UK Civil Aviation Authority

Economic regulation of NATS (En Route) Plc: decision on licence modifications to implement exceptional measures

CAP 2279

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About this document

This decision relates to changes to the price controls for NATS (En Route) Plc's (NERL's) regulated activities under its air traffic services licence for the year 2022, following on from the policy set in our December 2020 consultation (CAP1994), March 2021 update (CAP2119) and June 2021 update (CAP2160) and notice under section 11A(1) of the Transport Act 2000 of the proposed modifications that the CAA intends to make to NERL's licence (CAP2245).

This document constitutes notice under section 11A(5) of the Transport Act 2000 of modifications that the CAA has decided to make to NERL's licence.

We set out our decision to disapply the automatic calculation of the traffic risk sharing mechanism used to set the maximum Eurocontrol and London Approach service charges in 2022. These charges would otherwise increase sharply to recover allowed revenues from 2020 as a result of the reduction in traffic levels due to covid-19 pandemic. The main purpose of these modifications is to disapply this automatic calculation of the traffic risk sharing mechanism for 2022. Instead, allowed revenues will be recovered over a longer period of time to smooth the impact on charges to airspace users. The period of recovery will be determined through the next price control review (NR23).

The decision also includes modifications for exceptional measures to remove service quality incentives for 2020 that have been unduly affected by the impact of covid-19 on traffic levels, and further technical modifications necessary to implement the CMA's determination for the period 2020-2022.

If you would like to discuss any aspect of this document, please contact Anna Muoghalu (anna.muoghalu@caa.co.uk).

Summary and introduction

Introduction

1. NATS (En Route) Plc (NERL) is the monopoly provider of en route and certain approach air traffic services (ATS) in the UK and is subject to economic regulation of its services under the Transport Act 2000 (the Act) and licence conditions. NERL's price controls set the maximum charges that it can recover from airspace users for its Eurocontrol en route, London Approach and Oceanic en route services.

2. The current price controls (following the CMA's determination) started on 1 January 2020 and will end on 31 December 2022. During the period when the CMA was considering the reference, covid-19 emerged as a pandemic, with the resulting severe and unprecedented downturn across the aviation sector. The CMA decided that due to the uncertainty created by covid-19, we should review the price controls to take account of the impact of the covid-19 pandemic when better information had become available.

3. We set out in the June 2021 update[1] that we will complete a reconciliation of costs and revenues for the period 2020-2022 to take account of the impact of covid-19 as part of the next price review (NR23). However, as the current price controls include automatic adjustments that would significantly increase the maximum allowed charges in 2022, to meet our statutory duties we are making modifications to the NERL licence ahead of the NR23 decisions.

4. On 1 October 2021 we published a consultation document (CAP2245[2]) proposing the following modifications to the NERL licence to take account of these exceptional circumstances:

   - licence modifications to disapply the automatic traffic risk-sharing mechanism for 2022 charges; and
   - licence modifications to disapply the service quality incentive payments for 2022 charges.

5. Our consultation on these modifications ended on 29 October 2021. We received four responses to our consultation. The respondents supported the proposed licence condition modifications but raised some points on the policy principles guiding our approach to the recovery of revenue shortfall from 2020-2022,

[1] www.caa.co.uk/cap2160

[2] www.caa.co.uk/cap2245

including clarity on how affordability of charges would be considered, the 3Di annual review protocol and the approach to future traffic risk sharing. We are proceeding with the licence modifications that we consulted on and respond in chapters 1 to 3 to the points raised by respondents.

6. The modifications to disapply traffic risk-sharing ("TRS") are considered an exceptional measure taken as a result of the impacts of covid-19 on traffic levels. These modifications relate to the automatic application of TRS to recover 2020 allowed revenues in 2022 charges. We expect to take a consistent approach at the NR23 price control review with the price control conditions relating to the automatic recovery of 2021 and 2022 allowed revenues. The final decision on this will be subject to a separate statutory consultation procedure as it will relate to adjustments for 2023 and 2024 charges respectively and will be part of the wider NR23 licence modifications. These measures are relevant to the current exceptional circumstances and are not intended to be the starting point for considering the appropriate TRS mechanism for the NR23 period.

7. In chapter 1 we discuss the licence modifications relating to TRS and the policy principles guiding our approach on the recovery of 2020-2022 allowed revenues under the TRS. We expect these revenues to be recovered over one or two price control periods to smooth the impact on airspace user charges, while continuing to take account of the financial impact on NERL. During the NR23 price review, we will carry out analysis on the efficient cost baseline for 2020-2022 and consider the timing of the recovery of TRS revenues, bearing in mind both the affordability of charges and financeability of the regulated company. We will set out our decisions on recovery of these TRS revenues in the NR23 initial proposals and final decision documents in 2022.

8. In chapter 2 we provide details of the licence modifications to disapply service quality incentives related to 2022 charges. As a result of the significantly lower than expected traffic levels in 2020, capacity delays were significantly below target levels and automatic application of these incentives would provide bonus payments from airspace users to NERL to be recovered through 2022 charges. As these payments are the result of exceptional circumstances outside NERL's control, we will disapply these 2020 payments for 2022 charges. The approach was supported by NERL and other stakeholders. We would expect to take a consistent approach to any 2021 payments and, potentially, 2022 payments, depending on the extent of traffic recovery.

9. In chapter 3 we set out details of a licence modification that relates to the recovery of allowed revenues in 2020 under the CMA determination. The chapter also discusses the annual review protocol for the 3Di performance measure.

10. The modified licence conditions are included in Appendix A to this consultation.

11. The statutory framework that governs this licence modification process is the new regime in the Transport Act 2000 as amended by the Air Traffic Management and Unmanned Aircraft Act 2021. This means that we can modify licence conditions without NERL's prior consent, subject to appropriate stakeholder consultation. We consulted on these licence modifications in October 2021 in CAP2245. We are now exercising our functions to modify NERL's licence in accordance with our statutory duties and this document constitutes notice under section 11A(5) of the Act of the decision to modify NERL's licence.

12. NERL, and owners/operators of aircraft and owners/managers of prescribed aerodromes whose interests are materially affected by this decision, may apply to the CMA for permission to appeal this licence modification decision within six weeks of publication. The procedure is set out in sections 19A to 19F and Schedule A1 of the Act.

13. The modifications to conditions 21, 21a and 22 will take effect on 1 January 2022[3].

[3] Subject to paragraphs 6 to 8 of Schedule A1 of the Transport Act 2000. These provisions provide that, where an application for permission to appeal has been made, an application for a direction suspending the effect of the decision may be made to the CMA.

Chapter 1

Traffic risk-sharing mechanism

Introduction

1.1 In the December 2020 consultation[4] and March 2021 update[5] we said we would carry out a reconciliation of the TRS arrangements for 2020 to 2022, and integrate the recovery of an appropriate level of revenue in the next price control.

1.2 Respondents, including NERL, supported our intention to suspend the automatic application of the TRS mechanism in 2022 to avoid a steep increase in charges which could be unaffordable at a time when traffic was still relatively low due to the impact of covid-19. However, there were different views on the extent to which some, or all, of the shortfall in revenues should be met by the amended TRS arrangements or a combination of TRS, contributions from Government and contributions from shareholders.

1.3 In the March 2021 update we confirmed that, consistent with our statutory duties, we were seeking to develop an approach which delivers both affordable charges and supports NERL's financeability and efficient operation. We confirmed that we would carry out a reconciliation of costs and revenues for 2020 to 2022 and allow the recovery of revenue shortfall over a longer period than the automatic current two-year time lag. We also did not rule out setting price control arrangements on the basis that NERL's shareholders may need to provide additional support to the regulated business in response to the unprecedented and exceptional circumstances.

1.4 In the June 2021 update we confirmed our plans for the licence modification proposal and said that, as well as consulting on modifications to NERL's licence, we would address the policy principles that will guide our approach to the recovery of revenue shortfall from the 2020 to 2022 reconciliation review. We would then set out our approach to the recovery of the TRS revenue shortfall as part of the NR23 process.

Policy principles regarding recovery of 2020-2022 TRS revenue shortfall

1.5 In the October 2021 consultation, we explained that we were not making any decisions at this stage on recovery of this revenue shortfall, as we would need to consider affordability of charges and financeabiliy in the round as part of the

[4] www.caa.co.uk/cap1994

[5] www.caa.co.uk/cap2119

NR23 review. However, recognising the value in providing NERL and airspace users with further clarity, we provided the main principles that will guide our approach.

1.6 We said we will reconcile costs and revenues for 2020, 2021 and 2022 on the basis of estimates of efficient costs and this will form the basis for the calculation of the TRS recovery amount. We also said that to the extent it is reasonable, we will look to allow NERL to recover the TRS revenue shortfall throughout NR23 with outstanding amounts recovered in NR28, subject to assessments of affordability and financeability.

1.7 We confirmed that the TRS revenue shortfall will continue to be accounted for in NERL's regulatory asset base (RAB) through a debtor in the movements in working capital[6] with the amount unwinding as revenue is recovered. We also said we considered it appropriate to provide an allowance for financing costs or time value of money for the TRS recovery but did not conclude on a precise approach.

1.8 We also reiterated our previous position that we cannot at this stage rule out setting price control arrangements on the basis that NERL's shareholders provide additional support to the regulated business.

Representations

1.9 NERL was generally supportive of the policy principles. It cautioned against the benefit of hindsight when assessing efficient costs for 2020 to 2022 and considered the burden of proof should be on the CAA to determine that costs were inefficient.

1.10 With regard to financing costs, NERL considered that the shortfall should be adjusted for the full WACC because:

i) the debt and equity funding of the TRS revenue shortfall has come from funding which assesses NERL as a whole;

ii) the debt funding came initially from pre-existing bank facilities. The equity funding has arisen from dividend restraint over a number years. NERL's cost of debt and capacity to raise the level of debt have been underpinned by this dividend restraint and initial low gearing;

iii) shortfalls did not arise from a business decision to lower prices but rather from the operation of the regulatory mechanism in the face of an unprecedented demand shock;

[6] See NERL's 2020 Regulatory Accounts available here, page 18.

iv) NERL has one market into which it sells, one technology and one regulatory model, and considered this is unlike other regulated businesses where the regulator may set a different WACC for different parts of the business;

v) TRS is already reflected in the WACC so the effect of such shielding is already reflected in the method to determine NERL's WACC. Customers have also benefited from the TRS by virtue of a lower cost of capital.

1.11 EasyJet supported recovery over a longer period of at least ten years and cautioned against recovering the majority of the amount over the initial five year period. It said a shorter period of recovery would be insufficient to relaunch traffic and that the cost of the pandemic is falling disproportionately on the airlines. easyJet believed that NERL should absorb a fair share of losses and use profits from RP2 to offset them, with state-funding being the primary source for the remainder of the shortfall. It considered access to the debt market should be investigated and cautioned against shareholder funding resulting in airlines absorbing the impact. EasyJet supported the use of profiling so higher amounts are recovered in later years but did not support including an allowance for financing costs.

1.12 Ryanair did not support proposals to recover the TRS revenue shortfall, especially over a time as long as two reference periods. It also objected to adding the amounts to the RAB and thought it was inappropriate to consider any financing costs given that five-year bonds were being offered at favourable rates during the pandemic. Ryanair said that NERL's shareholders should provide the necessary support and airlines should not be unduly penalised for circumstances outside of their control.

1.13 Prospect highlighted the need for clarity on the term "affordability of charges", especially given the relatively low proportion of air traffic management (ATM) costs within the average airline ticket price.

Next steps

1.14 We welcome the feedback on the approach to the recovery of TRS revenue shortfall from 2020-2022.

1.15 We have considered similar arguments to those raised by respondents[7] in establishing our policy principles. In our consultation document we did not rule out setting price control arrangements on the basis that NERL's shareholders may need to provide additional support to the regulated business, if there was undue pressure on affordability of charges or financeability. We also said that in reaching any such view we would seek first to use conventional regulatory levers and mechanisms to manage affordability, take account of wider price control

[7] See responses to CAP1994 and CAP2160 available on the CAA website: www.caa.co.uk/natslicence

package, and consider our statutory duties, including to protect the interests of consumers and to have regard to NERL's financeability. As highlighted in our March 2021 update, it is important to note that it is not our role to decide whether further Government support should be provided as an alternative to regulatory intervention.

1.16 We continue to consider it is appropriate for the TRS revenues to be recovered in line with the policy principles we set out in the consultation. We will consider the views from stakeholders around profiling of TRS revenues, summarised above and provided through the NR23 customer consultation process, and we will consult further on our proposed approach to recovery of these TRS revenues in our NR23 initial proposals.

1.17 We also continue to carry out work on better understanding and defining affordability which will feed into our NR23 initial proposals next year.

1.18 As mentioned in previous publications, we consider that final decisions on the recovery of TRS revenue shortfall can only be made once we assess and consider affordability of charges and NERL's financeabiliy in the round as part of the NR23 review.

1.19 We expect the next substantial update on this subject to be made as part of our initial proposals for NR23. We have retained the policy principles provided in the October 2021 consultation, which are set out in Appendix C.

Licence modifications for 2022 charges

Proposed licence modifications

1.20 As explained above, as an exceptional response to the covid-19 pandemic, the associated downturn in traffic and resulting difference between allowed and actual revenues under TRS, we proposed to modify the licence conditions so that the TRS adjustment for 2022 charges is set to zero.

1.21 We estimated that under previously existing licence conditions the TRS revenue shortfall from 2020 to be recovered in 2022 would be around £380 million.

Representations

1.22 All respondents supported our proposal to set the TRS adjustment for 2022 charges to zero.

Licence modifications

1.23 For the reasons stated above and noting support from respondents, we are making the licence modifications to conditions 21 and 21a set out in the October consultation. The modifications are included in Appendix A.

Chapter 2

Service quality incentives

Introduction

2.1 As part of the RP3 determination, service quality incentives were set for environmental (3Di) and capacity (delay) targets. In 2020, the delays recorded by NERL were significantly below its capacity service quality targets. Under the current licence conditions, NERL would earn bonus payments in its 2022 charges. NERL also met its 3Di environmental performance target although there were no bonus payments associated with this.

2.2 The targets for delays in 2020 onwards did not reflect the impact from a significant downturn in traffic in 2020 and into 2021. In its response to the March 2021 update NERL acknowledged that it would not be appropriate for NERL to seek to recover from users these bonuses given that the achievement of the targets was materially easier while traffic remains well below anticipated levels. NERL therefore supported disapplying these incentives for 2020 to 2022. NERL also considered that equally, it should not be subject to penalties if traffic returns much quicker than expected over this period.

2.3 In our June 2021 update we set out our intention to disapply the 2020 incentives. We agree that the targets set for RP3 are no longer appropriate given the change in circumstances since they were set. We also think that given continued uncertainty and the concentration of efforts on the next price controls starting in 2023, it would not be appropriate to review the established targets used for incentive schemes in 2020.

2.4 We also said we would consider the same approach for 2021 if traffic levels remained substantially below the baseline. In the meantime, we said that we would continue to monitor NERL's performance against the targets set for RP3. We intend to continue our usual activities in monitoring NERL's actual performance and will seek further information from NERL where the targets are not met. We also said we will conclude on the year 2022 as the path of traffic recovery becomes clearer.

Licence modification for 2022 charges

Proposed licence modifications

2.5 The modifications in the consultation related only to the adjustment for financial incentives from the year 2020, which under existing licence conditions would otherwise be fully carried over into 2022 prices. Under the existing licence

conditions, NERL would be entitled to bonus payments for its C2 and C3 financial incentive targets, up to 0.3% of determined costs, or around £2 million.

2.6 Rather than removing the RP3 incentives from the terms of the licence, for the purpose of the 2022 charges, we proposed to state that the relevant terms in condition 21 will be equal to zero. This highlighted the extraordinary nature of this adjustment and NERL should continue to deliver a high-quality service.

2.7 We also said we expected to take a consistent approach to 2021 and, potentially, 2022 incentives, if traffic levels remain substantially below the baseline.

Representations

2.8 All respondents supported our proposal to set the relevant service quality terms from 2020 in condition 21 to zero, for the purpose of 2022 charges.

2.9 NERL requested that the CAA take a consistent approach to service quality incentives (bonuses and penalties) relating to 2021 and 2022 given the continued uncertainty while the industry recovers from the pandemic.

2.10 Ryanair considered that any bonus payments should also be suspended for 2021 and 2022 but that NERL should remain subject to penalties for this period. It considered NERL had sufficient data available on traffic recovery, including from STATFOR, to be able to plan for it and meet the previously set targets.

2.11 Ryanair also asked the CAA to clarify what it meant by 'baseline' when saying in paragraph 2.7 of CAP2245 that "*we anticipate the same approach to apply to 2021 and, potentially, 2022 incentives, if traffic levels remain substantially below the baseline.*"

CAA views on representations

2.12 Traffic levels in 2021 continue to be significantly below 2019 and forecasted levels. As mentioned in the consultation document, we anticipate the same approach to apply to 2021 and, potentially, 2022 incentives, if traffic levels remain substantially below the baseline. Consultation on the relevant modifications will only take place next year as they relate to 2023 prices under the n+2 adjustment mechanism but we will look to confirm this approach as part of the NR23 review, including as part of our initial proposals.

2.13 With regard to Ryanair's request for clarification, 'baseline' referred to the traffic forecast underpinning the RP3 price control review.

Licence modifications

2.14 Bearing the above in mind we are making the licence modifications to condition 21 as set out in the October 2021 consultation. The licence modifications are included in Appendix A..

Chapter 3

Other licence modifications

Introduction

3.1 In addition to consulting on the modifications in chapters 1 and 2, we also proposed a modification to allow for the recovery of allowed revenues in 2020 consistent with the CMA's determination.

3.2 We also took this opportunity to consult on the annual review protocol for the 3Di performance measure.

CMA uplift (temporary unit rate adjustment)

3.3 In December 2020 we implemented the CMA's decision on price controls from 2020 to 2022 retrospectively from 1 January 2020.[8] As part of the consultation, we noted that NERL's allowed charges to users for 2020 for UKATS, Oceanic and London Approach were set according to our RP3 decision, whereas the CMA's final report and determination allowed a higher level of revenues and user charges in 2020.

3.4 Although the process for adjusting revenues due to an application of a temporary unit rate is foreseen in the Eurocontrol framework (and features in the cost reporting tables), the term has not been previously included in the NERL licence. We proposed to allow this adjustment in the year 2022 and included an additional term in the price control formulae in conditions 21, 21a and 22. The impact on Eurocontrol service charges in 2022 was an increase of around £4.6 million.

Representations

3.5 NERL supported the proposed modifications noting also that the CMA uplift could alternatively be rolled into the reconciliation exercise. The proposed modification was preferable though as it ensured the adjustment is made as soon as possible, in a transparent manner and did not unnecessarily add to the task of reconciling costs and revenues.

3.6 NERL also pointed out that the formulae for the Oceanic price was expressed in annual rates and therefore the CMA uplift term did not require a traffic multiplier at the end of it.

[8] www.caa.co.uk/cap2011

CAA views on representations

3.7 We agree with NERL that the proposed timing of the CMA uplift is preferable.

3.8 We agree that the traffic multiplier for the Oceanic price control condition was erroneous and have corrected the term in the final modification.

Licence modifications

3.9 Bearing the above in mind we are making the licence modifications to conditions 21 and 21a set out in the October 2021 consultation. The modification to condition 22 is corrected as discussed above. The licence modifications are included in Appendix A.

3Di annual review protocol

3.10 The licence modifications that implemented the CMA decision did not include the annual review protocol for 3Di for RP3. The protocol is not embedded in the licence and does not require a licence modification. It was included in the October 2021 consultation for completeness and to facilitate our review of NERL's 2020 performance.

Proposed approach

3.11 We proposed not to make changes to the annual review process compared to the process established for RP2. We said that for NR23 we will consider possible adjustments, including expanding the data set used for the purpose of the annual review, if 3Di is retained as a service quality measure.

Representations

3.12 NERL supported the proposed simplified approach to the annual review process for the RP3 period (2020 to 2022). However, NERL did not agree with the proposed method for accounting for non-revenue flights.

3.13 NERL said that actual share of non-revenue flights in 2020 meant that the impact on the 3Di score was closer to -2.0. Therefore, it did not agree with the draft protocol which asked them to provide data for the purpose of the ex-post review adjusted by -0.6 and said the score should be updated for the actual impact.

CAA views on representations

3.14 Ahead of RP3, we agreed with NERL's proposal to remove non-revenue flights from the calculation of RP3 targets. As part of our consultation and later decision, we decided to adjust the targets by -0.6 based on historical impact of such flights on the 3Di score, as provided by NERL.The RP3 targets did not

include modulation for the actual impact of such flights. This approach was retained in the CMA's RP3 determination.[9]

3.15 To retain consistency with the RP3 determination, including the 3Di targets and incentives, we do not agree with this introduction of modulation as part of the update of the Annual Review Protocol. However, for illustrative purposes, NERL could report to us the actual impact of non-revenue flights for 2020-2022, to compare this with the impact of the -0.6 adjustment.

3.16 We consider that it would be appropriate to review this approach for the NR23 price review and we welcome NERL putting forward a proposal for such modulation for NR23. In doing so, NERL should consider whether use of actual flights (rather than a fixed level) would add unnecessary complexity to the metric and whether this is material enough to warrant change and not directly linked to the exceptional circumstances related to covid-19.

Final 3Di annual review protocol for RP3

3.17 Bearing the above in mind we do not propose to make any changes to the Annual Review Protocol for RP3.

3.18 The protocol is provided in Appendix B.

[9] Available online from www.caa.co.uk/natslicence

APPENDIX A

Modified conditions

Condition 21: Control of Eurocontrol Service Charges

1. Without prejudice to Condition 25 (Suspension and Modification of Charge Control Conditions), for each Eurocontrol Relevant Year beginning on 1 January 2020, 2021 and 2022, the maximum Permitted Average Charge Per Service Unit shall be calculated as follows:

$$Maximum\ Charge_t = \frac{DC_t + INF_t + ReS_t + TRS_t + CSM_t + FI_t + MOD_t + Tvar_t + TUR_t - VFR_t - INEA_t - FAS_t}{ForecastTSU_t} - DISCOUNT_t$$

Where:

$Maximum\ Charge_t$	means the Maximum Permitted Average Charge Per Service Unit in Eurocontrol Relevant Year t.	
DC_t	means the determined costs, expressed in nominal terms for relevant year t.	
	Year t	(£)
	2018	589,585,024
	2019	579,006,611
	2020	689,955,378
	2021	674,270,832
	2022	688,739,423
INF_t	means the adjustment of the difference between forecasted and actual inflation in relevant year t calculated in accordance with Paragraph 3 of this condition.	
$INEA_t$	means any assistance provided by the Innovation and Networks Executive Agency (INEA) or other similar public funding in relevant year t, where funding is to be returned to users via a specific unit rate reduction as calculated and agreed with the CAA.	
ReS_t	means the restructuring costs in relevant year t authorised in accordance with Article 2(18) of Commission Implementing Regulation	

	(EU) No 2019/317. For all years t = 2020, 2021, and 2022 $ReS_t = 0$	
TRS_t	means the Traffic Risk Sharing element from previous years calculated in accordance with Paragraph 4 of this condition.	
CSM_t	means the carry-overs from the previous reference period resulting from the implementation of the cost sharing mechanism referred to in Article 14 of Commission Implementing Regulation (EU) No 391/2013;	
	Year t	CSM_t
	2020	1,590,664
	2021	7,943,638
	2022	8,029,814
FI_t		means the Financial Incentives relating to performance as calculated in accordance with Paragraphs 7-18 of this condition.
MOD_t		means the over-or under-recoveries that may result from the modulation of air navigation charges in application of Article 16 of Commission Implementing Regulation (EU) No 2019/317.
$Tvar_t$	means the over-or under-recoveries resulting from traffic variations as defined in Paragraph 5 of this condition.	
TURt	means the over-or under-recoveries resulting from the application of a temporary unit rate in accordance with Paragraph 19 of this condition.	
VFR_t	means the expected cost of services to traffic operating under Visual Flight Rules in relevant year t. For all years t = 2020, 2021 and 2022 $VFR_t = 0$	
$DISCOUNT_t$	means an adjustment to the maximum charge per Total Service Unit in relevant year t where the Licensee at its own discretion decides to recover less than it would otherwise be allowed to recover and has declared to the CAA that it will not pursue this as under-recovery in subsequent years.	
$ForecastTSU_t$	means the forecast of Total Service Units for relevant year t established at the beginning of the reference period as follows:	
	Year t	TSU
	2018	10,758,000
	2019	10,940,000

	2020	12,647,945
	2021	12,891,000
	2022	13,183,000
Total Service Units (TSUs)	means the route service units calculated in accordance with Annex IV of Commission Implementing Regulation (EC) No 2019/317 as amended from time to time *including* the service units relating to military exempt flights.	

Inflation Assumptions

2. The forecast values of the inflation index referenced in paragraph 3 shall be as follows:

$FHICP_t$	means the reference values of the HICP (all items) index in respect of the UK for Eurocontrol Relevant Year t established prior to the control period, consistent with the projections in nominal prices (the index base is 2012=100 up to 2019 and 2017=100 thereafter), which shall be:		
	Year t	Index (base 2012=100)	Index (base 2017=100)
	2018	112.90	
	2019	115.15	
	2020		106.44
	2021		108.57
	2022		110.74

Inflation Adjustment

3. The adjustment of the difference between forecasted and actual inflation shall be calculated as follows:

For t = 2020, 2021, and 2022,

$$INF_t = DC_{t-2}\left(\frac{HICP_{t-2}}{FHICP_{t-2}} - 1\right)$$

Where $HICP_{t-2}$ is calculated as follows:

Year t-2	Calculation
2018	110.4
2019	$HICP_{2019} = 110.4 \times (1 + Inflation_{2019})$
2020	$HICP_{2020} = 102.5 \times (1 + Inflation_{2019}) \times (1 + Inflation_{2020})$
2021	$HICP_{2021} = 102.5 \times (1 + Inflation_{2019}) \times (1 + Inflation_{2020}) \times (1 + Inflation_{2021})$

2022	$HICP_{2022} = 102.5 \times (1 + Inflation_{2019}) \times (1 + Inflation_{2020}) \times (1 + Inflation_{2021}) \times (1 + Inflation_{2022})$
Where:	
$Inflation_t$	means the annual average inflation rate produced by Eurostat in the Harmonised Index of Consumer Prices in respect of calendar year t as published by Eurostat in April of year t+1 (the published rate of inflation is rounded to one significant place of decimals).

Traffic Risk Sharing

4. Article 13 of Commission Implementing Regulation (EU) No 2010/317 sets out the basis of traffic risk sharing.

Traffic Risk Sharing (TRS_t) shall be calculated as follows:

For t = 2020, 2021 and 2022

$$TRS_t = RSF_{t-2} \times DC_{t-2}$$

For t = 2022

TRS2022 = 0

Where:

	DC_{t-2}	has the meaning in Paragraph 1 of this condition.
And	RSF_{t-2}	means the risk sharing factor relating to Eurocontrol Relevant Year t-2 based on the actual number of Total Service Units which shall be calculated as follows:
	Where:	$0.98 \leq \frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}} \leq 1.02$ $RSF_{t-2} = 0$
	Where:	$1.02 \leq \frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}} \leq 1.10$ $RSF_{t-2} = -0.7 \left[\frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}} - 1.02\right]$
	Where:	$0.90 \leq \frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}} \leq 0.98$ $RSF_{t-2} = -0.7 \left[\frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}} - 0.98\right]$
	Where:	$\frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}} < 0.90$ $RSF_{t-2} = -\left[\frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}} - 0.90\right] + 0.056$

	Where:	$\frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}} > 1.10$ $RSF_{t-2} = -\left[\frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}} - 1.10\right] - 0.056$
Where:	$ActualTSU_{t-2}$	means the actual level of Total Service Units for relevant year t-2 published by Eurocontrol.

Correction of INF and TRS Adjustments for Subsequent Traffic Variations (TVar)

5. The TVar component shall be calculated as follows:

$TVar_t$	is an adjustment to allow for variations between actual and forecast TSUs in the year that a correction originally takes place. For t = 2020,2021 and 2022 $TVar_t = (INF_{t-2} + TRS_{t-2} + CSM_{t-2} + INEA_{t-2} + FAS_{t-2} + FI_{t-2} + TVar_{t-2})$ X $\left(1 - \frac{ActualTSU_{t-2}}{ForecastTSU_{t-2}}\right)$

Calculation of Capacity Target (C1)

6. The C1 (capacity target) shall be calculated as follows:

$C1_t$		means the average minutes of en route air traffic flow management (ATFM) delay in relevant year t. Where: $C1_t = \frac{EnRouteDelay_t}{Flights_t}$
$EnRouteDelay_t$		means the en route ATFM flight delay from all causes which has been attributed by Eurocontrol to the UK in relevant year t.
$Flights_t$		means the STATFOR determined count of all IFR flights for the UK for year t. For the avoidance of doubt these include flights which depart or arrive at airports in the UK or which overfly the UK FIR
$C1Target_t$		means the target set in the performance plan which have the following values:
	Year t	$C1Target_t$
	2020	0.26
	2021	0.32
	2022	0.32

Calculation of financial incentives (FI)

7. Financial incentives for capacity and environment performance shall be calculated as follows:

<table>
<tr><td colspan="2">For FI_{2020} and FI_{2021}</td><td>$FI_{2020}$and FI_{2021} shall have meanings set out in Paragraph 18 of this condition with reference to Condition 21 of the Air Traffic Services Licence for NATS En Route plc which was in effect on 1 January 2019.</td></tr>
<tr><td colspan="2">For FI_{2022}, FI_{2023} and FI_{2024}</td><td>$FI_t = FC2_{t-2} + FC3_{t-2} + FC4_{t-2} + F3DI_{t-2}$</td></tr>
<tr><td colspan="2"></td><td>For the year t= 2022,
FI2022 = 0</td></tr>
<tr><td>Where:</td><td>$FC2_{t-2}$</td><td>means the financial incentive for the C2 measure of NERL's contribution to FAB performance for relevant year t-2 as defined at Paragraph 8 of this condition.</td></tr>
<tr><td></td><td>$FC3_{t-2}$</td><td>means the financial incentive from the C3 Impact Score for relevant year t-2 as defined at Paragraph 9 of this condition.</td></tr>
<tr><td></td><td>$FC4_{t-2}$</td><td>means the financial incentive from the C4 Daily Excess Delay Score for relevant year t-2 as defined at Paragraph 12 of this condition.</td></tr>
<tr><td></td><td>$F3DI_{t-2}$</td><td>means the element of financial incentives relating to measure 3DI for relevant year t-2 as calculated in Paragraph 16 of this condition .</td></tr>
<tr><td colspan="3">In respect of all the elements of the Financial Incentives:</td></tr>
<tr><td colspan="2">Licensee Attributable En Route ATFM Delay</td><td>means En Route ATFM Delay attributed by Eurocontrol which meet the regulation cause and regulation location in the following tables:</td></tr>
<tr><td colspan="2"></td><td>
<table>
<tr><th>Regulation Cause</th><th>NM Code</th><th>Regulation Location</th></tr>
<tr><td>ATC Capacity</td><td>C</td><td>En route</td></tr>
<tr><td>ATC Routings</td><td>R</td><td>En route</td></tr>
<tr><td>ATC Staffing</td><td>S</td><td>En route</td></tr>
<tr><td>ATC Equipment</td><td>T</td><td>En route</td></tr>
<tr><td>Military</td><td>M</td><td>En route</td></tr>
<tr><td>Special Event</td><td>P</td><td>En route</td></tr>
</table>
</td></tr>
<tr><td colspan="2">En Route ATFM Delay</td><td>means en route ATFM delay calculated by the Network Manager of ATFM as defined in Commission Regulation (EC) No 255/2010 on ATFM and expressed as the difference between the take-off time requested by the aircraft operator in the last submitted flight plan and the calculated take-off time allocated by the Network Manager.</td></tr>
<tr><td></td><td>FLT_{t-2}</td><td>means the Network Manager (STATFOR) determined count of all IFR flights for the UK for year t-2.</td></tr>
</table>

Calculation of FC2

8. For the purpose of Paragraph 7, the term $FC2_{t-2}$ shall be calculated in accordance with the following formulae where Eurocontrol relevant years t-2 are 2020, 2021 and 2022 (relating to penalties or bonuses in 2022, 2023 and 2024 respectively).

$FC2_{t-2}$	If $C2_{t-2}$ > 1.15 x $C2ParValue_{t-2}$ (where 1.15 x $C2ParValue_{t-2}$ is rounded to 2 significant figures.) $FC_{t-2} = -MIN\left[\left(\frac{C2_{t-2} - C2Target_{t-2} - 1.15}{0.4}\right) \times (0.0025 \times REV_{t-2}), (0.0025 \times REV_{t-2})\right]$
	If $C2_{t-2}$ < 0.85 x $C2ParValue_{t-2}$ (where 0.85 x $C2ParValue_{t-2}$ is rounded to 2 significant figures.) $FC_{t-2} = +MIN\left[\left(\frac{0.85 - C2_{t-2} - C2Target_{t-2}}{0.4}\right) \times (0.0005 \times REV_{t-2}), (0.0005 \times REV_{t-2})\right]$
	Otherwise $FC2_{t-2} = 0$
$C2_{t-2}$	means the average minutes of en route ATFM delay in relevant year t. $C2_{t-2} = \frac{Licensee\ Attributable\ En\ Route\ ATFM\ Delay_{t-2}}{FLT_{t-2}}$ Where: Licensee Attributable En Route ATFM $Delay_{t-2}$ has the meaning in Paragraph 7 of this condition; and FLT_{t-2} has the meaning in Paragraph 7 of this Condition.
$C2ParValue_{t-2}$	means the par values for C2 which have the following values in the relevant years: t-2 = 2020 $C2ParValue_{t-2}$ = 0.20 t-2 = 2021 and 2022 $C2ParValue^{t-2} = 0.25$
REV_{t-2}	means the revenues from that part of the charges paid to Eurocontrol by users which is reimbursed to the United Kingdom and relates to services

	provided by the Licensee in year t-2. Where: REV_{t-2} = Maximum Charge$_{t-2}$ x $ActualTSU_{t-2}$ Where Maximum Charge$_{t-2}$ and $ActualTSU_{t-2}$ have the meanings in Paragraphs 1 and 4 respectively of this condition.

Calculation of FC3

9. FC3 is the financial incentive relating to C3 (an Impact Score placing greater weight on long delays and departures in the morning and the evening peaks).

For the purpose of Paragraph 7, the term $FC3_{t-2}$ shall be calculated in accordance with the following formulae where Eurocontrol relevant years t-2 are 2020, 2021 and 2022 (relating to penalties or bonuses in 2022, 2023 and 2024 respectively).

$FC3_{t-2}$	If $C3_{t-2} > C3Upper_{t-2}$ $FC3_{t-2} = -MIN\left[(C3PenRate_{t-2}\,(C3_{t-2} - C3Upper_{t-2})\,FLT_{t-2}), 0.0075 \times REV_{t-2}\right]$
	If $C3_{t-2} < C3Lower_{t-2}$ $FC3_{t-2} = +MIN\left[(C3BonusRate_{t-2}\,(C3Lower_{t-2} - C3_{t-2})\,FLT_{t-2}), 0.0025 \times REV_{t-2}\right]$
Where:	
$C3_{t-2}$	is defined in Paragraph 10.
$C3PenRate_{t-2}$	means the penalty rate for the reduction of revenues relating to the C3 score in Eurocontrol relevant year t-2 (to take effect in relevant year t) calculated as follows: $C3PenRate_{t-2} = £0.076 \times \frac{HICP_{t-2}}{100}$
$C3BonusRate_{t-2}$	means the bonus rate for the reduction of revenues relating to the C3 score in Eurocontrol relevant year t-2 (to take effect in relevant year t) $C3BonusRate_{t-2} = £0.038 \times \frac{HICP_{t-2}}{100}$
$C3Upper_{t-2}$	is the value of the C3 score in Eurocontrol relevant year t-2 above which a penalty becomes payable calculated in Paragraph 11.
$C3Lower_{t-2}$	is the value of the C3 score in Eurocontrol relevant year t-2 below which a bonus becomes payable calculated in Paragraph 11.

The Calculation of $C3_{t-2}$

10. $C3_{t-2}$ shall be calculated as follows:

$C3_{t-2}$	$C3_{t-2} = \frac{\sum w_{p,b} d_{p,b}}{FLT_{t-2}}$ For all flights in year t-2	
Where:	Where p denotes that each flight in relevant year t-2 shall be considered as falling into one of three periods:	
	Morning Peak (p=1)	means flights in relevant year t-2 with an off-block estimated time ≥ 0400 and < 0800 UTC in Summer (April –October inclusive) and between ≥0500 and < 0900 UTC in Winter (January -March inclusive and November-December inclusive).
	Evening Peak (p=2)	means flights in relevant year t-2 with an off-block estimated time ≥ 1500 and < 1900 UTC in Summer (April –October inclusive) and ≥ 1600 and < 2000 UTC in Winter (January-March inclusive and November-December inclusive).
	Other (p=3)	means flights in relevant year t-2 with an off-block estimated block time not in the morning peak and not in the evening peak.
And	b denotes bands of delay for each flight where:	
	$b = d_{p,1}$	means the Licensee Attributable En Route ATFM Delay for each flight in seconds up to and including 15 minutes per flight in relevant year t-2 of flights which fall into relevant period p as defined above.
	$b = d_{p,2}$	means the Licensee Attributable En Route ATFM Delay in seconds over 15 minutes but less than or equal to 30 minutes per flight in relevant year t-2 of flights which fall into relevant period p as defined above.
	$b = d_{p,3}$	means the Licensee Attributable En Route ATFM Delay in seconds over 30 minutes but less than or equal to 60 minutes per flight in relevant year t-2 of flights which fall into relevant period p as defined above.
	$b = d_{p,4}$	means the Licensee Attributable En Route ATFM Delay in seconds over 60 minutes per flight in relevant year t-2 of flights which fall into relevant period p as defined above.
	$w_{p,b}$	means the weighting to be applied to bands of delay b for each flight subject to the period of the flight p where the weightings applied shall be:

	p=1 Morning	**p=2 Evening**	**p=3 Other Times**

			Peak Period	**Peak Period**		
		b=1 (Delay > 0 and <=15 minutes)	3	2	1	
		b =2 (Delay >15 and <= 30 minutes)	6	3	2	
		b =3 (Delay >30 and <= 60 minutes)	9	6	3	
		b =4 (Delay >60 minutes)	18	9	6	

Definition of Thresholds at which Bonuses or Penalties for $C3_{t-2}$ become payable

11. The thresholds for bonuses or penalties shall be calculated as follows:

Where	$LFT_{t-2} \leq FLT_{t-2} \leq UFT_{t-2}$	
		$C3Upper^{t-2} = jt$ $C3Lower^{t-2} = kt$
where	$LFT_{t-2} > FLT_{t-2}$	
		$C3Upper^{t-2} = jt\left(1 + \frac{5(FLT_{t-2} - LFT^{t-2})}{LFT_{t-2}}\right)$
		$C3Lower^{t-2} = kt\left(1 + \frac{5(FLT_{t-2} - LFT^{t-2})}{LFT_{t-2}}\right)$
Where	j_t and k_t are factors for each year based on C2 values (as defined in Paragraph 8) x60x2 for Upper Threshold (j_t) and j_t x2/3 for Lower Threshold. If t=2020, j_t=24 and k_t=16 If t=2021 or 2022, j_t=30 and k_t=20	
where	$FLT_{t-2} > UFT_{t-2}$	
		$C3Upper^{t-2} = jt\left(1 + \frac{5(FLT_{t-2} - UFT^{t-2})}{UFT_{t-2}}\right)$
		$C3Lower^{t-2} = kt\left(1 + \frac{5(FLT_{t-2} - UFT^{t-2})}{UFT_{t-2}}\right)$
Where:		
FLT_{t-2}		has the meaning in Paragraph 7.

LFT_{t-2}		$LFT_{t-2} = 0.96 \times FFlight_{t-2}$
UFT_{t-2}		$UFT_{t-2} = 1.04 \times FFlight_{t-2}$
$FFlight_{t-2}$		means the forecast of flights for relevant year t established at the beginning of the reference period as set out as follows:

t-2	$FFlight_{t-2}$
2020	2,649,000
2021	2,686,000
2022	2,737,000

Calculation of FC4

12. FC4 is the financial incentive relating to C4 (a daily excess delay score based on weighted delays exceeding pre-determined thresholds on a daily basis).

For the purpose of Paragraph 7, $FC4_{t-2}$ shall be calculated in accordance with the following formulae:

Where:	$C4t-2 \geq 1800$	
		$FC4_{t-2} = -MIN[C4PenRate_{t-2} \times (C4_{t-2} - 1800) \times FLT_{t-2}, 0.0025 \times REV_{t-2}]$
Where:	$C4_{t-2} < 1800$	
		$FC4_{t-2} = 0$
Where:	$C4_{t-2}$	means the annual sum of the weighted daily excess delay score calculated as set out in Paragraph 13.
	$C4PenRate_{t-2}$	means the penalty rate for the reduction of revenues relating to the C4 score in Eurocontrol relevant year t-2 (to take effect in relevant year t) calculated as follows:
		$C4PenRate_{t-2} = 0.00167094 \times \frac{HICP_{t-2}}{100}$

Calculation of C4

13. $C4_{t-2}$ shall be calculated as follows subject to the exemption in Paragraph 15:

$C4_{t-2}$	$= C4DailyScore_d$ for all days in year t-2 except where an exemption applies as defined in Paragraph

	15.	
Where:	d is a day in the months January to March inclusive or November to December inclusive:	
	Where:	$\frac{DT1_d}{DailyFlights_d} \leq 40$
	Then	$C4DailyScore_d = 0$
	Where:	$40 < \frac{DT1_d}{DailyFlights_d} \leq 80$
	Then	$C4DailyScore_d = \frac{DT1_d}{DailyFlights_d} - 40$
	Where:	$\frac{DT1_d}{DailyFlights_d} \succ 80$
		$C4DailyScore_d = 40 + 2\left(\frac{DT1_d}{DailyFlights_d} - 80\right)$
Where:	d is a day in the months April to October inclusive.	
	Where	$\frac{DT1_d}{DailyFlights_d} \leq 60$
	Then	$C4DailyScore_d = 0$
	Where	$60 < \frac{DT1_d}{DailyFlights_d} \leq 110$
	Then	$C4DailyScore_d = \frac{DT1_d}{DailyFlights_d} - 60$
	Where	$110 < \frac{DT1_d}{DailyFlights_d}$
	Then	$C4DailyScore_d = 50 + 2\left(\frac{DT1_d}{DailyFlights_d} - 110\right)$
Where:	$DT1_d$	means total Licensee Attributable En Route ATFM Delay in seconds on day d.
	$DailyFlights_d$	means the actual aggregate number of flights on day d to be calculated by reliance on figures of chargeable flights reported to the CAA by the Network Manager (STATFOR).

Mitigation of $C3_{t-2}$ or $C4_{t-2}$ scores for equipment failure

14. On days where both the following two conditions apply:

- the scores relate to a day for which the relevant $C4DailyScore_d$ as calculated in Paragraph 13 is greater than zero; and
- there is a C3 score relating to Licensee Attributable to En Route ATFM recorded as equipment failure greater than zero.

The following mitigation should apply:

If:	$\lvert C3PenRate_{t-2}\rvert(C3_d)DailyFlights_d > \lvert C4PenRate_{t-2}\rvert(C4DailyScore_d)FLT_{t-2}$	
then:	for day d, the C3 numerator for all NERL attributable cause codes shall be included in the annual FC3 penalty or bonus term, the C4 score shall be excluded from the calculation of the annual $FC4_t$ penalty or bonus.	
If:	$\lvert C3PenRate_{t-2}\rvert(C3_d)DailyFlights_d \leq \lvert C4PenRate_{t-2}\rvert(C4DailyScore_d)FLT_{t-2}$	
then:	for day d the C3 numerator for all the Licensee attributable technical cause codes shall be excluded from the annual FC3 penalty or bonus term; the C4 score shall be included in the annual $FC4_t$ penalty or bonus term.	
Where:	$C3PenRate_{t-2}$	has the meaning in Paragraph 9.
	$DailyFlights_d$	has the meaning in Paragraph 13.
	$C4PenRate_{t-2}$	has the meaning in Paragraph 12.
	$C4DailyScore_d$	has the meaning in Paragraph 13.
	FLT_{t-2}	has the meaning in Paragraph 7.
	$C3_d$	has the following meaning: $C3_d = \frac{\sum w_{p,b} d_{p,b}}{DailyFlights_d}$ for all flights in day d Where: $\sum w_{p,b} d_{p,b}$ has the meaning in Paragraph 10.

For the avoidance of doubt the C3 and C4 measures are based on different units and the estimation of the penalty for each in the tests above requires the different parameters as specified.

Exemptions for $C3_{t-2}$ and $C4_{t-2}$ in respect of Major Changes in Operations

15. C3 weighted delays and C4 Daily scores for the relevant day shall not be counted for the purposes of calculating $C3_{t-2}$ or $C4_{t-2}$ where all the following conditions apply:

- The day falls into a period designated by the Licensee in advance as a period when major new systems or airspace changes are being implemented and transitioned into the operation;

- Users have been notified and consulted in advance over the timing of such exemptions under currently existing consultation mechanisms (e.g. the Service and Investment Plan (SIP)) or targeted consultation;
- The total number of days falling into such periods designated by the Licensee shall not exceed 60 in aggregate for the period of the three Eurocontrol relevant years 2020 to 2022 inclusive, considered as a whole;
- The length of any given transition period should be limited to three weeks (unless otherwise agreed with users) and will be agreed in advance as well as the amount of days from the overall cap that the Licensee wishes to use towards this transition;
- The number of days agreed during the consultation will be fixed (unless subsequently revised with the agreement of users) but the particular exempt days within the agreed transition period would not need to be specified as part of the consultation;
- The Licensee will carry out the transition by means of the detailed steps and timing that are most operationally practical. The Licensee will nominate the exempt days ex-post (up to the pre-agreed maximum) for the transitional period;
- If at the end of the transition period the Licensee does not use the pre-agreed amount of exempt days, these will still count against the overall 60 day cap (i.e. the Licensee cannot roll over unused exclusions).

Calculation of the Flight Efficiency Incentive (F3DI)

16. For the purpose of Paragraph 7, the term $F3DI_{t-2}$ shall be calculated in accordance with the following formulae where relevant years t-2 are 2020, 2021 and 2022 (relating to penalties or bonuses in 2022 and 2023 and 2024 respectively):

$3DI_{t-2}$	means the average 3Di score for all flights for year t-2 as calculated by NERL in accordance with the FEM calculation protocol.	
Where:	$3DI_{t-2} > 3DIUpper_{t-2}$	
	Then	$F3DI_{t-2} = -MIN\,[3DIPenRate_{t-2}\,(3DI_{t-2} - 3DIUpper_{t-2}), REV_{t-2} \times 0.005]$
Where:	$3DI_{t-2} < 3DILower_{t-2}$	
	Then	$F3DI_{t-2} = MIN\,[3DIBonusRate_{t-2}\,(3DILower_{t-2} - 3DI_{t-2}), REV_{t-2} \times 0.005]$
Where:	$3DIUpper_{t-2}$	is the upper deadband limit on the flight efficiency metric in year t-2; and

	$3DILower_{t-2}$	is the lower deadband limit on the flight efficiency metric in year t-2: which shall be calculated in accordance with:

t-2	$3DILower_{t-2}$	$3DIUpper_{t-2}$
2020	26.4	29.2
2021	26.2	28.9
2022	25.9	28.6

	$3DIPenRate_{t-2}$	Is the penalty rate in year t-2 $= 3DIBonusRate_{t-2}$
	$3DIBonusRate_{t-2}$	Is the bonus rate in year t-2 which is calculated as follows:

t-2	$3DIBonusRate_{t-2}$
2020	$(0.005 \times REV_{2020}) - 5.6$
2021	$(0.005 \times REV_{2020}) - 5.5$
2022	$(0.005 \times REV_{2020}) - 5.5$

17. For the avoidance of doubt, the treatment of C2, C3, C4 and 3DI occurring in 2018 and 2019 will be subject to review before the end of Relevant Year 2019 under the provisions of Commission Implementing Regulation (EU) No 390/2013 and the provisions of sections 11 to 19 of the Transport Act 2000. (Subject to those provisions, the CAA would expect to take the performance in 2018 and 2019 into account in the charges for subsequent years as if this condition applied to charges in 2020 and 2021

18. Financial Incentives Carried Forward From RP1

In respect of charges in year 2020
$FI_{2020} = FC2_{2018} + FC3_{2018} + FC4_{2018} + F3DI_{2018}$
In respect of charges in year 2021
$FI_{2021} = FC2_{2019} + FC3_{2019} + FC4_{2019} + F3DI_{2019}$

Where:		
$FC2_{2018}$	$FC2_{2019}$	have the meanings defined in Condition 21 of the Air Traffic Services Licence for NATS En Route plc which was in effect on 1 January 2019.
$FC3_{2018}$	$FC3_{2019}$	
$FC4_{2018}$	$FC4_{2019}$	
$F3DI_{2018}$	$F3DI_{2019}$	

Temporary unit rate adjustment

19. This is an adjustment for differences in revenue resulting from the temporary application of the initial 2020 unit rate that will be applied to the year 2022, due to the difference between CAA's RP3 determination and the CMA's final decision on price controls for 2020 to 2022. Initial unit rate means the unit rate initially charged based on CAA's RP3 determination. The revised unit rate means the unit rate charged based on the CMA's final decision on price controls for 2020 to 2022.

$$TUR_{2022} = (RUR_{2020} - IUR_{2020}) \times AcutalTSU_{2020}$$

Where:

TUR_{2022}	means the adjustment for revenue difference between an initial unit rate and revised unit rate.
RUR_{2020}	means the revised unit rate applied retrospectively to 2020
IUR_{2020}	means the initial unit rate applied in 2020
$ActualTSU_{2020}$	means the actual level of total service units for year 2020 published by Eurocontrol.

Condition 21a: Control of London Approach Charges

1. Without prejudice to Condition 25 (Suspension and Modification of Charge Control Conditions), for each London Approach Relevant Year beginning on 1 January 2020, 2021 and 2022, the maximum Permitted Average Charge Per London Approach Service Unit shall be calculated as follows:

$$MaximumCharge_t = \frac{LDC_t + LINF_t + LReS_t + LTRS_t + \mathrm{LOR}t + LCSM_t + LFI_t + LMOD_t + LTvar_t + LTUR_t - LVFR_t}{ForecastLTSU_t} - LDISCOUNT_t$$

Where:

$\mathrm{Maximum\ Charge}_t$	means the Maximum Permitted Average Charge Per London Approach Service Unit in Relevant Year t.	
LDC_t	Means the determined costs, expressed in nominal terms for relevant year t.	
	Year t	(£)
	2020	13,554,700
	2021	13,505,263
	2022	14,448,079
LINF_t	means the adjustment of the difference between forecasted and actual inflation calculated in accordance with Paragraph 3 of this condition.	
LReS_t	means the restructuring costs authorised in accordance with Article 7(4) of Commission Implementing Regulation (EU) No391/2013. For all years t =2020, 2021, 2022 $\mathrm{ReS}_t = 0$	
LTRS_t	means the Traffic Risk Sharing element from previous years calculated in accordance with Paragraph 4 of this condition.	
LOR_t	Means Other revenues, including revenues collected from Biggin Hill, as agreed with the CAA, to be returned to airspace users and reflected within the Central Route Charges Table 2. Note – LOR is a negative number as the revenues are returned to airspace users.	
LCSM_t	means the carry-overs from the previous reference period resulting from the implementation of the cost sharing mechanism referred to in Article 14 of Commission Implementing Regulation (EU) No391/2013; For all years t =2020, 2021, 2022 $\mathrm{LCSM}_t = 0$	
LFI_t	means the Financial Incentives relating to performance. For all years t =2020, 2021, 2022	

	$LFI_t = 0$
$LMOD_t$	means the over-or under-recoveries that may result from the modulation of air navigation charges in application of Article 16 of Commission Implementing Regulation (EU) No391/2013. For all years t= 2020,2021,2022 $LMOD_t = 0$
$LTvar_t$	means the over-or under-recoveries resulting from traffic variations as defined in Paragraph 5.
$LTUR_t$	means the over-or under-recoveries resulting from the application of a temporary unit rate in accordance with Paragraph 5 of this condition.
$LVFR_t$	means the expected cost of services to traffic operating under Visual Flight Rules. For all years t =2020, 2021, 2022. $LVFR_t = 0$
$LDISCOUNT_t$	means an adjustment to the maximum charge per LTSU in year t where the Licensee at its own discretion decides to recover less than it would otherwise be allowed to recover and has declared to the CAA that it will not pursue this as under-recovery in subsequent years.
$ForecastLTSU_t$	means the forecast of Total London Approach Service Units for relevant year t established at the beginning of the reference period as set out as follows:

	Year t	LTSU
	2018	940,093
	2019	958,830
	2020	1,005,900
	2021	1,015,600
	2022	1,041,800

Total London Approach Service Units	means the terminal service units calculated in accordance with Annex V of Commission Implementing Regulation (EC) No391/2013 as amended from time to time *including* any service units relating to military exempt flights for the aggregate of Heathrow, Gatwick, Stansted, Luton, and London City airports .

Inflation Assumptions

2. The forecast values of the inflation index referenced in paragraph 3 shall be as follows:

$FHICP_t$	means the reference values of the HICP (all items) index in respect of the UK for Eurocontrol Relevant Year t established prior to the control period, consistent with the projections in nominal prices (the index base is 2012=100

	up to 2019 and 2017=100 thereafter), which shall be:		
	Year t	Index (base 2012 = 100)	Index (base 2017 = 100)
	2018	112.90	
	2019	115.15	
	2020		106.44
	2021		108.57
	2022		110.74

Inflation Adjustment

3. The adjustment of the difference between forecasted and actual inflation shall be calculated as follows:

	For t = 2020, 2021 and 2022 $INF_t = LDC_{t-2}\left(\frac{HICP_{t-2}}{FHICP_{t-2}} - 1\right)$ Where $HICP_{t-2}$ is calculated as follows:	
	Year t-2	Calculation
	2018	110.4
	2019	$HICP_{2019} = 110.4 \times (1 + Inflation_{2019})$
	2020	$HICP_{2020} = 102.5 \times (1 + Inflation_{2019}) \times (1 + Inflation_{2020})$
	2021	$HICP_{2021} = 102.5 \times (1 + Inflation_{2019}) \times (1 + Inflation_{2020}) \times (1 + Inflation_{2021})$
	2022	$HICP_{2022} = 102.5 \times (1 + Inflation_{2019}) \times (1 + Inflation_{2020}) \times (1 + Inflation_{2021}) \times (1 + Inflation_{2022})$
	Where:	
	$Inflation_t$	means the annual Inflation rate produced by Eurostat in the Harmonised Index of Consumer Prices in respect of calendar year t as published by Eurostat in April of year t+1 (the published rate of inflation is rounded to one significant place of decimals).

Traffic Risk Sharing

4. The Traffic Risk Sharing (TRS_t) term shall be calculated as follows:

<table>
<tr><td colspan="3">For t = 2020,2021,2022
$LTRS_t = (LDC_{t-2} \times LRSF_{t-2})$
For t = 2022
$LTRS_{2022} = 0$</td></tr>
<tr><td>Where:</td><td>LDC_{t-2}</td><td>has the meaning in Paragraph 1 of this condition.</td></tr>
<tr><td>And</td><td>$LRSF_{t-2}$</td><td>means the risk sharing factor relating to Relevant year t-2 based on the actual number of Total London Approach Service Units which shall be calculated as follows:</td></tr>
<tr><td></td><td>Where:</td><td>$0.98 \leq \frac{ActualLTSU_{t-2}}{ForecastLTSU_{t-2}} \leq 1.02$
$LRSF_{t-2} = 0$</td></tr>
<tr><td></td><td>Where:</td><td>$1.02 \leq \frac{ActualLTSU_{t-2}}{ForecastLTSU_{t-2}} \leq 1.10$
$LRSF_{t-2} = -0.7 \left[\frac{ActualLTSU_{t-2}}{ForecastLTSU_{t-2}} - 1.02\right]$</td></tr>
<tr><td></td><td>Where:</td><td>$0.90 \leq \frac{ActualLTSU_{t-2}}{ForecastLTSU_{t-2}} \leq 0.98$
$LRSF_{t-2} = -0.7 \left[\frac{ActualLTSU_{t-2}}{ForecastLTSU_{t-2}} - 0.98\right]$</td></tr>
<tr><td></td><td>Where:</td><td>$\frac{ActualLTSU_{t-2}}{ForecastLTSU_{t-2}} < 0.90$
$LRSF_{t-2} = -\left[\frac{ActualLTSU_{t-2}}{ForecastLTSU_{t-2}} - 0.90\right] + 0.056$</td></tr>
<tr><td></td><td>Where</td><td>$\frac{ActualLTSU_{t-2}}{ForecastLTSU_{t-2}} > 1.10$
$LRSF_{t-2} = -\left[\frac{ActualLTSU_{t-2}}{ForecastLTSU_{t-2}} - 1.10\right] - 0.056$</td></tr>
<tr><td>Where:</td><td>$ActualLTSU_{t-2}$</td><td>means the actual level of Total London Approach Service Units for relevant year t-2 published by Eurocontrol for the aggregate of Heathrow, Gatwick, Stansted, Luton, and London City airports.</td></tr>
</table>

Correction of LINF and LTRS Adjustments for Subsequent Traffic Variations (LTVar)

5. The LTVar component shall be calculated as follows:

$LTVar_t$	is an adjustment to allow for variations between actual and forecast LTSUs in the year that a correction originally takes place. $LTVar_t = (LINF_{t-2} + LTRS_{t-2} + LPre2014_{t-2} + LTVar_{t-2}) \times \left(1 - \frac{Actual\,LTSU_{t-2}}{Forecast\,LTSU_{t-2}}\right)$

Temporary unit rate adjustment

6. This is an adjustment for differences in revenue resulting from the temporary application of the initial 2020 unit rate that will be applied to the year 2022, due to the difference between CAA's RP3 determination and following CMA's final decision on price controls for 2020 to 2022. Initial unit rate means the unit rate initially charged based on CAA's RP3 determination. The revised unit rate means the unit rate charged based on the CMA's final decision on price controls for 2020 to 2022.

$$LTUR_{2022} = (LRUR_{2020} - LIUR_{2020}) \times AcutalLTSU_{2020}$$

Where:

$LTUR_{2022}$	means the adjustment for revenue difference between an initial unit rate and a revised unit rate.
$LRUR_{2020}$	means the revised unit rate applied retrospectively to 2020
$LIUR_{2020}$	means the initial unit rate applied in 2020
$ActualLTSU_{2020}$	means the actual level of Total London Approach Service Units for year 2020 published by Eurocontrol for the aggregate of Heathrow, Gatwick, Stansted, Luton, and London City airports.

Condition 22: Oceanic Charges

1. The Oceanic charging zone comprises two areas, 'Atlantic' and 'Tango'. Flights will either incur an Atlantic or Tango area charge. If a flight is solely in the Tango area it will only incur a Tango charge, otherwise it will incur an Atlantic charge.

2. Without prejudice to Condition 25 (Suspension and Modification of Charge Control Conditions) the Licensee shall use its best endeavours to ensure that in each Oceanic Relevant Year beginning on 1 January 2020, 2021 and, 2022:

   The Average Charge Per Atlantic Flight shall not exceed the Maximum Permitted Average Charge Per Atlantic Flight calculated in accordance with the following formula:

$$A_t = U_t + ADA_t + AINF_t + ATVAR_t + ATCA_t$$

   The Average Charge Per Tango Flight shall not exceed the Maximum Permitted Average Charge Per Tango Flight calculated in accordance with the following formula

$$T_t = U_t + ADT_t + TINF_t + TDTRS_t + TTVAR_t + TTCA_t$$

   where:

<table>
<tr><td>A_t</td><td colspan="2">means the Maximum Permitted Average Charge Per Atlantic Flight in Oceanic Relevant Year t.</td></tr>
<tr><td>T_t</td><td colspan="2">means the Maximum Permitted Average Charge Per Tango Flight in Oceanic Relevant Year t.</td></tr>
<tr><td>U_t</td><td colspan="2">is a base charge per Oceanic Flight in Oceanic Relevant Year t, expressed in nominal terms:</td></tr>
<tr><td></td><td>Relevant Year t</td><td>U_t</td></tr>
<tr><td></td><td>2020</td><td>56.56</td></tr>
<tr><td></td><td>2021</td><td>55.21</td></tr>
<tr><td></td><td>2022</td><td>55.26</td></tr>
<tr><td>ADA_t</td><td colspan="2">means the price charged per Atlantic Flight for the use of the ADS-B service, expressed in nominal prices.</td></tr>
</table>

<table>
<tr><td></td><td>When the ADS-B service is not fully available for Atlantic flights ADA_t=0
When the ADS-B service is fully available:<table><tr><td>Relevant Year t</td><td>ADA_t</td></tr><tr><td>2020</td><td>33.30</td></tr><tr><td>2021</td><td>33.97</td></tr><tr><td>2022</td><td>34.65</td></tr></table></td></tr>
<tr><td>$AINF_t$</td><td>means the adjustment to the ADS-B North Atlantic charges to account for the difference between forecast and actual inflation in relevant year t calculated in accordance with Paragraph 4 of this condition.</td></tr>
<tr><td>$ATVAR_t$</td><td>means the adjustment to account for the difference between forecast and actual number of North Atlantic flights in the relevant year t calculated in accordance with Paragraph 5 of this condition.

For 2020 and 2021 $ATVAR_t$ = 0</td></tr>
<tr><td>ADT_t</td><td>means the price charged per Tango Flight for the use of the ADS-B service, expressed in nominal prices.
When the ADS-B service is not fully available for Tango flights ADT_t=0
When the ADS-B service is fully available:<table><tr><td>Year t</td><td>ADT_t</td></tr><tr><td>2020</td><td>5.15</td></tr><tr><td>2021</td><td>5.08</td></tr><tr><td>2022</td><td>5.02</td></tr></table></td></tr>
<tr><td>$ATCA_t$</td><td>means the over-or under-recoveries resulting from the application of a temporary base charge and calculated in accordance with Paragraph 5A.</td></tr>
<tr><td>$TINF_t$</td><td>means the adjustment to the ADS-B Tango charges to account for the difference between forecast and actual inflation in relevant year t calculated in accordance with Paragraph 4 of this condition.</td></tr>
<tr><td>$TDTRS_t$</td><td>Means the adjustment to account for the difference between forecast and actual Tango data charge.

For 2020 and 2021 $TDTRS_t$ = 0</td></tr>
</table>

	For 2022 $$TDTRS_t = ADT_{t-2} \times \left(1 - \frac{Actual\ Tango\ Flights_{t-2}}{Forecast\ Tango\ Flights_{t-2}}\right)$$
$TTVAR_t$	means the adjustment to account for the difference between forecast and actual number of Tango flights in the relevant year t calculated in accordance with Paragraph 5 of this condition. For 2020 and 2021 $TTVAR_t = 0$
$TTCA_t$	means the over-or under-recoveries resulting from the application of a temporary base charge and calculated in accordance with Paragraph 5A.

Forecast Tango Flights$_t$	means the forecast of Tango Flights for relevant year t established at the beginning of the reference period as follows:	
	2020	31,000
	2021	32,000
	2022	33,000
Forecast Atlantic Flights$_t$	2020	497,000
	2021	507,000
	2022	519,000

Inflation assumptions

3. The Oceanic base charge (U_t) and ADS-B North Atlantic (ADA_t) and Tango (ADT_t) charges are set above in *nominal* prices, and therefore include the CAA's assumed forecast of CPI inflation.

$FHICP_t$	means the reference values of the HICP (all items) index in respect of the UK for Eurocontrol Relevant Year t established prior to the control period, consistent with the projections in nominal prices (the index base is 2017=100), which shall be:	
	Year t	Index
	2020	106.4
	2021	108.6
	2022	110.7

Inflation Adjustment

4. The adjustment for the difference between forecast and actual inflation shall be calculated as follows:

For t = 2020, 2021 and 2022:

$$AINF_t = (U_{t-2} + ADA_{t-2}) \times \left(\frac{HICP_{t-2}}{FHICP_{t-2}} - 1\right)$$

and

$$TINF_t = (U_{t-2} + ADT_{t-2}) \times \left(\frac{HICP_{t-2}}{FHICP_{t-2}} - 1\right)$$

Where $HICP_{t-2}$ is calculated as follows:

Year t-2	Calculation
2018	102.5
2019	$HICP_{2019} = 102.5 \times (1 + Inflation_{2019})$
2020	$HICP_{2020} = 102.5 \times (1 + Inflation_{2019}) \times (1 + Inflation_{2020})$
2021	$HICP_{2021} = 102.5 \times (1 + Inflation_{2019}) \times (1 + Inflation_{2020}) \times (1 + Inflation_{2021})$
2022	$HICP_{2022} = 102.5 \times (1 + Inflation_{2019}) \times (1 + Inflation_{2020}) \times (1 + Inflation_{2021}) \times (1 + Inflation_{2022})$
Where:	
$Inflation_t$	means the annual Inflation rate produced by Eurostat in the Harmonised Index of Consumer Prices in respect of calendar year t as published by Eurostat in April of year t+1 (the published rate of inflation is rounded to one significant place of decimals).

5. Traffic adjustments

TVar Adjustments

These are adjustments to allow for variations between actual and forecast number of flights in the year that a correction originally takes place." For 2020 and 2021

both terms as defined below will equal 0.

For 2022

$ATVAR_t$ = $(((AINF_{t-2}$ + $ATVar_{t-2})$ X Forecast Atlantic $Flights_{t-2})$

$$X\ (1 - \frac{Actual\ Atlantic\ Flights\ t-2}{Forecast\ Atlantic\ Flights\ t-2})\ )$$

/ Forecast Atlantic $Flights_t$

and

$TTVAR_t$ = $(((TINF_{t-2}$ +$TTVar_{t-2})$ X Forecast Tango $Flights_{t-2})$

$$X\ (1 - \frac{Actual\ Tango\ Flights\ t-2}{Forecast\ Tango\ Flights\ t-2})\ )$$

/ Forecast Tango $Flights_t$

Temporary base charge adjustment

5A This is an adjustment for differences in revenue resulting from the temporary application of the 2020 base charge (Ut) that will be applied to the year 2022, due to the difference between CAA's RP3 determination and following CMA's final decision on price conditions for 2020 to 2022. Initial base charge means the base charge initially charged in accordance with the CAA's RP3 determination. The revised base charge means the base charge based on the CMA's final decision on price controls for 2020 to 2022.

$$ATCA_{2022} = (RC_{2020} - IC_{2020})$$

and

$$TTCA_{2022} = (RC_{2020} - IC_{2020})$$

Where:

ATCA2022	means the adjustment for revenue difference between initial and revised base charges.
RC2020	means the revised base charge applied retrospectively to 2020.
IC2020	means the initial base charge applied in 2020.
TTCA2022	means the adjustment for revenue difference between an initially charged and revised unit rate.

Other licence conditions

6. Tango flight means a flight only operating along the length of ATS routes T9 and T290, as defined and promulgated within the UK AIP, within a defined volume of airspace bounded by coordinates 4500N01000W - 4500N00845W - 4834N00845W - 4841N01000W – 4500N01000W and not elsewhere in the En route (Oceanic) Area.

7. Atlantic flight means any flight in the En route (Oceanic) Area that is not a Tango flight.

8. The ADS-B service is fully available when the Licensee's Board has certified that it is operating a fully ADS-B based service in the En route (Oceanic) Area and 99% of flights, that have the correct and functioning equipment, regulatory approval and plan to use it, crossing the En route (Oceanic) Area are being provided with an ADS-B enabled service for the whole time the flights are within the En route (Oceanic) Area. At all other times the ADS-B service is unavailable. The certificate may say that the ADS-B service is fully available for both Atlantic flights and Tango flights; or is fully available for Atlantic flights but not for Tango flights; or the ADS-B service is fully available for Tango flights but not for Atlantic flights.

9. By no later than two years and six months after the licensee has certified it is operating a fully ADS-B based service in the En route (Oceanic) Area, or at a later date agreed with the CAA, the Licensee shall commission an independent review of whether the benefits of providing a fully ADS-B based service outweigh the costs of providing the service.

APPENDIX B

3Di annual review protocol

Flight efficiency metric (3Di) calculation

B1 3Di is calculated as the mean of the 3Di scores for all flights taking place in UK airspace under NERL control within the relevant year of the control period. The metric will be calculated on a flight by flight basis and the mean published monthly. The annual average 3Di score will be used for the calculation of financial incentives.

B2 3Di score by flight is calculated as a combination of:

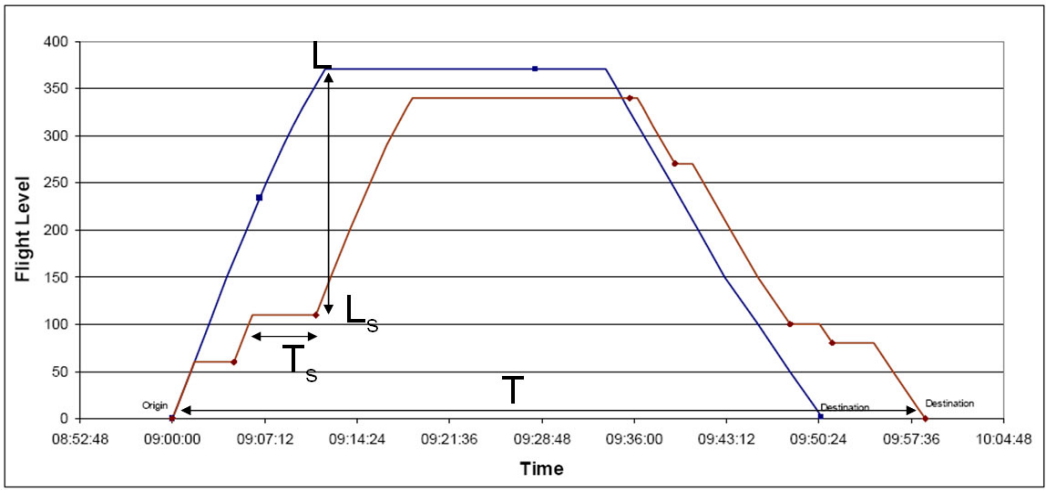
a) Horizontal flight efficiency - defined as the difference between the UK portion of the overall optimal flight distance and the actual flight path flown within UK airspace. Horizontal flight efficiency is measured from the actual entry and exit point into and out of UKFIR, where the optimal flight distance is calculated using the same logic as the EUROCONTROL KEA algorithm.

b) Vertical flight efficiency - defined as the difference in altitude between the reference (requested) flight level and the actual altitude of the period of level flight, alongside the time spent in level flight. Vertical inefficiency is split into flight phase (climb, cruise and descent) and the calculation for an individual flight phase is as follows:

B3 Vertical Inefficiency = $$V = \sum_{s} \frac{T_s}{T}\left(\frac{L - L_s}{L}\right)$$

B4 Where: V=Vertical Inefficiency, T=Total Flight Time (UKFIR), S=Step reference[10], Ts=Duration of Step, L=Reference Level, Ls=Level of Step, as illustrated on the next page.

[10] A step being a period of the flight at constant level, each step having a corresponding duration and level.



B5 Vertical and horizontal flight efficiency are combined using the following model form based on a multiple linear regression. This is a proxy estimate for the impact of the flight trajectory on fuel burn[11]:

$$\varphi = \beta_1 H + \beta_2 V_{CL} + \beta_3 V_{CR} + \beta_4 V_D$$

B6 Where φ = 3D Inefficiency Score, β_1 , β_2 , β_3 and, β_4 are constants, V_{CL}= Vertical Inefficiency of Climb, V_{CR}= Vertical Inefficiency of Cruise, V_D = Vertical Inefficiency of Descent, and H = KEA Horizontal Inefficiency

Flight efficiency metric (3Di) adjustment

B7 The determination for 2020-2022 included an allowance for an adjustment to exclude non-revenue flights from the total 3Di score. This amounted to an adjustment of -0.6. NERL is expected to report both adjusted and non-adjusted scores.

The 3Di Model

B8 The coefficients of this model (referred to as the base model hereafter) have been estimated using a sample of 145,865 flights from 2013, and tested on a further sample of 72,935 flights.

[11] This estimated impact is calculated by comparing the fuel burn for the journey based on an optimal trajectory (continuous climb and descent to/from the reference flight level) to the fuel burn for the actual trajectory followed. These fuel burn estimates are generated by the NATS Kerosene Emissions Research Model (KERMIT) model which uses data on aircraft performance from the Eurocontrol BADA 3.11 database.

Parameter	Coefficient
Horizontal flight inefficiency (β_1)	1.1876
Climb vertical flight inefficiency(β_2)	0.6687
Cruise vertical flight inefficiency(β_3)	0.7617
Descent vertical flight inefficiency (β_4)	1.8712

Annual review protocol

B9 The flight efficiency regression model and output will be reviewed each year. The annual review will test the continued appropriateness of the regression modelling coefficients that underpin the 3DI as described above.

B10 The annual review will use a sample of the review year data chosen (using cluster sampling) to provide a sample reflective of the underlying population, with a target of 50,000 flights, and apply the same linear regression methodology used to derive new 3Di model coefficients.

B11 The test model will be applied to the full calendar year data from the review year and the calculated mean 3Di score is compared to the actual mean 3Di score using the base model (3DI) for the year.

B12 If the difference between the mean 3Di score produced by the base model and the test model is greater than or equal to 8% of the base model score (3DI), then the 3DI bonus/penalty for the year would be cancelled. If the difference between the mean scores falls within the pre-specified threshold, then the bonus/penalty is applied.

B13 The test will be verified by the CAA, and NERL should supply all data used to undertake the analysis (and any other relevant data requested) to the CAA by end of March in each year to allow the verification to be undertaken.

B14 The data to be supplied to CAA will comprise:

- dataset to comprise of 50,000 sample flights representative of the population of all flights in the year;

- details of how the sample has been chosen using cluster sampling, including number of clusters identified, total number of days falling within each cluster, number of days sampled from each cluster and number of flights operated on the days sampled;
- the test model coefficients;
- the test model estimate of 3Di for the review year (X) based on the test and base model adjusted by -0.6 to account for exempt non-revenue flights;
- the existing set of coefficients from the base model;
- the existing estimate of 3Di for the review year (Y) based on the base model coefficients; and
- for each flight - values for I, H, VCl, VCr & VD as used in the existing model.

B15 The result of the annual review will be published by 30 April in the year following the review year to allow financial statements to reflect the outcome.

B16 If the annual review test falls outside the accepted tolerance in a given year, then the test will be repeated in the following year as per the protocol set out above.

B17 If the annual review test falls outside the accepted tolerance in two consecutive years, the CAA would expect the incentive to be withdrawn for the remainder of RP3. If, however, the CAA and NERL are in agreement that the retention of the incentive is justified then it may remain in place until the following annual review. This justification would require sufficient analytical work, to be conducted and shared by NERL, to demonstrate:

- an understanding of the underlying causes of the variation in test results, and
- that continuing the model in its existing form would not lead to the generation of unwarranted bonuses/penalties in future years.

APPENDIX C

Policy principles for the recovery of TRS revenues from 2020-2022

C1 Below are the policy principles from CAP2245 that will guide our approach to the recovery of TRS revenues form 2020 to 2022.

Assessment of efficient cost baseline for reconciliation

C2 We will reconcile costs and revenues for 2020, 2021 and 2022 on the basis of estimates of efficient costs. This efficient cost baseline may be lower than actual costs if we find evidence of inefficiency during our review, or if there are other reasons to adjust costs, such as to account for the furlough scheme. Our review will take account of information available to NERL at the time and will not rely on the benefit of hindsight.

C3 The final calculation of the TRS recovery amount will be confirmed as part of the reconciliation exercise and will be based on this updated efficient cost baseline for 2020 to 2022. As indicated in the March 2021 update, to the extent practicable and consistent with supporting NERL's financeability, we intend to allow NERL to recover the full TRS revenue shortfall amount against this revised baseline. We consider that this is important for regulatory certainty, as NERL's licence included an explicit TRS mechanism.

Recovery period

C4 In our March 2021 update we noted that we will consider the arrangements adopted for EU member states by the European Commission as an important benchmark for our approach. This referred specifically to the intention of spreading revenue recovery over a default five-year period with the possibility of extending it up to a total of seven years

C5 We consider that a five-year recovery period remains a valid starting point. However, where this is not appropriate, due to concerns around profiling and affordability of charges, we consider that it would be appropriate to extend the recovery period to the subsequent price review period, consistent with our statutory duties.

C6 To the extent it is reasonable, we would allow NERL to recover the TRS revenue shortfall over NR23, subject to an assessment that charges are at affordable

levels and we have appropriately considered financeability.[12] Any outstanding amounts following the initial five-year period (NR23) would then be carried over and we would expect these to be recovered through revenues in the next price review period (NR28).

C7 Under the EU approach, the revenue recovery will be spread equally over the five to seven-year period. We would not necessarily plan to limit this recovery to seven years in total from the commencement of NR23 (in line with the EU approach), partly because this would not allow ease of alignment with NERL's five-year price control periods, although we would not want recovery to take longer than two price control periods. However, as part of the NR23 review, we will consider the most appropriate option to profile the recovery of revenue, including potentially to align or bring it closer to the EU benchmark of five or seven years, taking into account our assessment of affordability and financeability.

Treatment of the RAB and financing costs

C8 We recognise that NERL is currently accounting for the expected recovery of these TRS revenues in its regulated asset base (RAB) through a debtor in the movements in working capital.[13] We consider this consistent with the rules that are in place for calculating NERL's RAB and we are not proposing any changes to these aspects of the RAB rules. As revenue is recovered over NR23 and beyond, the amount remaining in the working capital and therefore RAB will unwind. As there is an explicit TRS in the licence, we consider that using the RAB in this way can be appropriate as a means to spread the recovery of revenues over time, while providing certainty in the recovery of these revenues.

C9 Under the RP3 RAB rules, financing costs are calculated on variances in capex and pension costs and capitalised in the RAB. Consistent with this approach, we consider that it would be appropriate to provide an allowance for financing costs or time value of money for the TRS recovery.

C10 The capitalised financing costs on capex and pension costs are currently calculated based on the allowed cost of capital. For the TRS revenue shortfall, we will want to assess whether this is appropriate or whether we should use an alternative approach to calculate financing or time value of money costs. For example, as these adjustments essentially shield NERL from risk it may be appropriate to consider a range of options from applying the full cost of capital to applying only the allowed cost of debt. We will consider the appropriate

[12] We provide further details in our March 2021 update (CAP2119), para 1.33, on what we mean by affordable charges, which mean that charges could increase in real terms, and we will carry out further work on what affordable charges should mean in practice as part of the NR23 price control review.

[13] See NERL's 2020 Regulatory Accounts available here, page 18.

approach, taking account of relevant regulatory precedent, as part of the NR23 review. We would welcome views from stakeholders on the approach we should take.

Role of NERL's shareholders

C11 As indicated in our March 2021 update, we cannot at this stage rule out setting price control arrangements on the basis that NERL's shareholders may need to provide a dditional support to the regulated business, particularly if there were significant pressure from slower recovery of traffic on affordability of charges and NERL's financeability. At this stage there remains significant uncertainty about the future path of recovery in aviation, although we note that there has been some encouraging signs in recent months such as steady recovery in traffic volumes and recent government announcements about easing travel restrictions.

C12 In reaching our view, we would also take into account previous actions from NERL's shareholders, such as dividend restraint, and consider how we can use regulatory levers and mechanisms to manage affordability and financeability, including profiling of depreciation and charges.