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:

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	
Date of adoption of Draft Performance Plan	
Date of adoption of Final Performance Plan	

We hereby confirm that the present performance plan is consistent with the scope of 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	
Belgium	
France	
Germany	
Luxembourg	
Netherlands	
Switzerland	

Additional comments	

Document change record		
Version	Date	Reason for change
0.1	19-aug-21	Initial released version for stakeholder consultation

Table of Content

7 ANNEXES

ANNEX A. REPORTING TABLES & ADDITIONAL INFORMATION (EN-ROUTE)
ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL)
ANNEX C. CONSULTATION
ANNEX D. LOCAL TRAFFIC FORECASTS
ANNEX E. INVESTMENTS
ANNEX F. BASELINE VALUES (COST-EFFICIENCY)
ANNEX G. PARAMETERS FOR THE TRAFFIC RISK SHARING
ANNEX H. RESTRUCTURING MEASURES AND COSTS
ANNEX I. PARAMETERS FOR THE MANDATORY CAPACITY INCENTIVES
ANNEX J. OPTIONAL KPIs AND TARGETS
ANNEX K. OPTIONAL INCENTIVE SCHEMES
ANNEX L. JUSTIFICATION FOR SIMPLIFIED CHARGING SCHEME
ANNEX M. COST ALLOCATION
ANNEX N. CROSS-BORDER INITIATIVES
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 S. INTERDEPENDENCIES
ANNEX T. OTHER MATERIAL
ANNEX U. VERIFICATION BY THE NSA OF THE COMPLIANCE OF THE COST BASE
ANNEX Z. CORRECTIVE MEASURES*
** Only as per Article 15(6) of the Regulation*

SECTION 1: INTRODUCTION

1.1 The situation

1.1.1 - List of ANSPs and geographical coverage of services
1.1.2 - Other entities in the scope of the Performance and Charging Regulation as per Article 1(2) last para.
1.1.3 - Charging zones (see also 1.4-List of Airports)
1.1.4 - Other general information relevant to the plan

1.2 - Traffic Forecasts

1.2.1 - En route
1.2.2 - Terminal

1.3 - Stakeholder consultation

1.3.1 - Overall outcome of the consultation of stakeholders on the performance plan
1.3.2 - Specific consultation requirements of ANSPs and airspace users on the performance plan
1.3.3 - Consultation of stakeholder groups on the performance 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)
1.4.2 Other airports added on a voluntary basis as per Article 1(4)

1.5 - Services under market conditions

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

1.7 - Establishment and application of a simplified charging scheme

1.7.1 - Scope of the simplified charging scheme
1.7.2 - Conditions for the application of the simplified charging scheme

Annexes of relevance to this section

ANNEX C. CONSULTATION
ANNEX D. LOCAL TRAFFIC FORECASTS
ANNEX L. JUSTIFICATION FOR SIMPLIFIED CHARGING SCHEME

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

Additional comments

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

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

			IFR air transport movements			
ICAO code	Airport name	Charging Zone	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

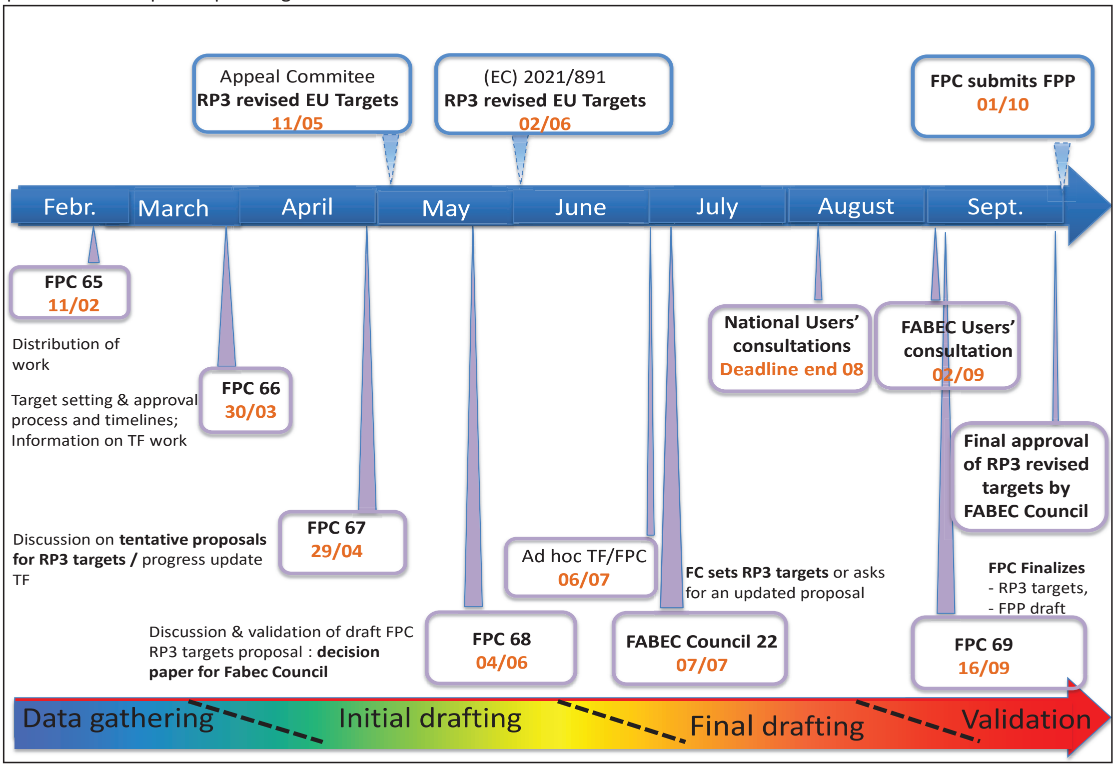
f) Switzerland

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

Additional comments

1.6 - 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 :



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*	-	C	C	C	C
	Safety risk management	*C*	-	C	C	D	D
	Safety assurance	*B*	-	B	B	C	C
	Safety promotion	*C*	-	C	C	C	C
	Safety culture	*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
	Safety risk management	*D*	-	D	D	D	D
	Safety assurance	*C*	-	C	C	C	C
	Safety promotion	*C*	-	C	C	C	C
	Safety culture	*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
	Safety risk management	*C*	-	C	C	D	D
	Safety assurance	*B*	-	B	B	C	C
	Safety promotion	*B*	-	C	C	C	C
	Safety culture	*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*	-	C	C	C	C
	Safety risk management	*C*	-	C	C	D	D
	Safety assurance	*B*	-	B	B	C	C
	Safety promotion	*B*	-	C	C	C	C
	Safety culture	*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
	Safety risk management	*C*	-	C	C	D	D
	Safety assurance	*C*	-	C	C	C	C
	Safety promotion	*C*	-	C	C	C	C
	Safety culture	*C*	-	C	C	C	C
	Additional comments						

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

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

b) 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;
• Review and update of the hazard identification and analysis processes;
• Review the acceptable level of risk in line with the risk tolerance level of the ANSPs' governing body (e.g. Board);
• 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;
• Review the acceptable level of risk in line with the risk tolerance level of the ANSPs' governing body (e.g. Board);
• 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.

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%

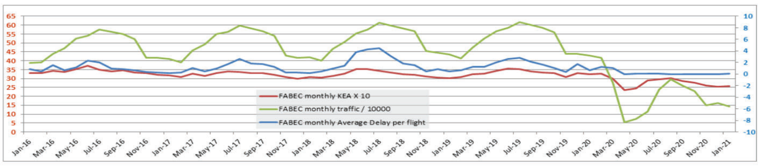
	2020 Target	2021 Target	2022 Target	2023 Target	2024 Target
FAB targets	n/a	2.75%	2.75%	2.75%	2.75%

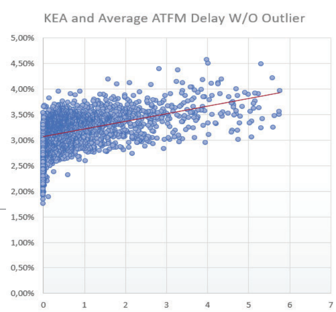
Breakdown values	*2020A* *Actual*	2020 Value	2021 Value	2022 Value	2023 Value	2024 Value
MUAC contribution to FABEC target	*n/a*	n/a	1,90%	1,85%	1,85%	1,85%
MUAC contribution to FABEC target referring to all MUAC States (Belgium, Germany, Luxembourg, the Netherland)	All states (Belgium, Germany, Luxembourg, 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*	n/a	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. 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). At tactical level, the former campaign "Stick to your flight Plan" organized by the Network Manager to deal with the capacity at network level during the summer was limiting skeyes' possibilities for HFE improvement as no direct or shortcut can be given anymore. Should these measures be put in place during 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 hampered by any eNM measure. 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 targets contained in the ERNIP. Skeyes therefore counts on the following : - 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 a pillar addressing horizontal flight efficiency is present. 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*	n/a	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*	n/a	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		n/a	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, there is limited room for signifcant improvements. 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 are 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. 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*	n/a	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.?					

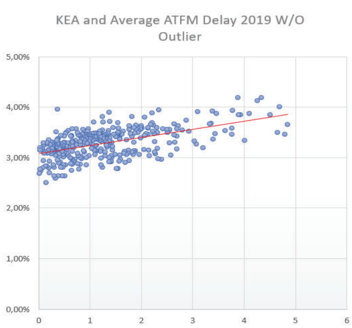
b) Detailed justifications in case of inconsistency between FAB targets and FAB reference values

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 evolutation - and thus also uncertainties as far as bottlenecks and delays might endanger this goal.





Conclusion:
We can derive an equation as follows:
y = b0 + B1x
KEA = 0,0309526553346238 + 0,00114880921312177.Average ATFM Delay



Conclusion:
We can derive an equation as follows:
y = b0 + B1x
KEA = 0,0312888303131166 + 0,00121222756558709.Average ATFM Delay

In addition, FABEC continues to underline the limitations of the KPI HFE, with significant influencial 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, 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). Furthermore, from a network perspective, focussing on local HFE might also 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 <u>ERNIP Part 2</u> (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

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 the main factor 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.

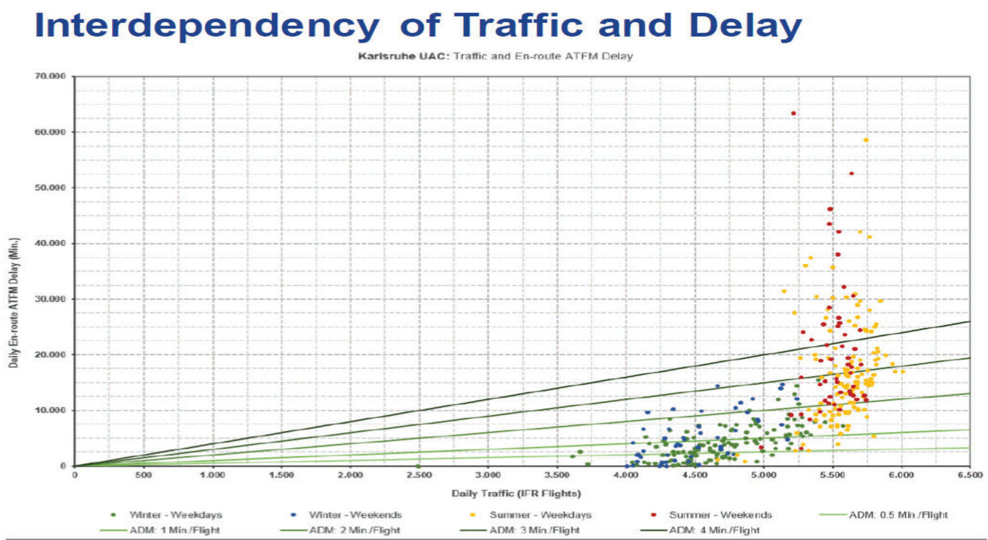
It is still expected that, In the next years, despite extensive efforts, some FABEC ACCs could still be facing an imbalance between traffic and capacity (the targets are challenging and performance will also depend on the traffic evolution which is currently still very uncertain) or staffing issues. 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 2019 – 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.



Oth es 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 latest European Network Operations Plan 2022-2024 edition October 2021.

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.

Civ-Mil co-location took take place end 2019, and a better application of FUA is enabled by the implementation in 2019 of 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 30% additional capacity is expected whithin the three years after commissioning), December 2023 in Paris ACC (20 to 30% 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 our 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 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, a FRA cross-border 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. The initiatives will be embedded in the future edition of the European Route Network Improvement Plan (ERNIP) - Part 2 -when they are mature enough. This plan will include all relevant Airspace Projects to provide a network consolidated picture including FABEC projects and the evaluation of their expected benefit. A close cooperation and synchronisation 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 2022 - 2024 ANSP capacity planning included in the latest NOP, 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

	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)		1,2	3	8,5	12,75	22,1	15,3
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	14,28	13,5	21,8	15,65	6,45	3,3	3,9
# of ATCOs in OPS planned to be operational at year-end (FTEs)	242,41	230,11	211,31	204,16	210,46	229,26	240,66

	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)		9,4	27,9	34	17	20,4	20,4
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	9,8	10	7,9	15,18	5,46	4	1,3
# of ATCOs in OPS planned to be operational at year-end (FTEs)	373,04	372,44	392,44	411,26	422,8	439,2	458,3

	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)		13,5	21,2	18,7	12,75	32,3	22,1
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	5,88	14,6	25,5	32,6	15,32	18,98	13,49
# of ATCOs in OPS planned to be operational at year-end (FTEs)	430,82	429,72	425,42	411,52	408,95	422,27	430,88

	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)		3,4	7,5	2	0	6,8	3,4
# of ATCOs in OPS planned to stop working in the OPS room (FTEs)	13	8,5	5,5	9,42	15,86	1,68	5,78
# of ATCOs in OPS planned to be operational at year-end (FTEs)	275,27	270,17	272,17	264,75	248,89	254,01	251,63

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 extend 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.

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

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

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.

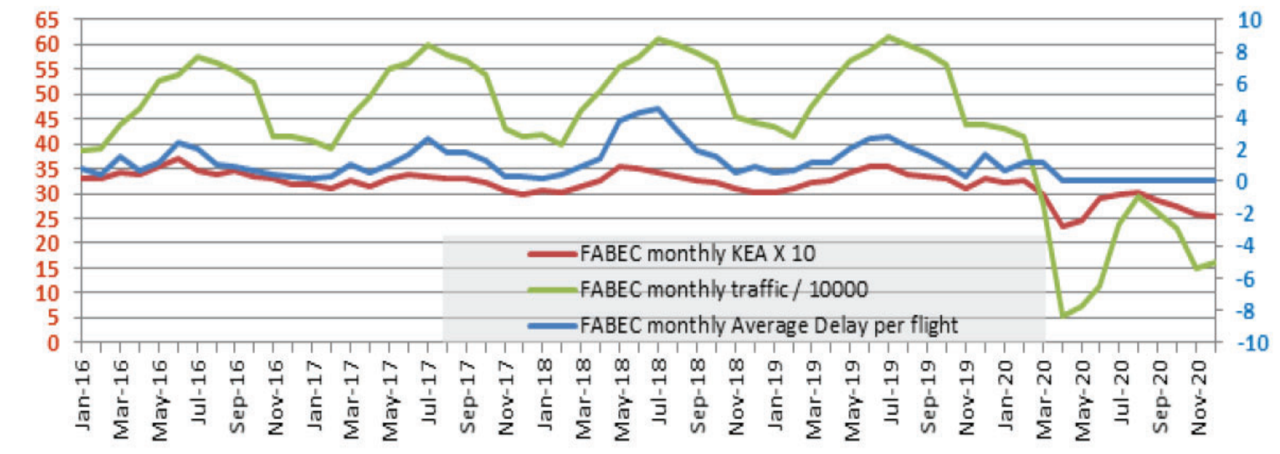
e) Have the States reviewed the ANSP financial and personnel resources that are needed to support safe ATC service provision through safety promotion, safety improvement, safety assurance and safety risk management after changes introduced to achieve targets in other KPAs? Please, explain.

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 r



In addition NM summer initiatives introduced as from 2018 summer introduced massive rerouting which have

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 one project (out of 300) focusing on FUA improvement. In addition, benefits from FUA implementation will only be perceivable if the level of military activity/training will remain unchanged in the years to come. Increase of military activity has a large adverse impact on flight efficiency.

- 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

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

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 eExpansion 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 in the coming years in order to support 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	Discussion with Brussels Airport Company on the implementation of extended AOP is expected to start in course of 2023.
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 FCM05: implementation ongoing and dependent on progress on Eurocontrol/ Network Manager side and on implementation of local trafic complexity tool. Implementation is expected to be finalised by end 2021.
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.
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	AMAN and DMAN are in operation in Paris CDG, their integration is a new topic under investigation
Nice Cote d'Azur	AMAN and DMAN are in operation in Paris CDG, their integration is a new topic under investigation

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	ANSP data to be shared under investigation
Paris-Orly	ANSP data to be shared under investigation
Nice Cote d’Azur	ANSP data to be shared under investigation
CP1-s-AF2.2.2 Airport operations plan (AOP)	
Paris-CDG	ANSP data to be shared under investigation
Paris-Orly	ANSP data to be shared under investigation
Nice Cote d’Azur	ANSP data to be shared under investigation
Lyon Saint-Exupéry	ANSP data to be shared under investigation
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

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	Participation in PJ38 will prepare use of trajectory information data especially for display to the controller.
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

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
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
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	
CP1-s-AF3.2 Free route airspace	
CP1-AF4 - Network Collaborative Management	
CP1-s-AF4.1 Enhanced short-term ATFCM measures	

CP1-s-AF4.2 Collaborative NOP	
CP1-s-AF4.3 Automated support for traffic complexity assessment	
CP1-s-AF4.4 AOP/NOP integration	
CP1-AF5 - SWIM	
CP1-s-AF5.1 Common infrastructure components	
CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	
CP1-s-AF5.3 Aeronautical information exchange	
CP1-s-AF5.4 Meteorological information exchange	
CP1-s-AF5.5 Cooperative network information exchange	
CP1-s-AF5.6 Flight information exchange (yellow profile)	
CP1-AF6 - Initial Trajectory Information Sharing	
CP1-s-AF6.1 Initial air-ground trajectory information sharing	
CP1-s-AF6.2 Network Manager trajectory information enhancement	
CP1-s-AF6.3 Initial trajectory information sharing ground distribution	

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.
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.
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.
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.
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. 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.
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
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.
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.
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.
CP1-s-AF5.2 SWIM yellow profile technical infrastructure and specifications	In RP3 LVNL will implement the SWIM yellow profile technical infrastructure.
CP1-s-AF5.3 Aeronautical information exchange	In RP3 LVNL will implement the exchange of aeronautical information via SWIM.
CP1-s-AF5.4 Meteorological information exchange	In RP3 LVNL will implement the exchange of Meteorological information via SWIM.
CP1-s-AF5.5 Cooperative network information exchange	In RP3 LVNL will implement the exchange of Cooperative network information via SWIM.
CP1-s-AF5.6 Flight information exchange (yellow profile)	In RP3 LVNL will implement the exchange of Flight information (yellow profile) via SWIM.
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.

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
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
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?).

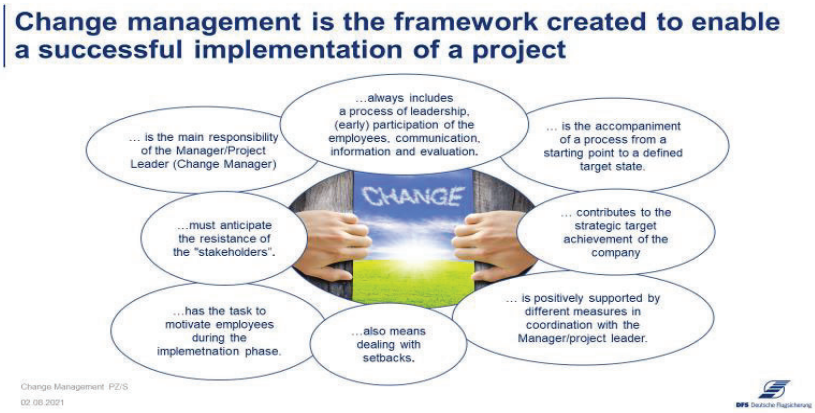
4.3 - Change management

Change management practices and transition plans for the entry into service of major airspace changes or for ATM system improvements, aimed at minimising any nega
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 chang 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 togethe 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 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.

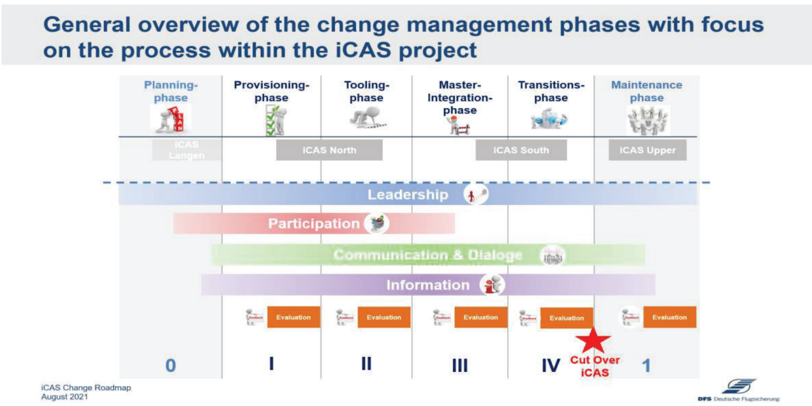
2. In the second phase, the planning and organization phase, a stakeholder analysis is carried out and a change architecture is developed. This change architecture consi a rough milestone plan from which the detailed planning of the change measures per field of action (leadership, participation, communication & dialogue, information a 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 prograı 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 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 t 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 we 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 a 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 n 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 th next target – the corrective maintenance of technical systems. This improvement results from the implementation of an open and modular architecture, the regular roll- 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 ste 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 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, reporti 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 t 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 sa 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 ma 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 matte 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 tha 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 provid 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 b approved Idea Sheet (IDS), committing resources for this first stage, and approves the Project Management Plan (PMP) to allocate the necessary resources for the proje 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 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 res to different assessments, the human factors aspect (operational and technical staff) will be covered as well. The necessary elements to timely train operational and tech 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 t SAS3 program.

Skyguide

Virtual Centre

With the Virtual Centre, skyguide play a pioneering role in implementing the Airspace Architecture Study as defined by the SESAR Joint Undertaking. Concretely, it mean improving the way Skyguide manages the airspace, offering capacity that matches the demand of the customers, and being more resilient and able to absorb traffic variations in a scalable manner. The main pillars of Skyguide's strategy consist of harmonizing the practices between Zurich and Geneva ACCs, improving efficiency in the way Skyguide manage the airspace and deliver capacity, and finally, increasing the resilience and scalability of the operations.

SECTION 5: TRAFFIC RISK SHARING ARRANGEMENTS AND INCENTIVE SCHEMES

Annexes of relevance to this section

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%

5.2 - Capacity incentive schemes

5.2.1 - Capacity incentive scheme - Enroute

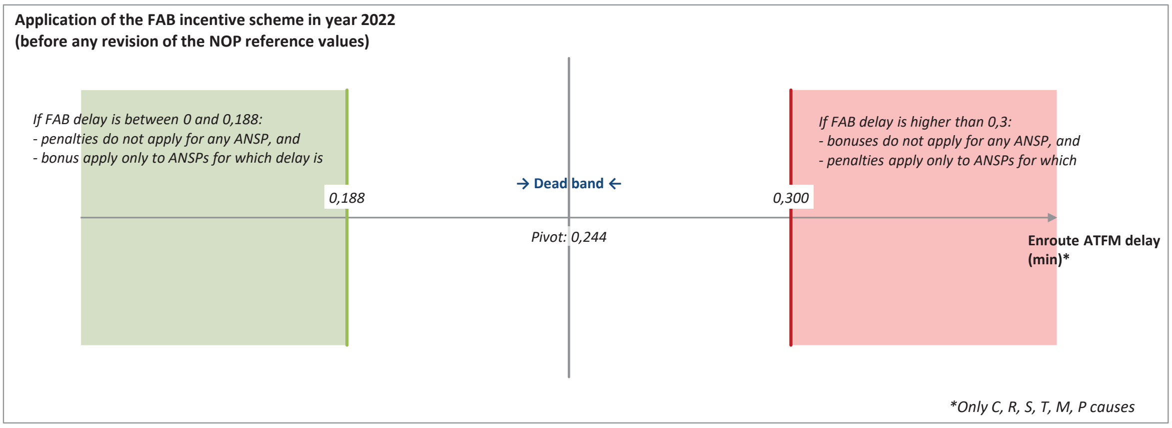
5.2.1.1 Parameters at FAB level for the calculation of financial advantages or disadvantages - Enroute

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)*				0,24	0,24	0,24
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,188-0,3]	[0,188-0,3]	[0,188-0,3]
	Bonus range			FAB delay < 0,188	FAB delay < 0,188	FAB delay < 0,188
	Penalty range			FAB delay > 0,3	FAB delay > 0,3	FAB delay > 0,3

** 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 years 2012-2020 shows that about 66% of en route ATFM delay can be considered to be under the responsibility of ANSPs (CRSTMP reasons). Therefore, the pivot values represent 66% of the FABEC capacity targets. It can be noted that even for the pandemic year 2020 with low traffic volumes, only a slightly higher value applies and therefore FABEC considered the averages from 2012-2019 and 2020 are relevant in RP3 despite very different traffic volumes throughout the RP.

*** 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

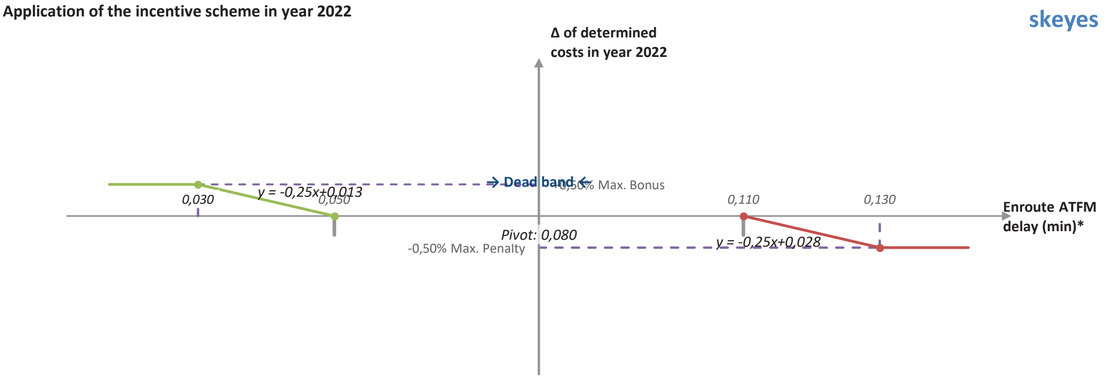
** These values are defined at FAB level and apply to all ANSPs and for the whole duration of RP3*

		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)**				0,08	0,09	0,08
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,05-0,11]	[0,06-0,12]	[0,05-0,11]
	Bonus sliding range*			[0,03-0,05]	[0,04-0,06]	[0,03-0,05]
	Penalty sliding range*			[0,11-0,13]	[0,12-0,14]	[0,11-0,13]

** 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.*

Application of the incentive scheme in year 2022



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

5.2.1.4 Parameters for the calculation of financial advantages or disadvantages - Enroute (DSNA)

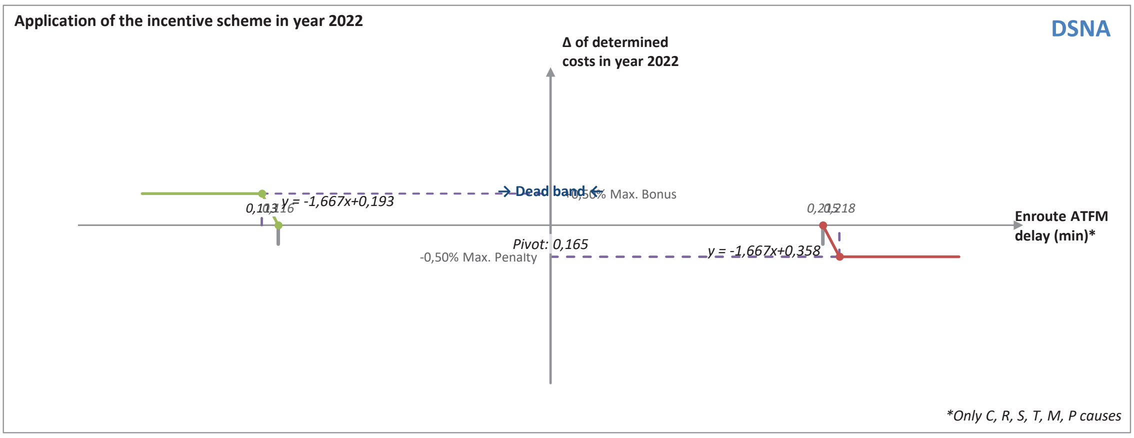
DSNA	Expressed in	Value
Dead band Δ	%	±30,0%
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** 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)**				0,17	0,17	0,17
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,116-0,215]	[0,116-0,215]	[0,116-0,215]
	Bonus sliding range*			[0,113-0,116]	[0,113-0,116]	[0,113-0,116]
	Penalty sliding range*			[0,215-0,218]	[0,215-0,218]	[0,215-0,218]

** 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)

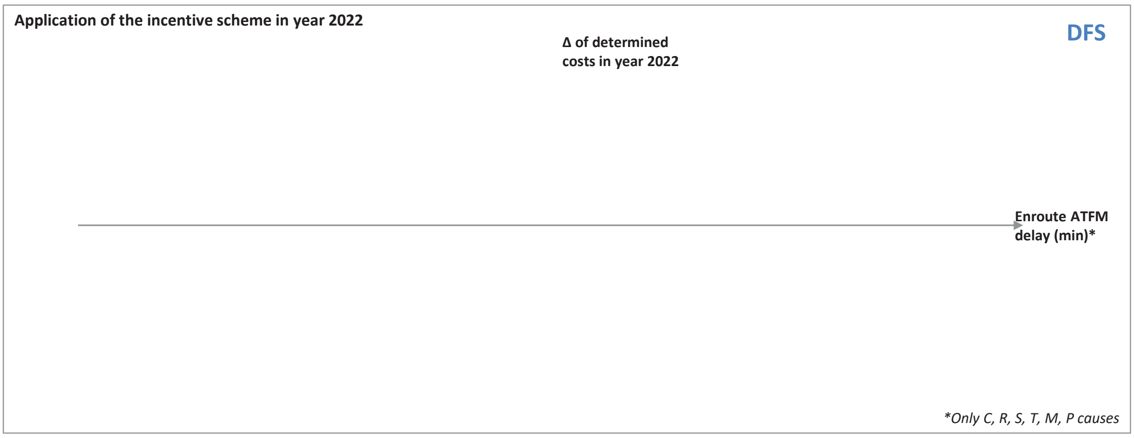
DFS	Expressed in	Value
Dead band Δ	%	±23,0%
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** 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				0,24	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			[0,122-0,195]	[0,127-0,203]	[0,122-0,195]
	Bonus sliding range*			[0,106-0,122]	[0,113-0,127]	[0,106-0,122]
	Penalty sliding range*			[0,195-0,21]	[0,203-0,218]	[0,195-0,21]

** 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)

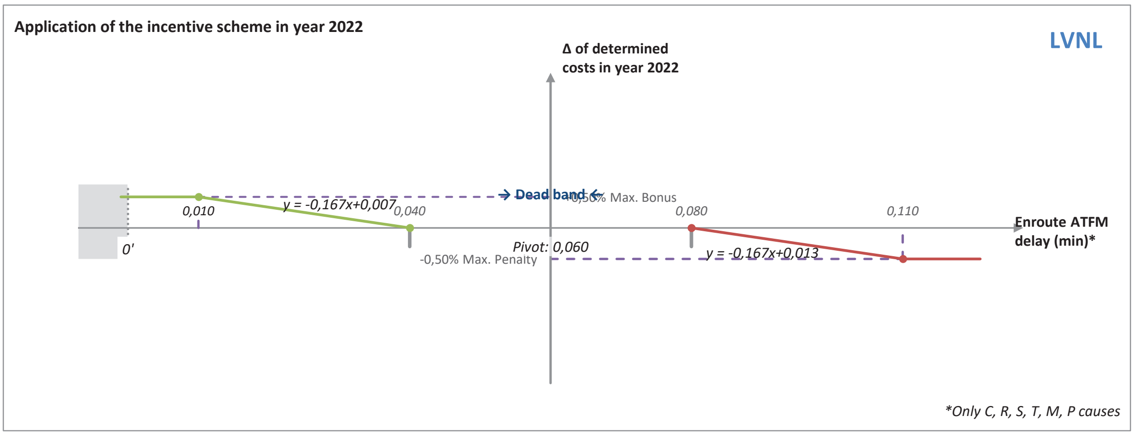
LVNL	Expressed in	Value
Dead band Δ	fraction of min	±0,020 min
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** 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)

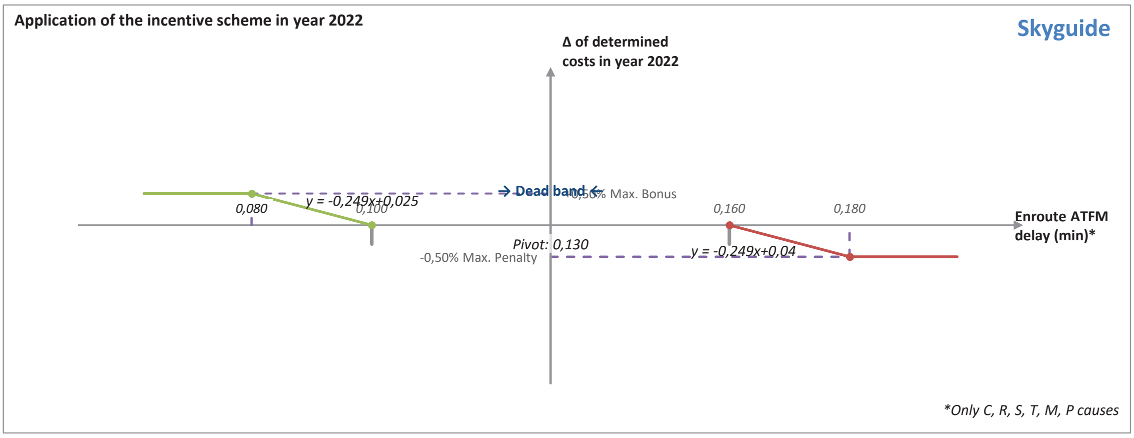
Skyguide	Expressed in	Value
Dead band Δ	%	±23,0%
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** 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			[0,1-0,16]	[0,1-0,16]	[0,1-0,16]
	Bonus sliding range*			[0,08-0,1]	[0,08-0,1]	[0,08-0,1]
	Penalty sliding range*			[0,16-0,18]	[0,16-0,18]	[0,16-0,18]

** 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)

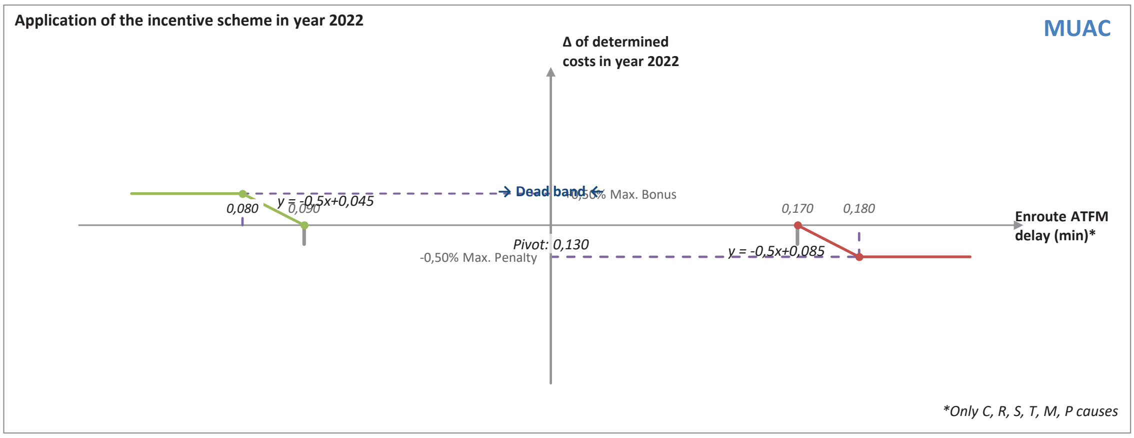
MUAC	Expressed in	Value
Dead band Δ	fraction of min	±0,040 min
Max bonus (≤2%)*	*% of DC*	0,50%
Max penalty (≥ Max bonus)*	*% of DC*	0,50%
The pivot values for RP3 are*	modulated	CRSTMP

** 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)**				0,13	0,13	0,13
Delay ranges for the calculation of financial advantages / disadvantages	Dead band range			[0,09-0,17]	[0,09-0,17]	[0,09-0,17]
	Bonus sliding range*			[0,08-0,09]	[0,08-0,09]	[0,08-0,09]
	Penalty sliding range*			[0,17-0,18]	[0,17-0,18]	[0,17-0,18]

** 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.*



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. 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.