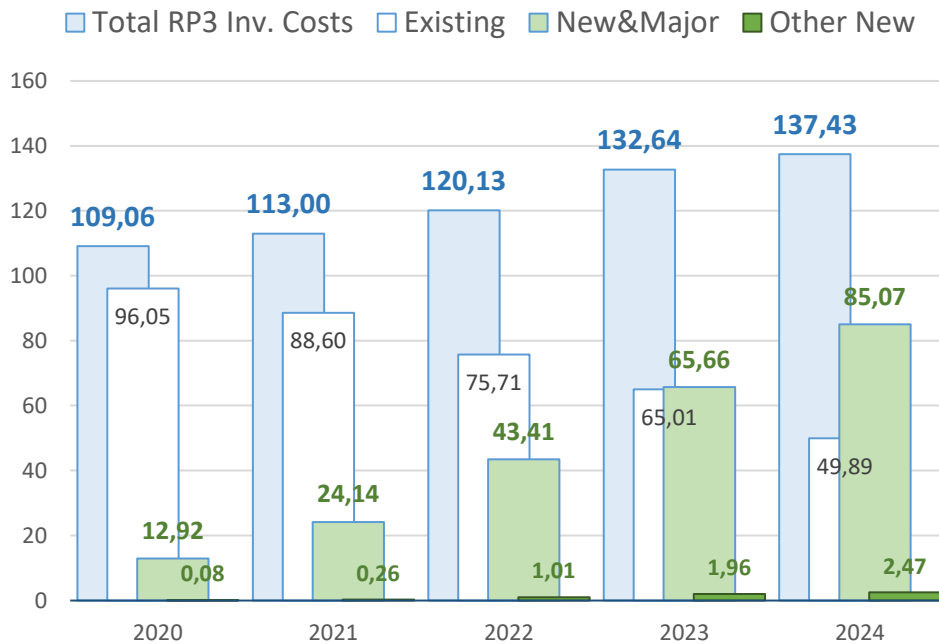
(*) Only investments related to changes to ATM systems for ATM-UTM integration have been included in the RP3 Plan.

(**) Only investment related to the use of drones for navaids verification have been included in the RP3 plan.

Note that the figure above reflects the whole strategic plan, from which only eligible investments according to Regulation 2019/317 have been included in the RP3 tables and the information detailed below.

6.2.2.3 Volume of Investment costs planned for RP3

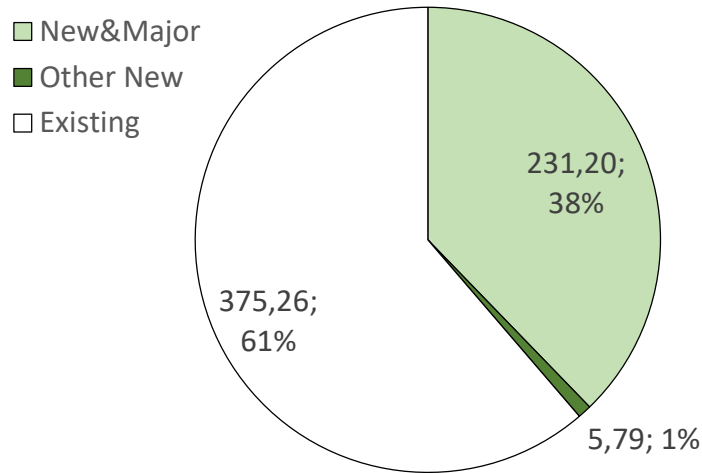
The total Costs (Depreciation plus Costs of Capital) related to the planned investments for RP3 (2020 – 2024) amounts 612.25 MEUR of which 231.20 MEUR derive from the planned new & major investments.



6.2.2.4 New & Major investment costs

Only 11 of the 38 abovementioned initiatives result in a level of investment that results in categorizing them as “New Major”. The ensemble of these new major initiatives represents 38% of the total plan (not including the already existing investment costs).

Total RP3 Investment Costs (MEUR)



NEW&MAJOR INVESTMENT COSTS		Total Cost RP3	TOTAL 2020	TOTAL 2021	TOTAL 2022	TOTAL 2023	TOTAL 2024
Safety Plan	"REINFORCE"-Safety Reinforcement	4,33	0,05	0,52	0,90	1,33	1,52
Safety Plan	"PROTECT" - Security & Cybersecurity	3,91	0,11	0,44	0,78	1,11	1,47
Digital Sky	Digital Airspace	27,24	2,42	3,18	5,19	7,42	9,03
Digital Sky	Digital Tech	87,51	4,52	8,68	15,27	23,96	35,09
Digital Sky	Digital Network	31,03	0,71	3,20	5,78	9,62	11,71
Digital Sky	Digital AIM	2,54	0,10	0,18	0,43	0,76	1,08
Digital Sky	Civil-Military Coordination	0,86	0,00	0,10	0,23	0,26	0,27
Green Sky	Eco-ENAIRES (Green Sky)	2,77	0,01	0,19	0,51	0,99	1,07
Future services	Technical evolution towards ADSP	25,05	1,57	1,92	4,95	7,71	8,91
Innovation	CRIDA as engine of ENAIRES innovation	3,91	0,02	0,14	0,84	1,23	1,67
Transformation ENAIRES 5.0	ENAIRES's Digital Transformation	42,07	3,40	5,59	8,54	11,28	13,26
TOTAL		231,20	12,92	24,14	43,41	65,66	85,07

We provide hereunder an explanation of these 11 New& Major investments:

“REINFORCE” - Safety Reinforcement Action Plan – A safety programme aiming to continuous operational safety improvement and aligned with the national Operational Safety Action Plan (also known as PARSO). This initiative includes 10 action lines:

1. Adherence to the Operation Mode
2. Reducing Fatigue and Stress
3. Reinforcement of ENAIRES's Safety Culture, Just Culture Policy
4. Improving Air Traffic Controller Training
5. Reinforcement of the Management Team in the Room
6. Use of Mobile Devices in Room
7. Technological Modernization
8. Flow Management
9. Improved management in cases of adverse weather
10. Adherence to Procedures

This initiative is mainly aimed at **safety improvement**, in particular, through safety nets. The current alert system will derive in safety improvements and ATCO workload reduction through enhanced alerts integrating

additional information from Mode S and ADS-B surveillance sources, improvements in conformity alerts, area proximity warning and minimum safe altitude, short term conflicts and aerodrome ATC clearances, better usability (filtering functionalities), etc. This will result in a reduction of the occurrence and severity on any potential safety incidents, better adherence to procedures and modes of operation, reduction of fatigue and stress, better ATC training and early awareness/management of potential conflicts.

“PROTECT” - Security & Cybersecurity – A security programme aimed at the evolution of means and systems for the protection of people and infrastructure as well as cybersecurity, which is fundamental in a context of increasing information sharing and seeking for new services detached from physical location. Investment is also necessary in architecture design for ATM/CNS systems and deployment of new elements for the sake of cyber protection. It includes four lines of action:

1. Security analysis: implementation of cybersecurity structures and diagnoses of the physical barriers currently protecting goods, data, infrastructure, services and people.
2. Improvement and risk mitigation measures derived from the previous analysis. Launching of SIEM (Security Information and Event Management). Security improvement.
3. Consolidation and greater security culture within the organisation. Certification and collaboration with external entities, both national and international.
4. Maintenance of the certifications. Security culture promotion. Continuous improvement as part of the integrated management system. This initiative expects an increased security and cybersecurity enabling ENAIRE’s digital transformation, as well as the development of future services and products, much more dependent on digitalisation, information sharing, etc.

This initiative expects an increased security and cybersecurity enabling ENAIRE’s digital transformation, as well as the development of future services and products, much more dependent on digitalisation, information sharing, etc. It will ensure lower probability of systems failure and/or consequences of cyber-attacks; protection against cyberattacks; increase of people's trust in digital systems and environments; greater assurance that infrastructure, people, data, and services have greater physical and cyber protection. Cybersecurity may be seen as an enabler for the development of future services and products much more dependent on digitalisation, information sharing, etc. Note that a cyberattack could have as a consequence the interruption of the service, whose consequences are difficult to estimate but, for instance, a control centre out of service by force majeure would cause around 1 million minutes of delay in 24h, which would cost around 100M€/day to users.

Digital Airspace – Digital Airspace is ENAIRE's airspace modernisation programme, aimed to ensure enough capacity during traffic recovery and to pave the way towards Airspace Architecture Study Transition Plan challenges. The programme includes a lot of actions linked to TMA ATC services, airspace structure, free route, and new tools development such as Dynamic ATFM And Flow tools. It also includes actions to improve operations in adverse meteorological conditions. It is organised in 5 plans to increase capacity and resilience, and it is aligned with the already mentioned AAS TP and its Operational Excellence Programme (OEP):

- **Capacity Plan:** Increase of sector capacity, improvement of flow management, reduction of conflict points and bottlenecks and overall improvement of ATS in all phases (en-route, TMA y TWR). It includes the local subprojects: TMA Barcelona (ATENEA-BRAIN); TMA Madrid (AMBAR); TMA Valencia (AMELIA); TMA Málaga (MIDAS); TMA Palma (BRUT).
- **Airspace restructuring Plan:** More extensive use of PBN, which allows both routes and approach procedures optimisation; compliance with Reg, (UE) 2021/116 (CP1) in TMA & AD (LEMD, LEBL, LEPA), (implementation of RNAV/RNP1 y RNP APCH) and compliance with Reg, (UE) 2018/1048 (IR PBN) with progressive implementation of RNP APCH between 2021 – 2024.

The airspace modernisation includes: IFR procedures revision and alignment with Focus Area "Airspace and Capacity" of the AAS and NM's initiatives of the Operational Excellence Programme; progressive decommissioning of VOR/DME/NDB when and where possible; Greater flexibility to satisfy user's needs; and better integration of VFR in the airspace.

- **Free – Route:** Free route implementation, including ATM system modifications, publication, operational changes, training, and sectors reconfiguration in order to adapt volumetry to the new flows. The Plan foresees Nocturn free route (with some structural limitations) by end of 2021; Free Route H24 (with some structural limitations) by mid- 2022, elimination of the structural limitations and adaptation of volumetry/SID/STAR between 2022 – 2024. Cross-border free route will be implemented by 2024- 2025.
- **ATFM 5.0:** Capacity optimisation, flexibility in high demand situations, analysis of regulations through B2B tools seeking improvement, better post-processing and analysis, all of it as part of the Operational Excellence Programme, in particular, Work Streams: WST3 (Application of ATFCM), WST5 (Enhancing Sectors throughput, including occupancies) y WST7 (Interoperability of Network and local support tools). It also supports the "Spanish National Air Navigation Strategy", Development of Dynamic ATFCM and Flow tools, such as IMPACT. Use of what-if techniques and improvement of communication with the NM. Better integration of traffic and meteorological information. Better post-ops analysis. Dynamic model of sector management. Development of a new concept of elementary sector allowing dynamic integration, which will require also new procedures development. New ATFM management models and methodologies based on occupancy and complexity concepts through the use of B2B tools.
- **Adverse meteorology management plan:** New tools, mechanisms, and procedures to make available more accurate meteorological information, aiming at a better decision making and an overall improvement of safety and capacity. The presence of predictors in the control rooms will contribute to better tools design and better-informed decision making. New tools will include geo-references for more accurate displayed info (ICARO MAP).

This programme will impact all the KPAS, although it is designed mainly for capacity, resilience, and flexibility increase. New procedures will also enhance safety through software improvements in the ATFM 5.0 line of action, with reduction of sector overloads and predictability both in pre tactical and tactical phases, Support of this programme to free route will also positively impact environment and will contribute to less costly flights and time of flight reduction. This plan is expected to derive in important capacity improvements, additional capacity, and significant reduction of delays, as well as better resilience due to new reliable tools and adaptability to traffic situations and complexity, and provision of better awareness of adverse met conditions. Capacity optimisation and the introduction of new ATM concepts will also reflect on cost-efficiency in the medium term, ENAIRE foresees to save 5 M minutes of delay which means 500 MEUR of savings for the airlines, and a potential KEA improvement of 0.05 percentual points.

Digital Tech – Digital Tech is ENAIRE's program for the digital transformation of systems, infrastructures, and CNS/ATM and maintenance services. Future technologies will contribute to capacity and better efficiency in many business dimensions, including sustainability. This technical evolution will pave the way for future virtualisation and a dynamic management and configuration. It includes 3 main plans:

- **ATM Digitalisation (SACTA-iTEC):** This includes important investments that already appeared in the old plan as part of the "SACTA evolution" (SACTA-iTEC version 4 & 5), "ATM supporting infrastructure", as well as the Digitalisation of ATM simulation. It includes the development of future 4D trajectory management tools and functionalities, advanced tools for flight management and conflict detection and resolution, stripless operation, etc, in full alignment with AAS TP.

Service oriented technical exploitation and maintenance coping with the RD 373/2017: Optimization of the technical and maintenance resources focusing on developing people's new skills, and deploying supporting technology, for a safer, efficient and digitally oriented service provision:

- CNS/ATM 5.0 Services: human factors integration, better training, new tools (such as ETNA 5.0, which will improve and automatise maintenance management), new catalogue and reposition management, and digital working position.

- **Exploitation 5.0:** centralised management and supervision of CNS/ATM systems, improving availability and continuity and reducing human error.
 - Logistic XXI: digitalization of reposition management.
 - ePALESTRA - Digital exploitation of ATM data (predictive intelligence). Use of new big data technologies.

- **CNS evolution Plan (including digitalisation and satellite technologies):** This plan includes previous (2019 draft performance plan) new major investments related to communications, navigation and surveillance, in particular, previous investment lines named "air/ground communications", "ground/ground communications", "REDAN (air navigation data network)", "satellite navigation", "navaids", "primary radars", "secondary radars" and "ADS-B". Note that an important of "voice communications system (VCS)" has been moved to ADSP project. This initiative mainly includes:
 - Introduction of EGNOS v3, and deployment of Interference Detection systems and performance GNSS analysis network.
 - Rationalization of NAVAIDS and design of Minimal Operational Network as back-up of the Satellite Navigation.
 - Renovation of the PSR network using 3D Primary Radars.
 - Conclusion of the mode S implementation.
 - Provision of surveillance services using ADS-B Data.
 - Evolution of Communications: technological evolution and operational adaptation of communications.
 - Evolution of data link ground/air stations.
 - New operational requirements for air navigation data network (REDAN).
 - Adaptation of Aeronautical Messaging (CRAMI) to the SWIM concept.
 - Adaptation and renewal of Voice Communications Systems and ground / air coverage due to operational and technological needs.
 - Implementation and evolution of a centralized meteorological information system.
 - Adaptation and renovation of transmission systems (fibre optics systems and radio links).

This programme supports the evolution of most of the services through technological modernisation and digital transformation, therefore representing the underlying enablers for all the other projects. It needs to be seen as an enabler to materialise all the expected safety, capacity and environment benefits claimed by operational solutions, which are dependent on the ATM automated systems and the accurate and timely availability of CNS information. Quantitative benefits materialise at the end of the supported project. Technology upgrades and modernisation will contribute by themselves to cost-efficiency in the medium-long term through more resilient infrastructures, optimised and easier and cheaper to maintain. A thorough list of the benefits this programme is contributing to may be consulted in the investment section of the official template.

Digital Network: This initiative is one of the main digital transformation and innovation projects at national network level. The initiative includes previous new major investment identified as "SYSRED (National network data integration)", which includes hosting the monitoring and analysis (EYWA) system in an integrated H24 supervision room. It is now complemented by a resilience plan:

- **EYWA Plan:** Integrated room for centralised supervision of services and network H24. This system will allow monitoring of the status and evolution of the quality of the Air Navigation system provided by ENAIRE through automated and systematic analysis of data and other real time information, as well as time series comparison with previous stored data. Digitalization of service performance supervision in real time, and performance analysis in post-tactical phase. Availability of integrated status information for crisis situations.

EYWA will permit to provide status and performance information to external users.

- **Resilience Plan:** Data analysis will support better decision-making processes, not only in real time, but also at strategic level with new procedures and infrastructure supported by new technologies allowing more robust service provision, mitigating the impact of potential failures. This plan includes:
 - Communications resilience: contingency measures in case of potential failures of the data network (REDAN) through some implementations in SACTA and the support infrastructure.
 - Operational resilience: reinforcing functionalities and providing additional communications systems to CATS rooms.
 - Airspace resilience (ALADÍN): visual tool supporting the evaluation of CNS systems unavailability.

The system will contribute to safety by improving knowledge, visualisation, and communication of technical incidents, which will ultimately, reduce the probability of systems unavailability. Services will be more reliable and resilient, QoS of Air navigation services will also be improved through direct observation and visualisation of relevant indicators of real time activity. Improvement of the Spanish network management will contribute to resilience and improved decision-making processes. ATS services improvement, innovation and better management will derive in better productivity and cost savings. Process efficiency will be improved. Several investments in Infrastructures and procedures across ATM/CNS systems aim to offer robust resilience to failures and service provision recovery and continuity mitigating the impact of potential unavailability. For instance, a control centre falling out of service by force majeure would cause around 1 M minutes of delay in 24h, which would cost around 100 MEUR/day to users.

Digital AIM: Digital AIM is ENAIRE's programme for the digitalisation of aeronautical information and migration to AIM concept. It will improve digitalisation and integration of data, ensuring quality and accessibility, improving the scope of AIS/AIM. This initiative includes previous new major investment known as "ICARO", together with other two additional plans:

- **Digital AIP:** It will improve information management processes and the interface between data providers and the users, also improving coordination, knowledge, and access to AIP information.
- **INSIGNIA 5.0:** This is an online tool to visualise aeronautical charts and information on tailored maps, which continues evolving to integrate data and functionalities.
- **ICARO:**
 - Digital ICARO: evolution of the current tools, extending functionalities and adapting to new requirements aligned with ATC needs and the FIS services (PLANEA).
 - ICARO SWIM: deployment of a geographic information system in order to process and provide georeferenced information to other systems and implementation of ASM FUA functions through an interface between LARA-ICARO-SACTA ATS system.

An improved aeronautical information system with better available information derives in increased safety and favours data interoperability and integration with new future applications from which better scalability resilience and cost-effectiveness are also expected. Concrete expected improvements include: Flight Plan presentation from mobile terminals (as required by airspace users in the corresponding forums); improvement in the management of restricted areas, according FUA concept; improvements in the Flight Information Service (FIS); Digital NOTAM; implementation of RCR regulation; georeferenced AIS/MET information to users. The provision of B2B services to users and clients impulses ENAIRE as a digital company and evolves towards a collaborative approach to users thanks to web services access.

Civil/Military Coordination: This initiative aims to foster the implementation of FUA in the context of a national framework of coordination between civil and military authorities. There are two main lines of action:

- **Strategic:** Improvement of coordination mechanisms promoting civil-military coordination both at national and European level, fostering FUA coordination and helping to a smooth transition to free route operations.

- Civil-military coordination improvement at all levels (strategic, pre-tactical and tactical). Processes improvement, ASM1, ASM2, ASM 3. Improved synchronisation ASM/ATFM, AirSpace Management Cell (AMC) and use of the LARA/Prismil tool.

This Plan is also aligned with the Operational Excellence Programme (OEP), Eurocontrol and expects positive impact in safety, capacity and en-route flight efficiency and environment indicators. It expects improvement in civil-military coordination procedures, better and more flexible airspace that will allow to respond better to all users' needs and improved QoS perceived by our customers.

This investment also contains a regularization action regarding properties previously owned by the military authorities but hosting CNS infrastructures, which, in compliance with Regulation EU 2017/373 ATS.OR.100 will, from now on, be owned by ENAIRE.

Eco ENAIRE - Green Sky - This is an initiative related to environment, promoting the use of renewable energy solutions and better management of residues in order to reduce ENAIRE's carbon footprint and contribute to environmental sustainability in a wide scope. This project imports the previous new major investment relative to "Environmental sustainability" and it also includes:

- Monitoring, controlling, and reducing energy consumption, with positive impact on billing.
- Deployment of systems to exploit alternative energy sources (photovoltaic panels) or more energetically efficient solutions (LED lighting, fostering the use of electric cars...).
- Reducing paper consumption and managing residues.
- Promoting a sustainable culture among employees.

The initiative will be of high positive environmental impact, though unrelated to KEA, Indirect CO2 reductions through the use of alternative energy sources are estimated around 13%. Long-term benefits for the use of renewable energies. Reductions in electricity billing. Costs reductions in 2021-2025 are estimated around 1,170,000 €.

Note that environmental sustainability is a must in current society. This project shows that ENAIRE is committed to preserve the environment beyond the KPI retained in current performance regulation. Note as well that this sustainability initiative goes beyond environment and represents also cost savings in the longer term, as indicated above.

Technical communications evolution (& basis for future concepts such as ADSP) - Development of new technology solution allowing evolution of communication infrastructure and systems, which, furthermore, will ease the implementation of new future concepts, such as ATM Data Services, based on the concept of digital evolution of current ATM system. This project, as part of ENAIRE's strategic plan, is linked to future concepts aligned with EC's SES2+ proposals, as also anticipated by the Airspace Architecture Study.

This investment project includes part of the old New&Major project "Voice Communications Systems infrastructure", which has been moved to this grouping as part of the technologic environment for ADSP, as supporting infrastructure.

Within this project, ENAIRE has included enablers that are key to current service provision, such as voice communications systems migration and cloud architecture. VCS' upgrades related to clouding are of particular interest for information sharing concepts that are also linked to ADSP future concepts, although in a non-exclusive basis (i.e that these features provide advantages in the exploitation of the information, regardless ADSPs, although for the ADSP concept they would be necessary, which is why in our strategic plan they are in the same project). Even before the implementation of the first ADSP in Europe, this technology is part of the natural evolution of the system. Airlines will benefit from more information available and accessible more quickly than today. The non- implementation of this upgrade will mean in the long-term higher and less efficient costs due to obsolete and more difficult to maintain information technologies

Benefits are expected through better response times and system availability deriving in better resilience against system failure, therefore improving safety and capacity. Improved cybersecurity is also expected. It allows scalability, flexibility, airspace reconfiguration and delegation, improved sectorization and

infrastructure rationalisation. All of them may derive in potential cost savings in services provision. Better synergies in services provision will also increase productivity, New VCS will save approximately 20% in maintenance costs in the long term. Approximately 3 MEUR/yr of savings associated to the upgrade of analogical lines to IP-based, VoIP VCS system COMETA will also improve quality of voice communications with users and resilience to failures and represents an enabler for Dynamic airspace configuration as basic requirement for ADSP and efficient operations.

CRIDA as engine on ENAIRE's innovation - Innovation is key for evolving the ENAIRE ATM system to achieve the SES goals. Apart from deployment of new solutions, the involvement in SESAR JU activities and promoting internal R&D is a must to promote and validate new concepts leading to the improvement of the provided services. CRIDA (the REFERENCE CENTER FOR RESEARCH, DEVELOPMENT AND INNOVATION IN ATM A,I,E) is the centre supporting the innovation activities in ENAIRE, Apart from accompanying ENAIRE into the SESAR programme activities, plays a relevant role into the Execution of ENAIRE's innovation programme for ATM improvement. Its activities are mainly focusing on:

- Identifying ENAIRE needs for new R&D activity areas.
- Set up of an Innovation observatory.
- Development of R+D projects for further CNS/ATM improvement.
- Support to new functionalities implementation through the evolution of the performance monitoring tools.

Apart from the above, CRIDA works for integrating the Open Innovation into the ENAIRE innovation processes. The programme will be deployment driven, prioritising SESAR derived solutions and their eventual customization to local environments when and where required.

ENAIRE's Digital Transformation - Digital transformation of the organisation, processes and mindset. It is part of the Strategic Plans included in the "Flight Plan 2025" addressing the Organizational Transformation through several initiatives. In particular, the one covered by this investment project of Digital Transformation **will enable increasing productivity and efficiency in services and processes, smart management of knowledge and information for making decisions, will facilitate ENAIRE's administrative procedures and service provision, and will enhance the satisfaction of users and staff because new technologies are being used. The following commitments of ENAIRE should be highlighted:**

- Optimisation, automatization, and digitalisation of key processes.
- Development of a data strategy and introduction of big data operational and corporate. Interconnection of all tools for managing data efficiently
- Digitalization of systems and applications. New tools to augment the efficiency of our resources. real-time interfaces for sharing information with other actors and clients of Air Navigation services.

Although a significant part of the investment is not ATM-related, there are some applications related to ATCO rostering and electronic briefings.

Benefits are expected in terms of better productivity and reduction of cost due to new technologies, efficiency in both services and process. Management of the knowledge and information in the decisions facilitates and reduces the time for administrative processes for users and employees.

6.2.2.5 Planned lifecycles

Note that, due to the nature of the defined investment projects, which, as can be seen in the previous section, may include several assets of different nature, in the official template ranges regarding lifecycles have been provided. The approach followed to define such ranges has been to indicate the minimum and maximum of

the involved lifecycles. Standard lifecycles are used by ENAIRE for planning purposes, according to the table shown below..

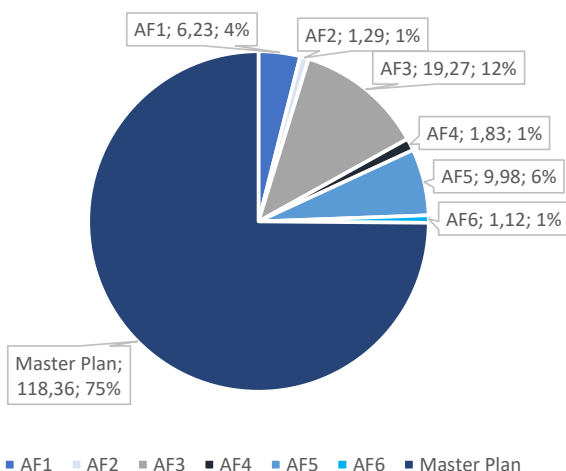
STANDARD ESTIMATION OF LIFECYCLE PER TYPE OF ASSET FOR PLANNING PURPOSES	LIFECYCLE
SOFTWARE (STANDARD LICENSES / CUSTOMISED DEVELOPMENT / SW SIRA/SCADA/ORION/WONDERWARE)	4
SOFTWARE (AIR NAVIGATION APPLICATIONS EXCEPT SACTA / ICARO / COMETA)	6
SOFTWARE (AIR NAVIGATION APPLICATIONS SACTA / ICARO / COMETA)	8
INDUSTRIAL AND INTELLECTUAL PROPERTY	4
DEVELOPMENT	4
ESPECIAL PLANS	8
FLIGHT PROCEDURES	5
TERRAINS	N/A
BUILDINGS (AND THEIR NECESSARY ASSOCIATED CONTRACTORS)	35
URBAN DEVELOPMENT (AND THEIR NECESSARY ASSOCIATED CONTRACTORS)	20
RADARS (PSR, SSR & MLAT)	18
NAVAIDS (VOR, DVOR, DME, NDB)	18
SATELLITE NAVIGATION: GBAS, RECNET, RIMS	5
ADS SYSTEM	8
SACTA/ICARO/COMETA (HW):SERVERS, COMPUTERS,WORKSTATIONS,MONITORS...	7
COMMUNICATION SYSTEMS SCV,SCO,REDAN,TIERRA /AIR(TX/RX)	12
COMMUNICATION SYSTEMS: OPTICAL FIBER AND G/G SYSTEMS	8
SIMULATION SYSTEMS (REAL TIME SIM. AND ACCELERATED SIM:)	5
TOOLS AND MEASUREMENT INSTRUMENTS	5
ELECTRICAL INFRASTRUCTURE	18
ELECTRICAL SYSTEMS (BATTERIES ETC:)	6
CLIMATISATION AND OTHER SUPPLIES INFRASTRUCTURE (WATER, FUEL, TELEPHONY, FIRE PROTECTION, ETC)	15
SECURITY SYSTEMS (ACCESS CONTROL, ELEVATORS, MECHANICAL STAIRS, ETC)	12
MAINTENANCE AND INDUSTRIAL MACHINERY	12
SECURITY INSPECTION EQUIPMENT	10
FURNITURE AND OFFICE EQUIPMENT	12
TRANSPORT (SHUTTLES, VEHICLES, ETC)	6
IT SERVERS	6
IT (COMPUTERS AND SW SIRA)	5
IT (NETWORKS AND PERIFERIC DEVICES)	7
CONTAINERS AND PALLETS	5

As an illustrative example, if a project includes, IT servers, standard software, communications equipment and works to be done in a building, a range (4 – 35 years) will appear.

6.2.2.6 Common Projects Investments

The following data traces back all the RP3 “New&Major” and “Other new” investments to CP ATM Functionalities (“Existing” costs are excluded from this classification). Therefore, comparisons are made against total costs resulting from the addition of “New&Major” and “Other new investments”.

Note that the classification of the projects against CP1 is under revision after publication of the new Regulation 2021/116. The information displayed below might be updated in the final version of the plan.



158 MEUR of the total costs reflected in RP3 (67%) have been associated to contribute directly to the European Master Plan projects and the Common Projects. The rest is associated with other investment necessary for the activity (buildings and other non-ATM infrastructure maintenance, furniture, other equipment, and materials, etc).

This distribution may change during the RP3 due to the update of Common Projects (either in timing and/or in content).

CP PLANNED INVESTMENT COSTS (ONLY New & New&Major)

MEUR	RP3 Total	2020	2021	2022	2023	2024
AF1	6.23	0.12	0.59	1.44	2.62	1.47
AF2	1.29	0.06	0.26	0.39	0.51	0.06
AF3	19.27	2.10	2.82	5.25	7.85	1.24
AF4	1.83	0.04	0.20	0.27	0.52	0.78
AF5	9.98	0.27	0.66	1.58	2.76	4.71
AF6	1.12	0.02	0.03	0.12	0.27	0.69
CP Total	39.72	2.62	4.56	9.05	14.53	8.96
Master Plan	118.36	6.03	10.97	20.08	30.24	51.05
Neither CP nor MP	78.91	4.36	8.88	15.29	22.86	27.53
TOTAL	236.99	13.00	24.40	44.42	67.63	87.54

6.2.3 COST OF CAPITAL AND FUNDING

The estimate of the average rate used to determine the cost of capital is calculated by ENAIRE through the weighted average cost of capital (WACC) and the Capital Asset Pricing Model (CAPM). The capital cost base is estimated taking into account the average asset base of the capital employed.

As indicated in the *Article 22.4.d of the COMMISSION IMPLEMENTING REGULATION (EU) 2019/317*, the cost of capital shall be equal to the product of the following elements:

$$\mathbf{CoC} = \mathbf{Total\ asset\ base} \cdot \mathbf{WACC}$$

Total asset base:

$$\mathbf{Total\ asset\ base} = (\mathbf{Net\ book\ value} + \mathbf{Adjustments\ total\ assets} + \mathbf{Net\ current\ assets})$$

Regarding total asset base, next table shows the values established for the different years of the reference period differed by charging zones:

LE	2020	2021	2022	2023	2024
<i>Net book value - T1 3.1</i>	454,670	483,939	535,811	581,629	609,994
<i>Adjustments total assets (*) - T1 3.2</i>	-	-	-	-	-
<i>Net current assets - T1 3.3</i>	2,468	-35,935	-60,586	-51,863	-39,317

GC	2020	2021	2022	2023	2024
<i>Net book value - T1 3.1</i>	58,090	62,669	74,703	85,721	92,964
<i>Adjustments total assets (*) - T1 3.2</i>	-	-	-	-	-
<i>Net current assets - T1 3.3</i>	315	-4,653	-8,447	-7,644	-5,992

TNC	2020	2021	2022	2023	2024
<i>Net book value - T1 3.1</i>	36,202	40,221	44,544	48,077	50,745
<i>Adjustments total assets (*) - T1 3.2</i>	-	-	-	-	-
<i>Net current assets - T1 3.3</i>	196	-2,987	-5,037	-4,287	-3,271

(*) No possible adjustments to total assets has been determined by the national supervisory authority either used by the air navigation service provider

WACC:

$$\mathbf{WACC} = \mathbf{RoE} \cdot \frac{\mathbf{E}}{\mathbf{D} + \mathbf{E}} + \mathbf{Kd} \cdot \frac{\mathbf{D}}{\mathbf{D} + \mathbf{E}}$$

Where:

RoE = The return on equity shall be that provided in the performance plan for the reference period and shall be based on the financial risk incurred by the air navigation service provider.

Kd = The interest rate on debts shall be equal to the weighted average interest rate on debts of the air navigation service provider.

$$\mathbf{RoE} = \mathbf{Rf} + \mathbf{Pm} * \mathbf{\beta e}$$

Rf = Risk free rate
 Pm= Market risk premium
 Be = equity beta

$$\beta e = \beta a * \left[1 + (1 - t) \cdot \frac{D}{E} \right]$$

βa = Asset beta
 t = Corporate tax rate

Current WACC for ENAIRE is lower through all the period compared to Draft RP3 Performance Plan elaborated in 2019, lower than -25% in the latest years of the period:

CURRENT WACC COMPARED TO DRAFT RP3 PLAN (2019)

	2020A	2021D	2022D	2023D	2024D
WACC % (pre-tax) - Draft Plan (2019)	5.70%	5.74%	5.79%	5.87%	5.93%
NEW - WACC % (pre tax)	5.05%	4.93%	4.67%	4.34%	4.25%
% NEW / draft Plan (2019)	-11.5%	-14.1%	-19.4%	-26.0%	-28.3%

The forecast includes an estimation of external funding that will depend on the real traffic evolution.

Comments related to the main parameters applied for cost of capital determination:

Risk free rate: 2.3%

ENAIRE follows the regulations and latest recommendations of the National Commission for Markets and Competition (CNMC), the economic supervisor of the majority of regulated sectors.

The CNMC considers as risk free rate the average of the ten-year bond in the previous five years adjusted upwards (1%) to correct the effect of the debt purchase mechanism carried out by the European Central Bank on sovereign debt (adjustment by application of the so-called Quantitative Easing).

The National Commission for Markets and Competition (CNMC), in several documents (November 2019 concerning energy sector and December 2020 updating the Methodology of WACC calculation for the telecommunications operators), considers the application of an adjustment to the risk free rate, called adjustment due to Quantitative Easing (QE). The justification is that the rate of the ten-year Spanish bond is below its real value, affected by the QE program of purchase of public debt.

Then, the risk-free rate value of 1.3%, considered by the CNMC in its document related to telecommunications, is adjusted with a 1% more due to QE.

In addition, the value of 1.30% mentioned, resulting from the average of the bond to ten years in the previous five years, coincides with the average value for Spain collected by Professor Pablo Fernández (IESE) for the year 2020. Therefore, with the application of the QE, which the CNMC recommends and has applied in its latest WACC estimates for both telecommunications and other regulated sectors, would be in the same value.

Market risk premium: 5.31%

The above-mentioned CNMC document of December 2020 considers a market risk premium of 5.31%, as the result of applying the selected methodology to that effect.

Just to indicate some other possible references, the value resulting from the survey conducted by Professor Pablo Fernández, with a median value collected of 6.4%, also, while the historical data of DMS (Dimson, Marsh and Staunton) is around 3.6%, another world benchmark can be mentioned such as DAMODARAN (Stern School of Business), that presents a value of 6.27% for Spain, which would lead to an average of around 5.4%, fully in line with the estimate by the CNMC and with the figure used by ENAIRE in the draft Plan RP3 (5.00%).

Asset beta or Risk of Business: 0.4

It has to be pointed out that there is no specific documentation available related to the asset beta for the air navigation service provision sector.

Just to mention a first reference, the specific parameter of the deleveraging asset beta for telecommunications operators proposed by the CNMC, in the above-mentioned document, is 0.53.

Although elaborated in 2014 it can be mentioned that, according to the final report elaborated by Steer Davies Gleave for the European Commission on the "*Cost of Capital Study, Cost of Equity and Pension Cost of Air Navigation Service Providers*": "*Based on the comparison of ANSPs with entities from other regulated industries, we conclude that the underlying risk of the ANSP (after abstraction from financial risk due to leverage) can be represented with a assets beta in the range of 0.3 to 0.5*".

Taking into account that in the last draft of RP3 Performance Plan elaborated in 2019 ENAIRE considered a value of 0.50, close to that of other regulated sectors and to that indicated by the CNMC, it should also be accepted that the current economic scenario presents a greater economic risk than that existing in 2019:

- global economic slowdown,
- uncertainty about the pace and extent of recovery in the aviation sector, as well as
- the scenario for the liberalisation of air navigation services.

Considering the above information, in particular that there is no other beta-related information that could be considered appropriate for air navigation service providers and no proposal at European level on this, ENAIRE considers that it would be perfectly appropriate to maintain the same value of 0.50 for this parameter, considered in the draft Performance Plan.

However, given the current exceptional crisis circumstances at the time of the revision of the new Performance Plan, and in order to reduce the cost to be transferred to the charges system, ENAIRE considered a reduction of the asset beta parameter to 0.40.

With these parameters, the current tax rate of 25% and leverage between 27% and 56% estimated for RP3, the estimated cost of equity before tax would be around 6.67% to 8.65% for years 2020-2024, summarised as follows:

ENAIRES	RP3 PP				
Assumptions for the Cost of Capital (WACC) in nominal terms	For the determined cost of capital				
	2020 A	2021 D	2022 D	2023 D	2024 D
Share of financing through equity % - T1 – 3.8	73.35%	71.85%	61.20%	47.77%	43.58%
Corporate tax rate %	25.0%	25.0%	25.0%	25.0%	25.0%
Risk free rate %	2.3%	2.3%	2.3%	2.3%	2.3%
Market risk premium %	5.31%	5.31%	5.31%	5.31%	5.31%
Asset beta	0.40	0.40	0.40	0.40	0.40
Equity beta	0.51	0.52	0.59	0.73	0.79
Return on Equity % (after tax)	5.00%	5.05%	5.43%	6.17%	6.49%
Return on Equity % (pre tax) - T1 – 3.6	6.67%	6.73%	7.25%	8.22%	8.65%
Average interest on debts - T1 – 3.7	0.58%	0.32%	0.60%	0.80%	0.86%
WACC % (pre tax) - T1 – 3.5	5.05%	4.93%	4.67%	4.34%	4.25%

Comparing with the support table prepared by the PRB, the WACC data of ENAIRES seem very reasonable and in line with that support information, considering the whole period and the average value for the period.

It has to be taken into account that ENAIRES is a company with autonomous economic management and financed by its own means, without public resources or inclusion in the State budget.

6.3 COSTS FROM OTHER ENTITIES

Determined costs and unit costs from the other entities contributing to the cost base for en-route and terminal charges can be seen in the following tables:

Cost-Efficiency Targets			2020	2021	2020/2021	2022	2023	2024	
Cost efficiency KPI #1: En-route Spain - Continental	ANSP EA	Determined costs (EUR 2017)	22,364	23,467	45,831	24,775	25,550	26,406	
		DUC (EUR 2017)	5.04	3.68	4.24	2.21	2.20	2.13	
	AEMET	Determined costs (EUR 2017)	27,508	27,896	55,404	28,575	29,031	29,308	
		DUC (EUR 2017)	6.20	4.38	5.13	2.55	2.49	2.36	
	AESA	Determined costs (EUR 2017)	4,930	4,469	9,399	4,329	4,117	3,808	
		DUC (EUR 2017)	1.11	0.70	0.87	0.39	0.35	0.31	
	NSA EA	Determined costs (EUR 2017)	1,190	1,088	2,278	1,106	1,124	1,143	
		DUC (EUR 2017)	0.27	0.17	0.21	0.10	0.10	0.09	
	ANSMET	Determined costs (EUR 2017)	187	252	439	269	272	274	
		DUC (EUR 2017)	0.04	0.04	0.04	0.02	0.02	0.02	
	ECTL	Determined costs (EUR 2017)	30,866	33,568	64,434	34,630	34,986	35,174	
		DUC (EUR 2017)	6.96	5.27	5.96	3.09	3.01	2.83	
	Cost efficiency KPI #2: En-route Spain - Canarias	ANSP EA	Determined costs (EUR 2017)	10,506	10,704	21,210	11,232	11,447	11,694
			DUC (EUR 2017)	13.08	11.27	12.10	7.94	7.11	6.59
AEMET		Determined costs (EUR 2017)	5,714	5,795	11,509	5,936	6,028	6,085	
		DUC (EUR 2017)	7.12	6.10	6.57	4.20	3.74	3.43	
AESA		Determined costs (EUR 2017)	1,087	884	1,971	751	690	626	
		DUC (EUR 2017)	1.35	0.93	1.12	0.53	0.43	0.35	
NSA EA		Determined costs (EUR 2017)	120	121	241	123	125	127	
		DUC (EUR 2017)	0.15	0.13	0.14	0.09	0.08	0.07	
ANSMET		Determined costs (EUR 2017)	33	45	78	48	48	48	
		DUC (EUR 2017)	0.04	0.05	0.04	0.03	0.03	0.03	
ECTL		Determined costs (EUR 2017)	6,806	6,638	13,444	6,005	5,861	5,782	
		DUC (EUR 2017)	8.48	6.99	7.67	4.25	3.64	3.26	
Cost efficiency KPI #3: Terminal Spain		AEMET	Determined costs (EUR 2017)	2,599	2,651	5,249	2,736	2,848	2,940
			DUC (EUR 2017)	7.43	5.33	6.20	3.25	3.23	3.18
	AESA	Determined costs (EUR 2017)	961	982	1,943	1,226	1,475	1,713	
		DUC (EUR 2017)	2.75	1.98	2.29	1.46	1.68	1.85	
	ANSMET	Determined costs (EUR 2017)	12	17	29	18	18	18	
		DUC (EUR 2017)	0.03	0.03	0.03	0.02	0.02	0.02	

6.4 CHARGING POLICY

Regulation (EU) 2020/1627 in its article 5 states that:

3. In respect of calendar years 2020 and 2021, reductions or increases of unit rates under Article 28(4) to (6) of Implementing Regulation (EU) 2019/317 shall be calculated on the basis of the relevant total determined costs and the relevant total actual costs for those 2 years. Those 2 years shall be referred to as a single period and replace the calendar year period referred to in those provisions. Without prejudice to the last sentence of the second subparagraph of Article 29(5) of Implementing Regulation (EU) 2019/317, the reductions or increases of unit rates to be applied in year n+2 shall be made in calendar year 2023.

4. In respect of RP3, adjustments shall in accordance with the second subparagraph of Article 29(5) of Implementing Regulation (EU) 2019/317 be calculated on the basis of the draft performance plans as relevant for the setting of unit rates under Article 17(1) of Implementing Regulation (EU) 2019/317.

By way of derogation from Article 29(5) of Implementing Regulation (EU) 2019/317, those adjustments shall be spread equally over 5 calendar years, starting in the year following the year in which the performance plan has been adopted.

5. The national supervisory authority may decide to extend the time period referred to in paragraph 4 to a maximum of 7 calendar years, where this is necessary in order to avoid a disproportionate effect of the carry-overs on the unit rates charged to airspace users.

Spain, in its commitment of preventing disproportionate effects in unit rates charged to airspace users in coming years, will spread the adjustments referred to in article 5(3) in 7 years as article 5(5) states.

In this sense, during the period for written comments after the consultation of the Performance Plan held on 30 July 2021, two stakeholders asked to assess the option showed by other States during their consultations on distributing adjustments equally over seven years based on the forecast service unit. This interpretation means an equal amount per forecasted service unit starting from 2023 until 2029.

This interpretation was rejected by the PRB during the NCP meeting held on 9 September 2021 and clarified that “Article 5(4) of Implementing Regulation 2020/1627 refers to ‘adjustments’ which in our understanding are absolute amounts of money. This amount needs to be spread ‘equally’, i.e. the same amount of money each and every year of the 5-7 year period. To us this means that a formula setting the amount of money to be spread according to expected traffic distribution within the period is not covered by the rules.”

In the case that the PRB approach eventually changes in the moment to apply the adjustments and the alternative interpretation of article 5(4) and (5) is finally accepted, Spain would be interested in its application on the understanding that it will bring benefits to the recovery of airspace users, as intended in art. 5 of Regulation (EU) 2020/1627.

7. INTERDEPENDENCIES AND TRADE-OFFS

This section describes the interdependencies and trade-offs between the various KPAs, including the assumptions used to assess trade-offs. It also includes an evaluation of the impact on safety of the performance plan with any mitigation required to maintain safety assurance.

7.1 INTERDEPENDENCIES BETWEEN SAFETY AND OTHER KPAS

Every change in the functional system is assessed from the safety point of view in the context of the safety management system processes. If the assessment identifies any potential safety implication, in order to avoid them, appropriate mitigation measures are always established, before putting in place the proposed change. Maintaining the levels of safety is the main issue when trying to reach targets in any KPA.

Safety assurance is brought by the Safety Management System implemented in the certified ANSPs ENAIRE and FerroNATS and through the oversight activity of the NSA AESA, under the umbrella of the EASA Regulations.

ENAIRE makes use a range of indicators to assess safety levels, which contribute to ensure targets on the rest of KPAs do not degrade safety, in particular:

- NPS indicator (Weighted safety level for incidents), severe occurrences weighted with traffic, Scope: All types of operational occurrences (not only separation minima violations and runway incursions as established by Regulation, severities A and B are included). Global aggregation level (all the ENAIRE services provision)
- Specific Safety monitoring indicators related to units/sectors, to certain types of incidents and to implemented changes, in order to check if Safety performance after the change is according to expected.

ENAIRE's management staff continuously monitors the relevant key performance indicators in order to both try to reach the operational targets and, above all, ensure that safety is always preserved.

Safety is prioritised. For that reason, the implementation of new initiatives towards meeting the targets, require risk mitigation measures. This includes training that requires operational staff to be available, However, the workforce is dimensioned for a determined capacity, in situations of high demand it is necessary to use all the resources for the operation. For this reason, implementations that require significant training are normally removed from high season.

FerroNATS, as the other air navigation service provider within the performance scheme is in line with prioritization of safety over any other criteria and allocate all required resources to achieve this goal. The organisation integrates safety fully into overall objectives.

7.2 INTERDEPENDENCIES BETWEEN CAPACITY AND ENVIRONMENT

One of the major elements in the analysis of interdependencies between environment / flight efficiency with other areas, in particular capacity, is related to re-routings. Re-routings are used to take advantage of available capacity that can happen at the expense of horizontal flight efficiency, Inversely, prioritization of the shortest routes may congest some sectors.

In the current scenario of reduced traffic due to the COVID-19 pandemic, there is eventually a lesser need for re-routings to help capacity, However, it is worth noting than during year 2019 ENAIRE actively collaborated in the context of the measures proposed by the NM to alleviate the capacity constraints in central Europe, significantly contributing to the network improvement. Should a need to balance capacity at

network level repeats in the short term, deriving in a redistribution of traffic flows that impacts the Spanish airspace, analysis on whether measures could locally affect the KEA indicator would be needed.

In a more general way, the following elements also stand out in the analysis:

- Re-routings affecting flows within a sector may vary complexity, either because the apparition/disappearance of interactions or because interactions, occur in a more inconvenient area.
- Re-routings affecting several sectors may affect saturation since the flow may discharge some sectors while collapsing others or vice versa, also resulting in potential reorganisation of the airspace through creation of new sectors or elimination of some current ones.
- The previous points may also affect the traffic flows at ACC level.

7.3 INTERDEPENDENCIES BETWEEN COST-EFFICIENCY AND CAPACITY

This section has been reviewed in the light of the new scenario. The revised RP3 Performance Plan has been elaborated in a very different situation than the initial one.

When RP3 performance plans were first presented in 2019, capacity shortage was the main concern in Europe. Improving capacity in order to reduce ATFM delays was the main challenge for Spain during RP3, taking also into account that the high traffic levels experienced during RP2 (with nearly 30% deviations from the assumptions made in the performance plan) which was still expected to affect RP3 results, especially during the first part of the period.

In that scenario, the main challenge was to hire enough ATCOs to offer the required services and capacity, assuming the necessary costs, Spain's performance plan presented in 2019 was already considered a balanced approach, in which cost increases allowed improvements in both key performance areas. Preliminary evaluations of the Spain Performance Plan were quite positive in March 2020. Although formal approval of the plans was suspended due to the COVID-19 outbreak, Spain cost efficiency targets were judged as consistent with EU targets.

COVID-19 has temporarily reduced the need of additional capacity. Traffic levels in 2020 have turned back to before 1990's levels, but there is a lot of uncertainty on how long this setback is going to last. Should the sector recovery happen soon enough, the capacity shortage situation would be reproduced, especially if all the initially planned actions get suspended.

For this reason, ENAIRE, in line with other European ANSPs, advocates for adequate consideration of future capacity needs, and the opportunity to prepare and adequately invest during the recovery time, so that RP3 becomes an opportunity for a smooth transition towards a RP4 with normal traffic levels and strengthened perspectives of growth. This vision is without prejudice of adequate prudence and moderation during the critical years 2020 and 2021.

This is why in this revised plan, ENAIRE, conscious of the new situation has reconsidered priorities. In the revised plan, capacity is not the immediate objective, due to the traffic drop, but still we should use the period and take advantage of the time borrowed as a consequence of the COVID-19 pandemic, to work for the capacity that will be necessary in the next years.

The revised strategy for the reference period is balanced around different goals:

- Cost control during the period.

ENAIRES, seriously affected by the worst crisis known to the aviation sector, reviewed its plans in the light of both temporary and structural measures, allowing to face the current situation and to contain, as much as possible, the expected economic loss resulting from the pandemic.

Regarding staff, specially ATCOS, the values for total ENAIRES staff costs reflects the significant measures of reduction adopted in years 2020 and 2021 and a very moderate evolution for the rest of the period, presenting figures, for the latest years of the period, still below 2019 actual cost.

The main measures for the period have been a delay in the hiring plan, the number of ATCOS in “Active reserve” increased, reductions in variable salary complements, containment in salary increases, reduction in the number of extra hours when possible, as well as adjustment and prioritisation of training courses.

However, ENAIRES still needs to recruit new controllers, in order to have the necessary staff to cope with the foreseen evolution in air traffic in optimal conditions of safety and efficiency. This will also serve to rejuvenate the staff, since ENAIRES’s ATCOS have a quite high average age and with an unbalanced population pyramid.

A moderate hiring plan of ATCOS is foreseen from year 2021, considering the long training periods required by the controllers in order to be able to provide effective service in the ENAIRES Towers and Control Centers. Approximately 2 years elapse from the publication of a call for controller positions until the selected person starts working in an ENAIRES operational unit.

It has to be pointed out that, considering the foreseen increase of control staff in Active Reserve (RA) as well as the reviewed salary for new recruitments, the associated expenses are estimated to show a reduction by -7% and -8% in 2020 and 2021, compared to 2019, and present a moderate evolution, always below 2019 actual, in the remaining years.

- Management of a necessary Investment Plan in order to prepare a recovery future.

Technology evolution is also one of the pillars to balance the cost-efficiency versus capacity trade-off. As explained in the sections corresponding to both capacity plans and investments ENAIRES wages for a counter-cyclic investment plan, which ensures the lower traffic period is used to pave the way towards RP4. The right investments will also allow more sustainable capacity solutions for the future.

The proposed investment plan will also make the best possible use of the funding made available through European mechanisms. It is expected to receive more than 150 MEUR, which will reflect in reductions of the cost base and unit rates.

In conclusion, we think that, in a scenario of low traffic, our challenges for the new Plan are the cost control and to invest in the right way to be prepared for the traffic recovery, to be cost-efficient and to take advantage for the future, for facing the next capacity targets. In this sense, ENAIRES’S Plan shows a fair balance between cost-efficiency and capacity, a cautious cost evolution with figures in real terms below 2019 actual and an Investment Plan as a way to modernization and technology for the capacity of the next future.

8. RISK SHARING AND REVISION MECHANISM

8.1 INTRODUCTION

This section includes the reference to the charging parameters that shall apply in RP3.

8.2 TRAFFIC RISK

With regard to the traffic risk sharing mechanism defined in Article 27 of the Regulation (EU) 2019/317, the standard sharing keys shall be the ones applicable for both en-route and terminal charging. That is, AESA has decided not to adapt the parameter of the traffic risk sharing mechanism laid out in paragraphs from 2 to 4 of Article 27.

8.3 COST RISK

According to Article 28 in Regulation (EU) 2019/317 the difference between actual and determined costs over the reference period is borne by the ANSP or the Member State concerned.

The general principle above does not apply to the following costs, in line with Article 28.3;

- a) unforeseen changes in costs of new and existing investments;
- b) unforeseen changes in costs referred to in the third subparagraph of Article 22(1);
- c) unforeseen and significant changes in pension costs established in accordance with Article 22(4) resulting from unforeseeable changes in national pensions law, pensions accounting law or unforeseeable changes in financial market conditions, on the condition that such changes in pension costs are outside the control of the air navigation service provider and, in the case of cost increases, that the air navigation service provider has taken reasonable measures to manage cost increases during the reference period;
- d) unforeseen and significant changes in costs resulting from unforeseeable changes in interest rates on loans that finance costs arising from the provision of air navigation services, on the condition that such changes in costs are outside the control of the air navigation service provider and, in the case of cost increases, that the air navigation service provider has taken reasonable measures to manage cost increases during the reference period;
- e) unforeseen and significant changes in costs resulting from unforeseeable changes in national taxation law or other unforeseeable new cost items not covered in the performance plan but required by law.

The adjustments due to differences in year n between the actual and determined costs related to point (a) above, shall be applied in the following reference period as stated in Article 28(4).

8.4 REVISION OF THE PERFORMANCE PLAN

According to Article 18.1 in Regulation (EU) 2019/317, Member States may revise one or more of its performance targets if at least one of the following circumstances occurs:

- (i) At least one of the alert thresholds referred to in point (b) of Article 9.4 is reached
- (ii) The initial data, assumptions and rationales, including on investments, on the basis of which the performance targets concerned were set are to a significant and lasting extent no longer accurate due to circumstances that were unforeseeable at the time of the adoption of the performance plan.

In both cases, the NSA has to assess the situation and determine the results cannot be mitigated without revising the targets. The actual revision of the targets, is subject to a positive decision from the EC.

For the purpose of the mechanism described in point (i) above, the reference will be the alert thresholds defined in Article 6 of the Commission Implementing Decision (EU) 2021/891 of 2 June 2021 on European-wide targets:

- 1) When the actual traffic, recorded by Eurocontrol, deviates from the traffic forecast in the performance plan (sections 2.4.2.1 and 2.4.2.2) over a given calendar year by at least 10% of IFR movements.
- 2) When the actual traffic, recorded by Eurocontrol, deviates from the traffic forecast in the performance plan (sections 2.4.2.1 and 2.4.2.2) over a given calendar year by at least 10% of service units.
- 3) where the variation of the reference values as a result of the seasonal updates of the NOP pursuant to point (a) of Article 9(4) and Article 9(8) of Regulation (EU) 2019/123 in comparison to the reference values from the latest version of the NOP available at the time of drawing up the performance plan is at least:
 - 0.05 minute of en-route ATFM delay if the reference value from the latest version of the NOP available at the time of drawing up the performance plan is less than 0.2 minute of en-route ATFM delay; or
 - 0.04 minute of en-route ATFM delay increased by 5 % of the reference value from the latest version of the NOP available at the time of drawing up the performance plan if the reference value is greater than or equal to 0.2 minute of en-route ATFM delay.

	2020	2021	2022	2023	2024
Reference values (min of ATFM delay per flight)	-	-	0.20	0.19	0.19
Alert thresholds	-	-	±0.05	±0.05	±0.05

For the purpose of the mechanism described in point (ii), given the specificities of the ATS provision model in Spain, factors such as changes in the conditions of the contracts between ANSPs and airport operators can be considered a reason for the revision of the targets.

9. TERMINAL NAVIGATION SERVICES AND MARKET CONDITIONS

9.1 INTRODUCTION

The performance and charging scheme aim to enhance the performance of air navigation services through gate-to-gate approach, covering both en-route and terminal air navigation services (TANS). TANS are provided in Spain in the context of a model in which public and private providers coexist.

The Commission Implementing Decision (EU) 2019/2174, of 17 December 2019, on the existence of market conditions, within the meaning of Article 35 of Commission Implementing Regulation (EU) 2019/317, in respect of some of the terminal air navigation services at the airports of Alicante - Elche and Ibiza was adopted. That Decision stated that the assessment of market conditions for the provision of aerodrome air traffic control services at airports of Alicante - Elche and Ibiza was carried out in accordance with the conditions laid down in Annex X to Implementing Regulation (EU) 2019/317.

This section is introduced in the ESPP3, in order to provide more clarity on the elements for which Regulation (EU) 2019/317 fully applies and separate the ones that are under the market conditions umbrella. In particular, this section:

- Lists the airports, and services within them, that are subject to market conditions and therefore should be in the scope of the exemptions of the performance and charging scheme Regulation.
- Sums up the approach to Safety, Environment, and Capacity KPIs, applicable to the TANS under market conditions.

9.2 SCOPE

Regarding terminal air navigation services (TANS), the performance and charging scheme Regulation applies to airports with 80,000 or more IFR movements per year, measured using the average of the three years prior to the performance plan being submitted in 2019. Considering this definition, the following airports are included in the scope of this regulation during RP3:

Airports	Average annual movements (*)	ATS Provider
Adolfo Suárez Madrid-Barajas	391,757	ENAIRES
Josep Tarradellas Barcelona-El Prat	322,303	ENAIRES
Palma de Mallorca	208,777	ENAIRES
Málaga-Costa del Sol	131,453	ENAIRES
Gran Canaria	117,696	ENAIRES
Alicante - Elche	92,841	FerroNATS
Ibiza	72,574	FerroNATS

(*) Considering 2016-2017-2018

Actual traffic 2020 decreased the average annual movements for Alicante -Elche and Ibiza below the previous threshold and STATFOR forecast foresees to maintain figures below 80,000 IFR movements per year by the end of the period for both airports. However, these two airports are kept within the scope of the Plan for the whole period.

Since market conditions are proved, Article 35 in Regulation (EU) 2019/317 allows the exclusion from charging requirements. The full list of exemptions under these circumstances are:

- The application of cost efficiency targets, including the setting of determined costs.

- The application of traffic risk sharing and cost sharing mechanisms.
- The setting of financial incentives in the KPAs of capacity and environment.
- The calculation of terminal charges.
- The setting of terminal unit rates.
- Being subject to certain consultation requirements.

To determine whether this service is subject to market conditions, the Member State must have:

- A detailed analysis in accordance with the conditions laid down in Annex X of the Regulation (EU) 2019/317.
- Several airspace users' consultation concerned on the intended decision and taken account of comments.
- Make this decision and the assessment publicly available.
- Submit this decision and the assessment to the Commission and received the agreement of the Commission.

Considering the above, and the fact that ENAIRE is a public entity, the possibility of market conditions exists only for the services provided by FerroNATS in Alicante - Elche and Ibiza airports for TANS operations (only for aerodrome control service).

FerroNATS is a private Spanish Air Navigation Services Provider (ANSP), certified by AESA and designated by the Ministry for Transport (Ministerio de Transportes, Movilidad y Agenda Urbana). FerroNATS is the result of a joint venture of Ferrovial Services and the British ANSP NATS Services Limited. This enterprise was created to bid for the contracts for the provision of the aerodrome ATS services put out to tender by AENA (airport operator) in several of airport control towers in 2011, under the umbrella of the Law that effectively liberalised these services in Spain (Ley 9/2010). FerroNATS provides aerodrome air traffic control services from the airport tower, that is: the management of arrivals to and departures from the runway, the taxiways and the airspace under the responsibility of the airport tower.

Regarding the above introduction, it has been proved that all the established requirements in Annex X of the Performance and Changing Regulation are met for Alicante - Elche and Ibiza airports, currently provided by FerroNATS, as it is stated in "Evaluation Report of SES Market Conditions in Spain". The analysis is summarized below:

- No significant legal or economic barriers are found that prevent a service provider from offering to provide or withdraw from the provision of TANS (only taking on board in mind the part of aerodrome control service).
- No significant barriers are found in relation with the tendering process and the value and scope of this assessment.
- No significant barriers are found in relation with the existence of any procedure that could affect to the intellectual property or staff to be transferred.
- No significant legal or economic barriers are found that prevent airport operators from choosing the air traffic services provider.
- There is a range of TANS service providers and there are public tendering processes available to these Spanish airports.
- These airports are either subject to economic regulation or actively compete for airline business – and so all face commercial incentives to manage the costs of TANS.
- Where TANS providers also provide en-route air navigation services, these activities are subject to separate accounting and reporting arrangements.
- This assessment applies to TANS operations (only for aerodrome control service) at Ibiza and Alicante airports subject to the relevant EC regulation.

The Commission Implementing Decision (EU) 2019/2174, of 17 December 2019, on the existence of market conditions, within the meaning of Article 35 of Commission Implementing Regulation (EU) 2019/317, in respect of some of the terminal air navigation services at the airports of Alicante - Elche and Ibiza was adopted. That Decision stated that the assessment of market conditions for the provision of aerodrome air traffic control services at airports of Alicante - Elche and Ibiza was carried out in accordance with the conditions laid down in Annex X to Implementing Regulation (EU) 2019/317.

Consequently, the exemptions set out in Article 35 of Regulation (EU) are applicable to these services and locations during the whole period of RP3. Nevertheless, it is necessary to establish Safety and Capacity targets for this TANS provider (understanding TANS as the provision of airdrome ATC services).

The market conditions exist in the service provision at the airport, and they are not necessarily limited to the ANSP currently operating. When the contracts for aerodrome ATS at Alicante - Elche and Ibiza, between AENA and FerroNATS expire, a different ANSP could win the tender process and enter into operation. However, the market conditions would persist. AESA would analyse if eventual changes due to the renewal of the contracts between AENA and the ANSPs require an update of the ESPP3.

During 2019-2020 a new tendering process for Alicante – Elche and Ibiza airports was carried out by AENA, resulting FerroNATS the provider awarded of the process and therefore renewing the contract for the provision of aerodrome control service at those airports for seven more years. As a result, at the beginning of 2021. AESA assessed that conditions laid down in Annex X of Regulation 2019/317 continued being met so market conditions were concluded to remain valid as stated in 2019.

9.3 SAFETY

FerroNATS as a TANS provider must report the safety performance under Regulation (EU) 2019/317. Regarding the Safety key performance area (KPA), the Performance and Charging Regulation requires targets to be set at National level on the related KPI set out below:

- The effectiveness of safety management to be achieved by air navigation service providers, certified to provide air traffic services.

With due consideration to the EU-wide goals, the Spain Performance Plan targets are set out below for all the services and dependencies subject to market conditions:

Safety KPI #1: Level of Effectiveness of Safety Management - EoSM		2020	2021	2022	2023	2024
Union-wide Targets	Safety Risk Management MO	-	-	-	-	D
	For all other MOs	-	-	-	-	C
Alicante-Elche and Ibiza Aerodrome ATS	Safety policy and objectives	C	C	C	C	C
	Safety risk management	C	C	C	C	D
	Safety assurance	C	C	C	C	C
	Safety promotion	C	C	C	C	C
	Safety culture	C	C	C	C	C

At the time of the drafting of this document, the AMC and GM from EASA has just been made available (19th of September). The transition to the new methodology has been made using the drafts advanced by EASA, See Annex A, section 1.2.

In the area of safety, the following lines of work represent the evolution expectations of FerroNATS:

- Policy describing the interface with judicial authorities in related cases with the application of Just Culture.
- Continue advancing in the knowledge and improvement of the Safety Culture through evaluations of external bodies taking into account different groups and their involvement in safety levels.

- Evolution of the Safety Management Systems audit and survey procedures to a model of risk-based supervision.
- Work on the identification of leading indicators.

9.4 ENVIRONMENT

The environment KPIs are set for en-route services, so there is not target set for TANS provider. Out of all the environment PIs which have reporting requirements (but no targets set), only one is applicable at the airport level:

- Additional time in the taxi-out phase.

In accordance with Regulation (EU) 2019/317, FerroNATS, as a TANS provider at Alicante - Elche and Ibiza airports will monitor and report these PIs annually.

9.5 CAPACITY

The arrival capacity KPI is defined as follows: The average time, expressed in minutes, of arrival ATFM delay per flight attributable to terminal and airport ANS, calculated at local level as:

- (i) The average arrival delay at the destination airport caused by ATFM regulations per inbound IFR flight;
- (ii) All IFR flights landing at the destination airport and all ATFM delay causes, excluding exceptional events; and
- (iii) For the whole calendar year and for each year of the reference period.

There is no EU-wide target on arrival capacity, or any other external reference. Considering local reference, the ESPP3 arrival capacity targets and airport level allocation for TANS providers at Spain are set out below. The reference values per airport are established only for monitoring purposes.

Capacity KPI #2: Arrival ATFM delay per flight: aerodrome TWR environment	2020	2021	2022	2023	2024
LEAL-Alicante-Elche	0.02	0.02	0.02	0.02	0.02
LEIB-Ibiza	0.25	0.13	0.14	0.14	0.14

Reference values are expressed for the aerodrome TWR environment within the arrival phase, and all causes of delay. For more details see Annex C, section 2.2.

In the area of capacity, the following lines of work will be carried out by FerroNATS to ensure capacity:

- The correct and adequate planning of a sufficient number of ATCOs will facilitate the opening of the number of control positions needed at any time to ensure that demand at both airports is properly managed. This analysis will cover all phases of operational, strategic, pre-tactical and tactical management.
- FerroNATS will work closely with the airport and collateral approach units to establish those measures necessary to ensure that available capacity can meet existing demand.
- Continuous revisions and improvements in the Letters of Agreement and specific operating procedures that could be carried out with the collateral control centres to allow optimum management of the existing capacity/demand.

9.6 COST-EFFICIENTY

FerroNATS as a TANS provider subject to market conditions does not propose setting cost efficiency targets or financial incentives for TANS in RP3, as it is stated in Regulation (EU) 2019/317.

The mandatory confidential reporting requirements shall be met, in compliance with Annex XI of Regulation (EU) 2019/317.

10. CROSS-BORDER INITIATIVES AND SESAR IMPLEMENTATION

10.1 CROSS BORDER INITIATIVES

10.1.1 SOUTH WEST FAB JOINT INITIATIVES

The formal constitution of the SW FAB took place on May 17th, 2013, with the signature of the ‘Agreement between the Portuguese Republic and the Kingdom of Spain on the establishment of the South West Functional Airspace Block (SW FAB)’. The objectives of the SW FAB are set to achieve optimal performance in the areas related to safety, environmental sustainability, capacity, cost-efficiency, flight efficiency and also military mission effectiveness, throughout the design of airspace and the organisation of air traffic management in the airspace concerned regardless of existing boundaries. The main achievements of the SW FAB along RP2 have been as follows:

- Safety: SW FAB ANSPs have worked together towards a common just culture policy enhancement plan.
- Capacity: The Network Manager has recognized the great performance of the SW FAB in an unexpected increasing traffic scenario. Efforts have focused on airspace redesign improvement.
- Cost-Efficiency: Significantly improved levels of cost-efficiency.
- Environment: Reduction of flown distances, CO2 and other contaminant emissions and fuel savings, providing a benefit for the users of the airspace.

The main SW FAB projects planned in the Operational Board Common Plan (SW FAB OB CP) within the RP3 timeframe are the following (check the original document for further details):

PROJECT	BRIEF DESCRIPTION
Airspace Management Optimisation	
Free Route Concept	
Lisboa/Madrid/Brest Free Route Airspace (iFRA)	Extension of SW FAB Free Route Airspace towards Brest Airspace, creating one of the largest Free Route Airspaces in the ECAC area. Lisboa/Madrid/Brest Free route project (iFRA) is the first FRA initiative involving two FAB (SW FAB and FABEC).
SW FAB FRA Phase II	Extension of Free Route operations (FRASAI and LISBOA FIR) to Santa Maria Oceanic Airspace.
SW FAB FRA Phase III	Improvement of flight efficiency through the implementation of Free Route operations in Madrid, Barcelona and Canarias UIR.
Network Management	
Marseille interface	Airspace restructuration to improve traffic flows and traffic management between SW FAB and FABEC airspace (via Marseille FIR), Expected benefits are: <ul style="list-style-type: none"> • Conflicts reduction at the boundary. • Traffic load balancing between different exit points. • Increased capacity. • Improved flow segregation; and • Improved hand-over between collateral ACCs.
SW FAB en-route sectorisation improvement	Several re-sectorisation projects are planned to increase the airspace capacity.
Civil-Military coordination	
SW FAB FUA Optimisation	Improvement of flight efficiency through an increase of the availability of conditional routes, the implementation of new ones and the revision of restricted areas.
Terminal Area Management	
Madrid TMA	Optimisation of Madrid TMA based on CNS infrastructure adaptation allowing to implement independent parallel approaches and RNP Approaches to improve safety.
Barcelona TMA	Optimisation of Barcelona TMA based on re-organisation of ATC sectors, implementation of new instrumental procedures allowing more efficiency and capacity, implementation of RNP Approaches and AMAN deployment to improve the precision of the approach trajectory and facilitates air traffic sequencing.
Lisboa TMA	In order to increase Lisbon APT capacity, Terminal area will be restructured taking advantage of RNAV-1 navigation procedures.

PROJECT	BRIEF DESCRIPTION
SW FAB RNP APCH Implementation Plan	Deployment of RNP Approaches to reduce and/or optimise the number of conventional nav aids necessary for the final approach, in line with EC recommendations, improving safety.
Palma TMA	Implementation of a new RNAV-1 based TMA in Palma to improve capacity and efficiency. It will enhance the SID/STAR structure, enabling operations closer to user preferred trajectory.
Infrastructure harmonisation	
ATM systems	
CDM	Identification, analysis and implementation of common solutions regarding implementation of CDM functionality and interface with the ATM systems in ENAIRE and NAV Portugal.
CNS Systems	
Datalink	Identification, analysis and implementation of common technical solutions for Datalink services compliant with Regulations. This project also considers current Implementation Project submitted to INEA Call, namely, European Air Ground Data Communication Service, ENAIRE and NAV Portugal monitor this initiative so that SW FAB aligns with Datalink strategies. ENAIRE and NAV Portugal participate in the INEA Call 2016 Path 1 Implementation Project aiming to solve the technical problems identified in the provision of Datalink. This Project is mainly focused on the deployment of multifrequency.
Datalink Phase II	Identification, definition and provision of an overall deployment picture of “target” solution according to DLS Recovery plan. The project consists of preparatory activities towards the transitional path to the “target” solution, ENAIRE and NAV Portugal also participate in the INEA Call 2017 Path 2 Pre-Implementation Project.
IR Conformity (Phase II)	Description solutions for the Conformity with Implementing Rules. Planning and implementation of the agreed solutions.
New surveillance sensors (Phase III)	Implementation plans for the introduction of ADS-B in the surveillance system of the SW FAB complying with Regulations. A related joint project was launched in 2018, with INEA support.
CIVIL/MIL ATC Network	Deploy operational ATC IP network (REDAN) nodes at civil and military sites in Spain for the provision of communications services to support both ATC voice and data.
IPv6 Services	Define, agree, and implement technical solutions for the provision of IPv6 communication services by means of the interconnection of aeronautical data networks of ENAIRE and NAV Portugal.
Implementation of Voice over IP Services (telephony)	Define, agree, and implement the technical solutions for the migration of current operational services (telephony) using native VoIP technology and supported by Portuguese and Spanish network interconnection through New PENS infrastructure.
European Network Planning	
LSSIP Coordination	Coordinate the civil ANSPs contribution to their national LSSIPs according to the SW FAB OB Common Plan.

All the projects together involve Lisboa FIR, Canary Islands FIR/UIR, Madrid FIR/UIR, Santa Maria FIR, Marseille FIR, Barcelona FIR/UIR and Brest FIR.

It is convenient to highlight other SW FAB cross-border projects successfully completed outside the RP3 framework but with clear benefits on it, notably in terms of interoperability and cost-efficiency, such as, but not limited to:

PROJECT	BRIEF DESCRIPTION
Airspace Management Optimisation	
New inter-FAB boundary limit definition	One of the main achievements of the SW FAB concerning the optimum utilisation of the airspace was the delegation of ATS service provision between Spain and Portugal through the implementation in October 2012 of a new cross border boundary limit definition irrespective of national borders.
Bordeaux Interface	The two interfaces reorganizations included in the project, interface between Bordeaux and Barcelona (2019), and interface between Bordeaux and Madrid (2018), were successfully concluded.
ATM Procedures Area	
SW FAB harmonisation project	Project successfully closed during the first quarter of 2019 meeting all the proposed objectives: <ul style="list-style-type: none"> • Harmonisation of Upper/Lower Airspace vertical limits. • Harmonisation of Airspace Classification; and • Harmonisation of radar separation;

PROJECT	BRIEF DESCRIPTION
Infrastructure harmonisation	
CNS Systems	
Evolution of the Aeronautical Messaging Networks (AMHS)	Implementation of a reliable AMHS link between Portugal and Spain, replacing the former CIDIN link, in operation since September 30th, 2014.
IP Interconnection	Implementation of FMTP service between Lisbon and Madrid on June 4th, 2014, representing the first operational IP service using the implemented IP interconnection. Introduction of further new FTMP and AMHS operational services.
Surveillance IP	Migration of surveillance data exchange between Portugal and Spain from X,25 to IP operationally deployed on March 7th, 2018. Additionally, to the scope of this project, the injection of these new radar data flows was completed in June 2018.
New radars sharing	Enhancing radar data sharing between Portugal and Spain through surveillance data exchange among Taborno, Valdespina, Peñas del Chache and Porto radars.
CIVIL/MIL ground communications	Implementation of two sets of voice communications services that also allow the use of military infrastructure as a contingency mechanism of civil ATC voice services between ACCs.
CIVIL/MIL Ground Communications (Phase II)	Implementation of voice communications services and identification of a new set of communications services to evolve from old voice communications protocols to more sophisticated ones, supporting the AGVN (ATS Ground Voice Network).
CIVIL/MIL Ground Communications (Phase III)	Improvement of civil-military and civil/civil ground voice communications.
New surveillance sensors (Phase I)	Identification of communications requirements for ADS-B and WAM systems using the IP protocol and the implementation and/or technical validation of several WAM/MLAT systems.
New Surveillance Sensors (Phase II)	Identification of communications requirements for ADS-B and WAM systems using the IP protocol and implementation and technical validation of a new WAM system in South Portugal.

10.1.2 OTHER CROSS BORDER INITIATIVES

10.1.3 REGIONAL AEFMP FRAMEWORK

AEFMP is another cross-border initiative in which some States outside the European Union are also involved. Set up in 1996 in order to harmonize and optimize the air navigation operations among Algeria, Spain, France, Morocco and Portugal, it aims at promoting common regional objectives, increase safety and achieve a high operational efficiency in the services provision. Collaboration was renewed in 2002 with the signature of a Joint AEFMP Plan. During 2018, Tunisia joined the AEFMP membership, through the signature of a new AEFMP MoU by the civil Air Traffic Services Providers of Algeria (ENNA), Spain (ENAIRE), France (DSNA), Morocco (ONDA), Portugal (NAV Portugal) and Tunisia (OACA), and by the Civil Aviation Authorities of Algeria, Spain, Morocco, Portugal and Tunisia.

AEFMP’s activities focus on procedures harmonization, improvement of interoperability and implementation of new systems. Collaboration exists in the following areas:

- Optimum use of Technical Systems: systems and common protocols, exchange of information between operational centres.
- Optimum use of Airspace: common methods and procedures as well as operational changes have been and shall be assessed considering the impact on global performance and in order to optimize the use of the AEFMP airspace by its users.

Out of the several cross-border initiatives carried out in the AEFMP, it is worth to highlight the sharing of radar data between collateral airspace countries with the objective to improve the already very high safety level in the concerned areas through two-fold/three-fold radar coverage.

11. IMPLEMENTATION OF THE PLAN

This section describes the processes that AESA (NSA of Spain) has put in place to monitor the implementation of this performance plan and to address all those situations where targets are not reached during the reference period.

11.1 MONITORING OF THE IMPLEMENTATION PLAN

AESA as NSA is responsible for monitoring the achievement of targets and action plans in the ESPP3 throughout RP3. Data collection, coordination, analysis and reporting are some of the tasks under the responsibility of the national supervisory authority. The annual monitoring of the indicators shall be carried out at National level since the performance plan has been defined at National level for the RP3 period.

According to articles 36 and 37 of the performance and charging scheme, it is necessary to report to the Commission the data indicated in Annex VI of the same regulation. The NSA plays two roles, one as source of some of the data, and another as the coordinator and verifier of some of the data provided by other accountable entities.

AESA has organised two types of monitoring procedures based on the ones applied during RP2, and tailored to meet the requirements set out in Article 37.1 in Regulation (EU) 2019/317:

- Annual monitoring: to report on the actual performance of the previous year.
- Continuous monitoring: carried out during the year to identify when targets risk not being met.
- Regular monitoring of the PIs in the different KPAs

Each year and no later than 1 June, the NSA must report to the Commission the results of the annual monitoring of the previous year. The annual monitoring process is fed by the results of the continuous monitoring carried out throughout the year already completed, as well as by the information provided by the different stakeholders involved in the process.

The annual monitoring report includes information and results on the compliance with the performance targets in the areas of Safety, Environment, Capacity and Cost-Efficiency, as well as the additional indicators subject to mandatory report.

The level of EoS_M is calculated on the basis of the answers provided to questionnaires tailored for NSAs and ANSPs. Both questionnaires are derived from elements of the ICAO State Safety Programme (SSP) and Safety Management System (SMS) as described in ICAO Annex 19, AESA shall verify the maturity levels reported by the ANSPs making use of the Supporting Material – RP3 Safety (K)PI: Measurement of the safety key performance indicator and safety performance indicators in the SES Performance and Charging Scheme: Part (A), Part (B) and Part (C) developed by the Commission, prior to its submission by the 1st of February each year.

11.2 NON-COMPLIANCE WITH TARGETS DURING THE REFERENCE PERIOD

AESA has implemented continuous monitoring procedure. A monthly monitoring system follows-up the evolution of the capacity indicators (ERD and TAD) and the environmental indicator KEA throughout the year, against early alert thresholds. When an early alert is triggered, the situation is analysed with the ANSP and can eventually lead to a report to the EC in accordance with Articles 36 and 37 of the Performance and Charging Regulation (EU) 2019/317.

This system is based on data provided by EUROCONTROL. It also takes into consideration requests related to Post-OPS (Post-Operations), an existing mechanism to rectify certain cases of delay not correctly attributed at the beginning. Through this procedure, the ANSP can claim certain cases of delay by requesting it to the NM and, once approved, it is incorporated into the analysis to obtain a picture of the real situation and evolution of the indicators.

Each parameter that is analysed monthly is framed at National level or regional level (ACC or airport) depending on each case:

DATA	ANALYSIS LEVEL
IFR flights	SPA / ACC
APT Inbound IFR flights	SPA / APT
KEA / Actual trajectory	SPA
Minutes of en-route ATFM delay ERD	SPA / ACC / Delay reasons per ACC
Minutes of ATFM arrival delay TAD	SPA / APT / Delay reasons per APT

This continuous process runs parallel with the annual monitoring and has a reciprocal relationship with it. It contributes as a warning of possible non-compliance before it occurs and at the same time captures the plan updates and potential additional measures that will eventually be reported in the annual monitoring.

The early alert system has already shown its effectiveness on several occasions. When the alerts have been triggered for several months, AESA contacts the ANSP, to evaluate the situation, the causes and the measures implemented and planned by the provider to mitigate the situation.

Additionally, an assessment of the delay will be carried out annually to analyse the causes of ATFM delay attributed throughout the year in the different units. This verification is essential to ensure that the attribution of the cause of ATFM delay is correctly assigned by ANSP, confirming that the incentive mechanism established is robust in its definition since, as a consequence of modulating the capacity objectives by causes of delay, a more detailed and effective assessment is necessary.

At the end of the year, all the work developed in monthly monitoring can feed into the annual monitoring procedure described above.

11.3 OVERSIGHT

AESA will audit the mechanisms affecting the quality and data of its impact on the charges.

Taking into account the continuous monitoring process carried out at National level and the incentive mechanism established in this plan, it is necessary to conduct a specific supervision of the aspect of:

- Cost base audits.

The cost base of ENAIRE shall be audited by AESA every year to revise the consistency of the data reported in the tables defined in the Performance and Charging Regulation (EU) 2019/317, in particular the information that has an impact on the unit rate to be charged to the users. The scope of this oversight includes the review of the actual evolution of the investments with respect to the plan linked to the ESPP3. The timescale of this oversight might result in differences between the data reported by the 1st of June and the final data submitted by the 1st of November.

12. PUBLIC CONSULTATION

This section provides an overview of the results of the consultation process during the elaboration of this performance plan, in order to provide a detailed view on the held stakeholder consultation.

Four public consultation meetings were scheduled during the elaboration of the ESPP3 Performance Plan during 2019:

- Grupo OPS ESPP3 #1 – 19/02/2019
- Grupo OPS ESPP3 #2 – 18/03/2019
- Grupo OPS ESPP3 #3 – 10/05/2019
- Public consultation – 18/06/2019

During the development period, AESA (the Spanish NSA) presented the main elements of the operational part of the ESPP3 to facilitate the exchange of ideas between all the stakeholders involved and also to capture their needs and expectations for RP3. Discussions were focused on Environment, Safety, Capacity and Cost-Efficiency targets, and in particular the incentive scheme mechanisms and cost risk sharing.

The OPS group meetings started in February 2019 to report on the evolution of the performance plan for RP3 in the operational areas, to develop mechanisms in the ESPP3 (in particular incentives), as well as to collect the different points of view of the stakeholders. Representatives of airlines, airlines associations, ANSPs, professional associations, airport operators and other authorities attended the meetings.

In the first OPS meeting, the basics Performance Plan drafting process were introduced. The new incentive mechanism principles were presented, including the "pivot value" concept, allowing to modulate the target for incentive purposes in two different ways: variations of the traffic included in the NOP or limiting the incentive mechanism only to ATC causes delay (codes C, R, S, T, M, P). AESA presented the models for en-route and arrival delay, the contribution of the different types of causes of delay and in particular Weather.

In the second OPS meeting, conclusions were presented on the incentive mechanism following the meeting with the EC, the establishment of alert thresholds that would allow the Performance Plan to be changed if exceeded, and the proposal of EC targets for PR3, ENAIRE explained the characteristics of the ATFM delay, which should be taken into account for the Performance Plan. The feedback of the comments received by the members of this group was also presented. Finally, AESA explained the different possibilities to establish the modulation by causes of delay, as well as an estimate of the amount of the incentive in the reference period RP3.

In the third OPS meeting, the proposed targets for arrival delay were presented by ENAIRE. Comments and opinions related to the incentive mechanism were compiled and the process that would continue until culminating with the public consultation on 18 June was explained.

Comments were circulated and views raised during these thematic consultation meetings. All the inputs were taken into account when drafting the consultation document that was distributed among main stakeholders for the ESPP3 consultation meeting held in Madrid on 18 June.

In the consultation on 18 June, the Draft Performance Plan was presented almost completely outlined. After this, there was a period of 3 weeks to receive written comments from the stakeholders. The plan was completed taking due consideration of the contributions received and incorporating the feedback traceability.

The result of the work done in 2019 has been used for the elaboration of this version of the ESPP3 that include the revised EU – wide performance targets and the reference values on environment and capacity assigned to Spain and a revision of the arrival capacity targets.

A public consultation was held on 30 July 2020 on the revised Draft Performance Plan and a period for written comments from the stakeholders was opened until 20 August. The final version of the document was completed taking due consideration of the contributions received and incorporating the feedback traceability.

Upon reception of the Verification of Completeness of the European Commission on 27th October 2021 where considering October 2021 STATFOR traffic forecast was requested, a written and a public consultation were held. The written consultation was opened from 8th to 14th November and a virtual meeting was held with users and the main ANSP on 12 November 2021. The final version of the document has been completed taking due consideration of the contributions received and incorporating the feedback traceability.

During the meeting held with users and the ANSP on 12 November 2021 the modifications introduced in the plan were explained. Users showed their support to the overall Performance Plan. Charging policy and efforts done to achieve it were well appreciated. The proposal of new capacity targets for years 2022 and 2023 based in significant increase of traffic figures received no comments against. The modification of the maximum bonus from a 0.5% to a 0.0% and maximum penalty from 1.0% to a 0.5%, in order to keep the balance between the ANSP and users' expectancies, given the uncertainty and volatility of traffic, received no comments by users.

A summary of the comments made by the users, together with the responses made by AESA and the reference in the final ESPP3 is provided within the Appendix A.

13. ACRONYMS

ACC	Area Control Centre
ACDM	Airport Collaborative Decision Making
AEMET	Agencia Estatal de Meteorología (MET services provider in Spain)
ENAIRE	Aeropuertos Españoles y Navegación Aérea (En-route and terminal ANSP in Spain)
AESA	Agencia Estatal de Seguridad Aérea (Spanish NSA)
AMAN	Arrival Manager
ANAC	Autoridade Nacional de Aviação Civil (Portuguese NSA)
ANS	Air Navigation Services
ANSMET	Autoridad Nacional de Supervisión Meteorológica (Supervisor of MET services in Spain)
ANSP	Air Navigation Services Provider
ANSP-EA	Spanish Air Forces (Ejército del Aire) – ANSP function
APW	Area Proximity Warning
ASMT	Automated Safety Monitoring Tool
AST	Annual Summary Template Mechanism
ATC	Air Traffic Control
ATCO	Air Traffic Controller
ATFM	Air Traffic Flow Management
ATFCM	Air Traffic Flow and Capacity Management
ATM	Air Traffic Management
ATM-S	ATM-specific occurrences
ATS	Air Traffic Services
CAPEX	Capital Expenditure
CDR	Conditional Route
CEANITA	Comisión de Estudio y Análisis de Notificaciones de Incidentes de Tránsito Aéreo (Spanish Commission for the study and analysis of ATS incidents)
CEO	Chief Executive Officer
CFIT	Controlled Flight Into Terrain
CISM	Crisis Stress Management System
CWP	Controller Working Position
DMAN	Departure Manager
DUC	Determined Unit Cost
EASA	European Air Safety Agency
EC	European Commission
ECAC	European Civil Aviation Conference
ECR	European Central Repository
EFS	Electronic Flight Strips
EoSM	Effectiveness of Safety Management
ERNIP	European Route Network Improvement Plan
ERT-CZ	En-Route Charging Zone
EU	European Union
FAB	Functional Airspace Block
FABEC	FAB Europe Central
FIR	Flight Information Region
FL	Flight Level
FRA	Free Route Airspace
FRASAI	FRA Santiago Asturias
FRMS	Fatigue Risk Management System
FUA	Flexible Use of Airspace
GDP	Gross Domestic Product
GCLP	Gran Canaria Airport
HICP	Harmonised Indices of Consumer Prices
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
IMF	International Monetary Fund

iTEC	Flight Data Processing
JC	Just Culture
KEA	horizontal en-route flight efficiency of the actual trajectory
KPA	Key Performance Area
KPI	Key Performance Indicator
LEBL	Josep Tarradellas Barcelona-El Prat Airport
LEMD	Adolfo Suárez Madrid-Barajas Airport
LEMG	Málaga-Costa del Sol Airport
LEPA	Palma de Mallorca Airport
MO	Management Objectives
MTCD	Medium Term Conflict Detection
MSAW	Minimum Safe Altitude Warning
NAT	North Atlantic ICAO region
NEST	Network Strategic Tool (EUROCONTROL)
NM	Network Manager
NM	Nautical Mile
NOP	Network Operations Plan
NSA	National Supervisory Authority
NSA-EA	Spanish Air Forces (Ejército del Aire) – Supervision function
NSP	Network Strategic Plan
PBN	Performance Based Navigation
PCP	Pilot Common Project
PP	Performance Plan
PRB	Performance Review Body
P-RNAV	Precision Area Navigation
QMS	Quality Management System
RI	Runway Incursion
RNDSG	Route Network Development Sub-Group
RP	Reference Period
SACTA	Sistema Automatizado de Control del Tránsito Aéreo (Automated Air Traffic Control System)
SES	Single European Sky
SID	Standard Instrument Departure
SMI	Separation Minima Infringement
SMS	Safety Management System
SSP	State Safety Plan
STCA	Short Term Conflict Alert
STAR	Standard Terminal Arrival
STATFOR	EUROCONTROL Statistics and Forecasts
SU	Service Units
SW FAB	South West FAB
TCZ	Terminal Charging Zone
TMA	Terminal Management Area
TNZ	Terminal Zone
UIR	Upper Flight Information Region
UNL	Unlimited height
ESPP3	Spain Performance Plan for RP3

1st July French Airspace Users' consultation meeting

Revised French RP3 cost-efficiency: cost of capital calculation

For the initial RP3 PP draft in 2019, in February 2019, DSNA selected the consulting company MAZARS to estimate the WACC for the elaboration of the third performance plan. The outcome of this study, which consisted in a WACC for RP3 to be set at 5.7% by DSNA (within thresholds calculated by MAZARS ranging from 5.2% up to 6.1%), was presented to the French NSA and to the airspace users.

After consultation with the airspace users and assessment by the French NSA (DTA/MCU), the WACC used in the initial plan submitted 1st October 2019 was set at 5.2% over the period.

As per the methodology coming from this study and considering the new assumptions on current assets and net debt ratio induced by the crisis, the resulting WAAC for 2021, as detailed below, should be set at 5.07%.

1. Usual method of calculating WACC

The WACC is calculated as the weighted average of the cost of debt (K_D) and the cost of equity (K_E).

$$CPMC = K_e * \frac{E}{D+E} + K_d * \frac{D}{D+E}$$

Where E = Value of equity and D = Value of net debt.

The calculations for 2021 are based on the following parameters (see table below for more details on 2020-2024):

⇒ The cost of equity (K_e) is calculated according to the CAPM method:

$$K_e = R_f + \beta E * (R_m - R_f)$$

Where:

- R_f = risk free rate = 0.7%
 - The risk free rate is based on the 5 year average of the ten years French treasury bonds rate.
- βE = beta of equity

- The beta measures the risk exposure of the sector in relation to the market. A beta lower than 1 is representative of low-risk sectors, which is the case for monopoly network operators.
 - A benchmark was conducted in the initial MAZARS study on a sample of representative listed companies in regulated sectors (air navigation services, airport operators, energy supplier ...) to estimate the beta.
 - βE is calculated from the unlevered beta of the sector $\beta S = \frac{\beta E}{1 + \frac{D}{E}} = 0.59$
 - $Rm - Rf$ = risk premium = 7.50% with Rm = market performance
- ⇒ The cost of debt (K_d) is the sum of these two followings components:
- Rf = risk free rate = 0.7%
 - Risk premium for $K_d = \beta E * \left(1 + \frac{D}{E}\right) = 20.2\%$
- ⇒ Net debt ratio $\frac{D}{D+E} = 78.09\%$

As a result, the updated calculated WACC is equal to 5.07%.

WACC	2019	2020	2021	2022	2023	2024
Net debt ratio	65,0%	68,8%	78,1%	72,5%	67,5%	63,3%
Imposition rate	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
βE (beta of equity)	45,0%	59,0%	59,0%	59,0%	59,0%	59,0%
Rf (risk free rate)	2,4%	0,7%	0,7%	0,7%	0,7%	0,7%
Risk premium for equity	4,8%	7,5%	7,5%	7,5%	7,5%	7,5%
Ke (cost of equity)	1,6%	0,9%	0,6%	0,6%	0,6%	0,6%
βL (Leveraged Beta)	1,29	1,89	2,69	2,15	1,82	1,61
Risk premium for Kd	6,2%	14,2%	20,2%	16,1%	13,7%	12,1%
Kd (cost of debt)	8,6%	14,9%	20,9%	16,8%	14,4%	12,8%
WACC	4,04%	5,24%	5,07%	5,05%	5,06%	5,06%

2. Implementation of a differentiated WACC rate in the context of the Covid-19 crisis

The Covid-19 crisis has given rise to a massive increase in DSNA's working capital requirement due to the drop in traffic in 2020 and 2021 and the implementation of the Commission IR (EU) 2020/1627 where Articles 4&5 provide that in respect of RP3, adjustments shall, in accordance with the 2nd subparagraph of Article (5) or IR (EU) 2019/317, be calculated on the basis of the draft performance plan as relevant for the setting of unit rates under Article 17(1) of IR (EU) 2019/317 ; by way of derogation from Article 29(5) of IR (EU) 2019/317, those adjustments shall be spread equally over 5 calendar years, starting in the year following the performance plan has been adopted (which means as from 2023).

In addition, regulation (EU) 2019/317 provides also for the implementation of a single WACC for net book values and for working capital requirements.

The strict implementation of these rules would lead to an additional cost for users of nearly 40M € over RP3. In order to avoid this, it was decided, after discussions between DSNA and the French NSA (DTA/MCU), to propose to develop for the RP3 revised cost-efficiency an updated calculation based on the implementation of 3 different rates:

- ✓ the usual rate of WACC (actual 5.24% for 2020, see above table for the calculation) for the net book values and the usual working capital resulting from the delay of 2 months between invoicing and payment;
- ✓ a reduced rate of 0.5% for the working capital requirement resulting from the impact of adjustments as from 2023 due to the drop of traffic in 2020 and 2021;
- ✓ a rate of 0% for the working capital requirement resulting from the deferral of payment offered to users in 2020.

1.3 - Stakeholder consultation

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

Description of main points raised by stakeholders and explanation of how they were taken into account in developing the performance plan
<p style="text-align: center;">Requests for more information about:</p> <p>STATFOR baseline scenario adopted - FTEs - Cost of capital - Major investments planned - Consistency with EU-wide targets: during the consultation it has been underlined that the performance targets proposed by Italy are fully in line with the EU-wide targets set by the European Commission.</p>

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

Topic of consultation	Applicable	Results of consultation
Where applicable, decision to diverge from the STATFOR base forecast	Yes	<p>Some of the Stakeholder did not share the decision taken by ENAC to adopt a slightly modified traffic profile with respect the present forecast.</p> <p>As described during the consultation and highlighted as well in the presentation, the forecast in service units for the period 2021-2024 has been defined in line with Scenario 2 provided by Statfor of Eurocontrol.</p> <p>In particular, the actual trend of the traffic for 2021 observed in the first 7 months of the year has shown a volume of service units in line with the scenario 2 provided by Statfor in November 2020. For this reason, for the year 2021, Italy has adopted the so-called scenario 2 of Statfor, issued in November 2020. While, for the remaining years of RP3 (that are 2022-2024) Italy has adopted the scenario 2 of Statfor, delivered in May 2021. This approach is common for both the en route and the terminal.</p>
Charging policy	Yes	<p>Some of the stakeholder regretted that charges were rising in 2020 and 2021, despite the crisis due to COVID-19. They asked for the contribution from Italian State to reduce charges.</p> <p>ENAC submitted to Ministero delle infrastrutture e della mobilità sostenibile a proposal for allocate State contributions for the ANS provision.</p> <p>Given the performance proposed by Italy, the trend in unit rates shows a decrease for the years 2023-2024.</p> <p>The expected increase in unit rates in 2022, in comparison with the unit rates set in 2020 and 2021 in a pre-Covid period, is determined by a level of forecasted traffic that counts about 3 million of service units less than the traffic levels recorded in 2019. In any case, the costs planned in 2022 lead to a performance in terms of DUC that is in full compliance with the targets set by the Commission in the Decision (EU) n. 2021/891.</p> <p>ENAV costs have been reduced more than any other ANSP in its comparative group. It is well known that ATS costs are not proportional to traffic, in particular when there's high seasonality and a lot of traffic happens during peak periods.</p>
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	<p>IATA did not object on the Italian scheme, but instead IATA has underlined that there are states that are applying a penalty only scheme.</p> <p>As reported in the presentation to users, the Maximum bonus/penalty for enroute is equal to 2% of determined costs; the Maximum bonus/penalty for terminal charging zone 1 and 2 is equal to 1% of determined costs.</p> <p>Italy has reiterated that a penalty only scheme would not be in compliance with the EU regulation. The incentive scheme plays a fundamental role in creating incentives for the compliance with capacity targets.</p>
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	Yes	<p>In line with EU Regulation and RP3 Supporting material provided by EC - The modulation consists in the limitation of the scope of the incentive scheme to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual</p>
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	<p>IATA did not object on the Italian scheme, but instead IATA has underlined that there are states that are applying a penalty only scheme.</p> <p>Enroute: deadband 0,001 around pivot values Terminal: Deadband 0,002m/f</p>
Establishment or modification of charging zones	Yes	<p>No need for changing charging zones has been raised during the meeting.</p> <p>No charging zones have been modified compared to RP2.</p>
Establishment of determined costs included in the cost base for charges	Yes	<p>Airspace Users commented what the rate high level of return of capital</p> <p>Attention has been paid to the level of cost of capital and on the level of FTEs.</p> <p>About cost of capital, all the necessary information for an adequate assessment of the parameters used for the calculation of the WACC and the cost of capital have been presented to users. In particular, in the presentation have been provided values and sources for every financial coefficient, in determining of the WACC (as, capital structure, risk free rate, equity risk premium, equity beta, interest on debt and debt premium). In any case, as restated in the consultation meeting, the WACC applied by Italy during all years of RP3 is lower than the effective WACC that would result from the systematic application of the EU sector regulations. In particular, the effective WACC would have been equal to 7,2%, higher than the average WACC applied during the entire RP3 period, equal to 4,35%. The reduction of the WACC has allowed to consistently limit the cost of capital, not only in 2020, but also for the remaining years of RP3.</p> <p>For what concerns FTEs, it has been clarified that "the operational layouts are defined on the basis of the average values of the traffic demand expected for the summer season, in particular for the June/September four-month period. It is therefore important to emphasise that dimensioning is not done on the basis of peaks.</p> <p>The corresponding operational layouts, as is well known, differ on the basis of the traffic volumes expected in the different weeks, and within the week on the different days, with particular attention to the days of greatest traffic demand.</p> <p>During the summer season, there will therefore be a greater availability of workforce because traffic demand is significantly higher than during the winter period.</p> <p>The dimensioning of the workforce on the sites allows, during the periods of lower traffic demand, to carry out all the activities functional to the safe and seamless development of air traffic control. Reference is made, by way of example but not limited to, to continuous updating activities, as per reference regulations, to the achievement of operational unit specializations that guarantee staff rotation and greater flexibility of use, and to testing activities of new technological implementations. Without forgetting the need to guarantee the legal institutions, not least the use of holiday periods and rest periods during the work shift, which affect hourly productivity. In view of the above, it seems complex to provide an exact breakdown of FTEs for the period considered.</p> <p>It appears more correct and consistent with the procedures currently in force to refer to maximum configurations. The information is reported in the NOP and, in this sense, the new version will soon be released, which will cover the period 2022/2024, the contributions to which have already been sent to the Network Manager, which will allow all stakeholders to have a view of the maximum configurations that each ANSP will be able to support.</p> <p>All this is in analogy with what has been done since the beginning of the pandemic in continuous coordination with the Network Manager and all stakeholders and reported in the "European Network Operations Plan 2021 - Rolling Seasonal Plan" which indicates the maximum configurations declared and guaranteed by the ANSPs for each ACC - for the next six weeks from the date of publication - validated by the Network Manager".</p>
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	Yes	<p>No comment has been raised on the traffic risk sharing adopted by Italy.</p> <p>Italy confirms the traffic risk sharing ranges as adopted in RP2.</p> <p>Not applicable</p>
Where applicable, decision to apply the simplified charging scheme	No	<p>Not applicable</p>
New and existing investments, and in particular new major investments, including their expected benefits	Yes	<p>Airspace Users asked for more details on the industrial scheme of ENAV.</p> <p>Details have been provided in the presentation as well as afterwards.</p> <p>IATA has requested to get a set of additional details as reported in the Performance Plan (deployment date, allocation).</p> <p>Moreover, in response to questions sent by AUs with reference to investments, it has been provided clarification about 2 major ENAVs projects not deriving from regulatory obligation. In particular, it has been stated that the consolidation planned by ENAV of the existing 4 ACCs into 2 ACCs and 2 Remote Tower Control Centers (RTCCs) is going to bring a number of benefits that will be gathered incrementally in the coming years. The establishment of these assets comprise a number of interventions which are complex and tightly linked each other and the final picture will be a paramount shift for ENAV and the existing organization and delivery of ATS. Both the Consolidation into two ACCs and the establishment of the 2 RTCCs will allow to create a technical/operational infrastructure that allows an increasingly flexible and agile organization in the provision of services, capable of guaranteeing punctuality, flight efficiency and safety, with an eye to the technological evolution of the Single European Sky. In detail:</p> <ul style="list-style-type: none"> • Increase the capacity to manage traffic demand through the combination of three elements: technological innovation/operational organization/training • Increase productivity for the concerned operational sites, thanks to the opportunity to have more flexibility in the use of the resources available • Implement enhanced methodologies for maintenance and increase environmental sustainability through reduced energy consumption <p>The unification of the Control Centers into just two ACCs, in addition to guarantee greater flexibility, both in the use of personnel and in the organization of the airspace, will take place with the deployment of new and updated ATM platforms that will increase automation and support tools for the ATCOs with benefits in terms of workload reduction. It will increase scalability and resilience to traffic demand with clear benefits in terms of capacity and efficiency.</p> <p>The implementation of the two Remote TWR Centers, first Brindisi and then Padua, will involve 13 Remote Control Towers per Center, thus ensuring the provision of air traffic services to all medium and small airports in a digitalized mode with the automated management of aeronautical information. In addition, the RTCC model, which will incrementally enter into operation starting from winter 2024, will guarantee a better service for users in terms of both efficiency and availability, for all of them H24, thus allowing a greater offer for customers and more business opportunities.</p>

1.3.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	ENAV: Mr Luca Colman, Mr Beppe Bozzi, Mr Vincenzo Smorto, Mr Paolo Nasetti, Mr Alessandro Ghilari, Mrs Giuseppa Luzzio ITAF: Lieutenant Colonel Francesco Del Donno
Dates of main meetings / correspondence	6th of September 2021
Main issues discussed	As reported above
Actions agreed upon	As reported above
Points of disagreement and reasons	
Final outcome of the consultation	The NSA has taken into consideration the inputs provided by the participants in the consultation meeting to finalise the Performance Plan before submission.
Additional comments	

The consultation has been organised by the Italian NSA represented by Mr Luca Valerio Falessi (ENAC) and Mrs Sabrina Paris (ENAC)

#2 - Airspace Users	
Stakeholder group composition	Rory Sergisson (IATA), Conor Gilardy (Ryanair), Stephan Weidenhiller (Lufthansa Group), Nicole Amman (Swiss), Francesco Rado (Easyjet), Matteo Roder (Air Dolomiti)
Dates of main meetings / correspondence	6th of September 2021
Main issues discussed	As reported above
Actions agreed upon	As reported above
Points of disagreement and reasons	As reported above
Final outcome of the consultation	The NSA has taken into consideration the inputs provided by the participants in the consultation meetings to finalise the Performance Plan before submission.

Additional comments

#3 - Professional staff representative bodies	
Stakeholder group composition	FIL-CGIL: Eleonora Luciano; Roberto Giacomelli FIT-CISL: Marcello Di Giulio; Rotundo Pietro Ultrasporti: Leonardo Orazzini; Moschetti Mirko UGL-TA: Adriano Angelillo UNICA: Giancarlo Saviantoni; Alfano Marco
Dates of main meetings / correspondence	22nd of September 2021
Main issues discussed	The consultation has been done pursuant article 10 of Regulation (CE) 549/2004. The focus has been directed on operational KPAs rather than Cost-Efficincy one. The main issue discussed has been:
Actions agreed upon	1) The performance Plan already contains enough margin to carry the staff to increased levels 2) Due to regulatory provisions on exemptions to small aircraft, FIS is largely paid by State Contribution. Therefore any increase of FIS scope must be negotiated with the Italian State to get enough resources. ANSV recommendation was not known at the time of consultation, and therefore no specific answer was given. 3) There's a specific commitment of ENAC to push for the development of a 3-dimensional ENV parameter which could take into account the flight vertical profile.
Points of disagreement and reasons	
Final outcome of the consultation	

Additional comments

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

Additional comments

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

Additional comments

#6 - Other (specify)	
Stakeholder group composition	Cecile Capart (Eurocontrol), Magdalena Jaworska (PRB), William McMaster (consultant EGIS, on behalf of Mark Scott, PRB Support), Denis Huet (Eurocontrol)
Dates of main meetings / correspondence	6th of September 2021
Main issues discussed	
Actions agreed upon	
Points of disagreement and reasons	
Final outcome of the consultation	

Additional comments

En-route Charging Zone Norway Reference Period 3 (2020-2024)

ADDITIONAL INFORMATION TO REPORTING TABLES 1 – TOTAL COSTS AND UNIT COSTS

1. Determined costs and unit costs

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

Avinor Air Navigation Services (Avinor ANS) provides en-route air navigation services in Norway charging zone. In addition, Avinor ANS delivers local air navigation services at controlled aerodromes and approach control services in combination with aerodrome control units or as an integrated part of the Air Traffic Control Centres in Oslo and Bodø.

Operating cost: Operating costs related to the provision of en-route air navigation services from the three area control units in Bodø, Stavanger and Oslo are included in the en-route cost base. In addition, a share of the operating costs related to the provision of approach control services is included in the en-route cost base. This basic share is 80% (50% in RP2) of the cost for the provision of approach control services.

Where approach control services are provided from an aerodrome control unit, an 40% share of the operating cost is allocated to the en-route cost base.

When approach control services are provided from the Air Traffic Control Centres (ATCC) in Bodø and Oslo, a share of the operating cost is allocated to the provision of approach control service. In this case, 80% (50% in RP2) of this operating cost for approach control services is allocated to the en-route cost base whereas the remaining 20% (50% in RP2) is distributed among the airports concerned.

The costs of military activities (FUA) are included in the en-route cost base. These costs include separation of military and civil flights, planning and service provision during military exercises, advisory services i.e. airspace design, and air traffic services at military airports. In RP2 these costs were extracted from the en-route cost base and allocated to a separate cost base.

The costs related to service provision to offshore helicopter operations from the ATCC's in Bodø and Stavanger are identified separately, allocated to a separate cost base and removed from the en-route cost base.

Support cost: A number of cost allocation keys are in use to distribute different support and overhead costs between all type of units. These allocation keys are different, dependant on the type of cost. The main purpose is to ensure that the cost allocation is in line with the operational requirements and the actual use of the different support functions. Support cost associated with tower control functions is forwarded to the airport operators. 20% (50% in RP2) of the cost associated with approach control functions is allocated to the airport operators, whereas the remaining 80% (50% in RP2) and the support cost associated with en-route functions is allocated to the en-route cost base.

CNS-cost: The cost related to the operation of the CNS facilities is divided between tower control functions, approach control functions and en-route functions. When CNS/ATM-equipment is serving different functions, a proportional number is defined for each installation based on the operational requirements and the actual use of the installation concerned. The cost related to tower control functions is allocated entirely to the airport operator, whereas the cost related to approach control services is divided between the airport operator and the en-route cost base in line with the applicable cost allocation of approach control cost (see above). The cost allocated to en-route functions is allocated entirely to the en-route cost base.

En-route Charging Zone Norway Reference Period 3 (2020-2024)

Depreciation: Depreciation cost is allocated depending on the actual use of the installations concerned. Where an installation serves different functions, a proportional division between tower control services, approach control services and en-route services are determined. This is determined based on the operational use of the installation. The depreciation cost in the en-route cost base includes the depreciation for installations that are used entirely or partly for en-route functions and 80% (50% in RP2) of the depreciation cost for installations that are used entirely or partly for approach control functions.

Avinor AS - Kristiansand airport, Kjevik (Saerco Norge):

Through a tender process in 2019 the Spanish company Saerco was awarded the right to provide ATC-services for “tower and approach” at one of the medium sized Norwegian airports (Kristiansand airport, Kjevik). Saerco started its operations at Kjevik 28 April 2020.

The allocation key for approach cost as described above is based on a national decision irrespective of service provider. As a consequence the en-route share of the approach cost at Kjevik is reported separately in the reporting tables as “ANSP Kje”.

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

The cost of air navigation services provided to VFR flights is estimated based on the share of VFR traffic on total traffic.

c) Criteria used to allocate costs between terminal and en route services, in accordance with Article 22(5);

2019 Baseline adjustments

c.3) Adjustments to the 2019 baseline value for the determined costs				Number of adjustments		3
Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Cost allocation key changes approach costs en route vs. tnc (50/50 to 80/20)	Avinor Flysikring AS	ANSP	Staff	113 231 100	107 461 492	11 520 611
Description and justification of the adjustment						
On the basis of a public hearing note sent to the stakeholders in the spring of 2019, the Ministry of Transport proposes two possible changes in aviation charges. One of the changes affecting the performance area is moving costs related to the approach services from the cost base for the terminal services, both covered by the performance and charging regulation (TNC - OSL/BGO/SVG/TRD) and from other airports outside the regulations, to the cost base for the en-route services. The change is supposed to reduce the cost of Norwegian airports somewhat and increase the cost of flying in the upper airspace accordingly.						
The rationale for the change is that, according to studies, Norway (Avinor ANS) allocates a lower proportion of the approach costs to the en route service than the majority of EU Member States. The Ministry has ended up proposing a re-adjustment from APP 50/50 to APP 80/20 distribution, meaning 80 per cent to the cost base for the en-route services and 20 per cent to the cost base for the terminal services TNC (OSL/BGO/SVG/TRD) and airports outside the regulations.						
The proposal is based on a shift in the basis for allocation, from ATCO composite hours (50/50) to a distance based allocation key (80/20). CAA Norway considers that such a change is compatible with the wording of the Performance and Charging Regulation. The basis for the proposed new calculation method is that the approach segment is provided at 80 km from the airport (average horizontal extent of the TMA). For larger/smaller TMAs, the distribution according to this model would give slightly different distribution keys for the individual airports than 80/20, while the larger TMAs of course also weigh heavier than many of the smaller ones which also have significantly less traffic. The approach segment is calculated from 5-80 km. Of the approach cost (15 km/75 km) 20% is considered allocated terminal ANS, while (60 km/75 km) 80% is considered allocated en-route ANS. On this basis we have concluded that the new APP allocation key increases the baseline costs (2019B) of 113,2 MNOK (2019-prices).						



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Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Cost allocation key changes combined towers (TWR/APP) from 60/40 to 50/50	Avinor Flysikring AS	ANSP	Staff	13 875 000	13 168 010	1 411 701
Description and justification of the adjustment						
Baseline is adjusted with changes made in the cost base due to change in the internal allocation key for APP cost of combined towers (TWR/APP). An external audit (PWC) have been conducted to evaluate the allocation key in respect of the RP3 Performance Plan which resulted in a recommendation for the new allocation key for combined towers. This changes the baseline cost of 13,8 MNOK (2019-prices). The previous allocation key was based on historical data on time used in the different services (TWR/APP) in the combined towers. The new allocation key is based on the opening time on sectors in the combined towers.						

En-route Charging Zone Norway Reference Period 3 (2020-2024)

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Military activities (FUA)	Avinor Flysikring AS	ANSP	Staff	32 500 000	30 843 986	3 306 687
Description and justification of the adjustment						
Avinor ANS provides en-route- and approach services for all military activity. Such costs, which among other incurred by separation of civilian/military traffic as a consequence of military activity in its own allocated areas, cf. the FUA regulations, is previously covered by Avinor AS through commercial income based on invoices from Avinor Flysikring AS (ANSP) according to the national regulations. The Ministry of Transport proposed these costs covered through the en route cost base in RP3. On this basis we have concluded that costs derived from military activities increases the baseline costs (2019B) of 32,5 MNOK (2019-prices). (I.e. extra workload and costs for the ANSP in handling civilian traffic as a result of military training)						

Avinor Flysikring AS (ANS):

The above change was implemented as from 2020, methodology also described in 1a)

d) Breakdown of the meteorological costs between direct costs and the costs of supporting meteorological facilities and services that also serve meteorological requirements in general ('MET core costs'). MET core costs include general analysis and forecasting, surface and upper-air observation networks, meteorological communication systems, data processing centres and supporting core research, training and administration;

The meteorological costs are entirely defined as "Other operating costs" as the designated MET provider in Norway operates as a subcontractor to Avinor ANS as per now.

Meteorological costs - Civil aviation	2020	2021	2022	2023	2024
Staff incl. admi. Support	82 %	82 %	82 %	82 %	82 %
Weather IT-specific	8 %	7 %	7 %	7 %	7 %
Training	4 %	4 %	4 %	4 %	4 %
Other expenses	2 %	2 %	2 %	2 %	2 %
Financial reserve	5 %	5 %	5 %	5 %	5 %
Total MET costs ex. VAT	100 %	100 %	100 %	100 %	100 %

MET-costs are classified in the En-Route cost base as Staff (86%) and other operating costs (14%) according to feedback from the MET-service provider (The Norwegian Meteorological Institute)

e) Description of the methodology used for allocating total meteorological costs and MET core costs referred to in point (d) to civil aviation and between charging zones;

Meteorological costs included in the en-route cost base are based on the products specified by the met office related to en-route services. Area forecasts, upper-wind forecasts, costs related to volcanic ashes etc. A proportion of the met watch office and briefing services are also allocated to en-route. The met forecasts related to the approach services to an airport operator are divided between the airport operator and the en-route services with 80% of the approach cost allocated to en-route.

f) For each entity, description of the composition of each item of the determined costs by nature and by service (points 1 and 2 of Table 1), including a description of the main factors explaining the planned variations over the reference period;

Determined costs by nature and by service

Entity: Avinor Air Navigation Services	
1. Detail by nature (in nominal terms)	
1.1 Staff costs	The pandemic dramatically changed the situation for aviation in Norway after its outbreak. Even though traffic levels have been higher in Norway than in many other European countries, the reduction in 2020 was 42 % for IFR movements and 50 % for en-route service units. This was due to the Norwegian dependence on national air traffic, despite the pandemic. Stringent restrictions on international travel have however led to almost an absence of international flights to and from Norway during large parts of 2020 and 2021.

En-route Charging Zone Norway Reference Period 3 (2020-2024)

	<p>Already before the pandemic, during autumn 2019, Avinor ANS had initiated a reorganisation of administrative units, resulting in a 30 % reduction in administrative and support staff (40 FTEs), with effect from late 2019/early 2020. As a consequence, Avinor ANS entered the new year with a slimmer and more efficient support staff.</p> <p>When the pandemic struck the market in spring 2020, Avinor ANS responded to the traffic downturn with a number of furloughs both in operational and support units. The furloughs have been ranging from 10 % to 100 % of staff at the units, in the operational units mostly 100 %. During the last year Avinor ANS has also entered voluntary redundancy agreements to reduce the number of staff permanently.</p> <p>In addition, salaries were reduced for management, and variable cost items, such as overtime, travel and consultancy fees have been considerably reduced as a direct response to traffic and revenue shortfall. ATCO training has been paused until the uncertainty in the traffic forecast is reduced.</p> <p>The Norwegian government has implemented a number of measures to help businesses hard hit by the pandemic. Norwegian companies' right to furlough staff was expanded during 2020, through an act passed by the Norwegian government. This legislation was implemented in order to allow businesses negatively impacted by Covid-19 to adjust cost to revenue shortfalls, and to avoid severe adverse effects on employment.</p> <p>Avinor ANS reports that the cost development in the medium and longer term will be driven by the gradual return to normal traffic volumes. A number of cost containment measures are established and followed up through a cost containment program. The traffic situation is continuously monitored and all measures are balanced against the capacity to meet the expected traffic increase in the coming months/years.</p> <p>In addition to adjusting costs to the traffic shortfall, implementation of the new ATM system is the primary focus for Avinor ANS in RP3, both to be compliant with legal requirements, but also to enable benefits for the users in the longer run (RP4). The investment project has, with few exceptions, followed the original plan during the last year. Implementation is still planned by the end of RP3. Training costs on the new ATM-system cannot be capitalized according to accounting practices and will be a driver for staff costs during the last years of RP3. There will also be a period in which two systems (existing and new) will operate simultaneously. This will also affect the level of staff and operating cost.</p>
of which, pension costs	No material changes in pension cost is expected during RP3, but it is variable to changes in underlying assumptions for the defined benefit plan. Avinor ANS has both a defined benefit plan and a defined contribution plan, of which the first mentioned was closed for new members 1.1.2019. The new scheme is expected to be more predictable with regards to cost in the longer run, as a gradually larger share of personnel are members of the defined contribution scheme.
1.2 Other operating costs	Please see 1.1.
1.3 Depreciation	<p>Depreciations relate to the total fixed assets in operation of en-route services. Capital expenditure has increased in RP2 and will increase further in RP3. This gives an impact on depreciations and cost of capital during RP3, especially as a consequence of two investment projects, NORWAM phase 2 in 2022 and planned completion of Future ATM System in 2024.</p> <p>Please also see 1.1.</p>
1.4 Cost of capital	<p>Cost of capital on assets used for en-route services.</p> <p>The WACC for RP3 is 5,85 %. This is based on an analysis performed by the external financial consultants (Oslo Economics) in 2019. For further details, please see table under 1 i).</p>
1.5 Exceptional items	N/A
2. Detail by service (in nominal terms)	
2.1 Air Traffic Management	The cost allocation model in Avinor ANS does not support allocation on services as specified in the reporting tables. Total cost is allocated based on fixed shares on the different services.
2.2 Communication	Please see 2.1.

En-route Charging Zone Norway Reference Period 3 (2020-2024)

2.3 Navigation	Please see 2.1.
2.4 Surveillance	Please see 2.1.
2.5 Search and rescue	Please see 2.1.
2.6 Aeronautical Information	Please see 2.1.
2.7 Meteorological services	Please see 2.1.
2.8 Supervision costs	Please see 2.1.
2.9 Other State costs	Eurocontrol costs
Adjustments beyond the provisions of the International Financial Reporting Standards adopted by the Union pursuant to Regulation (EC) No 1126/2008	
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Pension costs

Note: The determined pension costs of the main ANSPs are detailed and justified in the body of the performance plan (item 3.4.3)

Entity: Avinor Air Navigation Services
Assumptions underlying the determined pension costs and expected evolution over Reference Period 3
Please see 1.1. Staff cost/pension cost in table 1 f.

g) For each entity, a description and justification of the method adopted for the calculation of depreciation costs (point 1.3 of Table 1): historical costs or current costs referred to in the fourth subparagraph of Article 22(4), and, where current cost accounting is used, provision of comparable historical cost data;

Depreciation costs relate to the total fixed assets in operation for ANS purposes. These fixed assets are depreciated in accordance with their expected operating life cycle. Avinor ANS uses a linear method applied to historic cost of the assets.

Avinor ANS' financial statement complies with International Accounting Standards, IFRS. Avinor ANS' depreciation method is in accordance with applicable law.

h) For each entity, description and underlying assumptions of each item of complementary information (point 3 of Table 1), including a description of the main factors explaining the variations over the reference period;

Avinor Air Navigation Services	
Costs of new and existing investments (see also performance plan item 2)	
3.10 Depreciation	Covered in item f) above
3.11 Cost of capital	Covered in item f) above
3.12 Cost of leasing	Not applicable

Eurocontrol costs	
3.13 Eurocontrol costs (Euro)	Forecast EUROCONTROL cost-base 2022-2026 figures presented to the Standing Committee on Finance on 13 October 2021.
3.14 Exchange rate (if applicable)	2020: 10,7208 (Average 2020 exchange rate by Reuters). 2021: 10,779 (Average September 2020 exchange rate by Reuters) 2022-2024: 10,191 (Average September 2021 exchange rate by Reuters)

**En-route Charging Zone Norway
Reference Period 3 (2020-2024)**

i) For each entity, description of the assumptions used to compute the cost of capital (point 1.4 of Table 1), including the composition of the asset base, the return on equity, the average interest on debts and the shares of financing of the asset base through debt and equity;

Avinor Air Navigation Services					
Average asset base					
3.1 NBV fixed assets	Based on the financial accounts for Avinor ANS for 2020, and the share of fixed assets used for en-route services, less the share of <u>offshore services</u> which is allocated to a separate cost base. The increase in asset base during RP3 is driven by the investment projects described above (1f).				
3.2 Adjustments total assets					
3.3 Net current assets	Based on the financial accounts for Avinor ANS for 2020, and the share of fixed assets used for en-route services and the share of working capital related to en-route services, less the share of offshore services which is allocated to a separate cost base.				
Cost of capital %					
3.6 Return on equity	Return on equity before tax is set to 10,20% based on an analysis performed by external financial consultants Oslo Economics. Please see table below				
3.7 Average interest on debts	Average interest on debts before tax is set to 2,95% based on an analysis performed by Oslo Economics. Please see table below				
3.8 Share of financing through equity	Share of financing through equity is set to 40% in the analysis performed by Oslo Economics, which is in accordance to the articles of association for Avinor AS issued by the Ministry of Transport, stating that that the group's equity may not be less than 40% of the group's interest-bearing long-term loans and equity at any given time. Please see table below				
ANSP/Entity: Avinor ANS	RP3				
Cost of Capital (WACC) in nominal terms	2020	2021	2022	2023	2024
Capital structure (% debt)	60%	60%	60%	60%	60%
Return on Equity % (pre tax) - T1 3.6	10,20%	10,20%	10,20%	10,20%	10,20%
Interest on debt % (pre tax) - T1 3.7	2,95%	2,95%	2,95%	2,95%	2,95%
WACC % (pre tax) - T1 3.5	5,85%	5,85%	5,85%	5,85%	5,85%

j) Description of the determined costs of common projects (point 3.9 of Table 1).

Avinor ANS					
Determined costs of common projects (in nominal terms in '000 national currency)					
CP reference	2020	2021	2022	2023	2024
Free Route Airspace functionality (FRA)	21 455 KNOK	21 455 KNOK	21 455 KNOK		
Total (Table 1 item 3.9)	21 455 KNOK	21 455 NOK	21 455 KNOK		

En-route Charging Zone Norway Reference Period 3 (2020-2024)

2. Actual costs and unit costs

a) For each entity and for each cost item, a description of the reported actual costs and the difference between those costs and the determined costs, for each year of the reference period;

2020-2021

RP3 Monitoring – Year 2020-2021	
ANSP: Avinor ANS	
1.1 Staff costs	<p>Actual staff costs (in T1 ANSP Avinor) are in line with the determined costs in the revised performance plan for the combined years 2020/2021, with only a minor variance of 0,2 %. A higher pension cost than estimated is the reason for the variance.</p> <p>The pandemic dramatically changed the situation for aviation in Norway during the last two years. Even though traffic levels have been higher in Norway than in many other European countries, the reduction in 2020 was 42 % for IFR movements and 50 % for en-route service units. 2021 was 37 % and 41 % below 2019-levels for IFR movements and service units accordingly.</p> <p>Prior to the pandemic, during autumn 2019, Avinor ANS reorganized staff and support units, resulting in a 30 % reduction in administrative and support staff (40 FTEs). As a consequence, Avinor ANS entered the new reference period with a smaller and more efficient support staff. When the pandemic struck the market in spring 2020, Avinor ANS responded to the traffic downturn with a number of furloughs both in operational and support units. The furloughs have been ranging from 10 % to 100 % of staff at the units, in the operational units mostly 100 % during large parts of 2020 and 2021. Personnel have been gradually reboarded as traffic has increased during the latter part of 2021, consequently increasing staff cost accordingly. However, Avinor ANS also entered some severance agreements in 2020 and 2021, that will contribute to a lower number of staff and lower staff cost also in the longer term.</p>
1.2 Other operating costs	<p>Other operating costs (in T1 ANSP Avinor) are 8,2 % higher than determined costs in 2020/2021, equivalent to an overspend of 18,5 MNOK.</p> <p>Travel and consultancy fees and some other operating cost items were considerably reduced as a direct response to traffic and revenue shortfall. However, other operating cost is increasing from 2020 to 2021, due to a number of factors, of which the following have the largest impact:</p> <ul style="list-style-type: none"> • Decommissioning of radar components (one-off effect) • Increase in rent at Bodo ACC, mostly driven by security related cost • Capitalisation of the ADQ-investment. The investment is capitalized in the mother company (Avinor AS) and accounted for in Avinor ANS as an intercompany purchase/other operating cost.
1.3 Depreciation	<p>Depreciation (in T1 ANSP Avinor) is 3,0 % lower than determined costs in 2020/2021, equivalent to an underspend of 7,2 MNOK.</p> <p>Depreciation is reduced from 2020 to 2021 and is also lower than estimated. This is due to a number of factors, the most significant is the radar components decommissioning mentioned above that leads to lower depreciation of that particular asset.</p>
1.4 Cost of capital	<p>Cost of capital (in T1 ANSP Avinor) is 4,0 % higher than determined costs in 2020/2021, equivalent to an overspend of 5,6 MNOK.</p>

En-route Charging Zone Norway Reference Period 3 (2020-2024)

	Cost of capital is increasing through the reference period due to an increasing investment level. The investment in new ATM-system is the main contributor together with satellite-based surveillance technology (the NORWAM project).
1.5 Exceptional items	-

RP3 Monitoring – Year 2020-2021	
ANSP: MET	
1.1 Staff costs	<p>MET actual staff costs (in T1 MET) are 7,3 % below the determined costs in 2020/2021, equivalent to an underspend of 1,5 MNOK.</p> <p>The Norwegian Meteorological Institute has indicated a price increase from 2020 to 2021 due to changes in allocation keys for metrological services. The expected cost increase of 40 % was included in the determined cost from 2021. However, actual cost increase for the en-route products was lower than expected for the en-route services.</p> <p>The price on the metrological services is not fully agreed upon by the contract parties (The Metrological Institute and Avinor ANS). In addition to the changes in allocation principles there is also an ongoing discussion on the timing of the price increase.</p> <p>Please also see section 1 e).</p>
1.2 Other operating costs	MET actual other operating costs in 2020/2021 amounts to 3,2 MNOK, also 7,3 % below the determined costs, ref. 1.1.
1.3 Depreciation	-
1.4 Cost of capital	-
1.5 Exceptional items	-

RP3 Monitoring – Year 2020-2021	
STATE/NSA: Avinor ANS	
1.1 Staff costs	-
1.2 Other operating costs	The costs mainly consist of Eurocontrol costs in 2020/2021 amounts to 153,1 MNOK which is 6,7 % below determined costs due to significant lower EC costs in 2021 combined with a lower exchange rate than in the revised plan.
1.3 Depreciation	-
1.4 Cost of capital	-
1.5 Exceptional items	-

RP3 Monitoring – Year 2022	
ANSP: Avinor ANS	
1.1 Staff costs	<p>Actual staff costs (in T1 ANSP Avinor) are 5,5% lower than determined costs in 2022, equivalent of an underspend of 43,7 MNOK.</p> <p>Pension costs are 1,8 % higher than determined cost, mainly due to higher level of cost in the defined benefit pension, and social security cost, than estimated in determined cost.</p> <p>Half of the underspend is related to the restructuring of the organization. The support staff costs are reduced as these recourses (HR, finance, legal, communication etc.) have been moved to the mother company Avinor AS. As a consequence, staff support costs are instead accounted as an intercompany purchase/other operating costs.</p> <p>The determined staff costs reflected an expected increase which was correlated to the increase in the IFR movement forecast. An elasticity factor of 0,4 was used to describe this correlation. Although the traffic forecast was quite accurate, the cost increase did however not occur to this extent, explaining the rest.</p>

En-route Charging Zone Norway Reference Period 3 (2020-2024)

	Actual staff costs in 2022 increase with 5,1% compared to the actual costs of 2021. The furloughs of the first half of 2021 explain the staff cost increase beyond salary settlement of ca 4%.
1.2 Other operating costs	Actual other operating costs (in T1 ANSP Avinor) are 29,6 % higher than determined costs in 2022, equivalent to an overspend of 35 MNOK. The following factors have the largest impact: <ul style="list-style-type: none"> • Staff support costs accounted as an intercompany purchase instead of as staff costs due to organizational restructuring • Increase in power prizes • Increase in travel costs after end of Covid-19
1.3 Depreciation	Actual depreciation costs (in T1 ANSP Avinor) is 11,3 % lower than determined costs in 2022, equivalent to an underspend of 14,1 MNOK. The main reasons for the underspend, where the first increase the determined and the second reduce the determined costs are; <ul style="list-style-type: none"> • Depreciation related to the leases (IFRS16) was by mistake included twice in the determined costs (24 MNOK) • The estimated depreciation related to the fixed assets was underestimated in the determined costs (10 MNOK) <p>This underspending is carried forward and returned to the airspace users in 2024.</p>
1.4 Cost of capital	The cost of capital (in T1 ANSP Avinor) is 7,7 % higher than determined costs in 2022, equivalent to an overspend of 6,2 MNOK. This is due to a higher share of the investments is allocated to the en-route cost base than estimated in the determined costs.
1.5 Exceptional items	-

RP3 Monitoring – Year 2022

ANSP: MET	
1.1 Staff costs	MET actual staff costs (in T1 MET) are 19,2% below the determined costs in 2022, equivalent to an underspend of 2,4 MNOK. The Norwegian Meteorological Institute indicated a price increase from 2020 to 2021 due to changes in allocation keys for metrological services. The expected increase in cost of 40 % was included in the determined cost from 2021. There has however been an ongoing disagreement regarding the increase. The invoiced costs between contracting parties in 2022 have not been the originally notified increase. Instead, a KPI adjustment of the 2019-cost base was accepted. This resulted in a lower cost than the determined costs. The notified increase in cost has been accepted from 2023.
1.2 Other operating costs	MET actual other operating costs in 2022 amounts to 1,7 MNOK, also 19,2% below the determined costs, ref. 1.1 MET Staff costs.
1.3 Depreciation	-
1.4 Cost of capital	-
1.5 Exceptional items	-

RP3 Monitoring – Year 2022

STATE/NSA: Norway	
1.1 Staff costs	-
1.2 Other operating costs	The costs which mainly consist of Eurocontrol costs in 2022 amounts to 75,607 MNOK which is almost in line (-1%) compared with the determined costs.
1.3 Depreciation	-
1.4 Cost of capital	-
1.5 Exceptional items	-

En-route Charging Zone Norway Reference Period 3 (2020-2024)

b) Description of the reported actual service units and a description of any differences between those units and the figures provided by the entity that is billing and collecting charges as well as any differences between those units and the forecast set in the performance plan, for each year of the reference period;

2020-2021

Traffic was reduced 42 % for IFR movements and 50% for en-route service units in 2020. 2021 was 37% and 41% below 2019-levels for movements and service units accordingly. International flights and overflights have been heavily impacted by restrictions during the pandemic. Due to the dependence on air traffic in regional parts of Norway the situation has been less severe for the domestic market. 2021 service units ended 2,7 % above the November forecast, mainly due to a faster recovery than expected in the overflight segment.

2022

Actual service units in 2022 was 2 071 374, slightly higher (1,13%) than the in the PP of 2 048 218 service units. The main driver is increased international flights. Domestic flights also increase compared to the forecast while overflights are reduced.

c) Breakdown of the actual costs of common projects per individual project;

Avinor ANS					
Determined costs of common projects (in nominal terms in '000 national currency)					
CP reference	2020	2021	2022	2023	2024
INEA/CEF/TRAN/M2014/1037259	21 455 KNOK	21 455 KNOK	21 455 KNOK		
Total (Table 1 item 3.9)	21 455 KNOK	21 455 KNOK	21 455 KNOK		

d) Justification of the difference between the determined and the actual costs of new and existing investments of the air navigation service providers, as well as the difference between the planned and the actual date of entry into operation of the fixed assets financed by those investments for each year of the reference period;

Please see section 2 a) which describes 1.3 depreciation and 1.4 cost of capital in relation to ANSP Avinor ANS.

2022

Actual investment costs are approx. 3,4 MNOK below determined in 2022 and to be carried forward and deducted from the grand total for the calculation of the unit rate in 2024.

e) Description of the investment projects added, cancelled or replaced during the reference period with respect to the major investment projects identified in the performance plan, and approved by the national supervisory authority in accordance with Article 28(4).

2020-2021

No major changes for the combined year 2020/2021 compared to the planned investments adopted in the revised performance plan RP3.

2022

Future TWR system is delayed compared to the performance plan. The expected start up is now in 2025. The project will however not be allocated to the en-route cost base in RP4. The new ATM system is delayed. The project is planned to be put into operation in the second quarter of 2026. In the RP3 the schedule date in operation for the new ATM system was the end of RP3.

En-route Charging Zone Norway Reference Period 3 (2020-2024)

ADDITIONAL INFORMATION TO REPORTING TABLES 2 – UNIT RATE CALCULATION

a) Description and rationale for establishment of the different charging zones, in particular with regard to terminal charging zones and potential cross-subsidies between charging zones;

Norway has only one en-route charging zone within scope the of SES.

b) Description of the policy on exemptions and description of the financing means to cover the related costs;

Exempted flights constitute approximately 1% of total service units. The cost of exemptions is financed through commercial income in the Avinor Group.

Exempted flights are specific dignitary flights, flights by aircraft less than 2 tons, SAR, calibration flights, circular flights, VFR, humanitarian flights and flights to and from Svalbard. Exempted flights are covered by Avinor AS through commercial revenue based on invoices from Avinor ANS according to the national regulations.

Avinor ANS provides en-route and approach services for all military activity. These include separation of military and civil flights, planning and service provision during military exercises, advisory services and airspace design. These costs are covered through the en-route cost base from RP3.

2020-2021

Actual costs incurred in relation to services to flights exempted from ANS charges (pursuant to Article 31(3) to (5) and Article 22(6) of Implementing Regulation (EU) 2019/317) in the charging zone in 2020.

	2020
Costs for exempted VFR flights	1 125 KNOK
Costs for exempted IFR flights	1 339 KNOK
Total costs for exempted flights	2 464 KNOK

Actual costs incurred in relation to services to flights exempted from ANS charges (pursuant to Article 31(3) to (5) and Article 22(6) of Implementing Regulation (EU) 2019/317) in the charging zone in 2020.

	2021
Costs for exempted VFR flights	1 030 KNOK
Costs for exempted IFR flights	3 721 KNOK
Total costs for exempted flights	4 751 KNOK

Costs for exempted VFR flights are financed through commercial income in the Avinor group.

2022

Actual costs incurred in relation to services to flights exempted from ANS charges (pursuant to Article 31(3) to (5) and Article 22(6) of Implementing Regulation (EU) 2019/317) in the charging zone in 2022.

	2022
Costs for exempted VFR flights	1 291 KNOK
Costs for exempted IFR flights	4 956 KNOK
Total costs for exempted flights	6 247 KNOK

En-route Charging Zone Norway Reference Period 3 (2020-2024)

Description of the financing means covering the costs incurred for services provided to exempted flights in 2022.

Costs for exempted flights are financed through commercial income in the Avinor group.

c) Description of adjustments resulting from the traffic risk sharing mechanism in accordance with Article 27;

2020-2021

No traffic risk sharing adjustment stemming from 2020/2021. Traffic variation (of 1,5%) is within the dead band zone (of 2%), ref. sheet T2, 4.8 and 4.9.

2022

No traffic risk sharing adjustment stemming from 2022. Traffic variation (of 1,1%) is within the dead band zone (of 2%), ref. sheet T2, 4.8 and 4.9.

d) Description of the differences between determined costs and actual costs of year n as a result of the changes in costs referred to in Article 28(3) including description of the changes referred to in that Article;

2020/2021

Unforeseen changes in costs of new and existing investments in 2021 amounts to 3 534 KNOK. No other unforeseen changes identified.

2022

Unforeseen changes in costs of new and existing investments in 2022 amounts to - 3 466 KNOK. No other unforeseen changes identified at the present time.

e) Description of adjustments resulting from unforeseen changes in costs in accordance with Article 28(3) to (6);

2020-2021

Unforeseen changes in investments in 2021 will not be carried forward. No other unforeseen changes identified.

2022

Unforeseen changes in investments in 2022 are carried forward to n+2 (2024) and deducted from the grand total for the calculation the unit rate in 2024. No other unforeseen changes identified at the present time.

f) Description of the other revenues, if any, broken down between the different categories indicated in Article 25(3);

2020-2021

Revenues received from Union assistance programmes (INEA) carried over from previous reference period RP2 amounts to 19,3 MNOK, affecting the unit rates the first three years in RP3 (ref. en route reporting tables RP3, sheet T2, item 13.8). No revenues received from Union assistance programmes in 2020/2021.

2022

Avinor ANS received final payment for the INEA/CEF/TRAN/M2014/1037259, medio 2022, amounting to 10 823 KNOK. Expected final payment were 8 954 KNOK. The surplus amount 1 869 KNOK has been recognized as a reduction in investment cost. The surplus amount will be carried over to the airspace users in n+2 (2024). Please see T2, table 2 B, 13.8 Other revenues (Art. 25(2)(i)).

En-route Charging Zone Norway Reference Period 3 (2020-2024)

g) Description of the application of the financial incentive schemes referred to in Article 11(3) and 11(4) in year n and the resulting financial advantages and disadvantages; description and explanation of the modulation of air navigation charges applied in year n under Article 32 where applicable, and resulting adjustments;

Financial incentive schemes

The description and justification of the parameters of the incentive scheme defined in accordance with Article 11(3) and 11 (4) are provided in the body of the performance plan under item 5.2.

2020-2021

The actual application and relating financial advantages and disadvantages for 2020-2021 is not applicable (Exceptional measures for RP3 due to the COVID-19 pandemic (Regulation (EU) 2020/1627, Article 3 (3)).

2022

The actual application and relating financial advantages and disadvantages for 2022 is not applicable (Exceptional measures for RP3 due to the COVID-19 pandemic (Regulation (EU) 2020/1627, Article 3 (3)).

h) Description of adjustments relating to the temporary application of a unit rate under Article 29(5);

To mitigate the consequences of the pandemic on the aviation industry the Norwegian Ministry of Transport has made the following decision:

In 2020-2021 the total en-route revenue loss (deficit) is 897 MNOK. This amount will not be recovered through unit rate adjustments in 2023 and 2024, nor carried over to the airspace users to the next RP. This is shown in table T3 Revenue difference - revision of UR 2020-2021, set to zero for the years from 2023-2024 (and in next RP), also shown in table T2 item 13.10 Difference in revenue from temporary application of unit rate (ref. please see tables above in add.info. to reporting tables 2, 2 j) and 2 k))

i) Description of the cross-financing between en route charging zones, or between terminal charging zones, in accordance with point (e) of Article 15(2) of Regulation 550/2004;

Not applicable for this submission in current reference period RP3 (ref. En-Route reporting tables RP3, sheet T2, item 13.9). I.e., no cross-financing between different charging zones.

j) Information on the application of a lower unit rate under Article 29(6) than the unit rate calculated in accordance with Article 25(2) and the means to finance the difference in revenue;

No reduction in the unit rate planned in 2024 as per art. 29(6).

En-route Charging Zone Norway Reference Period 3 (2020-2024)

Table 2 B - Calculation of the unit rate for year n (1)		2020/2021	2022	2023	2024
13.1	Determined costs in nominal terms - VFR excl. (Art. 25(2)(a))	2 200 081,37	1 214 521,19	1 237 546,59	1 268 465,18
13.2	Inflation adjustment : amount carried over to year n (Art. 25(2)(b))	50 477,06	-	14 074,41	54 529,38
13.3	Traffic risk sharing adjustment : amounts carried over to year n (Art. 25(2)(c))	16 423,27	-	-	-
13.4	Differences in costs as per Art. 28(4) to (6) : amounts carried over to year n (Art. 25(2)(d))	22 065,86	19 427,37	8 796,27	15 586,77
13.5	Financial incentives : amounts carried over to year n (Art. 25(2)(e))	19 046,15	-	-	-
13.6	Modulation of charges : amounts carried over to year n (Art. 25(2)(f))	-	-	-	-
13.7	Traffic adjustments : amounts carried over to year n (Art. 25(2)(g) and (h))	3 965,67	16 871,75	- 2 773,56	- 1 361,98
13.8	Other revenues (Art. 25(2)(i))	- 12 894,00	- 6 447,00	-	- 1 869,00
13.9	Cross-financing between charging zones (Art. 25(2)(j))	-	-	-	-
13.10	Difference in revenue from temporary application of unit rate (Art. 25(2)(k))	-	-	-	-
13.11	Grand total for the calculation of year n unit rate	2 299 165,4	1 244 373,3	1 257 643,7	1 335 350,3
13.12	Forecast total service units for year n (performance plan)	2 636,6	2 048,2	2 316,5	2 472,3
13.13	Unit rate for year n as per Art. 25(2) (in national currency)	872,02	607,54	542,91	540,13
13.14	Reduction as per Art. 29(6), where applicable (in national currency)	-335,43	-61,21	0,00	0,00
14	Applicable unit rate for year n	536,60	546,33	542,91	540,13

k) Information and breakdown of the adjustments relating to previous reference periods impacting the unit rate calculation;

Table 3 - Complementary information on adjustments							
Norway							
Currency: NOK							
All entities							
Complementary information on adjustments	Amounts	2020	2021	2022	2023	2024	After RP
Inflation adjustment 2018	26 207	26 207	0	0	0	0	0
Inflation adjustment 2019	24 270	0	24 270	0	0	0	0
Total inflation adjustment up to 2019	50 477	26 207	24 270	0	0	0	0
Traffic risk sharing up to 2017	0	0	0	0	0	0	0
Traffic risk sharing 2018	0	0	0	0	0	0	0
Traffic risk sharing 2019	16 423	0	16 423	0	0	0	0
Total traffic risk sharing adjustments up to 2019	16 423	0	16 423	0	0	0	0
Cost exempt from cost sharing up to 2017	73 828	15 352	15 352	18 799	12 162	12 162	0
Cost exempt from cost sharing 2018	-17 279	-10 229	0	-7 050	0	0	0
Cost exempt from cost sharing 2019	24 625	0	1 590	7 678	7 678	7 678	0
Financial incentives year up to 2017	0	0	0	0	0	0	0
Financial incentives year 2018	9 727	9 727	0	0	0	0	0
Financial incentives year 2019	9 319	0	9 319	0	0	0	0
Total financial incentives up to 2019	19 046	9 727	9 319	0	0	0	0
Modulation of charges up to 2017	0	0	0	0	0	0	0
Modulation of charges year 2018	0	0	0	0	0	0	0
Modulation of charges year 2019	0	0	0	0	0	0	0
Total modulation of charges up 2019	0	0	0	0	0	0	0
Traffic adjustment up to 2017	0	0	0	0	0	0	0
Traffic adjustment 2018	-899	-899	0	0	0	0	0
Traffic adjustment 2019	4 864	0	4 864	0	0	0	0
Total traffic adjustments up to 2019	3 966	-899	4 864	0	0	0	0
Total traffic adjustment on adjustments from previous reference periods	43 866	0	0	16 872	0	-336	0
Revenues received from Union assistance programmes up to 2017	-19 341	-6 447	-6 447	-6 447	0	0	0
Revenues received from Union assistance programmes in 2018	0	0	0	0	0	0	0
Revenues received from Union assistance programmes in 2019	0	0	0	0	0	0	0
Total revenues received from Union assistance programmes up to 2019	-19 341	-6 447	-6 447	-6 447	0	0	0
Revenues received from national public funding up to 2017	0	0	0	0	0	0	0
Revenues received from national public funding in 2018	0	0	0	0	0	0	0
Revenues received from national public funding in 2019	0	0	0	0	0	0	0
Total revenues received from national public funding up to 2019	0	0	0	0	0	0	0
Revenues from commercial activities up to 2017	0	0	0	0	0	0	0
Revenues from commercial activities in 2018	0	0	0	0	0	0	0
Revenues from commercial activities in 2019	0	0	0	0	0	0	0
Total revenues from commercial activities up to 2019	0	0	0	0	0	0	0
Revenues from contracts with airport operators up to 2017	0	0	0	0	0	0	0
Revenues from contracts with airport operators in 2018	0	0	0	0	0	0	0
Revenues from contracts with airport operators in 2019	0	0	0	0	0	0	0
Total revenues from contracts with airport operators up to 2019	0	0	0	0	0	0	0
	195 611	33 713	65 371	29 852	19 840	19 504	0

A total adjustment relating from previous reference periods of 195,6 MNOK impacting the calculation of the unit rate in RP3, and for the year 2024 the amount is 19,5 MNOK, ref. table above.

En-route Charging Zone Norway Reference Period 3 (2020-2024)

Cost exempt from previous RPs - Pension Costs:

In total pension costs claimed as exempted from cost sharing in the en route reporting tables amounts to 108 967 KNOK (unforeseeable changes in national pensions law) carried over from previous reference period, to be reimbursed by the airspace users. Ref. en route reporting tables sheet T3 ANSP Avinor, total adjustment relating to cost exempt from previous RPs.

After a review of the external actuarial consultants AON Norway primo year 2021, the CAA-N concludes that in addition to the above mentioned, pension costs eligible as exempted stemming from unforeseeable changes in financial market conditions is calculated to -17750 KNOK (6 690+2 880+7 050+1 120) in RP2, i.e. to be carried over and reimbursed to the airspace users in RP3.

	ANS	En Route
2015	-	
2016	- 14 060 000	- 6 690 000
2017	- 6 050 000	- 2 880 000
2018	- 14 810 000	- 7 050 000
2019	- 2 360 000	- 1 120 000
Sum RP 2	- 37 280 000	- 17 750 000

Ref. en route reporting tables sheet T3 ANSP Avinor, total cost adjustment from previous RPs relating to unforeseeable changes in national pensions law and financial market conditions is +108 967 MNOK – 17 740 MNOK = 91 227 MNOK (please see table below).

Table 3 - Complementary information on adjustments							
Norway							
Currency: NOK							
Avinor							
Complementary information on adjustments	Amounts	2020	2021	2022	2023	2024	After RP
Cost exempt from cost sharing up to 2017	67 191	15 352	15 352	12 162	12 162	12 162	0
Cost exempt from cost sharing 2018	-7 050	0	0	-7 050	0	0	0
Cost exempt from cost sharing 2019	31 086	8 052	7 678	7 678	7 678	7 678	0
Total adjustment relating to cost exempt from previous RPs	91 227	15 352	23 404	12 790	19 840	19 840	0

Traffic adjustment on adjustments from previous RPs 2021

Recovery of traffic adjustments applied on the carry overs from previous RPs not covered in the revenues of 2021 which amounts to 27 331 KNOK will not be carried forward.

Table 3 - Complementary information on adjustments							
Norway							
Currency: NOK							
All entities							
Complementary information on adjustments	Amounts	2020	2021	2022	2023	2024	After RP
Traffic adjustment up to 2017	0	0	0	0	0	0	0
Traffic adjustment 2018	-899	-899	0	0	0	0	0
Traffic adjustment 2019	4 864	0	4 864	0	0	0	0
Total traffic adjustments up to 2019	3 966	-899	4 864	0	0	0	0
Traffic adjustment on adjustments from previous RPs 2020	16 872	0	0	16 872	0	0	0
Traffic adjustment on adjustments from previous RPs 2021	27 331	0	0	0	0	0	0
Traffic adjustment on adjustments from previous RPs 2022	-336	0	0	0	0	-336	0
Traffic adjustment on adjustments from previous RPs 2023	0	0	0	0	0	0	0
Traffic adjustment on adjustments from previous RPs 2024	0	0	0	0	0	0	0
Total traffic adjustment on adjustments from previous reference periods	43 866	0	0	16 872	0	-336	0
Traffic adjustment 2020-2021 (exceptional measures)	-2 774	0	0	0	-2 774	0	0
Traffic adjustment 2022	-1 026	0	0	0	0	-1 026	0
Traffic adjustment 2023	0	0	0	0	0	0	0
Traffic adjustment 2024	0	0	0	0	0	0	0
Total traffic adjustment (Art. 27(8) and 27(9))*	44 033	-899	4 864	16 872	-2 774	-1 362	0

En-route Charging Zone Norway Reference Period 3 (2020-2024)

General information Covid-19 measures

The Avinor Group comprises Avinor AS, that operates the majority of the Norwegian airports, and Avinor Flysikring AS, the ANS provider. Avinor Flysikring AS is a subsidiary of Avinor AS.

Financial support has been provided to the Avinor group by its owner in 2020 and 2021 to strengthen the group's solidity to mitigate weakened credit metrics due to Covid-19.

From Avinor's annual and sustainability report 2020:

"The loss of traffic caused a significant drop in revenues due to heavy falls in passenger numbers, as well as the Norwegian authorities largely opting to suspend fees due to Avinor for services provided to airlines. Avinor is usually self-financed based on commercial revenues and fees, but in this situation financial support in the form of an injection of capital was required in order to maintain the Group's liquidity and equity. The Group's owner, the Norwegian Ministry of Transport, provided support in 2020 amounting to approximately NOK 3.6 billion, during 2021 Avinor received approximately NOK 3,8 billion in support. This amount was used to cover lost revenues from ANS services for 2020 and 2021. Therefore, there will be none cost carried over to airspace users from this period.

To mitigate the consequences of the pandemic on the aviation industry the Norwegian Ministry of Transport has made the following decision:

The revenue difference of 897,3 MNOK for 2020 and 2021 will not be recovered through unit rate adjustments in 2023 and 2024, nor carried over to the airspace users to the next RP. This is shown in table T3 Revenue difference - revision of UR 2020-2021, set to zero for the years from 2023-2024 (and in next RP), also shown in table T2 item 13.10 Difference in revenue from temporary application of unit rate (ref. please see tables above in add.info. to reporting tables 2, 2 j) and 2 k))

En-route Charging Zone Norway
Reference Period 3 (2020-2024)

**ADDITIONAL INFORMATION TO REPORTING TABLE 3 – COMPLEMENTARY INFORMATION
ON COMMON PROJECTS AND ON UNION ASSISTANCE PROGRAMME**

I) Information on the costs of common projects and other funded projects broken down per individual project, as well as of public funds obtained from public authorities for these projects.

A share of costs of common projects (depreciations) related to investments of 118 MNOK from previous reference period (RP2), amounting to 64,3 MNOK, is carried over to the first three years of the current reference period RP3.

A share of the granted public funds (INEA) stemming from the above-mentioned project, amounting to 21,2 MNOK, is carried over to RP3. This affects the unit rates for the first three years of RP3 (ref. en route reporting tables RP3, sheet T1, item 3.9 and sheet T2, item 13.8).

There are no costs of common projects and public funds in relation to investments in RP3.

Norway is not part of the European Union's CEF funding program and is not directly eligible for CEF funding for implementing SESAR solutions.