# **Performance Plan**

# Norway

Third Reference Period (2020-2024)

Status: Draft performance plan (Article 12)

Date of issue: 15.11.2019

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\* Only as per Article 15(6) of the Regulation

## Signatories

Performance plan details							
State name	Norway						
Status of the Performance Plan	Draft performance plan (Article 12)						
Date of issue	15.11.2019						
Date of adoption of Draft	15.11.2019						
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								
Mr. Fredrik Birkheim Arnesen Director General Ministry of Transport	Dealth Brothelin Husty							

Additional comments

#### 

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## **1 - INTRODUCTION**

## 1.1 - The situation

NSA(s) responsible for drawing up the	Civil Aviation Authority Norway
Performance Plan	

## 1.1.1 - List of ANSPs and geographical coverage and services

Number of ANSPs		2					
ANSP name	Services	Geographical scope					
Avinor Flysikring AS (Avinor ANS)	En-Route ATS	Norway					
Avinor AS	Terminal ATS	Norway					

#### Cross-border arrangements for the provision of ANS services

Number CB arrangements where ANSPs provide services in an other State		6		
ANSPs providing services in the FIR of	another State			
ANSP Name	Description and scope of the cross-border arrangement			
Avinor Flysikring AS	Kirkenes TMA West and Centre are within Finnish airspace (see 4.1.1, initiative 1).			
Avinor Flysikring AS	North Sea Helicopters - Scottish FIR (see 4.1.1, initiative 2).			
Avinor Flysikring AS	North Sea Helicopters - Norway FIR (see 4.1.1, initiative 3).			
Avinor Flysikring AS	Sweden FIR/Norway FIR (see 4.1.1, initiative 4).			
Avinor Flysikring AS	inland FIR/Norway FIR (see 4.1.1, initiative 5).			
Avinor Flysikring AS	Free Route Airspace (see 4.1.1, initiative 6)			

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

ANSPs established in another Member State providing services in one or more of the State's FIRs					
ANSP Name	escription and scope of the cross-border arrangement				
NATS	North Sea Helicopters - Norway FIR (see 4.1.1, initiativ 3).				
LFV	Sweden FIR/Norway FIR (see 4.1.1, initiative 4).				
Saerco	TWR and APP services at Kristiansand airport Kjevik (from 01.03.2020)				

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#### 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	3						
Entity name	Domain of activity	Rationale for inclusion in the Performance Plan					
The Civil Aviation Authority of	National regulator	The CAA N is the competent authority (NSA) in Norway					
Norway (CAA-N)	National regulator	e CAA-IN IS the competent autionty (INSA) IN NOTWay.					
The Norwegian Meteorological	Norwegian MET	The Nerwagian Meteorological Institute is the designated MET provider in Nerway					
Institute (MET)	provider	I ne Norwegian Meteorological Institute is the designated MET provider in Norwa					
Europentual	Intergovernmental	Norway is a member of Eurocontrol and the determined cost stemming from the					
	Agency	Eurocontrol International Convention is a part of the cost base.					

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

En-route	Number of en-route charging zones	1
En-route charging zone 1	Norway	
Terminal	Number of terminal charging zones	1
Terminal charging zone 1	Norway - TCZ	

#### 1.1.4 - Other general information relevant to the plan

Avinor Flysikring AS (Avinor ANS) is the designated provider of ATC-services in Norway. Avinor ANS is a subsidiary company of Avinor AS, which is the owner of the major airports in Norway. Both companies are limited liability companies ("AS"). All the shares of Avinor AS are owned by the State, and administered by the Ministry of Transport (the Ministry).

Avinor Flysikring AS (Avinor ANS) is identified in the performance plan as the service provider for ATC-services in the en route charging zone. Avinor AS is identified as the service provider for ATC-services in the terminal charging zone. The latter solution may not seem logical, but it is related to the fact that Avinor AS as airport owner purchases ATC-services from Avinor ANS in the terminal charging zone, related to their airports, in addition to Avinor AS being an actual provider of CNS-services. All figures reported by Avinor AS in relation to ATC-services in the terminal charging zone are based on the actual costs of Avinor ANS to deliver ATC-services (i.e.: figures are not based on contractual costs).

The Norwegian Meteorological Institute (MET) is designated as the national service provider of meteorological air navigation services. MET delivers its services through contractual relations with Avinor ANS and Avinor AS. These contracts regulate the level and quality of service provision, as well as the costs. The MET cost base is as such an integral part of the cost bases for Avinor ANS and Avinor AS, ategorized solely as operating costs. The cost efficiency target of MET (for RP2) is set through the Ministry's designation of MET as a national service provider. The Ministry has not yet set a cost efficiency target for MET for RP3.

The Spanish service provider SAERCO has, through a tender process, been awarded a contract to provide ATC-services on two airports not directly a part of the performance scheme. The service provision will commence in spring 2020. This will for one of the airports (Kristiansand airport, Kjevik) have an effect on the part of the "approach"-services that is allocated to the en route charging zone. The cost allocation model chosen for the performance plan includes the Kjevik approach cost allocated to the en route cost base.

Additional comments

## 1.2 - Traffic Forecasts

#### 1.2.1 - En route

En route Charging zone 1	Norway								
En route traffic forecast				L	ocal forec	ast			
Local Forecast	2017A	2018A	2019	2020	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	591	594							-
IFR movements (yearly variation in %)		0,6%					1		
En route service units (thousands)	2 527	2 522	2 427	2 462	2 484	2 519	2 549	2 583	1,3%
En route service units (yearly variation in %)		-0,2%	-3,8%	1,4%	0,9%	1,4%	1,2%	1,3%	

Specific local factors justifying not using the STATFOR base forecasts					
(provide justification below or refer to Annex D for more detailed explanation)					
The En Route service units are based on STATFOR base forecast from October 2019 for the period 2019-2024 using model 3, taking into consideration the					
ratios M3/M2 published by the CRCO for November 2017 to May 2019.					
Ref. ANNEX D. LOCAL TRAFFIC FORECASTS					

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

## 1.2.2 - Terminal

Terminal Charging zone 1		- TCZ							
Terminal traffic forecast				L	ocal forec	əst			
Local Forecast	2017A	2018A	2019	2020	2021	2022	2023	2024	CAGR 2019-2024
IFR movements (thousands)	214,5	215,7							-
IFR movements (yearly variation in %)		0,6%							
Terminal service units (thousands)	246,2	252,6	262,0	267,1	269,4	272,4	274,7	277,5	1,2%
Terminal service units (yearly variation in %)		2,6%	3,7%	1,9%	0,9%	1,1%	0,8%	1,0%	

Specific local factors justifying not using the STATFOR base forecasts

(provide justification below or refer to Annex D for more detailed explanation)

The Terminal service units are based on STATFOR base forecast from October 2019 for the period 2019-2024 including offshore traffic for the airports.

Ref. ANNEX D. LOCAL TRAFFIC FORECASTS

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

## 1.3 - Stakeholder consultation

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

Description of main points raised by stakeholders and explanation of how they were taken into account in developing the performance plan

#### Traffic forecasts

NHO Luftfart (NHO) asked whether STATFOR forecasts will be used in the Performance Plan (PP).

Avinor Flysikring AS (AFS) commented that there might be presented local forecasts that may be used in the PP, but they were aware that these forecasts will have to be discussed and justified.

Concerning offshore traffic, Avinor AS (Avinor) mentioned that growth in traffic is larger than in other traffic, but that this has a low total impact.

Result: CAA is proposing local forecasts in the performance plan. These have been put forward by AFS, and has been consulted with the airspace users.

#### Investments

NHO asked if the WACC will be discussed, and which WACC that would be the basis for RP3. Avinor confirmed that their figures is based on the new WACC calculated in January 2019. IATA asked for the beta and the other factors that the WACC is based on. CAA said that they will get this information from Avinor AS, and send it too IATA.

NHO asked about the time frame for investments. AFS will make an update on this in September, but expects it not to be very different from the current.

SAS asked whether ATM system implementation delay might occur, since AFS is dependent on other partners in this project. AFS answered that this is possible, but that AUs will be consulted if this happens.

Result: CAA proposes use of a WACC as recommended by Avinor/AFS based on Deloitte report (see point 1.3.3).

#### National targets

Safety (no comments) Environment (no comments)

#### Capacity – En Route

AFS commented on the interdependencies with costs, and that PRB has suggested that one should consider a higher delay and at the same time offer capacity (by lending out ATCOs) to the rest of Europe. AFS does not have any stated preferences but choose to leave the question to the NSA/airspace users.

#### **Cost efficiency**

CAA pointed out some central issues:

- Low traffic increase in RP3 (1.1 %).

- Transition to new ATM-system with a need for double staffing generating restructuring costs (both en route and terminal).

- Change of allocation key for combined towers.

#### **Pension Scheme**

Ministry asked what might change these costs in the future. AFS replied that essential factors are mortal rate, interest rate, risk assessment.

#### **Restructuring costs**

AFS claimed that investment in new ATM system is considered as restructuring costs.

Airspace users were sceptical and their opinion was that the cost details have to be presented and analysed before any possible justification of restructuring costs.

AFS replied that they have no CEF-funding, and that the risk is therefore entirely on them as an ANSP.

The CAA pointed out that investments in future ATM-system (FAS) also gives more flexibility regarding use of ATCOs, and is essential for the implementation of PCP-requirements.

Result: CAA have analysed figures and AFS' rationale for justification of restructuring costs (Annex H), and propose to accept relevant costs as restructuring costs.

#### Cross border initiatives

No new initiatives in RP3.

#### Incentive schemes

CAA presented current proposal for national pivot value regarding en route delay stronger than reference value for delay set by NM: 0.08 min/flight. The national proposal is to give no bonus, but penalty starting from delay above the treshold of 0.11 min/flight. The penalty will consist of a reduction of up to 2 % of the revenues from traffic. AFS did not see the reasoning for the proposal of giving no bonus. They claimed that they performed better in RP2 because the incentive (bonus) was established. AFS wants a symmetrical solution. For the airspace users, the most important issue is to achieve the delay-target, not necessarily performing better. CAA proposed a modulated target regarding terminal delay, excluding e.g. weather as a delay cause.

Result: CAA proposes a non-symmetrical incentive scheme for capacity, with no bonus and penalty of up to 2 % of the cost base. Incentive scheme for traffic risk will be the "default solution" in the regulation. No incentive scheme for environment.

#### Changes in the allocation key for approach costs

CAA presented the draft proposal from the Ministry on change in the allocation key in the APP-sector, from 50/50 to 80/20. CAA explained the rationale for the proposal. They added that the proposal includes a suggestion to include these costs in RP3. Participants pointed out the importance of a final decision on this matter in close future.

Result: The performance plan is based on a change on allocation of approach-costs between the en route and the terminal from 50/50 to 80/20.

#### TWR/APP services under market condition

CAA presented the challenges with tendering of the TWR/APP services, at this stage concerning Kristiansand airport, Kjevik. Avinor's view is that recovery of the en route part of the approach costs should go through the en route cost base. If these costs should be recovered through f. ex. other commercial revenue, Avinor would have less incentive to put the services to market conditions. Ministry's view is that the costs must be included in the en route cost base. CAA will probably follow the Swedish model.

Result: Recovery of the en route part of the approach costs at airports with services under market conditions, will go through the en route cost base.

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

Topic of consultation	Applicable	Results of consultation
Where applicable, decision to diverge from the STATFOR base	Vas	Offshore traffic included in the TNC forecast. Local forecasts
forecast	res	instead of STATFOR.
Charging policy	Yes	Not discussed.
Maximum financial advantages and disadvantages for the	Voc	
mandatory incentive scheme on capacity	res	Bonus 0%, Penalty 2%
Where applicable, decision to modulate performance targets for		
the purpose of pivot values to be used for the mandatory incentive	Yes	Modulating of performance capacity targets connected to the
scheme on capacity		incentive scheme at the terminal area
Symmetric range ("dead band") for the purpose of the mandatory	Voc	Pivot value 0,08 and dead band +/- 0,03 min/flt for both en
incentive scheme on capacity	Tes	route and terminal services
Establishment or modification of charging zones	No	
Establishment of determined costs included in the cost base for	No.	Need for further clarification on allocation of "approach"-
charges	Yes	costs between en route and terminal charging zone. Also
Where applicable, values of the modulated parameters for the	Vas	
traffic risk sharing mechanism	res	No additional traffic risk sharing parameters adapted
Where applicable, decision to apply the simplified charging scheme	No	
New and existing investments, and in particular new major	Vec	
investments, including their expected benefits	res	More details requested

## 1.3.3 - Consultation of stakeholder groups on the performance plan

#1 - ANSPs							
Stakeholder group composition	Avinor AS, Avinor Flysikring AS (ANS) AS, The Norwegian Meteorological Institute (MET)						
	- 22.03.2019,						
Dates of main meetings / correspondence	- 08.05.2019						
	- continous dialogue with Avinor AS and AFAS from September to mid-November						
	Topics 22.03.2019 (Except MET)						
	- Capacity targets						
	- Cost efficiency						
	- Traffic development						
	- Investments						
	- MET costs						
	- Incentive schemes (bonus, penalty, pivot, dead band)						
	Topics 08.05.2019 (Except MET)						
	-Cost reduction measures						
	-Gains from FAS implementation during RP4						
	-Simulate different capacity targets						
Main issues discussed	-restructuring costs						
	Tonics 20.05 2019 (Only MET)						
	-Investment and projections of total operating costs associated with MET services in RP3						
	-investment and projections of total operating costs associated with the performance regime						
	-weteo ological institute and special challenges with the performance regime.						
	Topics in the continous dialogue (Except MET)						
	- Traffic forecasts						
	- WACC						
	- Level of cost reduction						
	- Incentive scheme for capacity: bonus and pivot value						
Actions agreed upon	Further work on specifying different costs elements, traffic forecast with local adjustments etc.						
	- AFAS is opposed to the CAA's proposal on incentive scheme. They want a symmetrical scheme, where						
	they also may receive a bonus for delivering less delays than the target/pivot value.						
	- Avinor AS and AFAS are opposed to any reduction in the WACC, compared to their own analysis,						
	conducted by Deloitte.						
	- AFS is of the opinion that a local traffic forecast should be used, instead of STATFOR. This relates in						
Deints of disagrapment and reasons	particular to STATFOR not taking into consideration the change in allocation key of costs in the approach-						
	sector, between en route and terminal, from 50/50 to 80/20.						
	- AFS considers that there are many uncertainties in relation to their expected income and costs during						
	RP3, and that a major cut in the unit rate level will seriously jeopardize their ability to deliver good						
	services through RP3.						

	CAPACITY: CAA considers that AFS' starting point should be to deliver the capacity that ensures continuity of traffic without significant interruptions. This entails an incentive system that is primarily intended to secure a resource allocation that takes care of this, i.e. that it must have an economic impact for the ANSP if they do not deliver the agreed capacity. Based on the experience from RP2 it is our view that under normal operational circumstances, the target (0,08 min/fit) should be well achievable without significant effort.
	beyond the threshold value (pivot) are far greater in a global perspective than the additional costs of delay beyond the threshold value (pivot) are far greater in a global perspective than the savings of providing a significant overcapacity. CAA has therefore considered an incentive scheme in the third reference period that does not provide any bonus for delivering overcapacity beyond the target (pivot value), while in case of delay beyond the target (pivot including a dead band), a balanced penalty of 2 per cent of the traffic revenues is allocated the airspace users in latest within year n + 2.
Final outcome of the consultation	TRAFFIC FORECASTS: CAA has considered using a local traffic forecast, since there has been a significant change in traffic expectations since STATFOR February was released. Due to the delayed submission of the performance plan, CAA has been able to use the STATFOR October forecast. This forecast is closer to the figures of the considered local forecast than STATFOR February was. CAA's view is that there is major uncertainty involved as to the development of traffic in the Norwegian en route sector. We consider that STATFOR October is the most updated forecast, also constituting a "compromise" between STATFOR February and a local forecast presented by AFS.
	WACC: Based on a letter from the Ministry of Transport, the cost of capital (WACC) is adjusted to 4,16 % for en route services and 4,83 % for the terminal services in PR3. The decision made by the Ministry is based on a letter received from the Norwegian Aviation Industries (NHO) where it is referred for calculation made by IATA in September 2019.
	GENERAL COST REDUCTION: There is a political ambition of a non-increase in the development of the unit rate for the en route sector. Given that we present a performance plan with deduction of "restructuring costs" from the cost base, the CAA's view is that the service provider should accept cost reducing measures assuring that there is no actual increase in the unit rate.

## Additional comments

In addition Avinor and AFS have been participating in all meetings described in 1.3.3, #2

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Stakeholder group composition	Norwegian Aviation Industries (NHO), Norwegian Air Sports Federation (NLF), International Air Transport Association (IATA)							
Dates of main meetings / correspondence	08.02.2019, 02.04.2019 and 23.08.2019							
	Topics 08.02.2019							
	- New regulation							
	- National road selection for RP3							
	- Discussion / input from national stakeholders							
	Tonics 02 04 2019							
	- Summary from SSC71 FIL-wide targets							
	- Targets and forecasts RP2 & RP3							
	- Presentations Goal RP3							
Main issues discussed								
	Topics 23.08.2019							
	1 Introduction							
	2. Investments 2. DEPERDMANCE TARGETS (Safety Environment Capacity Cost officiency)							
	4 Cross-Boarder and SESAR							
	5 Traffic RS & Incentives							
	6. Implementation							
Actions agreed upon	Described issues above from 23/8							
	Report from Deloitte initiated by Avinor regarding calculation of a new WACC in RP3. Hereof							
	disagreement around the peer group, beta value, risk free rate and the cost of debt. Level of restrucuring							
	costs and justification on the benefit (CBA) of investments in a new ATM system.							
Points of disagreement and reasons	NHO pointed out that there has been a lack of discussions in the consultation process on which airports to							
	be covered by the performance plan.							
	IATA was concerned about doublecharging of investments extending from RP2 into RP3.							
	Avinor has seen a need for an updated cost of capital (WACC) ahead of the reference period 3. This							
	formed the basis for a new analysis conducted by the consulting firm Deloitte. In accordance with the							
	information the CAA holds, the WACC is assessed by Deloitte without any guidance from Avinor with							
	regard to the assessment of individual parameters or level, nor are there any methodological changes in							
	the model used compared with the calculation performed by Deloitte. The assessment of WACC is based							
	on the annual accounts figures and other collected and documented figures as of 31.12.2018. The							
	consulted WACC for use in RP3 was set to 6.4% for en route services and 7,2 % for the terminal services.							
	Based on letter from the Ministry of Transport from October 2019, the cost of capital (WACC) is adjusted							
	to 4,16 % for en route services and 4,83 % for the terminal services in PR3. The decision made by the							
Final outcome of the consultation	Ministry is based on a letter received from the Norwegian Aviation Industries (NHO) referring to a							
	calculation made by IATA in September 2019.							
	The CAA has previously consulted on which airports will be included in the performance plan but has not							
	received input from the stakeholder (NHO) at this issue until late in the process.							
	The ANSP has confirmed that underspending of investments in PD2 are being deducted in PD2. The NSA							
	will monitor this closely in RP3.							

Additional comments PRB and IATA participated only in the stakeholder consultation meeting 23. August 2019.

#3 - Professional staff representative bodies						
Stakeholder group composition						
Dates of main meetings / correspondence						
Main issues discussed						
Actions agreed upon						
Points of disagreement and reasons						
Final outcome of the consultation						
b.						

Additional comments

#4 - Airport operators								
takeholder group composition Avinor AS, Torp Sandefjord Lufthavn (Sandefjord Lufthavn AS)								
Dates of main meetings / correspondence	The airport operators have been participating in all consultation meetings described in 1.3.3., #2.							
Main issues discussed								
Actions agreed upon								
Points of disagreement and reasons								
Final outcome of the consultation								

Additional comments

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

#6 - Other (specify)							
Stakeholder group composition	Norwegian Ministry of Transport, Team PRB Support						
Dates of main meetings / correspondence	Ministry of Transport have been participating in all consultation meetings described in 1.3.3., #2. Team PRB Support only in the meeting 23. August 2019.						
Main issues discussed	Topics 23.08.2019 Performance plan template 1. Introduction 2. Investments 3. PERFORMANCE TARGETS (Safety, Environment, Capacity, Cost efficiency) 4. Cross-Boarder and SESAR 5. Traffic RS & Incentives 6. Implementation						
Actions agreed upon							
Points of disagreement and reasons							
Final outcome of the consultation							

## Additional comments

Ministry of Transport have been participating in all consultation meetings described in 1.3.3., #2.

## 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			
CAO code Airport name		Charging Zone	2016	2017	2018	Average
ENGM	Oslo/Gardermoen	Norway - TCZ	245 093	251 193	257 474	251 253
ENBR	Bergen/Flesland	Norway - TCZ	87 144	83 653	85 443	85 413

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

Number of airports		2	
ICAO code	Airport name	Charging Zone	Additional information
ENZV	Stavanger/Sola	Norway - TCZ	IFR movements ≥ 70 000
ENVA	Trondheim/Vaernes	Norway - TCZ	IFR movements ≥ 50 000

## Additional comments

The geographical scope of the the terminal charging zone remains unchanged from RP2, i.e. one charging zone subject to the performance and charging regulation in RP3 consisting of the airports Gardermoen (ENGM), Bergen (ENBR), Stavanger (ENZV) and Trondheim (ENVA).

## 1.5 - Services under market conditions

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

Not applicable

Description of the process

## 1.7 - Establishment and application of a simplified charging scheme

Is the State intending to establish and apply a simplified charging scheme for any charging zone/ANSP?	No
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## 2.1 - Investments - Avinor Flysikring AS (Avinor ANS)

- 2.1.1 Summary of investments
- 2.1.2 Detail of new major investments
- 2.1.3 Other new and existing investments

#### 2.2 - Investments - Avinor AS

- 2.2.1 Summary of investments
- 2.2.2 Detail of new major investments
- 2.2.3 Other new and existing investments

## Annexes of relevance to this section

ANNEX E. INVESTMENTS

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

#### 2.1 - Investments - Avinor Flysikring AS (Avinor ANS)

## 2.1.1 - Summary of investments

Number of new major investments 2

#	# Name of new major investment (i.e. above 5 M€) Total value of the asset (capex or contractual leasing)	Value of the assets allocated	Determined costs of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle (Amortisation	Allocation (%)*		Planned date of	
		sing) to ANS in the scope of the PP	2020	2021	2022	2023	2024	period in years)	Enroute	Terminal	operation	
	1 SKYCOM	138 300 000	138 300 000	740 480	3 265 600	5 703 360	14 973 280	14 973 280	15	100 %	5	01.09.2023
	2 FAS ACC (TWR/APP)	190 043 621	76 017 449	462 779	1 041 254	1 812 553	2 583 852	6 322 326	15	100 %	5	01.08.2024
Sub-total of <b>new major investments</b> above (1)		328 343 621	214 317 449	1 203 259	4 306 854	7 515 913	17 557 132	21 295 606				
Sub-total other new investments (2)		440 747 927	327 493 340	0	0	2 114 276	9 749 160	13 623 723				
Sub	p-total existing investments (3)			132 165 637	137 354 791	156 186 578	149 593 508	204 787 897				
<b>Tot</b> (1)	tal new and existing investments + (2) + (3)	769 091 549	541 810 789	133 368 896	141 661 645	165 816 766	176 899 800	239 707 226				

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

#### 2.1.2 - Detail of new major investments

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

Name of new major investment 1	SKYCOM		Total value of the asset	NOK 138 300 000				
Description of the asset	Implementation of SKYCOM is an enal	of VoIP based Voice Communication System for Norway ACC, replacing existing 3 old local VCS systems. nabler for benefit realisation and performance improvement of future ATM system (FAS) for Norway ACC e.g. dynamic sectorisation						
The investment is mandated by a SES Regulation (i.e. PCP/Interoperability)?	No							
	Network	Low						
Level of impact of the investment	Local	Low						
	Non-performance	High, enabler for ATM system performance improvements						
	Safety							
Quantitative impact per KBA	Environment							
	Capacity							
	Cost Efficiency							
Results of the consultation of airspace users' representatives	Consultation with	airspace users not done.						
Joint investment / partnership	No							
Investment in ATM systems	No							
If investment in ATM system type?	Replacement							
in investment in Arwi system, type?	investment							
If investment in ATM system, Reference to European	Master Plan (non-							
ATM Master Plan / PCP	PCP)							

Name of new major investment 2	FAS ACC (TWR/AP	Р)	Total value of the asset	NOK 190 043 621				
Description of the asset	iTEC client position connected to a sha	lient positions to support Towers and Approaches with ATM-functionality, based on new iTEC ATM system. The client working positions will be ected to a shared data centre, supporting both ACC, APP and (limited) TWR functions.						
The investment is mandated by a SES Regulation (i.e. PCP/Interoperability)?	No							
	Network	Low						
Level of impact of the investment	Local	Moderate						
	Non-performance							
	Safety							
Quantitative impact per KBA	Environment							
	Capacity							
	Cost Efficiency							
Results of the consultation of airspace users' representatives	No consultation w	ith airspace users related to TWR functionality.						
Joint investment / partnership	Yes							
Investment in ATM systems	Yes							
If investment in ATM system, type?	Replacement investment							
If investment in ATM system, Reference to European ATM Master Plan / PCP	РСР							

#### 2.1.3 - Other new and existing investments

Description and justification of the costs nature and benefits of other new and existing investments in fixed assets planned over the reference period	Other new investments are mainly replacement and upgrade of COM/SUR/NAV-equipment. Annex E provides a more detailed overview. As presented in Annex E the sum of investments consists of a number of smaller projects within the categories NAV, SUR and COM. When planning 5-6 years ahead, the uncertainty of both which investments actually will be made and also the cost of a possible investment is high. The investment level is based on an evaluation of equipment in operation and the time frame for upgrade/replacement, considering many factors, but most importantly regulatory requirements and cost efficiency. The investment projects in Avinor ANS are managed on a portfolio basis.
	Please see Annex E for more detailed information.
	Existing investments are described in the Performance Plan for RP2.

## 2.2 - Investments - Avinor AS

#### 2.2.1 - Summary of investments

|--|

#	Name of new major investment	Total value of the asset (capex or contractual	Value of the assets allocated to	Determined cos	Determined costs of investment (i.e. depreciation, cost of capital and cost of leasing) (in national currency)					Lifecycle Allocat		Planned date of entry into
	(i.e. above 5 M€)	leasing value)	ANS in the scope of the PP	2020	2021	2022	2023	2024	period in years)	Enroute	Terminal	operation
	1 New ATM system OSL, NeTSO	547 000 000	547 000 000	1 508 563	5 393 043	10 343 819	15 293 823	40 745 061	20		100 %	01.08.2024
	2 Terminal area radar OSL	41 583 940	41 583 940	1 036 953	3 893 894	3 937 063	3 836 638	3 736 213	20	)	100 %	02.05.2021
Sub abc	o-total of <b>new major investments</b> ove (1)	588 583 940	588 583 940	2 545 515	9 286 938	14 280 883	19 130 461	44 481 274				
Sub	o-total other new investments (2)											
Sub	o-total existing investments (3)			54 318 713	53 523 275	52 966 469	52 188 616	52 132 870				
Tot	al new and existing investments (1)	F 88 F 83 0 40	F88 F83 040	56.964.339	C2 810 212	(7.247.252	71 210 077	00 014 144				
+ (2	2) + (3)	588 583 940	588 583 940	50 864 228	62 810 212	07 247 352	/1 319 0//	90 614 144				

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

## 2.2.2 - Detail of new major investments

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

Name of new major investment 1	New ATM system	OSL, NeTSO	Total value of the asset	NOK 547 000 000
Description of the asset	Investment in new input from several implement legal re decision by the Avi	TWR ATM-system to replace existing system at Gardermoen TWR. Th system suppliers. The investment is expected to increase safety, capa equirements as mandated by IR (EU) 716/2014. The NeTSO project is a inor AS board is expected in autumn 2020.	e total investment cost is based on a feasibil city and cost-efficiency of service provision a t the moment in a pre-project phase and a p	ity study based on at Oslo airport and lanned investment
The investment is mandated by a SES Regulation (i.e.		IR (EU) 716/2014		
PCP/Interoperability)? Ref. to the Regulation and, if funded	Yes			
through Union assistance programmes, ref. to the relevant				
Benefits for airspace users and results of the consultation of airspace users' representatives	Increased capacity	, safety and cost-efficiency in service provision.		
Joint investment / partnership	No			
Investment in ATM systems	Yes			
If investment in ATM system, type?	New system			
If investment in ATM system, Reference to European	Click to select	IR (EU) 716/2014		

Name of new major investment 2	Terminal area rade	ar OSL	Total value of the asset	NOK 41 583 940		
Description of the asset	The replacement of Gardermoen Terminal Area Radar (TAR) will provide ATC necessary system support to enable and ensure safe and efficient management of air traffic flows into OSL, providing 3NM or less separation between arriving aircraft. The new Gardermoen TAR shall consist of bo MSSR and PSR to ensure safety and security and will meet future regulatory requirements for standardization, capacity and provide redundancy to delays for airspace users.					
The investment is mandated by a SES Regulation (i.e. PCP/Interoperability)?	No					
	Network	Low				
Level of impact of the investment	Local	High				
	Non-performance					
	Safety					
Quantitative impact per KPA	Environment					
	Capacity					
	Cost Efficiency					
Results of the consultation of airspace users' representatives	Consultation with a	airspace users not done.				
Joint investment / partnership	No					
Investment in ATM systems	No					
If investment in ATM system, type?	Replacement investment					
If investment in ATM system, Reference to European ATM Master Plan / PCP	Master Plan (non- PCP)					

## 2.2.3 - Other new and existing investments

	d justification of the costs nature and benefits of existing investments in fixed assets planned over period	Description and other new and e the reference pe
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#### 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

En Route Charging Zone #x

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

#### 3.5 - 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

## 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	1						
		2020	2021	2022	2023	2024		
		Value	Value	Value	Value	Target		
Avinor	Safety policy and objectives	С	C	С	С	С		
	Safety risk management	С	C	С	С	D		
	Safety assurance	С	С	С	С	С		
	Safety promotion	С	C	С	С	С		
	Safety culture	С	С	С	С	С		
	Additional comments							

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

Three main measures put in place by Avinor ANS to improve the quality/maturity, and these are;

- Working with the management system processes to gather all in one place and clarify better how the ANSP are dealing with Safety risk management. Updated process will be finalized - Q1 – 2020.

- Planned implementation of a more integrated way of presenting safety/risk data, to support risk management in the organisation. Gathering safety information from both investigations and monitoring of the result of safety assessments, in a systematic way, such that the organization will have a more holistic overview of safety and risk. Avinor ANS are testing out tools to support them in this context, (Eurocontrols IRIS tested this summer).

- Parallel to this Avinor ANS are continuously working with developing the organization's safety culture through awareness activities and direct

dialogue/discussions on relevant case scenarios- safety topics with the operational staff, which is an important enabler for the flow of risk information (reporting culture) in the organization.

\* Refer to Annex O, if necessary.

## 3.2 - Environment targets

- 3.2.1 Environment KPI #1: Horizontal en route flight efficiency (KEA)
  - a) Environment national performance targets
  - b) Detailed justifications in case of inconsistency between national targets and national 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) National environment performance targets

	2020	2021	2022	2023	2024
	Target	Target	Target	Target	Target
National reference values	1.43%	1.43%	1.42%	1.42%	1.42%
National targets	1.43%	1.43%	1.42%	1.42%	1.42%

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

No inconsistency between national targets and national reference values

\* Refer to Annex P, if necessary.

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

Norway has implemented Free Route Airspace in Norwegian airspace and it is up to the airlines to file a flight plan according to their needs. In that respect the national ANSP has little influence regarding the environment performance target, but they claim to strive to offer direct routings to flights within their area of responsibility.

\* Refer to Annex P, if necessary.

## 3.3 - Capacity targets

- 3.3.1 Capacity KPI #1: En route ATFM delay per flight
  - a) Capacity national performance targets
  - b) Detailed justifications in case of inconsistency between national targets and national reference values
  - c) Main measures put in place to achieve the target for en-route ATFM delay per flight
  - d) ATCO planning

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

a) Capacity national performance targets

- b) Contribution to the improvement of the European ATM network performance
- c) Main measures put in place to achieve the target for terminal and airport ANS ATFM arrival delay per flight

#### 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) National capacity performance targets

	2020	2021	2022	2023	2024
	Target	Target	Target	Target	Target
National reference values	0,18	0,16	0,13	0,11	0,11
National targets	0,08	0,08	0,08	0,08	0,08

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

Norway has been developing ATC capacity over years, and is in position to provide more capacity than the national reference values. The cost optimum capacity for en route delay per flight for Avinor ANS is between 0,18 min/flt. and 0,11 min/flt., but for the airspace users this would be unacceptable. This view is based on the fact that a large portion of the overall traffic is transition flights with little leeway in terms of delays. Based on consultation meetings with the airspace users and Avinor ANS during spring 2019 the en route delay is set to 0,08 min./flt. for each year in RP3.

Avinor ANS has over the last years been increasing capacity, in order to being able to shift to new technology without major operational consequences for the airspace users.

\* Refer to Annex Q, if necessary.

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

If targets are not met during the reference period the State can initiate follow up measures and corrective actions in place.

\* Refer to Annex Q, if necessary.

#### d) ATCO planning

	Actual		Planning						
Bodo (ENBD ACC)	2018	2019	2020	2021	2022	2023	2024		
Number of additional ATCOs in OPS planned to start		1.0	2.7	2.7	1.0				
working in the OPS room (FTEs)		1,8	2,7	2,7	1,8				
Number of ATCOs in OPS planned to stop working in the		2.0	0.0	1.0	0.0	0.0	0.0		
OPS room (FTEs)		3,0	0,9	1,8	0,9	0,9	0,9		
Number of ATCOs in OPS planned to be operational at	42	40.2	42	42.0	42.0	42.0	42		
year-end (FTEs)	42	40,2	42	42,9	43,8	42,9	42		

	Actual		Planning					
Oslo (ENOSE ACC)	2018	2019	2020	2021	2022	2023	2024	
Number of additional ATCOs in OPS planned to start		F	F	4	4	0	0	
working in the OPS room (FTEs)		5	5	4	4	0	0	
Number of ATCOs in OPS planned to stop working in the		2	2	2	2	2	2	
OPS room (FTEs)		5	5	5	5	5	5	
Number of ATCOs in OPS planned to be operational at	102	105	107	109	100	106	102	
year-end (FTEs)	105	105	107	108	109	100	103	

	Actual		Planning					
Stavanger (ENOSW ACC)	2018	2019	2020	2021	2022	2023	2024	
Number of additional ATCOs in OPS planned to start			1.0	3,2	2.2	0	0	
working in the OPS room (FTEs)			1,6		3,2	0	0	
Number of ATCOs in OPS planned to stop working in the	1.6	24	0.0	0.0		1.0		
OPS room (FTEs)		1,0	2,4	0,8	0,8	0,8	1,6	
Number of ATCOs in OPS planned to be operational at	20	28.4	27.6	20	22.4	21.0	20	
year-end (FTEs)	30	28,4	27,0	50	52,4	31,0	30	

Additional comments

ATCOs in ACC-operation including supervisors in OPS only. ATCO FTEs allocated to oceanic and offshore operations are not included (reported as "Other ANS" in ACE).

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

#### a) National capacity performance targets

		2020	2021	2022	2023	2024
		Target	Target	Target	Target	Target
National targets		0,5	0,5	0,5	0,5	0,5
Additional comments						
	FAICHA Only (Complementary	0.50	0.50	0.50	0.50	0.50
	ENGIVI-OSIO/Gardermoen	0,50	0,50	0,50	0,50	0,50
	Airport contribution to national targets					
	ENBR-Bergen/Flesland	0,50	0,50	0,50	0,50	0,50
Airport loval	Airport contribution to national targets					
Allport level	ENZV-Stavanger/Sola	0,50	0,50	0,50	0,50	0,50
	Airport contribution to national targets					
	ENVA-Trondheim/Vaernes	0,50	0,50	0,50	0,50	0,50
	Airport contribution to national targets					

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

The actual and achieved terminal and airport ANS ATFM arrival delay in RP2 is so far significant below the national capacity targets (0,6 min/flt) set in RP2, and the capacity target is far more ambitious than the EU wide target set for the first two years in RP3. Most of the ATFM arrival delay occurs at Oslo airport due to its high number of flights.

\* Refer to Annex Q, if necessary.

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

There is a SLA between Avinor ANS and the airport operator Avinor AS describing capacity targets and performance of ATS at the four airports in the performance scheme in Norway. The actual delay in relation to the delay targets in this SLA is reported to airport and airspace users on a regular basis and ensures that the national targets in RP3 are achieved. ANSP has also improved their procedures to handle significant weather events. Through improved cooperation between TWR, APP and airport at Oslo, the trend of reduced delay due to weather events, is likely to continue in RP3.

If targets are not met during the reference period the State can initiate follow up measures and corrective actions in place.

\* Refer to Annex Q, if necessary.

#### 3.4 - Cost efficiency targets

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

En Route Charging Zone #x

- a) Baseline value for the determined costs and the determined unit costs (in real terms and in national currency)
- b) Cost-efficiency performance targets
- c) Description and justification of the methodology used to estimate the baseline values
- d) Justification for the level of the baseline value for the determined costs in comparison with the latest available actual costs

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

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

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

Terminal Charging Zone #x

- a) Baseline value for the determined costs and the determined unit costs (in real terms and in national currency)
- b) Cost-efficiency performance targets
- c) Description and justification of the methodology used to estimate the baseline values
- d) Justification for the level of the baseline value for the determined costs in comparison with the latest available actual costs

e) Description and justification of the contribution of the the local targets to the performance of the European ATM network f) Main measures put in place to achieve the targets for determined unit cost (DUC) for terminal ANS

3.4.3 - Pension assumptions

3.4.3.1 Total pension costs

3.4.3.2 Assumptions for the "State" pension scheme

3.4.3.3 Assumptions for the occupational "Defined contributions" pension scheme

3.4.3.4 Assumptions for the occupational "Defined benefits" pension scheme

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

3.4.5 - Restructuring costs

- 3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3
- 3.4.5.2 Restructuring costs planned for RP3

#### Annexes of relevance to this section

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

NOTE: The following requirements as per Annex II, 3.3 are addressed in the Annexes A and B:

Point 3.3 (d) on cost-allocation;

Point 3.3 (e) on the return on equity and cost of capital;

Point 3.3 (f) on assumptions for pension costs and interest on debt for other entities, inflation forecast and adjustments beyong IFRS; Point 3.3 (g) on adjustments to the unit rates carried over from previous reference periods;

Point 3.3 (h) on costs exempt from cost-sharing;

Point 3.3 (k) reporting tables and additional informations.

## 3.4 - Cost efficiency targets

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

#### En Route Charging Zone #1 - Norway

a) Baseline value for the determined costs and the determined unit costs (in real terms and in national currency)

2019 baseline value for the determined costs (in real terms and in national currency)	1 146 806 907
2019 latest available service units forecast (actual route flown, see point 1.2 of Annex VIII)	2 427 000
2019 baseline value for the determined unit costs (in real terms and in national currency)	472,52

#### b) Cost-efficiency performance targets

En route charging zone	Baseline 2014	Baseline 2019	RP3 Performance Plan (determined 2020-2024)						CAGR
Name of the CZ	2014 B	2019 B	2020 D	2021 D	2022 D	2023 D	2024 D	2014A-2024D	2019B-2024D
Total en route costs in nominal terms (in national currency)			1 197 294 858	1 266 404 409	1 315 750 709	1 324 133 483	1 325 009 981		
Total en route costs in real terms (in national currency at 2017 prices)	1 008 316 271	1 146 806 907	1 135 225 168	1 182 671 239	1 210 614 092	1 200 358 752	1 191 032 560	1,7%	0,8%
YoY variation			-1,0%	4,2%	2,4%	-0,8%	-0,8%		
Total en route Service Units (TSU)	2 220 734	2 427 000	2 462 000	2 484 000	2 519 000	2 549 000	2 583 000	1,5%	1,3%
YoY variation			1,4%	0,9%	1,4%	1,2%	1,3%		
Real en route unit costs (in national currency at 2017 prices)	454,05	472,52	461,10	476,12	480,59	470,91	461,10	0,2%	-0,5%
YoY variation			-2,4%	3,3%	0,9%	-2,0%	-2,1%		
Real en route unit costs (in EUR2017) <sup>1</sup>	48,68	50,66	49,43	51,04	51,52	50,49	49,43	0,2%	-0,5%
YoY variation			-2,4%	3,3%	0,9%	-2,0%	-2,1%		

National currency	NOK
<sup>1</sup> Average exchange rate 2017 (1 EUR=)	9,32776

#### c) Description and justification of the methodology used to estimate the baseline values

Based on the latest cost forecast in origin by 1. June 2019, last adjusted in September, adding the additional costs, described in 3.4.1.d), in 2017-values. The En Route service units is based on STATFOR base forecast from October 2019 for the period 2019-2024 using model 3, taking into consideration the ratios M3/M2 published by the CRCO for November 2017 to May 2019

\* Refer to Annex F, if necessary.

#### d) Justification for the level of the baseline value for the determined costs in comparison with the latest available actual costs

Baseline costs 2019B and onwards have been adjusted with three different changes affecting the figures in the third reference period. These are described below in this section; the rationale behind, the change that has been made and what implications this will have on the cost base in the third reference period. Cost detail for the adjustment of 2019B are provided in ANNEX F. BASELINE VALUES

First, baseline is adjusted with changes made in the cost base due to change an the internal allocation key for APP cost of combined towers (TWR/APP). An external audit (PWC) have been conducted to evaluate the allocation key in respect of the RP3 Performance Plan which resulted in a recommedation for the new allocation key for combined towers. This changes the baseline cost of **19,8 MNOK** (2019-prices). The previous allocation key was based on historical data on time used in the different services (TWR/APP) in the combined towers. The new allocation key is based on the opening time on sectors in the combined towers.

Second, on basis of a public hearing note sent to the stakeholders in the spring of 2019, the Ministry of Transport proposes two possible changes in aviation charges. One of the changes affecting the performance area is moving costs related to the approach services from the cost base for the terminal services, both covered by the performance and charging regulation (TNC - OSL/BGO/SVG/TRD) and from other airports outside the regulations, to the cost base for the enroute services. The change is supposed to reduce the cost of Norwegian airports somewhat and increase the cost of flying in the upper airspace accordingly.

The rationale for the change is that, according to studies, Norway (Avinor ANS) allocates a lower proportion of the approach costs to the en route service than the majority of EU Member States.

The Ministry has ended up proposing a re-adjustment from APP 50/50 to APP 80/20 distribution, meaning 80 per cent to the cost base for the en-route services and 20 per cent to the cost base for the terminal services TNC (OSL/BGO/SVG/TRD) and airports outside the regulations.

The proposal is based on a shift in the basis for allocation, from ATCO composite hours (50/50) to a distance based allocation key (80/20). CAA Norway considers that such a change is compatible with the wording of the Performance and Charging Regulation. The basis for the proposed new calculation method is that the approach segment is provided at 80 km from the airport (average horizontal extent of the TMA). For larger/smaller TMAs, the distribution according to this model would give slightly different distribution keys for the individual airports than 80/20, while the larger TMAs of course also weigh heavier than many of the smaller ones which also have significantly less traffic. The approach segment is calculated from 5-80 km. Of the approach cost (15 km/75 km) 20% is considered allocated terminal ANS, while (60 km/75 km) 80% is considered allocated en-route ANS. On this basis we have concluded that the new APP allocation key increases the baseline costs (2019B) of **128,3 MNOK** (2019-prices).

Third, Avinor ANS provides en-route- and approach services for all military activity. Such costs, which among other incurred by separation of civilian/military traffic as a consequence of military activity in its own allocated areas, cf. the FUA regulations, is today covered by Avinor AS through commercial income based on invoices from Avinor Flysikring AS (ANSP) according to the national regulations. The Ministry of Transport proposes these costs covered through the en route cost base in RP3. On this basis we have concluded that costs derived from military activities increases the baseline costs (2019B) of **32,5 MNOK** (2019-prices).

\* Refer to Annex F, if necessary.

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

The most important driver for the cost development in RP3 is the transition to a new ATM system. Implementation is planned to take place by the end of RP3. Avinor ANS has over the last years been increasing capacity, in order to be able to shift to new technology without major operational consequences for the airspace users. As a result cost is increasing through RP3. Training cost on the new ATM-system cannot be capitalised according to accounting practices and will further increase staff cost. Training on the new ATM-system platform is planned for 2021-2023. There will be a period of simultaneously operating two systems, also affecting the level of staff cost.

#### Annex R shows a more detailed justification:

If taken into account the amount of restructuring costs (see 3.4.5) connected to the new ATM-system, and given the oppurtunity to isolate this costs from the cost base, the performance of en-route operations in the national performance plan shows an average reduction in the real en-route unit costs (DUC in EUR2017) at -3,2 % per year (CAGR) in RP3 (please, see section 3.4.5 Restructuring costs and Annex H).

\* Refer to Annex R, if necessary.

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

Implementation of the new ATM system is the main priority for Avinor ANS in RP3, both to be in compliance with requirements from EU-regulations, but also to enable benefits for the users in the longer run (RP4). However the ANSP have established efficiency measures to comply with the EU-wide efficiency targets, given approval of the restructuring costs. Efficiency measures, such as reduction of support staff and optimisation of technical and operational services, are initiated and included as cost reductions in RP3. Secondment of ATCOs from Norway to other European ANSPs with capacity constraints is one of these initatives, reducing staff cost in Avinor ANS and at the same time adding capacity to the European network.

All measures taken will be balanced against risks of delay of the new ATM system implementation, and consequently for the quality of the service provision.

\* Refer to Annex R, if necessary.

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

### Terminal Charging Zone #1 - Norway - TCZ

a) Baseline value for the determined costs and the determined unit costs (in real terms and in national currency)

2019 baseline value for the determined costs (in real terms and in national currency)			455 093 976
2019 latest available service units forecast			262 008
2019 baseline value for the determined unit costs (in real terms and in national currency)			1 736,95

#### b) Cost-efficiency performance targets

Terminal charging zone	Baseline 2019		RP3 Performance Plan (determined 2020-2024)						
Name of the CZ	2019 B	2020 D	2021 D	2022 D	2023 D	2024 D	2019B-2024D		
Total terminal costs in nominal terms (in national currency)		432 865 128	443 973 323	454 899 130	471 521 651	513 576 677			
Total terminal costs in real terms (in national currency at 2017 prices)	455 093 976	409 190 064	413 507 185	416 943 662	425 279 874	458 187 316	0,1%		
YoY variation		-10,1%	1,1%	0,8%	2,0%	7,7%			
Total terminal Service Units (TNSU)	262 008	267 073	269 403	272 406	274 710	277 515	1,2%		
YoY variation		1,9%	0,9%	1,1%	0,8%	1,0%			
Real terminal unit costs (in national currency at 2017 prices)	1 736,95	1 532,13	1 534,90	1 530,60	1 548,11	1 651,04	-1,0%		
YoY variation		-11,8%	0,2%	-0,3%	1,1%	6,6%			
Real terminal unit costs (in EUR2017) <sup>1</sup>	186,21	164,25	164,55	164,09	165,97	177,00	-1,0%		
YoY variation		-11,8%	0,2%	-0,3%	1,1%	6,6%			

National currency	NOK
<sup>1</sup> Average exchange rate 2017 (1 EUR=)	9,33

## c) Description and justification of the methodology used to estimate the baseline values

Based on the latest cost forecast in origin by 1. June 2019, last adjusted in September. The terminal service units are based on STATFOR base forecast from October 2019 for the period 2019-2024 including offshore traffic for the airports.

\* Refer to Annex F, if necessary.

#### d) Justification for the level of the baseline value for the determined costs in comparison with the latest available actual costs

Baseline costs 2019B and onwards have been adjusted with two different changes affecting the figures in the third reference period. These are described below in this section, the rationale behind, the change that has been made and which implications this will have on the cost base in the third reference period. Cost detail for the adjustment of 2019B are provided in ANNEX F. BASELINE VALUES

First, baseline is adjusted with changes made in the cost base due to change the internal allocation key for tower cost of combined towers (TWR/APP) from 60/40 to 50/50. External consultants (PWC) have evaluated the allocation key in respect of the RP3 Performance Plan and concluded that the new allocation key for combined towers decreases the baseline cost for terminal services in the period 2019B-2024D. The previous allocation key was based on historical data on time used in the different services (TWR/APP) in the combined towers. The new allocation key is based on the opening time on sectors in the combined towers.

Second, on basis of a public hearing note sent to the stakeholders in the spring of 2019, the Ministry of Transport proposes two possible changes in aviation charges. One of the changes affecting the performance area is moving costs related to the approach services from the cost base for the terminal services, both covered by the performance and charging regulation (TNC - OSL/BGO/SVG/TRD) and from other airports outside the regulations, to the cost base for the en-route services. The change is supposed to reduce the cost of Norwegian airports somewhat and increase the cost of flying in the upper airspace accordingly.

The rationale for the change is that, according to studies, Norway (Avinor ANS) allocates a lower proportion of the approach costs to the en route service than the majority of EU Member States. The Ministry has ended up proposing a re-adjustment from APP 50/50 to APP 80/20 distribution, meaning 80 per cent to the cost base for the en-route services and 20 per cent to the cost base for the terminal services TNC (OSL/BGO/SVG/TRD) and airports outside the regulations.

The proposal is based on a shift in the basis for allocation, from ATCO composite hours (50/50) to a distance based allocation key (80/20). CAA Norway considers that such a change is compatible with the wording of the Performance and Charging Regulation. The basis for the proposed new calculation method is that the approach segment is provided at 80 km from the airport (average horizontal extent of the TMA). For larger/smaller TMAs, the distribution according to this model would give slightly different distribution keys for the individual airports than 80/20, while the larger TMAs of course also weigh heavier than many of the smaller ones which also have significantly less traffic. The approach segment is calculated from 5-80 km. Of the approach cost (15 km/75 km) 20% is considered allocated terminal ANS, while (60 km/75 km) 80% is considered allocated en-route ANS. On the basis we have concluded that the new APP allocation key increases the baseline costs (2019B) of 128,3 MNOK (2019-prices).

In total this leads to;

- Værnes, 50% is allocated first to TNC, the remaining 50% is allocated 20% to TNC and 80% to ENR

- Bergen and Stavanger, 60% is still allocated to TWR and 40% to APP. Of these 40%, 20% are allocated to TNC and 80% to ENR

- Gardermoen TWR, 100% of TWR is allocated to TNC, since only TWR is delivered from Gardermoen. For 100% of the total cost of the Oslo APP, 20% is allocated to TNC and 80% to ENR

On the basis of the above described changes in the allocation keys the basline costs for terminal services is decreasing with 58,8 MNOK in 2019B (in real terms).

The average reduction in the real terminal unit costs (DUC in EUR2017) is -1,0% per year (CAGR) in RP3 (2019B-2024D).

\* Refer to Annex F, if necessary.

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

In RP3 there will be a transition to a new ATM system at Oslo airport (OSL). This project is called NeTSO. Implementation is planned at the end of RP3. Training on the new ATM-system platform is planned 2023-2024 for the ATCO's at Gardermoen TWR. The rationale for implementing NeTSO is the need for change due to the implementation of the new enroute ATM-system (iTEC), the preparation for 3rd RWY at OSL and implementation of PCP requirements stemming from IR (EU) 716/2014. Norway is not part of CEF and have not been able to receive EU funding for implementation projects required by 716/2014, the cost for NeTSO will therefore need to be covered in full by the TNC charge. If Norway had been eligeable for CEF funding, the percentage of applicable funding would be up to 50 % of the project cost.

Efficiency benefits from NeTSO is expected from 2024 at the earliest. Efficiency in ordinary TWR operations is expected to increase as a result of the implementation of new technology and Avinor is planning to handle the increase in air traffic with the same or reduced number of operational staff. The timing of the investment is related to the legal requirements in IR (EU) 716/2014. The project will introduce new technology as remote tower functionality in conventional TWR and better quality safety nets. The benefits for the airspace users will include increased safety, capacity and not least cost-efficiency, but the full CBA of the project is not expected until August 2020 when the investment decision will be taken by the Avinor Board.

\* Refer to Annex R, if necessary.

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

\* Refer to Annex R, if necessary.

#### 3.4.3 - Pension assumptions

#### Avinor Flysikring AS (Avinor ANS)

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

Pension costs	2020D	2021D	2022D	2023D	2024D
Total pension costs	220 178	223 930	227 728	231 573	235 724
En-route activity	105 508	107 306	109 126	110 968	112 958
Terminal activity	49 650	50 496	51 353	52 220	53 156
Other activities	65 020	66 128	67 249	68 385	69 611

#### 3.4.3.2 Assumptions for the "State" pension scheme (in nominal terms in '000 national currency)

Are there different contribution rates for different staff categories? If yes, h	ibution rates for different staff categories? If yes, how many?			Sel	Select	
<staff category="" name=""></staff>	2020D	2021D	2022D	2023D	2024D	
Total pensionable payroll to which this scheme applies						
Employer % contribution rate to this scheme						
Total pension costs in respect of this scheme						
Number of employees the employer contributes for in this scheme						

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

All Norwegian Citizens are members of the National Insurance Scheme and entitled to withdraw a retirement pension after the age of 62. The retirement pension is funded through the National Insurance scheme. Employers are obligated to contribute to the National Insurance scheme through a payroll tax based on as percentage of personnel cost. The percentage is differentiated based on geographical criteria. For Avinor Flysikring AS the rate is at present 14,1 %.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs The payroll tax is calculated as a flat rate on the Calculation base, with 14,1 %, and is therefore variable with the level of personnel cost. The calculation base is salaries and other benefits, contribution to employer pension plans and refunds of sick pay.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users

The payroll tax is a fixed rate, which is determined by the Norwegian Parliament on a yearly basis. Historically the rate is rarely subject to significant changes.

#### 3.4.3.3 Assumptions for the occupational "Defined contributions" pension scheme (in nominal terms in '000 national currency)

Are there different contribution rates for different staff categories? If yes, h	now many?			N	0
<staff category="" name=""></staff>	2020D	2021D	2022D	2023D	2024D
Total pensionable payroll to which this scheme applies	700 841	720 114	739 917	760 265	781 172
Employer % contribution rate to this scheme					
Total pension costs in respect of this scheme	122 845	126 223	129 694	133 261	136 925
Number of employees the employer contributes for in this scheme	778	778	778	778	778

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

As per 01.01.2019 all employees under the age of 53 years have been transferred to the new defined contribution plan. The pension plan is financed with 7 % premium on pensionable salary between 0 and 7,1 G (G: Public pension base rate), and 20 % on pensionable salary between 7,1 and 12 G. The employees contributes 1,5% of the premium. For employees over the age limit for automatic transferal to the defined contribution plan, a process based on voluntary transferal is to be carried out in 2019. All new employees from 01.01.19 will be included in the defined contribution plan, as the defined benefit plan is closed for new members. The Group will also, as from 1 January 2019, be affiliated with the private early retirement scheme (AFP) for employees that have transitioned to the new pension scheme. This scheme is funded and expensed through yearly premiums – at present 2,5% of pensionable income.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs

In determined cost this allocation key for En-Route activity is estimated to 47,9%, which is the total number of employees contributint to the En-Route services in percentage of total employees in Avinor ANS. The allocation key for Terminal activity in Avinor ANS is 22,3%, based on the same assumptions.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users

This defined contribution pension plan is based on fixed rates and is therefore more predictable than the defined benefit plan.

#### 3.4.3.4 Assumptions for the occupational "Defined benefits" pension scheme (in nominal terms in '000 national currency)

Does the ANSP assume liability for meeting future obligations for the occup	?	Yes					
Is the occupational "Defined benefits" pension scheme funded? No							
2020D 2021D 2022D 2023D 2024D							
Total pensionable payroll to which this scheme applies241 333247 970254 789					268 995		
Employer % contribution rate to this scheme 0 0 0 0 0 0 0							
Total pension costs in respect of this scheme 97 333 97 707 98 034 98 312 98 799							
Number of employees the employer contributes for in this scheme	269	269	269	269	269		

Description on the relevant national pension regulations and pension accounting regulations on which the assumptions are based, as well as information whether changes of those regulations are to be expected during RP3

The defined benefit scheme is closed for new members. As of 01.01.19, all personnel not 53 years or more, have been transferred to the defined contribution plan. The defined benefit plan is managed by Statens Pensjonskasse (the Norwegian Public Service Pension Fund/SPK) and is part of the public occupational pension scheme . The pension plan defines an amount of pension the employee will receive on retirement, dependent on factors such as years of service and compensation. The pension plan includes pension benefits in accordance with the act relating to the Norwegian Public Service Fund (SPK). This includes specialage pensions and an early retirement scheme.

For those who have left the defined benefit scheme, a new scheme has been established relating to special-age pensions.

A new Act on public occupational pension schemes will come into force from 2020. In addition, new regulations have been adopted for the coordination of public occupational pension schemes and the National Insurance Scheme. This will have effect on the accounts for 2019.

Description of the assumptions underlying the calculations of pension costs comprised in the determined costs In determined cost this allocation key for En-Route activity is estimated to 47,9%, which is the total number of employees contributing to the En-Route services

in percentage of total employees in Avinor ANS. The allocation key for Terminal activity in Avinor ANS is 22,3%, based on the same assumptions.

Where, in the Reporting Tables, some occupational "defined benefits" costs (e.g. interest expense related to pensions) are reported in other cost item(s) than staff costs, the cost item(s) should be indicated here below along with corresponding explanations. The interest expenses related to pensions are reported as staff costs.

Describe the actions taken ex-ante to manage the cost-risk (cost increase) associated with this item, as well as the actions taken to limit the impact of the unforeseen change on the costs to be passed on to airspace users

As a consequence of the volatility of the pension costs, the pension defined pension plan is closed effectively for new members as of 01.01.19. All employees not turned 53 years before the aforementioned date have been transferred to the new defined contribution plan.

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

## Avinor Flysikring AS (Avinor ANS)

Select number of loans

		ing the question of sid					
Interest rate a	(Amounts in nominal term	ing the provision of an is in '000 national curre	ency)	25			
		2024.5		20225	20245		
Loan #1	2020D	2021D	2022D	2023D	2024D		
	Avinor ANS do	pes not currently have a	any loans, but with	the forecasts for o	perations and		
Description	investment, it	is estimated that the c	ompany must have	e loans in 2021. Wh	at kind of loans		
Description	and under wh	at conditions is not clea	ar at this time.				
	Interest rates	are assessed by compa	rable loans in Avin	or AS.			
Remaining balance	0	0 190 300 380 16					
Interest rate %	3,00 %	3,00 %	3,00 %	3,00 %	3,00 %		
Interest amount	0	6	9	11	5		
Other loans	2020D	2021D	2022D	2023D	2024D		
Description							
Remaining balance							
Average weighted interest rate %	-	-	-	-	-		
Interest amount							
Total loans	2020D	2021D	2022D	2023D	2024D		
Total remaining balance	0	190	300	380	160		
Average weighted interest rate %	-	3,00 %	3,00 %	3,00 %	3,00 %		
Interest amount							

1

#### 3.4.5 - Restructuring costs

#### 3.4.5.1 Restructuring costs from previous reference periods to be recovered in RP3

Restructuring costs from previous reference periods approved by the European Commission?	No

#### 3.4.5.2 Restructuring costs planned for RP3

Restructuring costs foreseen for RP3?	Yes
If yes, number of charging zones concerned	1

## Avinor Flysikring AS (Avinor ANS)

#### a) Overall description of the restructuring measures planned for RP3

The most important driver for the cost development in RP3 is the transition to a new ATM system. Implementation is planned by the end of RP3. Avinor ANS has over the last years been increasing capacity, in order to being able to shift to new technology without major operational consequences for the airspace users. As a result cost is increasing through RP3. Training cost on the new ATM-system cannot be capitalised according to accounting practices and will further increase staff cost. Training on the new ATM-system platform is planned 2021-2023. There will be a period of simultaneously operating two systems, also affecting the level of staff cost.

Cost related to the implementation of the new ATM-system is by Avinor ANS considered to be restructuring cost, as defined in Annex iv to regulation 2019/317. Efficiency benefits from the new ATM-system is expected from the end of RP3 at the earliest. Productivity in ordinary operations is expected to increase further through RP3, as Avinor ANS is planning to handle the expected increase in traffic with the same number of operational staff.

#### b) Detailed information on the restructuring measures planned for RP3

Number of restructuring measures					1	
Measure #1	2020D	2021D	2022D	2023D	2024D	
Associated restructuring costs	69 115 735	91 737 318	112 926 875	122 497 153	179 601 109	
Description and justification of the restructuring measure						
Demonstration that the restructuring measure will deliver a net financial benefit to airspace users at the latest in the next reference period						

	2020D	2021D	2022D	2023D	2024D
Total restructuring costs by measures	69 115 735	91 737 318	112 926 875	122 497 153	179 601 109

#### c) Detailed information on the restructuring costs by nature by charging zone

Restructuring costs planned for RP3 by nature and by charging zone						
(nominal terms in '000 national currency)						
Norway	2020D	2021D	2022D	2023D	2024D	
Staff	34 747	46 137	57 105	58 095	39 128	
of which, pension costs						
Other operating costs	2 593	5 242	7 902	10 587	13 300	
Depreciation					69 827	
Cost of capital	31 776	40 358	47 921	53 815	57 346	
Exceptional items						
	2020D	2021D	2022D	2023D	2024D	
Total restructuring costs by charging zone	69 116	91 737	112 927	122 497	179 601	

#### Additional comments

The most important driver for the cost increase in RP3 is the transition to a new ATM system. The capital and depreciation cost of the investment in new ATM infrastructure is included in the table above and also in 2.1.1, under item "Sub-total existing investment (3)". However the cost effects resulting from the transition to new technology are not limited to the capital related cost. An important goal for Avinor ANS is to change to new technology without major operational consequences. In order to succeed to reach this goal Avinor ANS has increased capacity over time, meaning a gradual increase in staff cost driven by the technology investment.

A share of this staff cost, man hours spent on project management and other project tasks, are capitalized on the investment and thereby charged to the airspace users through determined capital cost and depreciation cost. However the remaining over capacity in the operational units, necessary to deliver satisfactory capacity in the coming years, is categorized as staff cost and not included in the capital expenditure of the investment project. I addition, 2021-23 will be years of excessive training of operational staff on the new system platform. According to Norwegian Accounting laws training cost cannot be capitalized, and is thus the major reason for the increase in staff cost for the years 2021-2023.

The seamless transition to new technology also drives cost for the technical services. The change from old to new technology will take place over a period of two years as implementation is planned in the South of Norway in 2023 and in the North of Norway in 2025. This means that maintenance and management of two different ATM-systems is needed, driving staff cost in Avinor ANS' technical services. Operating two systems also generates need for higher network capacity, affecting Other operating cost.

When deducting the restructuring costs from the reported en-route cost base the "Cost of operation" show an average decrease in real en-route unit cost of -3,2 % per year (CAGR).

## 3.5 Additional KPIs / Targets

## Annexes of relevance to this section

ANNEX J. OPTIONAL KPIS AND TARGETS

# SECTION 3.6: DESCRIPTION OF KPAS INTERDEPENDENCIES AND TRADE-OFFS INCLUDING THE ASSUMPTIONS USED TO ASSESS THOSE TRADE-OFFS

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

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

- 3.6.2 Interdependencies and trade-offs between capacity and environment
- 3.6.3 Interdependencies and trade-offs between cost-efficiency and capacity
- 3.6.4 Other interdependencies and trade-offs

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

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

a) Do the measures to reach the targets in the different KPAs require changes in the ANSP functional system that have safety implications? If yes, which mitigation measures are put in place?

Measures to reach the targets in the different KPAs requires no changes in the ANSP functional system that have safety implications.

b) What are the main assumptions used to assess the interdependencies between safety and other KPAs? There are not established any additional indicators for this purpose

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? There are not established any additional indicators for this purpose

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? First question: Yes, second question: No

e) Has the State 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.

Yes, ref. section 4.3 - Change management

## 3.6.2 - Interdependencies and trade-offs between capacity and environment

N/A

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

Feedback from the operators based on consultations has been that an en route capacity level as proposed by NM is unacceptable. On this basis more capacity could be provided given that a surplus of ATCOs is maintained during the implementation phase of the new ATM-system.

## 3.6.4 - Other interdependencies and trade-offs

N/A

## 4.1 - Cross-border initiatives and synergies

4.1.1 - Planned or implemented cross-border initiatives at the level of ANSPs

4.1.2 - Investment synergies achieved at FAB level or through other cross-border initiatives

#### 4.2 - Deployment of SESAR Common Projects

#### 4.3 - Change management

## Annexes of relevance to this section

ANNEX N. CROSS-BORDER INITIATIVES

## 4.1 - Cross-border initiatives and synergies

## 4.1.1 - Planned or implemented cross-border initiatives at the level of ANSPs

· · · · · · · · · · · · · · · · · · ·	
Number of cross-border initiatives	6
	1.101.01.01.00
Name	Kirkenes IMA
Description	Kirkenes TMA West and Centre are within Finnish airspace, but controlled by Kirkenes TWR/APP.
Expected performance benefits	All approach procedures are now within controlled airspace, which ensures and increases the level of safety
	for all flights in and out of Kirkenes airport.
	Initiative #2
Name	North Sea Helicopters - Scottish FIR
	The provision of ATS in a defined area in Scottish FIR has been delegated to Avinor ANS. The purpose is to
Description	reduce the need for frequency changes for helicopters on their way to and from oil/gas platforms inside that area.
Expected performance benefits	
	Initiative #3
Name	North Sea Helicopters - Norway FIR
	The provision of ATS in a defined area in Norway FIR has been delegated to NATS. The purpose is to reduce
Description	the need for frequency changes for helicopters on their way to and from oil/gas platforms inside that area.
Expected performance benefits	
	Initiative #4
Name	Sweden FIR/Norway FIR
	The provision of ATS in several defined areas along the border of Norway FIR and Sweden FIR, have been
Description	delegated to either LFV or Avinor ANS. The purpose is to reduce the need for frequency changes for flights
	north to south or vice versa within those defined areas.
Expected performance benefits	
	Initiative #5
Name	Finland FIR/Norway FIR
	The provision of ATS in two areas (Halti and Manto) in the northern part om Finland FIR has been delegated
Description	to Avinor ANS. The purpose is to reduce the need for frequency changes for flights crossing the border for
	short periods of the flight.
Expected performance benefits	
	·
	Initiative #6
Name	Free Route Airspace
Description	Avinor ANS has implemented cross border free route airspace within NEFAB and NUAC. The purpose is to
Description	provide shortest possible trajectories to all flights within the area.
Expected performance benefits	

Additional comments

## 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 Avinor ANS procured, financed and established a radar nearby Kirkenes airport in Northern Norway. Surveillence information from that radar is made available for ANS Finland free of charge.

## 4.2 - Deployment of SESAR Common Projects

PCP ATM Functionality (AF) / Sub	Depart and superted progress
functionality (s-AF)	Recent and expected progress
AF1 - Extended AMAN and PBN in high de	ensity TMA
s-AF1.1 AMAN extended to en-route air	space
Oslo Gardermoen	Basic AMAN and AMAN Horizon extension into remote upstream - Oslo, Stavanger and Bodo ACCs is implemented. No plans for implementation towards Stockholm ACC and Copenhagen ACC yet.
s-AF1.2 Enhanced TMA using RNP-based	d operations
Oslo Gardermoen	Implemented.
AF2 - Airport Integration and Throughput	
s-AF2.1 DMAN synchronised with prede	parture sequencing
Oslo Gardermoen	Pre-requisites except initial AOP are implemented. A possibility study for implementation of DMAN is in progress.
s-AF2.2 DMAN integrating surface mana	agement constraints
Oslo Gardermoen	ASMGCS level 2 is implemented. No DMAN available yet.
s-AF2.3 Time-based separation for final	approach
Oslo Gardermoen	TBS functionality closely linked with new iTec system
s-AF2.4 Automated assistance to contro	Iller for surface movement planning and routing
Oslo Gardermoen	Planned implemented in new TWR ATM-system at Oslo. Project is called NeTSO.
s-AF2.5 Airport safety nets	
Oslo Gardermoen	Planned implemented in new TWR ATM-system at Oslo. Project is called NeTSO.
AF3 - Flexible Airspace Management and	
s-AF3.1 Airspace management and advanced flexible use of airspace	Status: "Planned" (with new ATM system - 20.04.2023) respectively "Already implemented". LARA is in use, but not integrated to NM B2B. Dynamic airspace configurations will be handled through iTEC Airspace Capacity Management tool (iACM).
s-AF3.2 Free route	Status: "Already implemented". Cross border FRA is already supported, but capabilities will be enhanced when the new ATM system is in service by 20.04.2023.
AF4 - Network Collaborative Managemer	ıt
s-AF4.1 Enhanced short-term ATFCM measures	Status: STAM phase 1 Not Applicable, STAM phase 2 "Planned". Considering NM platform or alternatively iTEC iACM (see s-AF 3.1) for this purpose.
s-AF4.2 Collaborative NOP	Status: "Planned" for all capabilities except the AOP/NOP information sharing ("No plan"), pending an initiative from customer Avinor AS (Oslo Airport).
s-AF4.3 Calculated take-offtTime to target times for ATFCM purposes	The requirements under 4.3.1 are N/A (as they apply to NM and AU). For 4.3.2 the Avinor ANS status is "No plan" as no industrialized SESAR solution is known at this time.
s-AF4.4 Automated support for traffic complexity assessment	Status: "Planned". NM solutions only or alternatively local deployment of the common iTEC Airspace Capacity Management (iACM) tool is under consideration.
AF5 - Initial SWIM	
s-AF5.1 Common infrastructure components	PENS 1 already implemented. NewPENS integration is "In Progress", milestones 1, 2 and 3 (ref SDM Monitoring Exercise) have been completed.
s-AF5.2 SWIM technical infrastructure and profiles	Status: "No plan". No formal start of transformation at this time (June 2019), only prestudies, competence building and talks to industrial players.
s-AF5.3 Aeronautical information exchange	Status: "No plan". No formal start of transformation at this time (June 2019). It should be noted that Avinor AS, the mother company of Avinor ANS, is the owner of the technical capabilities, which are under upgrade due to the PCP and the ADQ IR.
s-AF5.4 Meteorological information exchange	Status: "No plan". No formal start of transformation at this time (June 2019). Talks to the Norwegian designated MET provider on future SWIM based integration will be initiated this fall.
s-AF5.5 Cooperative network information exchange	Status: "No plan". No formal start of transformation at this time (June 2019).
s-AF5.5.6 Flight information exchange	Status: "No plan". Avinor ANS will industrialize the required capabilities through the iTEC collaboration and deploy according to the updated European roadmap (being part of Cluster #3).
AF6 - Initial Trajectory Information Sharing	General status: "Planned". ATN B1 based services will be provided in conjunction with the new ATM system starting service (20.04.2023). Network and A/G services will be tendered and contracted within 2019. Such service level agreement with a CSP will also cater for Multi Frequency support.

## 4.3 - Change management

Change management practices and transition plans for the entry into service of major airspace changes or for ATM system improvements, aimed at minimising any negative impact on the network performance

#### State level:

As the Competent Authority, the Norwegian Civil Aviation Authority is obliged to supervise safety-related changes to functional systems that are planned for ATM systems as defined in Article 9 of Regulation (EC) 1034/2011 and from 2. January 2020 (EC) 2017/373. Major Airspace Changes are in addition required to be notified in accordance with a process described in national regulation BSL G 4-1. CAA has approved the ANSPs change management procedures and they are required to notify all planned safety related changes to the CAA-Norway a minimum of 4 weeks before entry into service. Major Airspace Changes are required to be notified as soon as they have been formally decided by the ANSP management. Received notification regarding planned safety-related changes to ATM functional systems as well as Major Airspace Changes are assessed and reviewed in accordance with CAA-Norway's change management procedures, developed in accordance with regulation regulation regulirements and Eurocontrol GM/EASA AMC and GM.

System interoperability requirements are set out in Regulation (EC) 552/2004. Received interoperability documentation associated with planned safety-related functional changes are assessed in accordance with CAA-Norway's procedures, working methods and national/international regulations.

#### ANSP level:

Planned implementation of new ATM-system in 2023-2025 based on the iTEC alliance. High level transition concept in place. Human change management activities, training program and all associated transition activities are planned in close collaboration between the system integration project and the operational environment. All plans are designed to minimize any negative effect on the network performance, and will be closely coordinated with the Network Manager in due time before finalized.

## 5.1 - Traffic risk sharing parameters

5.1.1 Traffic risk sharing - En route charging zones

5.1.2 Traffic risk sharing - Terminal charging zones

#### 5.2 - Capacity incentive schemes

5.2.1 - Capacity incentive scheme - Enroute

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

5.2.1.2 Rationale and justification - Enroute

5.2.2 - Capacity incentive scheme - Terminal

5.2.2.1 Parameters for the calculation of financial advantages or disadvantages - Terminal

5.2.2.2 Rationale and justification - Terminal

### 5.3 - Optional incentives

#### Annexes of relevance to this section

ANNEX G. PARAMETERS FOR THE TRAFFIC RISK SHARING ANNEX I. PARAMETERS FOR THE MANDATORY CAPACITY INCENTIVES ANNEX K. OPTIONAL INCENTIVE SCHEMES

## 5.1 - Traffic risk sharing

## 5.1.1 Traffic risk sharing - En route charging zones

Norway			Traffic risk-sharing	no		
			Service units lo	ower than plan	Service units hi	gher than plan
	Deedhard	Diele ehe eine hered	% loss to be	Max. charged if	% additional	Min. returned if
	Dead band	RISK SHAFING DANG	recovered	SUs 10% < plan	revenue returned	SUs 10% > plan
Standard parameters	±2,00%	±10,0%	70,0%	5,6%	70,0%	5,6%

## 5.1.2 Traffic risk sharing - Terminal charging zones

Norway - TCZ	]		Traffic risk-sharing	no		
			Service units lo	ower than plan	Service units hi	gher 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 for the calculation of financial advantages or disadvantages - Enroute

Enroute	Expressed in	Value
Dead band Δ	fraction of min	±0,030 min
Max bonus (≤2%)	% of DC	0,00 %
Max penalty (≥ Max bonus)	% of DC	2,00 %
The pivot values for RP3 are	fixed	

Avinor Flysikring AS (Avinor ANS)

		2020	2021	2022	2023	2024
NOP reference values (mins of ATFM delay pe	er flight)	0,18	0,16	0,13	0,11	0,11
Alert threshold ( $\Delta$ Ref. value in fraction of mi	n)	±0,050	±0,050	±0,050	±0,050	±0,050
Performance Plan targets (mins of ATFM delay per flight)		0,18	0,16	0,13	0,11	0,11
Pivot values for RP3 (mins of ATFM delay per flight)		0,08	0,08	0,08	0,08	0,08
	Dead band range	[0,05-0,11]	[0,05-0,11]	[0,05-0,11]	[0,05-0,11]	[0,05-0,11]
Financial advantages / disadvantages Bonus range		[0,03-0,05]	[0,03-0,05]	[0,03-0,05]	[0,03-0,05]	[0,03-0,05]
Penalty range		[0,11-0,13]	[0,11-0,13]	[0,11-0,13]	[0,11-0,13]	[0,11-0,13]



#### 5.2.1.2 Rationale and justification - Enroute

If the pivot values are different that the values in the NOP, explain rationale for the difference and method of calculation\*\*

The cost optimum capacity for en route delay per flight for the ANSP is between 0,18 min/flt. and 0,11 min/flt., but for the airspace users this would be unacceptable. This view is based on the fact that a large portion of the overall traffic is transition flights with little leeway in terms of delays. Based on consultation meetings with the airspace users and the ANSP during spring 2019 the en route delay is set to 0,08 min./flt. for each year in RP3.

This incentive scheme has been set to encourage the ANSP to perform on targets in the area of capacity no more no less, while at the same time a less demanding capacity target than achieved in RP2 has a positive impact in the area of cost-efficiency.

Avinor ANS starting point is to deliver the capacity that ensures continuity of traffic without significant interruptions. This entails an incentive system that is primarily intended to secure a resource allocation that takes care of this, ie that it must have an economic impact for the ANSP if they do not deliver the agreed capacity. Based on the experience from RP2 it is our view that under normal operational circumstances, the target (0,08 min/flt) should be well achievable without significant effort.

On the basis of feedback from airspace users, it is also our opinion that the additional costs of delay beyond the threshold value (pivot) are far higher in a global perspective than the savings of providing a significant overcapacity. We have therefore considered an incentive scheme in the third reference period that does not provide any bonus for delivering overcapacity beyond the target (pivot value), while in case of delay beyond the target (pivot including a dead band), a balanced penalty of 2 per cent of the traffic revenues is allocated the airspace users latest within year n + 2.

\*\* Refer to Annex I, if necessary.

#### 5.2.2 - Capacity incentive scheme - Terminal

#### 5.2.2.1 Parameters for the calculation of financial advantages or disadvantages - Terminal

Terminal	Expressed in	Value
Dead band $\Delta$	fraction of min	±0,030 min
Bonus/penalty range (% of pivot value)	%	±50%
Max bonus	% of DC	0,00 %
Max penalty	% of DC	2,00 %
The pivot values for RP3 are	modulated	

		2020	2021	2022	2023	2024
Performance Plan targets (mins of ATFM dela	ay per flight)	0,5	0,5	0,5	0,5	0,5
Bonus/penalty range $\Delta$ (in fraction of min)		±0,040	±0,040	±0,040	±0,040	±0,040
Pivot values for RP3 (mins of ATFM delay per	flight)*	0,08	0,08	0,08	0,08	0,08
	Dead band range	[0,05-0,11]	[0,05-0,11]	[0,05-0,11]	[0,05-0,11]	[0,05-0,11]
Financial advantages / disadvantages	Bonus range	[0,04-0,05]	[0,04-0,05]	[0,04-0,05]	[0,04-0,05]	[0,04-0,05]
	Penalty range	[0,11-0,12]	[0,11-0,12]	[0,11-0,12]	[0,11-0,12]	[0,11-0,12]

\* When modulation applies, these figures are only indicative as they will be updated annually on the basis of the methodology described in 5.2.1.2.a below. The pivot values for year n have to be notified to the EC by 1 January n.



#### 5.2.2.2 Rationale and justification - Terminal

Explain how the bonus and penalties are going to be apportioned between the different terminal charging zones and ANSPs providing services in each of them\*\*

There is only one terminal charging zone that falls within the geographical scope of the performance plan and incentive scheme, which consists of the airports ENGM, ENBR, ENZV and ENVA. There will not be calculated nor paid any bonus to the service provider during the reference period. This incentive scheme has been set to encourage the ANSP to perform on targets in the area of capacity no more no less, while at the same time a less demanding capacity target than achieved in RP2 has a positive impact in the area of cost-efficiency

\*\* Refer to Annex I, if necessary.

cate which of the principles below will be applied for the modulation of the pivot values for the whole RP3:		
ne pivot value for year n is modulated in order to enable significant and unforeseen changes in traffic to be taken into	account and is based on the	No
ciples explained below:**		
he scope of the incentives is limited to delay causes related to ATC capacity, ATC routing, ATC staffing, ATC equipment	, airspace management and special	Yes
nts with the codes C, R, S, T, M and P of the ATFCM user manual. If yes, provide below a justification for this decision a	nd an explanation of how the pivot	
es are calculated.		
ng RP2, the delay is only limited to events with codes C, R, S, T, M and P in the ATFCM User Manual in the range betwe	een 0.01 min / flt and 0.11 min / flt.	
ed on this rationale, a balanced capacity target at 0,08 min/flt in RP3 has a positive impact in the area of cost-effective	ness, and still contributes to the con	tinuity of the
vork without any major disruptions.		
ed on the experience from RP2 it is our view that under normal operational circumstances, the target (0,08 min/flt) sho	ould be well achievable without sign	ificant effort.
he basis of feedback from airspace users, it is also our opinion that the additional costs of delay beyond the threshold	l value (pivot) are far higher in a glob	al perspective than
savings of providing a significant overcapacity. We have therefore considered an incentive scheme in the third referer	nce period that does not provide any	bonus for delivering
capacity beyond the target (pivot value), while in case of delay beyond the target (pivot including a dead band), a bala	anced penalty of 2 per cent of the tra	affic revenues is
cated the airspace users latest within year $n + 2$ .		

\*\* Refer to Annex I, if necessary.

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 NSA 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

The NSA requests all information from ANSPs as necessary to monitor performance. The NSA monitors the situation on a yearly basis, collects information from ANSPs and from other sources (e.g. PRB Dashboard). The Civil Aviation Act article 13 a-1, paragraph 1 no 2 subparagraph e, gives the aviation authorities grounds to demand information from ANSPs which is necessary for the authorities to obtain in order for them to perform their duties in relation to the Act.

## 6.2 Non-compliance with targets during the reference period

Description of the processes put in place and measures to be applied by the NSA to address the situation where targets are not reached during the reference period

NSA can propose corrective actions if targets are not met accordingly. Article 13 of the national regulation on the establishment and the implementation of the Single European Sky, states that the adopted performance plans are binding for legal persons and the authorities as far as the performance plans themselves contain such obligations. If deemed necessary in order to ensure compliance with those obligations, the CAA/NSA may order compliance and impose fines, with regard to the Civil Aviation Act articles 13 a-3, 13 a-4 and 13 a-5 first paragraph no 6.

## 7 - ANNEXES

ANNEX A. REPORTING TABLES & ADDITIONAL INFORMATION (EN-ROUTE) ANNEX A.x - En route Charging Zone #x ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL) ANNEX B.x - Terminal Charging Zone #x 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 Z. CORRECTIVE MEASURES\*

\* Only as per Article 15(6) of the Regulation

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

Ref. see separate annex to the national performance plan RP3 named ANNEX A. ENROUTE REPORTING TABLES PP RP3 and ANNEX A. ENROUTE ADDITIONAL INFORMATION PP RP3

## ANNEX B. REPORTING TABLES & ADDITIONAL INFORMATION (TERMINAL)

## PRINT

Ref. see separate annex to the national performance plan RP3 named ANNEX B. TERMINAL REPORTING TABLES PP RP3 and ANNEX B. TERMINAL ADDITIONAL INFORMATION PP RP3

## ANNEX D. LOCAL TRAFFIC FORECASTS

PRINT

## En Route

The En Route service units are based on STATFOR base forecast from October 2019 for the period 2019-2024 using model 3, taking into consideration the ratios M3/M2 published by the CRCO for November 2017 to May 2019.

## Terminal

Traffic forecast October 2019 (in KSU)

	2019	2020	2021	2022	2023	2024
Eurocontrol Statfor base Oct. 2019	256,30	261,30	263,50	266,60	269,00	271,90
Avinor Offshore Oct. 2019	5,71	5,77	5,90	5,81	5,71	5,62
	262,0	267,1	269,4	272,4	274,7	277,5

## **ANNEX E. INVESTMENTS**

## PRINT

## Specification of other new investments

						Sub-total
						other new
Investment (in MNOK)	2020	2021	2022	2023	2024	investments
ATM-Systems General	-	-	28	27	-	55
Buildings General	-	-	8	43	8	59
Communication General	-	-	8	44	17	68
Fremtidige investeringer	-	-	-	17	65	82
MET General	-	-	3	3		6
Mobility General	-	-	4	11	4	19
Other type of project	-	-	8	21	7	36
Surveillance General	-	-	10	81	25	116
Total value of the assets	-	-	68	247	125	441
Value of the assets allocated to ANS in the scope of the PP (EnRoute)	-	-	51	184	93	327

# **ANNEX F. BASELINE VALUES (COST-EFFICIENCY)**

PRINT Norway Currency: NOK Avinor Flysikring AS (Avinor ANS)

## Specification of cost elements

En Route	
1. Revision of the internal allocation key for combined towers (TWR/APP)	19 800 000
2. Change in allocation key for APP between EnRoute and Terminal	128 278 562
3. Costs incurred as a consequence of military activity	32 500 000
Total cost elements adj. (in national currency at 2019 prices)	180 578 562
Inflation index 2019	105,0
Total cost elements adj. (in national currency at 2017 prices)	172 050 041
Total en route costs in real terms (in national currency at 2017 prices)	974 756 866
2019 baseline value for the determined costs (in real terms and in national currency)	1 146 806 907

Norway Currency: NOK Avinor AS

## Specification of cost elements

Terminal	
1. Revision of the internal allocation key for combined towers (TWR/APP)	(2 800 000)
2. Change in allocation key for APP between EnRoute and Terminal	(58 935 770)
Total cost elements adj. (in national currency at 2019 prices)	(61 735 770)
Inflation index 2019	105,0
Total cost elements adj. (in national currency at 2017 prices)	(58 820 060)
Total cost elements adj. (in national currency at 2017 prices)	(58 820 060)
Total cost elements adj. (in national currency at 2017 prices)   Total en route costs in real terms (in national currency at 2017 prices)	(58 820 060) 513 914 036
Total cost elements adj. (in national currency at 2017 prices)   Total en route costs in real terms (in national currency at 2017 prices)	(58 820 060) 513 914 036

# ANNEX H. RESTRUCTURING MEASURES AND COSTS PRINT

Ref. see separate annex to the national performance plan RP3 named ANNEX H. RESTRUCTURING MEASURES AND COSTS.pdf. The content of this annex is provided the CAA directly from Avinor ANS, on the CAA's request. The CAA has thoroughly analysed the content, and supports all the essential facts and elements.