Performance Plan

FABEC

Third Reference Period (2020-2024)

Status: Draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 12 of IR

Date of issue: 1 October 2021 (updated 17 November 2021)

Signatories

Performance plan details	
FAB name	FABEC
FAB Member States	Belgium, France, Germany, Luxembourg, Netherlands, Switzerland
Status of the Performance Plan	Draft performance plan containing revised RP3 targets (Art. 3 of IR 2020/1627 & Art. 12 of IR 2019/317)
Date of issue	1 October 2021 (updated 17 November 2021)
Date of adoption of Draft Performance Plan	1 October 2021 (updated 17 November 2021)
Date of adoption of Final Performance Plan	

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

Name, title and signature of representative	
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Additional comments	IMPORTANT: This file has been consolidated from the inputs of combined efforts of the FABEC NSAs and contains many formulas and links to automatically insert or calculate information. Although signifcant care has been taken in developing the consolidated file, some of the links and formulas in this document may no longer work because they refer to other documents. In a number of critical areas, identified broken links have been fixed. However, should any data appear missing, inconsistent or contradictory, please contact Ference van Ham, ference.van.ham@minienw.nl.

Document change record		
Version	Date	Reason for change
0.1	19-aug-21	Initial released version for stakeholder consultation
1.0	1-okt-21	Adopted draft performance plan
1.2	17-nov-21	Updated draft performance plan following completeness verification

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1 - INTRODUCTION

1.1 - The situation

NSAs responsible for drawing up the Performance Plan	Federal Public Service Mobility and Transport, Belgian Civil Aviation Authority, Belgian Supervisory Authority for Air Navigation Services (BSA-ANS) French Civil Aviation Authority, Directorate for Safety of civil aviation; French Civil Aviation Authority, Air Transport Directorate German Federal Supervisory Authority for Air Navigation Services Luxembourg Civil Aviation Authority NSA The Netherlands Federal Office for Civil Aviation (FOCA), Safety Division Infrastructure

1.1.1 - List of ANSPs and geographical coverage and services

Number of ANSPs	11

ANSP name	Services	Geographical scope
skeyes	ATM, MET	Belgium, Luxembourg
DSNA	ATM	France
DFS	ATM	Germany
ANA LUX	ATM, MET	Luxembourg
LVNL	ATM	The Netherlands
Skyguide	ATM	Switzerland
MUAC	ATM	Belgium, Luxembourg, The Netherlands, Germany (North-West)
Météo France	MET	France
Deutscher Wetterdienst (DWD)	MET	Germany
Royal Netherlands Meteorological Institute (KNMI)	MET	The Netherlands
Office Féderal de la Météorologie et de Climatologie MétéoSuisse	MET	Switzerland

Cross-border arrangements for the provision of ANS services

Number CB arrangements where ANSPs provide services in an other State	7

ANSPs providing services in the FIR of another State	
ANSP Name	Description and scope of the cross-border arrangement
LVNL	ATS, FIS, alerting service for Belgium (Skeyes) ATS, FIS, alerting service for Germany (DFS) ATS, FIS, alerting service for Great Britain (NATS)
ANA Luxembourg	ATS, FIS for Belgium (Skeyes) ATS, FIS for France (DSNA) ATS, FIS for Germany (DFS)
DSNA	ATS (LFSB) - ATS (LFEE) for Switzerland ATS (LFST) - ATS (LFSB) for Germany ATS (LFQQ) for Belgium ATS (LFQQ) - ATS (LFEE) for Great Britain ATS (LFMM) - ATS (LFMN) for Italy
SKEYES	ATS, FIS, alerting service for Germany (DFS) ATS, FIS, alerting service, CNS, AIS, MET for Luxembourg (ANA) ATS, FIS, alerting service for The Netherlands (LVNL) ATS, FIS, alerting service for France (DSNA) ATS, FIS, alerting service in Belgium airspace assigned to MUAC
DFS	ATC, FIS, alerting service for The Netherlands (LVNL) ATC, FIS, alerting service for France (DSNA) ATC, FIS, alerting service for Belgium (SKEYES) ATC, AIS, FIS, alerting service for Luxembourg (ANA) ATC, AIS, FIS, alerting service for Switzerland (Skyguide) ATC, alerting service for Poland (PANSA) ATC, AIS, alerting service for Czech Republic (ANS Czech) ATC, AIS, alerting service for Austria (AustroControl)
SKYGUIDE	ATS, FIS, alerting service for Italy (ENAV) ATS, alerting service for Austria (AustroControl) ATC, FIS, alerting service, AIS for Germany (DFS) ATS, FIS, alerting service for France (DSNA)
MUAC	ATS, FIS, alerting services in Luxembourg airspace above FL245 ATS, FIS, alerting services for Denmark ATS, FIS, alerting service for France ATS, FIS, alerting services for Germany

Number CB arrangements where ANSPs from another State provide services in the State	1

ANSPs established in another Member State providing services in one or more of the State's FIRs	
ANSP Name	Description and scope of the cross-border arrangement
NATS	ATS, FIS, alerting service, ASM in NL airspace (MUAC)

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

Number of other entities	7

Entity name	Domain of activity	Rationale for inclusion in the Performance Plan
Belgian Supervisory Authority for Air Navigation Services (BSA-ANS)	Competent authority	Determined costs incurred in relation to the provision of air navigation services in accordance with the article 22(1) of Commission implementing regulation (EU) 2019/317
French Civil Aviation Authority, Air Transport Directorate	Competent authority	Determined costs incurred in relation to the provision of air navigation services in accordance with the article 22(1) of Commission implementing regulation (EU)
German Federal Supervisory Authority for Air Navigation Services	Competent authority	Determined costs incurred in relation to the provision of air navigation services in accordance with the article 22(1) of Commission implementing regulation (EU) 2019/317
Luxembourg Civil Aviation Authority	Competent authority	Determined costs incurred in relation to the provision of air navigation services in accordance with the article 22(1) of Commission implementing regulation (EU)
NSA The Netherlands	Competent authority	Determined costs incurred in relation to the provision of air navigation services in accordance with the article 22(1) of Commission implementing regulation (EU)
Federal Office for Civil Aviation (FOCA), Safety Division Infrastructure	Competent authority	Determined costs incurred in relation to the provision of air navigation services in accordance with the article 22(1) of Commission implementing regulation (EU) 2019/317
Eurocontrol		Determined costs incurred in relation to the provision of air navigation services in accordance with the article 22(1) of Commission implementing regulation (EU) 2019/317

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

En-route	Number of en-route charging zones	5

En-route charging zone 1	Belgium-Luxembourg
En-route charging zone 2	France
En-route charging zone 3	Germany
En-route charging zone 4	Netherlands
En-route charging zone 5	Switzerland

Terminal	Number of terminal charging zones	7

Terminal charging zone 1	Belgium EBBR
Terminal charging zone 2	France - Zone 1
Terminal charging zone 3	France - Zone 2
Terminal charging zone 4	Germany - TCZ
Terminal charging zone 5	Luxembourg - TCZ
Terminal charging zone 6	Netherlands - TCZ
Terminal charging zone 7	Switzerland - TCZ

1.1.4 - Other general information relevant to the plan

Relevant local circumstances with high significance for performance target setting and updated view on the impact of the COVID-19 crisis on the operational and financial situation of ANSPs covered in the performance plan

The Covid-19 pandemic affects performance and performance planning in a number of ways :

-> Practical issues

- **Financial impact**
- **Staff issues (protection, rostering,...)**
- **System implementation**
  * distancing constraints and remote working requirements affect practical elements of development, testing, validation and training
  * travel constraints limit presence and delivery by international suppliers
- **ATCO training and availability**
  * distancing constraints limit training capacity
  * increased pressure on simulators for training as well as currency
  * lack of high load traffic levels in OJT
  * working requirements following vaccination

-> Uncertainty and data availability

- **Ongoing pandemic**
- **Uncertainty and variability in traffic recovery**
- **short term volatility in traffic demand**

Further information on individual ANSPs is provided either directly in the individual chapters of this draft FABEC performance plan when relevant or, when additional relevant information has to be provided for a specific performance area, in the various national Annexes R or T referred to in the plan. It has also been presented and discussed in detail during the various consultation meetings held by the FABEC or national NSA and is reflected in the consultation material provided in Annex C.

Additional comments

Summary of COVID impact / actions in France

From March 2020, a huge traffic drop was observed. Detailed information and graphs presenting the monthly En route and Terminal actual traffic evolution up to September 2021 are available in *Annex R §1* . It may be noted that globally 2020 traffic was -61% of 2019.
As a consequence, associated huge revenue losses (about 1,5 b€) were faced leading to increased debts and loans for DSNA highlighted in *chapter 3.4.4 DSNA* as well as *Annex R §2* and *Annex C (doc -FR-10 Slide 24)* .

This will have an impact on French 2023 onward En route and Terminal unit rates which will be increased in relation with the implementation of Reg (EU) 2020/1267 art. 5 (unit rate adjustment equally spread over 7 years which was adopted with airspace users). The estimated provisional impact is described in *Annex A & B Tables 2 and 3* .

The asset base was therefore mechanically increased (net current assets) as described in *Annex A & B Tables 1* .
In order to moderate the impact on airspace users, it was decided to set up a specific RP3 mechanism implementing multiple rates for the cost of capital computation depending on the nature of the asset to which it applies. A normal rate (based on Mazars study and updated parameters according to the latest available data) is applied to equity and usual working capital requirement (WCR) and 0% to 2020 charges deferral and other COVID impact related net current assets. Both the breakdown of net current assets per nature and parameters related to the cost of capital are presented in *Annex R §3.4* .
In order to face the traffic drop and related revenue losses, immediate as well as longer term cost saving measures were identified and implemented to mitigate the financial impact of COVID. They address all areas from staff costs to other operating costs, investments and cost of capital and are consolidated in *Annex R §3* .
This included an in-depth review of DSNA investment plan which was performed to focus on strategic elements aiming at improving capacity and accommodating future traffic recovery. Those aspects were discussed with airspace users during a dedicated consultation meeting held 25th June which detailed information is available in *Annex C (docs -FR-[2] & -FR-12)* .
Ultimately COVID also impacted the capacity provision in France in 2021, mostly during Summer, in relation with ATCO training (temporary academy closure, training duration increased due to low traffic, higher use of simulators), sickness and vaccination roll-out (including EASA 48 hours day-offs after vaccination). Detailed elements are aggregated in *chapters 3.3.1 a) & c)* as well as in the Capacity slides presented during the FABEC consultation on 2nd September.

A **summary for the Netherlands** is provided in *Annex T*

1.2 - Traffic Forecasts

1.2.1 - En route

En route Charging zone 1 **Belgium-Luxembourg**

En route traffic forecast Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	1.240	1.275	1.249	541	649	1.094	1.156	1.224	-0,4%
IFR movements (yearly variation in %)		2,9%	-2,1%	-56,6%	19,9%	68,6%	5,7%	5,9%	
En route service units (thousands)	2.594	2.644	2.620	1.081	1.161	2.066	2.226	2.387	-1,8%
En route service units (yearly variation in %)		1,9%	-0,9%	-58,7%	7,4%	78,0%	7,7%	7,2%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
Update on the basis of the STATFOR OCTOBER 2021 base forecast.

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

En route Charging zone 2 **France**

En route traffic forecast Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	3.241	3.328	3.372	1.390	1.811	2.701	3.196	3.375	0,0%
IFR movements (yearly variation in %)		2,7%	1,3%	-58,8%	30,3%	49,1%	18,3%	5,6%	
En route service units (thousands)	20.862	21.450	21.782	8.547	10.969	16.990	21.020	22.464	0,6%
En route service units (yearly variation in %)		2,8%	1,5%	-60,8%	28,3%	54,9%	23,7%	6,9%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
STATFOR baseline traffic forecast published on 15 October 2021 has been reviewed and used except for Enroute in 2022 where local forecasts (rationale and justification documented in Annex D) have been used.

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

En route Charging zone 3 **Germany**

En route traffic forecast Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	3.259	3.404	3.394	1.479	1.642	2.973	3.186	3.365	-0,2%
IFR movements (yearly variation in %)		4,4%	-0,3%	-56,4%	11,0%	81,1%	7,2%	5,6%	
En route service units (thousands)	14.304	14.932	15.132	6.792	7.563	13.644	14.863	15.858	0,9%
En route service units (yearly variation in %)		4,4%	1,3%	-55,1%	11,3%	80,4%	8,9%	6,7%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
Germany did persue the possibility to adjust the traffic forecast to the STATFOR Base Scenario that was published on 15 October 2021. Service Units above are corrected for 98.500 Service Units of OAT that are not within the cost structure of the performance plan.

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

En route Charging zone 4 **Netherlands**

En route traffic forecast Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	1.287	1.329	1.332	596	644	1.084	1.244	1.321	-0,2%
IFR movements (yearly variation in %)		3,2%	0,2%	-55,3%	8,1%	68,3%	14,8%	6,2%	
En route service units (thousands)	3.223	3.392	3.381	1.480	1.515	2.593	3.081	3.294	-0,5%
En route service units (yearly variation in %)		5,3%	-0,3%	-56,2%	2,4%	71,2%	18,8%	6,9%	

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

The Netherlands will apply the STATFOR base scenario of October 2021 for all years except 2022. In our understanding, STATFOR assumes a step-by-step continuation of the current recovery of air traffic, without significant setbacks due to a recurrences of increasing infections leading to new travel restrictions and/or reduced passenger confidence. Although recent development of traffic volume has shown the resilience of air travel, the Netherlands sees a significant risk of a temporary setback, in particular in the short term. Increasing infections in many States show that COVID-19 is not yet gone, and still poses a risk, in particular in 2022. The Netherlands therefore considers it appropriate to take this into account in the traffic forecast. Following consultation of stakeholders (see details in sheet 1.3.6 and relevant Annexes), a scenario is used which provides a balance between STATFOR assumptions and our identification of the risk of potential setbacks.
Due to the lack of detailed visibility of STATFOR assumptions, and the short time available under EU regulations to prepare, consult and decide on the revised forecast, our forecast has necessarily been based on general assumptions only.

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

En route Charging zone 5 | **Switzerland**

En route traffic forecast | Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	1.110	1.167	1.177	477	615	1.048	1.088	1.148	-0,5%
IFR movements (yearly variation in %)		5,2%	0,8%	-59,5%	28,9%	70,4%	3,8%	5,5%	
En route service units (thousands)	1.604	1.741	1.769	650	879	1.594	1.689	1.811	0,5%
En route service units (yearly variation in %)		8,6%	1,6%	-63,2%	35,1%	81,3%	6,0%	7,2%	

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

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

1.2.2 - Terminal

Terminal Charging zone 1 | **Belgium EBBR**

Terminal traffic forecast | Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	116,1	114,9	114,6	45,7	62	98	105	111	-0,6%
IFR movements (yearly variation in %)		-1,1%	-0,3%	-60,1%	36,6%	56,9%	7,0%	6,2%	
Terminal service units (thousands)	157,8	161,1	162,3	72,9	94,5	134,4	147,4	155,5	-0,9%
Terminal service units (yearly variation in %)		2,1%	0,8%	-55,1%	29,5%	42,3%	9,7%	5,5%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
Update on the basis of the STATFOR OCTOBER 2021 base forecast.

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

Terminal Charging zone 2 | **France - Zone 1**

Terminal traffic forecast | Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	357,4	360,6	363,3	152,7	185	312	337	357	-0,3%
IFR movements (yearly variation in %)		0,9%	0,7%	-58,0%	20,9%	69,2%	7,7%	6,2%	
Terminal service units (thousands)	581,1	593,7	603,7	267,1	313,9	492,5	560,3	592,2	-0,4%
Terminal service units (yearly variation in %)		2,2%	1,7%	-55,8%	17,5%	56,9%	13,8%	5,7%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
STATFOR baseline traffic forecast published on 15 October 2021 has been reviewed and used.

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

Terminal Charging zone 3 | **France - Zone 2**

Terminal traffic forecast | Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	566,4	571,7	579,1	287,1	386	551	569	591	0,4%
IFR movements (yearly variation in %)		0,9%	1,3%	-50,4%	34,3%	42,9%	3,3%	3,9%	
Terminal service units (thousands)	518,4	528,0	545,6	244,5	314,0	508,7	529,5	557,2	0,4%
Terminal service units (yearly variation in %)		1,8%	3,3%	-55,2%	28,4%	62,0%	4,1%	5,2%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
STATFOR baseline traffic forecast published on 15 October 2021 has been reviewed and used.

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

Terminal Charging zone 4 | **Germany - TCZ**

Terminal traffic forecast | Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands) (departures only)	1.022,3	1.061,5	1.062,3	436,6	479,9	928,1	1.003,2	1.059,2	-0,1%
IFR movements (yearly variation in %)		3,8%	0,1%	-58,9%	9,9%	93,4%	8,1%	5,6%	
Terminal service units (thousands)	1.424,1	1.474,1	1.492,3	630,0	693,0	1.280,0	1.426,0	1.498,0	0,1%
Terminal service units (yearly variation in %)		3,5%	1,2%	-57,8%	10,0%	84,7%	11,4%	5,0%	

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

Germany did persue the possibility to adjust the traffic forecast to the STATFOR Base Scenario that was published on 15 October 2021; no data was provided for IFR movements.

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

Terminal Charging zone 5	**Luxembourg - TCZ**
Terminal traffic forecast	Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	35,3	37,4	38,1	20,1	24	35	36	38	0,2%
IFR movements (yearly variation in %)		5,9%	1,9%	-47,1%	18,1%	46,1%	4,4%	5,7%	
Terminal service units (thousands)	51,2	54,7	56,4	40,2	46,7	54,4	58,5	61,5	1,7%
Terminal service units (yearly variation in %)		6,8%	3,2%	-28,7%	16,0%	16,6%	7,4%	5,2%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
The terminal traffic forecast is updated by using the STATFOR October 2021 forecasts.

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

Terminal Charging zone 6	**Netherlands - TCZ**
Terminal traffic forecast	Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	290,4	295,1	293,2	131,7	161	219	263	281	-0,8%
IFR movements (yearly variation in %)		1,6%	-0,7%	-55,1%	22,2%	36,0%	20,1%	6,8%	
Terminal service units (thousands)	406,1	412,9	412,0	210,7	244,0	313,3	376,0	401,0	-0,5%
Terminal service units (yearly variation in %)		1,7%	-0,2%	-48,9%	15,8%	28,4%	20,0%	6,6%	

Specific local factors justifying not using the STATFOR base forecasts (provide justification below or refer to Annex D for more detailed explanation)
The Netherlands will apply the STATFOR base scenario of October 2021 for all years except 2022. In our understanding, STATFOR assumes a step-by-step continuation of the current recovery of air traffic, without significant setbacks due to a recurrences of increasing infections leading to new travel restrictions and/or reduced passenger confidence. Although recent development of traffic volume has shown the resilience of air travel, the Netherlands sees a significant risk of a temporary setback, in particular in the short term. Increasing infections in many States show that COVID-19 is not yet gone, and still poses a risk, in particular in 2022. The Netherlands therefore considers it appropriate to take this into account in the traffic forecast. Following consultation of stakeholders (see details in sheet 1.3.6 and relevant Annexes), a scenario is used which provides a balance between STATFOR assumptions and our identification of the risk of potential setbacks. Due to the lack of detailed visibility of STATFOR assumptions, and the short time available under EU regulations to prepare, consult and decide on the revised forecast, our forecast has necessarily been based on general assumptions only. IFR movements are estimated based on service unit evolution, since no data on IFR movements was provided by STATFOR in its October forecast.

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

Terminal Charging zone 7	**Switzerland - TCZ**
Terminal traffic forecast	Local forecast

Local Forecast	2017A	2018A	2019A	2020A	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	222,9	225,9	224,2	92,1	118	199	207	217	-0,7%
IFR movements (yearly variation in %)		1,3%	-0,7%	-58,9%	28,1%	68,6%	4,0%	4,8%	
Terminal service units (thousands)	283,8	291,0	292,9	111,8	128,0	246,0	268,0	280,0	-0,9%
Terminal service units (yearly variation in %)		2,5%	0,7%	-61,8%	14,5%	92,2%	8,9%	4,5%	

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

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

1.3 - FABEC 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
SAFETY: airspace users fully support the targets set by FABEC, but more transparency by NSA and ANSP is needed, in terms of information on the different ANSP targets.
ENVIRONMENT: the proposed KEA target in line with the reference value is strongly supported. ANSPs have to build an efficient airspace by reducing complexities. Moreover, greater focus should be put on improving vertical flight efficiency to reduce CO2 emissions.
CAPACITY: the FABEC targets, which are in line with the reference values, are supported. Mitigation measures shall be identified and planned to manage volatility, staff availability, rostering, training, new ATC system implementation.
INCENTIVE SCHEME: airspace users strongly advocated for a penalty-only scheme. The CRSTMP limitation is not supported. Furthermore, only the achievement of both FAB and ANSP targets would drive the changes required by airspace users.
Although stakeholders commented on the challenging nature of the targets, the targets in the areas of safety, environment and capacity are in line with EU-wide targets, as well as the incentive scheme is consistent with EU Regulation 2019/317 laying down a performance and charging scheme in the single European sky. Therefore, the AFBEC Council decided not to alter the proposed targets and incentive scheme.

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	Select	Not discussed at FABEC consultation; part of national level consultations.
Charging policy	Yes	Not discussed at FABEC consultation; part of national level consultations.
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	The FABEC en route incentive scheme uses a symmetrical maximum amount of bonus and penalty corresponding to 0,5% of the determined costs. Airspace User representatives strongly advocated for a penalty-only scheme. No bonus should be awarded unless there would be a siginificant improvment in CAP performance.
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	Yes	The FABEC en route incentive scheme will apply one point of the modulation mechanism as referred to the Annex XIII of the regulation IR (EU) 2019/317 to limit the scope of incentives to cover only CRSTMP delay causes. Airspace User representatives did not support the limitation of the scope to cover only CRSTMP delay causes.
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	The FABEC en route incentive scheme is elaborated with a dead band around the pivot value in recognition of the volatile nature of performance at current delay levels. Only penalising does not serve the purpose of improving performance. Airspace User representatives did not agree such a symmetric approach. They consider that only a penalty scheme should be developed to manage performance.
Establishment or modification of charging zones	Select	Not discussed at FABEC consultation; part of national level consultations.

Establishment of determined costs included in the cost base for charges	Yes	Not discussed at FABEC consultation; part of national level consultations.
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	Select	Not discussed at FABEC consultation; part of national level consultations.
Where applicable, decision to apply the simplified charging scheme	Select	Not discussed at FABEC consultation; part of national level consultations.
New and existing investments, and in particular new major investments, including their expected benefits	Yes	Not discussed at FABEC consultation; part of national level consultations.

1.3.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	FABEC ATSPs (ANA Luxembourg, DFS, DSNA, LVNL, MUAC, skeyes and Skyguide)
Dates of main meetings / correspondence	General FABEC stakeholder consultation meeting, 2 September
Main issues discussed	See minutes of the meeting
Actions agreed upon	See minutes of the meeting
Points of disagreement and reasons	See minutes of the meeting
Final outcome of the consultation	See minutes of the meeting

Additional comments

#2 - Airspace Users	
Stakeholder group composition	Air France, DLH, Ryanair,SWISS, Easyjet, Tuifly, IATA, A4E, ERAA
Dates of main meetings / correspondence	General FABEC stakeholder consultation meeting, 2 September
Main issues discussed	See minutes of the meeting
Actions agreed upon	See minutes of the meeting
Points of disagreement and reasons	See minutes of the meeting
Final outcome of the consultation	See minutes of the meeting

Additional comments

#3 - Professional staff representative bodies	
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

#4 - Airport operators	
Stakeholder group composition	ACI was invited to the FABEC stakeholder consultation meeting as representative body for the airports. No representative attended.
Dates of main meetings / correspondence	General FABEC stakeholder consultation meeting, 2 September
Main issues discussed	See minutes of the meeting
Actions agreed upon	See minutes of the meeting
Points of disagreement and reasons	See minutes of the meeting
Final outcome of the consultation	See minutes of the meeting

Additional comments
Not consulted by the NSA; consultation of staff is considered the responsibility of the ANSPs.

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

Additional comments

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

Additional comments

1.3.1 - Belgium-Luxembourg en route 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
Stakeholders questioned the rise in costs over the reference period. In particular, the number of ATCO-hirings together with the corresponding costs for training and the pre-retired ATCOs, the inclusion of the carry over related to the correction mechanism of 2020 and 2021 in the asset base and the assumptions used to calculate the return on equity. The Belgian NSA (BSA-ANS) decided to not include the carry over related to the correction mechanism of 2020 and 2021 in the asset base and revise the assumptions on the return on equity, resulting in a reduction of the cost of capital. For MUAC, it was highlighted that the rise in costs was mainly due to a shift of costs from the general Eurocontrol budget towards MUAC and that the corresponding rise of the MUAC budget is not sustainable in the current situation. Airspace users advocated that the MUAC member states should bear this cost. For ANA, it was stated that the main cost driver is staff costs and that there were discussions ongoing concerning additional public funding. At this moment, there is uncertainty on the evolution of traffic. The traffic scenario proposed (STATFOR May 2021 scenario 2) was adjusted, but only with regard to the change of the distance factor. It still remained to be seen whether the STATFOR October 2021 forecast will be included after the submission, depending on the development of the evolution of traffic.

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	No	stakeholders were informed on the intention of the Belgian and Luxembourg NSAs to adjust the STATFOR May 2021 scenario 2 to reflect the change of the distance factor. No comments were received.
Charging policy	Yes	BE and LUX NSA stated that it was the intention to spread the carry-over related to the correction mechanism of 2020 and 2021 underrecoveries over 7 years in accordance with art. 5(5) of commission Implementing Regulation 2020/1627. One stakeholder expressed concerns with regard to the effect this might have on the liquidity of skeyes.
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	Not discussed as this was treated by the FABEC consultation held on the 2nd of September.
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	Yes	Not discussed as this was treated by the FABEC consultation held on the 2nd of September.
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	Not discussed as this was treated by the FABEC consultation held on the 2nd of September.
Establishment or modification of charging zones	No	No charging zones were modified.
Establishment of determined costs included in the cost base for charges	Yes	See also description of main points discussed during the consultation meeting: Airspace users expressed concerns about the cost levels and stated that the benefit of the activities and investments that will be generated by these costs are not always clear. The NSAs interacted with the ANSPs to make sure all investments and activities are generated in a cost efficient way. However, the NSAs have not reconsidered any of those with the objective of reducing costs.
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	No	Not applicable
Where applicable, decision to apply the simplified charging scheme	No	Not applicable

New and existing investments, and in particular new major investments, including their expected benefits	Yes	Stakeholders questioned the level of investments of skeyes, and commented that the benefit of the investments was not demonstrated enough. Skeyes replied that a lot of equipment had to be replaced due to end-of-life and that synergies with BEL Defense were set up in order to mitigate the costs of the investements. For MUAC, investments were scaled back and postponed to RP4 where possible.

1.3.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	skeyes, MUAC, ANA
Dates of main meetings / correspondence	woensdag 18 augustus 2021
Main issues discussed	Cost-efficiency target for the Belgium-Luxembourg en route charging zone, comprising the costs of skeyes, (part of) MUAC, ANA and the NSAs, as well as the traffic scenario.
Actions agreed upon	No specific actions were agreed upon.
Points of disagreement and reasons	skeyes highlighted that opting for a 7-year period for the carry-over of the underrecoverries might potentially raise liquidity issues should the forecasted traffic not materialise.
Final outcome of the consultation	In conclusion, the Belgian and Luxembourg NSAs decided to accept the financial plans of skeyes, MUAC and ANA to be included in the cost-base of the Belgian-Luxembourg en route charging zone for RP3, apart from the Cost of Capital of skeyes, which was adjusted by revising the assumptions used to calculate the return on equity and exclude the carry over related to the correction mechanism of 2020 and 2021 out of the asset base used to calculate the cost of capital.

Additional comments

#2 - Airspace Users	
Stakeholder group composition	IATA, Lufthansa Group, Brussels Airlines, Ryanair,KLM, TUI Fly
Dates of main meetings / correspondence	woensdag 18 augustus 2021
Main issues discussed	Cost-efficiency tartget for the Belgium-Luxembourg en route charging zone, comprising the costs of skeyes, (part of) MUAC, ANA and the NSAs, as well as the traffic scenario. The main topics discussed were: Financial plan of skeyes (especially: the cost evolution, skeyes' ATCO-training, cost of capital and skeyes' staff increase), financial plan of MUAC (especially: increase in costs and the shift of costs from the general Eurocontrol to the MUAC budget) and ANA Luxembourg (especially: staff evolution and potential state support).
Actions agreed upon	It was agreed upon that skeyes would provide additional information on cost allocation for investments, cost of capital and staffing evolution.
Points of disagreement and reasons	Airspace users raised concerns about the cost evolution at skeyes during RP3. Specifically, questions were raised on the investment level and cost of capital. With regard to the investments, skeyes indicated that these were necessary due to end-of-life, and that where possible, synergies with BEL Defense were set up in order to mitigate the costs of the investements. Additionally, questions were raised on the return on equity used and the inclusion of the underrecoverries of 2020 and 2021 in the asset base. According to the airspace users, the percentage used should be lower and the underrecoverries should be excluded from the asset base. With regard to MUAC, airspace users stated that the rise in costs by the recent cost allocation shift was not sustainable, and requested that the state would bear at least a proportion of these costs. For ANA Luxembourg, airspace users appreciated the ongoing discussions regarding the potential state support and asked whether the discussions on this topic would be finalized before the submission deadline. ANA Luxembourg replied that this was the intention.
Final outcome of the consultation	In conclusion, the Belgian and Luxembourg NSAs decided to accept the financial plans of skeyes, MUAC and ANA to be included in the cost-base of the Belgian-Luxembourg en route charging zone for RP3, apart from the Cost of Capital of skeyes, which was adjusted by revising the assumptions used to calculate the return on equity and exclude the carry over related to the correction mechanism of 2020 and 2021 out of the asset base used to calculate the cost of capital. The discussions about potential additional public funding from the state of Luxembourg come to an agreement in November 2021.

Additional comments

#3 - Professional staff representative bodies	
Stakeholder group composition	ACV-CSC, VSOA, TUEM
Dates of main meetings / correspondence	woensdag 18 augustus 2021

Main issues discussed	traffic risk sharing, level of costs and investments
Actions agreed upon	No specific actions were agreed upon.
Points of disagreement and reasons	Professional staff representative bodies stated that the use of a prognosis of traffic in general is not realistic. In the current circumstances, they estimate that the actual number will likely be lower. and that the system of risk-sharing is not appropriate. it was further stated that the current level of investments and recruitments is the result from the RP1 and RP2 cost savings, and that professional staff representative bodies had doubts about the added value of using consultants instead of hiring staff and the outsourcing of the ATCO training centre.
Final outcome of the consultation	In line with commission Implementing Regulation 2019/317, the STATFOR base forecast was included in the performance plan.

Additional comments

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

Additional comments
Airport operators were not invited.

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

Additional comments
Airport coordinators were not invited.

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

Additional comments

1.3.2 - Belgium Terminal Stakeholder consultation

1.3.2.1 - 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
Stakeholders questioned the rise in costs over the reference period. In particular, the number of ATCO-hirings together with the corresponding costs for training and the pre-retired ATCOs, the inclusion of the carry over related to the correction mechanism of 2020 and 2021 in the asset base and the assumptions used to calculate the return on equity. The Belgian NSA (BSA-ANS) decided to not include the carry over related to the correction mechanism of 2020 and 2021 in the asset base and revise the assumptions on the return on equity, resulting in a reduction of the cost of capital. At this moment, there is uncertainty on the evolution of traffic. The traffic scenario proposed is the STATFOR May 2021 scenario 2. It still remained to be seen whether the STATFOR October 2021 forecast will be included after the submission, depending on the development of the evolution of traffic. a new VVIP procedure was in place which would generate additional delay on Brussels Airport in specific meteorological conditions. BSA-ANS decided to include a delay-budget for this procedure in the target.

1.3.2.2 - 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	No	No comments were made on the use of the STATFOR May 2021 scenario 2 forecast.
Charging policy	Yes	In accordance with the third management contract between the State and skeyes, the State decides each year the part of the determined costs for EBBR terminal charging zone financed by the users and the part financed by other revenues. In 2020 and 2021, the Belgian state borne 24.97% of the total costs for EBBR but no decision has been taken yet for the period 2022-2024. BE NSA stated that it was the intention to spread the carry-over related to the correction mechanism of 2020 and 2021 over 7 years in accordance with art. 5(5) of commission Implementing Regulation 2020/1627. One stakeholder expressed concerns with regard to the effect this might have on the liquidity of skeyes.
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	An asymmetric bonus/malus system was introduced, with a maximum bonus of 0.125% and a maximum penalty of 0.5%. BSA-Ans indicated that this parameters were interlinked with the inclusion of the VVIP-delay included in the currently proposed capacity target. the Airspace users supported the asymmetric scheme.
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	Yes	Belgian Terminal incentive scheme will be based upon CRSTMP-delay only. There will be no modulation applied for unforeseen and significant changes. No comments were made
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	Proposed deadband was presented to the airspace users. No comments were made.
Establishment or modification of charging zones	No	No charging zones were modified.

Establishment of determined costs included in the cost base for charges	Yes	See also description of main points discussed during the consultation meeting: Airspace users expressed concerns about the cost levels and stated that the benefit of the activities and investments that will be generated by these costs are not always clear. The NSA interacted with skeyes to make sure all investments and activities are generated in a cost efficient way. However, the NSA has not reconsidered any of those with the objective of reducing costs.
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	No	Not applicable.
Where applicable, decision to apply the simplified charging scheme	No	Not applicable.
New and existing investments, and in particular new major investments, including their expected benefits	Yes	Airspace users questioned the level of investments of skeyes, and commented that the benefit of the investments was not demonstrated enough. Skeyes replied that a lot of equipment had to be replaced due to end-of-life and that synergies with BEL Defense were set up in order to mitigate the costs of the investements.

1.3.2.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	skeyes
Dates of main meetings / correspondence	woensdag 18 augustus 2021
Main issues discussed	skeyes requested to set an additional buffer of 0.05 minutes per delay per flight for RP3 due to the new VVIP procedure at Brussels Airport, which implies escort flight by the Federal Police helicopter that could hinder airport operations at bad VMC. Alternatively, should it be allowed by the Commission and PRB, excluding this procedure (which would fall under code P) out of the scope of the target would be allowed since skeyes has no influence on this specific procedure, skeyes requested to either receive an additional delay-budget
Actions agreed upon	all stakeholders agreed on the specificity of the procedure with a high degree of uncertainty. Airspace users and the airport operator requested that the negative effect of this procedure on the airport operation of EBBR would be limited to the absolute minimum.
Points of disagreement and reasons	skeyes highlighted that opting for a 7-year period for the carry-over of the underrecoverries might potentially raise liquidity issues should the forecasted traffic not materialise.
Final outcome of the consultation	BSA-ANS concluded to include the VVIP-procedure in the delay target.

Additional comments

#2 - Airspace Users	
Stakeholder group composition	IATA, Lufthansa Group, Brussels Airlines, Ryanair,KLM, TUI Fly
Dates of main meetings / correspondence	woensdag 18 augustus 2021
Main issues discussed	Cost-efficiency tartget for the Brussels Terminal charging zone, comprising the costs of skeyes (especially: investment level and cost of capital) and the NSA, as well as the traffic scenario and the capacity target with corresponding incentive scheme.
Actions agreed upon	It was agreed upon that skeyes would provide additional information on cost allocation for investments, cost of capital and staffing evolution.
Points of disagreement and reasons	Airspace users raised concerns about the cost evolution at skeyes during RP3. Specifically, questions were raised on the investment level and cost of capital. With regard to the investments, skeyes indicated that these were necessary due to end-of-life, and that where possible, synergies with BEL Defense were set up in order to mitigate the costs of the investements. Additionally, questions were raised on the return on equity used and the inclusion of the carry over related to the correction mechanism of 2020 and 2021 in the asset base. According to the airspace users, the percentage used should be lower and the underrecoverries should be excluded from the asset base. Concerning the capacity target, airspace users took note of the inclusion of the extra delay due to the VVIP delay procedure, requested that the negative effect of this procedure would be limited to tha absolute minimum, and supported the asymmetric incentive scheme. The NSA replied that the VVIP procedure was beyond skeyes managerial control.
Final outcome of the consultation	In conclusion, the Belgian NSAs decided to accept the financial plan of skeyes to be included in the cost-base of the Belgian Terminal charging zone for RP3, apart from the Cost of Capital, which was adjusted by revising the assumptions used to calculate the return on equity and exclude the carry over related to the correction mechanism of 2020 and 2021 out of the asset base used to calculate the cost of capital.

Additional comments
/

#3 - Professional staff representative bodies	
Stakeholder group composition	ACV-CSC, VSOA
Dates of main meetings / correspondence	woensdag 18 augustus 2021
Main issues discussed	traffic risk sharing, level of costs and investments
Actions agreed upon	No specific actions were agreed upon.

Points of disagreement and reasons	Professional staff representative bodies stated that the use of a prognosis of traffic in general is not realistic. In the current circumstances, they estimate that the actual number will likely be lower. and that the system of risk-sharing is not appropriate. it was further stated that the current level of investments and recruitments is the result from the RP1 and RP2 cost savings, and that professional staff representative bodies had doubts about the added value of using consultants instead of hiring staff and the outsourcing of the ATCO training centre.
Final outcome of the consultation	In line with commission Implementing Regulation 2019/317, the STATFOR base forecast was included in the performance plan.

Additional comments

#4 - Airport operators	
Stakeholder group composition	Brussels Airport Company
Dates of main meetings / correspondence	woensdag 18 augustus 2021
Main issues discussed	Cost-efficiency tartget for the Brussels Terminal charging zone, comprising the costs of skeyes (especially: investment level and cost of capital) and the NSA, as well as the capacity target with corresponding incentive scheme.
Actions agreed upon	No specific actions were agreed upon.
Points of disagreement and reasons	Airport operators questioned the level of investment and the cost allocation between en route and the different airports of which EBBR is the only one incorporated in the performance plan. Next to this, it was questioned whether flight cancellations were taken into account.
Final outcome of the consultation	It was clarified that no investments attributed to airports outside the scope of the performance plan would be chargeed to the airspace users within the EBBR charging zone.

Additional comments

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

Additional comments
airport coordinators were not invited

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

Additional comments

1.3 - France Stakeholder consultation

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

Description of main points raised by stakeholders and explanation of how they were taken into account in developing the performance plan
The main points of concern raised by the different stakeholders were related to the uncertainties regarding future traffic developments and both AU and ANSP tresory issues and financial sustainability, how to maintain a balanced approach between cost saving measures to address the current revenue crisis and support air transport recovery while maintaining the ANSP priority investment and staffing plans necessary to cope with future traffic recovery and avoiding RP2 capacity shortages, the implementation of more flexibility and adaptation to traffic evolution, the practical details on the implementation of emergency measures and the impact on future RP3 and beyond unit rates. Detailed information is provided below and in the consultation material provided in annex to the plan.

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	No	The latest (Oct 2021) STATFOR scenario 2 has been used except for Enroute 2022 based on a local forecast (rationale and justification documented in Annex D)
Charging policy	Yes	No change
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	No change from the 2019 draft Performance plan
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	No	
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	No change from the 2019 draft Performance plan
Establishment or modification of charging zones	No	
Establishment of determined costs included in the cost base for charges	Yes	Mainly dealt during RP3 Users consultation meeting on 1 July. Some comments and requests for additional information have been handled and transmitted to airspace users (see detailed consultation summaries here under and follow up material).
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	No	
Where applicable, decision to apply the simplified charging scheme	No	
New and existing investments, and in particular new major investments, including their expected benefits	Yes	Mainly dealt during RP3 Users consultation meeting on 1 July. Some comments and requests for additional information have been handled and transmitted to airspace users (see detailed consultation summaries here under and follow up material).

1.3.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	DSNA - DTA (NSA)
Dates of main meetings / correspondence	Numerous performance regulation monitoring and oversight bilateral meetings as well as regular exchanges on the revision RP3 draft Performance plan have been held mainly in May and June. DSNA also participated to the 2 main national stakeholder consultation meetings with AU held 21st June and 1st July 2021 described in #2 Additional coordination was required to address the outcome of the completeness check.
Main issues discussed	Main RP3 assumptions (traffic forecast, economics, staffing, 2020 actual costs and operational achievements) RP3 revised determined costs per cost item and related assumptions DSNA investment plan Cost of capital and WACC Cost allocation methodology RP2 exempted costs (carry-over split over RP3) 2020 - 2021 revenue gap coverage (vs 5 to 7 years)
Actions agreed upon	Initial agreement on the proposed RP3 revised draft Performance plan submitted to Airspace users for consultation 1st July 2021 and final updated RP3 revised draft Performance plan submitted to EC 1st October 2021
Points of disagreement and reasons	The revision of some initial assumptions has been asked by the NSA in order to address AU comments (see below)
Final outcome of the consultation	Updates have been made regarding investments costs and staff costs ; the cost of capital has been updated Traffic has been updated in the course of the completeness check.

Additional comments
N/A

#2 - Airspace Users	
Stakeholder group composition	Air Canada, Air France, BAR, Easyjet, FNAM, IATA, KLM, Lufthansa, SCARA - DSNA - DTA (NSA) Observers : PRB, Eurocontrol, BAF (German NSA)
Dates of main meetings / correspondence	[1] 21 June : French RP3 Users consultation meeting (focus on 2020 en route and terminal air navigation actual costs and cost saving measures, the adjustments due to implementation of traffic risk sharing and cost risk sharing mechanisms and 2022 provisional unit rates) [2] 25 June : DSNA Strategic consultation meeting [3] 1 July : French RP3 Users consultation meeting (focus on the revision of the RP3 draft Performance plan regarding cost efficiency and Terminal capacity) [4] 2 Sept : FABEC RP3 Users consultation meeting (focus on the revision of the RP3 draft Performance plan regarding all items except those elements addressed in [3]) [5] 8 Nov : French RP3 Users consultation by mail on the updates (mainly traffic) subsequent to the completeness check ... also addressed during a dedicated meeting with some Airspace users on 9 Nov Meeting [1] & [3] draft minutes sent out to users on 27 July. Meeting [2] report sent out to users on to users on 31 July together with follow-up material. Initial material, minutes and follow-up material have also been published on ESSKY. Material related to written consultation [5] available in Annex C.
Main issues discussed	2020 actual costs Revised RP3 determined costs for en route and terminal per cost item Traffic forecasts and current developments The level of ANSP savings vs the magnitude of traffic drop Users' request to get state subsidies to support and reduce costs of the ANSP ATCO staffing policy Investments plan (incl. its revision) vs costs / operational benefit (incl. capacity gain) Cost of capital and WACC methodology and parameters DSNA debt The planning for RP2 carry-overs and 2020 - 2021 gap revenue coverage Terminal capacity target and related incentive scheme
Actions agreed upon	Additional information requested has been preprared and sent to AU

Points of disagreement and reasons	RP3 level of cost is considered to high AU need more information on asset base evolution Cost of capital proposed by DSNA is not supported France shall outperform cost-efficiency EU targets The French government shall grant DSNA non-repayable funds to reduce 2020/2021 under-recovery or lower the unit rates Use of local traffic forecast for Enroute 2022
Final outcome of the consultation	AU have taken note of the information provided, expressed their concerns, asked for some additional information and requested changes in the draft plan. Some updates have been made accordingly regarding investments and staff costs ; the cost of capital has been updated ; additional information has been forwarded to AU on their request ; revised spreading of RP2 carry-overs to lower the increase of 2022 unit rate ; extension to 7 years of the time period to perform 2020 - 2021 unit rate adjustment

Additional comments

#3 - Professional staff representative bodies	
Stakeholder group composition	DGAC, DGAC main staff representative bodies, DSNA, DTA (French NSA)
Dates of main meetings / correspondence	2 July 2021 (Comité de suivi de la performance)
Main issues discussed	RP3 main assumptions (traffic, ...) DSNA RP3 determined costs The level of ANSP savings vs the magnitude of traffic drop ATCO staffing policy Investments plan (incl. its revision) vs costs / operational benefit (incl. capacity gain) RP2 exempted costs The planning for RP2 carry-overs and 2020 - 2021 gap revenue coverage DSNA revenues and sustainability, level of debt
Actions agreed upon	Staff representatives will be informed during the next steps of the process of the draft performance plan elaboration and submission
Points of disagreement and reasons	NA
Final outcome of the consultation	Staff representatives took note of the information provided and expressed their concern regarding DSNA RP3 revenue, staffing policy and major investment implementation

Additional comments
NA

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

Additional comments
NA

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

Additional comments
NA

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

Additional comments
NA

PRINT

1.3.4 - Germany Stakeholder consultation (10 Aug 2021 and 4 Nov 2021- virtual)

1.3.4.1 - Overall outcome of the consultation of stakeholders on the performanc

Description of main points raised by stakeholders and explanation of how they were taken into account in developing the performance plan
Consultation on the draft performance plan on 10 Aug 2021: 1. Airspace user raised a comment regarding the adjustment to the DFS pension, which is only allowed when there is an unforeseeable cost to the ANSP, whether the change in accounting law or national law has affected the DFS pension cost. Conclusion: The complaint regarding the adjustment as mentioned by IATA was again reviewed by NSA and came up with the result that the adjustment is within the scope of the regulation. 2. Regarding the traffic forecast, airspace users did not think that two months gap in publishing the forecast was crucial in deciding to use the STATFOR over the DFS forecast. The main aspect highlighted by the airspace user is also about the consistency of application and avoiding choosing the lowest forecast whenever beneficial. Conclusion: Ministry of Transport decided to apply DFS forecast after reviewing the recent traffic development. This forecast presents higher service units amounted to additional 2 million SU for Enroute and 0,35 million SU for Terminal for the total of RP3. This will lead to a lower chargeable unit rate applied for all years in the RP3. 3. For allocation of carryover, airspace users demanded a justification for 5-year recovery and requested to apply 7 years option. Conclusion: NSA provided the regulation as a basis for the 5-year recovery. After extra review, NSA continued with this decision to avoid further liquidity risks incurs by the ANSP.

4. Airspace users requested NSA not to grant DFS applying Return on Equity on their asset-base. The same concern for DWD cost of capital (as a government institution with low risk) should not be included in the performance plan. Since it will further increase unit rates and risk for airlines.
Conclusion: After reviewing the evaluation of the imputed interest rate and the risk covered by ANSP, the Ministry of Transport decided not to apply ROE on the asset-based for DFS and DWD for all years in the RP3. This exclusion will further contribute to a favorable rate for the airspace user.
5. Airspace users considered the DDS project as not eligible to be brought up in performance planning, some arguments mentioned that the DDS project is a matter of national security.
Conclusion: After an additional review of the benefit and legality concerning the inclusion of the DDS project into the performance plan, NSA opts to include it: The planned project is at the present stage only destined at detecting drones for the purpose of supporting air traffic control in order to prevent and accidents between aircrafts and drones and to enable a safe and orderly flow of traffic. Currently, it is not decided whether the information thus gathered will be made available to other authorities and for other purposes such as drone defense, law enforcement or criminal prosecution. However, such a sharing of the data is considered as an option to share the costs. In such a case, in line with the principles set out in the European Commission's letter dated 14th of June 2021 (Ares (2021) 3876111), Germany will ensure that the costs are split according to a transparent methodology approved by the National Supervisory Authority and will lower the terminal charges for the respective year in accordance with Art. 29 (6) IR (EU) 2019/317.

6. Airspace user inquired MUAC to share the result of the GCE to the airspace user before the October submission.
Conclusion: MUAC representative agreed to provide the requested information before the submission.
7. The airspace users requested an explanation of costs affiliated with the second charging zone. Airspace users did not yet understand the cost-sharing key of these small airports.
Conclusion: As soon as NSA recognized the respective costs, airspace users will be provided with specific info about the NSA cost attribution between the first and the second charging zone.

Consultation in the course of the completeness check on 4 Nov 2021:

Stakeholders were invited to comment on the STATFOR Forecast as published on 15 October 2021.

Whereas airspace users commented very optimisticly on the forecast, partly even suggesting to go beyond the STATFOR Base Scenario, ANSPs expressed their concerned and advocated for a scenario between the base and the low scenario, pointing out certain risks such the further development of the pandemic but also digitalisation and environmental awareness not suffiently addressed by the forecast.

1.3.4.2 - Specific consultation requirements of ANSPs and airspace users on the

Topic of consultation	Applicable	Results of consultation
Where applicable, decision to diverge from the STATFOR base forecast	Yes - for some FAB Member States	Germany MoT decided to apply DFS forecast as of March 2021 after reviewing the recent traffic developments.
Charging policy	Yes	No changes to the consulted plan.
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	No changes to the consulted plan.
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory	No	
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	No changes to the consulted plan.
Establishment or modification of charging zones	No	
Establishment of determined costs included in the cost base for charges	Yes	Airspace users have requested additional effort to lower the unit rate. A few adaptations were taken by Germany such as excluding RoE of the ANSPs and also changing the applied traffic forecast .
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	No	
Where applicable, decision to apply the simplified charging scheme	No	
New and existing investments, and in particular new major investments, including their expected benefits	Yes	Main concern from the airspace user is regarding DDS project. After an additional review of the benefit and legality concerning the inclusion of the DDS project into the performance plan, NSA opts to include it as the initial

1.3.4.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	DFS, DWD, MUAC
Dates of main meetings / correspondence	National consultation 10/08/2021, Follow up meetings 12/08/2021, 23/08/2021, 13/09/2021, 15/09/2021
Main issues discussed	National consultation is described in table 1.3.4.1. Follow-up meeting with regard to the pending decisions is concerning DFS and DWD RoE, Asset Base, and Traffic Forecast.
Actions agreed upon	Various.
Points of disagreement and reasons	Various.
Final outcome of the consultation	No RoE will be included in the performance plan and changes of STATFOR forecast scenario 2 to the DFS march forecast.

Additional comments

#2 - Airspace Users	
Stakeholder group composition	IATA, BARIG, BDF, Condor, Easyjet, Lufthansa, Ryanair, TUI-Fly
Dates of main meetings / correspondence	National consultation 10.08.2021
Main issues discussed	Described in table 1.3.4.1
Actions agreed upon	Described in table 1.3.4.1
Points of disagreement and reasons	Described in table 1.3.4.1
Final outcome of the consultation	Described in table 1.3.4.1

Additional comments

#3 - Professional staff representative bodies	
Stakeholder group composition	Air Traffic Controllers European Unions Coordination (ATCEUC)
Dates of main meetings / correspondence	National consultation 10.08.2021
Main issues discussed	Described in table 1.3.4.1

Actions agreed upon	./.
Points of disagreement and reasons	./.
Final outcome of the consultation	Described in table 1.3.4.1

Additional comments

#4 - Airport operators	
Stakeholder group composition	No airport operators responded to the invitation of the 10 Aug 2021 - consultation.
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	No airport operators responed to the invitation of the 10 Aug 2021 - consultation.
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	Air Traffic Controllers European Unions Coordination (ATCEUC)
Dates of main meetings / correspondence	National consultation 10.08.2021
Main issues discussed	Described in table 1.3.4.1
Actions agreed upon	
Points of disagreement and reasons	
Final outcome of the consultation	Described in table 1.3.4.1

Additional comments

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1.3.5 - Luxembourg Terminal stakeholder consultation

1.3.5.1 - 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
As the main cost driver is staff costs, questions raised about the higher success rate than expected in matter of ab initio training and their public servant status, also in matter of possible early retirement compensation. Regarding the potential additional public funding, the discussions are still ongoing.

1.3.5.2 - 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	No	No comments were made on the use of the STATFOR May 2021 scenario 2 forecast.
Charging policy	Yes	The users have been informed of the intention to spread the carry-over related to the correction mechanism of 2020 and 2021 underrecoveries over 7 years in accordance with art. 5(5) of commission Implementing Regulation 2020/1627. No comments were made.
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	An symmetric bonus/malus system was introduced, with a maximum bonus of 0.25% and a maximum penalty of 0.25%. ANA indicated that no bonus will be calculated as long as the traffic in terms of service units stays below the level of 2019.
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	Yes	Luxembourg Terminal incentive scheme will be based upon CRSTMP-delay only. No comments were made
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	A symetric deadband of 30% has been presented to the users. No comments were made.
Establishment or modification of charging zones	No	
Establishment of determined costs included in the cost base for charges	Yes	
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	No	
Where applicable, decision to apply the simplified charging scheme	No	
New and existing investments, and in particular new major investments, including their expected benefits	Yes	No comments were made.

1.3.5.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	ANA
Dates of main meetings / correspondence	Regular exchanges during the establishment period - Users consultation on 20th September 2021
Main issues discussed	RP3 assumptions (traffic scenario, incentive scheme, …) Investments Operational and staff costs
Actions agreed upon	Ongoing discussions about additional public funding
Points of disagreement and reasons	/
Final outcome of the consultation	The discussions about additional public funding come to an agreement in November 2021.

Additional comments

#2 - Airspace Users	
Stakeholder group composition	Cargolux, Luxair
Dates of main meetings / correspondence	Users consultation on 20th September 2021
Main issues discussed	Staff costs - additional public funding
Actions agreed upon	Ongoing discussions about additional public funding
Points of disagreement and reasons	Increase of staff costs
Final outcome of the consultation	Due to the recruitment process in the civil service, the room to adapt is quite narrow. The discussions about additional public funding come to an agreement in November 2021.

Additional comments

#3 - Professional staff representative bodies	
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

#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	ILR (Institut Luxembourgeois de Régulation)
Dates of main meetings / correspondence	Users consultation on 20th September 2021
Main issues discussed	/
Actions agreed upon	/
Points of disagreement and reasons	/
Final outcome of the consultation	/

Additional comments

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
Similar to 2019, the Netherlands intentionally organised its consultation meeting on the national elements of the FABEC performance plan at an early stage, to ensure there would be sufficient time available to take stakeholder comments into account in the further development of the plan. Stakeholders were informed that written comments would be welcome following the meeting. The main focus of stakeholders was on the overall level of costs, with airspace users expressing concerns about the fact that proposed cost efficiency targets were not in line with EU-wide targets and calling on State and service providers to further reduce costs. Although the proposed targets already represent a reduction in overall costs of €145mln (8,2%) compared to the previous plan, State and NSA indicated that they are well aware of the concerns of the airspace users, and would continue to push the ANSPs to maintain focus on any potential savings, but State and NSA also clearly indicated at the meeting that care should be taken to ensure significant further savings do not undermine future service provision, with relevant negative consequences for airspace users. Efforts to further reduce costs following the meeting led to an additional savings of €11mln. Unfortunately, for the Netherlands the savings made by MUAC were partly outbalanced by an update in the cost sharing keys based on latest available operational information, leading to overall cost reduction of €7mln. State and users disagreed on the validity of the performance plan submitted in 2019, and of the subsequent negative assessment of that plan by EC/PRB, as a reference for identification of savings.

Some specific issues raised (either during the meeting or in writing afterwards) are listed below. See minutes of the meeting (Annex C) for further issues raised and responses provided.
- Users asked a number of questions regarding the eligibility or correctness of certain cost elements. These questions are addressed under questions g and f (for en route and terminal respectively) of the section of this document on cost efficiency targets for the Netherlands.
- Users expressed their preference for an assymetric incentive scheme for terminal capacity and indicated their disagreement with an incentive scheme based on CRSTMP delay codes only. This point is addressed in the relevant section below.
- Users expressed concerns on the feasibility of the ambitious LVNL project portfolio. This portfolio has been reviewed in relation to feasibility, also taking into account the practical impacts of COVID (distancing requirements, remote working conditions, etc), and a revised planning has been included in this performance plan.

No specific actions were agreed during the meeting, and no points of disagreement were explicitly noted. As a result, no actions or points of disagreement were noted in the minutes of the meeting. All attendees were provided with an opportunity to comment on these minutes, but no comments were received.

ADDITION FOR SUBMISSION NOVEMBER 2021
In early November 2021, the Netherlands consulted stakeholders, via a written procedure, on the adaptation of traffic forecasts. Relevant documentation is included in Annex C.

The Netherlands proposed traffic scenarios which deviated from the October STATFOR base forecast in 2022 but with an intermediate step in 2023 would be in line in STATFOR base by 2024. Airspace users highlighted their support for using the STATFOR base forecast for all years of RP3, and provided clear supporting arguments.

In response to AU arguments, the Netherlands has further adapted its traffic forecasts, which are now between the scenario proposed in the consultation, and the Ocotber STATFOR base scenario. The Netherlands still believes there is reason to assume significant risk of temporary setbacks in air traffic recovery during 2022.

In respose to specific comments from AU, the Netherlands would also like to state the following:
- AU objected to the argument that recent increases in daily new infections in the Netherlands should be used as an argument for a more cautious traffic scenario. We would like to clarify that in our opinion these recent increases are merely evidence that the virus has not yet disappeared and a risk of recurrence - not just in the Netherlands but throughout Europe and globally - still clearly exists.
- AU stated that traffic in Dutch airspace was mostly dependent on overflights and therefore increasing infections at a national level are not relevant for the en route traffic scenario. We would like to point out that in 2019 there were approximately 1.3 million flights in Dutch airspace, and 600 thousand movements at Dutch airports, suggesting nearly half of all flights in the airspace move to or from a Dutch airport, making national effects non-negligible.

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 - for some FAB Member States	The Netherlands will apply a deviation from STATFOR for 2022, see sheet 1.2 for details. Following consultation, and based on AU feedback, this deviation was reduced to only apply for 2022, and the deviation for 2022 was reduced compared to the proposal that was shared for consultation.

Charging policy	Yes	Airspace users requested to be consulted on the recovery of lost ANS revenues for 2020 and 2021. Whereas the Netherlands intend to apply an appropriate consultation process on this topic, it is not considered an RP3 issue but a national policy decision which is outside the scope of the consultation on the performance plan. Equally, airspace users called on the State to contribute to financing ANS provision in order to reduce unit rates. Although comments were noted, and the Netherlands is aware of the financial impact of ANS costs on airspace users, this is also considered a national policy issue, and not within the scope of the RP3 plan. The Netherlands furthermore noted that it had already provided significant financial support to the aviation industry in response to the impact of the COVID-19 pandemic. No comments were made on relevant aspects of charging policy.
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	Only the incentive scheme for terminal capacity performance was discussed at national level. The incentive scheme for en route capacity was discussed at FABEC level. Users expressed a preference for a non-symmetric incentive scheme and proposed a maximum penalty of 1% and a maximum bonus of 0,5%. The Netherlands considers a symmetric distribution of bonus and penalty to be the fairest format for an incentive scheme, and therefore has not changes its proposal based on stakeholder feedback.
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	Yes	Users request an incentive scheme based on all causes of delay, not CRSTMP-only. The Netherlands appreciates the issue: ANSPs deliver their performance in terms of CRSTMP-related delays, but users experience all causes of delay. This makes it difficult to define a scheme within the current rules that is fair to both parties. However, since this incentive scheme is part of a performance scheme for ANS provision, we consider it inappropriate to penalise the ANSP for delays that are outside their scope, but equally we do not support awarding a bonus when the performance level is the result of delay causes outside the ANSP scope. We therefore maintain a scheme based on CRSTMP codes only.
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	No comments made by stakeholders.
Establishment or modification of charging zones	No	Not applicable.
Establishment of determined costs included in the cost base for charges	Yes	See general description of main points, above.
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	No	Not applicable.
Where applicable, decision to apply the simplified charging scheme	No	Not applicable.
New and existing investments, and in particular new major investments, including their expected benefits	Yes	Users did not comment on specific investments, but noted the need for clear views on benefits, and expressed concerns on the high ambition level and feasibility for the LVNL project portfolio, which was subsequently revised in order to improve overall feasibility, also taking into account practical effects of COVID.

1.3.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	LVNL, MUAC, KNMI
Dates of main meetings / correspondence	National stakeholder consultation meeting 2 July
Main issues discussed	Discussion of all national elements of the FABEC performance plan
Actions agreed upon	See minutes of the meeting (Annex C).
Points of disagreement and reasons	See minutes of the meeting.
Final outcome of the consultation	See minutes of the meeting.

Additional comments

#2 - Airspace Users	
Stakeholder group composition	IATA, KLM, Lufthansa, easyJet, Ryanair
Dates of main meetings / correspondence	National stakeholder consultation meeting 2 July
Main issues discussed	Discussion of all national elements of the FABEC performance plan
Actions agreed upon	See minutes of the meeting.
Points of disagreement and reasons	See minutes of the meeting.
Final outcome of the consultation	See minutes of the meeting.

Additional comments
Invitations for the national stakeholder consultation meeting were sent to the ten largest airline custoomers in each of the two charging zones in Dutch airspace, as well as relevant national and international representative bodies (including GA). Following the meeting, written inputs were received from IATA, Lufthansa and easyJet (see Annex C). Given the high number of consultation meetings attended by the user representatives, the impression exists that in some cases user feedback included comments that did not relate to the situation in the Netherlands, or issues presented by the Netherlands were misunderstood. Whereas the feedback from users is highly appreciated, it is therefore equally necessary to scrutinise this feedback to ensure correct interpretation.

#3 - Professional staff representative bodies	
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
Not consulted by the NSA; consultation of staff is considered the responsibility of the ANSPs.

#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
Schiphol Group, as the main airport operator in the Netherlands, was invited to the general stakeholder consultation meeting, but was unable to attend.

#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
The airport coordinator was not consulted.

#6 - Other (specify)	
Stakeholder group composition	Ministry of Defence
Dates of main meetings / correspondence	National stakeholder consultation meeting 2 July
Main issues discussed	Discussion of all national elements of the FABEC performance plan
Actions agreed upon	See minutes of the meeting.
Points of disagreement and reasons	See minutes of the meeting.
Final outcome of the consultation	See minutes of the meeting.

Additional comments
Ministry of Defence attended the consultation meeting as observer, partly in relation to the planned integration of civil and military service providers during RP3.

1.3.7 - Switzerland Stakeholder

1.3.7.1 - Overall outcome of the consultation of stakeholders on the performance

Description of main points raised by stakeholders and explanation of how they were taken into account in developing the performance plan
Switzerland organised the Stakeholders Consultation on 15th July. The meeting was held virtually due to the ongoing COVID Pandemic. Stakeholders sent written comments following the meeting. - IATA Response: Switzerland Cost Efficiency Consultation supported by Easyjet, A4E sent on 23th July. - Easyjet Response: Switzerland RP3 Easyjet response final sent on 25th August. Further bilateral meetings between SWISS and FOCA, FOCA-Skyguide took place after the consultation process. During the meeting. It has been presented an overview on all KPAs. The main focus of stakeholders was on the cost development. FOCA noted all the open questions and delivered a CRD Document, which was sent to the stakeholders in written form after the meeting

1.3.7.2 - Specific consultation requirements of ANSPs and airspace users on the pe

Topic of consultation	**Applicable**	**Results of consultation**
Where applicable, decision to diverge from the STATFOR base forecast	No	~~During the stakeholder consultation on 15th July, it has been informed that STATFOR Base Forecast May 2021 will be used (En route and Terminal).~~ *Update:The Users have been informed by Email on the update for STATFOR Base Forecast October 2021 before the submission date (17th November). The CE En route and Terminal Excel Tabels of the Performance Plan have been also sent.

Charging policy	Yes	Determined costs plus adjustments according to the regulation have been presented.
Maximum financial advantages and disadvantages for the mandatory incentive scheme on capacity	Yes	En route Capacity: Please refer to FABEC consultation Terminal Capacity: Same approach as 2019 and as set in the regulation. No written comments received.
Where applicable, decision to modulate performance targets for the purpose of pivot values to be used for the mandatory incentive scheme on capacity	Yes	En route Capacity: Please refer to FABEC consultation Terminal Incentive scheme is applied for the CRSTMP part. No writen comments received.
Symmetric range ("dead band") for the purpose of the mandatory incentive scheme on capacity	Yes	En route Capacity: Please refer to FABEC consultation Terminal: Deadband is expressend in % and is set +- 5%. The maximun bonus and penalty was presented as established on the Regulation 2019/317
Establishment or modification of charging zones	No	
Establishment of determined costs included in the cost base for charges	Yes	Presented during the stakeholder consultation. Additional requested information was sent after the meeting.
Where applicable, values of the modulated parameters for the traffic risk sharing mechanism	No	
Where applicable, decision to apply the simplified charging scheme	No	

New and existing investments, and in particular new major investments, including their expected benefits	Yes	Investment overview has been presented during the User Consultation. Additional requested information on Investments was sent after the meeting under the Comment Response Document

1.3.7.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs	
Stakeholder group composition	Skyguide, Meteo CH
Dates of main meetings / correspondence	FOCA has organized several meetings to discuss on a bilateral manner during the whole years 2020 and 2021. The meetings have been done at working level as well as at managerial level on different topics around the Performance and Charging Scheme.
Main issues discussed	National elements of the FABEC Performance Plan COVID- 19 measures RP3 Exceptional Measures National User Consultation
Actions agreed upon	FOCA, Skyguide and METEO CH discussed and agreed on the process to develop the performance plan, the content and the deadlines to draft, review and validate the inputs as well as the whole Stakeholder Consultation process.
Points of disagreement and reasons	The whole discussion and preparation process was held in a contructive level and all requested information or justifications have been delivered on time at working level and at managerial level.
Final outcome of the consultation	The final outcome was the validation and agreement on all the discussed points.

Additional comments

#2 - Airspace Users	
Stakeholder group composition	IATA

Dates of main meetings / correspondence	Informal Stakeholders Meeting on 20th May Swiss Stakeholders Consultation Meeting on 15th July
Main issues discussed	National elements of the FABEC Performance Plan, Exceptional Items, Staff Cost (ETF Development, Cost development, Short time work) OPEX (2019 Operational Costs, Allocation of Cost en route terminal, MET Cost) CAPEX (Virtual Center Benefits in the four KPA) Swiss State Funding
Actions agreed upon	Exceptional items: A detailed table on exceptional items deduction has been sent after the meeting. No further action. Staff Cost, OPEX; CAPEX, Swiss State Funding; The requested information has been delivered in detail. No further action
Points of disagreement and reasons	
Final outcome of the consultation	FOCA responded to all the concerns.

Additional comments

#3 - Airspace Users	
Stakeholder group composition	SWISS
Dates of main meetings / correspondence	Informal Stakeholders Meeting on 20th May Swiss Stakeholders Consultation Meeting on 15th July
Main issues discussed	National elements of the FABEC Performance Plan Detailed FTE Breakdown during 2020 EU Funding Staff Cost
Actions agreed upon	Detailed FTE Breakdown: It has been agreed to deliver more detailed information after the meeting. No further action. Staff Cost: Further information has been sent after the meeting. No further action.

Points of disagreement and reasons	EU Funding: Funding for European ANSPs could eventually amount between 30 to 70% of eligible costs. For INEA: Skyguide was eligible for the funding for research and development, but as this effort was mostly focused on implementation, it was rejected at each application. Skyguide receives zero funding.
Final outcome of the consultation	No further questions were sent by writing.

Additional comments

#4 - Airspace Users	
Stakeholder group composition	Easyjet
Dates of main meetings / correspondence	Informal Stakeholders Meeting on 20th May Swiss Stakeholders Consultation Meeting on 15th July
Main issues discussed	National elements of the FABEC Performance Plan CAPEX RP2 RP3 Overspending in RP2 Strong increase of the Unit rate - Swiss State Funding
Actions agreed upon	CAPEX in RP2, RP3: It has been explained the development and the way forward. No further action. CE Targets - Swiss State support: The requested information has been explained. No further action.
Points of disagreement and reasons	
Final outcome of the consultation	FOCA responded to all the questions sent by writing.

Additional comments

#5 - Airspace Users	
Stakeholder group composition	Lufthansa
Dates of main meetings / correspondence	Swiss Stakeholders Consultation Meeting on 15th July
Main issues discussed	Short time work rules at Skyguide Capacity delay 2021 Remaining Questions Cost savings

Actions agreed upon	Capacity delay 2021: It has been agreed to send further information after the meeting. This has been done on the CRD Document. Remaining questions: Stakeholders will send their comments, questions in writing. Cost savings: The requested information has been sent.
Points of disagreement and reasons	
Final outcome of the consultation	No further comment has been received by writing.

Additional comments

#6 - Airpace Users	
Stakeholder group composition	Zurich Airport
Dates of main meetings / correspondence	Swiss Stakeholders Consultation Meeting on 15th July
Main issues discussed	Virtual Center Benefits, Tranche 2 and Tranche 3
Actions agreed upon	The requested information has been presented during the meeting. Further details has been sent after the meeting.
Points of disagreement and reasons	
Final outcome of the consultation	No further comment has been received by writing.

Additional comments

plan

rformance plan

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

1.4.1 - Airports as per Article 1(3) (IFR movements ≥ 80 000)

ICAO code	Airport name	Charging Zone	IFR air transport movements			
			2016	2017	2018	Average
EBBR	Brussels	Belgium EBBR	218.120	232.719	229.957	226.932
LFPG	Paris/Charles-De-Gaulle	France - Zone 1	479.199	482.678	488.117	483.331
LFPO	Paris/Orly	France - Zone 1	237.708	232.139	232.374	234.074
LFMN	Nice/Côte d'Azur	France - Zone 2	139.549	142.623	143.599	141.924
LFLL	Lyon/Saint-Exupéry	France - Zone 2	110.638	112.331	113.434	112.134
LFML	Marseille/Provence	France - Zone 2	96.281	97.473	97.770	97.175
LFBO	Toulouse/Blagnac	France - Zone 2	90.977	98.991	97.154	95.707
EDDF	Frankfurt	Germany-TMZ	462.903	475.535	512.099	483.512
EDDM	Munich	Germany-TMZ	391.744	401.849	410.528	401.374
EDDL	Dusseldorf	Germany-TMZ	217.041	221.067	218.391	218.833
EDDT	Berlin-Tegel	Germany-TMZ	183.959	171.882	185.309	180.383
EDDH	Hamburg	Germany-TMZ	152.323	154.478	149.338	152.046
EDDK	Cologne/Bonn	Germany-TMZ	134.393	138.832	141.991	138.405
EDDS	Stuttgart	Germany-TMZ	119.023	117.993	128.323	121.780
EDDB	Berlin Brandenburg (formely Berlin-Schönefeld)	Germany-TMZ	95.088	100.122	101.054	98.755
EHAM	Amsterdam Schiphol	Netherlands-TMZ	490.436	508.299	511.321	503.352
LSZH	Zurich	Switzerland-TMZ	262.610	263.549	271.578	265.912
LSGG	Geneva	Switzerland-TMZ	183.079	183.591	180.221	182.297

Additional comments
Berlin-Tegel Airport was finally closed on 5 May 2021 as a civilian airport; the ICAO code EDDB was reattributed to Berlin Brandenburg Airport that was opened in October 2021, incorporating the premises of former Schoenefeld-Berlin airport.

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

a) Belgium

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

Additional comments

a) France

Number of airports	52		
ICAO code	Airport name	Charging Zone	Additional information
LFSB	Bale/Mulhouse	France - Zone 2	
LFBD	Bordeaux/Merignac	France - Zone 2	
LFPB	Paris/Le Bourget	France - Zone 2	
LFRS	Nantes/Atlantique	France - Zone 2	
LFMT	Montpellier/Méditerranée	France - Zone 2	
LFST	Strasbourg/Entzheim	France - Zone 2	
LFOB	Beauvais/Tillé	France - Zone 2	
LFQQ	Lille/Lesquin	France - Zone 2	
LFRN	Rennes/St-Jacques	France - Zone 2	
LFKJ	Ajaccio/Napoléon-Bonaparte	France - Zone 2	
LFLC	Clermont-Ferrand/Auvergne	France - Zone 2	
LFRB	Brest/Bretagne	France - Zone 2	
LFMD	Cannes/Mandelieu	France - Zone 2	
LFKB	Bastia/Poretta	France - Zone 2	
LFBZ	Biarritz/Bayonne-Anglet	France - Zone 2	
LFBP	Pau/Pyrénées	France - Zone 2	
LFPN	Toussus/Le-Noble	France - Zone 2	
LFTH	Hyères/Le-Palyvestre	France - Zone 2	
LFKF	Figari/Sud-Corse	France - Zone 2	
LFLY	Lyon/Bron	France - Zone 2	
LFMP	Perpignan/Rivesaltes	France - Zone 2	
LFBL	Limoges/Bellegarde	France - Zone 2	
LFRH	Lorient/Lann-Bihoué	France - Zone 2	
LFBT	Tarbes-Lourdes/Pyrénées	France - Zone 2	
LFLB	Chambéry/Aix-les-Bains	France - Zone 2	
LFBH	La-Rochelle/Ile de Ré	France - Zone 2	
LFLS	Grenoble/Isère	France - Zone 2	
LFCR	Rodez/Marcillac	France - Zone 2	
LFKC	Calvi/Sainte-Catherine	France - Zone 2	
LFMV	Avignon/Caumont	France - Zone 2	
LFMK	Carcassonne/Salvaza	France - Zone 2	
LFBI	Poitiers/Biard	France - Zone 2	
LFMU	Béziers/Vias	France - Zone 2	
LFRK	Caen/Carpiquet	France - Zone 2	
LFBA	Agen/La-Garenne	France - Zone 2	
LFBE	Bergerac/Roumanière	France - Zone 2	
LFMI	Istres/Le-Tubé	France - Zone 2	
LFRD	Dinard/Pleurtuit-Saint-Malo	France - Zone 2	
LFRG	Deauville/Normandie	France - Zone 2	
LFTW	Nîmes/Garons	France - Zone 2	
LFLP	Annecy/Meythet	France - Zone 2	
LFGJ	Dole/Tavaux	France - Zone 2	
LFRQ	Quimper/Pluguffan	France - Zone 2	
LFOK	Châlons/Vatry	France - Zone 2	
LFMH	Saint-Etienne/Bouthéon	France - Zone 2	
LFSL	Brive/Souillac	France - Zone 2	
LFOT	Tours/Val-de-Loire	France - Zone 2	
LFRZ	Saint-Nazaire/Montoir	France - Zone 2	
LFLX	Châteauroux/Déols	France - Zone 2	
LFAQ	Albert/Bray	France - Zone 2	
LFOP	Rouen/Vallée-de-Seine	France - Zone 2	
LFJL	Metz-Nancy/Lorraine	France - Zone 2	

Additional comments

c) Germany

Number of airports	8		
ICAO code	Airport name	Charging Zone	Additional information
EDDV	Hannover	Germany-TMZ	
EDDP	Leipzig	Germany-TMZ	
EDDN	Nürnberg	Germany-TMZ	
EDDW	Bremen	Germany-TMZ	
EDDC	Dresden	Germany-TMZ	
EDDG	Münster-Osnabrück	Germany-TMZ	
EDDR	Saarbrücken	Germany-TMZ	
EDDE	Erfurt	Germany-TMZ	

Additional comments

d) Luxembourg

Number of airports	1		
ICAO code	Airport name	Charging Zone	Additional information
ELLX	Luxembourg	Luxembourg-TMZ	

Additional comments

e) Netherlands

Number of airports	3		
ICAO code	Airport name	Charging Zone	Additional information
EHRD	Rotterdam	Netherlands-TMZ	
EHGG	Groningen Eelde	Netherlands-TMZ	
EHBK	Maastricht - Aachen	Netherlands-TMZ	

Additional comments

f) Switzerland

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

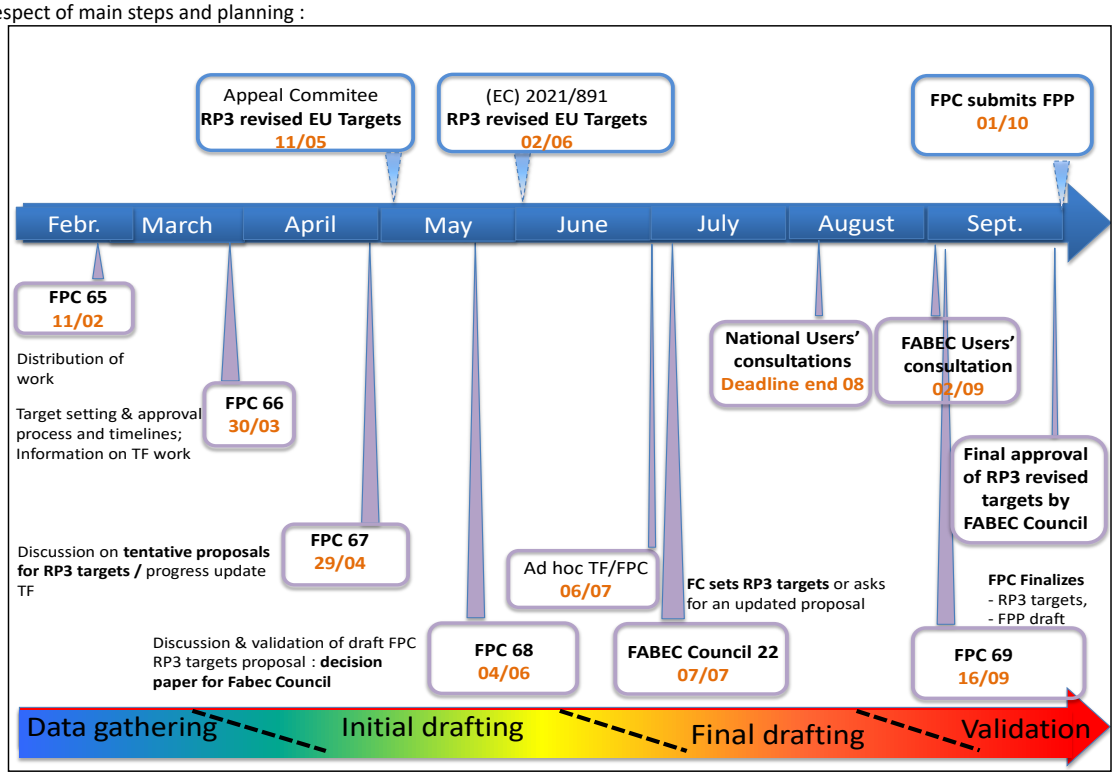
Additional comments

1.5 - Services Under Market Conditions

Number of services under market conditions	0

1.6 - Process followed to develop and adopt a FAB Performance Plan

Description of the process
The following process has been developped within the FABEC Financial and Performance Committee (FPC) : Setting up Task forces (TF) to : - coordinate and/or to liaise with any other States or ANSP committees, including the military, or task forces to be involved and with national representatives for local targets ; - gather required data and material in the appropriate format from ANSP and national representatives; - draft initial performance plan chapters ; - consolidate national chapters when drafted locally ; - ensure integration with final consolidated FABEC performance plan. 9 TF: - TF1 – General coordination and consultation management - TF2 – Introduction, FABEC organisation and processes - TF3 – Costs, investments and SESAR - TF4 – Safety - TF5 – Capacity - TF6 – Environment - TF7 – Cross-border - TF8 – Military dimension - TF9 – Traffic risk sharing and incentive scheme With respect of main steps and planning : ● with respect of main steps and planning :



1.7 - Establishment and application of a simplified charging scheme

How many Member States in the FAB intend to apply a simplified charging scheme?	0

SECTION 2: INVESTMENTS

2.x - Investments

2.x.1 - Summary of investments

2.x.2 - Detail of new major investments

2.x.3 - Other new and existing investments

#VERW!

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2.5 - Investments - LVNL

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#VERW!

#VERW!

2.10 - Investments - Royal Netherlands Meteorological Institute (KNMI)

#VERW!

Annexes of relevance to this section

ANNEX E. INVESTMENTS

NOTE: The requirements as per Annex II, 2.2.(c) are addressed in item 4.1.2

2.1 - Investments - skeyes

2.1.1 - Summary of investments

Number of new major investments	4

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1	ATM Next Generation	86.574.148	38.658.980	0	38.137	160.714	663.539	1.119.461	12 years	78%	22%	Phase I 2023 / Phase II 2026 /Phase III 2027
2	remote radio sites	13.338.869	12.453.446	11.755	35.502	111.361	290.606	1.061.475	15 years	82%	18%	2024 most part / 2025 remainder
3	Wide Area Networking	7.371.289	6.361.653	225	32.390	539.239	837.312	934.666	8 years (15 for building arrangements)	87%	13%	Phase I 2022 / Phase II 2023 / Phase III 2024
4	A-SMGCS 2 systeem EBBR	5.869.670	3.119.671	3.156	10.147	15.525	57.202	611.110	6 years software / 15 years hardware	0%	100%	Phase I 2024 / Phase II 2026
Sub-total of **new major investments** above (1)		113.153.976	60.593.750	15.135	116.178	826.839	1.848.660	3.726.712				
Sub-total **other new investments** (2)		119.002.965	73.229.107	494.501	1.412.051	3.209.505	6.951.199	9.945.147		77%	23%	
Sub-total **existing investments** (3)				14.562.294	11.831.096	10.407.395	9.453.957	8.707.030		77%	23%	
Total new and existing investments (1) + (2) + (3)		232.156.941	133.822.857	15.071.931	13.359.325	14.443.738	18.253.817	22.378.888				

** The total % enroute+terminal should be equal to 100%.*

2.1.2 - Detail of new major investments

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

Name of new major investment 1	***ATM Next Generation***					Total value of the asset	***86.574.148 €***
Description of the asset	This program focuses on replacing the current ATM system with a single, integrated and harmonised air traffic management system to support the integration of civil and military ATM services and to improve capacity and operational efficiencies. The program includes the upgrade of the current ATM system to extend its lifetime until the commissioning of the new system						
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	Commission Implementing Regulation (EU) 2021/116 of 1 February 2021 on the establishment of the Common Project One supporting the implementation of the European Air Traffic Management Master Plan provided for in Regulation (EC) No 550/2004 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014					
Specify links to the PCP/CP1/Interoperability Regulations	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability

Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	1,1		3.1, 3.2	4,2		6,3		
Benefits for airspace users and results of the consultation of airspace users' representatives	The shared data services solution will enable an efficient sharing of data and integrated use of the airspace. It also supports the deployment of an efficient and effective external contingency solution in the event of a failure of one of the facilities providing technical services. Furthermore, it will enable maximum compliance with customer needs (i.e. airlines, airports, military bases), and will allow ATCO's to work flexibly from any work station, on any airspace sector (enabling CIV-MIL integration) – in line with the vision of the Airspace Architecture Study. The new system will enable the implementation of the functionalities required by the European regulation.							
Joint investment / partnership	Yes	Synergy with MUAC and Belgium Defense to reduce the operating and development cost of the ATM system.						
Investment in ATM systems	Yes							
If investment in ATM system, type?	New system	The investment includes the renewal of the current system and the extension of the lifetime of the current system (Midlife upgrade)						
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP	AF 1.1, AF3.1, AF 3.2, AF 4.3, AF 6.3						

Name of new major investment 2	***remote radio sites***		Total value of the asset	***13.338.869 €***
Description of the asset	This project focuses on improving the redundancy and resilience of the air-ground radio communication infrastructure (Chain A, B and C), and involves the installation of 18 "new" sites for Enroute and Approach. The project comprises two investments: Remote radio sites and the electronic equipment transmitting and receiving centre.			
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No			
Level of impact of the investment	Network	Increased level of safety for airspace users as a result of improved communication service resilience, guaranteed business continuity of air navigation services through reduced traffic disruption.		
	Local	Increased level of safety for airspace users as a result of improved communication service resilience, guaranteed business continuity of air navigation services through reduced traffic disruption.		
	Non-performance			
Quantitative impact per KPA	Safety	Safety level is maintained in case of equipment failure (decrease risk of single point of failure.		
	Environment	N.A.		
	Capacity	Reduce risk of traffic disruption (traffic disruption due to system failure led to 52,920 minutes delay in 2015 and 7,442 minutes delay in 2018)		
	Cost Efficiency	N.A.		
Results of the consultation of airspace users' representatives	Airspace users' have been consulted on the investment plan of skeyes during the consultation meeting held on 18 August 2021. Complementary information requested by the users has been sent on 27 August.			
Joint investment / partnership	Yes	As part of the partnership between skeyes and Belgian Defense, new radiosite are installed whenever possible on military sites to avoid purchasing and equipping new plot of land		
Investment in ATM systems	No			
If investment in ATM system, type?	Click to select			
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select			

Name of new major investment 3	***Wide Area Networking***	Total value of the asset	***7.371.289 €***

Description of the asset	From mid 2022 onwards, skeyes' existing WAN (SDH network) will no longer be supported by the current Telco service provider, thus becoming obsolete. The creation of a new Wide Area Network (WAN) will support all skeyes operational and business critical processes and related IT systems. In particular, it will provide highly available, secure and scalable network connectivity to interconnect all skeyes locations (point of presence).	
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No	
Level of impact of the investment	Network	Business continuity of air navigation services through reduced risk of data traffic disruption
	Local	Cost reduction and efficiency gains through the use of a more efficient, scalable network.
	Non-performance	
Quantitative impact per KPA	Safety	N.A.
	Environment	N.A.
	Capacity	Reduce risk of traffic disruption (traffic disruption due to system failure led to 52,920 minutes delay in 2015 and 7,442 minutes delay in 2018)
	Cost Efficiency	Efficiency gains through the use of a more efficient and scalable network. The new WAN will be a major enabler for virtualization projects (ATM Next Gen and Digital Towers)
Results of the consultation of airspace users' representatives	Airspace users' have been consulted on the investment plan of skeyes during the consultation meeting held on 18 August 2021. Complementary information requested by the users has been sent on 27 August.	
Joint investment / partnership	No	
Investment in ATM systems	No	
If investment in ATM system, type?	Click to select	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	

Name of new major investment 4	***A-SMGCS 2 systeem EBBR***					Total value of the asset		***5.869.670 €***
Description of the asset	This project focuses on replacing the existing Advanced Surface Movement Guidance and Control (A-SMGCS) data fusion system, three Surface Movement Radars (SMR), and the MLAT system at Brussels Airport. The project comprises two investments: the A-SMGCS system and the cameras							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	Commission Implementing Regulation (EU) 2021/116 of 1 February 2021 on the establishment of the Common Project One supporting the implementation of the European Air Traffic Management Master Plan provided for in Regulation (EC) No 550/2004 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
		2.1, 2.2, 2.3		4.2, 4.4				
Benefits for airspace users and results of the consultation of airspace users' representatives	Airspace users' have been consulted on the investment plan of skeyes during the consultation meeting held on 18 August 2021. Complementary information requested by the users has been sent on 27 August.							
Joint investment / partnership	No							
Investment in ATM systems	No							
If investment in ATM system, type?	Click to select							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select							

2.1.3 - Other new and existing investments

2.1.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

The description and justification of the costs nature and benefit of other new and existing investments in fixed assets planned over RP3 are described in Annex E. Each planned investment has been categorised into three overarching categories:
- ATM enhancement
- CNS and MET enhancement
- Infrastructure enhancement

2.1.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	Click to select number of new other investments

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	

2.2 - Investments - DSNA

2.2.1 - Summary of investments

Number of new major investments	9

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1	4-FLIGHT	853.400.000	284.099.000	9.797.000	15.292.000	24.491.000	33.291.000	41.985.000	8	100%	0%	2021 to 2025
2	AIS/AIM	34 000 000 + N/A (MCO)	26.588.000	2.285.000	3.500.000	3.115.000	3.416.000	4.054.000	8	81%	19%	2018 - 2024 + Recur. Activ.
3	CDM/AMAN/DMAN/XMAN	100.000.000	26.016.000	1.468.000	2.587.000	2.811.000	3.594.000	4.540.000	8	81%	19%	From 2015
4	COFLIGHT	350.000.000	126.104.000	10.016.000	13.588.000	18.886.000	24.452.000	28.570.000	4	81%	19%	2021 to 2025
5	CSSIP	81.000.000	9.601.000	4.833.000	1.815.000	945.000	559.000	538.000	8	81%	19%	Up to 2022
6	NVCS	72.000.000	41.936.000	2.905.000	6.788.000	4.561.000	6.561.000	6.747.000	8	96%	4%	2019-2025
7	SYSAT	500.500.000	111.482.000	5.343.000	12.435.000	14.321.000	15.434.000	16.174.000	8	63%	37%	2021-2030
8	MCO and evol CNS/ATM	N/A (MCO)	617.296.000	60.381.000	74.651.000	87.259.000	97.741.000	109.776.000	8	81%	19%	Recurrent activities
9	CATIA	39.900.000	29.611.000	588.000	1.719.000	2.839.000	5.353.000	8.121.000	8	81%	19%	2021-2027
Sub-total of **new major investments** above (1)		1.996.800.000	1.272.733.000	97.616.000	132.375.000	159.228.000	190.401.000	220.505.000				
Sub-total **other new investments** (2)			108.445.000	17.668.000	8.758.000	14.904.000	14.663.000	14.521.000				
Sub-total **existing investments** (3)				202.733.000	178.785.000	141.371.000	122.733.000	111.057.000				
Total new and existing investments (1) + (2) + (3)		1.996.800.000	1.381.178.000	318.017.000	319.918.000	315.503.000	327.797.000	346.083.000				

** The total % enroute+terminal should be equal to 100%.*

2.2.2 - Detail of new major investments

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

Name of new major investment 1	***4-FLIGHT***	Total value of the asset	***853.400.000 €***

Description of the asset	4-FLIGHT represents the heart of the modernization of the French ATM system. The programme will make it possible to put into operation in the French en-route control centers a complete new generation control system, taking up all the functionalities of the current system, CAUTRA, while bringing new potential for developments aligned with the strategic roadmap of the European SESAR programme and the related European regulations. The functional content of the 4-FLIGHT system consists in the integration of a European radar processing system (ARTAS provided by Eurocontrol), a new human-machine interface (G-HMI, developed by Thales for the renewal of its range of ATM systems), to which are added a large number of peripherals used by controllers or technical supervisors and finally a modern system for volumic processing of flight plans (COFLIGHT, programme launched by DSNA in cooperation with its Italian counterpart ENAV, developed by a consortium formed by Thales and Leonardo). The evolutions of versions of the 4-FLIGHT system that are planned within the scope of the program (development costs during the period 2020-2025) for entry into service after the first operational commissioning of the system (2022/2023) will take into account in particular the following improvements and functional evolutions: 1. The integration of the innovations developed within the framework of the ATC Tools project, in particular the implementation of an additional safety barrier, the Medium Term Conflict Detection (MTCD) which will notify potential conflicts between flights with an even longer notice than in the commissioning version. 2. Additional functionalities in support of the longer-term steps of the SESAR Free Route roadmap (full capacity of the cross-border Free Route in particular thanks to the future IOP interoperability standard currently being validated by the SESAR programme). 3. The enrichment of the 4D trajectory calculated by COFLIGHT by elements of the trajectories calculated and transmitted by the aircraft's on-board computers (so-called EPP functionality, currently at the stage of proof of concept and standard by the SESAR program).							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	ATM Master Plan CP1 SGA n°INEA/CEF/TRAN/M2014/1037259 - Action 2014-EU-TM-0136-M SGA n°INEA/CEF/TRAN/M2015/1131871 - Action 2015-EU-TM-0193-M						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
			3.7, 3.8.2			6.1, 6.3	Data-Link	
Benefits for airspace users and results of the consultation of airspace users' representatives	4-Flight is a cost-effective capacity increase enabler through sector productivity increase and delay cost savings. ANSPs savings derived from staff cost avoidance. Aircraft operators will benefit of en route cost savings and reduction of delays. With respect to capacity, and based in particular on the return on experience of the implementation of the ERATO system in Brest and Bordeaux in 2016, the ultimate – i.e. after up to three years to fully materialize - benefit expected is estimated between 20 to 25% in successively Reims, Marseille and Paris, and between 10 to 15% in Bordeaux and Brest (since those two already experience an electronic environment thanks to ERATO). Airspace users' have been consulted on investments during the DSNA Consultation Strategic meeting on the 25th June. Questions have been raised regarding the delay of the program, the timeline and expected gains in term of productivity. DSNA answered and also provided (on a follow up action on 31st August) some strategic roadmaps of main key projects with expected benefits (see consultation annex C).							
Joint investment / partnership	No							
Investment in ATM systems	Yes							
If investment in ATM system, type?	New system	The French FDPS (Flight Data processing System), named CAUTRA, can no longer support evolutions led by SESAR.						
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	ATC12.1, ITY-AGDL, ATC07.1						

Name of new major investment 2	***AIS/AIM***	Total value of the asset	***34 000 000***

Description of the asset	Advanced data exchange services are required to communicate up to date aeronautical information (e.g. about flight plans, weather, airport data etc.) that help operational stakeholders to maximize the benefits of new ATM systems and tools. The Aeronautical Information Exchange Model (AIXM) and System Wide Information Management (SWIM) concept set out specifications that enable the distribution of key data in a common digital format. The AIM and SWIM concepts are being delivered via the SESAR programme to provide more accurate and efficient digital aeronautical information to civil and Military ANSPs, airspace users, airport operators, Meteorological service providers and the European Network Manager. Addtional costs corresponding to this major investment are MCO costs related to recurrent activities are necessary to be able to operate the AIS/AIM systems: annual obstacle surveys, corrective, preventive and evolutive maintenance.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	ATM Master Plan CP1 SGA n°INEA/CEF/TRAN/M2015/1132363 - Action 2015-EU-TM-0196-M SGA n°INEA/CEF/TRAN/M2016/1349619 - Action 2016-EU-TM-0117-M SGA n°INEA/CEF/TRAN/M2017/1602559 - Action 2017-EU-TM-0076-M						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
			3,1		5.3, 5.4, 5.6, 5.8, 5.10		ADQ	
Benefits for airspace users and results of the consultation of airspace users' representatives	Airspace users' have been consulted on investments during the DSNA Consultation Strategic meeting on the 25th June. Discussion and exchanges took place regarding how the risk on this complex program will be managed.							
Joint investment / partnership	Yes	Eurocontrol has a centralised database (EAD) whose management is entrusted to a private company, "groupEAD" (subsidiary of DFS, AENA and the Frequentis group), which develops and maintains the system, and provide resulting services.						
Investment in ATM systems	Yes							
If investment in ATM system, type?	Replacement							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	ITY-ADQ						

Name of new major investment 3	***CDM/AMAN/DMAN/XMAN***	Total value of the asset	***100.000.000 €***
Description of the asset	Airport Collaborative Decision Making (ACDM) is about partners (airport operators, aircraft operators/ground handlers, ATC and the Network Operations) working together more efficiently and transparently in the way they work and share data. The Airport CDM project aims at improving the overall efficiency of operations at an airport, with a particular focus on the aircraft turn-round and pre-departure sequencing process. Tools for Collaborative Decision Making: CPDS (Collaborative Pre-Departure Sequence), DMAN (Departure Manager), AMAN (Arrival manager) ACDM tools involve the introduction of new systems and processes at larger airports that focus on: • the creation, refinement and exchange of information at airport and with the network • The progress of each flights' arrival plan and turnaround • Up to date timings shared for each flight to push back, taxi out and take off; and • An optimized departure sequence ACDM systems allow air traffic controllers to construct an optimized sequence of departures tailored to the prevailing conditions of the runway and the surrounding airspace. ACDM systems also gather the latest estimated landing times for inbound flights (using AMAN and XMAN tools) to improve the management of ground operations that are often the cause of air traffic delays. The systems also provide data sharing services with airspace users, airport and network, to support collaborative decision making and increase resilience during adverse conditions and congested situation.		

The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	ATM Master Plan CP1 SGA n°INEA/CEF/TRAN/M2015/1131871 - Action 2015-EU-TM-0193-M SGA n°INEA/CEF/TRAN/M2015/1132363 - Action 2015-EU-TM-0196-M SGA n°INEA/CEF/TRAN/M2016/1349619 - Action 2016-EU-TM-0117-M SGA n°INEA/CEF/TRAN/M2017/1602559 - Action 2017-EU-TM-0076-M

Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
	1.2.2	2.6.2		4.1, 4.2, 4.3, 4.4, 4.5	5.3			

Level of impact of the investment	Network	Better flow management effoiciency, increase in cpacity and less delays.
	Local	more effective airside and landside perations management.
	Non-performance	
Quantitative impact per KPA	Safety	The more effective airside and landside operations management, improved situational awareness of all actors and resulting reduced congestion has a positive effect on safety.
	Environment	Reduction in holding and in low-level vectoring, by applying delay management at an early stage of flight, has a positive environmental effect in terms of noise and fuel usage.
	Capacity	Enhanced airport capacity through optimal use of airside and landside facilities and services, better use of airport and ATFM slots. Improved airport/TMA capacity.
	Cost Efficiency	Punctuality improvements for all Stakeholders will reduce operating costs. Reduced costs through reduction in delays, reduction in low-level holding operations and reduction in low-level tactical vectoring for delay purposes. Reduced reactionary costs due to better anticipation.
Benefits for airspace users and results of the consultation of airspace users' representatives	Airspace users' have been consulted on investments during the DSNA Consultation Strategic meeting on the 25th June. Punctuality improvements for all Stakeholders will reduce operating costs.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	New system	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	ATC15.1, ATC07.1

Name of new major investment 4	***COFLIGHT***	Total value of the asset	***350.000.000 €***
Description of the asset	COFLIGHT is the next generation automated flight plan processing system that will replace the STPV (CAUTRA 4 Flight Plan Processing System - Automatic Air Traffic Coordinator). Its commissioning will be concurrent with that of the 4-FLIGHT system in the first 3 en route control centers of the DSNA (Reims in the 1st half of 2022, Marseille in the 2nd half of 2022 and Paris in 2023). Beyond being a response to the obsolescence of CAUTRA, COFLIGHT aims above all to strengthen safety and fluidity within the framework of the SESAR 2035 roadmap(Single European Sky Air traffic Management Research,technological component of the Single European Sky). In particular, COFLIGHT will replace the static flight plan exchanged from control position to control position at the spaces crossed, by a 4D trajectory of the flight (the "Flight Object") updated in real time by the computer taking into account the control instructions entered by the air traffic controller through his electronic interface (4-FLIGHT) and the actions that the pilot enters into his on-board computer. This 4D trajectory will be interoperable, which means that the control instructions entered by the controller of another European control center will also be taken into account to update the flight data presented to the French controller and vice versa. COFLIGHT deployment is synchronized with 4-FLIGHT entry into service at Reims, Aix and Paris ACCs.		

The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	ATM Master Plan CP1 SGA n°INEA/CEF/TRAN/M2014/1037259 - Action 2014-EU-TM-0136-M SGA n°INEA/CEF/TRAN/M2017/1602559 - Action 2017-EU-TM-0076-M						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
			3,4	4,3	5.4, 5.6, 5.9		FMTP Data-Link	
Benefits for airspace users and results of the consultation of airspace users' representatives	Airspace users' have been consulted on investments during the DSNA Consultation Strategic meeting on the 25th June. Questions have been raised regarding the delay of the program, the timeline and expected gains in term of productivity. DSNA answered and also provided (on a follow up action on 31st August) some strategic roadmaps of main key projects with expected benefits (see consultation annex C).							
Joint investment / partnership	Yes	Partnership with ENAV						
Investment in ATM systems	Yes							
If investment in ATM system, type?	New system							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	ITY-FMTP, ITY-AGDL, ATC07.1						

Name of new major investment 5	***CSSIP***				Total value of the asset		***81.000.000 €***	
Description of the asset	The CSSIP (Ground-Ground Communications under Internet Protocol) program implements a national telecommunications network of new generation based on IP protocols for voice digital conversion and the migration of voice and data communications from the previous network to the new one called RENAR-IP. It provides all voice and data exchanges for the traffic control purposes. Connected to PENS, it is able to exchange data with various international networks and simplifies the systems and application interoperability between adjacent ANSPs.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	PCP ATM Functionalities : AF4, AF6 A dual telecom architecture, outlined in SESAR PCP, will ensure consistent availability with the future operational and services requirements to support (SWIM)						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
				X		X		
Benefits for airspace users and results of the consultation of airspace users' representatives	Airspace users' have been consulted on investments during the DSNA Consultation Strategic meeting on the 25th June.							
Joint investment / partnership	No							
Investment in ATM systems	No							
If investment in ATM system, type?	New system							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select							

Name of new major investment 6	***NVCS***	Total value of the asset	***72.000.000 €***

Description of the asset	The NVCS (New Voice Communication System) program aims at replacing the current safety voice communications system of the DSNA's five metropolitan en route control centres (first deployments atBrest and Bordeaux ACCs) and Roissy-CDG, as part of a joint acquisition with FABEC partners, in particular the Maastricht International Control Centre (MUAC) of the Eurocontrol agency. Although the introduction of Data Link exchange functionalities between controllers and pilots will ultimately reduce the number of voice exchanges, radio is and will remain for a long time the ultimate critical link between an air traffic controller and a pilot. It is therefore a critical component for flight safety and the architecture and design of these systems is subject to a particularly high level of requirements in terms of software assurance. In addition, the transition to the Internet Protocol (IP) standard of voice transmission reinforces the challenge of securing these systems against the cyber threat and taking into account the new related regulatory framework (military programming law and European NIS directive). This high technology system brings major changes: - end to end communications using voice on IP network(VoIP) - voice services on our ground to ground long distance communication network under IP (RENAR IP), compatible with the current telecomunication infrastructures - integration of radio and phone communication system - integrated radio and telephone backup system offering nearly euivalent features compatred to the main system - new functionalities permitting notably to supply a VCS service on a remote system.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	ATM Master Plan CP1 Grant Agreement INEA/CEF/TRAN/M2014/1026773 - Action 2014-EU-TM-0322-W						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
			X				8.33 kHz VCS	
Benefits for airspace users and results of the consultation of airspace users' representatives	Airspace users' have been consulted on investments during the DSNA Consultation Strategic meeting on the 25th June and also during the French NSA consultation meeting 1st July on new VCS. Airspace users took note of this project aiming at modernizing ACC voice communication systems (see consultation annex C).							
Joint investment / partnership	Yes	Joint investment with MUAC						
Investment in ATM systems	No							
If investment in ATM system, type?	Overhaul of							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	ITY-AGVCS2						

Name of new major investment 7	***SYSAT***	Total value of the asset	***500.500.000 €***

Description of the asset	The SYSAT program is aiming at modernizing ATM systems at Approach and Tower level. The systems developed within this program will interface with the 4-FLIGHT system for IFR flights and cover specific needs such as advanced management of VFR flights, ground traffic, landing, take-off, as well as collaboration and data exchange with airport systems. DSNA has opted to acquire an existing off-the -shelf industrial system, which will be adapted to DSNA's operational technical environment. The program has nevertheless been divided into two groups, Group 1 (G1) covering the perimeter of the major Parisian airports, and Group 2 (G2) covering the other metropolitan airports. This strategy enables in particular to have an enhanced priority given to the Paris region due to the more critical obsolescence of certain components of the ATM system, particularly at Roissy-CDG, and to take into account the specifics of the G2 perimeter (number of sites, variability of operational configurations, different functional needs). In accordance with the recommendations of the CGEDD (General Council for the Environment and Sustainable Development) and before any contract was notified, the SYSAT/Group 2 program has been the subject of an in-depth program review in june 2019. This review has in particular assessed the different options in the area of differentiation by geographic zones and global or modular architecture. A scenario for SYSAT group 2 has been elaborated at the time with a new cost-scheme reducing the overall cost of the program. The planning has been re-assessed for group 2 due to the sanitary crisis and associated budget constraints.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	ATM Master Plan CP1 SGA n° INEA/CEF/TRAN/M2014/1037259 - Action 2014-EU-TM-0136-M						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
		2.1, 2.2, 2.3, 2.5			5.3, 5.4, 5.6			
Level of impact of the investment	Network	Better use of the available network capacity., punctuality increase						
	Local	Punctuality increase						
	Non-performance	Increase of attractivity for CDG long haul flights hub.						
Quantitative impact per KPA	Safety	Reduction of human error. Prevention of overloads. The more effective airside and landside operations management, improved situational awareness of all actors and resulting reduced congestion has a positive effect on safety. Significant, through reduced risk of incidents and accidents on runways.						
	Environment	Enabler to the generalisation of CDAs at CDG airport. Support system to the design of low noise procedures on regional airports						
	Capacity	Reduction of controller workload. Better use of the available network capacity. Enhanced airport capacity through optimal use of airside and landside facilities and services, better use of airport and ATFM slots. Indirect through prevention of delay problems caused by runways excursion incidents.						
	Cost Efficiency	More cost efficient maintenance due to centralised architecture.						
Benefits for airspace users and results of the consultation of airspace users' representatives	Airspace users' have been consulted on investments during the DSNA Consultation Strategic meeting on the 25th June and users sent some additional questions afterwards. DSNA answered on the 31st August on the reassessment of the project and current status (see consultation annex C).							
Joint investment / partnership	No							
Investment in ATM systems	Yes							
If investment in ATM system, type?	New system							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	AOP04.1, AOP05, FCM03, AOP04.2						

Name of new major investment 8	***MCO and evol CNS/ATM***		Total value of the asset	***N/A (MCO)***
Description of the asset	Maintaining technical equipment in operational condition (MCO) is essential to continue to have a required level of optimal safety especially in a period of on-going optimisation of technical workforce management. It also Includes costs related to operational (corrective, preventive and evolutive) maintenance for NAV/COM/Surveillance/ATM systems			
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No			
Level of impact of the investment	Network			
	Local			
	Non-performance			
Quantitative impact per KPA	Safety	Safety is maintained by performing preventive MCO. MCO activities are assessed and prioritized in order to be able to maintain		
	Environment			
	Capacity	Safety is maintained by performing preventive MCO. MCO activities are assessed and prioritized in order to be able to maintain		
	Cost Efficiency			
Results of the consultation of airspace users' representatives	Airspace users' have been consulted on investments during the DSNA Consultation Strategic meeting on the 25th June. Discussion and exchanges took place on the implication of delaying programs (such as 4-FLIGHT / COFIGHT) on the Maintenance on Operating Conditions of current tools (like CAUTRA) and how to limit such situations.			
Joint investment / partnership	No			
Investment in ATM systems	Yes			
If investment in ATM system, type?	Overhaul of			
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	NAV10		

Name of new major investment 9	***CATIA***					Total value of the asset	***39.900.000 €***
Description of the asset	Radio is a critical component for flight safety and the architecture and design of radio communication systems is subject to a particularly high level of software assurance. In addition, the transition to the Internet Protocol (IP) standard for voice transmission increases the challenge of securing these systems against cyber threat. The CATIA project (Chaine rAdio Téléphone IP des Approches) is part of DSNA's strategy to modernize its radio / telephone systems implemented through three projects corresponding to three industrial products: NVCS (for the 5 CRNA and CDG), CATIA (for large approaches except CDG) and CLEOPATRE (for small isolated control towers). The main differences between these three projects lie on the one hand in their capacities (the number of radio frequencies needed to manage the spaces of a centre-en route or the four runways of CDG airport is much greater than for a control tower at an average airport) and on the other hand in their architecture and in particular in the level of availability requirements for the emergency backup chain (the safety and economic impact of a temporary deterioration in the level of service is obviously not the same for both). The objective of the CATIA project is to acquire and deploy a new voice communications systems (radio and telephone) in the 14 metropolitan main approach centers (excluding CDG but including Orly). This new VCS (Voice Communication System) will replace the RAIATEA systems in Large Approaches, and will replace GAREX in ORLY						
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	ATM Master Plan CP1					
Specify links to the PCP/CP1/Interoperability Regulations	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability

Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)			X				8.33 kHz VCS	
Benefits for airspace users and results of the consultation of airspace users' representatives	Airspace users' have been consulted on investments during the DSNA Consultation Strategic meeting on the 25th June and also during the French NSA consultation meeting 1st July on CATIA. Airspace users took note of this new project aiming at modernizing APP & TWR voice communication systems (see consultation annex C).							
Joint investment / partnership	No							
Investment in ATM systems	Yes							
If investment in ATM system, type?	Replacement							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	ITY-AGVCS2						

2.2.3 - Other new and existing investments

2.2.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

Other investments are oriented towards Innovation, data management and UAV traffic management systems. One of DSNA's strategic goals is to remain in the lead in terms of innovation and emerging new technologies. Along that, it is also DSNA's strategy to be as much cost-efficient as possible: in the current worldwide situation, investments in management supporting tools will be of help to achieve this. Investing in Remote Control Centers is also a way to reduce costs in terms of infrastructure maintenance as well as it increases our resilience to sudden variation of traffic such as the one we have experienced these past years.

2.2.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	0

2.3 - Investments - DFS

2.3.1 - Summary of investments

Number of new major investments	9

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	Determined costs of investment (i.e. depreciation and cost of leasing; w/o cost of capital) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1	Drone Detection System	193.696.701	57.194.279	2.425	3.567	3.532	1.210.454	4.783.312	3-20	0%	100%	2023-2028
2	iCAS architecture project	53.918.000	37.631.000	0	0	0	0	0	8	100%	0%	01-12-2025
3	Data Center	27.651.659	16.151.889	6.987	30.354	428.886	1.501.242	2.056.173	3-15	80%	20%	DC Initial disassembly 01/23 and DC Scaling Services 01/25
4	PIPE2 – IP enhancement phase 2	27.505.000	18.905.000	0	48.750	302.187	961.250	1.889.375	5-8	80%	20%	2027
5	New construction of an office building at the DFS Campus in Munich	19.077.586	5.227.586	0	970	33.470	80.345	168.820	15-40	80%	20%	1-11-2028
6	iTEC V3	10.640.000	5.640.000	0	0	40.000	236.250	548.750	8	100%	0%	2028 ff.
7	ViTo-MUC - Virtual Tower Munich	6.439.974	5.189.861	0	0	41.142	218.674	437.024	3-40	0%	100%	2030
8	Program ADS-B	5.313.500	4.185.501	8.695	9.628	71.303	194.751	459.696	8	82%	17%	2023-2025
9	ADS-C	8.896.000	2.869.333	0	0	0	0	0	8	100%	0%	1-7-2029
Sub-total of **new major investments** above (1)		353.138.420	152.994.449	18.107	93.269	920.520	4.402.966	10.343.150				
Sub-total **other new investments** (2)		27.895.149	21.279.372	77.759	328.841	994.728	1.632.001	2.229.314		51%	42%	
Sub-total **existing investments** (3)				99.255.213	99.594.128	106.495.697	116.886.316	126.236.316				
*Experience-based DFS management correction and non-regulated services**)*				-12.145.485	-13.926.020	-13.865.609	-17.846.700	-21.654.392				
Total new and existing investments (1) + (2) + (3)		381.033.569	174.273.821	87.205.594	86.090.218	94.545.337	105.074.582	117.154.387				

** The total % enroute+terminal should be equal to 100%. Differences to 100% are attributed to non-regulated services.*

***) The Investment table above was extended by an experience-based DFS management correction to show reduced investment figures. This adaption is being made on the assumption of a conservative planning and the experience that the full amount normally will not be needed due to e.g. the application of more innovative and cost-effective systems and services, risks that do not occur or achievements of the purchasing department. Additionally there is a reduction of the non-regulated services.*

2.3.2 - Detail of new major investments

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

Name of new major investment 1	***Drone Detection System***					Total value of the asset	***193.696.701 €***
Description of the asset	DFS got the order by the Ministry of Transport to establish at all international airports a system to seek, recognize and identify all flight objects flying in the TMA that cause dangerous situations at international airports. Quick action to complete the project is required due to the misuse of drones and the number of drone sightings and threats in the vicinity of the airport with the known consequences. Such incidents and operational disruptions also result in loss of revenue, costs, and considerable damage to the image of the airports. With the installation of the Drone Detection System, all unmanned aircraft systems (UAS) that may pose a threat can be detected. This may include a risk-based scaled threat model (e.g., at a wider distance it is sufficient to detect only high-risk drones). The planned project is at the present stage only destined at detecting drones for the purpose of supporting air traffic control in order to prevent and accidents between aircrafts and drones and to enable a safe and orderly flow of traffic. Currently, it is not decided whether the information thus gathered will be made available to other authorities and for other purposes such as drone defense, law enforcement or criminal prosecution. However, such a sharing of the data is considered as an option to share the costs. In such a case, in line with the principles set out in the European Commission's letter dated 14th of June 2021 (Ares (2021) 3876111), Germany will ensure that the costs are split according to a transparent methodology approved by the National Supervisory Authority and will lower the terminal charges for the respective year in accordance with Art. 29 (6) IR (EU) 2019/317.						
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability
Level of impact of the investment	Network	no impact					
	Local	no impact					
	Non-performance						
Quantitative impact per KPA	Safety	Reduces the risk of drone-induced collision significantly.					
	Environment	no impact					
	Capacity	Reduces the risk and the impact of drone-induces airport-closure.					
	Cost Efficiency	Reduces the risk and the impact of drone-induces airport-closure.					
Results of the consultation of airspace users' representatives	After an additional review of the benefit and legality concerning the inclusion of the DDS project into the performance plan, NSA opts to include it as the initial plan. The DDS project is legally included based on regulation, in order to avoid any collusion at the terminal and it is not a matter of national security, but a project to ensure the safety of aviation. The cost of prosecution of infringements is not part of it and also not the cost of drone defense, it is just a surveillance system to uncover drones.						
Joint investment / partnership	No						
Investment in ATM systems	No						
If investment in ATM system, type?	Click to select						
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select						

Name of new major investment 2	***iCAS architecture project***	Total value of the asset	***53.918.000 €***

Description of the asset	Software licenses for the ATS-System. The new iCAS Architecture and peripheral systems will provide a more cost efficient and flexible mode of operation on Data Center Plattforms, i.e. IaaS, CaaS cloud service models. It is in line with the EATM Masterplan.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network	High impact, ATS systems can be operated more flexible, incl. Cross border.						
	Local	iCAS architecture will run on the Data Center infrastructure and therefore the number of technical installations will be reduced and the ATS system will provide more flexibility						
	Non-performance	n/a						
Quantitative impact per KPA	Safety	no impact						
	Environment	no impact						
	Capacity	no impact						
	Cost Efficiency	CBA shows positive impact through a reduction of IT infrastructure-, operating- and maintenance-cost						
Results of the consultation of airspace users' representatives	n/a							
Joint investment / partnership	Yes	Developments will be performed in coordination with iCAS and iTEC partners						
Investment in ATM systems	Yes							
If investment in ATM system, type?	Overhaul of	Data Center readyness for the iCAS ATS-System and peripheral components						
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	Contributes to Essential Operational Change 'Virtualisation of Service Provision' [European ATM Master Plan 2019, chapter 4.2.5]						

Name of new major investment 3	***Data Center***					Total value of the asset		***27.651.659 €***
Description of the asset	Plattform to support cost efficient operation modes for ATS Systems, i.e. IaaS, CaaS							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network	no impact						
	Local	High impact, as operating costs will go down						
	Non-performance	n/a						
Quantitative impact per KPA	Safety	no impact						
	Environment	no impact						
	Capacity	no impact						
	Cost Efficiency	CBA shows positive effects through reduction of IT infrastructure-, operating- and maintenance cost, once all ATS systems are migrated into the Data Center platform.						

Results of the consultation of airspace users' representatives	n/a	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	New system	replacement local IT-infrastructure by a central IT-infrastructure in Data Center
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	(a) Data Center Initial disassembly and scaling services contribute to Essential Operational Change 'Virtualisation of Service Provision' [European ATM Master Plan 2019, chapter 4.2.5]; (b) Data Center initial disassembly is additionally indirectly linked to DVO (EU) 716/2014 because the IT-infrastructural changes are the precondition for realising the project TANGe which will fulfill the mentioned DVO.

Name of new major investment 4	***PIPE2 – IP enhancement phase 2***					Total value of the asset		***27.505.000 €***
Description of the asset	With the IP upgrading project for the radio and radar sites Phase 1, 144 sites were non-redundantly connected to the MPLS-A network. This is where phase 2 begins, with which the rendundate connection to the locations from phase 1 as well as to all other remote locations will take place. In addition, the Voice-over-IP and Surveillance-over-IP functionality will be introduced throughout DFS. The aim is to use an integrated network design to connect the applications of the communication, navigation and surveillance domains in a uniform and future-proof manner with an All-IP network.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network	no impact						
	Local	The background to the project is the discontinuation of servicing for the multiplexers for 2027 and the replacement of ISDN lines (by mid-2020). Due to the age of the analogue modules of the radio interfaces Bremen and Karlsruhe, a secure function and the supply of spare parts is endangered. Servicing of the VCX at the Langen and Munich locations has been discontinued.						
	Non-performance							
Quantitative impact per KPA	Safety	The replacement is needed to secure the existing level of safety.						
	Environment	no impact						
	Capacity	The omission alternative can lead to failures in the data networks, reduce the availability of systems and thus could have a negative impact on capacity and flight profiles in the operational service.						
	Cost Efficiency	The impending technology change among telecommunications providers makes infrastructure renewal essential and a delay in the project may increase the cost of operation and reduce the availability of services.						
Results of the consultation of airspace users' representatives	n/a							
Joint investment / partnership	No							
Investment in ATM systems	No							

If investment in ATM system, type?	Click to select	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	

Name of new major investment 5	***New construction of an office building at the DFS Campus in Munich***					Total value of the asset		***19.077.586 €***
Description of the asset	Due to legal requirements, the existing old ACC building would need to be extensivle renovated. A CBA comparing the cost for option 1 (the demolition of that building with the construction of a new office buidling for only administrative functions) with option 2 (renovation of the old ACC building) proved option 1 being the less expensive one. By the end of the year the project was stopped in order to find out if it´s also feasible to rent the required space. The current solution intends to rent for five years, demolish the old building in the meantime and restart the planning of the project in 2023.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network	no impact						
	Local	no impact						
	Non-performance	n/a						
Quantitative impact per KPA	Safety	no impact						
	Environment	no impact						
	Capacity	no impact						
	Cost Efficiency	Yes The demolition of the old building and the new construction of the new office building are having a positive effect, as a refurbishment of the old building would be considerably more expensive than a demolition and new construction. The facility Management costs for the new and smaller building are less than for the current old building.						
Results of the consultation of airspace users' representatives	n/a							
Joint investment / partnership	No							
Investment in ATM systems	No							
If investment in ATM system, type?	Click to select							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select							

Name of new major investment 6	***iTEC V3***	Total value of the asset	***10.640.000 €***

Description of the asset	Seven European ANSPs, organised in the iTEC Cooperation, intend to develop a common ATS system named iTEC OneSky. Based on harmonised requiremends across all seven ANSPs iTEC OneSky will provide - new way in sharing major cost (for development, training, operation, maintenance, etc.) , - an efficient way to keep ATM systems state-of-the-art and up-todate, - a major technical step foward (e.g using cloud technology) - new possibilities of working seamless and harmonised (based in a common CONOPs). Furthermore, it provides the opportinuity for future businnes models (like ADSP) and improved cooperation between the ANSPs that are covering a major part of the Euorpean Airspace. iTEC OneSky Definition Phase has started to agree the comon requirements for the iTEC OneSky sytems. By end of 2022/beginning of 2023 iTEC ANSPs will decide based on improved business cases about the implementation of iTEC OneSky. Implementation Phase is foressen to start mid 2023, a first deployment of iTEC OneSky at DFS will be possible not earlier than 2028.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No	iTEC ANSPs have decided include FO-IOP in the scope of iTEC OneSky. iTEC Cooperation is putting a lot of effort in agreeing and definig the underlying standard with all European ANSPs (iTEC, Coflight and Coopans). It's expected that once the standard has been set it will be mandated.						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network	Cooperation with other partners improves the network impact						
	Local	Enables seamless coordination and transfer						
	Non-performance	n/a						
Quantitative impact per KPA	Safety	To keep the current level of safety is a must						
	Environment	Provides possibilities of improved coordination and optimzed routing across European centres (e.g. FO-IOP)						
	Capacity	Provides possibilities of improved cooperation and optimizes use of airspace between European centres (e.g. FO-IOP)						
	Cost Efficiency	Possibility of sharing cost within iTEC partners and gaining additonal synergies by sharing services between iTEC partners						
Results of the consultation of airspace users' representatives	n/a							
Joint investment / partnership	Yes	joint investment of seven ANSPs collaborating in the iTEC						
Investment in ATM systems	Yes							
If investment in ATM system, type?	New system	iTEC V3 is based on current components shared between iTEC partners. The result will be a new ATS System ready to be deployed at all "iTEC centres".						
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP	iTEC V3 will implement mandated functionality included in current CP1 (EU 2021/116 , former PCP) such as SWIM, Free Route, Extended Arrival Management.						

Name of new major investment 7	***ViTo-MUC - Virtual Tower Munich***	Total value of the asset	***6.439.974 €***
Description of the asset	The Flughafen München GmbH (FMG) informed DFS, that the Tower building at the airport has to be renovated. The FMG owns the building used by DFS and others. The contract between DFS and FMG states the DFS has to bear a 47% share of the renovation costs. . The reductions compared to the Draft Performance Plan RP3-2019 result from the validation of an alternative approach with the aim of increasing the "Finance" KPI. During the validation, the renovation measures are limited to the bare minimum. Depending on the validation results, the implementation of the virtual approach or the renovation of the ATC tower will then take place after RP3.		

The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network	n/a						
	Local	Modern technology improves local performance						
	Non-performance	n/a						
Quantitative impact per KPA	Safety	Modern technology ensures at least maintaining current safety levels.						
	Environment	n/a						
	Capacity	no impact						
	Cost Efficiency	Validation to investigate significant cost savings by modern technology and in the tower construction.						
Results of the consultation of airspace users' representatives	n/a							
Joint investment / partnership	No							
Investment in ATM systems	Yes							
If investment in ATM system, type?	New system							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	ATM MP: SDM-0201 Remotely Provided Air Traffic Service for Single Aerodrome						

Name of new major investment 8	***Program ADS-B***					Total value of the asset		***5.313.500 €***
Description of the asset	The goal is to implement the surveillance system mix set forth in the Surveillance Strategic Architecture Plan and, as a result, to reduce the number of radar systems to be modernized, taking into account today's air situational requirements.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
							1206/2011 1207/2011	
Level of impact of the investment	Network	Modern surveillance technology strengthens the network.						
	Local	Wherever possible, the DFS own sites with modernized infrastructure are used.						
	Non-performance	n/a						
Quantitative impact per KPA	Safety	Distance-independent accuracy of ADS-B position reports						
	Environment	A reduction of the radio field exposure (according to European Commission Single European Sky Surveillance Performance and Interoperability Implementing Rule, DVO (EU) 1207/2011))						
	Capacity	Range extensions that can be used for more flexible structuring of control sectors (especially across national borders) can be realized much more easily and cost-effectively through the use of ADS-B stations than through conventional radar technology.						
	Cost Efficiency	CBA shows positive effects through reduction of operating- and maintenance cost.						

Benefits for airspace users and results of the consultation of airspace users' representatives	The on-board data provided in accordance with DVO (EU) 1206/2011 and DVO EU 1207/2011 (incl. supplement DVO 587/2020) are received on the ground, processed and made available to the ATM services for the provision or demand-oriented extension of their services. The benefit generated for DFS can support the expectations of external customers regarding improvements in the provision of "direct routing" or use of individual codes. The internal customers of the positioning services, the CC and TWR divisions, will receive guaranteed availability of their positioning data coverage and quality as required by the OSR until beyond the year 2040.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	Overhaul of	Modification in the area of SDPS, CWP
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	

Name of new major investment 9	***ADS-C***					Total value of the asset		***8.896.000 €***
Description of the asset	The goal of this project is develop and provide the necessary ADS-C systems and application software necessary to comply with EU Commission Implementing Regulation EU 2021/116 , part AF6 "Initial Trajectory Information Sharing". The AF6 mandates the support of ADS-C functions for airspace users and by all European ANSPs for all flight segments above FL285 from 31.12.2027 onwards. The project scope thus includes the ATS system development for DFS control centers in Karlsruhe and partially Munich. Based on existing validation findings regarding the potential operational benefits of ADS-C, the development of ADS-C applications for DFS lower airspace centers will also be analyzed, considering realization options and use cases beyond the current restricted ADS-C mandate for upper airspace. Note: Before operational deployment of the developed ADS-C systems and software, additional measures will be needed in the respective control centers, which will be conducted in the form of subsequent on-site projects.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	mandated through IR EU 2021/116 part AF6 "Initial Trajectory Information Sharing"						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
						sub-AF 6.1.2 sub-AF 6.3.1		
Level of impact of the investment	Network	ADS-C mandated for entire European ATM Network (above FL285)						
	Local	ADS-C will be implemented as a set of functions integrated in the future DFS ATM System						
	Non-performance	n/a						
Quantitative impact per KPA	Safety	ADS-C improves safety, as flight planning in airborne systems and ground system will be automatically checked for consistency						
	Environment	ADS-C enables the realization of optimized 4D-trajectories and flight profiles, which will lead to lower CO2 emissions						
	Capacity	ADS-C enables more precise flight planning with lower uncertainty in ground systems, and thereby leverages a better use of available airspace capacity						
	Cost Efficiency	ADS-C enables improvements of 4D trajectory prediction in ground tools for ATCOs, such as conflict detection. This will support more efficient flight vertical profiles and increase productivity.						
Benefits for airspace users and results of the consultation of airspace users' representatives	Improved flight efficiency, capacity and safety.							
Joint investment / partnership	Yes	joint investment of iTEC ANSPs envisaged for major share of ADS-C functionality						
Investment in ATM systems	Yes							

If investment in ATM system, type?	New system	Several development and deployment options are analyzed, ranging from integration in existing platform to development as part of
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP	CP1 (EU 2021/116), former PCP

2.3.3 - Other new and existing investments

2.3.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

The main investments during RP3 will be the iCAS Programme (including the above described projects and the product management), MaRS, S-ATM Robusto and RASUM 8.33.

DFS is engaged in a total of up to 37 combined and separate deployment projects/ initiatives.
The Top Deployment Projects by investment volume are:
- iCAS System,
- Deploying New Radar Technologies (MaRS): Implementation of SES by Improving Performance, Interoperability and Modernizing ATM in Germany,
- Deploying a terrestrial European back-up for GNSS (incl. GALILEO) in-line with the European ATM Master Plan,
- Deploying Remote Tower (RTC): Implementation of SES by Improving Performance and Modernizing ATM for Tower Service Provision in Germany,
- Deployment of next Generation and VoIP Capable Centre Voice Communication System, and
- TANGe (Tower ATS-System Next Generation - project start in RP2)

Those investments have been described in detail, including the expected benefits per KPA, in the RP2 Performance Plan, Section 2 (Investments), except for Project S-ATM Robusto, which has been introduced as unplanned investment in the Reporting for 2015. Refinements on this detailed information have been and will be provided for each project in the context of the yearly Performance Monitoring Reports.

2.3.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	8

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	
1	SWE iCAS Phase II KAR	4.900.000	2.600.000	0	0	0	0	162.500	As part of a cooperation between MUAC and DFS, a study is currently being conducted to determine whether a joint air traffic control system can be used in the future (MAKAN: MAastricht KArlsruhe Networks). The realisation of MAKAN would replace the planning of iCAS2.

2	iCAS Flight Object IOP	4.073.793	1.860.000	0	0	0	0	0	The iCAS Systemproject iCAS Flight Object IOP is currently in the planning phase due the changed IOP Strategy. The project will implement the necessary functionality in the future iTEC V3 ATM system to prepare the deployment of Flight Object interoperabilty as part of iSWIM in the DFS control centers. The assets reported here are preliminary and will be updated once the planning phase is completed.
3	A-SMGCS Leipzig	3.882.544	3.860.144	309	77.791	341.452	499.755	478.021	Implementing an A-SMGCS Level 2 (Phoenix-Ground-Situation-Display) including the necessary infrastructure (e.g. Sensor technology, Power, Data, HMI) at the international Airport Leipzig.
4	LIZ Rehosting	2.353.000	1.731.000	0	0	0	0	35.384	Migration of servers from current location and management to a central Data Center incl. software portation wherever necessary.
5	Future orientation AIM and Regulation	2.150.000	2.150.000	0	2.214	59.766	181.510	313.282	The functional system in the context of AIM has undergone many changes in recent years and the change continues. The ZAAR project is intended to analyze the actual situation of the functional systems and the upcoming requirements. Based on this, a future-proof and efficient functional system in the context of AIM will be designed and implemented. In the functional system with AIM context, static (SDO) and dynamic (NOTAM, flight plan) data are created, processed, distributed and published. The AIM projects "EAD SDO Full Migration (ESFM)", "Aeronautical Data Quality (VO73/2010)" and "EAD AIM System Integration (EASI)" have changed and extended the system. Through EASI, the EAD has become a proportionate part of this functional system and since ADQ, static data is increasingly obtained from external sources (e.g., ADV). The ADQ regulation requires traceability for the processing and distribution of data. The requirements from these measures were based on the existing infrastructure, which increased its complexity. Optimization has not yet been possible due to time and resource constraints. Likewise, many newer regulations (EU VO 373/2017, KritisV, IT-Security, Amdt40 to ICAO Annex15, Open-Data, Inspire) affect the AIS area, which is additionally affected by the EU VO 373/2017 as part of the functional system of DFS. The functional system must therefore be aligned with this regulatory requirement situation in order to

6	Maintenance Solutions	1.208.675	988.675	558	51.312	136.299	212.418	240.834	Modern maintenance processes and technologies (e.g. Mobile Work & Asset Management, IIoT & Predictive Maintenance, Digital & Smart Logistics) based on a future-proof infrastructure.
7	Automation tools ATM	1.600.000	1.600.000	0	0	25.000	115.625	190.625	CATo, MET-IF, DZSA, future CWP
8	Measuring technology	2.600.000	1.950.000	0	0	32.500	97.500	162.500	Procurement, regular operation service and maintenance from several measuring technologies (hard- and software e.g.oscilloscope or high-percision test measurement station for TACAN and DME systems including software applications for monitoring and reporting).

2.4 - Investments - ANA LUX

2.4.1 - Summary of investments

The current investments list could be adapted or modified depending on ongoing discussions on budgetary issues between ANA and its Ministry.

Number of new major investments	7

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1	Radar / SUR: A-SMGCS Level 2 and updates	1.053.000	1.053.000	0	281.827	831.333	818.485	805.638	15			31-12-2021
2	Communication systems: VCS/VCR, emergency radio; ADD and AMHS	1.617.000	1.617.000	18.602	67.133	400.423	281.754	425.038	10			31/12/2020 31/12/2023 31/12/2024
3	Navigation systems: ILS/DME24	477.860	477.860	18.322	47.476	46.764	46.052	45.340	15			31/12/2020 31/12/2024
4	Aeronautical Systems: AIS/AIM, eTOD and MET	2.585.273	1.657.910	1.087	12.187	71.854	153.295	85.174	10			31-12-2021
5	Radar / SUR: Mode S interrogator (TAR3)	3.000.000	3.000.000	0	0	100.479	52.299	199.617	20			31-12-2023
6	Radar / SUR: Surveillance chain evolution	1.900.000	1.900.000	0	0	116.092	218.787	28.787	10			31-12-2024
7	Navigation systems: DVOR/DME DIK, DVOR/DME LUX	1.300.000	1.300.000	0	0	10.728	52.708	86.545	20			31/12/2022 31/12/2023
Sub-total of **new major investments** above (1)		11.933.133	11.005.770	38.011	408.623	1.577.673	1.623.380	1.676.140				
Sub-total **other new investments** (2)		16.226.523	6.221.539	117.833	322.615	461.784	561.934	671.410				
Sub-total **existing investments** (3)				1.938.434	1.684.769	1.469.679	1.333.175	1.207.092				
Total new and existing investments (1) + (2) + (3)		28.159.657	17.227.309	2.094.278	2.416.007	3.509.136	3.518.489	3.554.641				

** The total % enroute+terminal should be equal to 100%.*

2.4.2 - Detail of new major investments

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

Name of new major investment 1	***Radar / SUR: A-SMGCS Level 2 and updates***	Total value of the asset	***1.053.000 €***
Description of the asset	A-SMGCS Level 1 (monitoring) is already installed and operational on ELLX. Level 2 installation ensures the tracking and monitoring of aircraft and transponder equipped vehicles on the aiport as a safety tool.		

The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No	
Level of impact of the investment	Network	
	Local	
	Non-performance	
Quantitative impact per KPA	Safety	enhanced from Level 1
	Environment	no impact
	Capacity	enhanced traffic flow in LVP conditions
	Cost Efficiency	
Results of the consultation of airspace users' representatives	Use of A-SMGCS as a ground movement control system (Acft / vehicles) for safe airport OPS. Consultation and user support ensured.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	New system	Ground surveillance and control
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	ESSIP: ESSIP AOP04.1, AOP04.2 (A-SMGCS); ENV01, ATM Masterplan.

Name of new major investment 2	***Communication systems: VCS/VCR, emergency radio; ADD and AMHS***	Total value of the asset	***1.617.000 €***
Description of the asset	Installation of a new voice communication system (HW replacement, 8.33 kHz capable) and voice recording system for ATC. Upgrade of emergency radio to a telephone based system, replacement of ATC Data Display (ADD) and ATC Message Handling System (upgrade) for SUR, Flight Data, weather(current & forecast) as an important safety tool.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
Level of impact of the investment	Network		
	Local		
	Non-performance		
Quantitative impact per KPA	Safety	back-up equipment	
	Environment	no impact	
	Capacity	no impact	
	Cost Efficiency		
Results of the consultation of airspace users' representatives	Continuity of voice communication service through a reliable system. The implementation of a voice recording system in ATC is a requirement (AET and DAC recommendation). TWR ADD replacement and upgrade to display relevant ATC info. User consultation planned during local AUC meeting.		
Joint investment / partnership	No		
Investment in ATM systems	Yes	Basic VCS, data display and flight data and message handling.	
If investment in ATM system, type?	New system	Replacement of VCS and installation of a new VCR, replacement of ADD and overhaul of AMHS.	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	Basic VCS system compliant with ESSIP ITY-AGVCS objective for air-ground communication; availability of a stable emergency VCS; and ATC information (compliance with ICAO standards and EUROCONTROL recommendations).	

Name of new major investment 3	***Navigation systems: ILS/DME24***	Total value of the asset	***477.860 €***

Description of the asset	Implementation of a new Instrument Landing System (ILS) and distance metering equipment (DME) at RW24	
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No	
Level of impact of the investment	Network	
	Local	
	Non-performance	
Quantitative impact per KPA	Safety	replacement of legacy system
	Environment	no impact
	Capacity	no impact
	Cost Efficiency	-3
Results of the consultation of airspace users' representatives	Continuity of service and through replacement of existing systems after life-cycle. User consultation planned during local AUC meeting.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	Basic navigation and landing system.
If investment in ATM system, type?	Replacement	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	Availability of navigation systems for all aircraft type.

Name of new major investment 4	***Aeronautical Systems: AIS/AIM, eTOD and MET***					Total value of the asset		***2.585.273 €***
Description of the asset	Implementation of modern AIM / AIS aeronautical, digital production and management systems including digital NOTAM in line with future requirements. Installation of electronic terrain and obstacle data (eTOD) and data management system for all areas as required;							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	Click to select							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network							
	Local							
	Non-performance							
Quantitative impact per KPA	Safety	no impact						
	Environment	no impact						
	Capacity	no impact						
	Cost Efficiency							
Benefits for airspace users and results of the consultation of airspace users' representatives	Availability of flight safety relevant terrain & obstacle data to ensure obstacle clearance in LU airspace and aerodrome. Digital aeronautical data handling							
Joint investment / partnership	No							
Investment in ATM systems	Yes	Basic aeronautical data and information for ANS.						

If investment in ATM system, type?	New system	Implementation of new digitalised AIS/AIM management and work-flow management and NOTAM system. Implementation of new eTOD management system. Replacement of RWY Visual Range (RVR) sensors for MET.
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	ESSIP: INF07 (eTOD) and ITY-ADQ (Aeronautical Data Quality) compliance; compliance with ICAO requirements. Initial implementation steps in line with SESAR ATM MP to create a SWIM enabled aeronautical environment.

Name of new major investment 5	***Radar / SUR: Mode S interrogator (TAR3)***		Total value of the asset	***3.000.000 €***
Description of the asset	TAR3 project is meant to overcome the increasing height and number of new windmills, the performance requirements for surveillance data (? ESASSP reporting), the lack of detection at low levels of VFR flights in certain part of the TMA, the missing redundancy for TAR2 without TAR1, ATC project to go for 3 NM separation, the Continuity of Service requirements and the planning of new buildings at airport and its surroundings creating reflexion and shadowing of aircraft trajectories for arrival and departing.			
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No			
Level of impact of the investment	Network			
	Local			
	Non-performance			
Quantitative impact per KPA	Safety			
	Environment			
	Capacity			
	Cost Efficiency			
Results of the consultation of airspace users' representatives	It has been presented to the users, but as the investements are carried by the state as it was done in the past, there was no reaction from the side of the users.			
Joint investment / partnership	No			
Investment in ATM systems	Yes	Basic surveillance		
If investment in ATM system, type?	New system			
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	This system is not part of ATM MP nor PCP as it is an additional redundancy that Luxembourg wants to include on its territory.		

Name of new major investment 6	***Radar / SUR: Surveillance chain evolution***					Total value of the asset	***1.900.000 €***
Description of the asset	ATC requested for a surveillance chain evolution in order to handle Mode S conspicuity code assignment (APP), make use the tool allowing flexible use of airspace (APP), go additional CWP customization (APP & TWR), enable Director sector for 3rd APP position (APP), to enable P BN management by FDP, enable TWR sector giving TWR the opportunity to request dedicated changes specially in VFR handling (TWR) and enable dedicated layout for DCL HMI at TWR (technically DCL is installed and ready to be used)						
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	Click to select						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability
Level of impact of the investment	Network						
	Local						
	Non-performance						

Quantitative impact per KPA	Safety	
	Environment	
	Capacity	
	Cost Efficiency	
Benefits for airspace users and results of the consultation of airspace users' representatives	It has been presented to the users, but as the investements are carried by the state as it was done in the past, there was no reaction from the side of the users.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	Basic surveilance and control
If investment in ATM system, type?	Overhaul of	implementation of additional functionalities of the actual surveillance chain
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	ATC02.8 ITY-SPI, ITY-ACID, ATC02.9

Name of new major investment 7	***Navigation systems: DVOR/DME DIK, DVOR/DME LUX***					Total value of the asset		***1.300.000 €***
Description of the asset	Renewing of DVOR/DME DIK (used for enroute) and the DVOR/DME LUX (used as backup for PBN)							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	Click to select							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network							
	Local							
	Non-performance							
Quantitative impact per KPA	Safety	back-up in case of GNSS failure						
	Environment	no impact						
	Capacity	no impact						
	Cost Efficiency							
Benefits for airspace users and results of the consultation of airspace users' representatives	It has been presented to the users, but as the investements are carried by the state as it was done in the past, there was no reaction from the side of the users.							
Joint investment / partnership	No							
Investment in ATM systems	Yes	Basic navigation for approach and en-route						
If investment in ATM system, type?	Replacement							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	MON PBN Transition 3.7						

2.4.3 - Other new and existing investments

2.4.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

2.4.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	Click to select number of new other investments

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	

2.5 - Investments - LVNL

2.5.1 - Summary of investments

Number of new major investments	8

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1	Centralised Approach and remote tower Beek and Eelde	13.603.000	13.602.652	0	3.317	26.409	31.401	608.209	8-20	50%	50%	2024
2	Common voice communication system (VCS)	18.194.000	12.275.396	0	5.101	305.794	723.708	703.933	15	54%	46%	2022
3	Expansion facilities/ Polaris	50.411.000	5.040.699	16.944	22.836	22.836	22.836	22.836	40	90%	10%	2019-2024
4	LVNL office and sustainability	56.380.000	29.677.757	28.793	214.371	486.108	559.640	894.647	10-40	90%	10%	2020-2024
5	Maintenance investments	129.691.754	84.101.576	1.297.406	870.416	1.436.375	3.281.422	4.572.947	3-20	69%	31%	2020-2024
6	Replacement of AAA by iCAS and SESAR Deployment of Trajectory Based Operations	128.959.036	75.177.895	1.092.887	43.417	49.159	87.095	7.465.185	20	100%		2023
7	System Wide Information Management (SWIM)	23.231.492	14.095.561	581.706	56.117	76.082	342.542	770.416	8	54%	46%	2020-2024
8	Tower system	23.048.143	14.003.187	1.259.616	29.940	236.843	223.844	201.927	8-20		100%	2020-2024
Sub-total of **new major investments** above (1)		443.518.425	247.974.724	4.277.351	1.245.514	2.639.608	5.272.488	15.240.100				
Sub-total **other new investments** (2)		40.678.031	32.580.864	46.223	285.130	1.412.876	2.619.768	2.926.427		69%	31%	
Sub-total **existing investments** (3)				19.196.114	20.843.842	19.368.376	18.442.080	18.188.000		69%	31%	
Total new and existing investments (1) + (2) + (3)		484.196.456	280.555.588	23.519.688	22.374.486	23.420.860	26.334.335	36.354.527				

** The total % enroute+terminal should be equal to 100%.*

2.5.2 - Detail of new major investments

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

Name of new major investment 1	***Centralised Approach and remote tower Beek and Eelde***	Total value of the asset	***13.603.000 €***

Description of the asset	The aim of the project is to relocate the provision of the Air Traffic Control Services (ATS) of two airports in the Netherlands, Maastricht Aachen Airport and Groningen Airport Eelde, by creating a Remote Tower Center (RTC) at Schiphol's facilities and deploying Remote Towers in the two relocated airports and centralise approach at Schiphol's facilities. The local maintenance organization at the two airports is going to be integrated into the Schiphol maintenance organization. This means that the tower controller will control the airport on another location by (amongst other information) camera's that are installed on the airport which gives him the visual information about the runways, the movement area and the airspace. It is a requirement that the system must be able to support multiple remote tower operations in the future. By centralising the approach controllers of the two airports at Schiphol a situation is reached in which all approach controllers work at one location (Schiphol) and on one air traffic control system. The project will contribute to the re-design of the Dutch airspace , increasing the harmonisation and improving the civil-military cooperation between Air Traffic Control the Netherlands (LVNL) and Royal Netherlands Air Force Command (RNLAF) since the Dutch military controllers are already established in Schiphol's area. Moreover, it will optimise the efficiency of the Air Traffic Control Service at the two concerned airports.	
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No	
Level of impact of the investment	Network	No impact expected
	Local	Centralized approach is an enabler for, and will contribute to, the Dutch airspace redesign (it lead to more possibilities to design the Dutch airspace) and the harmonisation, improved cooperation and integration of Dutch civil and military services.
	Non-performance	
Quantitative impact per KPA	Safety	No impact expected or better
	Environment	No impact expected
	Capacity	No impact expected or better
	Cost Efficiency	The project will optimise the efficiency of the Air Traffic Control Service at the two concerned airports EHBK and EHGG. After commissioning the remote tower technology is scalable to more civil or militairy towers so more efficiency can be reached. This will most likely increase when the multiple tower concept is implemented.
Results of the consultation of airspace users' representatives	No specific comments were made during the consultation meeting regarding individual investments. Some concerns were raised on the feasibility of the overall investment programme, and the performance plan is based on a revised overall planning. In response to an airspace user question, the airports within the scope of this investment were clarified.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	New system	

If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	AOP14 – Remote Tower Services The remote tower concept enables air traffic control services (ATS) and aerodrome flight information services (AFIS) to be provided at aerodromes where such services are either currently unavailable, or where it is difficult or too expensive to implement and staff a conventional manned facility. This Objective proposes to remotely provide ATC services and AFIS for one aerodrome handling low to medium traffic volumes or two low-density aerodromes. The basic configuration, which does not include augmentation features, is considered suitable for ATC and AFIS provision at low density airfields. However, the level and flexibility of service provision can be enhanced through the use of augmentation technology, such as an ATC surveillance display, surveillance and visual tracking, infra-red cameras etc. Cost Efficiency: Cost reduction for ATS by optimisation of ATCOs. Remote ATS facilities will be cheaper to maintain, able to operate for longer periods and enable lower staffing costs. It will also significantly reduce the requirement to maintain tower buildings and infrastructure.

Name of new major investment 2	***Common voice communication system (VCS)***	Total value of the asset	***18.194.000 €***
Description of the asset	The activity aims to deploy a Voice over Internet Protocol (VoIP) based Voice Communication System (VCS) for civil and military Air Traffic Control below flight level 245, in the Netherlands. The activity concerns an extension and upgrade of the current VCS. VoIP will be added to increase interoperability. The common VCS is a shared communication system with LVNL's military partner. It enables LVNL to have a three-lane voice communication system. This means that if the first lane VCS gets disabled, two more independent lanes still exist to handle a full traffic load. It also brings new functionalities. Communications between air traffic controllers across borders nowadays run via telephone connections, but the telecom networks will not support the old digital (E1) and analogue lines in the future. In addition, today it is not easily possible for an air traffic controller in one country to optionally access the radio infrastructure of another country. Only VoIP technology provides the prerequisites for such functions. Furthermore, this technology offers the means of introducing additional performance features that make communications between air traffic controllers and pilots easier and more secure. To implement this technology voice services will have to be fully IP (Internet Protocol)-based and run over an IP network infrastructure and the voice communication systems must be interoperable.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
Level of impact of the investment	Network	Increased sustainability of ATS services, if the first lane VCS gets disabled (in case of a failure of other reason), two more independent lanes (VCS) still exist to handle a full traffic load. This will prevent air traffic control from having to completely reduce air traffic in the Netherlands to zero, thus preventing serious disruption of the network operation and delay.	
	Local	Increased sustainability of ATS services, if the first lane VCS gets disabled (in case of a failure of other reason), two more independent lanes (VCS) still exist to handle a full traffic load. This will prevent air traffic control from having to completely reduce air traffic in the Netherlands to zero, thus preventing serious disruption of the operation and delay.	
	Non-performance		
	Safety	The three lane system is more stable, with a lower risk of overall VCS failure.	
	Environment	No impact expected	

Quantitative impact per KPA	Capacity	The three lane system will prevent air traffic control from having to completely reduce air traffic in the Netherlands to zero in case of a failure of one of the VCS systems, thus preventing serious disruption of the operation and delay.
	Cost Efficiency	By VoIP reduced costs by enabling flexible and dynamic use of ANSP resources, leading to long term savings.
Results of the consultation of airspace users' representatives	No specific comments were made during the consultation meeting regarding individual investments. Some concerns were raised on the feasibility of the overall investment programme, and the performance plan is based on a revised overall planning.	
Joint investment / partnership	Yes	Partner Military Air Traffic Control. Following a joint process with the military has allowed a more cost efficient procurement process.
Investment in ATM systems	Yes	
If investment in ATM system, type?	New system	Extension to a three-lane voice communication system shared with LVNL's military partner and using the Voice over Internet Protocol (VoIP)
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	European ATM masterplan COM11.1 – Voice over Internet Protocol (VoIP) in En-Route This Implementation Objective aims at an efficient use of voice over Internet protocol (VoIP) by harmonised and coordinated implementation for ground/ground and ground part of ground/air aeronautical communications, ensuring network benefits from VoIP implementation. The initiative covers inter centre (encompassing all type of ATM Units) voice communication and the links with the ground radio stations. Inter-centre voice communications are currently mainly performed via analogue and digital circuits. This legacy ATM voice services will soon no longer be supported by the European telecommunication service providers, making the use of new technology necessary.

Name of new major investment 3	***Expansion facilities/ Polaris***	Total value of the asset	***50.411.000 €***
Description of the asset	Due to various internal and external developments, amongst others the need for more space for the (migration towards a) new ATC system iCAS, the intended CIV/MIL integration of training and education and the outcome of a Contingency study, the present ATC Centre and its infrastructure need to be expanded. Polaris (the name of the new building) will be delivered just before RP3. During RP3 Polaris will be made ready to house the new ATC system iCAS and a trainings- and education centre for military and civil usage.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
Level of impact of the investment	Network	Improved contingency for ATM services in the Dutch airspace	
	Local	Improved contingency for ATM services in the Dutch airspace	
	Non-performance		
Quantitative impact per KPA	Safety	No impact expected	
	Environment	No impact expected	
	Capacity	Improved contingency for ATM services in the Dutch airspace	
	Cost Efficiency	Enabler for setting up a joint civil/military training school	
Results of the consultation of airspace users' representatives	No specific comments were made during the consultation meeting regarding individual investments. Some concerns were raised on the feasibility of the overall investment programme, and the performance plan is based on a revised overall planning.		
Joint investment / partnership	Yes	Joint development with the military, with the purpose of using the facility as a joint training school.	
Investment in ATM systems	No	Polaris is a building for a contingency centre for ATM services	
If investment in ATM system, type?	Click to select		
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select		

Name of new major investment 4	***LVNL office and sustainability***	Total value of the asset	***56.380.000 €***

Description of the asset	During RP3 LVNL has to invest in renovating in a sustainable manner the existing HQ building at Schiphol Oost by investing in solar panels to generate green electricity, making the heating installations more energy efficient, insulation of the building, durable office furniture etc. As part of the renovation, the building will be prepared for other ongoing developments, in particular through the creation of offices for staff related to e.g. remote tower/centralised approach, and integration of civil and military service providers.	
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No	
Level of impact of the investment	Network	No impact expected
	Local	No impact expected on formal KPA, but reduced environmental impact (CO2) from business practices
	Non-performance	No impact expected
Quantitative impact per KPA	Safety	No impact expected
	Environment	No impact expected
	Capacity	No impact expected
	Cost Efficiency	Reduction of energy costs by solar panels to generate green electricity, more energy efficient heath installations and insulation of the buildings.
Results of the consultation of airspace users' representatives	No specific comments were made during the consultation meeting regarding individual investments. Some concerns were raised on the feasibility of the overall investment programme, and the performance plan is based on a revised overall planning.	
Joint investment / partnership	No	
Investment in ATM systems	No	
If investment in ATM system, type?	Click to select	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	

Name of new major investment 5	***Maintenance investments***	Total value of the asset	***129.691.754 €***
Description of the asset	In order to maintain the normal level of service provision, several investments are needed with respect to the regular replacement and updating of the ATM systems, buildings and infrastructure, such as: - Replacing ILS systems; - Replacing VOR/DMEs; - Replacing direction finders (VDF); - Replacing TAR systems by WAM/ ADS-B systems - Replacement of monitoring and control systems; - Replacement of computers and ICT systems; Additionally, the introduction of new, modern systems as part of many of the other investments leads to the need to replace/modernise support systems.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
Level of impact of the investment	Network	No impact expected, these investments ensure the continuity of services.	
	Local	No impact expected, these investments ensure the continuity of services.	
	Non-performance		
	Safety	No impact expected	

Quantitative impact per KPA	Environment	No impact expected
	Capacity	No impact expected, these investments ensure the continuity of services.
	Cost Efficiency	No impact expected
Results of the consultation of airspace users' representatives	No specific comments were made during the consultation meeting regarding individual investments. Some concerns were raised on the feasibility of the overall investment programme, and the performance plan is based on a revised overall planning.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	Replacement	Replacement investments and overhaul of existing systems
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	Not applicable for replacement investments

Name of new major investment 6	***Replacement of AAA by iCAS and SESAR Deployment of Trajectory Based Operations***	Total value of the asset	***128.959.036 €***
Description of the asset	The current AAA-system (TDF) is the core of the LVNL support system for operational services, it allows for the processing of flight plan- and radar data, it handles the display of relevant information on the operational workstations and it includes warning- (safety nets) and planning functions. AAA will no longer meet future operational requirements, like 4D trajectory based operations and SWIM, at a cost-efficient level. The iCAS programme objective is to procure and deploy a state-of-the-art, harmonised and interoperable air traffic control system which will be rolled out at all DFS and LVNL control centres. iCAS is an important contribution to LVNL's ability to achieve the implementation of numerous Families of the Deployment Programme of the SESAR Deployment Manager to be deployed for Common Project 1. iCAS features a 4D-trajectory and is designed to provide ATC services within the entire airspace of Germany and the Netherlands including all lower and upper control centre sectors (except in airspace controlled by EUROCONTROL Maastricht UAC). iCAS will be used as a fully integrated civil / military ATS system, thus enabling a more "advanced and flexible use of the airspace" (A-FUA) for both civil and military purposes. The key iCAS components Flight Data Processor, Controller Working Position and Middleware are developed in the iTEC Collaboration together with a total of 7 ANSPs thus enabling a cost-efficient procurement as well as ensuring an interoperable system in line with the strategic goals of the Single European Sky (EU No. 552/2004 and EU No. 1070/2009). iCAS-II adds all necessary functions to the iCAS-I system to support ATC services in lower en-route and Terminal Manoeuvring Area (TMA) and to enable the transition between free route airspace and low en-route and terminal airspace operations including the integration with their associated TMAs and Extended Arrival Management systems. iCAS will make use of improved high resolution (hi-res) meteorological information as produced and developed by MET ANSP KNMI. iCAS will enable the introduction of future operational concepts which are based on 4D-trajectory information and which aim to move from today's tactical ATM operations towards increasingly strategic ATM operations.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	Mandated by PCP regulation (EU) No 716/2014 and CP1 regulation (EU) No 2021/116 ; Funded by CEF grant agreements 2015-EU-TM-0196-M, 2016-EU-TM-0117-M and 2017-EU-TM-0076-M.	

Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
	1.1		3.2	4.2	5.5 and 5.6			

Benefits for airspace users and results of the consultation of airspace users' representatives	- Common Deployment of iCAS into all DFS and LVNL Control Centers enables cost sharing in procurement, deployment and maintenance life cycles thus reducing total iCAS cost of ownership; - The continuity of services is better guaranteed by replacing the current AAA system with the new iCAS; - The advanced conflict management tools of iCAS will increase situational awareness of potential conflicts, so increasing safety; - iCAS will enable improved flight efficiency, allow for optimised routes regarding time and route length therewith reducing fuel burn and CO2 emissions. The improvements can generate benefits in Delay absorption, Delay reduction and User driven prioritisation process; - Increased system support and advanced tools will free the ATCOs from routine tasks providing gains in productivity. A productivity growth could make a capacity growth possible.	
Joint investment / partnership	Yes	Partner DFS
Investment in ATM systems	Yes	
If investment in ATM system, type?	Replacement investment	Partly a replacement investment (replacing AAA) and partly a new system for CP1 requirements and future Trajectory Based Operations
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP	- CP1 ATM Functionality 1: Extended AMAN and Integrated AMAN/DMAN in the high-density TMA, sub-functionality 1.1"Arrival Management extended to en-route Airspace"; - CP1 ATM Functionality 3: Flexible Airspace Management and Free Route Airspace, sub-functionality 3.2 "Free Route Airspace"; - CP1 ATM Functionality 4: Network Collaborative Management, sub-functionality 4.2"Collaborative NOP" - CP1 ATM Functionality 5: Initial System Wide Information Management, sub-functionalities 5.5 "Cooperative network information exchange" and 5.6 "Flight information exchange";

Name of new major investment 7	***System Wide Information Management (SWIM)***				Total value of the asset		***23.231.492 €***	
Description of the asset	Implementation of System Wide Information Management includes IPv6 based data communication networks, Public Key Infrastructure, SWIM technical infrastructure and systems using web services for the exchance of: - Aeronautical information - Meteorological information - Cooperative network information - Flight information (Yellow profile). By using open standards and interoperable services based on a Service Oriented Architecture (SOA) information can be shared throughout the system and consistent information is available to all interested. This will provide for sharing of information across different systems. Depending on the type of information an ANSP is a producer or consumer of information. The loose system coupling and separation of information provision and information consumption allow for quick and cost-effective creation of new system interfaces. Information is exchanged by XML based standard data models which makes the information machine readable. Cyber security is an important aspect of SWIM implementation. To exchange information by SWIM services the current systems need to be upgraded, adapted, interfaced or replaced. The actual list of services that LVNL provides will be made available in the common registry.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	Mandated by PCP regulation (EU) No 716/2014 and CP1 regulation (EU) No 2021/116 ; Only a part of the investment activities are funded by CEF grant agreements 2015-EU-TM-0193-M, 2015-EU-TM-0196-M and 2017-EU-TM-0076-M.						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
					5.1, 5.2, 5.3, 5.4, 5.5 and 5.6			

Benefits for airspace users and results of the consultation of airspace users' representatives	- Information can be shared throughout the system and consistent information is available to all interested. Up-to-date information shared with ANSPs and NM, it supports the exchange of flight information (and in the future trajectory based operations) and enhance the optimal flow of traffic. - SWIM allow for quick and cost-effective creation of new system interfaces and adaptation and extension of the information exchanged. Implementation of new interfaces can be done separately in the different organisations and participating organisations only implement the parts of the system they need. Both is cheaper than the current situation.	
Joint investment / partnership	Click to select	Only for Common infrastructure components (NewPENS and PKI), partner Eurocontrol
Investment in ATM systems	Yes	
If investment in ATM system, type?	New system	
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP	- CP1 ATM Functionality 5: "System Wide Information Management", sub-functionalities 5.1: "Common infrastructure components", 5.2 "SWIM yellow profile technical infrastructure and specifications", 5.3"Aeronautical information exchange", 5.4 "Meteorological information exchange", 5.5 "Cooperative network information exchange" and 5.6 "Flight information exchange (Yellow profile)".

Name of new major investment 8	***Tower system***					Total value of the asset		***23.048.143 €***
Description of the asset	LVNL will deploy a state-of-the-Art tower system at Schiphol Airport to support the implementation of the European ATM Master Plan and the Common Project 1 (CP1) in accordance with the SESAR deployment plan. Realisation of CP1 requirements in the TWR domain consists of: - Departure Management Synchronised with Pre-departure sequencing, including A-SMGCS 1 and 2 - Airport Safety Nets In addition: - A-SMGCS routing and planning function (to improve Airport Safety Nets) - Upgrade of the A-SMGCS Surveillance System - Interface for surface movement guidance The new TWR-system allows the processing of flight plan- and radar data, it handles the display of relevant information on the operational workstations, it handles Electronic Flight Strips, Airport CDM and controls the taxiway centreline lighting. Departure management synchronised with pre-departure sequencing is a means to improve departure flows at Schiphol Airport. Advanced Surface Movement Guidance and Control Systems (A-SMGCS) shall provide optimised taxi-time and improve predictability of take-off times. The routing and planning functions of A-SMGCS shall provide the automatic generation of taxi routes, with the corresponding estimated taxi time and management of potential conflicts. Airport safety nets consist of the detection and alerting of conflicting ATC clearances to aircraft and deviation of vehicles and aircraft from their instructions, procedures or routing which may potentially put the vehicles and aircraft at risk of a collision.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes	Mandated by PCP regulation (EU) No 716/2014 and CP1 regulation (EU) No 2021/116; Only a part of the investment activities are funded by CEF grant agreement 2015-EU-TM-0196-M.						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
		2.1 and 2.3						

Benefits for airspace users and results of the consultation of airspace users' representatives	- The new TWR system will enhance safety and reduce hazardous situations on the runway; - The new TWR system will calculate the most operationally relevant route, reducing taxi time (less fuel burn); - The new TWR system aims at maximising traffic flow on the runway by setting up a sequence (DMAN) with minimum optimised separations. Provide optimised taxi-time and improve predictability. Improved predictability results in more optimal use of available capacity and thus less delays. - No cost efficiency for ANSP expected. Airlines will benefit financially from these activities.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	Replacement	
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP	- CP1 ATM Functionality 2: Airport Integration and Throughput, sub-functionalities 2.1 "Departure Management Synchronised with Pre-departure sequencing" and 2.3 "Airport Safety Nets".

2.5.3 - Other new and existing investments

2.5.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

See the appendix of Annex R for further information on main other investments

2.5.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	Click to select number of new other investments

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	

2.6 - Investments - Skyguide

2.6.1 - Summary of investments

Number of new major investments	8

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1	Virtual Center	63.928.582	61.899.779	1.849.387	4.498.972	7.457.113	7.963.726	8.560.493	8	82%	18%	Stepwise until 2024
2	NSG	7.275.241	5.741.375	97.936	135.733	158.691	966.925	947.307	8	55%	45%	end 2022
3	Smart Radio	5.608.916	3.927.975	75.685	112.590	341.620	335.582	329.544	18	64%	36%	end 2021
4	WAM	8.000.289	7.366.297	11.740	58.631	118.742	381.623	410.663	15	67%	33%	Stepwise (2022, 2025, 2027)
5	SAMAX	5.204.384	5.204.384	65.978	120.454	430.415	518.987	509.331	15	0%	100%	12.2021 rsp in 02.2022 (2 steps entry in operation)
6	PAGE 1	9.876.633	8.465.685	166.143	830.263	1.407.370	1.377.424	1.347.478	8	0%	100%	stepwise between 2018 and 12.2022
7	SkyC@T	7.889.790	4.601.368	14.747	35.037	64.036	91.556	121.972	15	70%	30%	end 2024
8	AMAN CH	5.976.214	5.931.392	78.383	136.920	162.945	984.222	1.039.755	8	50%	50%	1-5-2022
Sub-total of **new major investments** above (1)		113.760.048	103.138.256	2.359.998	5.928.600	10.140.931	12.620.047	13.266.543				
Sub-total **other new investments** (2)		128.327.472	111.710.174	2.163.320	6.787.022	9.673.584	12.139.474	14.705.110		62%	38%	
Sub-total **existing investments** (3)				60.171.511	49.636.744	42.879.514	34.504.153	27.741.102		62%	38%	
Financing outside Suisse FIR				-12.450.878	-14.715.108	-12.570.441	-12.543.124	-11.755.948				
Total new and existing investments (1) + (2) + (3)		242.087.520	214.848.430	52.243.951	47.637.258	50.123.588	46.720.550	43.956.806				

** The total % enroute+terminal should be equal to 100%.*

2.6.2 - Detail of new major investments

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

Name of new major investment 1	***Virtual Center***	Total value of the asset	***63.928.582 €***

Description of the asset	From a local and disconnected set-up to a horizontal service structure: - A dynamic and networked airspace configuration - Scalable, connected, highly resilient and location-independent air traffic services - A virtual, network-centric, open and service-oriented architecture - Rationalised auxiliary services through strategic partnerships							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network							
	Local	Yes						
	Non-performance							
Quantitative impact per KPA	Safety	Yes						
	Environment	Yes						
	Capacity	Yes						
	Cost Efficiency	Yes						
Results of the consultation of airspace users' representatives	The project was consulted on 28.8.2019 and 15.7.2021, including the following benefits: Phase 1: Replaced classic flight strips to go stripless / Pushed ground-air datalinks / Standardised and harmonised processes and procedures between ACC East and ACC West / Increased the level of safety / Increased our capacity / Recurrent financial benefits of 7+ MCHF a year Phase 2: Laying the foundations for location-independent operations / Harmonised processes between ACC East and West in upper airspace / New Route Handling (NRH) concept up and running Swiss wide / One single data centre based on an open architecture / Location-independent technical services / Cost reductions in engineering by switching off legacy systems and operating an open, flexible and network-centric system out of a single virtual data centre Phase 3 : Simplified, location-independent procedures and processes / Increased automation / Dynamic airspace management The Users took note of the presentation. The written questions raised after the meeting have been answered in the CRD Document.							
Joint investment / partnership	No							
Investment in ATM systems	Yes							
If investment in ATM system, type?	New system	This is a mixture of new systems and improving processes, overhauling old systems, and replacing old systems						
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)							

Name of new major investment 2	***NSG***	Total value of the asset	***7.275.241 €***
Description of the asset	Replacement of end of life asset and also includes new voice regognition features to automate Pilot voice responses for specific training modules, thus allow trainees to practice some modules without the need for a human Pilot, thus ultimately reduce the instructor to learner ratio.		

The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No	
Level of impact of the investment	Network	
	Local	Yes
	Non-performance	
Quantitative impact per KPA	Safety	Yes
	Environment	
	Capacity	
	Cost Efficiency	Yes
Results of the consultation of airspace users' representatives	The project was consulted on 28.8.2019 and 15.7.2021, including the following benefits: - Safety: Obsolescence - Cost-Efficiency: Reduction of Simulation Pilots Users took note of the presentation. No further written questions were raised.	
Joint investment / partnership	No	
Investment in ATM systems	Yes	
If investment in ATM system, type?	Overhaul of	Simulator
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	

Name of new major investment 3	***Smart Radio***					Total value of the asset		***5.608.916 €***
Description of the asset	Replaces obsolescent main radio equipment across Switzerland, compliant with EC implementing rule for 8.33 kHz, and VOIP enabled to support the Virtual Centre implementation). This project started in 2013 and is due to complete in 2021 fully.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
							EC552 2004	
Level of impact of the investment	Network							
	Local	Yes						
	Non-performance							
Quantitative impact per KPA	Safety							
	Environment	Yes						
	Capacity	Yes						
	Cost Efficiency	enabler						
Benefits for airspace users and results of the consultation of airspace users' representatives	The project was consulted on 28.8.2019 and 15.7.2021, including the following benefits: - Safety: Obsolescence - Capacity: Enabler for Virutal Center - Cost-Efficiency: Enabler for Virutal Center Users took note of the presentation. No further written questions were raised.							
Joint investment / partnership	No							

Investment in ATM systems	Yes	
If investment in ATM system, type?	Overhaul of	
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP	

Name of new major investment 4	***WAM***					Total value of the asset		***8.000.289 €***
Description of the asset	Deploy MLAT to replace end of asset life secondary radar. MLAT allows lower running costs and affordably improve coverage in the complicated Swiss mountain geography. As demanded by Eurocontrol Bluebook.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
							x	
Level of impact of the investment	Network							
	Local	yes						
	Non-performance							
Quantitative impact per KPA	Safety	yes						
	Environment	yes						
	Capacity							
	Cost Efficiency	yes						
Benefits for airspace users and results of the consultation of airspace users' representatives	The project was consulted on 28.8.2019 and 15.7.2021, including the following benefits: - Safety: Obsolescence - Cost-Efficiency: Investment costs can be reduced of about 40% / Reduction of service cost about 25% per year over 15 years life cycle as of RP4 Users took note of the presentation (the project and its details were already presented in the consultation of December 2018 as well).							
Joint investment / partnership	No							
Investment in ATM systems	Yes							
If investment in ATM system, type?	Overhaul of existing system							
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP							

Name of new major investment 5	***SAMAX***	Total value of the asset	***5.204.384 €***
Description of the asset	SAMAX SMR ZRH Renewals: The project aims at renewing the two legacy SMR (Surface Movement Radars) of Zürich airport, used for our A-SMGCS application SAMAX. Benefits: Continuous SMR service as sensor for the safety net functions Rimcas and ARSI / Use of modern technology with equal performances /Ensure a safe, available, performing and compliant SMR service beyond 2020 for a 15 years' time frame / to meet OPS and AMS airport surface requirements as they are today .		

The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
							x	
Level of impact of the investment	Network							
	Local	yes						
	Non-performance							
Quantitative impact per KPA	Safety	Yes						
	Environment	N/A						
	Capacity	N/A						
	Cost Efficiency	N/A						
Benefits for airspace users and results of the consultation of airspace users' representatives	The project was consulted on the 15.7.2021. Main benefit is linked to Safety (maintained). Users took note of the presentation. No further written questions were raised.							
Joint investment / partnership	Yes	Airport contributes 50%						
Investment in ATM systems	Yes							
If investment in ATM system, type?	Overhaul of							
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP							

Name of new major investment 6	***PAGE 1***					Total value of the asset		***9.876.633 €***
Description of the asset	The PAGE-1 project aims to reduce the TWR ATCOs workload to harmonise their working methods and to simplify their training by deploying a more efficient and safer working environment that will replace the currently paper strip-based one. It also aims to develop the basis for Approach improvements in view of the global TWR/APP improvement in terms of safety, capacity and cost-efficiency.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
							AF6	
Level of impact of the investment	Network							
	Local	yes						
	Non-performance							
Quantitative impact per KPA	Safety	yes						
	Environment	N/A						
	Capacity	yes						
	Cost Efficiency	yes						

Benefits for airspace users and results of the consultation of airspace users' representatives	The project was consulted on the 15.7.2021 Main benefits are linked to Safety + Capacity + Cost Efficiency. Users took note of the presentation. No further written questions were raised.	
Joint investment / partnership	Yes	GVA Airport, FOCA
Investment in ATM systems	Yes	
If investment in ATM system, type?	New system	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	

Name of new major investment 7	***SkyC@T***					Total value of the asset		***7.889.790 €***
Description of the asset	Skyguide Communication at TWR/APP: Following the bankruptcy of the VCS supplier Schmid Telecom (SZ), who was foreseen to support various mid-life upgrades at regional TWRs and ZRH TWR/APP, a new voice communication solution is being implemented. A harmonized VCS product through all civil skyguide OPS units / Simplification of controller working position by replacing several HMI (TEL, RAD, VOBIS, Intercom) by one integrated solution ; Implement the "any controller, any frequency, any site" concept for the first VCS and thereby enable remote TWR and VC concepts							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
Level of impact of the investment	Network							
	Local	yes						
	Non-performance							
Quantitative impact per KPA	Safety	yes						
	Environment	yes						
	Capacity	yes						
	Cost Efficiency	enabler						
Results of the consultation of airspace users' representatives	The project was consulted on the 15.7.2021 Main benefit is linked to Service Continuity. Users took note of the presentation. No further written questions were raised.							
Joint investment / partnership	No							
Investment in ATM systems	Yes							
If investment in ATM system, type?	Overhaul of							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)							

Name of new major investment 8	***AMAN CH***	Total value of the asset	***5.976.214 €***

Description of the asset	Replace the 17 year old current Arrival Manager (AMAN) in ZRH, known as CALM. In GVA, a new AMAN is required to complete the PAGE-1 stripless concept for Approach planners. The project also delivers a required pre-requisite for a future planned project (Future: PAGE-2 - which supports the airport development plan to improve capacity and efficiency), and AMAN is a prerequisite for XMAN Zurich.							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes							
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability	
	x							
Level of impact of the investment	Network							
	Local							
	Non-performance							
Quantitative impact per KPA	Safety	N/A						
	Environment	yes						
	Capacity	yes						
	Cost Efficiency	enabler						
Benefits for airspace users and results of the consultation of airspace users' representatives	The project was consulted on the 15.7.2021 Main benefit is linked to Service continuity. Users took note of the presentation. No further written questions were raised.							
Joint investment / partnership	No							
Investment in ATM systems	Yes							
If investment in ATM system, type?	Overhaul of							
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)							

2.6.3 - Other new and existing investments

2.6.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

To comply with EU efficiency targets (amortisation reduction contribution), SKYGUIDE will reduce its annual investment in the project-portfolio by ~17% over the next 5 years. Skyguide also has adjusted capitalisation criteria since 1.1.2021 which reduces the amount of a project's total cost which is capitalised to enable its transformation and the harvesting of Virtual Center benefits (Buy vs. Make). With the reduced annual investment, ~67% of the project portfolio are planned projects required for business continuity, 11% for Virtual centre new systems and processes, and the remainder is spread across ATM, management systems across the company - wherever possible Skyguide aims not just to replace systems but seek to improve the business.
Existing investments are to complete projects in progress which aim to either maintain/improve the 4 main KPAs for capacity, efficiency, environment and of course safety, or to keep the business operations running (facilities, back office, etc.); there are up to 70 small projects or epics across the business addressing these topics in any year.

2.6.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	Click to select number of new other investments

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	

2.7 - Investments - MUAC

2.7.1 - Summary of investments

Number of new major investments	6

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1	New Voice Communication System	6.939.000	6.939.000	663.020	706.133	698.362	690.383	682.310	8 to 15	100%		Q4-2017
2	MeDUSA (MUAC Dual System Architecture)	13.500.000	13.500.000	0	0	0	0	0	8 to 15	100%		Q4-2025
3	Back up Voice Communication System	8.700.000	8.700.000	0	0	0	0	0	8 to 15	100%		Q4-2027
4	Data Centre Modernisation	7.103.000	7.103.000	0	0	0	511.890	507.438	15 to 20	100%		Q2-2023
5	IOP-G programme - First deployment	21.000.000	21.000.000	0	0	0	0	0	8 to 15	100%		Q2-2029
6	PHOENIX - New ops building (previously called New ATCO Consoles project)	34.375.000	34.375.000	0	0	0	0	0	8 to 50	100%		Q4-2026
Sub-total of **new major investments** above (1)		91.617.000	91.617.000	663.020	706.133	698.362	1.202.273	1.189.748				
Sub-total **other new investments** (2)		36.509.000	36.509.000	0	549.900	1.207.900	2.523.900	3.839.900				
Sub-total **existing investments** (3)				8.581.777	6.267.967	5.228.738	4.740.827	4.132.352				
Total new and existing investments (1) + (2) + (3)		128.126.000	128.126.000	9.244.797	7.524.000	7.135.000	8.467.000	9.162.000				

** The total % enroute+terminal should be equal to 100%.*

2.7.2 - Detail of new major investments

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

Name of new major investment 1	***New Voice Communication System***		Total value of the asset	***6.939.000 €***
Description of the asset	ED-137 compliant VoIP Voice Communication System, including test system. The system supports the FABEC concept for inter-centre sectorisation.			
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No			
Level of impact of the investment	Network	Very limited on the short term. Positive impact on the network will arise once VoiP has been implemented across all ANSPs in Europe.		
	Local	None		

	Non-performance	None
Quantitative impact per KPA	Safety	Current safety levels are maintained or improved. Improved radio coverage.
	Environment	No impact
	Capacity	The N-VCS can support more sectors than the old one and provides in addition more flexibility when switching from one sector configuration to another. Essential enabler for future CONOPS developments e.g. deeper integration with FDPS.
	Cost Efficiency	Reduced communication maintenance costs
Results of the consultation of airspace users' representatives	Covered in national consulation of BE, NL, GE and LUX. No specific comments were made.	
Joint investment / partnership	Yes	Common procurement with DSNA
Investment in ATM systems	Yes	
If investment in ATM system, type?	Replacement investment	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	Replacement of the Voice System, supporting VoIP for ground telephone; implementation objective COM11.1

Name of new major investment 2	***MeDUSA (MUAC Dual System Architecture)***	Total value of the asset	***13.500.000 €***
Description of the asset	The MUAC Dual System Architecture (MeDUSA) project will provide an upgraded Fallback/system, which will support the necessary operational requirements for a safe transition from Primary high capacity to Fallback sustained capacity. Upgraded Fallback CWP-HMI with additional functionalities on top of the currently existing ones : identical look and feel as the PRI-CWP, datalink and outgoing OLDI. The project is currently in the initiation phase.		
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No		
Level of impact of the investment	Network	None	
	Local	Due to the similar HMI and features in both PRI and FLB, training effort will be less. In addition, the legacy fallback system is a potential blockage to future capacity gains. MEDUSA ensures that primary system capacity at MUAC can grow, due to the higher	
	Non-performance	None	
Quantitative impact per KPA	Safety	The project is in the initiation phase. It is too early to quantify it's impact.	
	Environment	No direct impact	
	Capacity	Positive impact as a) MEDUSA ensures that primary system capacity at MUAC can grow and b) When operating under fallback conditions, the new system will be able to cope with more flights than the current fallback system.	
	Cost Efficiency	No direct impact	
Results of the consultation of airspace users' representatives	Covered in national consulation of BE, NL, GE and LUX. No specific comments were made.		
Joint investment / partnership	No		
Investment in ATM systems	Yes		
If investment in ATM system, type?	Overhaul of existing system		
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	The upgraded Fallback System will provide for a new Fallback CWP-HMI, as well as a replacement of the current MUAC Fallback Flight Server	

Name of new major investment 3	***Back up Voice Communication System***		Total value of the asset	***8.700.000 €***
Description of the asset	Replacement of the current BVCS system introduced in 2008			
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No			
Level of impact of the investment	Network	None		
	Local	None		
	Non-performance	This is a replacement project, without direct impact on network or local performance.		
Quantitative impact per KPA	Safety	The project is in the initiation phase. It is too early to quantify it's impact.		
	Environment	No direct impact		
	Capacity	No direct impact		
	Cost Efficiency	With the migration to IP technology, the phase out of legacy telephony will start		
Results of the consultation of airspace users' representatives	Covered in national consulation of BE, NL, GE and LUX. No specific comments were made.			
Joint investment / partnership	No			
Investment in ATM systems	Yes			
If investment in ATM system, type?	Replacement investment			
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non-PCP)	Replacement of the Backup Voice System, supporting VoIP for ground telephone; implementation objective COM11.1		

Name of new major investment 4	***Data Centre Modernisation***		Total value of the asset	***7.103.000 €***
Description of the asset	The data Centre Modernisation project aims at the upgrade of the equipment rooms and their installations and facilities to the Uptime Institute TIER III level. Besides that, the project will deliver processes and tooling to efficiently plan the rack-space and administer the assets and their physical (network) interconnections.			
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No			
Level of impact of the investment	Network	No		
	Local	No		
	Non-performance	The upgrade of the infrastructure is needed in order to ensure that the platform remains capable to support current and future IT needs.		
Quantitative impact per KPA	Safety	Reduced risk of system interruptions		
	Environment	Improved energy consumption, fire protection and physical security		
	Capacity	Reduced risk of system interruptions		
	Cost Efficiency	No		
Results of the consultation of airspace users' representatives	Covered in national consulation of BE, NL, GE and LUX. No specific comments were made.			
Joint investment / partnership	No			
Investment in ATM systems	No			

If investment in ATM system, type?	Click to select	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	

Name of new major investment 5	***IOP-G programme - First deployment***				Total value of the asset		***21.000.000 €***
Description of the asset	To comply with the Initial SWIM Implementing Rule 716/2014 of the Pilot Common Projects (PCP), MUAC is preparing the implementation of the Flight Object (FO), supported by the Blue SWIM Profile. The IOPG Programme comprises additional validations to complement the validations under SESAR1 & SESAR2020, the development and integration of the SWIM Node and Flight Object Manager (common project with iTEC) and the modifications to the						
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)? Ref. to the Regulation and, if funded through Union assistance programmes, ref. to the relevant grant agreement.)	Yes						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability
					Family 5-6-2		
Benefits for airspace users and results of the consultation of airspace users' representatives	Access to common flight data can result in improved coordination in user-preferred route environments, safety, robustness and concepts of operation. Costs saving through common development of the Blue SWIN Node and Flight Object Manager with iTEC.						
Joint investment / partnership	Yes						
Investment in ATM systems	Yes						
If investment in ATM system, type?	New system						
If investment in ATM system, Reference to European ATM Master Plan / PCP	PCP	AF#5,family 5-6-2					

Name of new major investment 6	***PHOENIX - New ops building (previously called New ATCO Consoles project)***		Total value of the asset	***34.375.000 €***
Description of the asset	New operational building, flexibly locatable in a brighter OPS Room, including new consoles designed to modern ergonomic standards, improved training, test and locat contingency infrastructure, refurbished training, test & contingency environment. The Study Phase has been approved by the MCG; the outcome of the study will be presented in the MCG of Spring 2022.			
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	No			
Level of impact of the investment	Network			
	Local	The new building will provide additional CWPs to handle more traffic.		
	Non-performance			
Quantitative impact per KPA	Safety	The project is in the initiation phase. It is too early to quantify it's impact.		
	Environment	Sustainability will be a high priority for the new OPS building		
	Capacity	Additional CWPs will allow for a higher capacity and support the future CONOPS.		
	Cost Efficiency	No impact		
Results of the consultation of airspace users' representatives	Covered in national consulation of BE, NL, GE and LUX. No specific comments were made.			
Joint investment / partnership	No			
Investment in ATM systems	No			
If investment in ATM system, type?	Click to select			

If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	

2.7.3 - Other new and existing investments

2.7.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

The **existing investments** with the highest significance in terms of operational and financial impact are : the MUAC building (9 M€ of depreciations over RP3), new FDPS which has been fully depreciated at the end of 2020 (3.7 M€ of depreciations in 2020), the data centre operations (3.1 M€ of depreciation over RP3), the Radio Direction Finder (1.2 M€ over RP3), the MUAC office Cloud operations OBS (1.1 M€ over RP3) and the BEEK transmitter station (0.6 M€ over RP3). The new investments with the highest significance are disclosed in section 2.7.1 . **Other new investment projects** includes among others , Maintenance of servers and workstations, the new Access Control system and increased automation in training (MUSE project).

2.7.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	3

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	
1	Data Centre operations	7.321.000	7.321.000	620.000	620.000	620.000	620.000	620.000	Obsolescence : replacement of servers and workstations NOTE: Althoughthe total value of this line is more than €5mln, the line covers a significant number of smaller repacement investments which are grouped here for convenience. Alle individual investments are well below the €5mln threshold.
2	New Access Control System	2.800.000	2.800.000				100.000	200.000	obsolescence of the existing access control system, acquire a new and state of the art access control system based on an integrated security platform which interconnects all required applications within an open architecture meeting the present regulations, expecting benefits are in user friendliness, IT security, capacity and possibilities of the new system, improvement of physical barries, futureproof and reducing of maintenance costs

3	Automated/remote ATCO training, self training and scoring (MUSE)	1.708.000	1.708.000					600.000	Improvement of the real time simulation environment at MUAC and from home leading to workload reduction, sel training for ab-initios

2.8 - Investments - Météo France

2.8.1 - Summary of investments

Number of new major investments	0

2.8.3 - Other new and existing investments

2.8.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

As sole provider of meteorological services to air navigation designated in France, Meteo France has to ensure to plan dedicated investments. In that respect, Meteo France expects to plan yearly a level of depreciation costs of approximately 18M€ (see RP3 table costs).
During RP3, new and existing investments are mainly related to the modernization of meteorological radar network, weather observation stations and the implementation of a supercomputer (not dedicated to aeronautical services) for enhancing the computing power.

2.8.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	0

2.9 - Investments - Deutscher Wetterdienst (DWD)

2.9.1 - Summary of investments

Number of new major investments	1

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1												
Sub-total of **new major investments** above (1)		0	0	0	0	0	0	0				
Sub-total **other new investments** (2)		1.805.000	495.000	209.710	209.710	255.151	255.151	255.151		80%	20%	
Sub-total **existing investments** (3)				2.218.041	2.315.488	2.314.341	2.335.620	2.352.419		70%	30%	
Total new and existing investments (1) + (2) + (3)		1.805.000	495.000	2.427.751	2.525.198	2.569.492	2.590.771	2.607.570				

** The total % enroute+terminal should be equal to 100%.*

2.9.3 - Other new and existing investments

2.9.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

AutoMETAR:
The AutoMETAR project will aim at the German Weather Service to fully automate the airport weather declarations at international traffic airports on the basis of the requirements set out in ICAO Annex 3 and Doc 9837 N/454. Full automation will increase the medium term performance through rapid data integration and a fully automatic 24/7 service offer. Therewith, DWD follows the global trend in automatization of weather observation and will gain a high performance system for the required airport weather reports METAR and MetReport/Special based on ICAO Annex 3 and ICAO Doc 9837. The project started in 2014 and will end with a full automatization in 2022.

LLWAS:
DWD implemented a Low Level Windshear Alert System at the airports Frankfurt and Munich to improve the detection and warning of wind shear, strong winds, turbulence and wake turbulence. Using a LIDAR and a X-band Radar the system allows to detect hazardous wind situations in the terminal area. Following the recommendation of ICAO Annex 3, the system generates automatic wind shear alerts. In a first step the data and the alerts are used by forecasters at the meteorological watch offices. In case of wind shear the forecasters contact DFS air traffic controller. The goal is to bring the warnings directly to customers via ASDUV Systems and with a tool using geowebservices.

ASDUV:
ASDUV is the Automatic Weather Observing System (AWOS) working at all German international airports. The system processes all sensor data at the airports like temperature/dew point, QNH, wind, RVR, clouds, significant weather and provides the weather reports METAR/SPECI, MetReport/Special and other special data telegrams for ATS Systems and the air traffic controllers. Since 2016 the new ASDUV System is in operational use at all international airports. Due to new requirements of ICAO and the automatization of the weather observation (AutoMETAR) DWD has to invest into hardware and software developments.

RVR_E:
For all weather operations the runway visual range and the cloud base are significant meteorological parameters to be determined by DWD along the runways and at the thresholds / glide path. The visibility sensors have been replaced by new modern systems. The ceilometers to determine cloud amount and cloud base will be replaced as well soon. The newly implemented visual range method allows for an improved visual range determination at airports by a new sensor type and contributes more safety in the terminal area.

SESAR common projects (MET-GATE, Adverse Weather):
The provision of harmonised meteorological products and services contributes to the objectives from SES, notably in increasing aviation safety but also in minimising flight delays and thus increasing capacity. In the context of Adverse Weather, flight meteorological products from various national European meteorological services are brought together so as to produce a Europe-wide harmonised meteorological picture."

2.9.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	1

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	

1	AutoMETAR	1.805.000	495.000	209.710	209.710	255.151	255.151	255.151	The AutoMETAR project will aim at the German Weather Service to fully automate the airport weather declarations at international traffic airports on the basis of the requirements set out in ICAO Annex 3 and Doc 9837 N/454. Full automation will increase the medium term performance through rapid data integration and a fully automatic 24/7 service offer. Therewith, DWD follows the global trend in automatization of weather observation and will gain a high performance system for the required airport weather reports METAR and MetReport/Special based on ICAO Annex 3 and ICAO Doc 9837. The project started in 2014 and will end with a full automatization in 2022.

2.10 - Investments - Royal Netherlands Meteorological Institute (KNMI)

2.10.1 - Summary of investments

Number of new major investments	1

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1												
Sub-total of **new major investments** above (1)		0	0	0	0	0	0	0				
Sub-total **other new investments** (2)		1.300.000	780.000	0	0	260.000	260.000	260.000		82%	18%	
Sub-total **existing investments** (3)				21.000	12.000	12.000	12.000	12.000		82%	18%	
Total new and existing investments (1) + (2) + (3)		1.300.000	780.000	21.000	12.000	272.000	272.000	272.000				

** The total % enroute+terminal should be equal to 100%.*

2.10.2 - Detail of new major investments

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

Name of new major investment 1								Total value of the asset	***0.000 €***
Description of the asset	KNMI has no new major investments planned. However, if '0' is selected in cell D6, the table in rows 8-63 disappers completely, leaving no space to report other new investments. For this reason '1' was selected, but there is no information to provide here. Further details on other new investments are provided below.								
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	Click to select								
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability		
Level of impact of the investment	Network								
	Local								
	Non-performance								
Quantitative impact per KPA	Safety								
	Environment								
	Capacity								
	Cost Efficiency								
Benefits for airspace users and results of the consultation of airspace users' representatives									
Joint investment / partnership	Click to select								
Investment in ATM systems	Click to select								

If investment in ATM system, type?	Click to select	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	

2.10.3 - Other new and existing investments

2.10.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

The total of investments costs is 1300k€ (combined en-route and terminal) and consists of LIDARs for Schiphol.

The two points below are charged to aviation via allocation keys. Compared to budget, there is a shift between fixed assets/depreciation and other operational costs:
1. Replacement and renewal investment of observation infrastructure and components in the observing network for aviation
2. Improved contingency and forecaster tools

2.10.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	Click to select number of new other investments

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	

2.11 - Investments - Office Féderal de la Météorologie et de Climatologie MétéoSuisse

2.11.1 - Summary of investments

Number of new major investments	0

#	Name of new major investment (i.e. above 5 M€)	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation period in years)	Allocation (%)*		Planned date of entry into operation
				2020	2021	2022	2023	2024		Enroute	Terminal	
1		0		0								
Sub-total of **new major investments** above (1)		0	0	0	0	0	0	0				
Sub-total **other new investments** (2)		360.000	360.000			24.429	24.429	51.429		50%	50%	
Sub-total **existing investments** (3)				312.000	312.000	312.000	312.000	312.000		50%	50%	
Total new and existing investments (1) + (2) + (3)		360.000	360.000	312.000	312.000	336.429	336.429	363.429				

** The total % enroute+terminal should be equal to 100%.*

2.11.2 - Detail of new major investments

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

Name of new major investment 1						Total value of the asset	***0.000 €***
Description of the asset							
The investment is mandated by a SES Regulation (i.e. PCP/CP1/Interoperability)?	Click to select						
Specify links to the PCP/CP1/Interoperability Regulations (add the sub-AF number(s) under each relevant box)	AF1	AF2	AF3	AF4	AF5	AF6	Interoperability
Level of impact of the investment	Network						
	Local						
	Non-performance						
Quantitative impact per KPA	Safety						
	Environment						
	Capacity						
	Cost Efficiency						
Benefits for airspace users and results of the consultation of airspace users' representatives							
Joint investment / partnership	Click to select						
Investment in ATM systems	Click to select						

If investment in ATM system, type?	Click to select	
If investment in ATM system, Reference to European ATM Master Plan / PCP	Click to select	

2.11.3 - Other new and existing investments

2.11.3.1 - Overall description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period

- Other new investments: new sensors to be installed in the framework of the AMAROC project.
- Existing investments: depreciation of existing infrastructure.

2.11.3.2 - Details of the main other new investments in fixed assets planned over the reference period

Number of new other investments	0

#	Name of investment	Total value of the asset (capex or contractual leasing value)	Value of the assets allocated to ANS in the scope of the PP	**Determined costs** of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Description
				2020	2021	2022	2023	2024	

SECTION 3: PERFORMANCE TARGETS AND MEASURES FOR THEIR ACHIEVEMENT

3.1 - Safety targets

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

3.2 - Environment targets

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

3.3 - Capacity targets

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

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

3.4 - Cost efficiency targets

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

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

3.4.3 - Pension assumptions

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

3.4.5 - Restructuring costs

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

3.5 - Additional KPIs / Targets

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

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

3.6.2 - Interdependencies and trade-offs between capacity and environment

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

3.6.4 - Other interdependencies and trade-offs

Annexes of relevance to this section

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

ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL)

ANNEX F. BASELINE VALUES (COST-EFFICIENCY)

ANNEX H. RESTRUCTURING MEASURES AND COSTS

ANNEX M. COST ALLOCATION

ANNEX J. OPTIONAL KPIs AND TARGETS

ANNEX O. JUSTIFICATIONS FOR THE LOCAL SAFETY TARGETS

ANNEX P. JUSTIFICATIONS FOR THE LOCAL ENVIRONMENT TARGETS

ANNEX Q. JUSTIFICATIONS FOR THE LOCAL CAPACITY TARGETS

ANNEX R. JUSTIFICATIONS FOR THE LOCAL COST-EFFICIENCY TARGETS

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

SECTION 3.1: SAFETY KPA

3.1 - Safety targets

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

a) Safety national performance targets

b) Detailed justifications in case of inconsistency between local and Union-wide safety targets

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

Annexes of relevance to this section

ANNEX O. JUSTIFICATIONS FOR THE LOCAL SAFETY TARGETS

3 - PERFORMANCE TARGETS AT LOCAL LEVEL

3.1 - Safety targets

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

a) Safety performance targets

Number of Air Traffic Service Providers	7

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
skeyes	Safety policy and objectives	*B*	B	C	C	C	C
	Safety risk management	*C*	C	C	C	D	D
	Safety assurance	*B*	B	B	B	C	C
	Safety promotion	*C*	C	C	C	C	C
	Safety culture	*B*	B	B	C	C	C
	Additional comments						

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
DSNA	Safety policy and objectives	*C*	C	C	C	C	C
	Safety risk management	*D*	D	D	D	D	D
	Safety assurance	*C*	C	C	C	C	C
	Safety promotion	*C*	C	C	C	C	C
	Safety culture	*B*	B	B	C	C	C
	Additional comments						

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
DFS	Safety policy and objectives	*C*	C	C	C	C	C
	Safety risk management	*C*	C	C	C	D	D
	Safety assurance	*B*	B	B	B	C	C
	Safety promotion	*B*	B	C	C	C	C
	Safety culture	*C*	C	C	C	C	C
	Additional comments						

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
ANA LUX	Safety policy and objectives	*B*	B	C	C	C	C
	Safety risk management	*C*	C	C	C	D	D
	Safety assurance	*B*	B	B	B	C	C
	Safety promotion	*B*	B	C	C	C	C
	Safety culture	*B*	B	B	C	C	C
	Additional comments						

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
LVNL	Safety policy and objectives	*C*	C	C	C	C	C
	Safety risk management	*C*	C	C	C	D	D
	Safety assurance	*C*	C	C	C	C	C
	Safety promotion	*C*	C	C	C	C	C
	Safety culture	*C*	C	C	C	C	C
	Additional comments						

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
Skyguide	Safety policy and objectives	*C*	C	C	C	C	C
	Safety risk management	*C*	C	C	C	D	D
	Safety assurance	*C*	C	C	C	C	C
	Safety promotion	*C*	C	C	C	C	C
	Safety culture	*C*	C	C	C	C	C
	Additional comments						

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
MUAC	Safety policy and objectives	*C*	C	C	C	C	C
	Safety risk management	*D*	D	D	D	D	D
	Safety assurance	*C*	C	C	C	C	C
	Safety promotion	*C*	C	C	C	C	C
	Safety culture	*C*	C	C	C	C	C
	Additional comments						

b) Detailed justifications in case of inconsistency between local and Union-wide safety targets

** Refer to Annex O, if necessary.*

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

There are different committees established within the FABEC as explained in the "FABEC Reference Guide", clearly highlighting the existing groups at ANSPs as well as Competent Authorities level and their responsibilities. For the KPA of Safety the ANSPs' committee installed is the Standing Committee Safety (SC-SAF) where all 7 ANSPs are represented.
On ANSPs level, a few measures for safety risk management were put in place by individual ANSPs as follows.
Skeyes (Belgium) decided to put in place following measures:
• Safety culture assessment and promotion;
• Improvement of the integration of contractors into the SMS;
• Yearly Rehearsal and update of all emergency procedures;
• Management of improvements in safety that address key risks;
• Management of performance deviations and deficiencies from its operational risk baseline;
• Continuous improvement of the SMS through yearly conduct of internal SMS audits.
Skyguide (Switzerland) decided to put in place following measures:
• Integration of all risk management activities together with business continuity and crisis management;
• Implementation of the RMIS (Risk Management Information System) combining all risk information in one single, cloud-based IT tool;
• Development of external supplier monitoring activities;
• Conduct of a safety culture survey together with other ANSPs;
• Legally anchoring of external Just Culture in the Swiss law;
• Application of data science to systematically learn from safety II data;
• Detection and management of interdependencies of complex operations.
LVNL (the Netherlands) decided to put in place following measures:
• Annual update of SMS;
• Establishment of a risk-based Safety Plan;
• Update of Safety Risk Target document and corresponding Unit Safety Case.

DSNA (France) decided to put in place following measures:
• Safety culture assessment and promotion;
• Review and update of the hazard identification and analysis processes;
• Management of improvements in safety that address key risks;
• Application of data science to systematically learn from safety II data;
• Update of Safety Risk Target document and corresponding Unit Safety Case.
DFS (Germany) decided to put in place following measures:
• Conduct a Safety Culture Survey;
• Conduct regular Local Safety Surveys;
• Conduct regular safety culture campaigns;
• Regular update of the Safety Plan.
ANA (Luxembourg) decided to put in place following measures:
• Establishment of a yearly rehearsal and update of all emergency procedures;
• Modernization of our occurrence investigation processes.
MUAC decided to put in place following measures
• Improving traceability between safety requirements;
• Creating an overall MUAC dashboard to steer the KPIs, including the safety aspect;
• Providing input to the FABEC working groups (SRAP and SPM).
Furthermore, all FABEC ANSPs jointly decided to put in place following measures to show their common spirit and to work together even closer:
• Identification of deviations / gaps to the requirements described in the RP3 EoSM-questionnaire, if any, and implementation of remedial measures accordingly;
• Retrieval of a better common understanding between ANSPs and Competent Authorities of EoSM-questionnaire requirements, where necessary;
• Maintenance of a FABEC dashboard. This is kept up-to-date by the SPM working group reporting to the SC-SAF. A yearly aggregation of SMI, RI and EoSM results is done under the leadership of the DSNA and analysed both by SPM and SC-SAF. The publication on a website is foreseen in the near future.
Last mentioned measures emphasize the FABEC added value through an intense cooperation between the 7 ANSPs.

On the Competent Authority level, the compliance verification of Commission Implementing Regulation (EU) 2017/373 is considered an effective means by inspecting the current safety performance and thus also anticipating if a set target is endangered. As the EoSM results are directly linked to aforementioned regulation's compliance verification, this is clearly depicting an early indicator of EoSM maturity and its necessary improvement.
Further, FABEC Competent Authorities meet regularly (three times a year) in a dedicated working group, the Safety Performance and Risk Coordination Task Force (SPRC TF), to gather Safety Performance data, to compare the ANSPs' performance among each other and to jointly determine whether and where catch-up demand is necessary. Additionally, the SPRC TF has established cooperation with the Standing Committee Safety (SC-SAF) to guarantee a holistic approach including all 7 FABEC ANSPs.

** Refer to Annex O, if necessary.*

SECTION 3.2: ENVIRONMENT KPA

3.2 - Environment targets

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

a) FAB environment performance targets

b) Detailed justifications in case of inconsistency between FAB targets and FAB reference values

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

Annexes of relevance to this section

ANNEX P. JUSTIFICATIONS FOR THE LOCAL ENVIRONMENT TARGETS

3.2 - Environment targets

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

a) FAB environment performance targets

	2020A	2020	2021	2022	2023	2024
FAB reference values	*2,94%*	n/a	2.75%	2.75%	2.75%	2.75%

	2020	2021	2022	2023	2024
	Target	Target	Target	Target	Target
FAB targets	3,25%	2.75%	2.75%	2.75%	2.75%

	2020A	2020	2021	2022	2023	2024
Breakdown values	*Actual*	Value	Value	Value	Value	Value
MUAC contribution to FABEC target	*n/a*	2,29%	1,90%	1,85%	1,85%	1,85%
MUAC contribution to FABEC target referring to all MUAC States (Belgium, Germany, Luxembourg, the Netherland)	All states (Belgium, Germany, Luxembourg, the Netherlands): MUAC has implemented free route airspace (FRA) 24/7 across its entire airspace. FRA offers airspace users more direct flight planning options, reducing fuel burn and emissions. All states: MUAC optimises airspace sectors to draw full benefit from free route airspace. On the AIRAC date 25 March 2021, MUAC successfully implemented a major overhaul of its airspace sector layout, which now better meets the European concept of free route airspace. The new airspace sector organisation is designed to better support higher traffic levels as soon as commercial schedules resume.Benefits include a reduction in flight planning restrictions and the creation of several shorter flight-plannable route options. The new sectorisation, with the alignment of flows and sector boundaries, also provides benefits for MUAC operations in terms of a reduction in airspace complexity and therefore enhanced capacity performance. Full acceptance of the measures and thus benefits are expected over the course of 2021, resulting in an improved and then maintained HFE. All states: After optimizing ATS-routes in 2020 MUAC has removed more than 100 network restrictions – the so-called Route Availability Document (RAD) measures - to improve flight planning options, making flights 'greener' by ensuring more direct routings.					
Belgium and Luxembourg	3,37%	n/a	3,10%	3,05%	3,00%	3,00%
Skeyes contribution to FABEC target	*n/a*	7,12%	5,93%	5,23%	5,23%	5,23%
Skeyes contribution to FABEC target	Within skeyes airspace, reducing extra nautical miles to improve KEA is very challenging due to the limited size of the airspace, especially as the KEA indicator excludes the track flown within a range of 40 nm around the departure and arrival airport which limits KEA improvement for DEP or ARR flights. Reducing track miles can be done at tactical level (direct routes, use of released military areas…) or by proposing better (shortest) routes to the airspace users (flight planning). The former campaign "Stick to your flight Plan" organized by the Network Manager in the summer of 2019 to deal with the capacity at network level during the summer was limiting skeyes' possibilities for HFE improvement as no direct or shortcut could be given anymore. Should these measures be put in place during the remainder of RP3, any improvement at tactical level would not be expected. A better use of the military airspaces could also support HFE improvement but then again, this should not be limited by any potential eNM measures. Another option is to improve flight planning by proposing shortest routes to the airspace users. FRA, which has been identified as an important enabler for HFE improvement by the PRB, is however out of scope of skeyes as it controls only the airspace below FL245. Nevertheless, skeyes is willing to show its ambition to contribute to the EU-wide environmental target. Therefore, skeyes intends to reach the local contribution to the targets contained in the ERNIP. Skeyes therefore takes part in the following initiatives : - the CIV-MIL AMC, co-located at skeyes premises, which aims at optimising the airspace management between CIV and MIL. - an improved FUA at Belgian level - this initiative is currently steered by BCAA - in the form of a new Rolling UUP process. This R-UUP process allows for an increase in pre-tactical airspace releases giving Airspace Users more opportunities to flight plan shorter routes through released TRAs/TSAs. - the Environmental Action plan currently developed by skeyes, in which the main pillar is addressing horizontal (and vertical) flight efficiency . The aim is, through an internal and an external consultation, to identify the initiatives that could potentially improve HFE within the skeyes AoR.					
MUAC contribution to FABEC target	Belgium and Luxemburg: Rolling UUP Trial Belgium and Luxemburg. The R-UUP trial started, as planned, on Wednesday, 21 April 2021. The Network Management Ops Centre (NMOC) has prepared the 'Group Re-Route Tool' (GRRT) for this trial, and a considerable number of Re-Route Proposals (RRPs) has already been sent out to the Airline Operators. Some of these RRPs have led to the re-filing of FPLs through airspace that was made available by means of the R-UUPs. Exact figures are, at this point, not yet available. Belgium and Luxemburg: The FL365+ project has been implemented. The TRA South is now managed above FL365 via UUP at D-1 and as such plannable by the AOs.					
France	3,25%	n/a	2,92%	2,83%	2,83%	2,83%
DSNA contribution to FABEC target	*n/a*	3,33%	2,91%	2,81%	2,70%	2,70%
DSNA contribution to FABEC target	In addition to the initiatives launched prior to the COVID crisis and listed below, the following actions have been taken to deal with the unexpected situation and drove the performance up : - RAD constraints canceled/modified : more than 300 constraints have been modified that impacted positively the KEA/KEP - Validation/Research projects to evaluate and improve the performance (ALBATROSS, PROVERT, OCTAVIE) - Launch of the PBN to ILS project at Orly airport for CDO generalisation, following the PBN to ILS project at CDG airport - New indicators based on IA/Machine learning to better assess and improve the environmental performance - Most penalized City pairs improvement (EDDF-LEMD…) The following initiatives will have an impact on flight efficiency during RP3: - New sets of night DCT in DSNA airspace. - Shorter route for traffic to Chambery Airport, SMART SKI process. - Change in division level of LMH in Paris airspace (dynamic sectorisation). - XStream in Paris ACC. - YB sector in Reims (dynamic sectorisation). - IAG project to improve interface of Marseille ACC with Geneva ACC. - PBNtoILS at CDG airport : CDO H24. Live trials 1st trimester 2021, deployment end 2023 - Opening of UL10 and UL15 routes to new Airports - Creation of DCT PENDU-ERADI-OBOKA between LFEE and KUAC - FUA improvement (see FABEC FUA improvements implementation under end of chap. 3.2.1 c) enhancement of the FUA concept). - RAD FUA (possibility to relax RAD restrictions by using FUA and have a daily basis) - Full FRA implementation supported by new ATM system 4-Flight planned by 2025 with COFLIGHT IOP and mid-term conflict detection tools; meanwhile FRA initial implementation in France, which has begun through DCT compliance (PCP) during RP2, will take place end 2021 in Brest ACC Atlantic sector, Bordeaux ACC and in Paris ACC. Preliminary evaluation of the 1st implementation step (Dec. 2021) shows an improvement of 0,3/0,5% of the KEP (-36 000t CO2/year). KEA should remain stable."					
Germany	2,37%	n/a	2,31%	2,30%	2,30%	2,30%
DFS contribution to FABEC target	*n/a*	3,24%	2,70%	2,65%	2,65%	2,65%
DFS contribution to FABEC target	The drastic decline of air traffic in 2020 due to the COVID-19 pandemic enabled ANSP to meet their challenging efficiency goals. Furthermore, the traffic downturn caused by the pandemic has been providing the opportunity to test and adopt best practise and implement procedures that lead to optimised flight profiles. Consequently, DFS is striving for meeting the goals even during rising and recovering traffic volumes. After optimizing ATS-routes in 2020 (e.g. the removal of more than 500 route restrictions previously imposed under RAD, followed by the removal of more than 150 flight level caps and 165 so-called eNM measures previously imposed to manage traffic during periods of high demand in FABEC airspace in 2021), DFS actually focuses intensely on finalizing the implementation of Free Route Airspace (FRA) to optimize the planning and tactical basis of traffic streams. Since 25 February 2021, the upper airspace in Germany under responsibility of Karlsruhe UAC is completely transferred into FRA. In addition, FRA Cells EDMM East, EDMM South and EDWW East are being provided during night (2230-0400 UTC) since 2018. The next level in optimizing FRA is foreseen to improve cross border operations with neighbouring states as Austria (2021), Czech Republic (2021/22), Poland, Switzerland, France, Belgium (Maastricht UAC) (all 2022).					
MUAC contribution to FABEC target	Germany: EUROCONTROL MUAC optimises airspace sectors to draw full benefit from free route airspace. On the AIRAC date 25 March 2021, EUROCONTROL's Maastricht Upper Area Control Centre (MUAC) successfully implemented a major overhaul of its airspace sector layout, which now better meets the European concept of free route airspace. The new airspace sector organisation is designed to better support higher traffic levels as soon as commercial schedules resume. Benefits include a reduction in flight planning restrictions and the creation of several shorter flight-plannable route options. Simulations predict that, on the basis of pre-pandemic traffic, the change will bring a weekly CO2 saving potential of 6,700 kg and offer flight-plannable gains of 280 NM. These savings are either directly achievable through explicit changes in the European Route Availability Document (RAD) or readily available thanks to improved alignment between sector boundaries and specific FRA trajectories. In order to help airspace users identify their individual saving potential, the MUAC AO AIRAC Brief highlights the explicit and also the implicit changes to flight plan routings within the improved MUAC sectorisation. The new sectorisation, with the alignment of flows and sector boundaries, also provides benefits for MUAC operations in terms of a reduction in airspace complexity and therefore enhanced capacity performance. Taking pre-pandemic traffic figures into account, simulations predict that the improved matching of flows and sectors can reduce delays by about 1%. Germany: Karlsruhe UAC and Maastricht UAC are currently involved in a project (COBRA) to optimise the interface between the two centres. This will, inter alia, allow the creation of two new flight plannable routes. A first route is for overflying traffic, above FL375, from SORAL to OBOKA. This route will only be flight plannable when the ED-R305 is not booked for military purposes. A second route is for arrivals to EDDF from VALEK or IBERA via PITES (FL250), then OBOGA to RAMOB. This route will be flight plannable under certain conditions regarding the ED-R305 and ED-R205. These changes are foreseen to be implemented on 7 October 2021.					
Netherlands	*2,63%*	n/a	2,63%	2,62%	2,62%	2,62%
LVNL contribution to FABEC target		7,22%	6,26%	5,81%	5,81%	5,81%

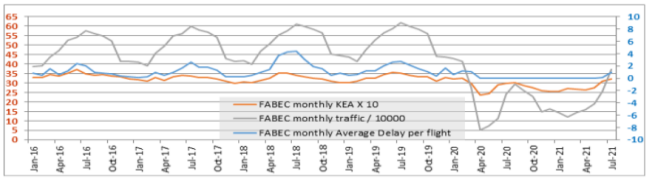
LVNL contribution to FABEC target	Flight efficiency is largely dependent on the airspace structure and the availability of temporary reserved airspace, both in the Netherlands and in adjacent countries. Due to the limited size of LVNL airspace, opportunities for signifcant improvements are scarce. Increases of low visibility capacities have been realised, allowing shorter holding times in case of visibility improvements, increasing KEA. Notable improvements of horizontal and vertical flight efficiency will be achieved through the national airspace redesign programme. Especially the horizontal flight efficiency of traffic flows on the southeast axis is expected to benefit from a redesign of the airspace in the southeastern part of Dutch airspace, and in particular the potential move of a military training area from the southeast to the north. While the first parts of the redesign programme are planned to be implemented in RP3, most benefits are expected after RP3. Other initiatives during RP3 that will deliver or enable improved flight efficiency are the implementation of the new LVNL ATM system (iCAS), the implementation of AMAN/XMAN, the integration of the civil and military service providers (enabling more efficient airspace use) and the introduction of PBN. PBN routes within the Schiphol TMA improve predictability and therefore vertical flight efficiency, but also reduce noise.
MUAC contribution to FABEC target	Netherlands: The implementation of concept "CDR activation" to "Area activation" has been done which allows for a better predictability and traffic distribution between DECO and BSG sector groups. All routes are available for flight planning 24/7 and closed by FUA. A MUAC FUA cell has been created.

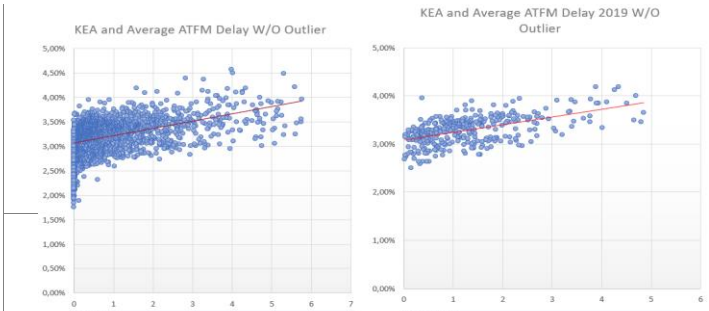
Switzerland	*4,21%*	n/a	3,95%	3,95%	3,95%	3,95%
Skyguide contribution to FABEC target	*n/a*	4,78%	4,59%	4,28%	4,28%	4,28%

Skyguide contribution to FABEC target	The 2020 results within the airspace managed by Skyguide were still highly impacted by network interfaces. Traffic drop only led to a slight improvement of HFE. FRA CH implementation end of 2020 can't improve significantly the performance result since the internal part of Skyguide HFE is already reduced thanks to direct routes (DRA) and tactical directs. Most of the inefficiency (80%) is at the interfaces (network inefficiency) over which Skyguide has little control. Measures to improve the performance were implemented in 2020 and are being deployed or planned to be deployed until the end of RP3.In 2020, traffic route restrictions were lifted avoiding the need for aircraft to operate at inefficient flight levels or fly longer routes. Most of these route restrictions were put in place in times of high traffic demand to stabilize the network and ensure safety while providing additional capacity. Moreover, Cooperation between DFS and skyguide has shortened routes over the Alps by 15 nautical miles, saving flight time and reducing fuel consumption A Free Route Airspace (FRA) project, which will allow Airspace Users to plan and fly direct routes, is in progress and should become effective in 2022. In 2022, an ATFCM Optimisation Tool Environment will allow planning and flying more direct routes at more economical flight altitudes. In addition, an ATFCM flow based what if will improve efficiency as well. From 2023, thanks to the CIV-MIL airspace management tool LARA, airspace and routes will be managed more flexibly and dynamically, allowing more frequent direct and shorter routes allocation as well as airlines to plan the route with less fuel. In 2024, Arrival management (AMAN) extended to en-route airspace will extend the AMAN horizon from the 100-120 nautical miles to at least 180-200 nautical miles from Zürich airport. Arrival sequencing may be anticipated during en-route and early descent phases.

b) Detailed justifications in case of inconsistency between FAB targets and FAB reference values

FABEC is planning to reach the FAB reference values. However, FABEC wants to underline uncertainties of the achievement of strong correlation with delays. Though FABEC is also committed to achieve capacity reference values, current volatility in traffic evolution - and thus also uncertainties as far as bottlenecks and delays might endanger this goal.





Conclusion:
We can derive an equation as follows:
y = bo + B1x
KEA = 0,0309526553346238 +
0,00114880921312177.Average ATFM Delay

Conclusion:
We can derive an equation as follows:
y = bo + B1x
KEA = 0,0312888303131166 +
0,00121222756558709.Average ATFM Delay

In addition, FABEC continues to underline the limitations of the KPI HFE, with significant influential factors without (share of overflights as well as weather) or only within limited control of ANSPs and the civil aviation administration (military use of airspace). Furthermore, there are numerous situations where a good horizontal flight efficiency might not constitute the most CO2-efficient flight path (flying in non-optimal Flight Level or non-optimal wind-related flight paths, see https://www.eurocontrol.int/publication/eurocontrol-data-snapshot-14-horizontal-flight-efficiency). Also, from a network perspective, focussing on local HFE might have a negative impact (see also https://ansperformance.eu/library/pru-hfe.pdf) and thus FABEC advocates for a reassessment of the local level HFE and especially to reassess the necessity and benefit of considering contributions by individual ANSPs.

Apart from improvents on HFE, FABEC also stresses additional projects to reduce any negative environmental impact that are within the control of ANSPs. Thus, among others, projects to improve vertical flight efficiency during climb and decent (CCO/CDO), but also the MUAC project to reduce contrails at night, perceived to have a measurable impact on climate change should be valued. In addition, efforts of ANSPs to reduce noice pollution with a severly negative impact on the highly populated areas around FABEC airports does pose a priority of FABEC ANSPs that however result in trade-offs with horizontal flight efficiency and should thus be especially taken into account when assessing FABEC performance in the KPA Environment.

** Refer to Annex P, if necessary.*

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

See above; a full list of projects improving horinzontal flight efficiency within FABEC including additional information might be found in the ERNIP Part 2 (https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-2). For further information on FRA development as well as Extended Arrival Management XMAN, please consult the FABEC-webpage under https://www.fabec.eu/strategy/operations.

** Refer to Annex P, if necessary.*

SECTION 3.3: CAPACITY KPA

3.3 - Capacity targets

3.3.1 - Capacity KPI #1: En route ATFM delay per flight
- a) FAB capacity performance targets
- b) Detailed justifications in case of inconsistency between FAB targets and FAB reference values
- c) Main measures put in place to achieve the target for en-route ATFM delay per flight
- d) ATCO planning
  - d.1) skeyes
  - d.2) DSNA
  - d.3) DFS
  - d.4) LVNL
  - d.5) MUAC
  - d.6) Skyguide

3.3.2 - Capacity KPI #2: Terminal and airport ANS ATFM arrival delay per flight
- 3.3.2.1 - Belgium
  - a) National performance targets
  - b) Contribution to the improvement of the European ATM network performance
  - c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight
- 3.3.2.2 - France
- 3.3.2.3 - Germany
- 3.3.2.4 - Luxembourg
- 3.3.2.5 - Netherlands
- 3.3.2.6 - Switzerland

Annexes of relevance to this section

ANNEX Q. JUSTIFICATIONS FOR THE LOCAL CAPACITY TARGETS

3.3 - Capacity targets

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

a) FAB capacity performance targets

	2020A	2020	2021	2022	2023	2024
FAB reference values	*0,42*	n/a	0,27	0,37	0,37	0,37

	2020	2021	2022	2023	2024
	Target	Target	Target	Target	Target
FAB targets	3,45	0,27	0,37	0,37	0,37

	2020A	2020	2021	2022	2023	2024
ANSP contribution to FAB targets	*Actual*	Value	Value	Value	Value	Value
skeyes	*0,06*	0,64	0,07	0,12	0,13	0,12
ANSP contribution to FABEC target	skeyes contribution to RP3 FABEC capacity target is in line with reference values set by NM. Current ATCO recruitment is set at full pace as well as training capacity, and aims at the largest extent possible to compensate the wave of retirement.					
DSNA	*0,61*	3,12	0,18	0,25	0,25	0,25
ANSP contribution to FABEC target	DSNA contribution to the revised RP3 FABEC capacity target is consistent with the reference values set by NM. There has been no capacity issues in 2020 and beginning 2021 due to the massive drop of traffic after the COVID-19 pandemic outbreak in March 2020 and currently used May 2021 STATFOR forecast for 2024 is at the level of year 2017. Actual July 2021 traffic recovery showed high traffic peaks (similar to 2019 traffic figures) in some sectors still impacted by capacity and staffing issues (remaining ATCO shortages and additional impact of the vaccination plan implementation and isolation measures in Reims and Marseille ACC) and resulted in some delays. RP2 Staffing and capacity issues have been addressed through progressive implementation of more flexible rostering schemes in French ACCs and additional recruitments initiated end RP2 and by maintaining ATCO hiring to a minimum level in order to prepare traffic recovery end RP3 and in RP4. However, the new ATM system implementation, which is one of the main level to enhance capacity provision in French ACCs, planned in 2021, 2022 and 2023 could require temporary reductions of available capacity for training, validation, safety and commissionning purposes. Some delays could be generated during these phases and regulations or rerouting planned could be needed and will be coordinated with NM and adjacent ANSPs. As from 2022 the DSNA targets will remain challenging and traffic evolution (faster recovery but also structure of traffic flows and impact of peak hours) could create unforseen bottlenecks. In addition, new Environmental measures to enhance horizontal and vertical flight efficiency at local and regional scale might somehow challenge and counter balance some capacity improvements leading to trade-offs to be found, keeping in mind that Safety will always be the most prevailing criteria.					
DFS	*0,18*	2,73	0,18	0,24	0,25	0,24
ANSP contribution to FABEC target	DFS contribution is in line with the NM reference values. Though targets remain challenging as staffing issues as seen during years 2018 and 2019 are planned to be progressively solved thanks to ongoing recruitments and supportive local working agreements. Staffing measures that were significantly slowed down by the COVID crisis due to the closure of the ATCO academy and the restricted training possible are resumed up to maximum level possible. The new ATM systems implementation plan in German ACCs will also require temporary reduction of available capacity for training, validation, safety and commissioning phase purposes. However, training periods are selected in order to minimize operational impact.					
LVNL	*0,01*	0,13	0,06	0,09	0,09	0,10
ANSP contribution to FABEC target	LVNL contribution to RP3 FABEC capacity targets is in line with the reference values set by the NM during the period. LVNL will pursue continuous recruitment and improve training to maintain levels of ATCOs, in anticipation of the significant number of ATCOs that will retire in the coming years. Additionally, activities are planned to eliminate the bow-wave effect of COVID-19 in operational training. Both will help in maintaining capacity while traffic recovers to pre-COVID levels. In the period 2022-2024, LVNL will implement several capacity benefiting projects, such as a Decision Support Tool for enhanced ATFCM, AMAN/XMAN, AOP-NOP information sharing and LARA for advanced FUA.					
Skyguide	*0,04*	0,47	0,12	0,19	0,19	0,19

ANSP contribution to FABEC target	skyguide contribution to RP3 FABEC capacity target is in line with the reference values set by the NM. The drop in traffic observed in 2020 and the slow recovery in 2021 have clearly a significant impact on skyguide's capacity and levels of delay during the whole RP3.						
MUAC		*0,01*	0,95	0,13	0,19	0,19	0,19
ANSP contribution to FABEC target	MUAC's contribution to the RP3 FABEC capacity target is in line with the reference values set by the NM. The drop in traffic observed in 2020 and the slow recovery in 2021 are important factors in delay reduction. While the volatility of traffic demand is expected to be very high over the coming years, MUAC is confident that there will be sufficient staffing and procedures in place to stay within the set targets, e.g. as a result of the 2019 ATCO social agreement and the 'minus counter' applied during low traffic in years 2020 and 2021, which helps to provides more ATCO hours in the later years of RP3.						

b) Detailed justifications in case of inconsistency between FAB targets and FAB reference values

During RP1, and at the time of developing RP2 plans, traffic growth was lower than forecasts and its future was uncertain. As a result, the main focus of all stakeholders was on cost-efficiency, and ANSPs aimed to control costs, i.a. through reducing or delaying recruitments and investments. In reality, FABEC airspace - like the rest of Europe - has experienced unforeseen high traffic growth since 2015, as well as significant traffic shifts. FABEC ANSPs have reacted to this but measures required to increase capacity in a structural manner need time to be implemented and become effective (e.g. hiring and qualifying new ATCO need 3 to 5 years), investment and related operational changes for additional capacity also need several years and may imply provisional capacity reduction for training and safe commissioning purposes. During RP2, FABEC experienced high delays, while some major measures for capacity within FABEC will be implemented during RP3 - but take time to deliver.

In the current context of the crisis and the resulting low taffic demand, ATCO training facilities were subject to COVID restrictions (where in some cases the maximum training capacity was already reached in some facilities). Licenced ATCOs were required to train high traffic load scenarios in simulators to keep proficiency, and on-the-job trainingspots for ab initio's were limited. As a result the capacity building measures were slowed down.

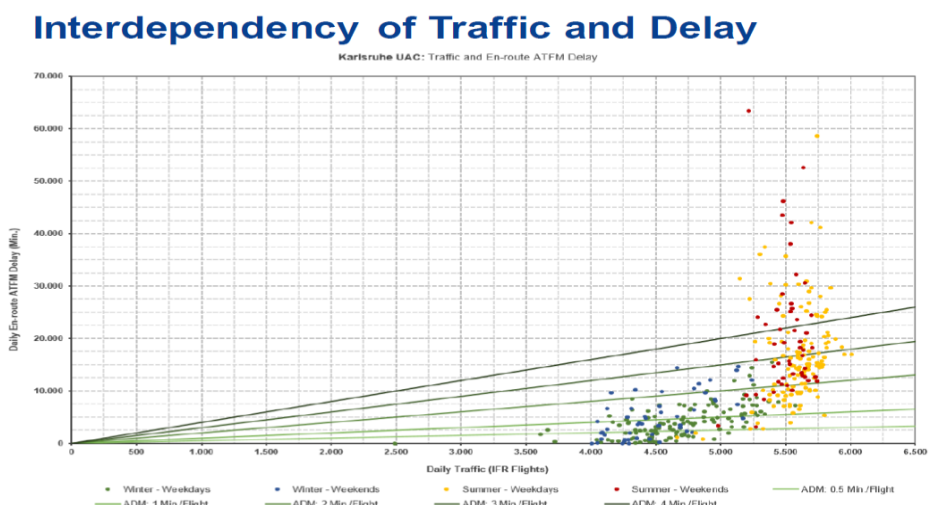
It is still expected that, In the next years, despite extensive efforts, some FABEC ACCs could still be facing an imbalance between traffic and capacity (the targets are challenging and performance will also depend on the traffic evolution which is currently still very uncertain) or staffing issues. Although some good progress is being witnessed in some FABEC ACCs, measures enabling capacity to match the demand will be implemented during or till end RP3.

FABEC ANSPs already planned major capacity enhancement measures for RP3 to remedy this situation, including implementing global and local individual ACCs measures agreed with the NM (see list of main contributive measures below and detailed individual measures in the latest NOP 2022 – 2024 edition).

The main drivers such as ATCO hiring and training will progressively deliver benefits during the period.

Major 4-Flight new ATM system implementation in France is planned 2022 in Reims and Marseille, end 2023 in Paris and beginning of RP4 in Brest and Bordeaux while ICAS ATM system implementation will take place in 2022 in Munich, 2023 in Amsterdam, 2024 in Bremen and 2025 in Langen. Training phase for ATCO and transition plans for commissioning phase will impact local capacity provision.

Major uncertainties remain regarding further traffic development and volatility. It is important to consider that, if an ACC operates close to its capacity limits, minor variations in traffic levels can lead to significant changes in the amount of delay. The example below of Karlsruhe ACC, generated for traffic and delay of 2018, shows the exponential impact on delays of the traffic evolution. In some cases, even without more traffic in total, just a local traffic shift is enough to overload sectors and to create a large amount of delays.



Other uncertainties that also be considered, such as the delayed implementation of ATCO hiring plans, the success conversion rates of ab-initios, the relatively high number of upcoming retirements, the outcomes of the next national or local social agreements and, the continuation and local impact of eNM measures/ANSPs summer if implemented.

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the target for en-route ATFM delay per flight

Full set of detailed measures implemented by FABEC and contributing to local capacity improvements will be listed in the European Network Operations Plan (NOP) 2022-2024 and updated in the Network Operations Plan 2022-2026 which elaboration work has now started. All ANSP capacity measures detailed in the NOP and in this FABEC performance plan and their impact on capacity provision, delay forecast, and target setting are based on values provided and calculated by the Network Manager and Eurocontrol in general. This is the case at FABEC and ANSP level to ensure consistency: FABEC and ANSP reference values are respectively calculated by NM at FABEC and ANSP levels and consistent with the EU-wide capacity targets. As the FABEC and ANSP targets strictly stick to the NM reference values, consistency is ensured as well. The capacity profile computed in the NOP – and all the proposed associated measures - are based on the high traffic scenario of the STATFOR Forecast published mid-October 2021 (future versions of the NOP will be updated according to future STATFOR publications, this could increase the gap between the capacity profiles and the PP). In case of assessment of the Performance Plan based on the NOP, due consideration shall be given to the differences between the traffic forecasts. The main measures providing capacity enhancement planned to be implemented by the FABEC ANSP to achieve the FABEC targets are described here under.

Regarding skeyes:
Within the framework of the e-NM measures, specific RAD restrictions have been created for skeyes in order to reduce the overall traffic complexity by strategically reducing the number of conflicting traffic streams.

A midlife upgrade of the CANAC2 ATM system is foreseen for 2024-2025. During this upgrade limited impact on capacity is expected due to testing and validation activities.

The rationalization of infrastructure, systems and equipment will be increased during RP3 enhancing capacity by reinforcing business continuity and improving resilience.

A better application of FUA is enabled by the implementation in 2019 of the colocation of the Air Traffic Control Centre of Belgian Defence in skeyes ACC. In order to further enhance FUA in BE, a Rolling UUP Live Trial is ongoing during the summer of 2021. Expected benefits are improved flight planning, increased flight efficiency including a positive impact on environment and more opportunities to plan higher capacities. The R-UUP procedure is expected to be implemented before the end of 2021 and to deliver benefits as of 2022. In addition, a traffic complexity tool is under testing phase, and is expected to deliver capacity benefits as of 2023.

Regarding DSNA:

DSNA strategy to address RP2 capacity issues and avoid future delays when traffic will recover is mainly based on a major investment plan aiming at modernizing ATM systems and tools and on a full set of human ressources measures addressing both ATCO shortage and better productivity.

Full data link services will be implemented in all French ACC in 2021 enabling 10% capacity increase (according to the initial assumption of 75% connected flights made by EUROCONOTROL).

After ERATO implementation in Brest (2015) and Bordeaux (2016) ACCs which have provided 5 to 25% additional capacity in those ACC in RP2 (even if the effect was absorbed by the traffic increase), 4-Flight new ATM system (including Coflight new FPS) will be implemented in Reims and Marseille ACCs in April 2022 and end November 2022 (20 to 25% additional capacity is expected whithin the three years after commissioning), December 2023 in Paris ACC (20 to 25% additional capacity expected). Final implementation in Brest and Bordeaux ACCs and upgrades in Marseille and Reims ACCs, including mid-term conflicts detection tools, are planned beginning of RP4 (after Paris olympic games) and should deliver additional 10 to 15% capacity in these French ACCs. More detailed desciption and information on these programs and their benefits is given in chapter 2.2: DSNA new major investment 1&4.

Regarding Human ressources, which is the second main driver for enhancing capacity:
- after an increased recruitments and training (over 100 ATCO/year) implemented end RP2, taking into account the traffic drop due to the COVID-19 crisis and related cost saving measures, but also the need to maintain a good quality of service and prepare future traffic recovery, considering also an increase in ATCO retirement as from end or RP3, an adapted recruitment plan should be implemented during RP3 (1 class of 16 ab-initio trainees in 2021, 2 classes of 32 ab-initio trainees in 2022 and 2023 and factoring in traffic evolution 2 to 4 classes of 32 ab-initio trainees in 2024). Those RP2&RP3 hiring plans combined should enable to reduce previous staffing issues in French ACCs and ATCO in OPS in 2024 are expected to be 100 more than in 2019.
- New rostering evolution and flexibility measures have been designed for some French ACCs during RP2 and will be implemented according to traffic evolution.

- New initiatives launched in RP2 and being achieved in RP3 in order to enhance productivity (tranfer of some airspaces under level 195 in Paris, Reims, Bordeaux and Brest ACCs to approaches, local adaption of current rostering), to adapt ATCO initial training and qualification time (new training design, intermediate qualification, use of simulator) reducing at least by 6 months the complete ATCO training by 2025.

All those combined measures should provide between 30 and 50% overall additional capacity during RP3.

This capacity enhancement plan has an impact on the DSNA cost base and the related interdependencies are described and assesssed in chapters 3.4.1 and 3.4.6 regarding cost-efficiency and interdependencies with capacity provision and 3.6 regarding general interdependencies.

More detailed information regarding the DSNA investment plan and its implementation timeline is provided in the updated "DSNA Strategic Master Plan 2019-2025" and in the "French ATM Strategy" (FAS) defined in collaboration with IATA. Both documents, which have been presented to users during the consultation phase, are annexed (Annex E of the initial draft plan) to this performance plan and are currently under review by DSNA and the airspace users to reflect the impact of the pandemic on the investment plan.

An online version of the current FAS is available: https://www.ecologie.gouv.fr/en/dsna-customer-relations

Change management measures implemented by DSNA to secure the investment plan are addressed in chapter 4.3.

Regarding DFS:

Compared to the original RP3 figure, the updated capacity targets and reference values have been reduced based on two assumptions:
1) Post-pandemic traffic levels will be significantly lower and it will take at least until 2024 to recover to 2019 level.
2) ANSPs have enough time during the pandemic to close the staff and capacity gaps, which caused important delays in 2018 and 2019.

Even though the first assumption is shared, it is important to understand that average annual traffic figures do not show the entire picture. Delays are mostly generated at local level during peak times. Traffic levels that bring sector capacity to its limit could already be reached in 2021 or at the latest in 2022.

With regard to the second assumption, ANSP have also been hit hard by the pandemic which has dramatically reduced their ATCO training capacities. Therefore, it will take longer than originally planned for DFS to close the gap in ATCO staff.

Another major challenge DFS faces in these current very uncertain times lies in the fact, that traffic predictability including those sudden occupancy-peaks decreases. Volatility increases simultaneously and has a negative impact on scheduling for ANSPs. On the other hand aircraft operators might need this flexibility in (short term) planning even more than in pre-COVID times.

Especially Karlsruhe UAC and Bremen ACC are subject to capacity bottlenecks linked with staff shortages during RP3. Karlsruhe UAC has not yet recovered from the shortages experienced in 2018 and 2019, whereas Bremen ACC has to prepare the implementation of the new ATS system iCAS II with a reduced number of available ATCOs.

For that Bremen ACC has developed a stabilization plan for the next few years to improve the capacity situation, especially in the context of the iCAS introduction. This includes various measures from a technical, operational and personnel point of view. The simulator has been increasingly used for training since summer 2020 and extra measures are being taken to optimize the simulator capacity. Flight profiles are being identified that can be relocated to reduce the demand, when required.

In Karlsruhe, measures to increase the number of staff will continue to be prioritized and training capacities will be used to the maximum. In addition, increased system support (e.g. complexity tool, post-ops analysis, expansion of CPDLC) will enable operations to use the available resources more efficiently and to reduce potential delays. Of course, in the next years operational staff will focus on operations relieving them of other activities and special tasks.

Taking into account these factors, it is realistic to assume that DFS could generate higher levels of ATFM delay compared to the updated reference values shown in the table above.

Regarding ATCO Staffing : reduced ATCO training capacities due to COVID-19 pandemic occurred:

- Due to the temporary closure of the DFS academy and the COVID-19 measures in place, in 2020 and 2021 the number of ATCO ab initio-trainees had to be reduced by approximatively 60 trainees compared to the original plan. The training for the remaining ATCO trainees (approximatively 150) had to be delayed by around eight months.

- Due to the reduced amount of traffic to be controlled during the pandemic, the on-the-job ATCO training could not take place as originally planned, leading to further significant training delays (OJT-Endurance in pre-COVID-times: 12 months; current delay another 12 – 18 months plus)

Regarding capacity relevant projects & measures, the following overview shows projects & measures until 2025 which might have an impact on capacity:
- Bremen ACC:
- Training and transition for iCAS Phase II Bremen: significant capacity reduction expected in 2022 and 2023 in all sector families
- iCAS Phase II Bremen (01/2024-03/2024)
- Karlsruhe UAC:
- COBRA (Collaborative Optimization of Boundaries, Routes and Airspace) (Q1/2022)
- Implementation of a Complexity Management Tool (2023)
- Erlangen sector: vertical split into 3 sectors (capacity increase through a more flexible opening scheme) (2024)
- Langen ACC:
- iCAS Phase II Langen (10/2025-03/2026)
- Munich ACC:
- iCAS Phase II Munich (09/2022)

Regarding LVNL:

LVNL will pursue the continuous recruitment and improve training to maintain levels of ATCOs, while many will retire in the coming years. Additionally, activities are planned to eliminate the bow-wave effect of COVID-19 in operational training. Both will help in maintaining capacity while traffic recovers to pre-COVID levels.

In the period 2022-2024, LVNL will implement several capacity benefiting projects, such as a Decision Support Tool for enhanced ATFCM, AMAN/XMAN, AOP-NOP information sharing and LARA for advanced FUA.

Regarding skyguide:

skyguide contribution to RP3 FABEC capacity target is in line with reference values set by the NM / EU.
In 2021, it is not expected to overtake the reference value even though this one (0.12) is rather low and the uncertainty on traffic ramp-up quite high.
Over the period 2022-2024, the delay forecast will naturally be highly dependent on traffic recovery. If this traffic recovery follows the high traffic forecast from STATFOR, situation will be very tense in the most congested sectors and delays will be high! However, when applying the scenario 2 of STATFOR, taking into consideration the implementation of the Virtual Center concept, notably through the improved ATFCM methodology in the lower airspace, the continuous improvements to Crystal for ACCs (traffic and complexity prediction tool), the further development of ATFCM procedures and STAM, in association with the planned capacity increase due to CPDLC, skyguide should ideally just reach the reference values (0.19 min/flt).
However, this target is very ambitious and if peaks of traffic during reduced periods of the day in summer will reach the level of 2019, then performance will deteriorate, and delays will increase.
Obviously, the great difference between the 3 STATFOR scenarios sets a lot of uncertainty in the planning phase; reliability of any forecast in this situation is therefore very poor.
Following the COVID crisis and the unprecedented resulting drop in revenues, will generate a heavy pressure on costs and could have a rather huge impact on performance in the coming years.
skyguide adapted to the crisis by a series of rostering measures:
- review of the roster every week based on the NM rolling seasonal plan and correction of the rosters in order to increase the short time work with an horizon of 14 days.
- vaccine is followed by at least 2 days-off
- increase shifts at simulator
- releasing ATCOs before the end of their shift or shortening shifts- overtime discontinued

Regarding MUAC:

To provide the necessary staffing, MUAC is taking several measures, including training of new staff, cross training of ATCOs, a new agreement with the social partners for mitigating measures and (further) scrutinizing of involvement of operational staff in developments. Furthermore, a study is undergoing to reduce the number of sectors open during the night. Since the traffic downturn, a deal has been agreed with the social partner that allows for some of the surplus ATCO shifts from 2020 and Q1 2021 to be deferred. These days can be used at zero addition cost in the rest of the RP3 period.

Furthermore, MUAC has taken an active part in developing measures at network level aimed at safeguarding or increasing throughput while decreasing delay. MUAC sees further opportunities in this area in improved and harmonized ASM. Also the exclusion of short-duration high-workload flights is under investigation. MUAC has also been active in using some of the surplus ATCO shifts in 2020/2021 to accelerate some airspace design projects that should also provide additional capacity as the recovery materialises. Looking further ahead, MUAC is working on post-OPS analysis and business intelligence as a means of further fine-tuning and optimising daily operations. This is expected to deliver some additional capacity, as well as avoiding ATFM delays due to overregulation.

At FABEC level:
FABEC collaboration with NM contributes to enhance capacity and prevent or mitigate delays through supporting the rolling seasonal NOP planning activities, eNM/ANSP summer measures. On top of FABEC ongoing airspace design initiatives, it was decided to set up a FABEC/NM Airspace Design Coordination Group (ADCG) which final goal is to define a Target Plan for implementation of a FABEC Optimized Airspace Structure, an optimum FABEC sectorisation, FRA cross-border operations and ATS route structure below FRA, in order to optimize all FABEC measures, make them consistent at network level and deliver the highest possible benefits of operations. The initiatives are embedded in the European Route Network Improvement Plan (ERNIP) - Part 2. This plan includes all relevant Airspace Projects and provides a network consolidated picture including FABEC projects and the evaluation of their expected benefit (30 FABEC initiatives proposed in the latest edition July 2021). A close cooperation and synchronisation, including updates of the airspace projest on the whole duration of current ERNIP 2021-2030, is ensured between the Network Manager and all the operational stakeholders of FABEC in the preparation of this FABEC Catalogue of Airspace Projects.

In general, it should be noted that capacity benefits and delay reductions expected from the ANSP initiatives listed in the ANSP capacity planning included in the latest NOP 2022-2024, have been taken into account in the NM delay forecast (where quantitative impact of ANSP capacity measures are calculated according to NM methodology at ACC, ANSP and FAB level and resulting delay forecast is computed). Those ANSP and ACC capacity profiles and exhaustive list of initiatives can be found for each FABEC country and relative ANSPs & ACCs in Annex 5 of the European Network Operations Plan 2022-2024 edition 2021. FABEC States, when setting the target, have also relied on additional assumptions regarding potential benefits coming from new initiatives to be implemented during RP3, which were not considered at the time of drafting the current NOP , such as future eNM summer plan implementation after 2021, additional ATCO hiring or enhanced flexible rostering depending on social agreements still to be negotiated after the performance plan submission 1st October 2021. In addition, FABEC States have obviously based their assessment and target setting on the Scenario 2 of the STATFOR Forecast published in May 2021, as requested in the IR 2021/891. Unsurprisingly, if the Scenario 1 had been selected, the target setting would have been different.

** Refer to Annex Q, if necessary.*

d) ATCO planning

d.1) skeyes

	Actual	Planning					
Brussels (EBBU ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	0,8	5	3	8	6	7	7
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	4	12,3	2	1	2,2	6	3
# of ATCOs in OPS planned to be operational at year-end (FTEs)	87,8	80,5	81,5	88,5	92,3	93,3	97,3

d.2) DSNA

	Actual	Planning					
Bordeaux (LFBB ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	8	12,6	17	14	17	9	13
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	5	20	5,8	5	11,7	6,6	9,7
# of ATCOs in OPS planned to be operational at year-end (FTEs)	225,4	218	229,2	238,2	243,5	245,9	249,2

	Actual	Planning					
Brest (LFRRACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	18	14,6	10	9	7	11	8
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	5	11	11,6	3	9	5,9	10
# of ATCOs in OPS planned to be operational at year-end (FTEs)	245,6	249,2	247,6	253,6	251,6	256,7	254,7

	Actual	Planning					
Marseille (LFMM ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	15	16	23	26	22	13	12
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	22	24,4	15,2	7	13,7	10,6	10,7
# of ATCOs in OPS planned to be operational at year-end (FTEs)	291,8	283,4	291,2	310,2	318,5	320,9	322,2

	Actual	Planning					
Paris (LFFF ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	5	18	16	17	28	14	28
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	27	32,8	24,6	11	19,8	20,2	18,8
# of ATCOs in OPS planned to be operational at year-end (FTEs)	271,6	256,8	248,2	254,2	262,4	256,2	265,4

	Actual	Planning					
Reims (LFEE ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	3	6	8	14	12	23	23
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	16	25	17,2	12	17,8	14,2	15,8
# of ATCOs in OPS planned to be operational at year-end (FTEs)	214,4	195,4	186,2	188,2	182,4	191,2	198,4

d.2) DFS

* for explanation of German figures, see below.

	Actual	Planning				
Bremen (EDWW ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	9,6	1,2	7,6	6,0	14,6	27,1	25,2
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	12,1	13,2	22,5	5,7	16,4	12,7	5,4
# of ATCOs in OPS planned to be operational at year-end (FTEs)	261,8	249,8	234,9	235,2	233,5	247,9	267,7

	Actual	Planning				
Karlsruhe (EDUU UAC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	8,8	9,4	42,7	36,3	63,1	33,6	22,6
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	27,4	17,2	59,1	11,8	21,2	7,2	9,9
# of ATCOs in OPS planned to be operational at year-end (FTEs)	404,2	396,4	380,0	404,4	446,3	472,7	485,4

	Actual	Planning				
Langen (EDGG ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	8,0	13,5	8,2	18,0	27,5	32,7	29,8
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	17,4	35,9	15,1	16,0	43,8	15,4	23,3
# of ATCOs in OPS planned to be operational at year-end (FTEs)	467,2	444,9	438,0	440,0	423,6	440,9	447,5

	Actual	Planning				
Munich (EDMM ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	0,0	3,4	2,0	8,2	7,7	24,6	6,3
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	16,0	13,1	11,8	7,0	14,3	15,9	1,7
# of ATCOs in OPS planned to be operational at year-end (FTEs)	297,3	287,6	277,8	279,0	272,4	281,1	285,7

d.3) LVNL

	Actual	Planning				
Amsterdam (EHAA ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	3	4	1	2	4	4	4
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	0	0	0	7,4	2,9	5	7,9
# of ATCOs in OPS planned to be operational at year-end (FTEs)	85,4	89,4	90,4	85	86,1	85,1	81,2

d.4) MUAC

	Actual	Planning				
Maastricht (EDYY UAC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)	2	2,2	0,5	6,4	19	16,8	9,8
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	2,5	2,5	6	3	0	10	8,5
# of ATCOs in OPS planned to be operational at year-end (FTEs)	292	291,7	286,2	289,6	308,6	315,4	316,7

d.5) Skyguide

	Actual	Planning					
Geneva (LSAG ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)		5	10	6	13	8	10
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)		8	7	5	6	13	14
# of ATCOs in OPS planned to be operational at year-end (FTEs)	121	118	121	122	129	124	120

	Actual	Planning					
Zurich (LSAZ ACC)	2018	2019	2020	2021	2022	2023	2024
# of additional ATCOs in OPS planned to start working in the OPS room (FTEs)		7	4	6	10	10	6
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)		4	12	6	10	11	9
# of ATCOs in OPS planned to be operational at year-end (FTEs)	118	121	113	113	113	112	109

Additional comments
En Route capacity target has strong interdependencies with Safety and Environment targets and with Cost-efficiency target. Those are addressed in Chapter 3.6 of this FABEC performance plan. The financial incentive scheme implemented by FABEC regarding this En Route capacity target is fully described in chapter 5.2.1. Regarding ATCO planning, FABEC NSAs and ANSPs note that there is no legal requirement for ATCO planning figures to be included in the performance plans for RP3. In addition, FABEC NSAs question if this is the right level of detail to be monitored by the EC. Technically the plans are and will always be subject to change, creating the unnecessary burden of tracking, supervising and explaining the figures within the SES performance scheme domain. In addition, the details of the planned evolution of ATCO numbers within an ANSP with several ACCs are socially sensitive. However ATCO hiring and assigment is one of the major driver for current capacity and staffing issues solving. Nevertheless, FABEC States consider that they cannot be considered as a commitment due to the high level of uncertainties related to such ATCO recruitement plans management. These figures, even when provided on annual basis, can only be regarded as snapshot information, i.e. a situation at one point in time which does not guarantee a realistic view throughout the entire duration of RP3. There are many factors with a high level of uncertainty that have an impact on the ATCO planning: first of all there are classical uncertainty factors of general staff planning like the actual rate of retirement, the absence rate of employees, as well as maternity and parent leave. Moreover, ATCOs mobility has become a severe issue recently, leading to high rate of unforeseen leaves. Another factor which cannot be significantly mitigated further impacting the availability of ATCOs is the number of suitable applicants, the failure rate of the theoretical training at the academies and the success rate during the on-the-job training phases of trainees. The final retirement age is firmly set by law, but in many countries employees may go earlier. ANSPs can only assume a certain amount of people opting out/in. It is common culture now that companies offer varying working hours to enable employees to adjust their work to different phases of their life. Again, ANSPs can only assume a certain amount of people opting in/out. On top of all that, future social agreements will significantly determine the ATCO availability per person and by that the total available FTE per ANSP. The demographic situation of ANSPs is different and might require to hire to an extent not aligned to the traffic demand. FTE refers to a different amount of working time per year/ANSP. FTE is not harmonised among ANSPs but are subject to national laws and labour regulations. Before the planned ATCO FTE can reasonably be reported, a revised specification for information disclosure is required, clearly describing how to count ATCOs partially working in projects (another uncertainty factor) and (very important) standardising the assumptions for the uncertainties mentioned above. For those ANSP having more than one national ACC, ATCO hiring plan are managed at ANSP level but changes in traffic volumes or flows and volatility or local human ressources factors can influence the assignment to different ACCs. It should also be noted that some social agreements regarding numbers of additional ATCO to be recruited during RP3 and working conditions (salaries, extra hours, rostering) will be renegociated after the submission of this FABEC performance plan. Outcomes of such negociations, in which ANSP and unions but also Ministeries of Finance or Public administration are involved, will have an impact on those figure. Additional information regarding ATCO hiring plans and their impact on cost-efficiency for some ANSP is also provided in chapters 3.4 (cost-efficiency) & 3.6 (interdependencies) and in annexes of this FABEC Performance Plan.
Germany (DFS): To ensure data consistency between the ATM Cost-Effectiveness (ACE) Benchmarking Report and the RP3 Performance Plan, the ATCOs in OPS figures have been updated compared to the data published for the RP3 user consultation and the data provided in the FABEC monitoring report 2020. Data provided in the monitoring report 2020 was not only showing ATCOs in OPS but also ATCOs on other duties with the aim of aligning the data with the ATCO figures provided in the financial part of the report. The now presented ATCOs in OPS data is also updated compared to the values provided for the RP3 user consultation, since now the data is in line with and is derived from the ACE reports (2018 – 2020 being currently in progress) where there are not only ATCOs but also Supervisors considered in line with the “EUROCONTROL Specification for Economic Information Disclosure".

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

3.3.2.1 - Belgium

a) National performance targets

	2020A	2020	2021	2022	2023	2024
	Actual	Target	Target	Target	Target	Target
National level	*0,38*	1,82	1,08	1,08	1,08	1,08
Additional comments						

Airport level	***EBBR-Brussels***	*0,38*	1,82	1,08	1,08	1,08	1,08
	Airport contribution to national targets	EBBR is the only Belgian airport incorporated in the Performance Plan.					

b) Contribution to the improvement of the European ATM network performance

The ASMGCS system will be replaced during RP3 (NOVA data fusion software and MLAT), to continue ensuring improved terminal capacity at EBBR during deteriorated weather conditions.

High CRSTMP delay can be expected in some meteorological circumstances at EBBR during the application of new measures to escort VVIPs using a police helicopter (P cause, beyond ANSP managerial control).

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight

ATCO recruitment is set at full pace to compensate forecasted retirements and to manage forecasted traffic.

** Refer to Annex Q, if necessary.*

3.3.2.2 - France

a) National performance targets

	2020A	2020	2021	2022	2023	2024
	Actual	Target	Target	Target	Target	Target
National level	-	-	0,4	0,4	0,4	0,4
Additional comments	According to the latest EUROCONTROL Forecast published by the Network Manager, for CZ1 (resp. CZ2), the traffic is expected to get back to 2019 levels in 2025 (resp. 2024). The national capacity targets have been set taking into account the actual RP2 and 2020 performance for terminal capacity. They are set constant over the period, implying that DSNA shall deliver during RP3 a better level of performance than achieved during RP2 accommodating future traffic recovery. This capacity improvement will be implemented on the main French airports during the whole RP3 building on implementations of new ATM terminal systems and/or airspace design projects while local works are also planned during RP3 (on runways, taxiways or towers) as well as international events management (Olympic Games 2024 organized in France from 26th July to 11th August). Performance targets and achievements in RP2 and 2020:						

Terminal capacity yearly target	2015	2016	2017	2018	2019	2020	RP3
Average ATFM delay Target (min/flight)	0,6	0,6	0,6	0,6	0,6	0,4	0,4
CRSTMP pivot value for incentive	*0,15*	*0,15*	*0,15*	*0,15*	*0,15*	*0,1*	*0,1*
Actual All causes delays	0,34	0,59	0,48	0,4	0,42	0,3	N/A
Actual CRSTMP	0,06	0,11	0,17	0,1	0,08	0,07	N/A

Based on these performance targets are set at 0,4 mn/flight.

	LFPG-Paris/Charles-De-Gaulle	-	-	0,30	0,30	0,32	0,35
	Airport contribution to national targets	As the first French airport in terms of IFR movements and passengers, Paris-CDG remains the major contributor to the French terminal capacity target. The runway 09L/27R has been renovated during summer 2020 and runway 09/27L will be renovated during Summers 2022 and 2023 with limited impact on capacity. Initial planned implementation of the new tower system (SYSAT) is replaced by an upgarde of the local A-SMGCS system in 2022/2023 without strong expected impact on the capacity. An airspace project implementation aimaing at restructuring CDG airspace to enhance CDO provision is planned in 2023. In this context, ATFM regulations will be needed but minimized to enable ATCO training phases and the adapatation process of such a new airspace project.						
	LFPO-Paris/Orly	-	-	1,00	1,10	1,15	1,20
	Airport contribution to national targets	Some infrastructures works are planned during RP3 (rebuilding at the West of the airport platform, work on taxiways). The work will impact significantly the capacity airside. Besides , a new TWR system, so-called SYSAT, will be implemented as from 2023 for training phases in two steps (eTWR: Winter 2023/2024 ; eAPP: Winter 2024/2025). PBN to ILS is planned in 2023 (West) and 2025 (East) with ATCO training planned as from 2022.						
	LFMN-Nice/Côte d'Azur	-	-	0,20	0,25	0,30	0,30
	Airport contribution to national targets	In terms of enhancement of the capacity, the Collaborative Decision Making (CDM@Nice) concept has been implementated in 2020 and will optimize in RP3 the airside resources such as parkings or taxiways. In addition, an evolution of A-SMGCS will be implemented in RP3.						
	LFLL-Lyon/Saint-Exupéry	-	-	0,10	0,10	0,15	0,10

	Airport contribution to national targets	Lyon Saint-Exupéry airport has no major infrastructure work planned during RP3. As from 2021, a resectorisation project will be implemented in order to enhance CDO and CCD procedures in 2023. No significant impact is expected on capacity for this implementation. New airlines will operate flights at the airport during RP3 (Corsair, Air Sénégal, Anadolujet, Sky Up and Sky Express) but Air France will reduce its activity (2 daily hubs instead of 3 and reduction from 20 average flights per hub down to 14).					
	LFML-Marseille/Provence	-	-	0,10	0,15	0,20	0,20
	Airport contribution to national targets	During RP3, the technical projects concern the renovation of the main runway which has been done in summer 2020, the renovation of the Terminal 1 building between launched in 2020 and planned for final implementation in 2023. Works on Taxiway C innitially planned in 2023 have been cancelled due to COVID-19 crisis. New airline bases will be created during RP3 (Volotea, Ryanair) and new scheduled flights will be operated by Aeroflot and Sun Express. Some ATFM regulations are expected as from 2022 due to staffing issues (retiring staff not replaced.)					
	LFBO-Toulouse/Blagnac	-	-	0,25	0,25	0,25	0,25
	Airport contribution to national targets	A new SID/STAR GNSS network is planned for implementation between 2021 and 2024 in order to address local environment issues (noise) which could slightly decrease the airport capacity. Airspace restructuration in French SW FIR and related changes in procedures and working arangement could generate ATFM regulation in order to address training, experimental validation and implementation needs, combined with a staff reduction due to retirements (-10%).					
	Other airports	*0,37*	0,20	0,37	0,37	0,35	0,35
	LFSB-Bale/Mulhouse	-	-				
	Airport contribution to national targets						
	LFBD-Bordeaux/Merignac	-	-				
	Airport contribution to national targets						
	LFPB-Paris/Le Bourget	-	-				
	Airport contribution to national targets						
	LFRS-Nantes/Atlantique	-	-				
	Airport contribution to national targets						
	LFMT-Montpellier/Méditerranée	-	-				
	Airport contribution to national targets						
	LFST-Strasbourg/Entzheim	-	-				
	Airport contribution to national targets						
	LFOB-Beauvais/Tillé	-	-				
	Airport contribution to national targets						
	LFQQ-Lille/Lesquin	-	-				
	Airport contribution to national targets						
Airport level	***LFRN-Rennes/St-Jacques***	-	-				
	Airport contribution to national targets						
	LFKJ-Ajaccio/Napoléon-Bonaparte	-	-				
	Airport contribution to national targets						
	LFLC-Clermont-Ferrand/Auvergne	-	-				
	Airport contribution to national targets						
	LFRB-Brest/Bretagne	-	-				
	Airport contribution to national targets						
	LFMD-Cannes/Mandelieu	-	-				
	Airport contribution to national targets						
	LFKB-Bastia/Poretta	-	-				
	Airport contribution to national targets						
	LFBZ-Biarritz/Bayonne-Anglet	-	-				
	Airport contribution to national targets						
	LFBP-Pau/Pyrénées	-	-				
	Airport contribution to national targets						
	LFPN-Toussus/Le-Noble	-	-				
	Airport contribution to national targets						
	LFTH-Hyères/Le-Palyvestre	-	-				
	Airport contribution to national targets						
	LFKF-Figari/Sud-Corse	-	-				
	Airport contribution to national targets						
	LFLY-Lyon/Bron	-	-				
	Airport contribution to national targets						
	LFMP-Perpignan/Rivesaltes	-	-				
	Airport contribution to national targets						

	LFBL-Limoges/Bellegarde	-	-				
	Airport contribution to national targets						
	LFRH-Lorient/Lann-Bihoué	-	-				
	Airport contribution to national targets						
	LFBT-Tarbes-Lourdes/Pyrénées	-	-				
	Airport contribution to national targets						
	LFLB-Chambéry/Aix-les-Bains	-	-				
	Airport contribution to national targets						
	LFBH-La-Rochelle/Ile de Ré	-	-				
	Airport contribution to national targets						
	LFLS-Grenoble/Isère	-	-				
	Airport contribution to national targets						
	LFCR-Rodez/Marcillac	-	-				
	Airport contribution to national targets						
	LFKC-Calvi/Sainte-Catherine	-	-				
	Airport contribution to national targets						
	LFMV-Avignon/Caumont	-	-				
	Airport contribution to national targets						
	LFMK-Carcassonne/Salvaza	-	-				
	Airport contribution to national targets						
	LFBI-Poitiers/Biard	-	-				
	Airport contribution to national targets						
	LFMU-Béziers/Vias	-	-				
	Airport contribution to national targets						
	LFRK-Caen/Carpiquet	-	-				
	Airport contribution to national targets						
	LFBA-Agen/La-Garenne	-	-				
	Airport contribution to national targets						
	LFBE-Bergerac/Roumanière	-	-				
	Airport contribution to national targets						
	LFMI-Istres/Le-Tubé	-	-				
	Airport contribution to national targets						
	LFRD-Dinard/Pleurtuit-Saint-Malo	-	-				
	Airport contribution to national targets						
	LFRG-Deauville/Normandie	-	-				
	Airport contribution to national targets						
	LFTW-Nîmes/Garons	-	-				
	Airport contribution to national targets						
	LFLP-Annecy/Meythet	-	-				
	Airport contribution to national targets						
	LFGJ-Dole/Tavaux	-	-				
	Airport contribution to national targets						
	LFRQ-Quimper/Pluguffan	-	-				
	Airport contribution to national targets						
	LFOK-Châlons/Vatry	-	-				
	Airport contribution to national targets						
	LFMH-Saint-Etienne/Bouthéon	-	-				
	Airport contribution to national targets						
	LFSL-Brive/Souillac	-	-				
	Airport contribution to national targets						
	LFOT-Tours/Val-de-Loire	-	-				
	Airport contribution to national targets						
	LFRZ-Saint-Nazaire/Montoir	-	-				
	Airport contribution to national targets						
	LFLX-Châteauroux/Déols	-	-				
	Airport contribution to national targets						
	LFAQ-Albert/Bray	-	-				
	Airport contribution to national targets						
	LFOP-Rouen/Vallée-de-Seine	-	-				
	Airport contribution to national targets						
	LFJL-Metz-Nancy/Lorraine	-	-				
	Airport contribution to national targets						

b) Contribution to the improvement of the European ATM network performance

The improvement of the European ATM network performance will take into consideration the gate-to-gate efficiency. Regarding the main French airports, the following supporting projects or enablers have already contributed in some airports and should also contribute in the other ones to this expected enhancement:

- New TWR system, so-called SYSAT,
- PBN to ILS,
- Airport Collaborative Decision Making (A-CDM),
- Departure manager (DMAN), Continuous climb operations (CCO),
- Continuous descent operation (CDO),
- Arrival manager (AMAN/XMAN),
- Time-Based Separation (TBS) and
- Advanced Surface Movement Guidance and Control System (A-SMGCS).

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight

During RP3, high performing airport and terminal area operations as well as advanced air traffic services will be implemented for the benefit of the main French airports performance.

However it should be noted that priority given to French en route ACC for ATCO hiring and high level of retirement expected as from end of RP3 will affect the capacity provision at some French airports.

The French Local Single Sky ImPlementation (LSSIP) describes yearly the implementation objectives progress of these main measures which contribute to the ongoing improvement of ATM network performance, according to PCP/CP1 timeline.

** Refer to Annex Q, if necessary.*

3.3.2.3 - Germany

a) National performance targets

	2020A	2020	2021	2022	2023	2024
	Actual	Target	Target	Target	Target	Target
National level	*0,10*	0,66	0,45	0,45	0,45	0,45
Additional comments	In the context of the setting of a national target the following items were considered to ensure a comprehensible approach: 1. Traffic of the previous years 2. Delay of the previous years 3. Traffic forecasts 4. Technical developments and probality of system failures 5. Potential influence of the COVID-Pandemic on capacity 6. Eventuality of “uncontrollable” or non-CRSTMP delays These factors were particularly considered in the target calculation since these are the major factors influencing the overall national capacity value at airports for the upcoming years. EDDT has been legally decommissioned in May 2021, last departure in November 2020. Past data of EDDT was considered in the calculations for EDDB for the years 2021-2024 since it is expected that traffic of EDDT will be transferred to EDDB. *The break-down values for the individual airports shown in the table below display mathematically calculated contributions to the national target and are based on the above mentioned items, especially traffic and delay of previous years.*					

Airport level	***EDDF-Frankfurt***	*0,19*	1,79	0,94	0,94	0,94	0,94
	Airport contribution to national targets						
	EDDM-Munich	*0,08*	0,90	0,49	0,49	0,49	0,49
	Airport contribution to national targets						
	EDDL-Dusseldorf	*0,26*	0,91	0,53	0,53	0,53	0,53
	Airport contribution to national targets						
	EDDT-Berlin-Tegel	-	-				
	Airport contribution to national targets	Airport closed					
	EDDH-Hamburg	*0,03*	1,06	0,38	0,38	0,38	0,38
	Airport contribution to national targets						
	EDDK-Cologne/Bonn	*0,03*	0,94	0,16	0,16	0,16	0,16
	Airport contribution to national targets						
	EDDS-Stuttgart	*0,00*	0,46	0,08	0,08	0,08	0,08
	Airport contribution to national targets						
	EDDB-Schoenefeld-Berlin	*0,00*	0,28	0,24	0,24	0,24	0,24
	Airport contribution to national targets						
	EDDV-Hannover	*0,00*	0,31	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EDDP-Leipzig	*0,14*	0,76	0,14	0,14	0,14	0,14
	Airport contribution to national targets						
	EDDN-Nürnberg	*0,00*	0,26	0,01	0,01	0,01	0,01
	Airport contribution to national targets						
	EDDW-Bremen	*0,01*	0,86	0,09	0,09	0,09	0,09
	Airport contribution to national targets						
	EDDC-Dresden	*0,00*	0,92	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EDDG-Münster-Osnabrück	*0,00*	0,92	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EDDR-Saarbrücken	*0,00*	0,92	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EDDE-Erfurt	*0,00*	0,27	0,00	0,00	0,00	0,00
	Airport contribution to national targets						

b) Contribution to the improvement of the European ATM network performance

Low targets for arrival delay contributes significantly to the overall perfomance of the European ATM network performance as it provides for a high degree of predictability for both airspace users as well as en route ANSPs.

In addition, DFS participates actively in the "Airport Integration Taskforce" to assess conceptional changes of ATFCM based procedures to airports to integrate them as full part of the ATM Network.

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight

In order to maintain the low arrival delay at German airports, DFS continues its maximized training-efforts at the academy. In the context of scheduling, the Corona Collective Agreement (Corona-Tarifvertrag - CoronaTV) enables more short term-flexibility and supports the provision of additional capacity for the following years. As an extra capacity-buffer, the Kapazitäts-Tarifvertrag (Capacity-Collective Labour Agreement) remains valid for the remainder of RP3. Concepts to assist the unit training in low-traffic-times have been and are being prepared and additional simulation capabilities have been offered to the tower units. Supervisors are still being employed primarily in operations.

** Refer to Annex Q, if necessary.*

3.3.2.4 - Luxembourg

a) National performance targets

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
National level		*0,06*	0,12	0,12	0,05	0,05	0,05
Additional comments							
Airport level	***ELLX-Luxembourg***	*0,06*	0,12	0,12	0,05	0,05	0,05
	Airport contribution to national targets						

b) Contribution to the improvement of the European ATM network performance

Low targets for arrival delay contributes significantly to the overall perfomance of the European ATM network performance as it provides for a high degree of predictability for both airspace users and partner ANSPs. Luxembourg TMA despite being small offers additional capacity, as well as an improved layout at the airport and enhanced taxi plan and imroved follow-me services will help utilize this capacity also on the ground.

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight

APP director position with new associated sector is expected to bring these improvements as APP can handle more flights at the same timerespecting current margins. These position will be fully implemented over the coming years, training has already been completed. Most gains will be made during the busy evening rush periods where the APP sector got busy quickly.

** Refer to Annex Q, if necessary.*

3.3.2.5 - Netherlands

a) National performance targets

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
National level		*1,26*	2,00	1,4	1,6	1,6	1,4
Additional comments		In the initial RP3 plan, the Netherlands proposed a stepwise improvement from the RP2 target of 2 minutes, based on the measures presented below. Due to the impact of the COVID pandemic, several measures have been delayed, and as a result the performance improvement profile has also been delayed, by one year. However, due to the lower traffic levels in 2021 and 2022, it should still be possible to perform at a better level than this improvement profile, therefore targets for these years have been set at a lower level. Since nearly all delays are caused Amsterdam, in the breakdown below the full target is allocated to Amsetrdam and the target for other airports is set at 0.					
Airport level	***EHAM-Amsterdam Schiphol***	*1,41*	2,20	1,54	1,76	1,76	1,54
	Airport contribution to national targets						
	EHRD-Rotterdam	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EHGG-Groningen Eelde	*0,01*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						
	EHBK-Maastricht - Aachen	*0,00*	0,00	0,00	0,00	0,00	0,00
	Airport contribution to national targets						

b) Contribution to the improvement of the European ATM network performance

Schiphol Airport is one of the major sources of arrival ATFM delay in the European network, and a reduction in this delay would provide a notable, positive contribution to the performance of the network.

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight

Although the majority of delays at Schiphol are so called 'non-CRSTMP delays', i.e. delays that are outside the direct influence of the ANSP, a number of initiatives is planned to reduce the occurrence of relevant external factors (e.g. insufficient aerodrome capacity) or, where reducing the occurrence is not possible, to reduce the impact (e.g. weather delays).

Main measures are:
- Increased operational peak hour capacity: this activity includes the implementation of RECAT-EU, time-based separation and reduced minimum radar separation for certain aircraft pairs. A higher operational capacity makes the terminal operation at Schiphol better able to cope with tactical variations in traffic flows, without having to initiate ATFCM measures.
- Capacity management: this activity also includes a set of different measures, including a Decision Support Tool for enhanced ATFCM. These complement the measures to increase capacity - rather than adding more capacity, the capacity management activity aims to ensure that optimum use is made of the available capacity.
- Extended Arrival Management, to reduce bunches in traffic demand by speed adjustments rather than ATFM regulations.

(see annex R, providing addditional information on cost efficiency targets, for further details on these measures)

** Refer to Annex Q, if necessary.*

3.3.2.6 - Switzerland

a) National performance targets

		2020A	2020	2021	2022	2023	2024
		Actual	Target	Target	Target	Target	Target
National level		*0,55*	1,94	1,03	1,15	1,28	1,42
Additional comments							
Airport level	***LSZH-Zurich***	*0,60*	2,14	1,25	1,39	1,54	1,71
	Airport contribution to national targets						
	LSGG-Geneva	*0,49*	1,37	0,71	0,79	0,88	0,98
	Airport contribution to national targets						

b) Contribution to the improvement of the European ATM network performance

Zurich and Geneva airports are contributors to arrival ATFM delay in the European network, and a reduction of this delay, associated with low targets, would provide indubitably a positive contribution to the overall performance of the European ATM network.

** Refer to Annex Q, if necessary.*

c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight

In Geneva TWR/APP, the sustained effort in recruiting ATCOs in order to ensure an optimum level of performance will remain the reference point for improvement. The e-strip project (step 1 at TWR in 2019-2022 and step 2 at APP in 2024-2027) coupled with the iLVP initiative (separation minima decreased from 12Nm to 6Nm in case of low visibility) and the enhancement and gained experience of the traffic and complexity prediction tool for TWR/APP (CRYSTAL, implemented in 2020) will participate in enhancing the operational level of performance in spite of the high uncertainty of the forecast traffic and its associated volatility.
In Zurich TWR/APP, the sustained effort in recruiting ATCOs will be the cornerstone of a successful performance improvement as well. To harvest benefits of the Advance Runway Safety Improvements as per 2023 through the activation of crossed RWY when under North wind conditions (increase of capacity) will also represent an important step forward. On top of these, to de-complexify the TMA (parachute management and optimization of East arrival concept in 2024-2025; SID concept to South-West with a reduced separation management in 2024), to harvest benefits of the implementation of the traffic and complexity prediction tool for TWR/APP (implemented mid 2020), the e-coordination Departure-ACC (mid 2022), the Rapid Exit Taxiway 28 (end 2021), Runway 28 by-pass (mid 2023), will as well be key enablers to enhance performance towards the end of RP3.

** Refer to Annex Q, if necessary.*

SECTION 3.4: COST-EFFICIENCY KPA

3.4 - Cost efficiency targets

3.4.1 - Cost efficiency KPI #1: Determined unit cost (DUC) for en route ANS
3.4.2 - Cost efficiency KPI #2: Determined unit cost (DUC) for terminal ANS
3.4.3 - Pension assumptions
3.4.4 - Interest rate assumptions for loans financing the provision of air navigation services
3.4.5 - Restructuring costs

Annexes of relevance to this section

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

NOTE: The following requirements as per Annex II, 3.3 are addressed in the Annexes A and B:
Point 3.3 (d) on cost-allocation;
Point 3.3 (e) on the return on equity and cost of capital;

Point 3.3 (f) on assumptions for pension costs and interest on debt for other entities, inflation forecast and adjustments beyong IFRS;
Point 3.3 (g) on adjustments to the unit rates carried over from previous reference periods;
Point 3.3 (h) on costs exempt from cost-sharing;
Point 3.3 (k) reporting tables and additional informations.

SECTION 3.4.1: KPI #1: Determined unit cost (DUC) for en route ANS

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

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)
b) Information on the baseline values for the determined costs and the determined unit costs
c) Detailed justifications for the adjustments to the baseline values
d) Where a deviation from the Union-wide performance targets is observed, please indicate if the NSA considers those deviations to be necessary and proportionate
e) Main measures put in place to achieve the targets for determined unit cost (DUC) for en route ANS
f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of

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Annexes of relevance to this section

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

NOTE: The following requirements as per Annex II, 3.3 are addressed in the Annexes A and B:
Point 3.3 (d) on cost-allocation;
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Point 3.3 (g) on adjustments to the unit rates carried over from previous reference periods;
Point 3.3 (h) on costs exempt from cost-sharing;
Point 3.3 (k) reporting tables and additional informations.

3.4 - Cost efficiency targets

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

En Route Charging Zone #1 - Belgium-Luxembourg

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2014 B	2024 D vs. 2019 B
Total en route costs in nominal terms (in national currency)	161.307.247	217.740.555	442.197.853	249.904.292	261.814.435	272.631.728	69,0%	25,2%
Total en route costs in real terms (in national currency at 2017 prices)	**167.321.288**	**211.337.662**	**424.899.880**	**234.016.672**	**241.524.257**	**247.800.797**	**48,1%**	**17,3%**
Total en route costs in real terms (in EUR2017) [1]	167.321.288	211.337.662	424.899.880	234.016.672	241.524.257	247.800.797	48,1%	17,3%
YoY variation			101,1%	-44,9%	3,2%	2,6%		
Total en route Service Units (TSU)	2.288.106	2.537.599	2.241.977	2.066.227	2.225.803	2.386.876	4,3%	-5,9%
YoY variation			-11,6%	-7,8%	7,7%	7,2%		
Real en route unit costs (in national currency at 2017 prices)	**73,13**	**83,28**	**189,52**	**113,26**	**108,51**	**103,82**	**42,0%**	**24,7%**
Real en route unit costs (in EUR2017) [1]	**73,13**	**83,28**	**189,52**	**113,26**	**108,51**	**103,82**	**42,0%**	**24,7%**
YoY variation			127,6%	-40,2%	-4,2%	-4,3%		

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	Actuals 2014 2014 A	Actuals 2019 2019 A	2014 Baseline adjustments	2019 Baseline adjustments
Total en route costs in nominal terms (in national currency)	161.307.247	217.740.555	155.716.192	199.494.828	5.591.055	18.245.727
Total en route costs in real terms (in national currency at 2017 prices)	**167.321.288**	**211.337.662**	161.485.138	193.678.302	5.836.150	17.659.360
Total en route costs in real terms (in EUR2017) [1]	167.321.288	211.337.662	161.485.138	193.678.302	5.836.150	17.659.360
Total en route Service Units (TSU)	2.288.106	2.537.599	2.362.038	2.619.592	-73.932	-81.993

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2014 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 base of ANA Luxembourg added	ANA Lux	ANSP	Staff	3.350.935	3.507.217	3.507.217
Description and justification of the adjustment						
In RP1, costs of ANA Luxembourg were not yet included in the cost base of BE-LUX. From RP2 (2015) onwards, this cost base was added. To make comparisons over years, this effect should be neutralized and the cost base of 2014 for ANA was added to the baseline value of 2014. The adjustment is mainly related to staff costs and other operating costs (+ depreciation, cost of capital)						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Cost base of ANA Luxembourg added	ANA Lux	ANSP	Other operating	1.904.279	1.993.092	1.993.092
Description and justification of the adjustment						
In RP1, costs of ANA Luxembourg were not yet included in the cost base of BE-LUX. From RP2 (2015) onwards, this cost base was added. To make comparisons over years, this effect should be neutralized and the cost base of 2014 for ANA was added to the baseline value of 2014.						

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Cost base of ANA Luxembourg added	ANA Lux	ANSP	Depreciation	335.841	335.841	335.841
Description and justification of the adjustment						
In RP1, costs of ANA Luxembourg were not yet included in the cost base of BE-LUX. From RP2 (2015) onwards, this cost base was added. To make comparisons over years, this effect should be neutralized and the cost base of 2014 for ANA was added to the baseline value of 2014.						

Total adjustments to the 2014 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	5.591.055	**5.836.150**	**5.836.150**

c.2) Adjustments to the 2014 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	-	-	-73.932

Other adjustment to the 2014 service units	No

Total adjustments to the 2014 service units	-73.932

c.3) Adjustments to the 2019 baseline value for the determined costs

Number of adjustments	5

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change in APP allocation key	skeyes	ANSP	Staff	11.088.105	10.710.289	10.710.289
Description and justification of the adjustment						
Change in the allocation of the approach costs (see annex M for detailed explanation).						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change in APP allocation key	skeyes	ANSP	Other operating	2.690.238	2.598.571	2.598.571
Description and justification of the adjustment						
Change in the allocation of the approach costs (see annex M for detailed explanation).						

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017

Change in APP allocation key	skeyes	ANSP	Depreciation	1.037.099	1.037.099	1.037.099
Description and justification of the adjustment						
Change in the allocation of the approach costs (see annex M for detailed explanation).						

Adjustment #4	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Adjustment of cost base	MUAC	ANSP	Staff	3.430.285	3.313.402	3.313.402
Description and justification of the adjustment						
In EUROCONTROL, the remunerations of active staff are subject to an internal tax, while the pensions of retired staff are subject to national taxes in the countries were they reside. Pensioners receive a compensation for local income taxes, depending on where they live, to ensure all pensioners receive the same net pension. In 2005, the EUROCONTROL's Pension Fund was created whereby the pensions (amounts paid to the pensioners) are financed through this Fund (from employer and employee contributions) and the income tax compensation on pensions is financed on a pay as you go basis from the budget. In 2016, an agreement was made between the 4 MUAC States and the other EUROCONTROL Member States whereby the 4 States were given more autonomy over MUAC while in exchange the pension tax compensation related to MUAC is progressively (over a period of 7 years from 2016 to 2022) borne by the 4 States. The agreements were embedded in Decision n°128 and n°129 of the Permanent Commission. In accordance with the Declaration of the National Contracting Parties to the Maastricht Agreement dated 19-04-2016, these costs have been included since 2016 in a Special Annex (to the general budget of EUROCONTROL) in a staggered approach (10% in 2016, 20% in 2017, 30% in 2018, 40% in 2019, 60% in 2020, 80% in 2021). These costs will be included at 100% in MUAC (Part III) General Budget and thus the MUAC Cost Base once the new Maastricht Agreement has been ratified by all four States, which is assumed to happen before the end of 2021. In 2019, the tax compensation amounted to 17.553.719 EUR, 40% of which were attributed to the MUAC special annex (EUROCONTROL Part IV) and 60% thereof to the EUROCONTROL General Budget (Part I); the Belgian share within MUAC for 2019 was 31,5912%, the Luxembourg share within MUAC for 2019 was 0,9770%. In order to provide for a baseline that makes future costs comparable to the situation in 2019, the MUAC cost base is adjusted accordingly. NOTE: due to the staggered approach, part of the adjustment was already included in the 2019 actual costs. Only the difference is reported here.						

Adjustment #5	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Adjustment of cost base	MUAC	ANSP	Other operating	0	0	0
Description and justification of the adjustment						
Under the same discussions between the 4 MUAC States and the 41 EUROCONTROL Member States, an agreement embedded in Decision n° 128 of the Permanent Commission was concluded as relates the allocation to Part III (MUAC) of the costs for support services delivered by other units of the Agency to MUAC. Similarly, the 4 states agreed to include these costs in a Special Annex (Part IV), in accordance with the Declaration of the National Contracting Parties to the Maastricht Agreement dated 19-04-2016. There is no progressive approach for these costs and they are supported directly at 100% by the 4 MUAC states. As from 2022 these costs will be included at 100% in MUAC (Part III) General Budget. In 2019, the HQ support costs amouted to 4.514.080 EUR, included by 100% into the MUAC Special Annex (Part IV); the Belgian share within MUAC for 2019 was 31,5912%, the Luxembourg share within MUAC for 2019 was 0,9770%. In order to provide for a baseline that makes future costs comparable to the situation in 2019, the MUAC cost base is adjusted accordingly. NOTE: This part was already included in the 2019 actual costs. It is still incorporated in the baseline in order to have a consistent approach among the MUAC states.						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	18.245.727	**17.659.360**	**17.659.360**

c.4) Adjustments to the 2019 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units

Impact of transition to actual route flown	-	-	-81.993

Other adjustment to the 2019 service units	No

Total adjustments to the 2019 service units	-81.993

d) Description and justification of the consistency between local and Union-wide cost-efficiency targets

Despite cost containment measures resulting in a reduction of ca. 121 m€ compared to the initial submission in 2019 (-9%), the local cost-efficiency targets differ from the EU wide target. These differences are driven by specific challenges related to the provision of air navigation services in Belgian airspace :
- Belgium/Luxembourg's airspace is one of the most complex airspace leading to higher workload for ATCOs for a same volume of air traffic. Strong efforts are made by ANSPs to reduce this complexity through leveraging on partnership, civil-military integration and technical defragmentation
- Skeyes must address a wave of pre-retirement during RP3 and RP4 by investing in recruitments and training to prepare the recovery and to avoid a devastating impact for airspace capacity.
- Skeyes must invest in vital ATM service provision infrastructure, which will reach its end-of-life during RP3 and use this opportunity to rationalize the current infrastructure and implement systems which support the future airspace vision of Europe.
- MUAC must invest in capacity and honoured the social agreement concluded in 2019

Aside these specific challenges, an agreement between the Eurocontrol MS will lead to the transfer of costs from the Eurocontrol cost base to the MUAC cost base, leading to an increase of unit rate in the Be/Lux charging zone. (cf. Annex R)

** Refer to Annex R, if necessary.*

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

Additional costs of measures necessary to achieve the capacity targets for RP3	Yes	Detailed in part 3.4.6 of the performance plan
Restructuring costs planned for RP3	No	

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

Following the COVID crisis and the collapse of traffic, one-off cost-cutting measures have been taken by the ANSPs (recruitment freeze, revision of investment plans, revision of supplier contracts, etc.). However, these one-off measures will not lead to structural efficiency gains. In line with the Belgian Airspace Vision 2030, ANSPs active in Belgian airspace have taken various initiatives to improve efficiency in a structural way (civil-military integration, defragmentation of ATM systems, dynamic airspace use etc.).These long-term initiatives are being developed and deployed but the benefits will only be tangible in several years. (cf. annex R)

** Refer to Annex R, if necessary.*

g) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

BSA-ANS, the Belgian NSA, engaged to confirm whether the respective costs should be allocated to the respective cost bases within the context of the performance plan and verified the compliance of the cost base with the legal requirements. No findings were raised.

** Refer to Annex U, if necessary.*

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

En Route Charging Zone #2 - France

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2014 B	2024 D vs. 2019 B
Total en route costs in nominal terms (in national currency)	1.194.806.122	1.332.578.058	2.668.216.818	1.356.571.126	1.382.095.349	1.407.430.933	17,8%	5,6%
Total en route costs in real terms (in national currency at 2017 prices)	1.209.671.162	1.297.829.674	2.577.332.466	1.293.612.485	1.305.142.346	1.315.459.035	**8,7%**	**1,4%**
Total en route costs in real terms (in EUR2017) [1]	1.209.671.162	1.297.829.674	2.577.332.466	1.293.612.485	1.305.142.346	1.315.459.035	8,7%	1,4%
YoY variation			98,6%	-49,8%	0,9%	0,8%		
Total en route Service Units (TSU)	18.542.996	21.836.563	19.516.384	16.989.960	21.020.185	22.464.259	21,1%	2,9%
YoY variation			-10,6%	-12,9%	23,7%	6,9%		
Real en route unit costs (in national currency at 2017 prices)	65,24	59,43	132,06	76,14	62,09	58,56	**-10,2%**	**-1,5%**
Real en route unit costs (in EUR2017) [1]	65,24	59,43	132,06	76,14	62,09	58,56	**-10,2%**	**-1,5%**
YoY variation			122,2%	-42,3%	-18,5%	-5,7%		

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	Actuals 2014 2014 A	Actuals 2019 2019 A	2014 Baseline adjustments	2019 Baseline adjustments
Total en route costs in nominal terms (in national currency)	1.194.806.122	1.332.578.058	1.194.806.122	1.332.578.058	0	0
Total en route costs in real terms (in national currency at 2017 prices)	1.209.671.162	1.297.829.674	1.209.671.162	1.297.829.674	0	0

Total en route costs in real terms (in EUR2017) [1]	1.209.671.162	1.297.829.674	1.209.671.162	1.297.829.674	0	0
Total en route Service Units (TSU)	18.542.996	21.836.563	18.496.754	21.782.108	46.242	54.455

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2014 baseline value for the determined costs

Number of adjustments	0

c.2) Adjustments to the 2014 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	-	CRCO correction factor May 2019 (on 12 months)	46.242

Other adjustment to the 2014 service units	No

Total adjustments to the 2014 service units	46.242

c.3) Adjustments to the 2019 baseline value for the determined costs

Number of adjustments	0

c.4) Adjustments to the 2019 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	-	CRCO correction factor May 2019 (on 12 months)	54.455

Other adjustment to the 2019 service units	No

Total adjustments to the 2019 service units	54.455

d) Description and justification of the consistency between local and Union-wide cost-efficiency targets

The French NSA views and analysis of the consistency between local and en route Union-wide cost-efficiency targets and detailed justification of deviation due to additional costs of measures to achieve the capacity targets for RP3 are given in the Annex R for France to this plan.

** Refer to Annex R, if necessary.*

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

Additional costs of measures necessary to achieve the capacity targets for RP3	Yes	Detailed in part 3.4.6 of the performance plan
Restructuring costs planned for RP3	No	

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

The detailed measures put in place to achieve the targets for determined unit cost (DUC) for en route ANS are described in the Annex R for France to this plan.

** Refer to Annex R, if necessary.*

g) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

The French NSA performs annually the verification of actual costs i.a.w. Reg EU 2019/317 Art. 22 (7), 23 and 28(7).
Due consideration to the guidance and supporting material developed over 2019 / 2020 by EY on behalf of the EC resulted in an upgrade of the proceedings. The verification conducted in 2021 on 2020 actual costs and the implementation of the overall process will trigger additional finetuning for subsequent years, and fully addressed the similar exercise required as part of RP3 draft performance plan revision.

Transparency is ensured and information is regularly exchanged with the EC, Eurocontrol and airspace users as required by Reg EC 550/2004 and Reg EU 2019/317.
However the detailed presentation of potential findings and related corrections resulting from the NSA oversight in this report would be deemed to be infringing the confidentiality provided for in Reg EC 550/2004 Art. 18.

** Refer to Annex U, if necessary.*

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

En Route Charging Zone #3 - Germany

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2014 B	2024 D vs. 2019 B
Total en route costs in nominal terms (in national currency)	1.068.542.098	1.027.726.243	1.935.358.410	977.377.632	1.010.116.017	1.033.552.160	-3,3%	0,6%
Total en route costs in real terms (in national currency at 2017 prices)	**1.086.860.315**	**1.000.348.119**	**1.858.018.400**	**921.276.788**	**940.629.654**	**949.671.536**	**-12,6%**	**-5,1%**
Total en route costs in real terms (in EUR2017) [1]	1.086.860.315	1.000.348.119	1.858.018.400	921.276.788	940.629.654	949.671.536	-12,6%	-5,1%
YoY variation			85,7%	-50,4%	2,1%	1,0%		
Total en route Service Units (TSU)	12.825.352	15.155.120	14.354.543	13.643.500	14.862.500	15.857.500	23,6%	4,6%
YoY variation			-8,5%	-18,2%	13,3%	11,8%		
Real en route unit costs (in national currency at 2017 prices)	**84,74**	**66,01**	**133,92**	**81,18**	**73,13**	**66,06**	**-22,0%**	**0,1%**
Real en route unit costs (in EUR2017) [1]	**84,74**	**66,01**	**133,92**	**81,18**	**73,13**	**66,06**	**-22,0%**	**0,1%**
YoY variation			102,9%	-39,4%	-9,9%	-9,7%		

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	Actuals 2014 2014 A	Actuals 2019 2019 A	2014 Baseline adjustments	2019 Baseline adjustments
Total en route costs in nominal terms (in national currency)	1.068.542.098	1.027.726.243	1.015.641.838	889.361.603	52.900.261	138.364.640
Total en route costs in real terms (in national currency at 2017 prices)	**1.086.860.315**	**1.000.348.119**	1.032.791.537	866.438.129	54.068.778	133.909.990

Total en route costs in real terms (in EUR2017) [1]	1.086.860.315	1.000.348.119	1.032.791.537	866.438.129	54.068.778	133.909.990
Total en route Service Units (TSU)	12.825.352	15.155.120	12.806.143	15.132.422	19.209	22.699

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2014 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
Change in the interest rate for the DFS pension scheme	DFS	ANSP	Staff	44.500.000	45.482.964	45.482.964
Description and justification of the adjustment						
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: •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 correspond to the average remaining service time of DFS staff according to IFRS. 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. For RP2 the interest rate was lowered from 4.65 % (RP1) to 3.54 % (RP2), as a result of the general development of interest rates on the market, which lead to higher costs in RP2.						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Transfer of costs for tax compensation into MUAC cost base	MUAC	ANSP	Other operating	5.611.461	5.735.413	5.735.413
Description and justification of the adjustment						
In EUROCONTROL, the remunerations of active staff are subject to an internal tax, while the pensions of retired staff are subject to national taxes in the countries were they reside. Pensioners receive a compensation for local income taxes, depending on where they live, to ensure all pensioners receive the same net pension. In 2005, the EUROCONTROL’s Pension Fund was created whereby the net pensions (net amounts paid to the pensioners) are financed through this Fund (from employer and employee contributions) and the tax compensation on pensions is financed on a pay as you go basis from the budget. In 2016, an agreement was made between the 4 MUAC States and the other EUROCONTROL Member States whereby the 4 States were given more autonomy over MUAC while in exchange the pension tax compensation related to MUAC is progressively (over a period of 7 years from 2016 to 2022) borne by the 4 States. The agreements were embedded in Decision n°128 and n°129 of the Permanent Commission. In accordance with the Declaration of the National Contracting Parties to the Maastricht Agreement dated 19-04-2016, these costs have been included since 2016 in a Special Annex (to the general budget of EUROCONTROL) in a staggered approach (10% in 2016, 20% in 2017, 30% in 2018, 40% in 2019, 60% in 2020, 80% in 2021). These costs will be included at 100% in MUAC (Part III) General Budget and thus the MUAC Cost Base once the new Maastricht Agreement has been ratified by all four States, which is assumed to happen before the end of 2021. In 2014, the total overall Eurocontrol tax compensation on pension and ancillary cost in 2014 was 38,326,507.28 €. The proportion for MUAC was 31.5 % or 12.072.849,79 EUR. The German share within MUAC for 2014 was 46,48 %. In order to provide for a baseline that makes future costs comparable to the situation in 2014, the MUAC cost base is adjusted accordingly						

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Transfer of costs for HQ costs into MUAC cost base	MUAC	ANSP	Other operating	2.788.800	2.850.402	2.850.402
Description and justification of the adjustment						

Under the same discussions between the 4 MUAC States and the 41 EUROCONTROL Member States, an agreement embedded in Decision n° 128 of the Permanent Commission was concluded as relates the allocation to Part III (MUAC) of the costs for support services delivered by other units of the Agency to MUAC. Similarly, the 4 states agreed to include these costs in a Special Annex (Part IV), in accordance with the Declaration of the National Contracting Parties to the Maastricht Agreement dated 19-04-2016. There is no progressive approach for these costs and they are supported directly at 100% by the 4 MUAC states. As from 2022 these costs will be included at 100% in MUAC (Part III) General Budget.

In 2014, the HQ support costs amouted to around 6.000.000 EUR, included by 100% into the MUAC Special Annex (Part IV); the German share within MUAC for 2014 was 46,48 %.

In order to provide for a baseline that makes future costs comparable to the situation in 2014, the MUAC cost base is adjusted accordingly.

Total adjustments to the 2014 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	52.900.261	**54.068.778**	**54.068.778**

c.2) Adjustments to the 2014 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	0,15%	CRCO correction factor May 2019 (on 12 months)	19.209

Other adjustment to the 2014 service units	No

Total adjustments to the 2014 service units	19.209

c.3) Adjustments to the 2019 baseline value for the determined costs

Number of adjustments	4

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Corporate action in RP2	DFS	ANSP	Exceptional items	89.381.000	86.503.379	86.503.379
Description and justification of the adjustment						
In RP2 the Federal Republic of Germany decided to undertake a corporate action for the years 2015-2019 for strengthening DFS and to bring down the unit rate over RP 2. This action ended in 2019. The figure above refers to the coporate action in year 2019.						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change in the interest rate for the DFS pension scheme	DFS	ANSP	Staff	38.805.000	37.555.673	37.555.673
Description and justification of the adjustment						

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:
• 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.
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.

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. The result of the change in the discount rate are higher pension costs.

Discounting when calculating the costs of occupational pension schemes takes into account the fact that a company can invest the necessary financial resources on the capital market until the pension obligation is payable. In this connection the following applies: the lower the interest rate, the higher the expenses for retirement provision. Due to the lower interest rate a company needs more capital to provide the promised service. From an economic point of view there are actuarial losses.
This exogenous factor "interest rate risk" leads to higher personnel costs in RP3, which, due to the changed interest rate, cannot be compared with the personnel costs in RP2.

However, in order to establish a comparability and thus a connection between RP2 and RP3, an increase in the baseline value is necessary / appropriate. In doing so, it is pretended that the interest rate of 2.85 percent used in RP3 had already been used in RP2 - with otherwise unchanged parameters. As described above, this leads to higher personnel costs and therefore to a higher baseline value.

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Integration of costs for tax compensation into MUAC cost base	MUAC	ANSP	Staff	8.096.548	7.835.879	7.835.879
Description and justification of the adjustment						

In EUROCONTROL, the remunerations of active staff are subject to an internal tax, while the pensions of retired staff are subject to national taxes in the countries were they reside. Pensioners receive a compensation for local income taxes, depending on where they live, to ensure all pensioners receive the same net pension. In 2005, the EUROCONTROL's Pension Fund was created whereby the pensions (amounts paid to the pensioners) are financed through this Fund (from employer and employee contributions) and the tax compensation on pensions is financed on a pay as you go basis from the budget.

In 2016, an agreement was made between the 4 MUAC States and the other EUROCONTROL Member States whereby the 4 States were given more autonomy over MUAC while in exchange the pension tax compensation related to MUAC is progressively (over a period of 7 years from 2016 to 2022) borne by the 4 States. The agreements were embedded in Decision n°128 and n°129 of the Permanent Commission. In accordance with the Declaration of the National Contracting Parties to the Maastricht Agreement dated 19-04-2016, these costs have been included since 2016 in a Special Annex (to the general budget of EUROCONTROL) in a staggered approach (10% in 2016, 20% in 2017, 30% in 2018, 40% in 2019, 60% in 2020, 80% in 2021). These costs will be included at 100% in MUAC (Part III) General Budget and thus the MUAC Cost Base once the new Maastricht Agreement has been ratified by all four States, which is assumed to happen before the end of 2021.

In 2019, the tax compensation amounted to 17.553.719 EUR, 40% of which were attributed to the MUAC special annex (EUROCONTROL Part IV) and 60% thereof to the EUROCONTROL General Budget (Part I); the German share within MUAC for 2019 was 46,1244 %.

In order to provide for a baseline that makes future costs comparable to the situation in 2019, the MUAC cost base is adjusted accordingly.

Adjustment #4	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Integration of HQ costs into MUAC cost base	MUAC	ANSP	Other operating	2.082.092	2.015.059	2.015.059
Description and justification of the adjustment						

Under the same discussions between the 4 MUAC States and the 41 EUROCONTROL Member States, an agreement embedded in Decision n° 128 of the Permanent Commission was concluded as relates the allocation to Part III (MUAC) of the costs for support services delivered by other units of the Agency to MUAC. Similarly, the 4 states agreed to include these costs in a Special Annex (Part IV), in accordance with the Declaration of the National Contracting Parties to the Maastricht Agreement dated 19-04-2016. There is no progressive approach for these costs and they are supported directly at 100% by the 4 MUAC states. As from 2022 these costs will be included at 100% in MUAC (Part III) General Budget.

In 2019, the HQ support costs amouted to 4.514.080 EUR, included by 100% into the MUAC Special Annex (Part IV); the German share within MUAC for 2019 was 46,1244 %.

In order to provide for a baseline that makes future costs comparable to the situation in 2019, the MUAC cost base is adjusted accordingly.

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	138.364.640	**133.909.990**	**133.909.990**

c.4) Adjustments to the 2019 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	0,15%	CRCO correction factor May 2019 (on 12 months)	22.699

Other adjustment to the 2019 service units	No

Total adjustments to the 2019 service units	22.699

d) Description and justification of the consistency between local and Union-wide cost-efficiency targets

With the current proposed draft performance plan, Germany is reaching and in fact also overachieving the Union-wide cost-effienciency targets. In fact, this result is achieved even without taking into account a technical reduction of the cost base due to additional capacity measures (see 3.4.6).

In addition, it has to be highlighted that a consistency between local and Union-wide cost-efficiency over RP3 is not only ensured by taking into account the more optimistic traffic scenario provided for by DFS in March 2021 but also by referring to the STATFOR forecast May 2021, scenario 2.

** Refer to Annex R, if necessary.*

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

Additional costs of measures necessary to achieve the capacity targets for RP3	Yes	Detailed in part 3.4.6 of the performance plan
Restructuring costs planned for RP3	No	

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

DFS:
Among the key elements contributing to the target achievement, there are the following measures:
1. During RP3, the number of FTE will be reduced in the administrative areas (thus with relevance both to the Terminal and En Route charging zone) from 2448 in 2020 to 2227 in 2024, which corresponds to an overall reduction of 10% (compared to 2021 a reduction of 3% in 2022, 6% in 2023 and 9% in 2024).
2. The other operating costs will be reduced by 1% per year (based on an inflation of 2%, they are planned not to increase more than 1% p.a.)
3. There will be no RoE for RP3.

** Refer to Annex R, if necessary.*

g) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

The German NSA did perform an in depth verification of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. (EU) No 550/2004 and Article 22 of IR (EU) 2019/317. This verification process included numerous virtual meetings as well as an extensive email-exchange which were conducted in a very constructive and efficient manner. Where applicable, the German NSA identified corrections to be applied to the cost base as a result of this verification. The draft performance plan as handed in is as a result in compliance with the applicable rules.

** Refer to Annex U, if necessary.*

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

En Route Charging Zone #4 - Netherlands

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2014 B	2024 D vs. 2019 B
Total en route costs in nominal terms (in national currency)	181.011.983	239.382.519	477.609.444	246.424.037	253.620.455	259.250.724	43,2%	8,3%
Total en route costs in real terms (in national currency at 2017 prices)	**183.467.848**	**230.857.381**	**454.269.148**	**229.819.383**	**233.496.668**	**236.215.041**	**28,8%**	**2,3%**
Total en route costs in real terms (in EUR2017) [1]	183.467.848	230.857.381	454.269.148	229.819.383	233.496.668	236.215.041	28,8%	2,3%
YoY variation			96,8%	-49,4%	1,6%	1,2%		
Total en route Service Units (TSU)	2.712.796	3.314.024	2.994.593	2.593.000	3.081.000	3.294.000	21,4%	-0,6%
YoY variation			-9,6%	-13,4%	18,8%	6,9%		
Real en route unit costs (in national currency at 2017 prices)	**67,63**	**69,66**	**151,70**	**88,63**	**75,79**	**71,71**	**6,0%**	**2,9%**
Real en route unit costs (in EUR2017) [1]	**67,63**	**69,66**	**151,70**	**88,63**	**75,79**	**71,71**	**6,0%**	**2,9%**
YoY variation			117,8%	-41,6%	-14,5%	-5,4%		

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	Actuals 2014 2014 A	Actuals 2019 2019 A	2014 Baseline adjustments	2019 Baseline adjustments
Total en route costs in nominal terms (in national currency)	181.011.983	239.382.519	177.088.241	237.137.991	3.923.742	2.244.528
Total en route costs in real terms (in national currency at 2017 prices)	**183.467.848**	**230.857.381**	179.481.165	228.706.280	3.986.683	2.151.101

Total en route costs in real terms (in EUR2017) [1]	183.467.848	230.857.381	179.481.165	228.706.280	3.986.683	2.151.101
Total en route Service Units (TSU)	2.712.796	3.314.024	2.767.312	3.380.622	-54.516	-66.598

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2014 baseline value for the determined costs

Number of adjustments	2

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Transfer of costs for tax compensation into MUAC cost base	MUAC	ANSP	Staff	2.621.100	2.663.145	2.663.145
Description and justification of the adjustment						
In EUROCONTROL, the remunerations of active staff are subject to an internal tax, while the pensions of retired staff are subject to national taxes in the countries were they reside. Pensioners receive a compensation for local income taxes, depending on where they live, to ensure all pensioners receive the same net pension. In 2005, the EUROCONTROL's Pension Fund was created whereby the net pensions (net amounts paid to the pensioners) are financed through this Fund (from employer and employee contributions) and the tax compensation on pensions is financed on a pay as you go basis from the budget. In 2016, an agreement was made between the 4 MUAC States and the other EUROCONTROL Member States whereby the 4 States were given more autonomy over MUAC while in exchange the pension tax compensation related to MUAC is progressively (over a period of 7 years from 2016 to 2022) borne by the 4 States. The agreements were embedded in Decision n°128 and n°129 of the Permanent Commission. In accordance with the Declaration of the National Contracting Parties to the Maastricht Agreement dated 19-04-2016, these costs have been included since 2016 in a Special Annex (to the general budget of EUROCONTROL) in a staggered approach (10% in 2016, 20% in 2017, 30% in 2018, 40% in 2019, 60% in 2020, 80% in 2021). These costs will be included at 100% in MUAC (Part III) General Budget and thus the MUAC Cost Base once the new Maastricht Agreement has been ratified by all four States, which is assumed to happen before the end of 2021. In 2014, the total overall Eurocontrol tax compensation on pension and ancillary cost in 2014 was 38,326,507.28 €. The proportion for MUAC was 31.5 % or 12.072.849,79 EUR. The Dutch share within MUAC for 2014 was 21,71 %. In order to provide for a baseline that makes future costs comparable to the situation in 2014, the MUAC cost base is adjusted accordingly.						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Transfer of costs for HQ costs into MUAC cost base	MUAC	ANSP	Other operating	1.302.642	1.323.538	1.323.538
Description and justification of the adjustment						
Under the same discussions between the 4 MUAC States and the 41 EUROCONTROL Member States, an agreement embedded in Decision n° 128 of the Permanent Commission was concluded as relates the allocation to Part III (MUAC) of the costs for support services delivered by other units of the Agency to MUAC. Similarly, the 4 states agreed to include these costs in a Special Annex (Part IV), in accordance with the Declaration of the National Contracting Parties to the Maastricht Agreement dated 19-04-2016. There is no progressive approach for these costs and they are supported directly at 100% by the 4 MUAC states. As from 2022 these costs will be included at 100% in MUAC (Part III) General Budget. In 2014, the HQ support costs amouted to around 6.000.000 EUR, included by 100% into the MUAC Special Annex (Part IV); the Dutch share within MUAC for 2014 was 21,71 %. In order to provide for a baseline that makes future costs comparable to the situation in 2014, the MUAC cost base is adjusted accordingly.						

Total adjustments to the 2014 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	3.923.742	**3.986.683**	**3.986.683**

c.2) Adjustments to the 2014 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	-1,97%	CRCO correction factor May 2019 (on 12 months)	-54.516

Other adjustment to the 2014 service units	Click to select

Total adjustments to the 2014 service units	-54.516

c.3) Adjustments to the 2019 baseline value for the determined costs

Number of adjustments	1

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Integration of costs for tax compensation into MUAC cost base	MUAC	ANSP	Staff	2.244.528	2.151.101	2.151.101
Description and justification of the adjustment						
In EUROCONTROL, the remunerations of active staff are subject to an internal tax, while the pensions of retired staff are subject to national taxes in the countries were they reside. Pensioners receive a compensation for local income taxes, depending on where they live, to ensure all pensioners receive the same net pension. In 2005, the EUROCONTROL's Pension Fund was created whereby the pensions (amounts paid to the pensioners) are financed through this Fund (from employer and employee contributions) and the tax compensation on pensions is financed on a pay as you go basis from the budget. In 2016, an agreement was made between the 4 MUAC States and the other EUROCONTROL Member States whereby the 4 States were given more autonomy over MUAC while in exchange the pension tax compensation related to MUAC is progressively (over a period of 7 years from 2016 to 2022) borne by the 4 States. The agreements were embedded in Decision n°128 and n°129 of the Permanent Commission. In accordance with the Declaration of the National Contracting Parties to the Maastricht Agreement dated 19-04-2016, these costs have been included since 2016 in a Special Annex (to the general budget of EUROCONTROL) in a staggered approach (10% in 2016, 20% in 2017, 30% in 2018, 40% in 2019, 60% in 2020, 80% in 2021). These costs will be included at 100% in MUAC (Part III) General Budget and thus the MUAC Cost Base once the new Maastricht Agreement has been ratified by all four States, which is assumed to happen before the end of 2021. In 2019, the tax compensation amounted to 17.553.719 EUR, 40% of which were attributed to the MUAC special annex (EUROCONTROL Part IV) and 60% thereof to the EUROCONTROL General Budget (Part I); the Dutch share within MUAC for 2019 was 21,31 %. In order to provide for a baseline that makes future costs comparable to the situation in 2019, the MUAC cost base is adjusted accordingly. NOTE: in relation to affected entity, relevant costs are treated under a Special Annex of the Eurocontrol budget until 2021 and will become part of the regular MUAC budget from 2022 onwards. This means that relevant amounts were reported as Eurocontrol costs in reporting tables for 2019 (as well as 2020 and 2021), and as MUAC costs from 2022 onwards. This shift has no impact on the overall cost base and is therefore not reporte as an additional baseline adjustment here.						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	2.244.528	**2.151.101**	**2.151.101**

c.4) Adjustments to the 2019 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	-1,97%	CRCO correction factor May 2019 (on 12 months)	-66.598

Other adjustment to the 2019 service units	Click to select		
<Title of adjustment>		Service units	
Description and justification of the adjustment			
<Justification>			

Total adjustments to the 2019 service units	-66.598

d) Description and justification of the consistency between local and Union-wide cost-efficiency targets

Cost efficiency targets are consistent with EU-wide targets. However, the Netherlands still considers it important that a clear view is given of the basis for the proposed costs. In this context, we in particular highlight that additional costs will be incurred to address existing capacity issues as well as priorities of the new national aviation policy. Other factors apply as well, e.g. potential areas of savings which were identified by the PRB as the basis for the EU-wide targets are not, or only to a limited extent, applicable to the situation in the Netherlands. Further details on these issues, as wel as other arguments based on distribution of cost reductions over charging zones; existing reserves; and traffic development, are described in further detail in Annex R.

Additionally, service provision is being restructured through, firstly, the introduction of remote tower and approach services and, secondly, the integration of civil and military service providers. However, the type of benefits these activities will provide, in relation to the strict requirement in the performance and charging regulation for financial benefits, mean it is not possible to identify these costs as a justification for deviation from Union-wide targets.

** Refer to Annex R, if necessary.*

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

Additional costs of measures necessary to achieve the capacity targets for RP3	Yes	Detailed in part 3.4.6 of the performance plan
Restructuring costs planned for RP3	No	

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

Cost development will be monitored and discussed with relevant parties on a regular basis. If deviations between planned and actual DUC occur or are expected to occur, this will be discussed between the NSA and the relevant party or parties to determine a) causes and b) possible measures. Because DUC is dependent on external factors (in particular traffic development) as well as a number of assumptions which become more uncertain towards the end of the RP, the need for measures will be determined on a case-by-case basis. If non-achievement of DUC targets is justified by circumstances, and/or is in the interest of airspace users or their customers, this may lead to a situation where no further measures are taken.

** Refer to Annex R, if necessary.*

g) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

The NSA and responsible Ministry have agreed the basic principles for identifying costs incurred by LVNL which can or cannot be allocated to the cost base for one of the charging zones. Any areas where uncertainty exists are generally discussed and resolved before they are definitively allocated. With respect to the cost base for RP3, a very limited number of issues was identifed and resolved.

No issues were identified for MUAC.

In their written input following the stakeholder consultation, Lufthansa highlighted three concerns regarding eligibility and necessity of costs. All three points have been considered by the NSA, and the NSA is satisfied these have been dealt with correctly in the cost bases of the en route aand terminal charging zones.

** Refer to Annex U, if necessary.*

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

En Route Charging Zone #5 - Switzerland

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2014 B	2024 D vs. 2019 B
Total en route costs in nominal terms (in national currency)	153.481.985	168.265.324	349.685.633	185.025.300	178.132.412	177.797.629	15,8%	5,7%
Total en route costs in real terms (in national currency at 2017 prices)	**152.788.522**	**166.700.793**	**346.118.535**	**182.630.797**	**174.728.056**	**173.137.254**	**13,3%**	**3,9%**
Total en route costs in real terms (in EUR2017) [1]	137.493.721	150.013.312	311.470.551	164.348.653	157.237.011	155.805.455	13,3%	3,9%
YoY variation			107,6%	-47,2%	-4,3%	-0,9%		
Total en route Service Units (TSU)	1.427.068	1.708.100	1.529.488	1.593.957	1.688.954	1.810.951	26,9%	6,0%
YoY variation			-10,5%	4,2%	6,0%	7,2%		
Real en route unit costs (in national currency at 2017 prices)	**107,06**	**97,59**	**226,30**	**114,58**	**103,45**	**95,61**	**-10,7%**	**-2,0%**
Real en route unit costs (in EUR2017) [1]	**96,35**	**87,82**	**203,64**	**103,11**	**93,10**	**86,04**	**-10,7%**	**-2,0%**
YoY variation			131,9%	-49,4%	-9,7%	-7,6%		

National currency	**CHF**
[1] Average exchange rate 2017 (1 EUR=)	**1,11**

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

En route charging zone Name of the CZ	Baseline 2014 2014 B	Baseline 2019 2019 B	Actuals 2014 2014 A	Actuals 2019 2019 A	2014 Baseline adjustments	2019 Baseline adjustments
Total en route costs in nominal terms (in national currency)	153.481.985	168.265.324	153.481.985	163.374.995	0	4.890.329
Total en route costs in real terms (in national currency at 2017 prices)	**152.788.522**	**166.700.793**	152.788.522	161.873.775	0	4.827.018

Total en route costs in real terms (in EUR2017) [1]	137.493.721	150.013.312	137.493.721	145.669.500	0	4.343.813
Total en route Service Units (TSU)	1.427.068	1.708.100	1.427.068	1.768.952	0	-60.852

c) Detailed justifications for the adjustments to the baseline values

c.1) Adjustments to the 2014 baseline value for the determined costs

Number of adjustments	0

c.2) Adjustments to the 2014 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	-	-	

Other adjustment to the 2014 service units	Click to select

Total adjustments to the 2014 service units	-

c.3) Adjustments to the 2019 baseline value for the determined costs

Number of adjustments	2

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
MET costs extraordinary reimbursement 2019	Meteosuisse	MET	Other operating	5.858.770	5.783.378	5.204.436
Description and justification of the adjustment						
In 2019, there reimbursment of MET costs has been provisioned which artificially decreased the MET costs for 2019 (extraordinary one-off effect).						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
MET costs change in allocation key as of 2020	Meteosuisse	MET	Other operating	-968.441	-955.978	-860.281
Description and justification of the adjustment						
The allocation key of MET costs to the various products has been changed, having thus an impact on the cost level.						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	4.890.329	**4.827.399**	**4.344.155**

c.4) Adjustments to the 2019 service units

Impact of transition to actual route flown	Coefficient M2/M3	Source	Service units
	-	-	-60.852

Other adjustment to the 2019 service units	Click to select

Total adjustments to the 2019 service units	-60.852

d) Description and justification of the consistency between local and Union-wide cost-efficiency targets

In RP2, Skyguide has delivered necessary capacity while having to cope with strong traffic increase and has invested in the future. Skyguide made losses over RP2.
Skyguide is currently undergoing a massive transformation in investing in the Virtual Centrer and make its cost structure more flexible, in full alignment with the AAS.
2020 and 2021 has been marked by one-off savings measures (short time work, cut of variable salary part, salary containment, etc.), a recapitalization to ensure the financial stability and a huge negative year-end-result due to non-recognition of accruals (even-though foreseen to be invoiced as of 2023)
The capital injection of 150M CHF in 2020 finances the impact of the implementation of more restrictive capitalization rules (90M CHF over RP3 and 125M CHF in total) as well as under-financing of Delegated Airspace in 2020 (23M CHF), neither of this impacts will be billed to users due to the ongoing crisis. As a counterpart of the recapitalization by the CH Confederation, Skyguide has to implement a 120M CHF savings in 2020 - 2024 (reflected in current submission) and to raise the retirement age of ATCOs to at least 60 years (having as consequence a transition phase with additional costs.)
As a summary, the chargeable cost base was reduced by 80 MCHF with regard to the first version of the plan submitted in October 2019.
Skyguide decided to take into account the latest STATFOR base scenario of October 2021, without increasing its costs (and expects no further discussions on cost target achievement in 2022, as in 2022 alone traffic has improved by 37% vs. STATFOR Base May 2021).
To avoid putting at risk its ongoing transformation, Skyguide is not planning on reducing its cost base further, i.e. the remaining gap is to be financed by airspace users.

** Refer to Annex R, if necessary.*

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

Additional costs of measures necessary to achieve the capacity targets for RP3	No	
Restructuring costs planned for RP3	No	

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

The capital injection of 150M CHF in 2020 finances the impact of capitalization rules (90M CHF over RP3 and 125M CHF in total)
as well as the under-financing of Delegated Airspace in 2020 (23M CHF). Without this, the gap to target would have been much higher.
In addition to that, efforts have been undergone to reduce costs in 2020 and 2021 vs. initially planned costs.

** Refer to Annex R, if necessary.*

g) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

Skyguide's financial statements are audited each year by an external statutory auditor; their report is an integral part of the annual report published by Skyguide.

Between 2018 and 2020, the NSA has performed financial audits of the MET services provider for the ANSP, and of Skyguide on the basis of FY 2017.

Due consideration of the requirements of Reg EC 550/2004 and Reg EU 2019/317 and to the guidance and supporting material developed over 2019 / 2020 by EY on behalf of the EC led the NSA to initiate the revisions of the cost accounting of Skyguide due to be implemented by 2023.

Transparency is ensured and information is regularly exchanged with the EC, Eurocontrol and airspace users as required by Reg EC 550/2004 and Reg EU 2019/317. However the detailed presentation of potential findings and related corrections resulting from the NSA oversight in this report would be deemed to be infringing the confidentiality provided for in Reg EC 550/2004 Art. 18.

** Refer to Annex U, if necessary.*

SECTION 3.4.2: KPI #2: Determined unit cost (DUC) for terminal ANS

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

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)
b) Information on the baseline values for the determined costs and the determined unit costs
c) Detailed justifications for the adjustments to the baseline values
d) Main measures put in place to achieve the targets for determined unit cost (DUC) for terminal ANS
e) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of

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Annexes of relevance to this section

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

NOTE: The following requirements as per Annex II, 3.3 are addressed in the Annexes A and B:
Point 3.3 (d) on cost-allocation;
Point 3.3 (e) on the return on equity and cost of capital;

Point 3.3 (f) on assumptions for pension costs and interest on debt for other entities, inflation forecast and adjustments beyong IFRS;
Point 3.3 (g) on adjustments to the unit rates carried over from previous reference periods;
Point 3.3 (h) on costs exempt from cost-sharing;
Point 3.3 (k) reporting tables and additional informations.

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

Terminal Charging Zone #1 - Belgium EBBR

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2019 B
Total terminal costs in nominal terms (in national currency)	**33.008.239**	69.520.910	38.861.209	40.395.875	42.620.475	**29,1%**
Total terminal costs in real terms (in national currency at 2017 prices)	**32.009.693**	**66.670.395**	**36.354.792**	**37.264.605**	**38.847.490**	**21,4%**
Total terminal costs in real terms (in EUR2017) [1]	**32.009.693**	**66.670.395**	**36.354.792**	**37.264.605**	**38.847.490**	**21,4%**
YoY variation		108,3%	-45,5%	2,5%	4,2%	
Total terminal Service Units (TNSU)	163.766	167.375	134.428	147.415	155.499	-5,0%
YoY variation		2,2%	-19,7%	9,7%	5,5%	
Real terminal unit costs (in national currency at 2017 prices)	**195,46**	**398,33**	**270,44**	**252,79**	**249,82**	**27,8%**
Real terminal unit costs (in EUR2017) [1]	**195,46**	**398,33**	**270,44**	**252,79**	**249,82**	**27,8%**
YoY variation		103,8%	-32,1%	-6,5%	-1,2%	

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	Actuals 2019 2019 A	2019 Baseline adjustments
Total terminal costs in nominal terms (in national currency)	33.008.239	37.583.619	-4.575.379
Total terminal costs in real terms (in national currency at 2017 prices)	**32.009.693**	36.439.699	-4.430.006

Total terminal costs in real terms (in EUR2017) [1]	32.009.693	36.439.699	-4.430.006
Total terminal Service Units (TNSU)	163.766	163.766	0

c) Detailed justifications for the adjustments to the baseline values

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

Number of adjustments	3

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change in APP allocation key	skeyes	ANSP	Staff	-3.436.418	-3.319.325	-3.319.325
Description and justification of the adjustment						
Change in the allocation of the approach costs (see annex M for detailed explanation).						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change in APP allocation key	skeyes	ANSP	Other operating	-829.989	-801.708	-801.708
Description and justification of the adjustment						
Change in the allocation of the approach costs (see annex M for detailed explanation).						

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change in APP allocation key	skeyes	ANSP	Depreciation	-308.972	-308.972	-308.972
Description and justification of the adjustment						
Change in the allocation of the approach costs (see annex M for detailed explanation).						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	-4.575.379	**-4.430.006**	**-4.430.006**

c.2) Adjustments to the 2019 service units

Adjustment to the 2014 service units	No

d) Description and justification of the contribution of the the local targets to the performance of the European ATM network

** Refer to Annex R, if necessary.*

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

** Refer to Annex R, if necessary.*

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

BSA-ANS, the Belgian NSA, engaged to confirm whether the respective costs should be allocated to the respective cost bases within the context of the performance plan and verified the compliance of the cost base with the legal requirements. No findings were raised.

** Refer to Annex U, if necessary.*

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

Terminal Charging Zone #2 - France - Zone 1

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2019 B
Total terminal costs in nominal terms (in national currency)	59.137.558	114.049.362	58.939.208	60.366.031	61.594.406	4,2%
Total terminal costs in real terms (in national currency at 2017 prices)	57.630.256	110.312.661	56.375.904	57.265.874	57.925.436	0,5%
Total terminal costs in real terms (in EUR2017) [1]	57.630.256	110.312.661	56.375.904	57.265.874	57.925.436	0,5%
YoY variation		91,4%	-48,9%	1,6%	1,2%	
Total terminal Service Units (TNSU)	603.664	581.099	492.532	560.294	592.207	-1,9%
YoY variation		-3,7%	-15,2%	13,8%	5,7%	
Real terminal unit costs (in national currency at 2017 prices)	95,47	189,83	114,46	102,21	97,81	2,5%
Real terminal unit costs (in EUR2017) [1]	95,47	189,83	114,46	102,21	97,81	2,5%
YoY variation		98,8%	-39,7%	-10,7%	-4,3%	

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	Actuals 2019 2019 A	2019 Baseline adjustments
Total terminal costs in nominal terms (in national currency)	59.137.558	59.137.558	
Total terminal costs in real terms (in national currency at 2017 prices)	57.630.256	57.630.256	

Total terminal costs in real terms (in EUR2017) [1]	57.630.256	57.630.256	
Total terminal Service Units (TNSU)	603.664	603.664	

c) Detailed justifications for the adjustments to the baseline values

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

Number of adjustments	0

c.2) Adjustments to the 2019 service units

Adjustment to the 2014 service units	No

d) Description and justification of the contribution of the the local targets to the performance of the European ATM network

The French NSA views and analysis of the terminal local cost-efficiency targets are provided in Annex R of this performance plan.

** Refer to Annex R, if necessary.*

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

The detailed measures put in place to achieve the targets for determined unit cost (DUC) for terminal ANS are described in the Annex R for France to this plan.

** Refer to Annex R, if necessary.*

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

The French NSA performs annually the verification of actual costs i.a.w. Reg EU 2019/317 Art. 22 (7), 23 and 28(7).
Due consideration to the guidance and supporting material developed over 2019 / 2020 by EY on behalf of the EC resulted in an upgrade of the proceedings. The verification conducted in 2021 on 2020 actual costs and the implementation of the overall process will trigger additional finetuning for subsequent years, and fully addressed the similar exercise required as part of RP3 draft performance plan revision.

Transparency is ensured and information is regularly exchanged with the EC, Eurocontrol and airspace users as required by Reg EC 550/2004 and Reg EU 2019/317.
However the detailed presentation of potential findings and related corrections resulting from the NSA oversight in this report would be deemed to be infringing the confidentiality provided for in Reg EC 550/2004 Art. 18.

** Refer to Annex U, if necessary.*

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

Terminal Charging Zone #3 - France - Zone 2

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2019 B
Total terminal costs in nominal terms (in national currency)	198.129.879	382.449.681	190.383.772	191.305.181	192.111.965	-3,0%
Total terminal costs in real terms (in national currency at 2017 prices)	192.403.991	368.086.058	180.553.386	179.399.599	178.028.515	-7,5%
Total terminal costs in real terms (in EUR2017) [1]	192.403.991	368.086.058	180.553.386	179.399.599	178.028.515	-7,5%
YoY variation		91,3%	-50,9%	-0,6%	-0,8%	
Total terminal Service Units (TNSU)	547.128	558.444	508.702	529.498	557.181	1,8%
YoY variation		2,1%	-8,9%	4,1%	5,2%	
Real terminal unit costs (in national currency at 2017 prices)	351,66	659,13	354,93	338,81	319,52	-9,1%
Real terminal unit costs (in EUR2017) [1]	351,66	659,13	354,93	338,81	319,52	-9,1%
YoY variation		87,4%	-46,2%	-4,5%	-5,7%	

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	Actuals 2019 2019 A	2019 Baseline adjustments
Total terminal costs in nominal terms (in national currency)	198.129.879	198.129.879	
Total terminal costs in real terms (in national currency at 2017 prices)	192.403.991	192.403.991	

Total terminal costs in real terms (in EUR2017) [1]	192.403.991	192.403.991	
Total terminal Service Units (TNSU)	547.128	547.128	

c) Detailed justifications for the adjustments to the baseline values

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

Number of adjustments	0

c.2) Adjustments to the 2019 service units

Adjustment to the 2014 service units	No

d) Description and justification of the contribution of the the local targets to the performance of the European ATM network

The French NSA views and analysis of the terminal local cost-efficiency targets are provided in Annex R of this performance plan.

** Refer to Annex R, if necessary.*

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

The detailed measures put in place to achieve the targets for determined unit cost (DUC) for terminal ANS are described in the Annex R for France to this plan.

** Refer to Annex R, if necessary.*

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

The French NSA performs annually the verification of actual costs i.a.w. Reg EU 2019/317 Art. 22 (7), 23 and 28(7).
Due consideration to the guidance and supporting material developed over 2019 / 2020 by EY on behalf of the EC resulted in an upgrade of the proceedings. The verification conducted in 2021 on 2020 actual costs and the implementation of the overall process will trigger additional finetuning for subsequent years, and fully addressed the similar exercise required as part of RP3 draft performance plan revision.

Transparency is ensured and information is regularly exchanged with the EC, Eurocontrol and airspace users as required by Reg EC 550/2004 and Reg EU 2019/317.
However the detailed presentation of potential findings and related corrections resulting from the NSA oversight in this report would be deemed to be infringing the confidentiality provided for in Reg EC 550/2004 Art. 18.

** Refer to Annex U, if necessary.*

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

Terminal Charging Zone #4 - Germany - TCZ

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2019 B
Total terminal costs in nominal terms (in national currency)	**291.970.427**	583.637.570	294.376.034	304.847.292	326.799.431	**11,9%**
Total terminal costs in real terms (in national currency at 2017 prices)	**283.521.994**	**559.340.146**	**276.938.178**	**283.248.502**	**299.291.923**	**5,6%**
Total terminal costs in real terms (in EUR2017) [1]	**283.521.994**	**559.340.146**	**276.938.178**	**283.248.502**	**299.291.923**	**5,6%**
YoY variation		97,3%	-50,5%	2,3%	5,7%	
Total terminal Service Units (TNSU)	1.492.294	1.323.000	1.280.000	1.426.000	1.498.000	0,4%
YoY variation		-11,3%	-3,3%	11,4%	5,0%	
Real terminal unit costs (in national currency at 2017 prices)	**189,99**	**422,78**	**216,36**	**198,63**	**199,79**	**5,2%**
Real terminal unit costs (in EUR2017) [1]	**189,99**	**422,78**	**216,36**	**198,63**	**199,79**	**5,2%**
YoY variation		122,5%	-48,8%	-8,2%	0,6%	

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	Actuals 2019 2019 A	2019 Baseline adjustments
Total terminal costs in nominal terms (in national currency)	291.970.427	222.772.427	69.198.000
Total terminal costs in real terms (in national currency at 2017 prices)	**283.521.994**	216.551.824	66.970.170

Total terminal costs in real terms (in EUR2017) [1]	283.521.994	216.551.824	66.970.170
Total terminal Service Units (TNSU)	1.492.294	1.492.294	

c) Detailed justifications for the adjustments to the baseline values

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

Number of adjustments	2

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change in the interest rate for the DFS pension scheme	DFS	ANSP	Staff	12.112.000	11.722.054	11.722.054
Description and justification of the adjustment						
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: •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 correspond to the average remaining service time of DFS staff according to IFRS. 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. 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. Discounting when calculating the costs of occupational pension schemes takes into account the fact that a company can invest the necessary financial resources on the capital market until the pension obligation is payable. In this connection the following applies: the lower the interest rate, the higher the expenses for retirement provision. Due to the lower interest rate a company needs more capital to provide the promised service. From an economic point of view there are actuarial losses. This exogenous factor “interest rate risk” leads to higher personnel costs in RP3, which, due to the changed interest rate, cannot be compared with the personnel costs in RP2. However, in order to establish a comparability and thus a connection between RP2 and RP3, an increase in the baseline value is necessary / appropriate. In doing so, it is pretended that the interest rate of 2.85 percent used in RP3 had already been used in RP2 - with otherwise unchanged parameters. As described above, this leads to higher personnel costs and therefore to a higher baseline value.						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Corporate action in RP2	DFS	ANSP	Exceptional items	57.086.000	55.248.116	55.248.116
Description and justification of the adjustment						
In RP2 the Federal Republic of Germany decided to undertake a corporate action for the years 2015-2019 for strengthening DFS and to bring down the unit rate over RP2. This action ended in 2019. The figure above refers to the coporate action in year 2019.						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	69.198.000	**66.970.170**	**66.970.170**

c.2) Adjustments to the 2019 service units

Adjustment to the 2014 service units	No

d) Description and justification of the contribution of the the local targets to the performance of the European ATM network

Ambitious cost planning by DFS and DWD and the postponement of recruiting within the German NSA lead to a realistic and efficient cost structure in the German terminal charging zone. With such a cost structure, Germany lays the basis for determined unit costs that reflect the high quality and ambition within the charging zone and thus contribute to keeping costs to a minimum within the European ATM network.

** Refer to Annex R, if necessary.*

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

DFS:
Among the key elements contributing to the target achievement, there are the following measures:
1. During RP3, the number of FTE will be reduced in the administrative areas (thus with relevance both to the terminal and en route charging zone) from 2448 in 2020 to 2227 in 2024, which corresponds to an overall reduction of 10% (compared to 2021 a reduction of 3% in 2022, 6% in 2023 and 9% in 2024).
2. The other operating costs will be reduced by 1% per year (based on an inflation of 2%, they are planned not to increase more than 1% p.a.)
3. There will be no RoE for RP3.

** Refer to Annex R, if necessary.*

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

The German NSA did perform an in depth verification of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. (EU) No 550/2004 and Article 22 of IR (EU) 2019/317. This verification process included numerous virtual meetings as well as an extensive email-exchange which were conducted in a very constructive and efficient manner. Where applicable, the German NSA identified corrections to be applied to the cost base as a result of this verification. The draft performance plan as handed in is as a result in compliance with the applicable rules.

Concerning the DFS Drone Detection System, the German NSA did in particular investigate the purpose of the system as well as its capabilities and ensured it's compliance with the respective communication with the European Commission (MOVE.DDG2.E.3/AH/lm Ares(2021) 4324503).

** Refer to Annex U, if necessary.*

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

Terminal Charging Zone #5 - Luxembourg - TCZ

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2019 B
Total terminal costs in nominal terms (in national currency)	**14.275.844**	30.885.049	16.029.905	16.442.889	16.887.865	**18,3%**
Total terminal costs in real terms (in national currency at 2017 prices)	**13.843.792**	**29.829.282**	**15.224.451**	**15.373.550**	**15.544.943**	**12,3%**
Total terminal costs in real terms (in EUR2017) 1	**13.843.792**	**29.829.282**	**15.224.451**	**15.373.550**	**15.544.943**	**12,3%**
YoY variation		115,5%	-49,0%	1,0%	1,1%	
Total terminal Service Units (TNSU)	56.026	86.668	54.421	58.468	61.508	-7,2%
YoY variation		30,3%	-41,1%	11,6%	8,3%	
Real terminal unit costs (in national currency at 2017 prices)	**247,10**	**344,18**	**279,75**	**262,94**	**252,73**	**21,0%**
Real terminal unit costs (in EUR2017) 1	**247,10**	**344,18**	**279,75**	**262,94**	**252,73**	**21,0%**
YoY variation		65,4%	-13,3%	-9,5%	-6,7%	

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	Actuals 2019 2019 A	2019 Baseline adjustments
Total terminal costs in nominal terms (in national currency)	14.275.844	13.598.057	677.787
Total terminal costs in real terms (in national currency at 2017 prices)	**13.843.792**	13.190.915	652.877

Total terminal costs in real terms (in EUR2017) [1]	13.843.792	13.190.915	652.877
Total terminal Service Units (TNSU)	56.026	56.026	0

c) Detailed justifications for the adjustments to the baseline values

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

Number of adjustments	4

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change of allocation keys - effect on staff costs	ANA LUX	ANSP	Staff	709.010	684.851	684.851
Description and justification of the adjustment						
The revised allocation keys are based on the actual allocation keys, applicable for RP2, and reflect changes in the services provided and cost centres. Part of the staff and operational costs of AIS and MET services are carried by other authorities in Luxembourg. These costs are excluded of the cost base for ANSP services and therefore not charged to the users.						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change of allocation keys - effect on other operating costs	ANA LUX	ANSP	Other operating	1.737	1.678	1.678
Description and justification of the adjustment						
The revised allocation keys are based on the actual allocation keys, applicable for RP2, and reflect changes in the services provided and cost centres. Part of the staff and operational costs of AIS and MET services are carried by other authorities in Luxembourg. These costs are excluded of the cost base for ANSP services and therefore not charged to the users.						

Adjustment #3	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change of allocation keys - effect on depreciation costs	ANA LUX	ANSP	Depreciation	-23.507	-23.507	-23.507
Description and justification of the adjustment						
The revised allocation keys are based on the actual allocation keys, applicable for RP2, and reflect changes in the services provided and cost centres. Part of the staff and operational costs of AIS and MET services are carried by other authorities in Luxembourg. These costs are excluded of the cost base for ANSP services and therefore not charged to the users.						

Adjustment #4	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
Change of allocation keys - effect on cost of capital	ANA LUX	ANSP	Cost of capital	-9.453	-9.453	-9.453
Description and justification of the adjustment						
The revised allocation keys are based on the actual allocation keys, applicable for RP2, and reflect changes in the services provided and cost centres. Part of the staff and operational costs of AIS and MET services are carried by other authorities in Luxembourg. These costs are excluded of the cost base for ANSP services and therefore not charged to the users.						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	677.787	**653.569**	**653.569**

c.2) Adjustments to the 2019 service units

Adjustment to the 2014 service units	Click to select

d) Description and justification of the contribution of the the local targets to the performance of the European ATM network

In RP2, ANA has delivered necessary capacity (very few delays) despite a strong traffic increase. In order to ensure safe flights despite the permanent growth of traffic volume and knowing that ANA ATC was operating close to and even above the air space's capacity limits to respond to user demands at peak times, ANA took in early 2019 based on an extensive needs analysis the decision to implement a 3rd position in the tower (the ground position) and in the approach (the director position). Due to the fact that ANA, as a State administration, relies on State decisions regarding recruitment of human resources, as all staff are civil servants or public employees, a longer planning and budgeting process and due justification is the norm before any recruitment can start.
Every new vacancy needs the prior authorization of ANA's supervising ministry and the central HR management of the State. After years of drought, in 2019 ANA finally obtained a significant number of new vacancies.
In order to anticipate the expected market-oriented failure rate of 50%, the central HR management of the State granted even more vacancies than expected. Willing to improve safety and capacity as rapidly as possible, ANA simply couldn't miss this unique opportunity and started immediately the recruitment of new ATCO trainees. So far the failure rate is very low and the manning of these 3rd positions is proceeding faster than originally anticipated.
Unfortunately the increase of costs based on decisions taken before the COVID-19 crisis can't be avoided. All ANA can do is to engage in damage limitation.

After years of hold out, ANA started in 2018 to overhaul the whole ANSP infrastructure. In 2020 and 2021 the pandemic crisis has put a temporary break on this plan, which resulted in a re-prioritization, cancelling and postponement of parts of the project portfolio. However, under condition of the availability of the necessary financial resourses, ANA is willing to accelerate again next year in order to catch-up the delayed investments.
Even though Luxembourg State was as well severely struck by the COVID-19 crisis, ANA has got the confirmation, that same as in RP2, in 2020 and 2021, as well for the remainder of RP3, the Luxembourg State will carry all investment related costs and the staff costs of the electro technical department. Neither the cost of capital, nor the depreciation costs will be charged to the users, which means more than 12 M€ in total for RP3.

ANA did its outmost to receive additional public funding in order to further reduce the chargeable unit rate. ANA found an agreement with its Ministry and the Ministry of Finance which allows ANA to maintain the chargeable unit rate for 2022 on the same level as foreseen in the initial performance plan (from 2019), despite the decrease of traffic.

In addition, ANA will renounce on any bonus which would result from the application of the incentive scheme during the COVID-19 crisis (as long as traffic in terms of service units stays below the level of 2019).

** Refer to Annex R, if necessary.*

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

ANA has undergone efforts to reduce costs in 2020 and 2021 in comparison to the initially planned costs. Since ANA's hands were tied regarding staff costs, ANA did its outmost to reduce the other operating costs for 2020 and beyond, i.e.
- Reduction in travels and meeting expenses
- Cost reduction related to training expenses
- Reduction of Office costs
- Reduction of Experts contracts and consulting expenses
- Budget reduction for social events and any other communication related cost, nice-to-haves in times of crisis.
- Cost reduction related to internet connections

Despite the unavoidable significant increase of staff costs, ANA manages to stay 2% under the cumulated determined costs foreseen in the initial plan.
For the remaining years of RP3, ANA hasn't foreseen any further net increase of staff. The increase of staff costs from 2021 to 2024 is limited to the application of the factors that are mandatory for the Luxembourg State budget (such as a factor for career shifts and the sliding scale of wages).

** Refer to Annex R, if necessary.*

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

The Luxembourg NSA and the Ministry have agreed on the allocation of costs and the NSA performs annually the verification of actual costs in reference to Regulation EU 2019/317 Art. 22 (7), 23 and 28(7). The accounts of ANA Lux are audited each year by an independant auditor and also by the IGF (Inspection Générale des Finances).

Transparency is ensured and information is regularly exchanged with the EC, Eurocontrol and airspace users as required by Reg EC 550/2004 and Reg EU 2019/317.
However the detailed presentation of potential findings and related corrections resulting from the NSA oversight in this report would be deemed to be infringing the confidentiality provided for in Reg EC 550/2004 Art. 18.

** Refer to Annex U, if necessary.*

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

Terminal Charging Zone #6 - Netherlands - TCZ

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2019 B
Total terminal costs in nominal terms (in national currency)	**77.845.000**	143.394.048	74.772.706	77.867.459	79.526.060	**2,2%**
Total terminal costs in real terms (in national currency at 2017 prices)	**74.861.717**	**135.747.570**	**69.422.076**	**71.324.542**	**72.133.235**	**-3,6%**
Total terminal costs in real terms (in EUR2017) [1]	**74.861.717**	**135.747.570**	**69.422.076**	**71.324.542**	**72.133.235**	**-3,6%**
YoY variation		81,3%	-48,9%	2,7%	1,1%	
Total terminal Service Units (TNSU)	412.433	454.653	313.300	376.000	401.000	-2,8%
YoY variation		10,2%	-31,1%	20,0%	6,6%	
Real terminal unit costs (in national currency at 2017 prices)	**181,51**	**298,57**	**221,58**	**189,69**	**179,88**	**-0,9%**
Real terminal unit costs (in EUR2017) [1]	**181,51**	**298,57**	**221,58**	**189,69**	**179,88**	**-0,9%**
YoY variation		64,5%	-25,8%	-14,4%	-5,2%	

National currency	**EUR**
[1] Average exchange rate 2017 (1 EUR=)	**1,00**

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

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	Actuals 2019 2019 A	2019 Baseline adjustments
Total terminal costs in nominal terms (in national currency)	77.845.000	77.845.000	0
Total terminal costs in real terms (in national currency at 2017 prices)	**74.861.717**	74.861.717	0

Total terminal costs in real terms (in EUR2017) [1]	74.861.717	74.861.717	0
Total terminal Service Units (TNSU)	412.433	412.433	0

c) Detailed justifications for the adjustments to the baseline values

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

Number of adjustments	0

c.2) Adjustments to the 2019 service units

Adjustment to the 2014 service units	No

d) Description and justification of the contribution of the the local targets to the performance of the European ATM network

Noting that no Union-wide targets are applied for terminal charging zones, local targets for the Netherlands closely follow, and for 2020/2021 are significantly better than, Union-wide targets for en route cost efficiency. Continued investment in existing capacity issues as well as in priorities of the new national aviation policy is included in the targets. Targets are set at the proposed level despite terminal traffic recovery in the Netherlands lagging behind the EU average. Further information on cost efficiency targets is provided in Annex R.

** Refer to Annex R, if necessary.*

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

Cost development will be monitored and discussed with relevant parties on a regular basis. If deviations between planned and actual DUC occur or are expected to occur, this will be discussed between

** Refer to Annex R, if necessary.*

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

The NSA and responsible Ministry have agreed the basic principles for identifying costs incurred by LVNL which can or cannot be allocated to the cost base for one of the charging zones. Any areas where uncertainty exists are generally discussed and resolved before they are definitively allocated. With respect to the cost base for RP3, a very limited number of issues was identifed and resolved.

In their written input following the stakeholder consultation, Lufthansa highlighted three concerns regarding eligibility and necessity of costs. All three points have been considered by the NSA, and the NSA is satisfied these have been dealt with correctly in the cost bases of the en route aand terminal charging zones.

** Refer to Annex U, if necessary.*

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

Terminal Charging Zone #7 - Switzerland - TCZ

a) RP3 revised cost-efficiency performance targets (IR 2020/1627)

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	RP3 revised cost-efficiency targets (determined 2020-2024) 2020/2021 D	 2022 D	 2023 D	 2024 D	2024 D vs. 2019 B
Total terminal costs in nominal terms (in national currency)	**97.935.900**	209.454.206	105.207.116	104.121.837	105.326.817	**7,5%**
Total terminal costs in real terms (in national currency at 2017 prices)	**96.896.397**	**207.271.463**	**103.867.436**	**102.170.228**	**102.622.408**	**5,9%**
Total terminal costs in real terms (in EUR2017) [1]	**87.196.643**	**186.522.680**	**93.469.850**	**91.942.540**	**92.349.455**	**5,9%**
YoY variation		113,9%	-49,9%	-1,6%	0,4%	
Total terminal Service Units (TNSU)	293.928	239.807	245.791	267.772	279.762	-4,8%
YoY variation		-18,4%	2,5%	8,9%	4,5%	
Real terminal unit costs (in national currency at 2017 prices)	**329,66**	**864,32**	**422,59**	**381,56**	**366,82**	**11,3%**
Real terminal unit costs (in EUR2017) [1]	**296,66**	**777,80**	**380,28**	**343,36**	**330,10**	**11,3%**
YoY variation		162,2%	-51,1%	-9,7%	-3,9%	

National currency	**CHF**
[1] Average exchange rate 2017 (1 EUR=)	**1,11**

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

Terminal charging zone Name of the CZ	Baseline 2019 2019 B	Actuals 2019 2019 A	2019 Baseline adjustments
Total terminal costs in nominal terms (in national currency)	97.935.900	94.165.236	3.770.663
Total terminal costs in real terms (in national currency at 2017 prices)	**96.896.397**	93.174.256	3.722.142

Total terminal costs in real terms (in EUR2017) [1]	87.196.643	83.847.104	3.349.539
Total terminal Service Units (TNSU)	293.928	293.928	0

c) Detailed justifications for the adjustments to the baseline values

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

Number of adjustments	2

Adjustment #1	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
MET costs extraordinary reimbursement 2019	Meteosuisse	MET	Other operating	1.509.569	1.490.144	1.340.974
Description and justification of the adjustment						
In 2019, there reimbursment of MET costs has been provisioned which artificially decreased the MET costs for 2019 (extraordinary one-off effect).						

Adjustment #2	Entity name	Entity type	Nature	Costs nominal NC	Costs real NC	Costs EUR2017
MET costs change in allocation key as of 2020	Meteosuisse	MET	Other operating	2.261.094	2.231.998	2.008.565
Description and justification of the adjustment						
The allocation key of MET costs to the various products has been changed, having thus an impact on the cost level.						

Total adjustments to the 2019 baseline value for the determined costs	**Costs nominal NC**	**Costs real NC**	**Costs EUR2017**
	3.770.663	**3.722.142**	**3.349.539**

c.2) Adjustments to the 2019 service units

Adjustment to the 2014 service units	Click to select

d) Description and justification of the contribution of the the local targets to the performance of the European ATM network

In RP2, Skyguide has delivered necessary capacity while having to cope with strong traffic increase and has invested in the future. Skyguide made losses over RP2.
Skyguide is currently undergoing a massive transformation in investing in the Virtual Centrer and make its cost structure more flexible, in full alignment with the AAS.
2020 and 2021 has been marked by one-off savings measures (short time work, cut of variable salary part, salary containment, etc.), a recapitalization to ensure the financial stability and a huge negative year-end-result due to non-recognition of accruals (even-though foreseen to be invoiced as of 2023)
The capital injection of 150M CHF in 2020 finances the impact of the implementation of more restrictive capitalization rules (90M CHF over RP3 and 125M CHF in total) which will not be billed to users due to the ongoing crisis. As a counterpart of the recapitalization by the CH Confederation, Skyguide has to implement a 120M CHF savings in 2020 - 2024 (reflected in current submission) and to raise the retirement age of ATCOs to at least 60 years (having as consequence a transition phase with additional costs.)
As a summary, the chargeable cost base was reduced by 74 MCHF with regard to the first version of the plan submitted in October 2019.
Skyguide decided to take into account the latest STATFOR base scenario of October 2021, without increasing its costs (and expects no further discussions on cost target achievement in 2022, as in 2022 alone traffic has improved by 17% vs. STATFOR Base May 2021).
To avoid putting at risk its ongoing transformation, Skyguide is not planning on reducing its cost base further, i.e. the remaining gap is to be financed by airspace users

** Refer to Annex R, if necessary.*

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

The capital injection of 150M CHF in 2020 finances the impact of capitalization rules (90M CHF over RP3 and 125M CHF in total).
Without this, the gap to target would have been much higher.
In addition to that, efforts have been undergone to reduce costs in 2020 and 2021 vs. initially planned costs.

** Refer to Annex R, if necessary.*

f) Findings of the verification by the NSA (under Art. 22(7) of IR 2019/317) of the compliance of the cost base for charges with the requirements of Article 15(2) of Reg. 550/2004 and Article 22 of IR 2019/317, and where applicable identification of corrections applied to the cost base as a result of this verification

Skyguide's financial statements are audited each year by an external statutory auditor; their report is an integral part of the annual report published by Skyguide.

Between 2018 and 2020, the NSA has performed financial audits of the MET services provider for the ANSP, and of Skyguide on the basis of FY 2017.

Due consideration of the requirements of Reg EC 550/2004 and Reg EU 2019/317 and to the guidance and supporting material developed over 2019 / 2020 by EY on behalf of the EC led the NSA to initiate the revisions of the cost accounting of Skyguide due to be implemented by 2023.

Transparency is ensured and information is regularly exchanged with the EC, Eurocontrol and airspace users as required by Reg EC 550/2004 and Reg EU 2019/317. However the detailed presentation of potential findings and related corrections resulting from the NSA oversight in this report would be deemed to be infringing the confidentiality provided for in Reg EC 550/2004 Art. 18.

** Refer to Annex U, if necessary.*

3.4.3: Pension assumptions

3.4.3.1 Total pension costs
3.4.3.2 Assumptions for the "State" pension scheme
3.4.3.3 Assumptions for the occupational "Defined contributions" pension scheme
3.4.3.4 Assumptions for the occupational "Defined benefits" pension scheme

skeyes
DSNA
DFS
ANA LUX
LVNL
Skyguide
MUAC

3.4.3 - Pension assumptions - skeyes

3.4.3.1 Total pension costs (in nominal terms in '000 national currency)

Pension costs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pension costs - TOTAL PENSION COST SKEYES*	20.798	22.172	42.970	23.977	24.345	25.098
En-route activity	14.422	15.365	29.787	16.712	17.163	17.793
Terminal activity (EBBR)	3.661	3.924	7.585	4.196	4.187	4.266
Terminal activity (Regional airports)	1.850	1.929	3.779	2.110	2.167	2.210
Other activities	865	954	1.819	959	828	829

* Includes the total pension cost at charge of skeyes, while determined pension cost is limited to the pension cost for the En route and EBBR terminal activity.

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

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

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	45.718	48.554	94.272	51.477	53.654	55.276
Employer % contribution rate to this scheme	35%	35%		35%	35%	35%
Total pension costs in respect of this scheme	**16.001**	**16.994**	**32.995**	**18.017**	**18.779**	**19.347**
Number of employees the employer contributes for in this scheme	501	506		522	539	552

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	31.674	33.026	64.700	37.996	35.328	36.401
Employer % contribution rate to this scheme	8,86%	8,86%		8,86%	8,86%	8,86%
Total pension costs in respect of this scheme	**2.806**	**2.926**	**5.732**	**3.366**	**3.130**	**3.225**
Number of employees the employer contributes for in this scheme	389	392		436	434	429

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
The State pension scheme in place is a "Pay-As-You-Go" scheme based on career duration and income earned - for civil servants, skeyes makes a contribution of 35% to the State for each civil servants - for contractual employees, skeyes makes a contribution of 8.86% to the State Regulations on pension are a prerogative of the Federal State The existing regulatory regime may be consulted on https://wwwsfpdfgovbe/fr/centre-de-connaissances/legislation skeyes has no information wether changes of those regulations are to be expected during RP3

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
The pension cost "state pension scheme" is budgetted taking into account the current national pension regulations and the increase in pensionable payroll (increase in staff numbers and salary increase).

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users
The pension costs have been determined based on existing regulatory regime. Any unforeseen changes on the costs to be passed on to airspace users will be duly motivated.

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

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

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	819	835	1.654	869	904	940
Employer % contribution rate to this scheme	14%	14%		14%	14%	14%
Total pension costs in respect of this scheme	**114**	**116**	**230**	**121**	**125**	**130**
Number of employees the employer contributes for in this scheme	4	4		4	4	4

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
skeyes has a defined contribution pension scheme for members of the Executive Committee which are contractual employees Skeyes pays premiums to an insurance company under an extra group insurance contract.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
The pension cost "defined contribution pension scheme" is budgetted taking into account the current contract and an annual indexation.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users
The pension costs have been determined based on existing regime Any unforeseen changes on the costs to be passed on to airspace users will be duly motivated.

3.4.3.3 Assumptions for the occupational "Defined benefits" pension scheme

Does the ANSP assume liability for meeting future obligations for the occupational "Defined benefits" scheme?	Yes
Is the occupational "Defined benefits" pension scheme funded?	Yes

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	33.944	35.474	69.418	36.912	39.223	40.926
Total pension costs in respect of this scheme	1.877	2.136	4.013	2.473	2.311	2.396
- in respect of regular pension costs	0	0	-	0	0	0
- in respect of non-recurring deficit repair	0	0	-	0	0	0
- reported as staff costs (in reporting tables)	1.877	2.136	4.013	2.473	2.311	2.396
- not reported as staff costs (in reporting tables): please use comment box	0	0	-	0	0	
Actuarial assumptions						
% discount rate	Not available					
% projected increase in benefits						
% annual increase in salaries						
% expected return on plan assets						
Net funding surplus / deficit						
Number of employees the employer contributes for in this scheme	385	388		432	430	425

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
skeyes has a defined benefit scheme for contractual staff members (excluding the Executive Committee) Skeyes pays premiums to an insurance company under an extra group insurance contract.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
The pension cost "defined benefit pension scheme" is budgetted taking into account the current contract, evolution in contractual staff numbers and salary increases.

Where, in the Reporting Tables, some occupational "defined benefits" costs (e.g. interest expense related to pensions) are reported in other cost item(s) than staff costs, the cost item(s) should be indicated here below along with corresponding explanations.
Not applicable.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users
The pension costs have been determined based on existing regime Any unforeseen changes on the costs to be passed on to airspace users will be duly motivated

3.4.3 - Pension assumptions - DSNA

3.4.3.1 Total pension costs (in nominal terms in '000 national currency)

Pension costs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pension costs	203.755	207.314	411.069	209.499	210.761	212.527
En-route activity	165.345	170.219	335.564	172.467	173.962	175.879
Terminal activity	38.410	37.094	75.505	37.032	36.799	36.648
Other activities			-			

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

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

Civil pensions	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	258.601	263.476	522.077	266.261	267.953	270.320
Employer % contribution rate to this scheme	74,6%	74,6%		74,6%	74,6%	74,6%
Total pension costs in respect of this scheme	**192.916**	**196.553**	**389.470**	**198.631**	**199.893**	**201.659**
Number of employees the employer contributes for in this scheme	7.294	7.304		7.361	7.317	7.316

State workers	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Employer % contribution rate to this scheme						
Total pension costs in respect of this scheme	**10.839**	**10.760**	**21.599**	**10.869**	**10.869**	**10.869**
Number of employees the employer contributes for in this scheme	274	274		274	274	274

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
The ANSP contributes to the "CAS Pensions" (a special budgetary account), which corresponds to a pay-as-you-go scheme. The CAS Pensions was planned by article 21 of the LOLF (organic law related to finance acts) and created by article 51 of 2006 Finance Act. More specifically, the ANSP contributes to 2 programs of the CAS Pensions: program 741 (civil pensions) and program 742 (State workers) References: - Loi organique n° 2001-692 du 1 août 2001 relative aux lois de finances - Loi n° 2005-1719 du 30 décembre 2005 de finances pour 2006 Pension costs are the sum of the contribution to program 741 and program 742. Contribution to program 741 is equal to the product of the contribution rate times the contribution base. Contribution base to program 741 corresponds to gross salaries (i.e. not including bonuses or premiums). The Ministry of Economy & Finance decides on the contribution rate to program 741 each year. The Ministry of Economy & Finance decides on the contribution amount to program 742 each year. The contribution rates to prog. 741 and the contribution to prog. 742 are both deemed uncontrollable, as they are imposed by the Ministry of Economy & Finance.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
An assumption of a flat contribution rate for program 741 has been taken. The rate is flat from year 2013. A pension reform is envisaged at State level. But the date of this reform, if it occurs, is not known at this stage of the development of RP3, nor the form it could take.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users
As explained above, the contribution rate is decided by Ministry of Economy & Finance and has been flat since 2013. No change is foreseen at the moment.

3.4.3 - Pension assumptions - DFS

3.4.3.1 Total pension costs (in nominal terms in '000 national currency)

Pension costs	2020A/D	2021D	2020/2021D	2022D	2023D	2024D
Total pension costs	**290.323**	**304.366**	**594.690**	**250.045**	**250.536**	**254.099**
En-route activity (state pension scheme + defined benefit)	204.573	211.541	416.114	172.056	174.427	177.559
Terminal activity (state pension scheme + defined benefit)	60.507	65.357	125.863	54.028	54.126	54.604
Other activities	25.244	27.469	52.713	23.961	21.983	21.936

Explanation
The total pensions costs as reported in table 3.4.3.1 above represent the total pension costs of DFS regarding the three segments “En-route activity”, “Terminal activity” and “Other activities”. The segment “Other activities” mainly affects pension costs related to OAT/VFR. These costs include the DFS contributions to the state pension scheme, to the defined benefits pension scheme, IFRS conversion effects and some minor obligations (i.e. early retirement or part time contracts for older employees). The cost allocation to the three segments in table 3.4.3.1 is just an approximate estimation. Due to the internal planning system the DFS contributions to the state pension scheme are allocated to the total staff costs (number 1.1 in reporting table 1). The current planning system does not make it possible to deduct these contributions to the state pension scheme from the total staff costs. For this reason, line 13 in reporting table 1 just includes the DFS contributions to the defined benefit pension scheme and some minor obligations as described before (see also additional information on the reporting tables). For these obligations, a separate presentation on basis of actuarial reports is easily possible. Furthermore, in Reporting Table 1 IFRS conversions effects always are shown in the position “exceptional items” (number 1.5). To preserve comparability, no change should be made to that disclosure.

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

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

	2020A/D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	348.426	364.500	712.927	381.979	388.854	398.160
Employer % contribution rate to this scheme	9,30	9,30		9,30	9,35	9,35
Total pension costs in respect of this scheme	**32.404**	**33.899**	**66.302**	**35.524**	**36.358**	**37.228**
Number of employees the employer contributes for in this scheme	5.312	5.366		5.400	5.361	5.330

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
Financed using contributions of for example 18,6% in 2020, split equally between employees and employers (annual contribution assessment ceiling of EUR 82.800 in 2020). Early retirement is possible from 63 years of age subject to contributions for a minimum of 35 years and deduction of up to 14,4% for retiring 48 month before the recommended retirement age. No changes are expected in RP3. Additional remarks: The figures included in the tables above show the pension assumptions on DFS level. A distinction between en-route and terminal is not done on contract level.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
Financed using contributions of 18,6% in 2020 up to 18,70% in 2024, split equally between employees and employers (annual contribution assessment ceiling (Beitragsbemessungsgrenze) of EUR 82.800 in 2020 up to EUR 92.400 in 2024).

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users
To manage the risk of the state pensions ex-ante is not possible. Therefore we use best estimates from the experts from the HR-department.

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

Are there different contribution rates for different staff categories? If yes, how many?	Select

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Employer % contribution rate to this scheme						
Total pension costs in respect of this scheme			-			
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

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

3.4.3.3 Assumptions for the occupational "Defined benefits" pension scheme

Does the ANSP assume liability for meeting future obligations for the occupational "Defined benefits" scheme?	Yes
Is the occupational "Defined benefits" pension scheme funded?	Yes

	2020A	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	585.684	601.089	1.186.773	618.929	632.703	646.570
Total pension costs in respect of this scheme	257.920	270.468	528.387	214.521	214.178	216.871
- in respect of regular pension costs	n/a	n/a	n/a	n/a	n/a	n/a
- in respect of non-recurring deficit repair	n/a	n/a	n/a	n/a	n/a	n/a
- reported as staff costs (in reporting tables)	184.130	191.058	375.188	192.946	194.637	197.435
- not reported as staff costs (in reporting tables): please use comment box	73.789	79.410	153.199	21.575	19.541	19.436
Actuarial assumptions (plan)						
% discount rate	2,85%	2,85%		2,85%	2,85%	2,85%
% projected increase in benefits	n/a	n/a		n/a	n/a	n/a
% annual increase in salaries	2,50%	2,50%		2,50%	2,50%	2,50%
% expected return on plan assets	2,85%	2,85%		2,85%	2,85%	2,85%
Net funding surplus / deficit	78.262	78.349	156.611	78.851	79.554	79.148
Number of employees the employer contributes for in this scheme	8.741	8.990		9.180	9.340	9.510

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

The schemes for pensions are defined benefit schemes. There are various forms of pension provision available to the employees of DFS, which are largely governed by collective agreements.
Additional remarks: A split of the total cost per pension scheme in “regular pension costs” and “non-recurring deficit repair” is not possible, because the appointed actuary does not calculate these figures.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

Under the collective agreement covering pensions, employees who began employment by 31 December 2004 receive old-age, disability and surviving dependant’s pensions. These are defined benefits linked to the respective final salary of the employee. However, employees who entered service from 1 January 2005 receive benefits under the collective agreement covering pensions which are linked to average career earnings. Under this system, each year a pension component is calculated based on the respective income and the old-age pension is determined based on the sum of the annual pension components (Versorgungstarifvertrag - “VersTV”).
Air traffic controllers and flight data specialists receive transitional retirement benefits based on the final salary to cover the period from the end of their operational activity until the receipt of the statutory pension as well as the pension as explained above (Übergangsversorgungstarifvertrag - “ÜVersTV”).
DFS pays an increased employer contribution for health insurance for the employees who were previously employed as established civil servants with the former Federal Administration of Air Navigation Services (Bundesanstalt für Flugsicherung - BFS) / the Federal Aviation Office (Luftfahrtbundesamt - LBA). This compensates over the entire active period of employment and in retirement for the fact that this staff is no longer covered by the German Civil Service welfare provisions for healthcare (Krankentarifvertrag - “KTV”).

Where, in the Reporting Tables, some occupational "defined benefits" costs (e.g. interest expense related to pensions) are reported in other cost item(s) than staff costs, the cost item(s) should be indicated here below along with corresponding explanations.

For the year 2020 and 2021 the position "not reported as staff costs" contains IFRS conversion effects charged to the airlines on a pro-rata basis and pension costs that belong to other cost objects (e.g. OAT). From 2022 onwards the position only contains pension costs that belong to other cost objects (e.g. OAT).

IFRS conversion effects are 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. From 2022 onwards pension costs will be only reported as staff costs.

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

Controlling the risk is difficult. Above data has been prepared under the support of a national actuary providing an opinion on the expected interest rates on plan assets in the years 2020-2024.

3.4.3 - Pension assumptions - ANA LUX

3.4.3.1 Total pension costs (in nominal terms in '000 national currency)

Pension costs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pension costs	368	375	743	389	401	413
En-route activity	93	95	188	99	102	105
Terminal activity	178	182	360	189	195	201
Other activities	98	98	195	101	104	107

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

Are there different contribution rates for different staff categories? If yes, how many?	Select

Salaried employees	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	4.600	4.692	9.292	4.857	5.010	5.168
Employer % contribution rate to this scheme	8%	8%		8%	8%	8%
Total pension costs in respect of this scheme	**368**	**375**	**743**	**389**	**401**	**413**
Number of employees the employer contributes for in this scheme	66	60		60	60	60

Public servants	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	14.757	15.051	29.808	15.580	16.070	16.577
Employer % contribution rate to this scheme	0%	0%		0%	0%	0%
Total pension costs in respect of this scheme	**0**	**0**	**-**	**0**	**0**	**0**
Number of employees the employer contributes for in this scheme	115	127		127	127	127

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
The pension costs depend on the status of the person. For a public servant there is no employer's share, whereby for a salaried employee an employer's share of 8 % exists. Regarding this regulation there are no changes expected for RP3.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
The calculation is based on the assumption that one third of our staff are salaried employees, whereby the other two third are public servants. (as in 2018)

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the

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

Are there different contribution rates for different staff categories? If yes, how many?	Select

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Employer % contribution rate to this scheme						
Total pension costs in respect of this scheme			**-**			
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

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

3.4.3.3 Assumptions for the occupational "Defined benefits" pension scheme

Does the ANSP assume liability for meeting future obligations for the occupational "Defined benefits" scheme?	Select
Is the occupational "Defined benefits" pension scheme funded?	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Total pension costs in respect of this scheme			-			
- in respect of regular pension costs			-			
- in respect of non-recurring deficit repair			-			
- reported as staff costs (in reporting tables)			-			
- not reported as staff costs (in reporting tables): please use comment box			-			
Actuarial assumptions						
% discount rate						
% projected increase in benefits						
% annual increase in salaries						
% expected return on plan assets						
Net funding surplus / deficit			-			
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

Where, in the Reporting Tables, some occupational "defined benefits" costs (e.g. interest expense related to pensions) are reported in other cost item(s) than staff costs, the cost item(s) should be indicated here below along with corresponding explanations.

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

3.4.3 - Pension assumptions - LVNL

3.4.3.1 Total pension costs (in nominal terms in '000 national currency)

Pension costs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pension costs	19.418	21.265	40.683	22.982	23.681	22.818
En-route activity	13.340	14.609	27.949	15.789	16.269	15.676
Terminal activity	5.922	6.486	12.408	7.010	7.223	6.959
Other activities	155	170	325	184	189	183

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

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

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Employer % contribution rate to this scheme						
Total pension costs in respect of this scheme			-			
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the

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

Are there different contribution rates for different staff categories? If yes, how many?	Select

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	93.671	97.815	191.486	100.139	103.185	104.959
Employer % contribution rate to this scheme	20,73%	21,74%		22,95%	22,95%	21,74%
Total pension costs in respect of this scheme	19.418	21.265	**40.683**	22.982	23.681	22.818
Number of employees the employer contributes for in this scheme	1.190	1.221		1.305	1.298	1.279

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
As of 2008 the LVNL financial statements comply with IFRS with the exception of the provisions related to the early retirement arrangements of the operational LVNL-staff (FLNA/IKV; IAS 19 and IAS 19R IFRS). The Netherlands has decided not to implement this specific IFRS item. As a consequence of this decision the majority of the FLNA/IKV obligations is not presented as liabilities in the LVNL balance sheet. To minimize the lack of transparency on this issue, LVNL presents these obligations as 'off-balance sheet rights and commitments'. As in the past users will only be charged for the actual FLNA/IKV expenses. According to LVNL's Annual Report 2020, the net present value of the defined benefit obligations is about M€ 586 on 31st December 2020, including a standard tax penalty of 52%). LVNL has no pension related assets. Only a small part of the early retirement arrangements (M€ 9.3) is included in a balance sheet provision. This concerns mainly the early retirement arrangements of a select number of controllers on the regional airports. The pension premium is set by the independent national pension fund ABP.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
The pension costs form a substantial part of the staff costs. Because the national pension fund (ABP) have difficulties to meet the mandatory coverage ratio (assets at least 104% of the liabilities) we expect the pension premium increase in 2022, which was issued to regain the mandatory coverage ratio, will remain for 2 years.

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

However there is a (cost exempt) risk that structural changes in the pension scheme may occur during RP3 because of the pension discussion currently held in The Netherlands. A new study to the necessary coverage ratio of pension funds in The Netherlands addresses the need for an improved coverage ratio which may lead to increased pension premiums. Besides this study the government and the social partners are negotiating the fundamentals of the current pension scheme. For example new retirement age categories are now discussed upon. This may also lead to changes during RP3.

3.4.3.3 Assumptions for the occupational "Defined benefits" pension scheme

Does the ANSP assume liability for meeting future obligations for the occupational "Defined benefits" scheme?	Select
Is the occupational "Defined benefits" pension scheme funded?	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Total pension costs in respect of this scheme			-			
- in respect of regular pension costs			-			
- in respect of non-recurring deficit repair			-			
- reported as staff costs (in reporting tables)			-			
- not reported as staff costs (in reporting tables): please use comment box			-			
Actuarial assumptions						
% discount rate						
% projected increase in benefits						
% annual increase in salaries						
% expected return on plan assets						
Net funding surplus / deficit			-			
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

Where, in the Reporting Tables, some occupational "defined benefits" costs (e.g. interest expense related to pensions) are reported in other cost item(s) than staff costs, the cost item(s) should be indicated here below along with corresponding explanations.

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

3.4.3 - Pension assumptions - skyguide

3.4.3.1 Total pension costs (in nominal terms in '000 national currency)

Pension costs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pension costs	63.516	61.116	124.632	61.163	62.285	62.907
En-route activity	40.284	37.847	78.132	37.885	39.090	39.563
Terminal activity	12.744	12.183	24.927	11.992	12.017	12.138
Other activities	10.488	11.085	21.573	11.287	11.178	11.205

En-route financed outside Swiss FIR	-10.963	-12.388		-11.594	-12.880	-13.307
Terminal financed outside Swiss FIR	-714	-926		-374	-386	-363
TOTAL En Route	29.321	25.460		26.290	26.210	26.256
TOTAL Terminal	12.030	11.258		11.618	11.631	11.775

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

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

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	240.433	243.938	484.371	239.521	238.470	237.533
Employer % contribution rate to this scheme	5,275%	5,300%		5,300%	5,300%	5,300%
Total pension costs in respect of this scheme	**12.683**	**12.929**	**25.612**	**12.695**	**12.639**	**12.589**
Number of employees the employer contributes for in this scheme	1.462	1.464		1.468	1.447	1.423

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
The state pension (AHV) is a mandatory defined benefit scheme funded on a pay-as-you-go basis through contributions and VAT revenues. Qualification requires at least one year of contributions. The benefit received depends on income and the number of years of contributions.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
Assumptions are based on actual state pension legal contributions.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the

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

Are there different contribution rates for different staff categories? If yes, how many?	Yes-5

ATCOs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	69.607	74.944	144.551	77.094	76.327	76.866
Employer % contribution rate to this scheme	34,8%	29,0%		30,0%	31,6%	31,8%
Total pension costs in respect of this scheme	**24.216**	**21.771**	**45.987**	**23.123**	**24.083**	**24.457**
Number of employees the employer contributes for in this scheme	396	426		461	455	452

ATCOs : regional/military	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	20.746	18.320	39.065	15.368	15.307	15.800
Employer % contribution rate to this scheme	18,9%	20,2%		18,8%	17,7%	17,7%
Total pension costs in respect of this scheme	**3.917**	**3.704**	**7.622**	**2.891**	**2.712**	**2.793**
Number of employees the employer contributes for in this scheme	139	123		111	111	110

AOT	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	83.611	80.514	164.125	79.004	78.314	76.424
Employer % contribution rate to this scheme	15,9%	16,3%		16,7%	17,1%	17,5%
Total pension costs in respect of this scheme	**13.335**	**13.091**	**26.426**	**13.183**	**13.409**	**13.394**
Number of employees the employer contributes for in this scheme	714	700		689	679	661

Managers	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	36.446	36.774	73.221	34.766	34.557	34.553
Employer % contribution rate to this scheme	25,6%	26,0%		26,5%	27,2%	27,9%
Total pension costs in respect of this scheme	**9.326**	**9.577**	**18.903**	**9.229**	**9.400**	**9.641**
Number of employees the employer contributes for in this scheme	209	212		203	199	197

Auxiliaries (houlry staff)	2020D	2021D	2020/2021D	2022D	2023D	2024D

Total pensionable payroll to which this scheme applies	767	788	1.555	785	785	584
Employer % contribution rate to this scheme	5,1%	5,5%		5,5%	5,5%	5,5%
Total pension costs in respect of this scheme	**39**	**44**	**83**	**43**	**43**	**32**
Number of employees the employer contributes for in this scheme	4	3		4	4	3

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
Skyguide manages its occupational defined contribution scheme through a separate legal entity called Skycare. Members receive defined benefits, though the full liability of the scheme is assumed by Skycare. Skyguide is only liable for making contributions to the scheme and so its contributions are assessed on a defined contribution basis.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
Assumptions are based on actual Skycare pension plans contributions.

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

3.4.3.3 Assumptions for the occupational "Defined benefits" pension scheme

Does the ANSP assume liability for meeting future obligations for the occupational "Defined benefits" scheme?	Select
Is the occupational "Defined benefits" pension scheme funded?	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Total pension costs in respect of this scheme			-			
- in respect of regular pension costs			-			
- in respect of non-recurring deficit repair			-			
- reported as staff costs (in reporting tables)			-			
- not reported as staff costs (in reporting tables): please use comment box			-			
Actuarial assumptions						
% discount rate						
% projected increase in benefits						
% annual increase in salaries						
% expected return on plan assets						
Net funding surplus / deficit			-			
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

Where, in the Reporting Tables, some occupational "defined benefits" costs (e.g. interest expense related to pensions) are reported in other cost item(s) than staff costs, the cost item(s) should be indicated here below along with corresponding explanations.

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

3.4.3 - Pension assumptions - MUAC

3.4.3.1 Total pension costs (in nominal terms in '000 national currency)

Pension costs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pension costs	12.805	13.562	26.367	35.410	37.830	40.067
En-route activity	12.805	13.562	26.367	35.410	37.830	40.067
Terminal activity			-			
Other activities			-			

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

Are there different contribution rates for different staff categories? If yes, how many?	Select

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Employer % contribution rate to this scheme						
Total pension costs in respect of this scheme			-			
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
MUAC does not have a "State" pension scheme.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the

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

Are there different contribution rates for different staff categories? If yes, how many?	Select

<Staff category name>	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies			-			
Employer % contribution rate to this scheme						
Total pension costs in respect of this scheme			-			
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
MUAC does not have a "defined contributions" pension scheme.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

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

3.4.3.3 Assumptions for the occupational "Defined benefits" pension scheme

Does the ANSP assume liability for meeting future obligations for the occupational "Defined benefits" scheme?	Yes
Is the occupational "Defined benefits" pension scheme funded?	Yes

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	163.014	167.049	330.063	197.297	207.720	215.899
Total pension costs in respect of this scheme	12.805	13.562	26.367	35.410	37.830	40.067
- in respect of regular pension costs			-			
- in respect of non-recurring deficit repair			-			
- reported as staff costs (in reporting tables)	12.805	13.562	26.367	35.410	37.830	40.067
- not reported as staff costs (in reporting tables): please use comment box			-			
Actuarial assumptions						
% discount rate						
% projected increase in benefits						
% annual increase in salaries						
% expected return on plan assets						
Net funding surplus / deficit			-			
Number of employees the employer contributes for in this scheme	750	750		750	750	750

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3
MUAC employees are eligible for membership in the EUROCONTROL defined benefit pension scheme. This scheme is the first and unique pillar for the employees. Contributions from the employees and the employer are paid to the EUROCONTROL pension fund. The pension costs reported in this section relates to 2 different elements : the employer contribution (expressed as a percentage of the basic salary -17.5% in 2021) and the tax compensation on pension. Following a decision from the MUAC Member States, this tax compensation on pensions is gradually recognised over RP3 as pension costs in the MUAC costbase. This explains the substantial increase of pension costs as from 2022.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs
One of the main assumptions is the percentage of the employer contribution which is set at 17.5% of the basic salary in 2021. According to actuarial studies, this percentage is expected to increase up to 20% during RP3. Another assumption relating to the tax compensation on pension (accounted on a Pay as You Go basis) is the mortality and taxation pressure in the countries were pensioners reside.

Where, in the Reporting Tables, some occupational "defined benefits" costs (e.g. interest expense related to pensions) are reported in other cost item(s) than staff costs, the cost item(s) should be indicated here below along with corresponding explanations.
Not applicable.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users
Increase of pension age of ATCOs and non ATCO staff. Review of benefits. New HR policy limiting access to permanent contracts of employment.

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

skeyes
DSNA
DFS
ANA LUX
LVNL
Skyguide
MUAC

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

Select number of loans	4

Interest rate assumptions for loans financing the provision of air navigation services
(Amounts in nominal terms in '000 national currency)

Loan #1	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Federal holding investment company loan					
Remaining balance (end of year)	2.500.000	2.510.000		2.520.040	2.530.120	2.540.241
Interest rate %	2,50%	2,50%		2,50%	2,50%	2,50%
Interest amount	62.500	62.750	125.250	63.001	63.253	63.506

Loan #2	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Eurocontrol loan for bridging the pandemic period: principal received in 2020 and last installment 03/22.					
Remaining balance (end of year)	31.304.663	6.260.932		0	0	0
Interest rate %	1,50%	1,50%		1,50%	1,50%	1,50%
Interest amount	469.570	93.914	563.484	-	0	0

Loan #3	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Loans received from the belgian federal state in 2020 and 2021 to face liquidity issue due to the pandemic. The loan will be gradually reimbursed as from 2023.					
Remaining balance (end of year)	20.000.000	130.000.000		130.000.000	87.500.000	45.000.000
Interest rate %	0,00%	0,00%		0,00%	0,00%	0,00%
Interest amount	0	0	-	0	0	0

Loan #4	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description						
Remaining balance (end of year)						
Interest rate %	-	-		-	-	-
Interest amount	0	0	-	0	0	0

Other loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description						
Remaining balance (end of year)						
Average weighted interest rate %	-	-		-	-	-
Interest amount			-			

Total loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total remaining balance	53.804.663	138.770.932		132.520.040	90.030.120	47.540.241
Average weighted interest rate %	0,99%	0,11%		0,05%	0,07%	0,13%
Interest amount	532.070	156.664	688.734	63.001	63.253	63.506

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

Select number of loans	Select

Interest rate assumptions for loans financing the provision of air navigation services
(Amounts in nominal terms in '000 national currency)

Other loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	The debt levels presented below are aggregated between the different loan lines granted to the DGAC, as the DSNA does not raise loans itself. They represent the share of borrowings allocated to the ANSP.					
Remaining balance (end of year)	1.398	2.301		2.301	1.946	1.592
Average weighted interest rate %	0,87%	0,63%		0,59%	0,54%	0,50%
Interest amount	12	14	27	14	10	8

Total loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total remaining balance	1.398	2.301		2.301	1.946	1.592
Average weighted interest rate %	0,87%	0,63%		0,59%	0,54%	0,50%
Interest amount	12	14	27	14	10	8

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

Select number of loans	6

Interest rate assumptions for loans financing the provision of air navigation services
(Amounts in nominal terms in national currency)

Loan #1	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Schuldscheindarlehen (loan against borrower's note/debenture loan under German law) - maturity date in 2023.					
Remaining balance (end of year)	110.000.000	110.000.000		110.000.000	-	-
Interest rate %	2,308%	2,308%		2,308%	2,308%	0,000%
Interest amount	2.538.800	2.538.800	5.077.600	2.538.800	2.538.800	-

Loan #2	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Schuldscheindarlehen (loan against borrower's note/debenture loan under German law) - maturity date in 2020.					
Remaining balance (end of year)	0	-		-	-	-
Interest rate %	3,007%	0,000%		0,000%	0,000%	0,000%
Interest amount	2.631.125	-	2.631.125	-	-	-

Loan #3	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Schuldscheindarlehen (loan against borrower's note/debenture loan under German law) - year of payment 2020.					
Remaining balance (end of year)	99.500.000	99.500.000		99.500.000	99.500.000	99.500.000
Interest rate %	0,000%	0,500%		0,500%	0,500%	0,500%
Interest amount	0	497.500	497.500	497.500	497.500	497.500

Loan #4	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Schuldscheindarlehen (loan against borrower's note/debenture loan under German law) - year of payment 2020.					
Remaining balance (end of year)	132.000.000	132.000.000		132.000.000	132.000.000	132.000.000
Interest rate %	0,000%	0,650%		0,650%	0,650%	0,650%
Interest amount	0	858.000	858.000	858.000	858.000	858.000

Loan #5	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Schuldscheindarlehen (loan against borrower's note/debenture loan under German law) - year of payment 2020.					
Remaining balance (end of year)	268.500.000	268.500.000		268.500.000	268.500.000	268.500.000
Interest rate %	0,000%	0,850%		0,850%	0,850%	0,850%
Interest amount	0	2.282.250	2.282.250	2.282.250	2.282.250	2.282.250

Loan #6	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Geldmarktkreditaufnahmevertrag (money market loan) - maturity date in 2020.					
Remaining balance (end of year)	0	-		-	-	-
Interest rate %	0,350%	0,000%		0,000%	0,000%	0,000%
Interest amount	10.549	-	10.549	-	-	-

Other loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description						
Remaining balance (end of year)						
Average weighted interest rate %	-	-		-	-	-
Interest amount			-			

Total loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total remaining balance	610.000.000	610.000.000		610.000.000	500.000.000	500.000.000
Average weighted interest rate %	0,849%	1,013%		1,013%	1,235%	0,728%
Interest amount	5.180.474	6.176.550	11.357.024	6.176.550	6.176.550	3.637.750

3.4.4 - Interest rate assumptions for loans financing the provision of air navigation services - ANA LUX

Select number of loans	Select

Interest rate assumptions for loans financing the provision of air navigation services
(Amounts in nominal terms in '000 national currency)

Other loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	No loans, financed 100% through equity					
Remaining balance (end of year)						
Average weighted interest rate %	-	-		-	-	-
Interest amount			-			

Total loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total remaining balance	-	-		-	-	-
Average weighted interest rate %	-	-		-	-	-
Interest amount	-	-	-	-	-	-

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

Select number of loans	3

Interest rate assumptions for loans financing the provision of air navigation services (Amounts in nominal terms in '000 national currency)

Loan #1	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Commercial loans BNG (existing loans, fixed interest rates)					
Remaining balance (end of year)	2.600	650				
Interest rate %	4,60%	4,60%		4,60%		
Interest amount	162	53	215	3		

Loan #2	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Treasury banking loans (existing loans, fixed interest rates)					
Remaining balance (end of year)	136.817	145.180		135.565	125.950	116.335
Interest rate %						
Interest amount	709	641	1.350	575	514	452

Loan #3	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Treasury banking 2022-2024 - new loans					
Remaining balance (end of year)				58.820	106.740	153.103
Interest rate %				1,00%	1,00%	1,00%
Interest amount			-	295	828	1.283

Other loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description						
Remaining balance (end of year)						
Average weighted interest rate %	-	-		-	-	-
Interest amount			-			

Total loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total remaining balance	139.417	145.830		194.385	232.690	269.438
Average weighted interest rate %	0,62%	0,48%		0,45%	0,58%	0,64%
Interest amount	871	694	1.565	873	1.342	1.735

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

Select number of loans	3

Interest rate assumptions for loans financing the provision of air navigation services
(Amounts in nominal terms in '000 national currency)

Loan #1	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Loan of 200M CHF by Postfinance					
Remaining balance (end of year)	200.000	-		-	-	-
Interest rate %	2,23%	2,23%				
Interest amount	4.470	3.352	7.822			

Loan #2	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	New loan from CH Government 250M CHF in 2021					
Remaining balance (end of year)	0	250.000		250.000	250.000	250.000
Interest rate %		0,27%		0,27%	0,27%	0,27%
Interest amount		169	169	675	675	675

Loan #3	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	New loan from CH Government 100M CHF in 2022					
Remaining balance (end of year)				100.000	100.000	100.000
Interest rate %				0,27%	0,27%	0,27%
Interest amount			-	270	270	270

Other loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description						
Remaining balance (end of year)						
Average weighted interest rate %	-	-		-	-	-
Interest amount			-			

Total loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total remaining balance	200.000	250.000		350.000	350.000	350.000
Average weighted interest rate %	2,23%	1,41%		0,27%	0,27%	0,27%
Interest amount	4.470	3.521	7.991	945	945	945

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

Select number of loans	4

Interest rate assumptions for loans financing the provision of air navigation services
(Amounts in nominal terms in '000 national currency)

Loan #1	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Bullet loans with KBC contracted in December 2020 for 60 million € up to 31 Dec 2027 at variable rate (IRS Swap Curve + 0.4%)					
Remaining balance (end of year)	60.000	60.000		60.000	60.000	60.000
Interest rate %	0,40%	0,40%		0,40%	0,40%	0,40%
Interest amount	0	240	240	240	240	240

Loan #2	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Loan with KBC contracted in 2017 for 40 million € at variable rate (EURIBOR 1 to 9 months + 0.40%) maturing in December 2025					
Remaining balance (end of year)	25.000	20.000		15.000	10.000	5.000
Interest rate %	0,40%	0,40%		0,40%	0,40%	0,40%
Interest amount	120	100	220	80	60	40

Loan #3	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Loan with BNP contracted in 2017 for 30 million € at variable rates (EURIBOR + 0.40%) maturing in Decmber 2025					
Remaining balance (end of year)	18.750	15.000		11.250	7.500	3.750
Interest rate %	0,40%	0,40%		0,40%	0,40%	0,40%
Interest amount	90	75	165	60	45	30

Loan #4	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description	Loan with KBC contracted in 2014 for 70 million € at variable rate (EURIBOR 1 to 9 months +0.58%) maturing in December 2022					
Remaining balance (end of year)	17.500	8.750		-	-	-
Interest rate %	0,58%	0,58%				
Interest amount	152	102	254			

Other loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Description						
Remaining balance (end of year)						
Average weighted interest rate %	-	-		-	-	-
Interest amount			-			

Total loans	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total remaining balance	121.250	103.750		86.250	77.500	68.750
Average weighted interest rate %	0,30%	0,50%		0,44%	0,45%	0,45%
Interest amount	362	517	879	380	345	310

SECTION 3.4.5: Restructuring costs

3.4.5 - Restructuring costs

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

3.4.5.2 Restructuring costs planned for RP3

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Annexes of relevance to this section

ANNEX H. RESTRUCTURING MEASURES AND COSTS

3.4.5 - Restructuring costs - skeyes

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

Restructuring costs from previous reference periods approved by the European Commission?	Select
If yes, number of charging zones concerned	Select

Restructuring costs from previous reference periods to be recovered in RP3 (nominal terms in '000 national currency)						
Restructuring costs recovery plan from previous RPs	2020D	2021D	2020/2021D	2022D	2023D	2024D

Additional comments

3.4.5.2 Restructuring costs planned for RP3

Restructuring costs foreseen for RP3?	Select
If yes, number of charging zones concerned	1

a) Overall description of the restructuring measures planned for RP3

b) Where applicable, information on how the restructuring measures make use of shared services, ATM data services and/or how the measures contribute to infrastructure rationalisation

b) Detailed information on the restructuring measures planned for RP3

Number of restructuring measures	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by measures ('000 national currency)	-	-	-	-	-	-

c) Detailed information on the restructuring costs by nature by charging zone

Restructuring costs planned for RP3 by nature and by charging zone (nominal terms in '000 national currency)						
Click to select	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-			
of which, pension costs			-			
Other operating costs			-			
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total restructuring costs	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by charging zone ('000 national currency)	-	-	-	-	-	-

Additional comments

3.4.5 - Restructuring costs - DSNA

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

Restructuring costs from previous reference periods approved by the European Commission?	Select
If yes, number of charging zones concerned	Select

Restructuring costs from previous reference periods to be recovered in RP3 (nominal terms in '000 national currency)						
Restructuring costs recovery plan from previous RPs	2020D	2021D	2020/2021D	2022D	2023D	2024D

Additional comments

3.4.5.2 Restructuring costs planned for RP3

Restructuring costs foreseen for RP3?	Select
If yes, number of charging zones concerned	1

a) Overall description of the restructuring measures planned for RP3

b) Where applicable, information on how the restructuring measures make use of shared services, ATM data services and/or how the measures contribute to infrastructure rationalisation

b) Detailed information on the restructuring measures planned for RP3

Number of restructuring measures	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by measures ('000 national currency)	-	-	-	-	-	-

c) Detailed information on the restructuring costs by nature by charging zone

Restructuring costs planned for RP3 by nature and by charging zone (nominal terms in '000 national currency)						
Click to select	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-			
of which, pension costs			-			
Other operating costs			-			
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total restructuring costs	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by charging zone ('000 national currency)	-	-	-	-	-	-

Additional comments

3.4.5 - Restructuring costs - DFS

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

Restructuring costs from previous reference periods approved by the European Commission?	Select
If yes, number of charging zones concerned	Select

Restructuring costs from previous reference periods to be recovered in RP3 (nominal terms in '000 national currency)

Restructuring costs recovery plan from previous RPs	2020D	2021D	2020/2021D	2022D	2023D	2024D

Additional comments

3.4.5.2 Restructuring costs planned for RP3

Restructuring costs foreseen for RP3?	Select
If yes, number of charging zones concerned	1

a) Overall description of the restructuring measures planned for RP3

b) Where applicable, information on how the restructuring measures make use of shared services, ATM data services and/or how the measures contribute to infrastructure rationalisation

b) Detailed information on the restructuring measures planned for RP3

Number of restructuring measures	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by measures ('000 national currency)	-	-	-	-	-	-

c) Detailed information on the restructuring costs by nature by charging zone

Restructuring costs planned for RP3 by nature and by charging zone (nominal terms in '000 national currency)

Click to select	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-			
of which, pension costs			-			
Other operating costs			-			
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total restructuring costs	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by charging zone ('000 national currency)	-	-	-	-	-	-

Additional comments

3.4.5 - Restructuring costs - ANA LUX

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

Restructuring costs from previous reference periods approved by the European Commission?	Select
If yes, number of charging zones concerned	Select

Restructuring costs from previous reference periods to be recovered in RP3 (nominal terms in '000 national currency)

Restructuring costs recovery plan from previous RPs	2020D	2021D	2020/2021D	2022D	2023D	2024D

Additional comments

3.4.5.2 Restructuring costs planned for RP3

Restructuring costs foreseen for RP3?	Select
If yes, number of charging zones concerned	1

a) Overall description of the restructuring measures planned for RP3

b) Where applicable, information on how the restructuring measures make use of shared services, ATM data services and/or how the measures contribute to infrastructure rationalisation

b) Detailed information on the restructuring measures planned for RP3

Number of restructuring measures	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by measures ('000 national currency)	-	-	-	-	-	-

c) Detailed information on the restructuring costs by nature by charging zone

Restructuring costs planned for RP3 by nature and by charging zone (nominal terms in '000 national currency)

Click to select	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-			
of which, pension costs			-			
Other operating costs			-			
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total restructuring costs	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by charging zone ('000 national currency)	-	-	-	-	-	-

Additional comments

3.4.5 - Restructuring costs - LVNL

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

Restructuring costs from previous reference periods approved by the European Commission?	Select
If yes, number of charging zones concerned	Select

Restructuring costs from previous reference periods to be recovered in RP3 (nominal terms in '000 national currency)

Restructuring costs recovery plan from previous RPs	2020D	2021D	2020/2021D	2022D	2023D	2024D

Additional comments

3.4.5.2 Restructuring costs planned for RP3

Restructuring costs foreseen for RP3?	Select
If yes, number of charging zones concerned	1

a) Overall description of the restructuring measures planned for RP3

b) Where applicable, information on how the restructuring measures make use of shared services, ATM data services and/or how the measures contribute to infrastructure rationalisation

b) Detailed information on the restructuring measures planned for RP3

Number of restructuring measures	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by measures ('000 national currency)	-	-	-	-	-	-

c) Detailed information on the restructuring costs by nature by charging zone

Restructuring costs planned for RP3 by nature and by charging zone (nominal terms in '000 national currency)

Click to select	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-			
of which, pension costs			-			
Other operating costs			-			
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total restructuring costs	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by charging zone ('000 national currency)	-	-	-	-	-	-

Additional comments

3.4.5 - Restructuring costs - Skyguide

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

Restructuring costs from previous reference periods approved by the European Commission?	Select
If yes, number of charging zones concerned	Select

Restructuring costs from previous reference periods to be recovered in RP3
(nominal terms in '000 national currency)

Restructuring costs recovery plan from previous RPs	2020D	2021D	2020/2021D	2022D	2023D	2024D

Additional comments

3.4.5.2 Restructuring costs planned for RP3

Restructuring costs foreseen for RP3?	Select
If yes, number of charging zones concerned	1

a) Overall description of the restructuring measures planned for RP3

b) Where applicable, information on how the restructuring measures make use of shared services, ATM data services and/or how the measures contribute to infrastructure rationalisation

b) Detailed information on the restructuring measures planned for RP3

Number of restructuring measures	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by measures ('000 national currency)	-	-	-	-	-	-

c) Detailed information on the restructuring costs by nature by charging zone

Restructuring costs planned for RP3 by nature and by charging zone
(nominal terms in '000 national currency)

Click to select	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-			
of which, pension costs			-			
Other operating costs			-			
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total restructuring costs	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by charging zone ('000 national currency)	-	-	-	-	-	-

Additional comments

3.4.5 - Restructuring costs - MUAC

3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

Restructuring costs from previous reference periods approved by the European Commission?	Select
If yes, number of charging zones concerned	Select

Restructuring costs from previous reference periods to be recovered in RP3 (nominal terms in '000 national currency)

Restructuring costs recovery plan from previous RPs	2020D	2021D	2020/2021D	2022D	2023D	2024D

Additional comments

3.4.5.2 Restructuring costs planned for RP3

Restructuring costs foreseen for RP3?	Select
If yes, number of charging zones concerned	1

a) Overall description of the restructuring measures planned for RP3

b) Where applicable, information on how the restructuring measures make use of shared services, ATM data services and/or how the measures contribute to infrastructure rationalisation

b) Detailed information on the restructuring measures planned for RP3

Number of restructuring measures	Select

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by measures ('000 national currency)	-	-	-	-	-	-

c) Detailed information on the restructuring costs by nature by charging zone

Restructuring costs planned for RP3 by nature and by charging zone (nominal terms in '000 national currency)

Click to select	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-			
of which, pension costs			-			
Other operating costs			-			
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total restructuring costs	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total restructuring costs by charging zone ('000 national currency)	-	-	-	-	-	-

Additional comments

SECTION 3.4.6: Additional determined costs related to measures necessary to achieve the en route capacity targets

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

a) Overall description of the measures necessary to achieve the en-route capacity targets for RP3, which induce additional costs
b) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3

c) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3 by nature by ANSP
d) Demonstration that the deviation from the Union-wide targets is exclusively due to the additional determined costs related to measures necessary to achieve the performance targets in capacity

skeyes
DSNA
DFS
ANA LUX
LVNL
Skyguide
MUAC

Annexes of relevance to this section

-

3.4.6 - Additional determined costs related to measures necessary to achieve the en route capacity targets - Belgium-Luxembourg

Additional costs of measures necessary to achieve the capacity targets for RP3?	Yes
If yes, number of **en route** charging zones concerned	1

a) Overall description of the measures necessary to achieve the en-route capacity targets for RP3, which induce additional costs

skeyes:
To prepare for the expected resumption of air traffic during RP3, skeyes must ensure its ATCO capacity is maintained at appropriate levels. Skeyes has an aging ATCO population, resulting in a large number of ATCOs reaching pre-retirement age during RP3 and RP4. To compensate, additional ATCOs shall be recruited and trained to ensure skeyes operational capacity is retained. Furthermore, skeyes intends to replace its ATM system with a single, integrated and harmonised airspace management system with MUAC and BEL DEF to support the integration of civil and military ATM services and to improve capacity and operational efficiencies.

MUAC:
In 2019, an agreement was closed on new general conditions on employment, which increases ATCO availability in order to mitigate the gap between staff availability and traffic demand.

The PABI project aims to optimize further the planning of daily operations.

b) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3

Number of capacity measures, which induce additional costs	4

Measure #1	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	3.067	4.016	7.083	5.841	5.855	6.238

Description and justification of the additional determined costs of the measure

(skeyes) To prepare for the expected resumption of air traffic during RP3, skeyes must ensure its ATCO capacity is maintained at appropriate levels.
Skeyes has an aging ATCO population, resulting in a large number of ATCOs reaching pre-retirement age during RP3.
To compensate, additional ATCOs shall be recruited and trained to ensure a sustainable capacity.
The amounts supra represent the external cost of initital certification training for new ATCO in order to replace departing ATCO's ; the total over the RP3 period is 25m€ which is 3.2% of skeyes' cost base En route over RP3.

Measure #2	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	0	1.380	1.380	2.010	2.518	3.098

Description and justification of the additional determined costs of the measure

skeyes intends to replace its ATM system with a single, integrated and harmonised airspace management system with MUAC and BEL DEF
to support the integration of civil and military ATM services and to improve capacity and operational efficiencies. The amounts supra represent the cost of external support required for the program NextGen ATM (project management, experts...).

Measure #3	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	2.234	2.900	5.133	2.984	3.042	3.113

Description and justification of the additional determined costs of the measure

(MUAC) **GCE Package** : The measure aims to increase ATCO availability in order to mitigate the gap between staff availability and traffic demand. Key measures of the proposal include: an increase in annual working time for newly recruited ATCO staff; the replacement of stand-by shifts (where staff are off duty but on call) by flex shifts (where the shifts have to be worked within a certain time window); the possibility to contract additional working days for staff currently in post; more flexible working time planning on an annual basis; the possibility to transfer leave days to a lifetime working time account, freeing up additional working days in the short to medium term; the possibility to increase working time with the consent of the ATCO, including extension of the retirement age to 60 years; and an increase in the basic salary scales of O grades by 10.75% over a two-year period.

Measure #4	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	359	494	853	51		

Description and justification of the additional determined costs of the measure

(MUAC) **Post-OPS Analysis and BI (PABI):** the scope of this project consists of enhancing the Post-OPS Analysis process and tooling at MUAC, in order to further optimise the planning of daily operations, and in this context to develop Business Intelligence facilities that not only allows the efficient creation of KPI monitoring and reporting workflows and dashboards, but also allows users to perform data mining in a self-service manner.
The additional insights gained from properly consolidated MUAC performance data will improve the cost-efficiency not only of the ATM operations directly, but also of the ATM system and operational concepts development strategies, thereby securing the stability and long-term sustainability of MUAC services.n accordance with OPS ATFCM requirements timeline, PABI is estimated to provide a slight amount of additional capacity and some CRSTMP delay reduction by avoiding over-regulation, and a better determination of the necessary amount of excess ATCOs to cover the unforeseen.

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	5.659	8.790	14.449	10.886	11.414	12.449

c) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3 by nature by ANSP

Additional costs of measures necessary to achieve the capacity targets for RP3
(nominal terms in '000 national currency)

Belgium-Luxembourg	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-			
of which, pension costs			-			
Other operating costs	3.067	5.396	8.463	7.851	8.372	9.336
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total additional costs of measures	3.067	5.396	8.463	7.851	8.372	9.336

Belgium-Luxembourg	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff	2.293	3.163	5.456	2.984	3.042	3.113
of which, pension costs	183	253	436	239	243	249
Other operating costs	300	231	530	51		
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total additional costs of measures	2.592	3.394	5.986	3.035	3.042	3.113

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	5.659	8.790	14.449	10.886	11.414	12.449

Additional comments
The amounts supra represent the external cost of initital certification training for new ATCO in order to replace departing ATCO's ; the total over the RP3 period is 25m€ which is 3.2% of skeyes' cost base En route over RP3. The additional staff cost contains the salary charge of DISPO (unoperational ATCO). The other operating costs represent the cost of external support for the ATM NextGen program and the initital certification training for new ATCO.

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

Together with the replacement of end of life equipments, the recruitment and training of new ATCO and the ATM next gem are mandatory to safeguard business continuity and capacity over RP3. This is developed more in depth in the annexes E and R.

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

Additional costs of measures necessary to achieve the capacity targets for RP3?	Yes
If yes, number of **en route** charging zones concerned	1

a) Overall description of the measures necessary to achieve the en-route capacity targets for RP3, which induce additional costs

During RP2 the traffic increase and changes in some traffic flows combined with a decrease in operational staff (ATCO in OPS) due to the implementation of cost containment measures during RP1 and RP2 resulted in an increase of en route ATFM delays for DSNA, with a peak of en route average ATFM delay in 2018 (1,82 min/flight, all delay causes included).

DSNA addressed immediatly this issue by implementing short-term measures such as implementing new rostering schemes and enhancing the collaboration with adjacent ANSPs and the Network Manager through the implementation in 2018 and 2019 of rerouting Summer plans in the European core area, lowering the average en route ATFM in 2019 (1,20 min/flight, all delay causes included).

Nevertheless, current staffing and rostering schemes and legacy ATM systems productivity wouldn't enable DSNA to achieve its expected contribution to the FABEC revised RP3 en route capacity targets for 2021 to 2024 (the DSNA reference values computed by the NM) or be ready to accommodate the full traffic recovery in RP4 should the traffic recover as STATFOR scenario 2 traffic forecast has predicted or even at a higher speed or with an increased volatility without implementing during RP3 additional and costly measures. In some French ACCs, traffic ATFM measures have to be implemented as soon as the traffic level reach 80% of 2019 traffic in average (which has already been the case during Summer 2021, for example at Marseille ACC) because of local peak phenomena.

DSNA medium and long-term strategy to address this RP2 staffing issues and avoid future new capacity shortages when traffic will recover is based on a major investment plan aiming at modernizing ATM systems and tools and on a full set of human ressources measures addressing both ATCO shortage and better productivity.

The major drivers to provide additional capacity during RP3 and to prepare traffic recovery in RP4 in France are:

- 1/ The Implementation of new ATM systems enabling major productivity increase (through implementation of full electronic environment, 4D trajectory management, new ATC tools such as MTCD, "What-if solutions", new safety net and HMI...), enhance interoperability and PCP/CP1 compliance while supporting future AAS conops developments.

For DSNA, two major projects have been prioritized ans secured for implementation during RP3 (2022 in Reims and Marseille, 2023 in Paris) and beginning of RP4 (2025 in Brest and Bordeaux), which are coflight (new flight data processing system - FDPS) and 4-Flight (new ATM system). Extensive description of these new ATM systems is given in 2.2 ANSP#2 section (investments 1 & 4) and related investment costs are also provided there.

Implementation of 4-Flight (which includes underlying coflight FDPS) is expected to provide an additional 20 to 25 % capacity at Reims, Paris and Marseille ACCs and an additional 10 to 15% in Brest and Bordeaux ACCs (which have aready implemented full electronic environment and some new ATC tools).

- 2/ The increase of ATCO in OPS for the five DSNA ACCs, which will be the result of ongoing qualification of additional RP2 recruited ATCOs and of maintained recruitment and training of new ab-initio ATCO in RP3 in order to mitigate current staff and capacity shortages at DSNA ACCs but also to prepare for progressive traffic recovery during RP3 and future additional capacity required for RP4.

The detailed costs related to the implementation of additional ATCO in ops and the 2 new ATM systems described above are detailed below.

b) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3

Number of capacity measures, which induce additional costs	3

4-Flight system RP3 investment costs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	9.797.000	15.292.000	25.089.000	24.491.000	33.291.000	41.985.000
Description and justification of the additional determined costs of the measure						
As already mentionned in a) these are the en route investment related costs required in RP3 to ensure proper and timely implementation of new French ATM system 4-Flight at DSNA ACCs as detailed in 2.2 Investments_ANSP#2 chapter of this FABEC draft performance plan						

Coflight system RP3 investment costs	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	8.112.960	11.006.280	19.119.240	15.297.660	19.806.120	23.141.700
Description and justification of the additional determined costs of the measure						
As already mentionned in a) these are the en route investment related costs required in RP3 to ensure proper and timely implementation of coflight (the 4-Flight new FDPS) at DSNA ACCs as detailed in 2.2 Investments_ANSP#2 chapter of this FABEC draft performance plan.						

Additional ATCO in OPS for RP3 and beyond	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	26.550.000	24.804.000	51.354.000	32.557.000	31.726.000	31.323.000
Description and justification of the additional determined costs of the measure						

As already mentionned in a) these are the en route staff costs related to the recruitment and training (during RP3) of additional ATCOs in French ACC required in RP3 to ensure proper and timely staffing and prepare also for additional RP4 capacity provision.

These costs include:

- the yearly staff costs related to additional ATCO in OPS in French ACC (2019 ATCO in OPS as a basis) as presented to the airspace users and the PRB during the consultation meeting:

	ATCO (ICNA)						ATCO (TSEEAC)	
	OPS ATCO ACC+APP	Trainees ATCO ACC+APP	OPS ACC	Trainees ACC	OPS APP	Trainees APP	OPS TWR	Trainees TWR
2019	3017	304	1423	251	1594	53	300	30
2020	3041	295	1453	237	1588	58	300	30
2021	2989	317	1431	252	1558	65	300	30
2022	3060	345	1502	277	1558	68	300	30
2023	3086	390	1505	340	1578	50	300	30
2024	3117	373	1524	327	1592	46	300	30

- the yearly staff costs related to RP3 ATCO recruitments (ab-initio and on the job trainees before qualification) for the French ACCs.

The table below provides the details of the total cost calculation:

	2020	2021	2022	2023	2024	Total RP3	Total RP3 costs for ACC (80%)
Number RP3 ATCO on initial training	303	285	229	164	196	1177	70 620 000 €
Number RP3 ATCO on the job training	51	82	94	127	64	418	33 440 000 €
Number RP3 additional ATCO in OPS	30	8	79	82	101	300	42 900 000 €

RP3 ATCO on initial training cost (75k€)	*18 180 000 €*	*17 100 000 €*	*13 740 000 €*	*9 840 000 €*	*11 760 000 €*
RP3 ATCO on the job training cost (100k€)	*4 080 000 €*	*6 560 000 €*	*7 520 000 €*	*10 160 000 €*	*5 120 000 €*
RP3 additional ATCO in OPS cost (143)	*4 290 000 €*	*1 144 000 €*	*11 297 000 €*	*11 726 000 €*	*14 443 000 €*

RP3 additional ATCO total cost	**26 550 000 €**	**24 804 000 €**	**32 557 000 €**	**31 726 000 €**	**31 323 000 €**	**146 960 000 €**

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	44.459.960	51.102.280	95.562.240	72.345.660	84.823.120	96.449.700

c) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3 by nature by ANSP

Additional costs of measures necessary to achieve the capacity targets for RP3
(nominal terms in '000 national currency)

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff	17.728.365	16.562.500	34.290.865	21.739.450	21.184.562	20.915.465
of which, pension costs						
Other operating costs	18.619.920	14.423.066	33.042.986	17.291.715	17.104.917	16.589.326
Depreciation	4.922.028	15.053.778	19.975.806	25.995.617	37.523.715	48.859.788
Cost of capital	3.189.646	5.062.936	8.252.582	7.318.877	9.009.927	10.085.121
Exceptional items			-			
Total additional costs of measures	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	44.459.960	51.102.280	95.562.240	72.345.660	84.823.120	96.449.700

Additional comments

The costs are allocated to the different cost elements, taking into account the following elements:

- 4-flight and Coflight investment costs include depreciation, cost of capital and other operating costs directly related to these investments;

- additional ATCO RP3 costs are broken down between staff costs and associated operating costs.

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

These combined cost amount to during 349 M€ for the whole RP3 period. If those cost were not spent to enable proper ATCO hiring training and qualification and implement the main two new ATM systems, DSNA would not be in a position to address current staffing and capacity issues and shortages and could not achieve revised RP3 en route capacity targets.

In such a case, without the additional costs related to the implementation of the capacity measures described above, the overall RP3 DSNA en route costs will be lower than those requested in average to achieve en route cost-efficiency targets for France.

Additional demonstration material is provided in the French Annex R of this revised RP3 FABEC draft performance plan.

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

Additional costs of measures necessary to achieve the capacity targets for RP3?	Yes
If yes, number of **en route** charging zones concerned	1

German charging zone

a) Overall description of the measures necessary to achieve the en-route capacity targets for RP3, which induce additional costs

MUAC: GCE packages, post-ops analysis and business intelligence initiatives
DFS: Increase of ATCOs (difference between e.g. retiring ATCOs and additional ATCOs)

b) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3

Number of capacity measures, which induce additional costs	3

Measure #1	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	2.987	4.102	7.089	4.244	2.071	1.009
Description and justification of the additional determined costs of the measure						
MUAC: GCE Package : The measure aims to increase ATCO availability in order to mitigate the gap between staff availability and traffic demand. Key measures of the proposal include: an increase in annual working time for newly recruited ATCO staff; the replacement of stand-by shifts (where staff are off duty but on call) by flex shifts (where the shifts have to be worked within a certain time window); the possibility to contract additional working days for staff currently in post; more flexible working time planning on an annual basis; the possibility to transfer leave days to a lifetime working time account, freeing up additional working days in the short to medium term; the possibility to increase working time with the consent of the ATCO, including extension of the retirement age to 60 years; and an increase in the basic salary scales of O grades by 10.75% over a two-year period.						

Measure #2	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	480	699	1.179	72		
Description and justification of the additional determined costs of the measure						
MUAC: Post-OPS Analysis and BI (PABI): the scope of this project consists of enhancing the Post-OPS Analysis process and tooling at MUAC, in order to further optimise the planning of daily operations, and in this context to develop Business Intelligence facilities that not only allows the efficient creation of KPI monitoring and reporting workflows and dashboards, but also allows users to perform data mining in a self-service manner. The additional insights gained from properly consolidated MUAC performance data will improve the cost-efficiency not only of the ATM operations directly, but also of the ATM system and operational concepts development strategies, thereby securing the stability and long-term sustainability of MUAC services.n accordance with OPS ATFCM requirements timeline, PABI is estimated to provide a slight amount of additional capacity and some CRSTMP delay reduction by avoiding over-regulation, and a better determination of the necessary amount of excess ATCOs to cover the unforeseen.						

Measure #3	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)			-	8.186	10.873	12.348
Description and justification of the additional determined costs of the measure						
DFS: Compared to the actual number of ATCOs by the end of 2019, there will be an increase of 168 FTE between 2022 and 2024 to contribute to the capacity target achievements, corresponding to a staff cost increase of 31,4 Mio. € (incl. 2% salary increase).						

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	3.467	4.801	8.268	12.502	12.944	13.357

c) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3 by nature by ANSP

Additional costs of measures necessary to achieve the capacity targets for RP3 (nominal terms in '000 national currency)

MUAC

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff	2.987	4.102	7.089	4.244	2.071	1.009
of which, pension costs	239	328	567	340	166	81
Other operating costs	480	699	1.179	72	0	0
Depreciation			-			
Cost of capital			-			
Exceptional items			-			
Total additional costs of measures	3.467	4.801	8.268	4.316	2.071	1.009

DFS

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff			-	8.186	10.873	12.348
of which, pension costs			-			
Other operating costs			-			
Depreciation			-			
Cost of capital			-			
Exceptional items			-			

Total additional costs of measures	-	-	-	8.186	10.873	12.348

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	3.467	4.801	8.268	12.502	12.944	13.357

Additional comments

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

No deviation from the EU-wide target.

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

Additional costs of measures necessary to achieve the capacity targets for RP3?	Yes
If yes, number of **en route** charging zones concerned	1

Netherlands charging zone

a) Overall description of the measures necessary to achieve the en-route capacity targets for RP3, which induce additional costs

MUAC: GCE packages, post-ops analysis and business intelligence initiatives
LVNL: Various initiatives in or affecting en route zone to address ATFM delays at Schiphol airport

Further details on all measures are provided in Annex R.

b) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3

Number of capacity measures, which induce additional costs	3

Measure #1	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	1.511	1.708	3.219	1.779	1.779	1.826
Description and justification of the additional determined costs of the measure						
MUAC: GCE Package : The measure aims to increase ATCO availability in order to mitigate the gap between staff availability and traffic demand. Key measures of the proposal include: an increase in annual working time for newly recruited ATCO staff; the replacement of stand-by shifts (where staff are off duty but on call) by flex shifts (where the shifts have to be worked within a certain time window); the possibility to contract additional working days for staff currently in post; more flexible working time planning on an annual basis; the possibility to transfer leave days to a lifetime working time account, freeing up additional working days in the short to medium term; the possibility to increase working time with the consent of the ATCO, including extension of the retirement age to 60 years; and an increase in the basic salary scales of O grades by 10.75% over a two-year period.						

Measure #2	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	243	291	534	30		
Description and justification of the additional determined costs of the measure						
MUAC: Post-OPS Analysis and BI (PABI): the scope of this project consists of enhancing the Post-OPS Analysis process and tooling at MUAC, in order to further optimise the planning of daily operations, and in this context to develop Business Intelligence facilities that not only allows the efficient creation of KPI monitoring and reporting workflows and dashboards, but also allows users to perform data mining in a self-service manner. The additional insights gained from properly consolidated MUAC performance data will improve the cost-efficiency not only of the ATM operations directly, but also of the ATM system and operational concepts development strategies, thereby securing the stability and long-term sustainability of MUAC services.n accordance with OPS ATFCM requirements timeline, PABI is estimated to provide a slight amount of additional capacity and some CRSTMP delay reduction by avoiding over-regulation, and a better determination of the necessary amount of excess ATCOs to cover the unforeseen.						

Measure #3	2020D	2021D	2020/2021D	2022D	2023D	2024D
Associated additional costs (nominal terms in '000 national currency)	156	171	327	903	1.476	1.663
Description and justification of the additional determined costs of the measure						
LVNL: Various initiatives to address ATFM delays at Schiphol airport: This measure covers the initiatives AMAN/XMAN, capacity management and peak hour capacity, which are aimed to help reduce the high level of ATFM delays at Schiphol airport. Although the majority of delays is caused by factors outside the direct influence of the ANSP (eg weather), these initiatives will help reduce the impact of such factors. Whereas the problems are experienced at the airport, part of the solutions are implemented in the en route zone. Given the importance of Schiphol as a major airport node in the european network, addressing this issue is considered imprtant by the Netherlands.						

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	1.909	2.171	4.080	2.712	3.255	3.489

c) Detailed information on the additional costs of measures necessary to achieve the capacity targets for RP3 by nature by ANSP

Additional costs of measures necessary to achieve the capacity targets for RP3 (nominal terms in '000 national currency)

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Staff	1.511	1.708	3.219	1.779	1.779	1.826
of which, pension costs			-			
Other operating costs	399	437	836	165	250	319
Depreciation		25	25	768	1.226	1.344
Cost of capital			-			
Exceptional items			-			
Total additional costs of measures	-	-	-	-	-	-

	2020D	2021D	2020/2021D	2022D	2023D	2024D
Total additional costs of measures ('000 national currency)	1.909	2.171	4.080	2.712	3.255	3.489

Additional comments

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

See Annex R for details.

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

Additional costs of measures necessary to achieve the capacity targets for RP3?	No

SECTION 3.5: ADDITIONAL KPIS / TARGETS

3.5 Additional KPIs / Targets

Annexes of relevance to this section

ANNEX J. OPTIONAL KPIs AND TARGETS

SECTION 3.6: DESCRIPTION OF KPAS INTERDEPENDENCIES AND TRADE-OFFS INCLUDING THE ASSUMPTIONS USED TO ASSESS THOSE TRADE-OFFS

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

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

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

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

a) Do the measures to reach the targets in the different KPAs require changes in the ANSP functional system that have safety implications? If yes, which mitigation measures are put in place?

Other KPAs may require changes directly impacting the ANSP functional system. Some changes have already been identified e.g. new procedures for greener routes or modernization of systems to comply with Common Project 1 (CP1) requirements (KPA environment), additional changes may be identified at a later stage.
Improving and maintaining a mature SMS (for example human resources / staff requirements) does also have an indirect impact on other KPAs (especially KPA cost efficiency). An important effort is required to train, maintain and operate experience feedback mechanisms (investigators, local and corporate safety committees, automatic loss of separation detection tools, improved runway alerting systems like ASMGCS) as well as functional system changes' analysis (development of safety barrier models etc.).
In all cases, changes are subject to Commission Implementing Regulation (EU) 2017/373 including its detailed requirements for changes to the functional system.
On the ANSPs level, the current safety management processes requested by aforementioned Common Requirements do ensure that safety levels are not compromised when implementing airspace changes or changes to the ATM/ANS functional system. Changes to the ATM/ANS functional system could be required to reach the targets in the different KPAs. A mitigation layer exists as these changes will require approval from the Competent Authorities. Furthermore, changes might also be necessary on the organisational level (i.e. safety training or safety culture initiatives).
On the Competent Authority level, the changes to the ANSP functional system are closely supervised. The precise changes' scope as well as interfaces are challenged during this process to ensure that all essential information is available to avoid any unacceptable safety implications right from the start of the change management procedure. The combination of changes due to measures to reach the targets in the different KPAs may not have any negative safety implication and overall safety should improve in line with the safety targets. Furthermore, change management procedures and any change thereto require prior approval by the Competent Authority. These procedures are also inspected by EASA in the frame of the ongoing standardisation (STD) visits. Besides, the Competent Authority oversees the Safety Management requirements covered by Commission Implementing Regulation (EU) 2017/373 Part.ATM/ANS and Part.ATS specifically. That ensures a high standard of safety performance management.

b) What are the main assumptions used to assess the interdependencies between safety and other KPAs?

Safety constitutes the highest priority and its attainment cannot be compromised by adverse interdependencies with other key performance areas. Thus, it is always part of any other KPA's consideration. The achievement of an acceptable level of safety has the highest priority. Safety will naturally be balanced with other strong requirements linked to environment, production pressure and finances. In all change paths undertaken, this balance is addressed and ensured to guarantee that this balance stays acceptable. Sometimes this leads to a non-acceptance of change proposals, based on one of these requirements. FABEC ANSPs have a safety target for their operations, that, if quantifiable, helps to establish a bottom line for safety.
On the Competent Authority level, the mitigation measures described in a) address the assumptions used to assess the interdependencies between safety and other KPAs.

c) What metrics, other than those indicators described in the Regulation, are you monitoring during RP3 to ensure targets in the KPAs of capacity , environment, and cost-efficiency are not degrading safety?

FABEC ANSPs have defined own (K)PIs to monitor their performance by means of other ad-hoc and flexible indicators than those described in Commission Implementing Regulation (EU) 2019/317. These are also crossing the KPAs to highlight the interface and interdependency between safety and other KPAs.
FABEC ANSPs have a dashboard including safety data as well as lagging and leading indicators. For instance: there is an indicator that monitors the number of runway crossings at a certain crossing to ensure achieving the safety objective(s). These indicators could typically indicate production pressure. Similarly, there are parameters for the driving direction of runway inspections, separation on final, etc. Besides, there is a common FABEC dashboard which is kept up-to-date by the SPM working group reporting to the SC-SAF. A yearly aggregation of SMI, RI and EoSM results is done under the leadership of the DSNA and analysed both by SPM and SC-SAF. The publication on a website is foreseen in the near future.
Moreover, FABEC ANSPs also hold performance board meetings to monitor indicators relevant to their Integrated Safety Management System (Safety, Security, Quality, Environment). Indicators, issues and possible trade-offs are discussed, explained and sorted out by board members under the leadership of the ANSPs' management.
On the Competent Authority level, the Safety Management System's components as described in Commission Implementing Regulation (EU) 2017/373, Part-ATS, ATS.OR.200 are subject to the ongoing oversight. These are: Safety policy and objectives, safety risk management, safety assurance and safety promotion.

d) Do targets allow trade-offs in operational decision making to managing resource shortfalls in order to preserve safety performance? Do targets restrict the release of staff for safety activities, such as training?

In terms of resources normally the operational staff is the bottleneck. Of course, the acceptable safety performance is priority 1, second is safety training, third is the change management of changes to the functional ATM system(s). No non-safety target will be able to restrict safety or safety activities.
Operational safety trade-offs (day to day operations at unit level) are very different in nature and content to safety performance trade-offs at organisational level. Operational safety is the main driver but consequences of corporate decision making is also tracked and monitored. Specific processes are required to manage the operational HR's needs that must be maintained independent of the different size of FABEC ANSPs. Furthermore, budget issues are scrutinized because of civil service specific norms and rules.

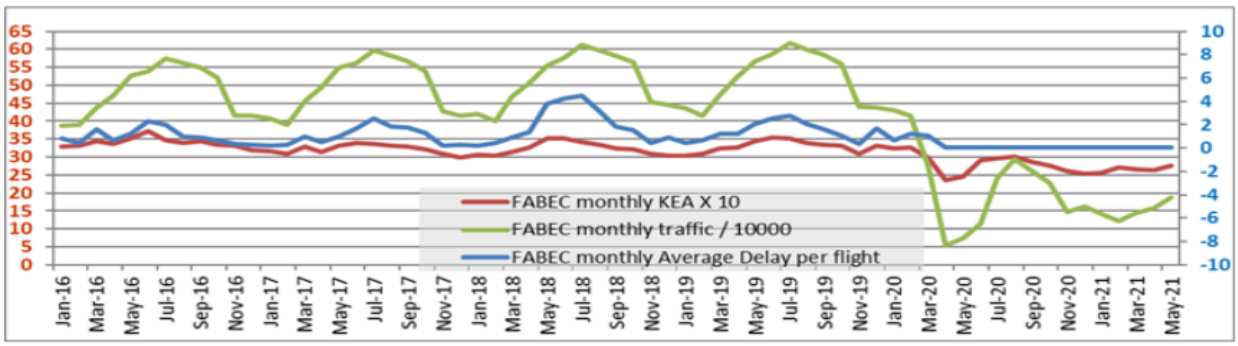
e) Have the States reviewed the ANSP financial and personnel resources that are needed to support safe ATC service provision through safety promotion, safety improvement, safety assurance and safety risk management after changes introduced to achieve targets in other KPAs? Please, explain.

On the ANSPs level, the seven FABEC ANSPs have committed themselves by declaring to have sufficient resources to perform the required safety activities in their day-to-day operations. Most FABEC ANPSs are state-owned and hence these FABEC states oversee the financial and personnel plan to ensure all necessary activities are carried out. The non-state-owned ANSPs have to perform this review by alternative means.
On the Competent Authority level, the Safety Management System's components as described in Commission Implementing Regulation (EU) 2017/373, Part-ATS, ATS.OR.200 are subject to the ongoing oversight. These are: Safety policy and objectives, safety risk management, safety assurance and safety promotion.
Besides, the Management System requirements for ATS providers laid down in Commission Implementing Regulation (EU) 2017/373 Part.ATM/ANS and Part.PERS are strictly overseen by the Competent Authority. These include, but are not limited to, the following aspects: providing appropriate human and financial resources by the senior management, ensuring sufficient resources allocated to the compliance monitoring function and safety manager function, allocation of appropriate resources to achieve the planned safety performance by the safety review board, appropriate resources covered in the Stress Management and Fatigue Management policies. Apart from this, the Competent Authority supervises the annual plan, the resulting annual report and the (5 years) business plan to ensure that financial and personnel resources are dealt with proportionally.
Furthermore, the mitigation measures described in a) address the assumptions used to assess the interdependencies between safety and other KPAs.

3.6.2 - Interdependencies and trade-offs between capacity and environment

Following traffic increases, the FABEC KEA indicator increased between 2014 and 2016. From 2017 onwards the KEA performance has stabilised as a balance has occurred between continued strong traffic growth and the introduction of operational changes such as FRA, but this may also be related to a change in the KEA calculation method. In 2020 KEA has decreased with the massive drop of traffic as from the ourbreak of the COVID-19 pandemic.

KEA achievements are clearly influenced by traffic level and volatility (the yearly profile is clearly influenced by seasonality and number of flights). ATCOs can offer more direct routing with low traffic and facing no capacity issues. Nevertheless, with the capacity and staffing issues incurred by FABEC ANSPs in the core area, delays increased significantly during RP2, deteriorating flight efficiency. The graph provided here under show the relationship between traffic and delay increases and KEA deterioration :



In addition NM summer initiatives introduced as from 2018 summer introduced massive rerouting which have impacted FABEC flight efficiency in order to mitigate capacity issues. As stakeholders put priority on reducing delays, this comes at a cost to environmental performance.

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

As it has been described in chapter 3.3.1, main capacity improvements during RP3 and following RP4 will be provided through measures such as:

- Implementation new ATM systems or upgrades of legacy systems enabling new concepts of operations or introducing new ATC tools (safety nets, stripless, DLS, 4D trajectory, MTCD, sector less ATM, new HMI etc.) such as 4-FLIGHT, ICAS or S-ATM;

- ATCO hiring plans;

- More flexible rostering and new working conditions for ATCO.

All these measures have an impact on the costs bases of ANSP: on staff costs for additional recruitments or social agreements, on depreciation costs and costs of capital regarding new investments.

Individual ANSPs' detailed interdependencies between cost-efficiency and capacity are addressed in chapter 3.4 and in Annex R & S of this FABEC performance plan.

3.6.4 - Other interdependencies and trade-offs

Regarding Environment performance, capacity is not the only performance area influencing KEA achievement; many other factors, some of them out of the full scope of responsability of ANSPs, can impact a good flight efficiency.

Among the main factors can be listed:

- Further implementation of FUA in the airspaces most affected by military activities is expected to bring a certain improvement of flight efficiency. However, the current ERNIP edition includes only a few project (out of around 300) focusing on FUA improvement. In addition, benefits from FUA implementation will only be significantly perceivable if the level of military activity/training will remain unchanged in the years to come. Increase of military activity has an impact on flight efficiency. Nevertheless, FABEC has set up a FUA harmonization and implementation initiative with its ANSPs through a permanent joint CIV-MIL task-force.

- Weather has been becoming more extreme and unpredictable; and so has its impact on air traffic (to reflect the real situation the TMA cylinder should be extended from 40NM to 200NM, therefore excluding the constraints set for arrival and departure from the calculation of en-route flight efficiency).

- Structure of the traffic: more overflights automatically means a better HFE. FABEC area, however, contains the busiest European airports (FRA, CDG, AMS), and Heathrow in close proximity.

- In contrast to the aim to minimise emissions, Airspace users are not obliged to fly the shortest route. One example of a reason why they might not do this is when longer but cheaper route is available due to different unit rates across Europe. Neither are they obliged to provide a reason for not flying the shortest route. In addition the new En Route charging calculation according to actual flown route could have an impact on Airspace users choice regarding routes, which will influence flight-efficiency in a magnitude which is still unknown.
- The NM and the ANSPs have optimized their operations with respect to rolling UUP and Procedure 3, bringing more flexibility and more options for AOs to fly shorter routes. Unfortunately, the major part of AOs are not able to seize these opportunities because they file their flight plans more than 6-7 hours in advance. As a consequence, when a TRA is released only 3 hours in advance, they are not able to update their flight plans. As long as the flown track follows the flight plan trajectory, this lack of AOs' reactivity has a negative impact on flight efficiency and potentially on capacity (for instance if several flight plans are filed in a region with a capacity bottleneck whereas if these flight plans were updated, the corresponding flights would be rerouted outside this area).

More in general, we note that the performance scheme does not cover all KPAs and indicators that are relevant to ANS performance, and indeed to air transport as a whole. Performance areas such as security, sustainability, business continuity, etc are also important, and activities undertaken to address performance in these areas can affect performance in relation to the KPIs and targets included in this plan, e.g. improving security will come at a cost. Similarly, within the KPAs of safety, capacity, environment and cost efficiency there are (both local and European) issues or priorities that require action even without target setting - compare the PIs included in the performance and charging regulation. As an example, it may be necessary to invest in detecting and/or preventing runway incursions or airspace infringements. This will also affect cost efficiency but it will not contribute to meeting any of the targets in this plan.

SECTION 4: CROSS-BORDER INITIATIVES AND SESAR IMPLEMENTATION

4.1 - Cross-border initiatives and synergies

4.1.1 - Planned or implemented cross-border initiatives at the level of ANSPs

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

4.2 - Deployment of SESAR Common Projects

4.3 - Change management

a) Belgium

b) France

c) Germany

d) Luxembourg

e) Netherlands

f) Switzerland

Annexes of relevance to this section

ANNEX N. CROSS-BORDER INITIATIVES

4.1 - Cross-border initiatives and synergies

4.1.1 - Planned or implemented cross-border initiatives at the level of ANSPs

Number of cross-border initiatives	10

Note: menu will only allow selection of a maximum of 10 initiatives, however, 15 initiatives are listed below.

Initiative #1	
Name	iCAS deployment collaboration
Description	DFS and LVNL develop and deploy common iCAS system. The German and Dutch Air Navigation Service Providers DFS and LVNL have signed contracts for the development and commissioning of the air traffic management system iCAS (iTEC Center Automation System) at the control centers in Germany and at the Amsterdam center in the Netherlands. iTEC is a highly advanced air traffic management system based on 4-dimensional trajectory-based flight management that provides major savings in terms of time and fuel, resulting in a reduction of both CO2 emissions and costs for airlines, in addition to increasing the total capacity of the system.
Expected performance benefits	SAF+ CAP+ CEF+ ENV+

Initiative #2	
Name	Collaboration for Flight Object Interoperability (FO IOP)
Description	Maastricht Upper Area Control Centre (MUAC), DFS and LVNL will jointly develop components that will enable interoperability between their respective Air Traffic Management systems and help deliver a Single European Sky.
Expected performance benefits	CAP+ CEF+

Initiative #3	
Name	DSNA, ENAV & Skyguide partners to deliver Coflight Cloud Service (CCS), the first ADSP (ATM Data Service Provider)
Description	The aim of the program is to implement a Flight data processing service and all related support services for testing, training, operational and contingency purpose. The Flight Data Processing System offered remotely "as a service", to interconnect within an innovative Service Oriented Architecture like Skyguide Virtual Center. This advanced technology and architectural interface is implemented jointly by DSNA, ENAV and skyguide. Coflight Cloud Services fosters interoperability required between the Europeans ANSPs, particularly in the FABEC while enabling consolidation of ATM systems in FABEC in an open architecture framework.
Expected performance benefits	SAF+ CAP+ CEF+ ENV+

Initiative #4	
Name	Dynamic Cross-border airspace shared by DSNA and skyguide
Description	Implementation of a French/Swiss cross-border airspace at Geneva Airport. Dependent on the RWY in use Swiss and French controllers operate a dynamically adapted cross border airspace.
Expected performance benefits	CEF+ ENV+

Initiative #5	
Name	The 14 ACCs of FABEC are internally benchmarked with the focus on sector level capacity
Description	The study explorers factors influencing capacity provision at all 14 FABEC ACCs. In contrast to available benchmark reports this is done on a unusual detailed level and unusual large data set. Local supervisors, ATCOs and ATFM experts along with FABEC performance experts analyse the operational environment, the technical environment as well as staff planning routines to provide a deeper understanding of performance differences and to identify and exchange best practices.
Expected performance benefits	CAP+

Initiative #6	
Name	Framework for Cross-Border Business Continuity / Contingency
Description	Establish the appropriate framework at FABEC level supporting the development of cross-border business continuity or contingency procedures. FABEC ANSPs will check the requirements to support each other with bilateral arrangements in case of outages of an ACC (e.g. frequency outage, power failure, etc.). Some procedures are already in place. Langen ACC can deliver/ take over traffic at the border directly to/ from Liège Approach in case of an outage at Brussels ACC. The same is done with DSNA and Charleroi Approach.
Expected performance benefits	SAF+ CAP+ CEF+ ENV+

Initiative #7	
Name	Harmonisation of regulator framework for unmanned aircraft systems
Description	Initiative to harmonise separation standards to unmanned aircraft systems (UAS/ drones). In the framework of the initiative any kind of factors are analysed that may impair safety and operational performance. The objective is to avoid procedure diversification within FABEC and prepare a consolidated regulatory approach.
Expected performance benefits	CEF+

Initiative #8	
Name	RAD Optimisation Workshops
Description	The Route Availability Document (RAD) is a common reference document containing the policies, procedures and description for route and traffic orientation. The RAD is part of the European Route Network Improvement Plan (ERNIP). It also includes route network and free route airspace utilisation rules and availability. The RAD is also an Air Traffic Flow and Capacity Management (ATFCM) tool that is designed as a sole-source flight-planning document, which integrates both structural and ATFCM requirements, geographically and vertically. FABEC's CRM group organises regular meetings to optimise and harmonise the documents. Airspace users, NM representatives and FABEC's RAD coordinators optimise and harmonise RAD restrictions and increase understanding on users side. During the second half of 2021 a 'Dynamic RAD Progress' trial will take place with, amongst others, DSNA and Skyguide.
Expected performance benefits	CAP+ ENV+

Initiative #9	
Name	Joint States/ ANSPs FUA Task Force
Description	The Task Force of State and ANSP experts, referred to as the joint FUA Task Force (JTF), supports the work of the Airspace Committee in developing an harmonised application of the ASM/FUA concepts within FABEC and in providing guidance to FABEC ANSPs on an harmonised application of FUA Level 2 and Level 3. The tool sub-group is focussing on the usage of available tools. The JTF is established with the general objectives of providing ASM/ FUA expertise to the AC and performing tasks for the AC in the area of ASM/FUA, with the end goal to develop proposals for the harmonisation of the application of ASM/ FUA concept at all three levels, in order to enhance airspace utilisation and contribute to performance and network improvements in particular in the FABEC core area and in cross-border areas of the FABEC airspace.
Expected performance benefits	CAP+ ENV+

Initiative #10	
Name	FABEC/Network Manager Airspace Design Coordination Group (FABEC/NM ADCG)
Description	For the mid-term, the NM Action Plan aims to tackle existing bottlenecks, address future capacity, and flight efficiency challenges, with a renewed airspace structure, in particular for the FABEC. The Airspace Design Coordination Group (ADCG) has been set up with the objective to make the link between the FABEC States and ANSPs bodies/structures (AC, SC OPS and ODG) and the NM RNDSG in charge of conducting the airspace study, on a seamless approach basis regardless of national borders. The new airspace structure will address current and future structural airspace bottlenecks and will include the new airspace requirements, which had to been declared by the States no later than May 2019. The implementation plan was postponed several times due to the COVID crisis but all potential projects are now included in the 'Airspace Catalogue', as annex to ERNIP part 2, even though with a status 'proposed'.
Expected performance benefits	CAP+ ENV+

Initiative #11	
Name	The Cooperative Optimisation of Boundaries, Routes and Airspace (COBRA)
Description	The two upper area control centres in Karlsruhe (DFS) and Maastricht (Eurocontrol) have launched an initiative to optimise the transfer of flights at the boundary of their areas of responsibility. The project is developing measures in the Central, East and West modules for the adjacent sectors along the geographical borders between Germany, Belgium, Luxembourg and France. The objective of the planned modifications is to reduce the complexity of air traffic in these airspaces for controllers. This will in turn optimise workflows, which will increase safety and airspace capacity as well as shorten the routes.
Expected performance benefits	SAF+ CAP+ ENV+

Initiative #12	
Name	New German-Swiss interface
Description	a set of permanent new procedures will improve the interface between Germany and Switzerland. Airspace users can remain at fuel-efficient cruising heights for longer, reach higher altitudes earlier across international boundaries and have more shortened routes available.
Expected performance benefits	CAP+ ENV+

Initiative #13	
Name	Extended Arrival Management (XMAN)
Description	With the need to focus on activities which are directly answering current operational needs and the heavy constraints which the still ongoing COVID-19 crisis imposes on all ANSPs, FABEC ANSPs were forced to re-prioritise their FABEC XMAN Activities. As it remains an important initiative for when traffic recovers, most ANSPs continue with implementation as planned or with minor postponement. The maximum benefit for Airlines is therefore still expected to be substantial.
Expected performance benefits	CAP+ ENV+ CEF+

Initiative #14

Name	Free Route Airspace (FRA)
Description	The project work on Direct Routings and Free Route is in a rolling status with a yearly update of the implementation report and implementation plan. The four involved FABEC ANSPs (MUAC, DFS, DSNA and Skyguide) will have FRA 24h by end 2025. Additional FRA improvements are also planned with several cross border operations for e.g. Karlsruhe/Munich/Zurich, Karlsruhe/MUAC, Karlsruhe/Vienna and Geneva/Zurich.
Expected performance benefits	CAP+ ENV+

Initiative #15	
Name	Preparing for Dutch Airspace Redesign
Description	The essence of the redesign programme is that closer collaboration between civil and military aviation will allow for more efficient use of airspace capacity. This will result in shorter ATS routes, and in shorter routes to and from airports, thus reducing fuel consumption as well as CO2 and airborn nitrogen deposits. In addition, faster climbing and descending aircrafts will also reduce noise impact. The main elements of the redesigned Dutch airspace includes expansion of the existing military training zone in the northern part of the Netherlands which will allow for the closure of the existing training area in the south-east. The area that will thus become available can be adapted for civil air traffic. The northern zone will enable efficient training with the new generation of fighter aircraft, such as the F-35. The aim is to incorporate this training areainto a cross-border Dutch-German training zone. A feasibility study for a cross-border training area is being carried out in cooperation with the German organisations DFS, Luftwaffe, Ministry of Transport and Ministry of Defence. The study phase will be followed by the initiation of the implementation phase, which will continue beyond RP3.
Expected performance benefits	CAP+ ENV+

Additional comments
FABEC States are focusing their work in order to ensure that FABEC airspace management aims at supporting both the performance of operations within FABEC airspace, in particular defined RP3 targets, and the Military Mission Effectiveness achievement. The functional airspace block worked as facilitator for not just the abovementioned larger undertakings but also to many more smaller initiatives. Many initiatives are born when the CEOs, OPS directors, technical directors, the Head of ACC group or performance experts plan jointly future performance in their regular meetings. Studies, tests and deployment then, usually starts with one or two collaborating ANSPs and if successful are joined by the FABEC partners. FABEC offers a more comprehensive picture on Operational planning on this site: https://www.fabec.eu/opmap/

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

Details of synergies in terms of common infrastructure and common procurement
Generally speaking, it has to be noted that the financial impact of such common procurement or common infrastructure is hard to determine as soon as an alliance starts to act. Practically, on a yearly basis, FABEC SC TECH SYS collects the investment plans for CNS equipment of the FABEC partners in order to investigate possibilities for a common procurement. This already resulted in cooperation between FABEC partners on many technical projects and investment synergies are achieved. Such technical synergies are listed in chapter 4.1.1 above.

4.2.2 - Common Project One (CP1)

a) Belgium

CP1 ATM Functionality (CP1-AF) / Sub functionality (CP1-s-AF)	Recent and expected progress
CP1-AF1 - Extended AMAN and Integrated AMAN/DMAN in High-Density TMAs	
CP1-s-AF1.1 AMAN extended to en-route airspace	
Brussels Airport	Ref. MPL3 Objectives ATC15.1 & ATC15.2: The existing basic AMAN will be upgraded/replaced during the midlife upgrade of the ATM system (planned in 2024) in order to prepare extended AMAN operations. The information exchange and bilateral working arrangements with adjacent centres are discussed in the context of the FABEC XMAN project.
CP1-s-AF1.2 AMAN/DMAN Integration	
Brussels Airport	n/a
CP1-AF2 - Airport Integration and Throughput	
CP1-s-AF2.1 DMAN synchronised with predeparture sequencing	
Brussels Airport	DMAN synchronised with predeparture sequencing is already in operational use for several years. Ref. MPL3 Objective AOP05: Airport CDM has been implemented in 2008 and extended to cater for adverse conditions in 2013. Electronic Flight Strips are already in use since the early 2000s.
CP1-s-AF2.2.1 Initial airport operations plan (iAOP)	
Brussels Airport	Ref. MPL3 Objective AOP11: Implementation of initial AOP is achieved via a dedicated CINEA funded project (joinly with Brussels Airport Company). In the first half of 2021, updates were performed to the operational exchange of flight and MET data, and thereby ensuring full compliancy with the CP1 requirements for ANSPs.
CP1-s-AF2.2.2 Airport operations plan (AOP)	
Brussels Airport	updates od iAOP were performed during the first half of 2021, ensuring full compliancy with CP1 requirements
CP1-s-AF2.3 Airport safety nets	
Brussels Airport	Ref. MPL3 Objective AOP11 (as well as AOP04.1 & AOP04.2): A-SMGCS Levels 1 & 2 and enhanced safety nets are fully implemented since 2016.
CP1-AF3 - Flexible Airspace Management and Free Route Airspace	
CP1-s-AF3.1 Airspace management and advanced flexible use of airspace	Ref. MPL3 Objectives AOM19.1 & AOM19.2 & AOM19.3 & AOM19.4: - LARA tool implemented and used to introduce civil booking since 07 March 2013. - Improvements to planning and allocation of airspace booking are ongoing. - Implementation of ASM Management of Real-Time Airspace Data is ongoing. - Implementation of full Rolling ASM/ATFCM Process and ASM Information Sharing is ongoing. - Management of Pre-defined Airspace Configurations: A number of pre-defined Airspace configurations (e.g. MIL on/off) are already operational. A project to define additional configurations has been initiated with MIL partners.
CP1-s-AF3.2 Free route airspace	The required connectivity between FRA and TMAs is ensured by skeyes by implementing specific (direct) routes.
CP1-AF4 - Network Collaborative Management	
CP1-s-AF4.1 Enhanced short-term ATFCM measures	Ref. MPL3 Objective FCM04.2: Implementation of STAM Phase 2 measures depends on the progress made at the side of Eurocontrol/Network Manager as this is done through the NM platform. The STAM measures will also make use of the information of the local traffic complexity tool, which is expacted to be operationally implemented by end 2021.
CP1-s-AF4.2 Collaborative NOP	Ref. MPL3 Objective INF08.1: A SWIM study was launched in 2020 resulting in the approval of a SWIM project, including budget and resources. It is planned to have SWIM implemented by the target date of CP1 (31/12/2025).
CP1-s-AF4.3 Automated support for traffic complexity assessment	Ref. MPL3 Objective FCM06: A local traffic complexity tool is being implemented. It is expected to become operational by end 2021.
CP1-s-AF4.4 AOP/NOP integration	Additional data/information exchange requirements (on top of those foreseen in the implementation of 'Collaborative NOP') are expected to be discussed with Brussels Airport Company jointly with discussions in relations to the implementation of extended AOP. Target date of this Sub-AF is December 2027 so beyond RP3
CP1-AF5 - SWIM	
CP1-s-AF5.1 Common infrastructure components	Ref. MPL3 Objective COM12: New PENS implemented operationally in 2020. Participation to the CINEA funded common SWIM PKI project (led by Eurocontrol).

CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	Ref. MPL3 Objective INF08.1: A SWIM study was launched in 2020 resulting in the approval of a SWIM project, including budget and resources. It is planned to have SWIM implemented by the target date of CP1.
CP1-s-AF5.3 Aeronautical information exchange	Ref. information in relation to AF5.2. In addition: AIXM format is already in use for the majority of the AIM data (including the information for the EAD).
CP1-s-AF5.4 Meteorological information exchange	Ref. information in relation to AF5.2. In addition: IWXXM for the legacy ICAO messages (e.g. METAR, TAF & SIGMET) has been implemented in 2017.
CP1-s-AF5.5 Cooperative network information exchange	Ref. information in relation to AF5.2. In addition: a number of B2B services from the Network Manager are already implemented.
CP1-s-AF5.6 Flight information exchange (yellow profile)	Ref. information in relation to AF5.2.
CP1-AF6 - Initial Trajectory Information Sharing	
CP1-s-AF6.1 Initial air-ground trajectory information sharing	n/a for skeyes - ref. information from MUAC
CP1-s-AF6.2 Network Manager trajectory information enhancement	n/a for skeyes - ref. information from MUAC
CP1-s-AF6.3 Initial trajectory information sharing ground distribution	n/a for skeyes - ref. information from MUAC

b) France

CP1 ATM Functionality (CP1-AF) / Sub functionality (CP1-s-AF)	Recent and expected progress
CP1-AF1 - Extended AMAN and Integrated AMAN/DMAN in High-Density TMAs	
CP1-s-AF1.1 AMAN extended to en-route airspace	
Paris-CDG	-MP Obj ATC07.1 AMAN Tools and Procedures - Functionality is already operational at Charles de Gaulle since March 2012. -MP Obj ATC15.1 Information Exchange with En-route in Support of AMAN - France uses MAESTRO to support AMAN operations for many years. MAESTRO is already compliant to use in En-Route and is a level1 system, already implemented in the Paris ACC to support AMAN operations of CDG. -MP Obj ATC15.2 - Arrival Management Extended to En-route Airspace) - The current situation (Paris CDG/ORY AMAN extended into Paris ACC) is already compliant with the PCP and the operational needs.
Paris-Orly	-MP Obj ATC07.1 AMAN Tools and Procedures - Functionality is already operational at Orly Airport since March 2012. -MP Obj ATC15.1 Information Exchange with En-route in Support of AMAN - France uses MAESTRO to support AMAN operations for many years. MAESTRO is already compliant to use in En-Route and is a level1 system, already implemented in the Paris ACC to support AMAN operations of Orly. -MP Obj ATC15.2 - Arrival Management Extended to En-route Airspace) - The current situation (Paris CDG/ORY AMAN extended into Paris ACC) is already compliant with the PCP and the operational needs.
Nice Cote d'Azur	-MP Obj ATC07.1 AMAN Tools and Procedures - Functionality is already operational at Orly Airport since June 2015. -MP Obj ATC15.1 Information Exchange with En-route in Support of AMAN - France uses MAESTRO to support AMAN operations for many years. At Nice Airport, the implementation is being considered by mid 2019. -MP Obj ATC15.2 - Arrival Management Extended to En-route Airspace) - The deployment of AMAN2SE in Marseille ACC guarantees PCP compliance, except for the flow coming from North-East via Milano ACC. Initiation of an XMAN project with ENAV is ongoing with 10% of progrss, to cover this North-East flow.
CP1-s-AF1.2 AMAN/DMAN Integration	
Paris-CDG	- MP Obj ATC19: current progress 0% (source LSSIP 2020)
Nice Cote d'Azur	- MP Obj ATC19: current progress 0% (source LSSIP 2020)

CP1-AF2 - Airport Integration and Throughput	
CP1-s-AF2.1 DMAN synchronised with predeparture sequencing	
Paris-CDG	-MP Obj AOP05 Airport CDM - CDG airport is labellized "Airport-CDM" since 16th November 2010; CDM procedures in adverse condition implemented 02/2013; FUM process implemented by end 2013. -MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) – The digital systems such as electronic flight strips (EFS) are implemented as part of DMAN deployed in February 2013.
Paris-Orly	-MP Obj AOP05 Airport CDM - Orly airport has been certified as a CDM airport on November 2016. -MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) – The digital systems such as electronic flight strips (EFS) are implemented as part of DMAN deployed in November 2016.
Nice Cote d'Azur	-MP Obj AOP05 Airport CDM - Nice Airport has been certified as a CDM airport in September 2020 -MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) – The digital systems such as electronic flight strips (EFS) are implemented as part of DMAN deployed . DMAN Nice is in operation since 25 November 2019
CP1-s-AF2.2.1 Initial airport operations plan (iAOP)	
Paris-CDG	-MP Obj AOP11: partially completed depending on expected requirement about ANSP data to be shared (source LSSIP 2020)
Paris-Orly	-MP Obj AOP11: partially completed depending on expected requirement about ANSP data to be shared (source LSSIP 2020)
Nice Cote d'Azur	-MP Obj AOP11: partially completed depending on expected requirement about ANSP data to be shared (source LSSIP 2020)
CP1-s-AF2.2.2 Airport operations plan (AOP)	
Paris-CDG	-MP Obj AOP11: partially completed depending on expected requirement about ANSP data to be shared (source LSSIP 2020)
Paris-Orly	-MP Obj AOP11: partially completed depending on expected requirement about ANSP data to be shared (source LSSIP 2020)
Nice Cote d'Azur	-MP Obj AOP11: partially completed depending on expected requirement about ANSP data to be shared (source LSSIP 2020)
Lyon Saint-Exupéry	-MP Obj AOP11: partially completed depending on expected requirement about ANSP data to be shared (source LSSIP 2020)
CP1-s-AF2.3 Airport safety nets	
Paris-CDG	-MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) - The ATC clearances monitoring will be supported by the new system SYSAT planned to be implemented in Paris CDG airport. The current percentage of implementation is to be assessed with new CP1 requirement.
Paris-Orly	-MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) - The ATC clearances monitoring will be supported by the new system SYSAT planned to be implemented at Paris Orly Airport. The current percentage of implementation is to be assessed with new CP1 requirement.
Nice Cote d'Azur	-MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) - The ATC clearances monitoring will be supported with the new system SYSAT planned to be implemented at Nice Airport. The current percentage of implementation is to be assessed with new CP1 requirement.
CP1-AF3 - Flexible Airspace Management and Free Route Airspace	

CP1-s-AF3.1 Airspace management and advanced flexible use of airspace	- MP Obj AOM19.1 ASM Support Tools to Support Advanced FUA (AFUA) - French AMC (called CNGE) is using its own appropriate support systems (e.g. COURAGE, ...) since the year 2000. - MP Obj AOM19.2 ASM Management of Real-Time Airspace Data - The current implementation
CP1-s-AF3.2 Free route airspace	- MP Obj AOM21.2 Free Route Airspace - Free Route Implementation is being studied in the FABEC framework and in collaboration with NM. Initial FRA is expected to be fully implemented by the end of 2021, full free route implementation percentage is to be assessed with the next monitoring view
CP1-AF4 - Network Collaborative Management	
CP1-s-AF4.1 Enhanced short-term ATFCM measures	- MP Obj FCM04.1 Short Term ATFCM Measures (STAM) - Phase 1 - Process is completed in the 5 ACCs (Bordeaux, Brest, Paris, Reims and Marseille) -MP Obj FCM04.2 Short Term ATFCM Measures (STAM) - Phase 2 - DSNA has launched a program
CP1-s-AF4.2 Collaborative NOP	- MP Obj FCM05 Interactive Rolling NOP - Practical implementation of this objective by all concerned stakeholders is currently on-going. However, the provision of AOP to NM to perform the integration of the AOP with the NOP is only planned in a second phase for 2021. The current percentage of
CP1-s-AF4.3 Automated support for traffic complexity assessment	Different DSNA tools are available to support traffic complexity assesment. The current percentage of implementation is estimated at 85%
CP1-s-AF4.4 AOP/NOP integration	Different DSNA tools are available to support AOP/NOP integration. The current percentage of implementation is estimated at 33%
CP1-AF5 - SWIM	
CP1-s-AF5.1 Common infrastructure components	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - DSNA has started consuming various NM services offered on B2B concerning Flight and Network information, a first step towards full implementation. Progress is monitored through the local common infrastructure
CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - DSNA has started consuming various NM services offered on B2B concerning Flight and Network information, a first step towards full implementation. Progress is monitored through the local common infrastructure
CP1-s-AF5.3 Aeronautical information exchange	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - DSNA has started consuming various NM services offered on B2B concerning Flight and Network information, a first step towards full implementation. Progress is monitored through the local common infrastructure
CP1-s-AF5.4 Meteorological information exchange	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - DSNA has started consuming various NM services offered on B2B concerning Flight and Network information, a first step towards full implementation. Progress is monitored through the local common infrastructure
CP1-s-AF5.5 Cooperative network information exchange	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - DSNA has started consuming various NM services offered on B2B concerning Flight and Network information, a first step towards full implementation. Progress is monitored through the local common infrastructure
CP1-s-AF5.6 Flight information exchange (yellow profile)	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - DSNA has started consuming various NM services offered on B2B concerning Flight and Network information, a first step towards full implementation. Progress is monitored through the local common infrastructure
CP1-AF6 - Initial Trajectory Information Sharing	
CP1-s-AF6.1 Initial air-ground trajectory information sharing	- MP Obj ITY-AGDL Initial ATC Air-Ground Data Link Services - Data link functions are provided in accordance with DLS IR. (source LSSIP 2020). - Participation in PJ38 will prepare use of trajectory information data especially for display to the controller. The respective ATS system will be upgraded accordingly. It is expected that CP1 AF6.1 will be implemented before December 2027.
CP1-s-AF6.2 Network Manager trajectory information enhancement	N/A
CP1-s-AF6.3 Initial trajectory information sharing ground distribution	- Participation in PJ38 will prepare trajectory information data sharing through a common ADS-C service, DSNA is expected be a user of this common ADS-C service that is expected to be provided by the future Data-link Service Provider. It is expected that CP1 AF6.3 will be implemented before December 2027.

c) Germany

CP1 ATM Functionality (CP1-AF) / Sub functionality (CP1-s-AF)	Recent and expected progress
CP1-AF1 - Extended AMAN and Integrated AMAN/DMAN in High-Density TMAs	
CP1-s-AF1.1 AMAN extended to en-route airspace	
Berlin Brandenburg Airport	Activities halted till Q3/2022
Düsseldorf International	Activities halted till Q3/2022
Frankfurt International	Activities halted till Q3/2022
Munich Franz Josef Strauss	Activities halted till Q3/2022
CP1-s-AF1.2 AMAN/DMAN Integration	

Berlin Brandenburg Airport	- MP Obj ATC19: current progress 0% (source LSSIP 2020)
Düsseldorf International	- MP Obj ATC19: current progress 0% (source LSSIP 2020)
CP1-AF2 - Airport Integration and Throughput	
CP1-s-AF2.1 DMAN synchronised with predeparture sequencing	
Berlin Brandenburg Airport	-MP Obj AOP05 Airport CDM - Implementation of A-CDM is completed. -MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) – Not Applicable (source LSSIP 2020)
Düsseldorf International	-MP Obj AOP05 Airport CDM - At Duesseldorf Airport, implementation of A-CDM is completed since April 2013. -MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) – Current completion percentage is 28%. Implementation planned for the end of 2024. (source LSSIP 2020)
Frankfurt International	-MP Obj AOP05 Airport CDM - At Frankfurt Airport, implementation of A-CDM is completed since January 2013. -MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) – Current completion percentage is 25%. Implementation planned for the end of 2024. (source LSSIP 2020)
Munich Franz Josef Strauss	-MP Obj AOP05 Airport CDM - At Munich Airport, A-CDM is fully operational since 7th June 2007. -MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) – Current completion percentage is 25%. Implementation planned for the end of 2024. (source LSSIP 2020)
CP1-s-AF2.2.1 Initial airport operations plan (iAOP)	
Berlin Brandenburg Airport	-MP Obj AOP11: completed (source LSSIP 2020)
Düsseldorf International	-MP Obj AOP11: Completion is planned in 2021. Current percentage of completion is 43% (source LSSIP 2020)
Frankfurt International	-MP Obj AOP11: Completion is planned by the end of 2023. Current percentage of completion is 34% (source LSSIP 2020)
Munich Franz Josef Strauss	-MP Obj AOP11: Completion is planned by the end of 2022. Current percentage of completion is 48% (source LSSIP 2020)
CP1-s-AF2.2.2 Airport operations plan (AOP)	
Berlin Brandenburg Airport	work in progress
Düsseldorf International	work in progress
Frankfurt International	work in progress
Munich Franz Josef Strauss	work in progress
Hamburg	-MP Obj AOP11: Completion for iAOP is planned by the end of 2023. Current percentage of completion is 28% (source LSSIP 2020)
Stuttgart	-MP Obj AOP11: Completion for iAOP is planned by the end of 2023. Current percentage of completion is 30% (source LSSIP 2020)
CP1-s-AF2.3 Airport safety nets	
Berlin Brandenburg Airport	-MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) - Not Applicable (source LSSIP 2020)
Düsseldorf International	-MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) - Implementation of runway and airfield safety with ATC clearances monitoring is scheduled to be finished by 2024. Current percentage of implementation is 25%. (source LSSIP 2020)
Frankfurt International	-MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) - Implementation of runway and airfield safety with ATC clearances monitoring is scheduled to be finished by 2024. Current percentage of implementation is 28%. (source LSSIP 2020)

Munich Franz Josef Strauss	-MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) - Implementation of runway and airfield safety with ATC clearances monitoring is scheduled to be finished by 2024. Current percentage of implementation is 25%. (source LSSIP 2020)
CP1-AF3 - Flexible Airspace Management and Free Route Airspace	
CP1-s-AF3.1 Airspace management and advanced flexible use of airspace	- MP Obj AOM19.1 ASM Support Tools to Support Advanced FUA (AFUA) - The implementation of ASM support tools to support A-FUA was finished in January 2019. - MP Obj AOM19.2 ASM Management of Real-Time Airspace Data - The implementation of ASM Management of Real-Time Airspace Data has started and is planned to be finished in 2023. Current percentage of completion is 30%. - MP Obj AOM19.3 Full Rolling ASM/ATFCM Process and ASM Information Sharing - The implementation of full rolling ASM/ATFCM process and ASM information sharing is planned to be finished by the end of 2021. Current percentage of implementation is 25%. - MP Obj AOM19.4 Management of Pre-defined Airspace Configurations - The implementation of the management of pre-defined airspace configurations is planned to be finished by the end of 2021. Current percentage of implementation is 40%. (source LSSIP 2020)
CP1-s-AF3.2 Free route airspace	- MP Obj AOM21.2 Free Route Airspace - The implementation of Free Route Airspace is ongoing for FABEC and expected to be completed by the end of 2021. Civil and military stakeholders are involved, however Air Traffic Services for OAT flights in Germany were provided by DFS. Current percentage of implementation is 55%.I132 (source LSSIP 2020)
CP1-AF4 - Network Collaborative Management	
CP1-s-AF4.1 Enhanced short-term ATFCM measures	- MP Obj FCM04.1 Short Term ATFCM Measures (STAM) - Phase 1 - The implementation of Short Term ATFCM Measures (STAM) - phase 1 is completed since December 2016. -MP Obj FCM04.2 Short Term ATFCM Measures (STAM) - Phase 2 - The implementation of Short Term
CP1-s-AF4.2 Collaborative NOP	- MP Obj FCM05 Interactive Rolling NOP (source LSSIP 2020)
CP1-s-AF4.3 Automated support for traffic complexity assessment	- MP Obj FCM06 Traffic Complexity Assessment - A Local Traffic Load Management tool is planned to be implemented by 2021. The evaluation and validation of the tool has started. DFS systems receive, process and integrate EFD provided by Network Manager. Expected completion date is the end of 2021
CP1-s-AF4.4 AOP/NOP integration	work in progress
CP1-AF5 - SWIM	
CP1-s-AF5.1 Common infrastructure components	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Implementation activities are ongoing at DFS, with implementation date expected by the end of 2024. Current percentage of completion is 4%.C136
CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Implementation activities are ongoing at DFS, with implementation date expected by the end of 2024. Current percentage of completion is 4%.
CP1-s-AF5.3 Aeronautical information exchange	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Implementation activities are ongoing at DFS, with implementation date expected by the end of 2024. Current percentage of completion is 4%.
CP1-s-AF5.4 Meteorological information exchange	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Implementation activities are ongoing at DFS, with implementation date expected by the end of 2024. Current percentage of completion is 4%.
CP1-s-AF5.5 Cooperative network information exchange	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Implementation activities are ongoing at DFS, with implementation date expected by the end of 2024. Current percentage of completion is 4%.
CP1-s-AF5.6 Flight information exchange (yellow profile)	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Implementation activities are ongoing at DFS, with implementation date expected by the end of 2024. Current percentage of completion is 4%.
CP1-AF6 - Initial Trajectory Information Sharing	
CP1-s-AF6.1 Initial air-ground trajectory information sharing	- MP Obj ITY-AGDL Initial ATC Air-Ground Data Link Services - Data link functions are provided in accordance with DLS IR. The respective ATS system is upgraded accordingly. (source LSSIP 2020)
CP1-s-AF6.2 Network Manager trajectory information enhancement	work in progress
CP1-s-AF6.3 Initial trajectory information sharing ground distribution	work in progress

d) Luxembourg

CP1 ATM Functionality (CP1-AF) / Sub functionality (CP1-s-AF)	Recent and expected progress
CP1-AF1 - Extended AMAN and Integrated AMAN/DMAN in High-Density TMAs - n/a	
CP1-AF2 - Airport Integration and Throughput - n/a	
CP1-AF3 - Flexible Airspace Management and Free Route Airspace	
CP1-s-AF3.1 Airspace management and advanced flexible use of airspace	N/A, we don't have any millitary airspace in Luxembourg
CP1-s-AF3.2 Free route airspace	N/A, TMA too small for real benefits
CP1-AF4 - Network Collaborative Management	
CP1-s-AF4.1 Enhanced short-term ATFCM measures	All ATFCM measures for Luxembourg are implemented by the FMP position of skeyes for the entire FIR Brussels in accordance with the established agreements. However, The NM STAM application will be used as a sufficient means for the implementation of STAM P2. Status is on-going, projected completion
CP1-s-AF4.2 Collaborative NOP	Some SLoAs of this objective are not economically justified and therefore are considered not to be applicable. Status: not yet planned
CP1-s-AF4.3 Automated support for traffic complexity assessment	not yet planned
CP1-s-AF4.4 AOP/NOP integration	not yet planned
CP1-AF5 - SWIM	
CP1-s-AF5.1 Common infrastructure components	not yet implemented
CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	not yet implemented
CP1-s-AF5.3 Aeronautical information exchange	not yet implemented
CP1-s-AF5.4 Meteorological information exchange	not yet implemented
CP1-s-AF5.5 Cooperative network information exchange	not yet implemented
CP1-s-AF5.6 Flight information exchange (yellow profile)	not yet implemented
CP1-AF6 - Initial Trajectory Information Sharing	
CP1-s-AF6.1 Initial air-ground trajectory information sharing	not yet planned
CP1-s-AF6.2 Network Manager trajectory information enhancement	not yet planned
CP1-s-AF6.3 Initial trajectory information sharing ground distribution	not yet planned

e) Netherlands

CP1 ATM Functionality (CP1-AF) / Sub functionality (CP1-s-AF)	Recent and expected progress
CP1-AF1 - Extended AMAN and Integrated AMAN/DMAN in High-Density TMAs	
CP1-s-AF1.1 AMAN extended to en-route airspace	

Amsterdam Schiphol	LVNL commissioned a new and extensible basic AMAN system in 2018 with functionality referred to as "version AMAN 1.0". This system will be extended in RP3 to an enhanced version referred to as "AMAN 2.0" and "AMAN 2.1" and to Extended AMAN. This will be implemented in the period 2021 to 2024. Completion of Extended AMAN is planned for end of 2024.
CP1-s-AF1.2 AMAN/DMAN Integration	
Amsterdam Schiphol	n/a
CP1-AF2 - Airport Integration and Throughput	
CP1-s-AF2.1 DMAN synchronised with predeparture sequencing	
Amsterdam Schiphol	An electronic flight strip system was put into operation at Schiphol's control tower in 2019. LVNL is going to replace the tower system of Amsterdam Schiphol Airport in phases with a system that is suitable for the new SESAR functionalities. One of these functionalities is a Departure Manager (DMAN), which is scheduled to go live in 2022.
CP1-s-AF2.2.1 Initial airport operations plan (iAOP)	
Amsterdam Schiphol	The Royal Schiphol Group (RSG) has implemented an initial airport operations plan (iAOP) for Amsterdam Schiphol Airport in 2019 for which LVNL supplies part of the data. The iAOP will be interfaced with the NOP systems to implement a Collaborative NOP. This is planned for end of 2021.
CP1-s-AF2.2.2 Airport operations plan (AOP)	
Amsterdam Schiphol	The gradual development by Royal Schiphol Group (RSG) of the iAOP into a extended AOP continues in RP3 and full implementation is planned in RP4. The expected completion date is end of 2027.
CP1-s-AF2.3 Airport safety nets	
Amsterdam Schiphol	LVNL is going to replace the tower system of Amsterdam Schiphol Airport in phases with a system that is suitable for the new SESAR functionalities. One of these functionalities is Airport safety Nets. The expected completion date is end of 2025.
CP1-AF3 - Flexible Airspace Management and Free Route Airspace	
CP1-s-AF3.1 Airspace management and advanced flexible use of airspace	Local limitations prevent the implementation of ASM and A-FUA in Dutch airspace below FL245 (LVNL). However, LVNL will implement LARA including an interface with the new iCAS. The expected LARA completion date is end of 2023. Within the Netherlands the Dutch Airspace Redesign Program (DARP) is active. In this program FRA below FL 310, and below FL 245, will be assessed and implemented when possible. The program expects to implement first redesigns of the Dutch airspace starting 2025-2027.
CP1-s-AF3.2 Free route airspace	FRA must be provided and operated at least above flight level 305, this means that it does not apply below FL 245, the airspace where LVNL provides its services. However, LVNL is going to replace its current system in RP3 with iCAS and thereby upgrade the ATM system so that it supports Free Route. The expected completion date is end of 2023.
CP1-AF4 - Network Collaborative Management	
CP1-s-AF4.1 Enhanced short-term ATFCM measures	LVNL is working on the implementation of STAM. An initial set of STAM measures will be implemented in 2022, after which it will be extended. A decision support tool (DST) is being developed and is scheduled to be implemented in 2022, a what-if function and other features will support STAM.
CP1-s-AF4.2 Collaborative NOP	The Royal Schiphol Group has implemented an iAOP for Schiphol Airport in 2019 for which LVNL supplies part of the data, the iAOP will be interfaced with the NOP systems to implement a Collaborative NOP. LVNL will work on the application of target times for ATFCM purposes in RP3. The expected completion date is end of 2023.
CP1-s-AF4.3 Automated support for traffic complexity assessment	LVNL has developed a workload model for ACC and is working on its improvement and is also developing these models for APP and Ground Control. In addition, a decision support tool (DST) is being developed and is scheduled to be implemented in 2022.
CP1-s-AF4.4 AOP/NOP integration	The Royal Schiphol Group will implement the information exchange of the Schiphol AOP with NM NOP in RP3. The expected completion date is end of 2027.
CP1-AF5 - SWIM	
CP1-s-AF5.1 Common infrastructure components	LVNL is connected to the New Pan-European Network Services (NewPENS) in 2019. In RP3 LVNL will implement the public key infrastructure (PKI) and will use the registry for information about services. The expected completion date is end of 2023.
CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	In RP3 LVNL will implement the SWIM yellow profile technical infrastructure. The expected completion date is end of 2023.
CP1-s-AF5.3 Aeronautical information exchange	In RP3 LVNL will implement the exchange of aeronautical information via SWIM. The expected completion date is end of 2025.
CP1-s-AF5.4 Meteorological information exchange	In RP3 LVNL will implement the exchange of Meteorological information via SWIM. The expected completion date is end of 2025.

CP1-s-AF5.5 Cooperative network information exchange	In RP3 LVNL will implement the exchange of Cooperative network information via SWIM. The expected completion date is 2025.
CP1-s-AF5.6 Flight information exchange (yellow profile)	In RP3 LVNL will implement the exchange of Flight information (yellow profile) via SWIM. The expected completion date is 2025.
CP1-AF6 - Initial Trajectory Information Sharing	
CP1-s-AF6.1 Initial air-ground trajectory information sharing	Although the application of the initial trajectory information (EPP) is not mandatory below FL285, LVNL has planned the development of the application EPP to start in RP3 and its commissioning is planned to take place in RP4.
CP1-s-AF6.2 Network Manager trajectory information enhancement	n/a
CP1-s-AF6.3 Initial trajectory information sharing ground distribution	Although the application of the initial route information (EPP) is not mandatory below FL285, LVNL has planned to implement the necessary interface for the ground-based distribution of trajectory information data coming from onboard systems in RP4.

f) Switzerland

CP1 ATM Functionality (CP1-AF) / Sub functionality (CP1-s-AF)	Recent and expected progress
CP1-AF1 - Extended AMAN and Integrated AMAN/DMAN in High-Density TMAs	
CP1-s-AF1.1 AMAN extended to en-route airspace	
Zurich Kloten	-MP Obj ATC07.1 AMAN Tools and Procedures - An Arrival management tool is implemented in Zurich, called CALM. -MP Obj ATC15.1 Information Exchange with En-route in Support of AMAN - AMAN tools and exchange mechanisms and corresponding procedures have been established in Switzerland for years. Time To Lose (TTL) information is provided in LSZH operational environment (APP and corresponding upper sectors). An XMAN implementation project (including an OPS trial) is on-going which will allow an extension of the ER operational coordination with adjacent centers. The current AMAN in LSZH (CALM) will be replaced (AMAN CH Project 2018-2020) Changes to the existing framework will be treated according to standard oversight procedures (EC REG 1034/2011). With the new AMAN, the XMAN Horizon will be increased to the required 200 NM. The integration of GVA and Milano is planned to be completed by 2021 -MP Obj ATC15.2 - Arrival Management Extended to En-route Airspace) - An AMAN is implemented in Zurich. In the frame of the FABEC activities an XMAN project was launched in 2015. Initial step is to receive XMAN information (Munich) from DFS and integrate them in Zurich ACC for operational use by ACC ATCOs. Also with this step, XMAN information is sent to Munich, Langen & Reims for operational use by ACC ATCOs of these adjacent centers. The current percentage of implementation is 49% and the expected completion date is December 2023. (source LSSIP CH 2020)
Geneva	-MP Obj ATC07.1 The deployment project of an AMAN in LSGG operational environment has started in 2019 and will finish in 2022 (source LSSIP CH 2020)
CP1-s-AF1.2 AMAN/DMAN Integration	
Zurich Kloten	-MP Obj NAV03.2 RNP 1 in TMA Operations and MP Obj NAV10 RNP Approach Procedures to instrument RWY : The initial version of the PBN Transition Plan was published by Skyguide in July 2020 and undergo wide stakeholders consultation in Sept-Nov 2020. Version 1.0 of the PBN Transition plan was approved by FOCA in Dec 2020 with a focus on the 2020 requirements and the overall approach. Further approvals will be issued if/when the plan evolves towards 2024 and 2030 deadlines. (source LSSIP CH 2020)
Geneva	
CP1-AF2 - Airport Integration and Throughput	
CP1-s-AF2.1 DMAN synchronised with predeparture sequencing	
Zurich Kloten	-MP Obj AOP05 Airport CDM - Airport CDM Applications Level 1 to 3 implemented since 2013 and audited by EUROCONTROL CDM-Team. -MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Functionality implemented for the Runway part through the Advanced Runway Safety Improvement (ARSI) project (source LSSIP CH 2020)
Geneva	-MP Obj AOP5 Airport CDM is completed (source LSSIP CH 2020)
CP1-s-AF2.2.1 Initial airport operations plan (iAOP)	

Zurich Kloten	MP Obj AOP11 : Capacity information are made available and A-CDM processes partly answer the requirements. The Crystal TWR / APP tool provides traffic and complexity predictions to the FMP and ACC supervisor (source LSSIP CH 2020)
Geneva	MP Obj AOP11 : Capacity information are made available by Skyguide for future processing by Geneva Airport (source LSSIP CH 2020)
CP1-s-AF2.2.2 Airport operations plan (AOP)	
Zurich Kloten	
Geneva	
CP1-s-AF2.3 Airport safety nets	
Zurich Kloten	-MP Obj AOP12 Improve Runway and Airfield Safety with Conflicting ATC Clearances (CATC) Detection and Conformance Monitoring Alerts for Controllers (CMAC) - Functionality implemented for the Runway part through the Advanced Runway Safety Improvement (ARSI) project (source LSSIP CH 2020)
Geneva	
CP1-AF3 - Flexible Airspace Management and Free Route Airspace	
CP1-s-AF3.1 Airspace management and advanced flexible use of airspace	- MP Obj AOM19.1 ASM Support Tools to Support Advanced FUA (AFUA) - LARA tool is in place and the B2B SW Release 3.0 is implemented since 2016. - MP Obj AOM19.2 ASM Management of Real-Time Airspace Data - A study is on-going to identify
CP1-s-AF3.2 Free route airspace	- MP Obj AOM21.2 Free Route Airspace - The on-going FRA Switzerland project aims to implement FRA in the Swiss Area of Responsibility in 2022 The current percentage of implementation is 41%. (source LSSIP CH CH 2020)
CP1-AF4 - Network Collaborative Management	
CP1-s-AF4.1 Enhanced short-term ATFCM measures	-MP Obj FCM04.2 Short Term ATFCM Measures (STAM) - Phase 2 - STAM - phase 2 is implemented between Geneva and Zürich ACCs. (source LSSIP CH 2020)
CP1-s-AF4.2 Collaborative NOP	- MP Obj FCM05 Interactive Rolling NOP - LARA B2B V3 tool is in use and was implemented in 2016. Airport slots are exchanged with Slot Coordination Switzerland, which provides the information to NM via the EUACA database (MoC with Eurocontrol).
CP1-s-AF4.3 Automated support for traffic complexity assessment	- MP Obj FCM06 Traffic Complexity Assessment - Skyguide is using CRYSTAL, a traffic complexity and prediction tool which allows supervisors to continuously monitor sector demand and evaluate traffic complexity (by applying predefined complexity metrics) according to a predetermined qualitative scale.
CP1-s-AF4.4 AOP/NOP integration	
CP1-AF5 - SWIM	
CP1-s-AF5.1 Common infrastructure components	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Deployment of SWIM Yellow Profile is ongoing: Several proofs of concept were developed or are planned, leading to implementation projects.
CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Deployment of SWIM Yellow Profile is ongoing: Several proofs of concept were developed or are planned, leading to implementation projects.
CP1-s-AF5.3 Aeronautical information exchange	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Deployment of SWIM Yellow Profile is ongoing: Several proofs of concept were developed or are planned, leading to implementation projects.
CP1-s-AF5.4 Meteorological information exchange	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Deployment of SWIM Yellow Profile is ongoing: Several proofs of concept were developed or are planned, leading to implementation projects.
CP1-s-AF5.5 Cooperative network information exchange	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Deployment of SWIM Yellow Profile is ongoing: Several proofs of concept were developed or are planned, leading to implementation projects.
CP1-s-AF5.6 Flight information exchange (yellow profile)	- MP Obj INF08.1 Information Exchanges using the SWIM Yellow TI Profile - Deployment of SWIM Yellow Profile is ongoing: Several proofs of concept were developed or are planned, leading to implementation projects.
CP1-AF6 - Initial Trajectory Information Sharing	
CP1-s-AF6.1 Initial air-ground trajectory information sharing	- MP Obj ITY-AGDL Initial ATC Air-Ground Data Link Services - The AGDL CPDLC is in operation in both Geneva and Zurich ACC (above FL245) since end 2012 (Geneva) and beginning 2013 (Zurich). (source LSSIP CH 2020)
CP1-s-AF6.2 Network Manager trajectory information enhancement	
CP1-s-AF6.3 Initial trajectory information sharing ground distribution	

g) MUAC

CP1 ATM Functionality (CP1-AF) / Sub functionality (CP1-s-AF)	Recent and expected progress
CP1-AF1 - Extended AMAN and Integrated AMAN/DMAN in High-Density TMAs	
CP1-s-AF1.1 AMAN extended to en-route airspace	- MP Obj ATC15.1 - The interface with Amsterdam ACC was implemented in 2011.Implementation with additional partners is expected to take place depending on their readiness and operational needs. Due to its unique position, MUAC is piloting the integration with multiple AMAN implementations as input
CP1-s-AF1.2 AMAN/DMAN Integration	n/a
CP1-AF2 - Airport Integration and Throughput - n/a	
CP1-AF3 - Flexible Airspace Management and Free Route Airspace	
CP1-s-AF3.1 Airspace management and advanced flexible use of airspace	Implemented (AOM19.1, AOM19.2, AOM19.3 and AOM19.4)
CP1-s-AF3.2 Free route airspace	Implemented (AOM21.2)
CP1-AF4 - Network Collaborative Management	
CP1-s-AF4.1 Enhanced short-term ATFCM measures	Implemented (FCM04.2)
CP1-s-AF4.2 Collaborative NOP	B2B services will be implemented upon their availability and added value. (FCM05)
CP1-s-AF4.3 Automated support for traffic complexity assessment	implemented
CP1-s-AF4.4 AOP/NOP integration	B2B services will be implemented upon their availability and added value. (FCM05)
CP1-AF5 - SWIM	
CP1-s-AF5.1 Common infrastructure components	Preparatory steps have been taken. Services are in place in some areas, in other areas they are being planned. (INF08.1)
CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	The infrastructure for Yellow SWIM profile is in place and used for some initial services such as the B2B connection with NM of the ATM Portal. New services are being developed
CP1-s-AF5.3 Aeronautical information exchange	implemented
CP1-s-AF5.4 Meteorological information exchange	MUAC is planning an upgrade of the meteorological data feed in the coming year(s), before December 2024
CP1-s-AF5.5 Cooperative network information exchange	partially implemented
CP1-s-AF5.6 Flight information exchange (yellow profile)	implemented
CP1-AF6 - Initial Trajectory Information Sharing	
CP1-s-AF6.1 Initial air-ground trajectory information sharing	MUAC is operational with data Link (DLS/IR scope = ATN-B1) since 2003. MUAC plans an operational introduction of the two CP1 AF#6 ADS-C/EPP (ATS-B2) functionalities, display of the EPP and a discrepancy warning, early 2022.
CP1-s-AF6.2 Network Manager trajectory information enhancement	n/a
CP1-s-AF6.3 Initial trajectory information sharing ground distribution	MUAC is partner in the ADS-C Common Service prototype definition and valdiation under SESAR2020 PJ38 and will implement the service when it becomes available for operational use (around 2025?).

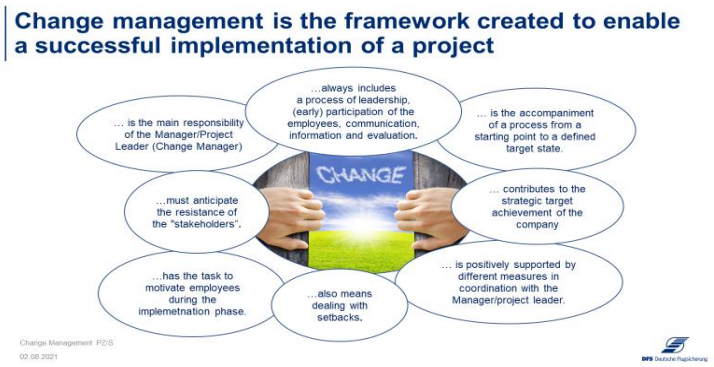
4.3 - Change management

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

DFS

In the context of the planned development/implementation of major airspace changes as well as new/revised ATM systems, the rules of the relevant project structure foresee as one essential element a dedicated change management process.

DFS has a team of experts who support change projects with the help of various tools and methods in different topic areas and especially in operational projects. The objective is the planned management of change processes from an initial state to a target state, especially in order to minimize the impact on day-to-day business/operational processes and to loose fear against future changes.



Change is unique depending on the situation, habits and experiences of staff and managers. Accordingly, there is no one-size-fits-all solution for change management. Rather, the change management expert team works in a constant exchange to create a common understanding of the relevant hard and soft factors, the goals and the change process.
Change projects are divided into three phases:
1. In the first phase, the so-called analysis phase, the change project is being defined in a job clarification meeting. This can be, for example, the introduction of an (operational) system, a reorganisation, a change in working methods or team development. During this discussion it is clarified what consequences and effects the change will have for the employees and managers and what support is needed during this change process. In a further discussion, goals, conditions and a budget are set together, roles are defined and initial ideas are generated.
Tools for this analysis phase are:
- Clarification of the assignment: Questions for clarification of the assignment that help to better understand the situation and the change process of the client.
- Systemic questioning techniques: Questioning techniques that help to describe the target state in more detail, give the change facilitator more information and create a common understanding
- Change checklist: Checklist that helps the client to find answers when analysing the change
- So called “Force field analysis”: Analysis that describes the facilitating and inhibiting forces of the goal.

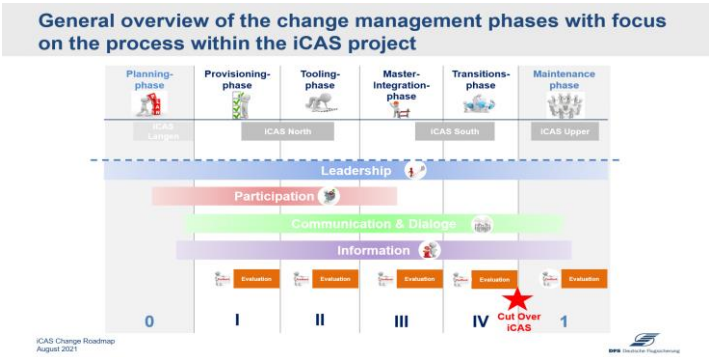
2. In the second phase, the planning and organization phase, a stakeholder analysis is carried out and a change architecture is developed. This change architecture consists of a rough milestone plan from which the detailed planning of the change measures per field of action (leadership, participation, communication & dialogue, information and evaluation) is derived.

Tools for this analysis phase are:
- Stakeholder analysis: Analysis of the stakeholders in the change process and their influence and attitude towards the change project. Development in workshops, interviews and surveys.
- Impact analysis: Presentation of the individual changes and their impact on employees. Developed in workshops, interviews and surveys.
- Project environment analysis: Analysis of the project environment including the relationships between the protagonists.
- Risk analysis: Presentation of the risks in the change process.
- Vision work and development of a change story: Formulation of the current state and the target state of the change and consideration of the "why" (why is the program or the change necessary, what advantages will it create for which group, what disadvantages will it create and how do we handle/ cope with them).

3. The implementation of the planned change measures takes place in the third phase. The change architecture or change roadmap defined in phase 2 is continuously implemented. Stakeholders, progress and changing framework conditions are kept in mind in order to regularly review measures, adjust them if necessary and record lessons learned.
Tools for this analysis phase are:
- Continuous development and evaluation of the change roadmap
- Change agent: development of a change agent network
- Sounding Board: Concept for building a "sounding board" Feedback from staff and managers from the organisation about developments in die Programm/ Project and the change activities
- Pulse Check: Evaluation tool to measure the phases in the change process
- Change Barometer: Short-term survey instrument among managers and staff on specific issues (interim measurements)
- Lessons learnt: Working out lessons learnt from past projects
- Anonymous online survey: About the perception of the change, atmosphere, necessary information etc.

In addition to this internal part of change management within the respective project, the process also includes the assessment of all the changes and potential impacts to different functional systems generated by this change, safety- and risk assessments, as well as the approval by the German NSA.

Currently, the DFS team of experts supports e.g. operational projects like iCAS, ZAAS with projects like implementation of a Data Center, iCAS Architecture project as well as Tower NextGeneration ATS Systems (TANGe), virtual tower Munich (ViTo MUC).
Following there is as an example a general overview about the Change Management process within the iCAS project of the DFS:



DSNA
Portfolio management and delivery process transformation

After having formalized and implemented a specific methodology to ensure the successful completion of projects and programmes, DSNA has launched an advanced transformation dealing with portfolio management.
Accordingly, a set of portfolios has been defined to cover the whole scope of DSNA's investments, including ATM, communication, navigation, surveillance, network infrastructures, facilities, and innovation. Portfolio managers have been coached on how to perform their roles and responsibilities. A dedicated tool has been set up to allow project/programme/portfolio managers to complete their planning and monitoring activities, in line with the strategic objectives of DSNA. Portfolio roadmaps have been established, which allows the top management to have a better vision on the status of projects and programmes, including dependencies and risks.
All DSNA's major ATM programmes (in particular but not limited to: 4-Flight, SYSAT and Coflight) are part of the same portfolio, under the supervision of a unique ATM programmes director since early 2021. This significant move in DSNA's organisation has enabled to focus on achieving technical modernisation, while preparing for the next steps of technological evolution in ATM systems.
In parallel, the process of delivery of system/software versions has been adapted to increase the cost control of the development, the evolutive maintenance and – as the next target – the corrective maintenance of technical systems. This improvement results from the implementation of an open and modular architecture, the regular roll-out of new versions or value-added services for operational centres, and an increased reactivity in implementing recovery plans.
Those two major transformations have proven powerful enablers to deal with the more uncertain and fast-evolving environment in which DSNA delivers its services to clients.

Management of tactical and strategic changes:

DSNA has implemented the concept of Collaborative Decision Making, a set of methods and tools that enable to manage pre-tactical and tactical disruptions caused by unforeseen events in close collaboration with all the relevant stakeholders such as the Network Manager, the operators and the airport operators.
In that respect, the following achievements may be mentioned:
-4 airports certified by the NM,
-a portal "CDM@DSNA" widely used by airlines, airport operators and crisis centres,
-decision-making tools developed for the flow management positions of the 5 ACCs and interconnected with the NM's system (SALTO),
-CDM tools and processes to optimize airspace configuration through the airspace management cell and the sectors of the ACCs.

At strategic level, the concept of collaboration is materialized by the French ATM Strategy, a joint initiative by IATA and DSNA which started in 2017 and ran into full steam in 2020. The objective is to consult with all relevant stakeholders (clients/airspace users/partners) when DSNA defines/revises its strategic objectives and the roadmaps aimed at achieving those objectives, especially for investments. This consultation results in - but is not limited to - an annual Strategic Consultation meeting, which took place in June for the year 2021. In addition, a dedicated working group on PBN has been launched, to organise the technical collaboration with all relevant and willing stakeholders on that topic.

Evolving while maintaining safety:

The performance of DSNA safety service relies on its ability to integrate technical and operational improvements/innovations, in order to adapt to the changing context and to maintain a high level of operational skills. Providing this service now and tomorrow to the highest level of requirement and performance lastly entails fully integrating security issues, and in particular the threat of cyber into increasingly more automation and interoperability with all the aerospace stakeholders.

To do this, DSNA continue to capitalize on the three historical pillars of its safety approach which are the high level of operational competence of the personnel, reporting and transparency in a Just culture framework and finally its recognized acknowledgment in the deployment of "safety net" tools. DSNA is consolidating the fourth pillar that is now cybersecurity, along with the management of technical transitions by capitalizing on experience feedback.

Following the diagnosis on the operation of its SMS established in 2015, and in the aim of integrating the results of discussions then initiated as part of its "integrated safety approach", DSNA resolutely engaged a transformation of its SMS, particularly aiming, by the creation of "unit safety cases", to:
- Take into account safety event analyses (and, more broadly, findings) in the safety studies
- Harmonize and optimize safety studies
- Capitalize on the analysis results of the findings
- Better take into account the human factor element in the functional system

To do this, DSNA seized the opportunity of the new European regulation 2017-373 (known as ATM-IR) to achieve its goals: empowering the SMS with the prospect of making it more adaptive (than normative), bringing the designed close to the end user, developing the "collection" modes, and better defining the strategic policies in the matter by an approach by risks (precaution vs. innovation).

For this purpose, the adoption of a so-called "barrier" safety model allows DSNA's safety assessment methodologies and analysis of incidents to provide better safety management capacities. Also, by integrating benefits of change in modernization projects, this approach will support other key performance areas.

LVNL

With all changes LVNL pays attention to limiting the negative impact on the operation. This is achieved in different ways depending on the type of change. For example changes at the controller working position and operational testing of software are done during night hours. For airspace changes, such a phasing will be applied that is feasible for airspace users and air traffic controllers. The cut over to the new iCAS ATC system will be done in the winter season and will be executed using the so called Shadow-Mirroring principle. A new building, intended as a contingency and training facility, will be used for the transition to iCAS. The new system will be installed in that new building and integrated with all other systems, creating a fully independent operational environment without any major effect on the current operation. To test the iCAS system in real operations pre-transition life operations will be executed during nights and weekends. After thorough training the controllers will temporarily provide services from the new building using the iCAS system. The controllers move back after replacement of the current ATC-system in the main operational room.

MUAC

Depending on its size, risk and/or exposure, a change may be managed as a project. In such a case, Strategy & Performance Management triggers the project initiation by an approved Idea Sheet (IDS), committing resources for this first stage, and approves the Project Management Plan (PMP) to allocate the necessary resources for the project execution.
In the event that a technical change (internally or externally triggered) would risk a negative impact on the network, the aim is to minimize the impact on Network Performance. For the vast majority of changes, the goal is always for airspace changes to have a positive network impact.

Skeyes

Change management for the shared ATS services solution (SAS3). skeyes will clearly identify all the necessary elements towards this change in a dedicated change management project, part of the SAS3 program. Aim is to have limited impacts on operational traffic, even during the transition phase of the change. Amongst others, skeyes will assess all the changes and impacts to different functional systems generated by this change. The internal safety management procedures will be followed, as will be the case for the risk assessment. Obtaining the necessary approval of this change by the Belgian Supervisory Authority will be essential to the SAS3 program. With respect to different assessments, the human factors aspect (operational and technical staff) will be covered as well. The necessary elements to timely train operational and technical staff will be foreseen in the SAS3 program through a dedicated training project. Operational and technical staff will extensively participate - from the beginning - in the program in order to guarantee user requirements are correctly implemented in the SAS3 solution. The whole change management process will be monitored as part of the SAS3 program.

Skyguide

Building on the learning developed during the Virtual Center Programme, Skyguide now aims for increased business agility. Skyguide applies an innovative and flexible change management frame-work, applying Lean Portfolio management techniques for the selection and approval of changes, and a hybrid approach to individual change delivery. This includes traditional waterfall methodolo-gies for certain programmes and projects (CNS, Buildings and Infrastructure domains) and a scaled agile methodology for epics, typically involving complex business requirements with associated itera-tive software development solutions (Virtual Centre and others). Skyguide's change management framework sits aside and integrates with various neighbouring processes, with especial focus on safety, but also strategy, finance and compliance.

SECTION 5: TRAFFIC RISK SHARING ARRANGEMENTS AND INCENTIVE SCHEMES

5.1 - Traffic risk sharing

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

5.2 - Capacity incentive schemes

- 5.2.1 - Capacity incentive scheme - Enroute
  - 5.2.1.1 Parameters at FAB level for the calculation of financial advantages or disadvantages - Enroute
  - 5.2.1.2 Rationale and justification - Enroute
  - 5.2.1.3 Parameters for the calculation of financial advantages or disadvantages - Enroute (skeyes)
  - 5.2.1.4 Parameters for the calculation of financial advantages or disadvantages - Enroute (DSNA)
  - 5.2.1.5 Parameters for the calculation of financial advantages or disadvantages - Enroute (DFS)
  - 5.2.1.6 Parameters for the calculation of financial advantages or disadvantages - Enroute (LVNL)
  - 5.2.1.7 Parameters for the calculation of financial advantages or disadvantages - Enroute (Skyguide)
  - 5.2.1.8 Parameters for the calculation of financial advantages or disadvantages - Enroute (MUAC)

- 5.2.2 - Capacity incentive scheme - Terminal
  - 5.2.2.1 Belgium
  - 5.2.2.2 France
  - 5.2.2.3 Germany
  - 5.2.2.4 Luxembourg
  - 5.2.2.5 Netherlands
  - 5.2.2.6 Switzerland

5.3 - Optional incentives

Annexes of relevance to this section

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

5.1 - Traffic risk sharing

5.1.1 Traffic risk sharing - En route charging zones

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

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

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

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

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

5.1.2 Traffic risk sharing - Terminal charging zones

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

France - Zone 1			Traffic risk-sharing parameters adapted?			no
			Service units lower than plan		Service units higher than plan	
	Dead band	Risk sharing band	% loss to be recovered	Max. charged if SUs 10% < plan	% additional revenue returned	Min. returned if SUs 10% > plan
Standard parameters	±2,00%	±10,0%	70,0%	5,6%	70,0%	5,6%

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

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

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

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

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

5.2 - Capacity incentive schemes

5.2.1 - Capacity incentive scheme - Enroute

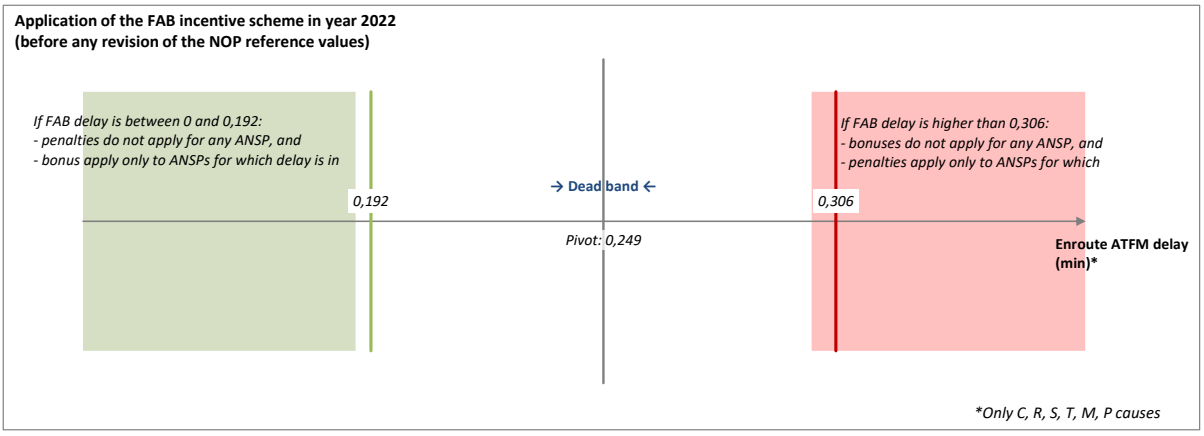
5.2.1.1 Parameters at FAB level for the calculation of financial advantages or disadvantages - Enroute

FABEC - Enroute	Expressed in	Value
Dead band Δ	%	±23,0%
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** These values apply to all ANSPs and for the whole duration of RP3*

		2020	2021	2022	2023	2024
Ref. values (mins of ATFM delay/ flight) as per NM letter of 1.6.2021				0,37	0,37	0,37
Alert threshold (Δ Ref. value in fraction of min)				±0,059	±0,059	±0,059
FAB Performance Plan targets (mins of ATFM delay per flight)				0,37	0,37	0,37
FAB pivot values for RP3 (mins of ATFM delay per flight)*				0,25	0,25	0,25
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,192-0,306]	[0,192-0,306]	[0,192-0,306]
	Bonus range			FAB delay < 0,192	FAB delay < 0,192	FAB delay < 0,192
	Penalty range			FAB delay > 0,306	FAB delay > 0,306	FAB delay > 0,306

** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the November n-1 NOP and the methodology described in 5.2.1.2.a2 below. The pivot values for year n have to be notified to the EC by 1 January n.*



5.2.1.2 Rationale and justification - Enroute

Indicate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:	
a) In order to enable significant and unforeseen changes in traffic to be taken into account:	
a.1) The pivot value for year n IS the reference value from the November release of year n-1 of the NOP.	No
a.2) The pivot value for year n is informed by the November release of the year n-1 of the NOP and calculated according to the following principles and formulas:**	No
b) The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision and an explanation of how the pivot values are calculated.	Yes
The FABEC incentive scheme for the en route ATFM delay per flight KPI has been established in accordance with the requirements of Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the single European sky as well as Implementing Regulation (EU) 2020/1627 of 3 November 2020 on exeptional measures for the third reference period (2020-2024) of the single European sky performance and charging scheme due to the COVID-19 pandemic. The FABEC incentive scheme is based on the en route ATFM delay causes related to the codes C, R, S, T, M and P of the ATFCM user manual. FABEC had already decided to focus on these delay causes in RP2 because ANSPs are supposed to be responsible for them and can influence them; though the reason for respective ATFM-delay might be considered irrelevant by the airspace users, FABEC states are convinced that rewarding or penalising ANSPs for performance that is outside their influence does not incentivise good ANSP performance and might - in case of e.g. good weather - lead to windfall bonuses for ANSPs. In order to assure the correct application of the ATFM-coding, FABEC states continue to apply a post-operation procedure, checking the correct application yearly on a sample basis. Considering the ratio of en route ATFM delay CRSTMP causes, the historical data of the previous reference period (RP2 - 2014-2019) shows that about 67% of en route ATFM delay within FABEC can be considered to be under the responsibility of ANSPs (CRSTMP reasons). Therefore, the pivot values represent 67,2854093198613% of the FABEC capacity targets. For the individual ANSPs, the respective individual average CRSTMP-share of RP2 has been used.	

*** Refer to Annex I, if necessary.*

Justification for the set up of the incentive scheme

5.2.1.3 Parameters for the calculation of financial advantages or disadvantages - Enroute (skeyes)

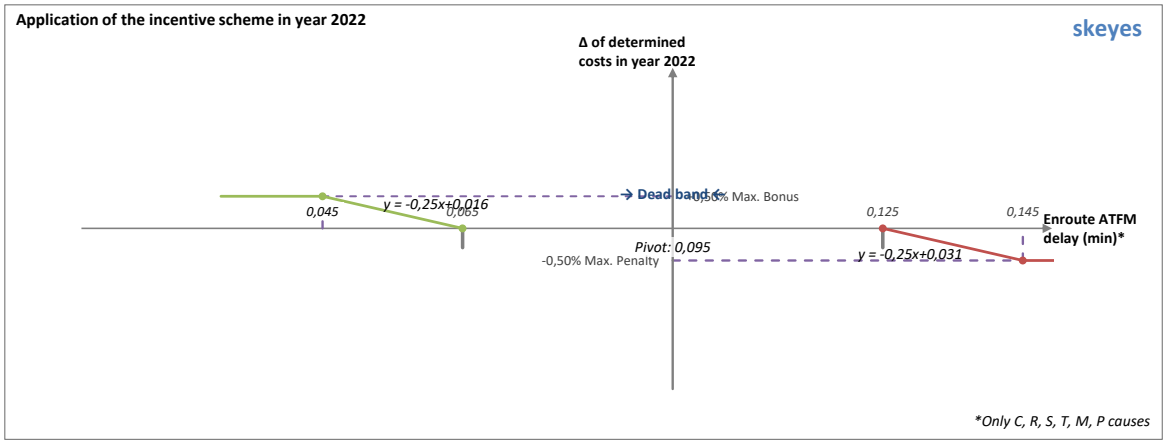
skeyes	Expressed in	Value
Dead band Δ	fraction of min	±0,030 min
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** These values are defined at FAB level and apply to all ANSPs and for the whole duration of RP3*

		2020	2021	2022	2023	2024
Ref. values (mins of ATFM delay/ flight) as per NM letter of 1.6.2021				0,12	0,13	0,12
Alert threshold (Δ Ref. value in fraction of min)				±0,050	±0,050	±0,050
Performance Plan targets (mins of ATFM delay per flight)				0,12	0,13	0,12
Pivot values for RP3 (mins of ATFM delay per flight)**				0,10	0,10	0,10
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,065-0,125]	[0,073-0,133]	[0,065-0,125]
	Bonus sliding range*			[0,045-0,065]	[0,053-0,073]	[0,045-0,065]
	Penalty sliding range*			[0,125-0,145]	[0,133-0,153]	[0,125-0,145]

** Bonuses only apply if ATFM delay per flight in year n at FAB level is within the 'Bonus range' for year n as shown in Section 5.2.1.1 and penalties only apply if ATFM delay per flight in year n at FAB level is within the 'Penalty range' for year n as shown in Section 5.2.1.1.*

*** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the November n-1 NOP and the methodology described in 5.2.1.2.a2. The pivot values for year n have to be notified to the EC by 1 January n.*



5.2.1.4 Parameters for the calculation of financial advantages or disadvantages - Enroute (DSNA)

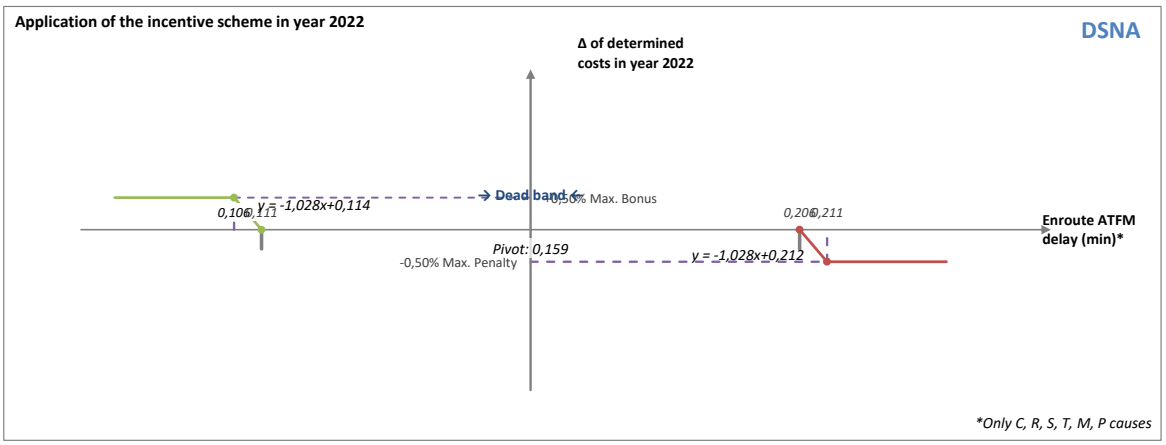
DSNA	Expressed in	Value
Dead band Δ	%	±30,0%
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** These values are defined at FAB level and apply to all ANSPs and for the whole duration of RP3*

		2020	2021	2022	2023	2024
Ref. values (mins of ATFM delay/ flight) as per NM letter of 1.6.2021				0,25	0,25	0,25
Alert threshold (Δ Ref. value in fraction of min)				±0,053	±0,053	±0,053
Performance Plan targets (mins of ATFM delay per flight)				0,25	0,25	0,25
Pivot values for RP3 (mins of ATFM delay per flight)**				0,16	0,16	0,16
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,111-0,206]	[0,111-0,206]	[0,111-0,206]
	Bonus sliding range*			[0,106-0,111]	[0,106-0,111]	[0,106-0,111]
	Penalty sliding range*			[0,206-0,211]	[0,206-0,211]	[0,206-0,211]

** Bonuses only apply if ATFM delay per flight in year n at FAB level is within the 'Bonus range' for year n as shown in Section 5.2.1.1 and penalties only apply if ATFM delay per flight in year n at FAB level is within the 'Penalty range' for year n as shown in Section 5.2.1.1.*

*** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the November n-1 NOP and the methodology described in 5.2.1.2.a2. The pivot values for year n have to be notified to the EC by 1 January n.*



5.2.1.5 Parameters for the calculation of financial advantages or disadvantages - Enroute (DFS)

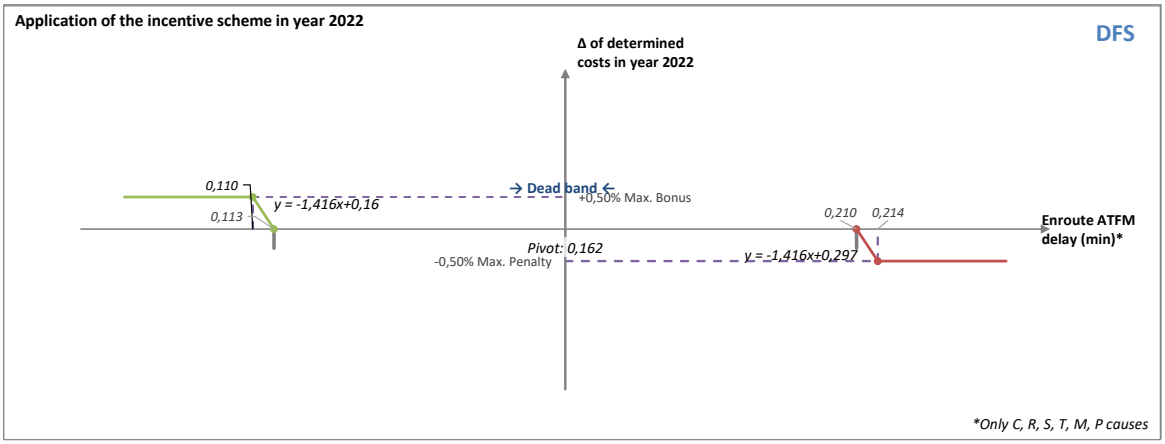
DFS	Expressed in	Value
Dead band Δ	%	±30,0%
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** These values are defined at FAB level and apply to all ANSPs and for the whole duration of RP3*

		2020	2021	2022	2023	2024
Ref. values (mins of ATFM delay/ flight) as per NM letter of 1.6.2021				0,24	0,25	0,24
Alert threshold (Δ Ref. value in fraction of min)				±0,052	±0,053	±0,052
Performance Plan targets (mins of ATFM delay per flight)				0,24	0,25	0,24
Pivot values for RP3 (mins of ATFM delay per flight)**				0,16	0,17	0,16
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,113-0,21]	[0,118-0,219]	[0,113-0,21]
	Bonus sliding range*			[0,11-0,113]	[0,116-0,118]	[0,11-0,113]
	Penalty sliding range*			[0,21-0,214]	[0,219-0,221]	[0,21-0,214]

** Bonuses only apply if ATFM delay per flight in year n at FAB level is within the 'Bonus range' for year n as shown in Section 5.2.1.1 and penalties only apply if ATFM delay per flight in year n at FAB level is within the 'Penalty range' for year n as shown in Section 5.2.1.1.*

*** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the November n-1 NOP and the methodology described in 5.2.1.2.a2. The pivot values for year n have to be notified to the EC by 1 January n.*



5.2.1.6 Parameters for the calculation of financial advantages or disadvantages - Enroute (LVNL)

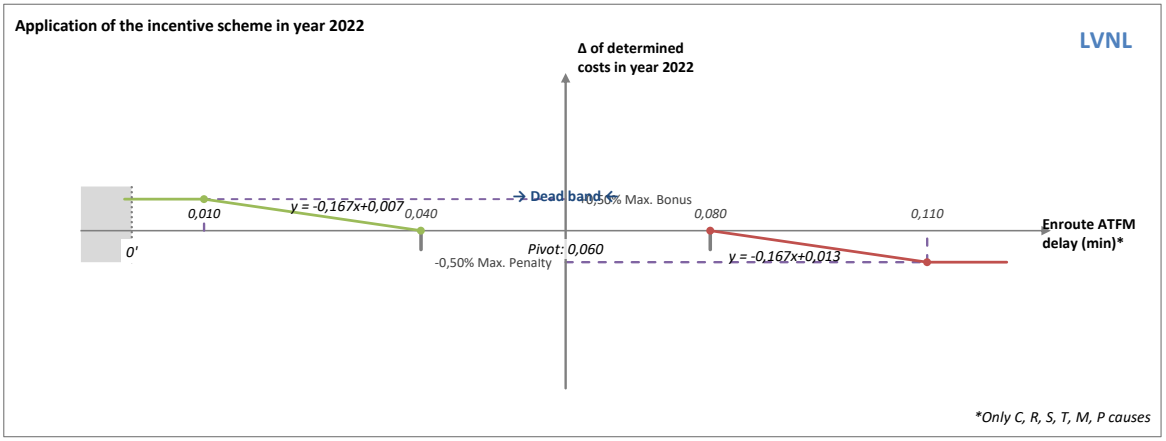
LVNL	Expressed in	Value
Dead band Δ	fraction of min	±0,020 min
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** These values are defined at FAB level and apply to all ANSPs and for the whole duration of RP3*

		2020	2021	2022	2023	2024
Ref. values (mins of ATFM delay/ flight) as per NM letter of 1.6.2021				0,09	0,09	0,10
Alert threshold (Δ Ref. value in fraction of min)				±0,050	±0,050	±0,050
Performance Plan targets (mins of ATFM delay per flight)				0,09	0,09	0,10
Pivot values for RP3 (mins of ATFM delay per flight)**				0,06	0,07	0,07
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,04-0,08]	[0,05-0,09]	[0,05-0,09]
	Bonus sliding range*			[0,01-0,04]	[0,02-0,05]	[0,02-0,05]
	Penalty sliding range*			[0,08-0,11]	[0,09-0,12]	[0,09-0,12]

** Bonuses only apply if ATFM delay per flight in year n at FAB level is within the 'Bonus range' for year n as shown in Section 5.2.1.1 and penalties only apply if ATFM delay per flight in year n at FAB level is within the 'Penalty range' for year n as shown in Section 5.2.1.1.*

*** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the November n-1 NOP and the methodology described in 5.2.1.2.a2. The pivot values for year n have to be notified to the EC by 1 January n.*



5.2.1.7 Parameters for the calculation of financial advantages or disadvantages - Enroute (Skyguide)

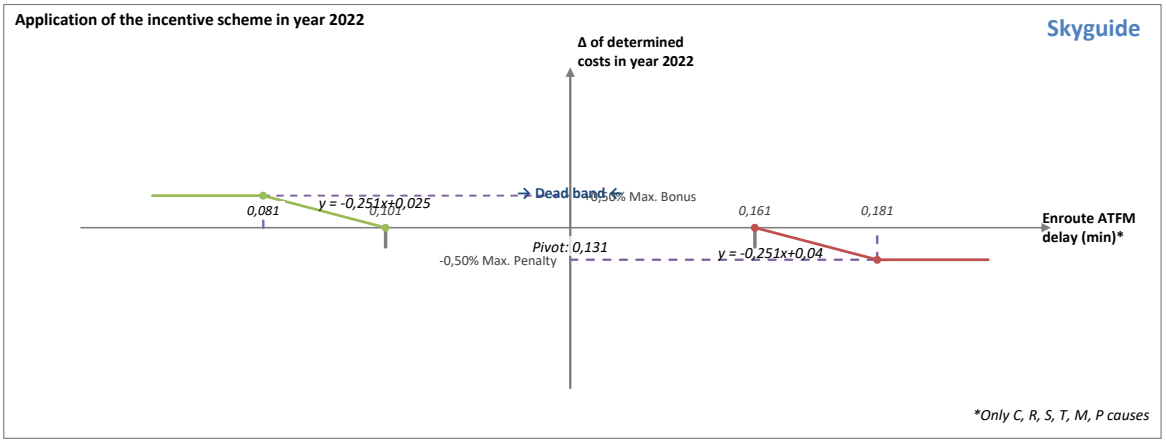
Skyguide	Expressed in	Value
Dead band Δ	%	±23,0%
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** These values are defined at FAB level and apply to all ANSPs and for the whole duration of RP3*

		2020	2021	2022	2023	2024
Ref. values (mins of ATFM delay/ flight) as per NM letter of 1.6.2021				0,19	0,19	0,19
Alert threshold (Δ Ref. value in fraction of min)				±0,050	±0,050	±0,050
Performance Plan targets (mins of ATFM delay per flight)				0,19	0,19	0,19
Pivot values for RP3 (mins of ATFM delay per flight)**				0,13	0,13	0,13
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,101-0,161]	[0,101-0,161]	[0,101-0,161]
	Bonus sliding range*			[0,081-0,101]	[0,081-0,101]	[0,081-0,101]
	Penalty sliding range*			[0,161-0,181]	[0,161-0,181]	[0,161-0,181]

** Bonuses only apply if ATFM delay per flight in year n at FAB level is within the 'Bonus range' for year n as shown in Section 5.2.1.1 and penalties only apply if ATFM delay per flight in year n at FAB level is within the 'Penalty range' for year n as shown in Section 5.2.1.1.*

*** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the November n-1 NOP and the methodology described in 5.2.1.2.a2. The pivot values for year n have to be notified to the EC by 1 January n.*



5.2.1.8 Parameters for the calculation of financial advantages or disadvantages - Enroute (MUAC)

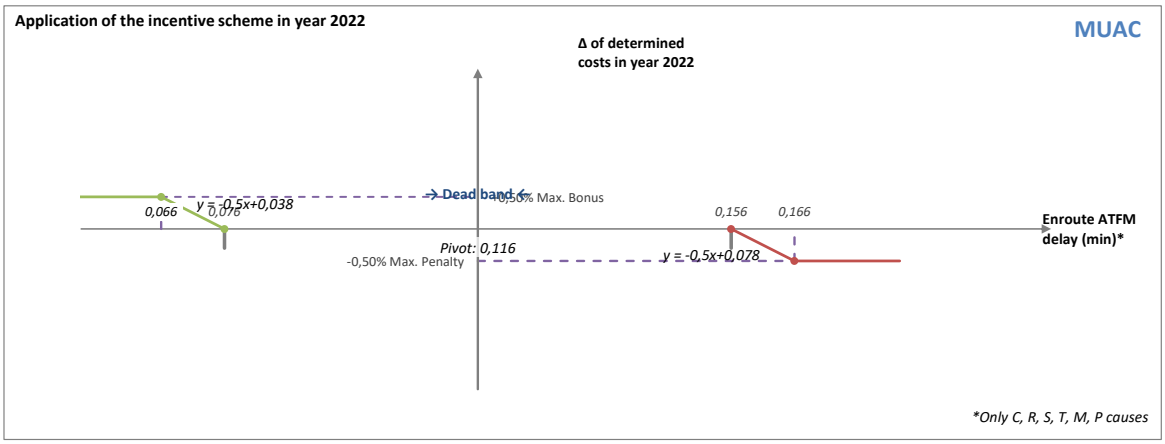
MUAC	Expressed in	Value
Dead band Δ	fraction of min	±0,040 min
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** These values are defined at FAB level and apply to all ANSPs and for the whole duration of RP3*

		2020	2021	2022	2023	2024
Ref. values (mins of ATFM delay/ flight) as per NM letter of 1.6.2021				0,19	0,19	0,19
Alert threshold (Δ Ref. value in fraction of min)				±0,050	±0,050	±0,050
Performance Plan targets (mins of ATFM delay per flight)				0,19	0,19	0,19
Pivot values for RP3 (mins of ATFM delay per flight)**				0,12	0,12	0,12
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,076-0,156]	[0,076-0,156]	[0,076-0,156]
	Bonus sliding range*			[0,066-0,076]	[0,066-0,076]	[0,066-0,076]
	Penalty sliding range*			[0,156-0,166]	[0,156-0,166]	[0,156-0,166]

** Bonuses only apply if ATFM delay per flight in year n at FAB level is within the 'Bonus range' for year n as shown in Section 5.2.1.1 and penalties only apply if ATFM delay per flight in year n at FAB level is within the 'Penalty range' for year n as shown in Section 5.2.1.1.*

*** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the November n-1 NOP and the methodology described in 5.2.1.2.a2. The pivot values for year n have to be notified to the EC by 1 January n.*



5.2.2 - Capacity incentive scheme - Terminal

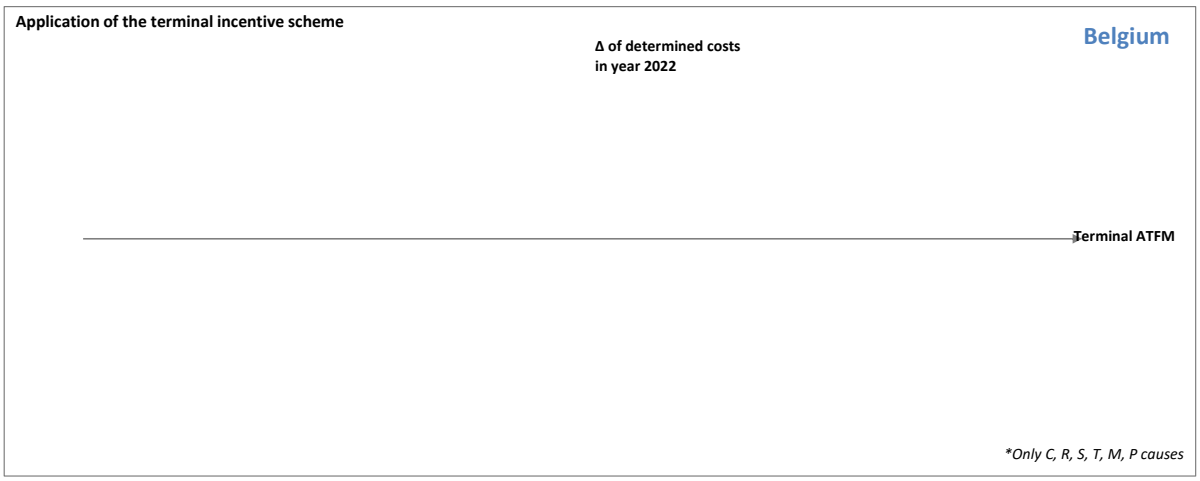
5.2.2.1 Belgium: Capacity incentive scheme - Terminal

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

Belgium - Terminal	Expressed in	Value
Dead band Δ	%	±25,0%
Bonus/penalty range (% of pivot value)	*%*	±50%
Max bonus	*% of DC*	0,125%
Max penalty	*% of DC*	0,50%
The pivot values for RP3 are	modulated	

		2020	2021	2022	2023	2024
Performance Plan targets (mins of ATFM delay per flight)				1,08	1,08	1,08
Bonus/penalty range Δ (in fraction of min)				±0,060	±0,060	±0,060
Pivot values for RP3 (mins of ATFM delay per flight)*				0,12	0,12	0,12
Financial advantages / disadvantages	Dead band range			[0,09-0,15]	[0,09-0,15]	[0,09-0,15]
	Bonus sliding range			[0,06-0,09]	[0,06-0,09]	[0,06-0,09]
	Penalty sliding range			[0,15-0,18]	[0,15-0,18]	[0,15-0,18]

** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the methodology described in 5.2.1.2.a below. The pivot values for year n have to be notified to the EC by 1 January n.*



b) Rationale and justification - Terminal

Explain how the bonus and penalties are going to be apportioned between the different terminal charging zones and ANSPs providing services in each of them**
There is only one Terminal charging zone included in the Performance Plan for Belgium, namely EBBR. Skeyes is the sole service provider.

*** Refer to Annex I, if necessary.*

Indicate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:	
a) The pivot value for year n is modulated in order to enable significant and unforeseen changes in traffic to be taken into account and is based on the principles explained below:**	No
b) The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision and an explanation of how the pivot values are calculated.	Yes
ANSPs can only be held accountable for delay attributed for CRSTMP-causes. Therefore, the incentive scheme should be only applicable to these causes. The CRSTMP ratio has been calculated based on the average ratio CRSTMP/all causes of the last 5 years (2014-2018). This gave a CRSTMP ratio of 11,11%.	

*** Refer to Annex I, if necessary.*

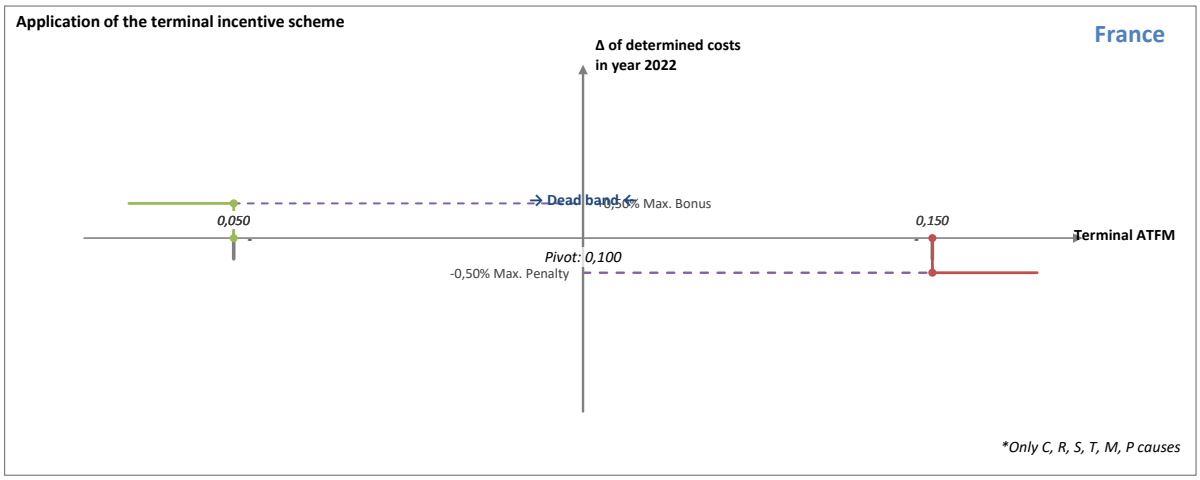
5.2.2.2 France: Capacity incentive scheme - Terminal

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

France - Terminal	Expressed in	Value
Dead band Δ	%	±50,0%
Bonus/penalty range (% of pivot value)	%	±50%
Max bonus	% of DC	0,50%
Max penalty	% of DC	0,50%
The pivot values for RP3 are	modulated	

		2020	2021	2022	2023	2024
Performance Plan targets (mins of ATFM delay per flight)				0,4	0,4	0,4
Bonus/penalty range Δ (in fraction of min)				±0,050	±0,050	±0,050
Pivot values for RP3 (mins of ATFM delay per flight)*				0,10	0,10	0,10
Financial advantages / disadvantages	Dead band range			[0,05-0,15]	[0,05-0,15]	[0,05-0,15]
	Bonus sliding range			[0,05-0,05]	[0,05-0,05]	[0,05-0,05]
	Penalty sliding range			[0,15-0,15]	[0,15-0,15]	[0,15-0,15]

** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the methodology described in 5.2.1.2.a below. The pivot values for year n have to be notified to the EC by 1 January n.*



b) Rationale and justification - Terminal

Explain how the bonus and penalties are going to be apportioned between the different terminal charging zones and ANSPs providing services in each of them**

Based on Annex XIII §1.2 b), the modulation mechanism limits the scope of incentives to cover only ATFM delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with respectively the codes C, R, S, T, M and P of the ATFCM user manual.

In case of a bonus or a penalty, *i.e.* an annual terminal ATFM delay respectively below 0.05 mn/flight or above 0.15 mn/flight, the financial amount A is going to be apportioned proportionally between both terminal charging zones in applying yearly the same sharing key during RP3.

This sharing key is based on the average weight of air traffic managed by each charging zone during RP2, counted in terms of IFR movements, and to be applied for RP3: 40% in the first charging zone (CZ1) and 60% in the second charging zone (CZ2). Indeed, during RP2 the cumulated number of IFR flights in CZ1 and CZ2 was respectively 40% and 60%.

Incentive scheme shares CZ1/CZ2	2015	2016	2017	2018	2019	2020	IS RP3 ratio
Traffic (IFR Mvts - STATFOR)							
CZ1	354 985	358 404	357 396	360 240	363 267	152 751	
CZ2	533 695	544 916	559 940	566 906	579 051	292 157	
Ratio							
CZ1	40%	40%	39%	39%	39%	34%	**40%**
CZ2	60%	60%	61%	61%	61%	66%	**60%**

In year n+2, unit rates for CZ1 and CZ2 will be adjusted by taking into account respectively an amount equal to 40% of A and 60% of A where appropriate.

*** Refer to Annex I, if necessary.*

Indicate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:	
a) The pivot value for year n is modulated in order to enable significant and unforeseen changes in traffic to be taken into account and is based on the principles explained below:**	No
b) The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision and an explanation of how the pivot values are calculated.	Yes

Based on Annex XIII §1.2 b), the modulation mechanism limits the scope of incentives to cover only ATFM delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with respectively the codes C, R, S, T, M and P of the ATFCM user manual. This modulation mechanism has already been used during RP2 for the terminal capacity incentive scheme.

Based on RP2 historical data , CRSTMP share of ATFM delay causes represents 25% of all ATFM delays causes. From the Terminal capacity performance target fixed at 0.4 mn/flight, this percentage has been applied for setting the Pivot value at 0.10 min/flight each year in compliance with the modulation mechanism.

*** Refer to Annex I, if necessary.*

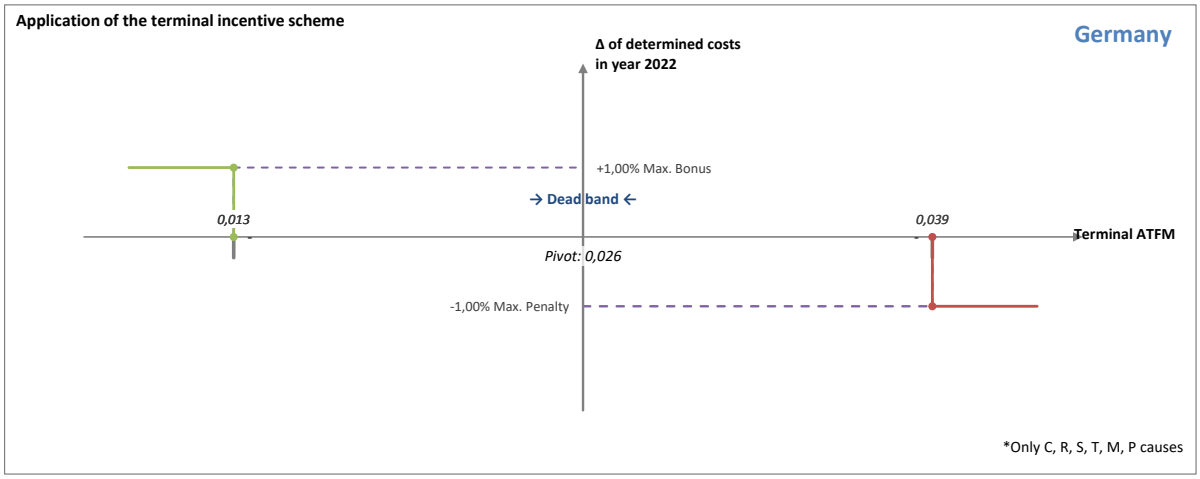
5.2.2.3 Germany: Capacity incentive scheme - Terminal

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

Germany - Terminal	Expressed in	Value
Dead band Δ	%	±50,0%
Bonus/penalty range (% of pivot value)	%	±50%
Max bonus	% of DC	1,00%
Max penalty	% of DC	1,00%
The pivot values for RP3 are	modulated	CRSTMP

		2020	2021	2022	2023	2024
Performance Plan targets (mins of ATFM delay per flight)				0,45	0,45	0,45
Bonus/penalty range Δ (in fraction of min)				±0,013	±0,013	±0,013
Pivot values for RP3 (mins of ATFM delay per flight)*				0,026	0,026	0,026
Financial advantages / disadvantages	Dead band range			[0,013-0,039]	[0,013-0,039]	[0,013-0,039]
	Bonus sliding range			[0,013-0,013]	[0,013-0,013]	[0,013-0,013]
	Penalty sliding range			[0,039-0,039]	[0,039-0,039]	[0,039-0,039]

** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the methodology described in 5.2.1.2.a below. The pivot values for year n have to be notified to the EC by 1 January n.*



b) Rationale and justification - Terminal

Explain how the bonus and penalties are going to be apportioned between the different terminal charging zones and ANSPs providing services in each of them**
There is only one terminal charging zone and only one ANSP providing services in it. Thus, no apportionment does take place.

*** Refer to Annex I, if necessary.*

Indicate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:	
a) The pivot value for year n is modulated in order to enable significant and unforeseen changes in traffic to be taken into account and is based on the principles explained below:**	No
b) The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision and an explanation of how the pivot values are calculated.	Yes
The scope of the incentive scheme is limited to CRSTMP codes of the ATFCM user manual since these are the delay reasons for which ANSPs can be considered as being directly responsible. The average value for CRSTMP delays during the regulated years of RP1, RP2 and the first year of RP3 (2012-2020) was 0,026 min/arrival. For those mentioned reasons the value for RP3 CRSTMP delays is set at 0,026 min/arrival.	

*** Refer to Annex I, if necessary.*

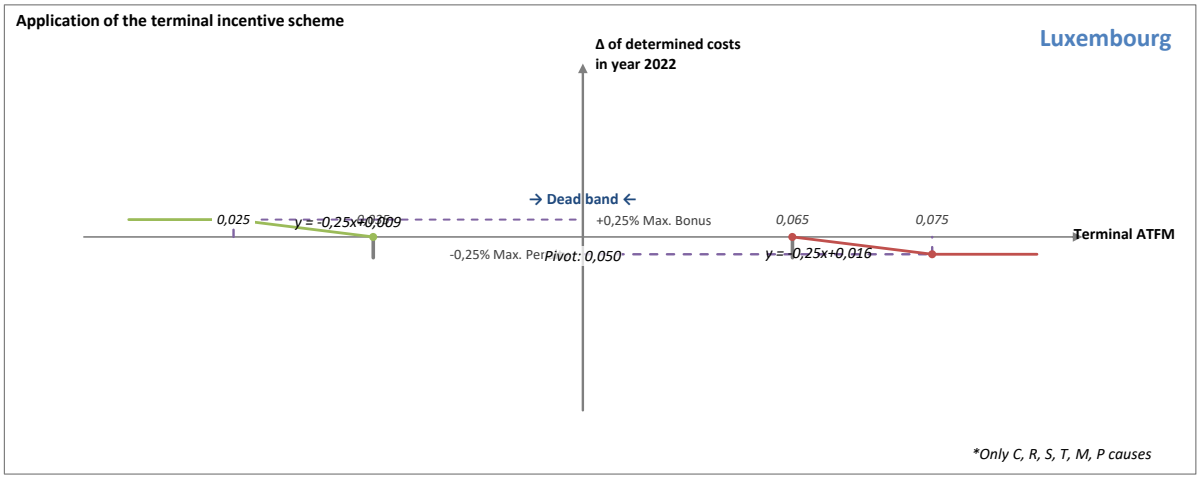
5.2.2.4 Luxembourg: Capacity incentive scheme - Terminal

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

Luxembourg - Terminal	Expressed in	Value
Dead band Δ	%	±30,0%
Bonus/penalty range (% of pivot value)	*%*	±50%
Max bonus	*% of DC*	0,25%
Max penalty	*% of DC*	0,25%
The pivot values for RP3 are	modulated	CRSTMP

		2020	2021	2022	2023	2024
Performance Plan targets (mins of ATFM delay per flight)				0,05	0,05	0,05
Bonus/penalty range Δ (in fraction of min)				±0,025	±0,025	±0,025
Pivot values for RP3 (mins of ATFM delay per flight)*				0,05	0,05	0,05
Financial advantages / disadvantages	Dead band range			[0,035-0,065]	[0,035-0,065]	[0,035-0,065]
	Bonus sliding range			[0,025-0,035]	[0,025-0,035]	[0,025-0,035]
	Penalty sliding range			[0,065-0,075]	[0,065-0,075]	[0,065-0,075]

** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the methodology described in 5.2.1.2.a below. The pivot values for year n have to be notified to the EC by 1 January n.*



b) Rationale and justification - Terminal

Explain how the bonus and penalties are going to be apportioned between the different terminal charging zones and ANSPs providing services in each of them**
N/A (one terminal charging zone) During the COVID-19 crisis (as long as traffic in terms of service units stay below the level of 2019) ANA will waive any bonus which would result from the application of the incentive scheme.

*** Refer to Annex I, if necessary.*

Indicate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:	
a) The pivot value for year n is modulated in order to enable significant and unforeseen changes in traffic to be taken into account and is based on the principles explained below:**	No
b) The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision and an explanation of how the pivot values are calculated.	Yes
ANA choose to take into account CRSTMP delay causes only, as these are the only ones under its control. Delay caused by weather conditions becomes less and less predictable, especially with regard to an increase in the frequency of extreme weather events in recent times. The pivot values have been calculated to be as close to the present values as possible taking into consideration the evolution of the airport during RP3.	

*** Refer to Annex I, if necessary.*

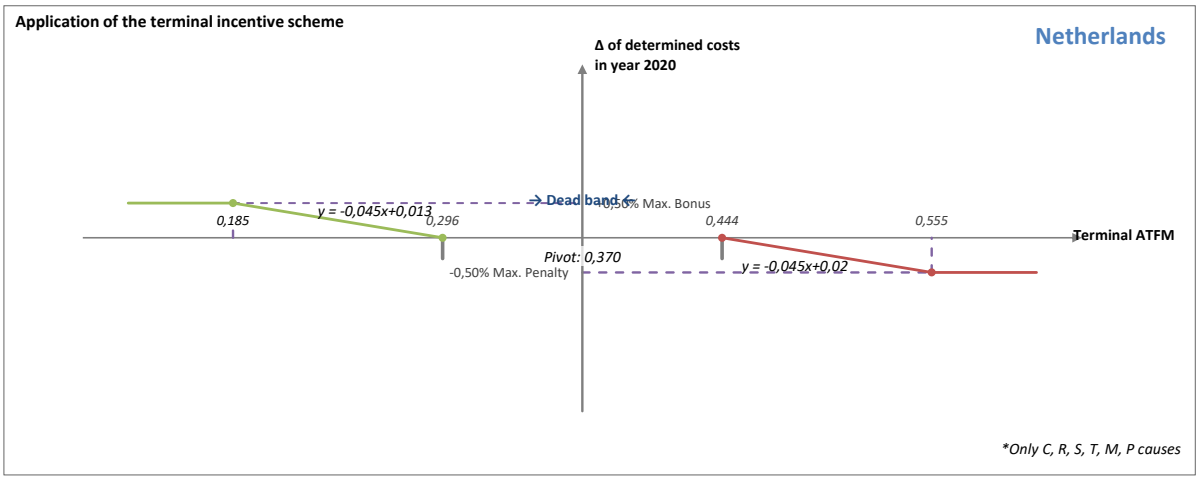
5.2.2.5 Netherlands: Capacity incentive scheme - Terminal

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

Netherlands - Terminal	Expressed in	Value
Dead band Δ	%	±20,0%
Bonus/penalty range (% of pivot value)	%	±50%
Max bonus	% of DC	0,50%
Max penalty	% of DC	0,50%
The pivot values for RP3 are	modulated	

		2020	2021	2022	2023	2024
Performance Plan targets (mins of ATFM delay per flight)				1,6	1,6	1,4
Bonus/penalty range Δ (in fraction of min)				±0,185	±0,185	±0,155
Pivot values for RP3 (mins of ATFM delay per flight)*				0,37	0,37	0,31
Financial advantages / disadvantages	Dead band range			[0,296-0,444]	[0,296-0,444]	[0,248-0,372]
	Bonus sliding range			[0,185-0,296]	[0,185-0,296]	[0,155-0,248]
	Penalty sliding range			[0,444-0,555]	[0,444-0,555]	[0,372-0,465]

** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the methodology described in 5.2.1.2.a below. The pivot values for year n have to be notified to the EC by 1 January n.*



b) Rationale and justification - Terminal

Explain how the bonus and penalties are going to be apportioned between the different terminal charging zones and ANSPs providing services in each of them**
There is only one terminal charging zone in the Netherlands, and only one relevant ANSP (LVNL).

*** Refer to Annex I, if necessary.*

Indicate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:	
a) The pivot value for year n is modulated in order to enable significant and unforeseen changes in traffic to be taken into account and is based on the principles explained below:**	No
b) The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision and an explanation of how the pivot values are calculated.	Yes
Arrival ATFM delays in the Netherlands are dominated by the performance of Schiphol. The vast majority of delays at Schiphol are due to either weather or aerodrome capacity: on average over the period 2016-2019, 37% of delays was due to aerodrome capacity and 52% due to weather – together these two issues have therefore caused approx. 90% of all ATFM delays (in 2020, when traffic was far below normal levels, this was more than 99%). As a basic principle, it is considered unfair to reward or penalise the ANSP for performance that is outside of its influence (i.e. non-CRSTMP delays). Additionally, in particularly weather delays are highly volatile from one year to the next, making it nearly impossible to define a non-modulated incentive scheme that would fairly reward or penalise the ANSP. The Netherlands has therefore decided to introduce a CRSTMP-only scheme. Modulated values have been determined using the same approach as in the performance plan that was submitted in 2019: a stepwise improvement of the all-causes delay target from 2,0 min/flt to 1,2 min/flt was linked to a stepwise improvement in CRSTMP-only delays from 0,5 min/flt to 0,25 min/flt. In this approach, the new all-causes targets for 2022 (1,6 min/flt), 2023 (1,6 min/flt) and 2024 (1,4 min/flt) link to CRSTMP-only targets of resp. 0,37 min/flt; 0,37 min/flt; and 0,31 min/flt.	

*** Refer to Annex I, if necessary.*

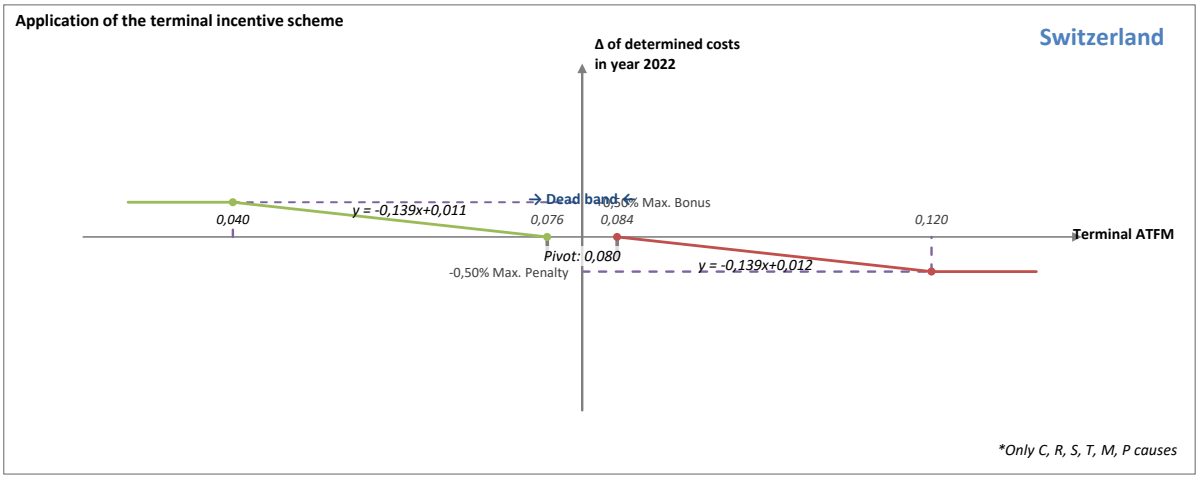
5.2.2.6 Switzerland: Capacity incentive scheme - Terminal

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

Switzerland - Terminal	Expressed in	Value
Dead band Δ	%	±5,0%
Bonus/penalty range (% of pivot value)	%	±50%
Max bonus	% of DC	0,50%
Max penalty	% of DC	0,50%
The pivot values for RP3 are	modulated	CRSTMP

		2020	2021	2022	2023	2024
Performance Plan targets (mins of ATFM delay per flight)				1,15	1,28	1,42
Bonus/penalty range Δ (in fraction of min)				±0,040	±0,045	±0,045
Pivot values for RP3 (mins of ATFM delay per flight)*				0,08	0,09	0,09
Financial advantages / disadvantages	Dead band range			[0,076-0,084]	[0,086-0,095]	[0,086-0,095]
	Bonus sliding range			[0,04-0,076]	[0,045-0,086]	[0,045-0,086]
	Penalty sliding range			[0,084-0,12]	[0,095-0,135]	[0,095-0,135]

** When modulation applies, these figures are only indicative as they will be updated annually on the basis of the methodology described in 5.2.1.2.a below. The pivot values for year n have to be notified to the EC by 1 January n.*



b) Rationale and justification - Terminal

Explain how the bonus and penalties are going to be apportioned between the different terminal charging zones and ANSPs providing services in each of them**
There is only one Terminal Charging Zone included in the Performance Plan for Switzerland and skyguide is the unique ANSP.

*** Refer to Annex I, if necessary.*

Indicate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:	
a) The pivot value for year n is modulated in order to enable significant and unforeseen changes in traffic to be taken into account and is based on the principles explained below:**	No
b) The scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment, airspace management and special events with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision and an explanation of how the pivot values are calculated.	Yes
ANSPs can only be held accountable for delay attributed for CRSTMP causes. Therefore, the incentive scheme should be only applicable to these causes. However in order to mitigate the limitation of this scope, a trigger is set at 1.94 min / arrival movement. This means that a bonus is computed only if the total ATFM arrival delay per arrival movement is below 1.94 min/arrival movement. And a penalty is computed only if the total ATFM arrival delay per arrival movement is above 1.94 min/arrival movement.	

*** Refer to Annex I, if necessary.*

SECTION 6: IMPLEMENTATION OF THE PERFORMANCE PLAN

6.1 Monitoring of the implementation plan

6.2 Non-compliance with targets during the reference period

6 - IMPLEMENTATION OF THE PERFORMANCE PLAN

6.1 Monitoring of the implementation plan

Description of the processes put in place by the NSAs to monitor the implementation of the Performance Plan including the yearly monitoring of all KPIs and PIs defined in Annex I of the Regulation and a description of the data sources
Monitoring processes exist at FABEC and national level, and vary between different KPAs. Capacity and environment performance is reported by the FABEC ANSPs' Performance Management Group (PMG) on a monthly basis. Reports are presented to the States' Financial and Performance Committee (FPC) which meets approximately 6 times per year. Monitoring of the safety KPI is limited to the annual monitoring process described below. Monitoring of PIs is done at national level. Monitoring of cost efficiency and investments is performed at national level. For the annual monitoring process, FABEC will continue to use the process applied during RP2. The process is performed under the responsibility of the FPC, with FPC members nominated as Champions for the development of the individual parts of of the monitoring report. Champions coordinate with: - the FABEC ANSPs' Performance Management Group (PMG) on gathering operational performance information (capacity, environment) - the FABEC States' Safety Performance and Risk Coordination (SPRC) Task Force and the ANSPs' focal points for EoSM for gathering and verifying safety performance data; If necessary, the ANSPs' Standing Committee on Safety will be consulted - national NSAs for information on costs and investments In all areas, identification of the main drivers for performance and in particular for deviations from planned performance will be part of the monitoring process. Input of all Champions is consolidated into a single monitoring report, which is then reviewed, updated and finalised during a dedicated drafting session.

6.2 Non-compliance with targets during the reference period

Description of the processes put in place and measures to be applied by the NSAs to address the situation where targets are not reached during the reference period
Non-compliance with cost efficiency targets is dealt with at national level. Germany, as part of the yearly reporting process, is thoroughly investigating and reporting on deviations from the values set in the performance plan. In that way, Germany is committed to both develop and publish an understanding especially where either internal and external effects caused higher costs in certain areas, challenging targets or not. In addition, the German NSA is closely monitoring the internal management reporting of both DFS and MUAC in order to have an early insight into cost changes with frequent exchanges with both the working and management level if necessary. Furthermore, the NSA is well aware of the opportunity and willing to use the instrument of audits in case it sees that targets are not reached or the financial strength is jeopardised. France addresses the compliance with cost efficiency targets through two processes : - the annual NSA oversight of the ANSPs compliance with Reg (EU) 317/2019 as amended includes cost-efficiency deviations, revision and adjustments. Potential non-compliances would lead to raising findings managed through a formal corrective action plan implementation and follow-up assessment. - the annual monitoring assesses and reports on cost-efficiency aspects as well as investment monitoring. For the Netherlands, compliance with cost efficiency targets is monitored through the regular annual reports and budget planning processes, as well as through six-monthly updates on cost developments. For Switzerland, compliance with cost efficiency targets is monitored through the annual report and budget planning process, as well as through the annual monitoring report on cost-efficiency and investments In Belgium, the regular budget planning and annual reporting processes are used to monitor and verify the compliance with cost efficiency targets. Equally, the annual monitoring report on investments and cost-efficiency is used for this process.

Union-wide safety targets for the end of RP3 i.e. 2024 given by Commission implementing decision (EU) 2021/891 of 2 June 2021 are always born in mind by NSAs through the yearly monitoring process. The ANSPs individual targets for 2021-2023 are checked every year within the NSA assessment of the ANSPs self-assessment. Subject matter experts gather data during January each year and will counteract instantly in case an intermediate target is not reached and thus a non-compliance identified. For that purpose close cooperation between NSAs (SPRC TF / NSAC) and ANSPs (SC-SAF) has been established.

For capacity and environment performance, FABEC has developed the 'OPS performance process' which requires ANSPs to propose measures to improve performance if performance is not in line with targets. Remedial measures are initially proposed to the FPC, which will assess the proposals and provide advice to the FABEC Council to either accept the proposed remedial measures or request further improvements.