

Draft UK Reference Period 3 Performance Plan proposals

For consultation

CAP 1758

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Executive summary

Context

1. NATS (En Route) plc, known as NERL, is the monopoly provider of en route and certain approach air traffic services in the UK. NERL is subject to economic regulation, which is designed to protect the users of its services and prevent NERL from exploiting its monopoly power.
2. NERL is currently regulated under the European Union Single European Sky performance scheme and the UK Transport Act 2000 and economic licence. The performance scheme provides for the setting of targets and incentives in four key performance areas – safety, capacity, environment and cost efficiency – over five-year regulatory cycles.
3. The current Reference Period 2 (RP2) runs from 1 January 2015 to 31 December 2019. Reference Period 3 (RP3) will run from 1 January 2020 to 31 December 2024. In preparation for RP3 the UK must develop a performance plan and targets consistent with EU-wide targets set by the European Commission; with the targets for NERL given effect through its economic licence. The performance scheme has a broad scope – as well as safety, service and efficiency targets for NERL, it encompasses cost efficiency targets for the Met Office, the CAA and the Department for Transport for certain activities associated with airspace management and oversight.
4. The Transport Act 2000 gives the CAA a primary duty to exercise its functions so as to maintain a high standard of safety in the provision of air traffic services. It also places a duty on NERL, as the licence holder, to provide a safe system for air traffic services. The EU regulations also emphasise the importance of safety.
5. The overriding priority for NERL remains the safe operation of UK airspace, including planning for the growth in air traffic movements that is expected over the RP3 period. In this context, a key strategic driver for NERL in RP3 is to support the implementation of the UK's Airspace Modernisation Strategy, which is intended to deliver a once in a generation upgrade to modernise critical national infrastructure – UK airspace – and deliver a broad range of benefits in all key performance areas and more widely. Our final RP3 performance plan will also need to provide sufficient flexibility for NERL to respond to the uncertainties associated with Brexit. We hope that by the time we make final proposals for the RP3 in the summer, changes and impacts associated with Brexit (in the context of the performance plan) will be better understood.

6. NERL will need to respond flexibly to these changes and remain accountable for continuing to deliver its service to a high standard and for an efficient price, in order to justify the revenue it receives as the monopoly service provider. NERL's customers place a high value on a safe and reliable service, and we will continue to monitor and enforce NERL's licence obligations on this basis. If, in due course, NERL accepts our performance plan and the associated licence modifications that give effect to this, it should only do so on the basis that it is taking responsibility and accountability for providing an appropriately high quality of service to airlines and their passengers. NERL's focus in delivering outcomes and outputs should always be in the context of maintaining and/or improving safety.

Developing our proposals to protect consumers

7. Historically NERL has demonstrated strong performance and been able to achieve good efficiencies while delivering a high level of service. In making proposals for the RP3 period we have assumed that NERL will be able to make efficiency savings in line with historical performance, in part as its large programme of technological and airspace modernisation that is already underway should deliver longer term efficiencies.
8. We recognise the significant change and uncertainty ahead in RP3. We consider that NERL's high level plans to upgrade its legacy technology system and for airspace modernisation are both important and desirable for UK aviation, and provide important strategic context for our work on the development of the UK performance plan. We have considered how to facilitate the successful delivery of these as part of our proposals and ensured there are mechanisms that will allow flexibility and appropriate protection to support these changes. We have, also allowed cost increases at the end of RP2 that, in particular, should provide a kickstart for airspace modernisation work that will take place during RP3 and allow NERL to deliver a more resilient service.
9. In preparing their RP3 business plan, NERL conducted an extensive customer engagement programme with users and airports. The process was well planned to ensure that the meetings were effective, with open and constructive discussions between NERL and its customers. Airspace users were positive about the process but thought that on some specific topics NERL's mind-set appeared to be predetermined. We consider that NERL's RP3 proposals to date could demonstrate more ambition and provide more assurance to users that its forecasts reflect efficient levels of capital and operating costs. Airspace users and our consultants have provided feedback that it has been difficult to form a view on NERL's proposals, especially around the benefits that can be expected from different programmes. As we said in our January 2018 business plan

guidance to NERL – it is in a privileged position as a monopoly provider of nationally vital services, and it needs to earn the confidence of all relevant stakeholders to support this position. Well-evidenced proposals, backed by clarity over options and their expected benefits, would go towards supporting this, and NERL needs to make further progress in delivering for stakeholders on these matters.

10. As well as NERL's RP3 business plan, in coming to our proposals we have considered a range of evidence including:
 - historical analysis/trends (top down analysis);
 - independent in-depth consultant studies (bottom up analysis); and
 - customer consultation process, including the Co-Chairs' Report and bilateral meetings with airspace users.
11. Our proposals for NERL's main UK en route activity provide a greater level of challenge on financial and cost efficiency compared to those in NERL's RP3 business plan, including:
 - a 2.3%pa unit cost reduction for opex (excluding pensions) and additional challenge on non-regulatory income;
 - a reduction of 8% of forecast capital expenditure, other than that related to airspace programme costs;
 - sharper incentive and governance arrangements that apply to NERL's capital expenditure to promote capital efficiency. The price control arrangements will mean that efficiently incurred capital expenditure that NERL has consulted on with users in RP3 will be added to NERL's regulatory asset base;
 - stronger incentives on service quality performance; and
 - using market evidence and taking account of regulatory precedent, to determine a pre-tax Weighted Average Cost of Capital of 2.84%, compared to NERL's proposal of 5.07%. This is discussed in chapter 7.
12. These assumptions result in a NERL en route Determined Unit Cost of £43.09 (2017 prices), compared to £49.85 in NERL's RP3 business plan.
13. Our draft proposals reflect high level assumptions necessary to formulate a price control on NERL's activities and proposals to strengthen the incentives to provide its services efficiently. We are not seeking to make or determine the business decisions that should be better made by NERL's management. It will be up to NERL to decide on whether to accept our final proposals and how best to run its business, taking account of its statutory and licence obligations for safety and quality of service. We consider that NERL should be best placed to engage with and be responsive to its customers, run its business efficiently and meet its

licence obligations to provide a resilient service with sufficient capacity to meet all reasonable demand.

Interdependencies

14. Recognising the primacy of safety in both EU and domestic legislation (with duties on both the CAA and NERL in respect of safety) we are clear that safety must always be protected and that traffic would be constrained where necessary to ensure this. Ahead of our final proposals, we will task NERL to provide an assessment of safety and analysis of potential changes to their functional systems and relevant mitigation measures.
15. In respect of interdependencies between service quality and cost we have sought to balance our more stringent assumptions on cost – appropriate to protect consumers and ensure better value for money air traffic services – with our strategic decision to provide strong support for the delivery of airspace modernisation. We have allowed all the capital expenditure NERL has requested for its role in airspace modernisation (£115 million) and excluded airspace modernisation-related operating expenditure (opex) (£35 million for the NERL Opex Flexibility Fund and £15 million for the Airspace Change Organising Group) from our efficiency proposals. We have also proposed costs increases in our own airspace-related costs to ensure we are equipped to fulfil our own airspace modernisation related duties and functions. In doing so, we have also sought to ensure that we maintain as much flexibility as practicable within the constraints of the legal frameworks by designing mechanisms that will support delivery of airspace modernisation. In addition to the Opex Flexibility Fund, we also proposed to establish an airspace modernisation support fund of £10 million to be added to our costs for RP3 (see chapter 9 on uncertainty mechanisms). For both funds, expenditure will be subject to greater governance and, where not utilised, returned to airspace users in the future.
16. In determining our approach to capacity and flight efficiency targets, we have taken account of the discussion and agreement between NERL and their customers through their customer consultation programme. Considering NERL's good historical record, rather than propose more ambitious service targets, we propose only moderate improvements through RP3 while NERL seeks to deliver its part of airspace modernisation.

Summary of key draft proposals

17. Our draft proposals, along with our supporting rationale, are set out in individual chapters covering each key performance area. Additional detailed supporting

information is provided in the appendices. We provide below a high-level summary of our key proposals.

Safety

18. At RP2 we adopted an approach to safety consistent with the EU-wide performance targets. Historically NERL has performed well against these targets and in its business plan envisages it will continue to meet these targets, although the European Commission is yet to finalise its proposals for RP3. We support NERL's approach to these matters. See chapter 2.

Environment

19. Consistent with our approach to RP2, we propose to focus on a UK-specific horizontal and vertical flight efficiency indicator, the 3Di. Along with a technical adjustment to the metric to improve the accuracy of the data, we propose a modest performance improvement as against targeted RP2 performance. This will be supported with financial incentives broadly similar to those in RP2. See chapter 3.

Proposed 3Di targets

	RP2 (recalculated for model changes)					RP3				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NERL performance	29.5	29.7	29.0	28.7 ¹	N/A	N/A				
Par value ²	29.1	28.6	28.3	27.5	27.1	26.8	26.5	26.2	25.9	25.6

Source: CAA

Notes: ¹ The 2018 figure is based on data to the end of October 2018.

² The par value for RP2 has been adjusted downwards by 0.6 to reflect the exclusion of various types of non-revenue flights.

Capacity

20. We propose to adopt an air traffic flow management minutes of delay per flight target consistent with RP2 targeted performance, along with stronger financial incentives.

Proposed ATFM minutes of delay per flight target

ATFM delay minutes/flight ¹	RP2					RP3				
	2015	2016	2017	2018 ²	2019	2020	2021	2022	2023	2024
C2 target ³	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
NERL performance	0.04	0.21	0.10	N/A	N/A	N/A				

Source: CAA

Notes: ¹ Figures presented are for average minutes of en route ATFM delay per flight attributable to air navigation services, with the codes C, R, S, T, M and P.

² NERL is forecast to exceed the target in 2018.

³ We intend to apply modulation to the C2 target. These values are indicative and will be updated annually as appropriate, in accordance with the performance regulation.

21. Also consistent with our approach to RP2, we propose additional capacity performance targets and incentives, which focus on the time of day and duration of delays, as well as significant systems outages. See chapter 4.

Cost efficiency

22. Chapter 6 sets out our overall UK Determined Costs and Determined Unit Cost target. Our proposed UK cost efficiency target is an average reduction of Determined Unit Cost of 3.8% per year. This compares to the Performance Review Body's proposals to the European Commission for EU-wide cost efficiency target of an average 4.1% reduction of DUC per year.¹ Our proposed UK Determined Costs include c.£80 million of contingency support funds, the use of which will be dependent on appropriate governance and which if not utilised will be returned to airspace users in future reference periods.

Proposed UK's Determined Costs for RP3

2017 prices £millions	2019 Base	2020	2021	2022	2023	2024	CAGR 2019 to 2024
NERL	627.3	623.7	589.7	565.8	558.9	550.6	-2.6%
MET	25.5	29.0	27.7	28.5	31.0	30.6	3.7%
NSA& DFT	65.7	66.7	67.3	67.1	67.2	67.5	0.5%
UK	718.5	719.3	684.7	661.4	657.2	648.7	-2.0%

Source: CAA calculations

¹ The European Commission is yet to propose or agree EU-wide targets as required under the performance regulation. However, their advisers – the Performance Review Body – have published their recommendations to the Commission.

UK's Determined Unit Cost (DUC) target

2017 prices £millions	2019 Base	2020	2021	2022	2023	2024	CAGR 2019 to 2024
NERL	50.06	48.86	45.21	42.61	41.42	40.15	-4.3%
MET	2.03	2.27	2.12	2.14	2.30	2.23	1.9%
NSA& DFT	5.25	5.22	5.16	5.05	4.98	4.93	-1.3%
UK	57.34	56.35	52.50	49.80	48.70	47.31	-3.8%

Source: CAA calculations

23. NERL's UK en route activities account for the largest component of the UK Determined Costs, our proposals for which are set out in chapter 5 and summarised in the table below.

Summary of CAA proposed NERL efficiencies

RP3 Determined Costs for en route (£m, 2017 prices)	NERL business plan en route (£m)	CAA draft proposal en route (£m)	Difference (£m)	DUC impact (£)
Operating costs (excl. pensions)	2,156	2,084	-71	-1.13
- from staff and non-staff opex efficiency	-	-	-71	-1.13
Pension costs	416	368	-48	-0.75
- from DB deficit payment reduction	-	-	-36	-0.57
- from opex reduction	-	-	-12	-0.19
Regulatory depreciation	771	753	-18	-0.28
- from capital expenditure reduction	-	-	-11	-0.17
- from change to inflation forecasts	-	-	-7	-0.11
Regulatory return	277	149	-128	-2.02
Other income	-464	-499	-35	-0.56
- from MOD contract update	-	-	+13	+0.21
- from non-regulatory income increase	-	-	-49	-0.77
Total Determined Costs (£m, CSU-based)	3,155	2,855	-300	-4.74
CSUs ('000s) ¹	63,302	65,533	+2,231	
Determined Unit Cost per CSU (£)	49.85	43.57	-6.27	

Source: CAA calculations

Note: ¹ Calculations based on NERL Chargeable Service Unit (CSU). The performance regulation uses Total Service Units (TSU) as the service unit metric. We therefore make a net neutral adjustment for Determined Costs to account for the difference between CSUs and TSU. This is consistent with our approach to RP1 and RP2.

24. NERL has forecast that its operating costs will increase by about 21% in the last two years of RP2. We accept that NERL needs this to deal with quality of service issues and progress future improvements but assume that it can achieve unit cost reductions of 2.3% per year from 2019. This is in line with its efficiency performance from 2007 to 2017. NERL has projected lower cost reductions of 2.2% from 2020. NERL has forecast an increase in operational ATCOs of 17% in RP3. We recognise that additional staff will be required to meet service levels and to deliver airspace modernisation and that there is a global shortage of ATCOs. However, we consider that NERL could set more ambitious staffing levels and still deliver the required service standards. Our proposal is for NERL's operating costs to be £71 million lower than NERL's projections in RP3 overall, but still represent an increase on RP2. This is within the range of £57 million to £133 million cumulative reductions suggested by our consultants Steer/Helios.
25. The £48 million reduction in pension costs is primarily driven by a reduction in defined benefit deficit recovery payments which amount to £36 million. This is mostly driven by the potential for lower levels of prudence at future valuations. The remaining £12 million reduction reflects overall operating cost efficiency assumptions being applied to NERL's forecasts of pension costs.
26. In relation to non-regulatory revenue, we have proposed an upward adjustment equal to half the reduction between NERL's non-regulatory revenue and its projections for the period of RP3. This is somewhat offset by a decrease in FMARS revenue – the resulting net adjustment is £35 million. The magnitude of the adjustment reflects our view that NERL has not demonstrated that it has taken all available steps to offset the decline in the non-regulatory revenue.

Summary of RP2 historical and CAA proposed RP3 costs by year

RP2 and RP3 Determined Costs for en route (£m, 2017 prices)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Actuals	Actuals	Actuals	F'cast	F'cast	Draft	Draft	Draft	Draft	Draft
Operating Costs (excl. pensions)	348	360	350	386	422	421	414	426	419	404
Pension Costs	81	80	80	74	70	88	87	67	64	62
Regulatory Depreciation	193	193	186	173	165	185	152	133	137	146
Regulatory Return	69	64	59	56	56	27	30	31	31	30
Other Income	-106	-115	-115	-97	-94	-105	-99	-98	-98	-98
Total Determined Costs (£m, CSU)	585	583	560	592	620	616	583	559	553	545
CSUs ('000)	9,975	10,711	11,606	12,009	12,379	12,612	12,890	13,128	13,342	13,561
DUC per CSU (£)	58.61	54.39	48.25	49.30	50.06	48.86	45.21	42.61	41.42	40.15

Source: CAA

27. In addition to our main proposals, we include proposals in respect of NERL's Oceanic service in chapter 11.
28. In developing our proposed efficiencies for NERL, we have considered the impact of plausible downside scenarios, but have not identified issues in respect of our duty to ensure that NERL does not find it unduly difficult to finance their licensed activities. See chapter 7.

Next steps

29. We welcome comments from all stakeholders on any matters relating to our draft performance plan proposals. Consultation on our proposals closes on 12 April 2019. To support the consultation process, stakeholders are invited to a multilateral stakeholder consultation meeting on 11 March 2019.
30. Through spring and early summer 2019 we will continue to engage with stakeholders on detailed governance arrangements. Subject to stakeholder feedback on our proposals, EU-wide target developments and Brexit developments, we will update our proposals, before submitting them to the Department for Transport in time for adoption as the UK draft performance plan and submission to the European Commission by 30 September 2019. We will also consult on related modifications to the NERL licence ahead of a CAA decision before the end of the year. RP3 starts on 1 January 2020.
31. Further information on consultation arrangements and next steps can be found in chapter 1.

CHAPTER 1

Introduction and background

Purpose of this document

- 1.1 This document sets out for consultation, proposals for the UK draft performance plan for Reference Period 3 of the EU's Single European Sky (SES) performance scheme for air navigation services (ANS). This includes the targets and incentives for NATS (En Route) plc – referred to as NERL – that will form the basis of the price controls for their “En route (UK) Area” and “En route (Oceanic) Area” activities under their air traffic services licence, issued by the Secretary of State, under the Transport Act 2000 (‘the Transport Act’).
- 1.2 These proposals have been prepared by the UK Civil Aviation Authority (CAA), in our roles as the UK national supervisory authority (NSA) under the SES legislation and economic regulator for air traffic services under the Transport Act.

Views invited

- 1.3 Comments and responses to this consultation should be sent to economicregulation@caa.co.uk by noon on Friday 12 April 2019. We cannot commit to take into account representations received after this date.
- 1.4 We expect to publish the responses we receive on our website as soon as practicable after the period for representations expires. Any material that is regarded as confidential should be clearly marked as such and included in a separate annex. Please note that we have powers and duties with respect to disclosure of information under Schedule 9 of the Transport Act and the Freedom of Information Act 2000 and it may be necessary to disclose information consistent with these requirements.
- 1.5 A stakeholder meeting to support the consultation process will be held in London on 11 March 2019. Stakeholders wishing to attend the meeting should email economicregulation@caa.co.uk by 1 March 2019.
- 1.6 Any questions relating to this document should be sent to Matt Claydon at matt.claydon@caa.co.uk.

Regulatory framework

The performance and charging scheme

- 1.7 The SES performance and charging scheme is set out in EU legislation and is designed to improve the performance of ANS in four key performance areas (KPAs):
- Safety
 - Capacity
 - Environment
 - Cost efficiency
- 1.8 Detailed requirements of the performance scheme are contained in the RP3 performance and charging regulation (the 'performance regulation'),² the main features of which are summarised below.
- 1.9 Member States must adopt performance plans in respect of ANS providers covering a five-year reference period. The current regulatory cycle, Reference Period 2 (RP2), comes to an end on 31 December 2019. Reference Period 3 (RP3) will run from 1 January 2020 to 31 December 2024.
- 1.10 The European Commission (the Commission) must set EU-wide targets in each KPA, based on Key Performance Indicators (KPIs), taking account of performance achieved in the previous reference period and inputs provided by their advisers the Performance Review Body (PRB), the SES Network Manager (NM) and NSAs.
- 1.11 The performance plans submitted by Member States must contain performance targets for each KPI set at national level that are consistent with EU-wide targets that are set by the Commission.
- 1.12 Performance targets in the KPAs of capacity, environment and cost efficiency should be subject to effective financial incentive schemes to encourage better performance. There are no financial incentives on safety due to its overriding importance.
- 1.13 NSAs must consult on performance plans to ensure the views of stakeholders are taken into account in establishing performance plans and targets (this document forms the basis for that consultation in respect of the UK's performance plan).

² Revised regulation agreed by Member States on 17 December 2018, yet to be formally adopted by the Commission and published in the Official Journal of the European Union.

The Transport Act 2000

- 1.14 The Transport Act gives the CAA a primary duty to exercise its functions so as to maintain a high standard of safety in the provision of air traffic services.
- 1.15 In exercising its functions the CAA must do so in a manner it thinks best calculated:
- to further the interests of operators and owners of aircraft, owners and managers of aerodromes, persons travelling in aircraft and persons with rights in property carried in them;
 - to promote efficiency and economy on the part of licence holders;
 - to secure that licence holders will not find it unduly difficult to finance activities authorised by their licences;
 - to take account of any international obligations of the UK notified to the CAA by the Secretary of State (whatever the time or purpose of the notification); and
 - to take account of any guidance on environmental objectives given to the CAA by the Secretary of State.
- 1.16 Our approach to economic regulation includes price controls where we specify the maximum amounts that NERL can charge its customers for its regulated services. These amounts depend on how it performs against performance targets. These price controls are given effect through conditions in the NERL licence.
- 1.17 The Transport Act also places duties on NERL. As the licence holder it:
- must secure that a safe system for the provision of authorised air traffic services in respect of a licensed area is provided, developed and maintained;
 - must take all reasonable steps to secure that the system is also efficient and coordinated;
 - must take all reasonable steps to secure that the demand for authorised air traffic services in respect of a licensed area is met;
 - must have regard, in providing, developing and maintaining the system, to the demands which are likely to be placed on it in the future.
- 1.18 We may modify the conditions of the licence, if NERL consents. If, in due course, NERL accepts our performance plan and the associated licence modifications that give effect to this, it should only do so on the basis that it is taking responsibility and accountability for providing an appropriately high quality of service to airlines and their passengers. If NERL does not consent to our licence

modifications, we may make a reference to the Consumers and Markets Authority (CMA) to investigate and report on our proposed modifications.

Brexit

- 1.19 At the time of preparation of our draft performance plan proposals for consultation, it is not clear what the nature of the UK's future relationship with the EU will be. Our approach and proposals are based on the SES performance framework applying to the UK on the 1 January 2020. If no future arrangements are put in place before the end of 2019, the economic regulation of NERL will default to the Transport Act. Under both the EU and domestic regulatory frameworks the substantive requirements are similar – we expect to produce a price control and service quality targets that go towards achieving the strategic outcomes established in CAP 1511,³ and these need to be in place by 1 January 2020. If a 'no-deal' Brexit were to occur we would consider the implications of this in making our final proposals later in 2019.

Scope of the consultation

- 1.20 This document covers our proposals for consultation on the draft UK performance plan and Oceanic price control for RP3.
- 1.21 The Oceanic price control covers the air traffic services NERL provides to aircraft crossing the North Atlantic. This service is not in scope of the SES performance framework and is regulated under the Transport Act. The regulatory periods are aligned and, where appropriate, we have made similar assumptions in setting the Oceanic and UK en route price controls. Chapter 11 sets out proposals for the Oceanic price control and consults on our draft proposals for the Oceanic control.
- 1.22 The draft performance plan covers:
- NERL's en route ANS in the Scottish and London Flight Information and Upper Information Regions (FIR/UIR);
 - NERL's combined approach ANS for certain London airports;⁴
 - the costs of the UK's contribution to Eurocontrol – referred to as DfT costs in the draft performance plan;

³ [CAP 1511](#) - Strategic outcomes for the economic regulation of NERL 2020-2024: discussion document (April 2017).

⁴ See chapter 8 on the London Approach service.

- the costs of aviation services provided by the Met Office;
- the costs of the CAA's airspace policy and regulation activities; and
- terminal ANS performance requirements.⁵

1.23 Under the performance regulation, it is open to Member States to adopt plans at the Functional Airspace Block (FAB) or national level. We propose that this draft performance plan is adopted at the national level. Brexit implications aside, there are material differences in terms of size, scope and complexity of UK and Irish airspace and ANS. The UK and Ireland, therefore, agree that national plans will provide a more transparent view of respective performance over RP3.

1.24 Furthermore, the complexity of the UK airspace and air navigation arrangements mean that it is not appropriate to apply the simplified charging scheme set out in Article 34 of the performance regulation.

UK context and assumptions

Airspace modernisation

1.25 In addition to our European and domestic statutory duties, the key strategic consideration in developing our proposals for the draft performance plan for RP3 is airspace modernisation. Airspace is a crucial part of the UK's national infrastructure. It needs to be maintained and enhanced to provide more choice and value for consumers, through the capacity for airlines to add new flights, reduced flight delays and enhanced global connections that can help boost the UK economy, while continuing to improve safety standards. Unlocking the benefits of modernisation can make journeys faster and more environmentally friendly. Better airspace design can help with the management of noise impacts for communities and improve access for other airspace users, including the military, for whom airspace is a key resource.

1.26 Government has set out its support and objectives for the modernisation of UK airspace in its Green Paper⁶ published in December 2018 in preparation for its forthcoming Aviation Strategy. Prior to this, in October 2017, the Government tasked the CAA with a key oversight role for airspace modernisation. Consistent with our role as specialist aviation regulator and our statutory responsibilities, we are required to prepare and maintain a coordinated strategy and plan for the use

⁵ See chapter 10 on terminal ANS.

⁶ <https://www.gov.uk/government/consultations/a-new-aviation-strategy-for-the-uk-call-for-evidence>

of UK airspace for air navigation up to 2040, including for the modernisation of the use of such airspace.

- 1.27 In December 2018, we published our UK Airspace Modernisation Strategy (AMS),⁷ setting out the detailed initiatives that industry must deliver to achieve the objectives envisaged in current government policy. In our guidance for NERL in preparing its business plan for RP3,⁸ we were clear that as the licensed monopoly provider of (air traffic) services that are of national importance, NERL would have a key role in supporting the development and implementation of airspace modernisation.

Traffic assumptions

- 1.28 Our draft proposals are based on the STATFOR⁹ October 2018 base case medium-term forecasts for en route traffic and are presented in Table 1.1. We note that STATFOR is preparing to update its medium-term forecasts in February 2019. As these were not available at the time of development of our proposals we are unable to take them into account prior to publication. However, we will consider the updated forecasts alongside stakeholder responses to this consultation.
- 1.29 The average annual growth rate for UK flights is forecast to be 1.5% in RP3, compared to 2.8% in RP2. For TSU, the average annual growth rate for UK flights is forecast to be 1.8% in RP3, compared to 4.7% in RP2.

Table 1.1: Traffic forecast

	RP2					RP3				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Actual	Actual	Actual	F'cast	F'cast	F'cast	F'cast	F'cast	F'cast	F'cast
Overall UK flights (000)	2,322	2,449	2,534	2,553	2,605	2,649	2,693	2,735	2,772	2,809
TSU (000)	10,154	10,875	11,768	12,157	12,531	12,766	13,043	13,280	13,494	13,713

Source: STATFOR Seven-Year Forecast October 2018

⁷ [CAP 1711](#) - Airspace Modernisation Strategy (December 2018)

⁸ [CAP 1625](#) - Guidance for NERL in preparing its business plan for Reference Period 3 (January 2018).

⁹ A team within Eurocontrol that provides statistics and forecasting services.

Comparison with NERL's traffic forecast

- 1.30 NERL's RP3 business plan uses traffic forecasts that NERL developed itself using a combination of:
- a passenger allocation model for scheduled, chartered and low-cost operations; and
 - statistical techniques for overflights, cargo, business flights and military operations.
- 1.31 The main difference between NERL's forecasting methodology and STATFOR's is that NERL's model re-allocates passengers to nearby airports when a particular airport is capacity-constrained. The STATFOR model instead assumes that constrained-off passengers would not fly. The NERL approach is *theoretically* preferable for the UK compared to the STATFOR approach, which is more suited to continental Europe where rail or road travel may be a viable alternative to flying.
- 1.32 Table 1.2 compares the NERL and STATFOR forecasts. In a capacity-constrained environment, as expected for the UK in RP3, the NERL model would be expected to produce higher traffic forecasts, all else being equal. In practice, however, by the end of RP3 STATFOR's forecast for TSU is 2.6% higher than NERL's business plan. NERL states that this is because:
- NERL forecasts 0.5% growth in flights in 2019 compared to 2.0% forecast by STATFOR. This is despite the fact that both forecasts are based on GDP¹⁰ growth from the July 2018 Oxford Economics¹¹ forecast (OEF) central scenario.
 - STATFOR's forecast uses the most recent northerly position of the jet stream, whereas NERL's forecast uses a rolling 5-year average position of the jet stream.

Table 1.2: Comparison of NERL and STATFOR traffic forecast

	Source	2018	2019	2020	2021	2022	2023	2024	CAGR 2018-24
Overall	STATFOR	2,553	2,605	2,649	2,693	2,735	2,772	2,809	1.6%
UK flights (000)	NERL RP3 business plan	2,533	2,546	2,597	2,653	2,713	2,769	2,802	1.7%
TSU	STATFOR	12,157	12,531	12,766	13,043	13,280	13,494	13,713	2.0%

¹⁰ Gross Domestic Product (GDP) assumptions are a key determinant of the traffic forecasts, as they characterise the expected level of economic activity in the UK and destination countries.

¹¹ Oxford Economics Ltd, is an established UK economic research organisation.

(000)	NERL RP3 business plan	12,085	12,094	12,220	12,498	12,823	13,133	13,366	1.7%
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Source: NERL and STATFOR

- 1.33 Both NERL's and Eurocontrol's STATFOR traffic forecasts make allowances for adverse impacts on traffic arising from Brexit, driven by uncertainty around its impact on economic growth. To the extent that actual traffic varies from forecasts, there are in-built mechanisms in the performance framework to share traffic risk and the associated costs and benefits between NERL and airspace users. If the variance triggers alert mechanism thresholds, NSAs may review the performance plans and, where appropriate, propose new targets. Traffic risk sharing is addressed in chapter 9 on uncertainty mechanisms.
- 1.34 We understand that NERL continues to engage with STATFOR regarding the difference between their forecasts and that this difference may narrow in the updated forecasts. We expect to update the traffic forecasts we use for our final proposals to take account of stakeholder feedback and updates to forecasts in 2019. It is our preference to use the STATFOR forecasts given the official role and greater independence of STATFOR, but we will consider responses to the consultation before making a final decision.

Process

Process to date

- 1.35 Following publication of a discussion document on our strategic outcomes for NERL for RP3¹², we consulted on¹³ and then published business plan guidance¹⁴ to NERL in January 2018, setting out our expectations for NERL's RP3 business plan and consultation with its customers.
- 1.36 NERL shared an initial business plan with airspace users in April 2018, which it followed with a programme of customer consultation on its proposals, from May to September 2018. At the end of the programme, the Co-Chairs of the Customer Consultation Working Group (CCWG) submitted a report on their

¹² [CAP 1511](#) - Strategic outcomes for the economic regulation of NERL 2020-2024: discussion document (April 2017).

¹³ [CAP 1593](#) - Guidance for NERL in preparing its business plan for Reference Period 3: Consultation document (September 2017).

¹⁴ [CAP 1625](#) - Guidance for NERL in preparing its business plan for Reference Period 3 (January 2018).

conclusions.¹⁵ NERL published a revised RP3 business plan at the end of October 2018.¹⁶

1.37 In addition to our own analysis and assessment, we have commissioned a number of consultancy studies to provide independent in-depth analysis and advice on certain issues, to inform our proposals. These studies are published on our [website](#):

- Cost of capital – Europe Economics
- Operating and capital costs – Steer/Helios
- Pensions – the Government Actuary's Department (GAD)
- Cost allocation and non-regulated revenue – Cambridge Economic Policy Associates (CEPA)
- Financial model assurance – Grant Thornton
- Review of Service and Investment Plan (SIP) process – Chase Partners

1.38 In addition to the NERL-focussed process, the Met Office has developed and consulted on its RP3 proposals, which was supported by a stakeholder consultation meeting in September 2018.¹⁷

1.39 As previously stated, a key strategic consideration for the development of our RP3 proposals has been to support the AMS. The strategy, and associated policy, was developed through 2017 and 2018, before a process of public engagement ahead of being finalised and published¹⁸ in December 2018. We have taken account of the development of the strategy as we have developed our RP3 proposals.

Next steps to finalise RP3 performance plan

1.40 We will hold a stakeholder consultation meeting in London on 11 March 2019. This will provide stakeholders with the opportunity to set out their views and priorities on our proposals. Stakeholders wishing to attend the workshop should email economicregulation@caa.co.uk by 1 March 2019.

1.41 Written responses to the consultation should be submitted to economicregulation@caa.co.uk by noon on 12 April 2019.

¹⁵ RP3 Customer Consultation Working Group [Report of the Co-Chairs](#) (October 2018).

¹⁶ NERL [RP3 business plan](#) 2020-2024 (October 2018) and [appendices](#).

¹⁷ <https://www.metoffice.gov.uk/aviation/our-responsibilities-to-aviation>

¹⁸ [CAP 1711](#) – Airspace Modernisation Strategy (December 2018)

- 1.42 The process beyond stakeholder consultation will be informed by the UK's future relationship with the EU. The steps below are based on the UK continuing to be subject to the SES performance regulation.
- 1.43 Following consideration of stakeholder consultation responses, relevant updated forecasts and taking account of EU-wide target developments (and adoption), we will make final proposals on a draft UK performance plan to the DfT for adoption and submission to the Commission by 30 September 2019.
- 1.44 By the end of October 2019, the Commission will conduct a verification process on Member States' draft performance plans. If no key information has been omitted, the draft performance plans submitted by Member States will come into effect on 1 January 2020.
- 1.45 The Commission will undertake a formal assessment of performance plans and targets, for consistency with the regulation and EU-wide targets. If any subsequent changes are required, they will be applied retrospectively. If the Commission's assessment is positive, a formal decision will be adopted formalising the performance plan and targets by the end of February 2020.
- 1.46 If the UK were to cease to be subject to EU legislation before our final proposals, then economic regulation of NERL would revert to the Transport Act and the EU-wide targets and processes will not be directly relevant to our decisions.

EU targets

- 1.47 The performance regulation requires that national targets are consistent with EU-wide targets. The performance regulation agreed for RP3 requires that EU-wide targets must be adopted by the Commission no later than the end of May 2019. Whilst the Commission intends to bring forward agreement of the EU-wide targets, at the time of preparing our draft performance plan proposals, the EU-wide targets were not available.
- 1.48 Notwithstanding, in October 2018, following stakeholder consultation in summer 2018, the PRB published its EU-wider target proposals to the Commission. We have therefore used the PRB's proposals to the Commission on EU-wide targets where possible, to provide context for our own proposals. Stakeholders should note that the Commission has not provided any formal or informal views on the PRB proposals.
- 1.49 The Commission has indicated its intent to begin consultation with Member States on proposed EU-wide targets in late March 2019. As the EU-wide target proposals develop and once they are formally agreed, we will review our latest proposals and where appropriate conduct proportionate additional stakeholder engagement and consultation.

NERL licence modifications

- 1.50 Whether under the performance scheme or under the Transport Act, there will be modifications required to the NERL licence to implement the relevant components of the UK targets and financial incentives.
- 1.51 We also expect to make additional licence modifications to implement our proposals in respect of capital expenditure and airspace modernisation governance and accountability. We will engage with stakeholders on these proposals in due course and ahead of the statutory consultation required to modify the NERL licence, which we plan to conduct in the last quarter of 2019.

Structure of this document

- 1.52 The remainder of this document is structured as follows:
- Chapters 2, 3 and 4 set out our proposals for NERL's outputs in respect of Safety, Environment and Capacity, including – where appropriate – financial incentives;
 - Chapter 5 addresses our efficiency proposals for NERL's en route Determined Costs and chapter 6 sets out our proposed UK cost efficiency target, as well as DfT, MET and CAA Determined Costs;
 - Chapter 7 addresses key NERL building blocks and our assessment of financeability;
 - Chapter 8 sets out our proposals for the London Approach service, including a proposal to bring Biggin Hill Airport into the scope of the London Approach charge;
 - Chapter 9 sets out our approach to addressing uncertainty during RP3, including traffic and costs risk sharing, as well as funds and regulatory mechanisms to support airspace modernisation;
 - Chapter 10 addresses terminal ANS; and
 - Chapter 11 focuses on our proposals for the Oceanic price control.
- 1.53 Appendices providing detailed supporting information, are provided in a separate document – [CAP 1758A](#).

CHAPTER 2

Safety

Introduction

- 2.1 Safety is the overriding objective under the performance scheme and Member States must have regard to safety when developing performance plans.
- 2.2 The CAA has a primary duty under the Transport Act to exercise its functions so as to maintain a high standard of safety in the provision of air traffic services. The Transport Act also places duties on NERL including to ensure that a safe system for the provision of authorised air traffic services in respect of a licensed area is provided, developed and maintained.
- 2.3 This chapter:
- summarises the approach to aviation safety in the UK; and
 - sets out the requirements under the performance regulation regarding safety, including the KPI against which NERL's safety performance will be monitored, and our draft proposals for the target for this KPI.

UK approach to safety

- 2.4 The UK's State Safety Programme (SSP)¹⁹ is developed by the CAA, in conjunction with the DfT, the Air Accidents Investigation Branch, the Ministry of Defence (MoD) and Air Safety Support International, in accordance with the International Civil Aviation Organisation (ICAO) requirement for the UK to put in place an SSP to regulate and oversee the UK's aviation system. The SSP sets out the UK's approach to aviation safety, with the following objectives:

No accidents involving commercial air transport that result in serious injuries or fatalities. No serious injuries or fatalities to third parties as a result of aviation activities.

- 2.5 The UK aims to achieve this through State safety objectives that:
- protect people from aviation safety risks;
 - reinforce the UK position as a global leader in aviation safety; and

¹⁹ <https://www.caa.co.uk/Safety-initiatives-and-resources/How-we-regulate/State-safety-programme/Introduction/About-the-programme/>

- positively influence aviation safety through collaborative working with the UK's international partners.

- 2.6 The DfT is in the process of developing a new aviation strategy. The SSP is a key component of this, and it will be updated to reflect this evolving strategy. The DfT has agreed that the coordination of the UK SSP should be undertaken by the CAA.
- 2.7 Post Brexit, the stated preference of the UK Government and the CAA is that the UK remains part of the European Aviation Safety Agency (EASA) aviation safety system. While this remains our position, we are preparing for the possibility of a no-deal Brexit in March 2019, under which we would recognise EASA certificates, approvals and licences for use in the UK aviation system and on UK-registered aircraft at least for a period of up to two years following Brexit.

SES requirements

- 2.8 The performance regulation requires targets to be set at national level against one KPI, Effectiveness of Safety Management (EoSM):²⁰ The EoSM KPI for air navigation service providers (ANSPs) is measured by the level of implementation of the following management objectives:
- a. safety policy and objectives;
 - b. safety risk management;
 - c. safety assurance;
 - d. safety promotion; and
 - e. safety culture.
- 2.9 EASA Acceptable Means of Compliance and Guidance Material for EoSM for RP3 have yet to be developed. Based on the approach to RP2²¹, achievement of the (safety) management objectives is measured by verified responses to questionnaires. For each question, the response should indicate the level of implementation, characterising the level of performance of the respective organisation. Responses to each question are then aggregated under the above management objectives to generate a level for each objective. Under RP2, the levels and effectiveness scores were:

²⁰ Annex I, section 2, 1.1 of the performance regulation.

²¹ [EASA, Acceptable Means of Compliance and Guidance Material](#) for the implementation and measurement of Safety (Key) Performance Indicators (S(K)PIs) (ATM performance IR) Issues 2 (December 2014).

- Level A which is defined as 'Initiating' — processes are usually ad hoc and chaotic;
- Level B which is defined as 'Planning/Initial Implementation' — activities, processes and services are managed;
- Level C which is defined as 'Implementing' — defined and standard processes are used for managing;
- Level D which is defined as 'Managing & Measuring' — objectives are used to manage processes and performance is measured; and
- Level E which is defined as 'Continuous Improvement' — continuous improvement of processes and process performance.

2.10 There are five safety performance indicators that will be monitored during RP3.

- a. The rate of runway incursions at airports located in a Member State.
- b. The rate of separation minima infringements within the airspace of all controlling air traffic services units in a Member State.
- c. The rate of runway incursions at an airport calculated as the total number of runway incursions with any contribution from air traffic services (ATS) or Communication, Navigation and Surveillance (CNS) services with a safety impact that occurred at that airport.
- d. The rate of separation minima infringements within the airspace where the ANSP provides ATS, calculated as the total number of separation minima infringements with any contribution from ATS or CNS services with a safety impact.
- e. Where applicable, the use of automated safety data recording systems by ANSPs as a component of their safety risk management framework.

2.11 We will continue to monitor and report annually on these performance indicators to the Commission.

CAA proposal

2.12 Historically NERL has performed well in the maturity of its safety management systems. The RP2 EU-wide target is for ANSPs to reach Level C for safety culture and Level D for all other management objectives by the end of 2019. NERL reached level D for safety in 2015 and level D for all management objectives since 2016. It has maintained level D performance since, well ahead of the 2019 EU-wide target.

- 2.13 We understand that EASA intends to modify the approach for RP3 and may amend the levels and effectiveness scores. However, given NERL's strong historical performance, we expect them to achieve the EU-wide target.
- 2.14 Therefore, subject to confirmation of RP3 EU-wide targets, our current intention is to propose a UK target consistent with the EU-wide targets. This is also the approach set out in NERL's RP3 business plan.
- 2.15 NERL's RP3 business plan notes it will also set internal aspirational safety targets at a more detailed level. We support this initiative and will continue to monitor progress through oversight by our Safety and Airspace Regulation Group (SARG). We also expect that NERL will report on its safety performance through the SIP process and the Condition 11 service standards reporting requirements under its licence.

Consultation questions

- 2.16 We welcome comments on any issues raised and our proposed approach to safety.

CHAPTER 3

Environment

Introduction

- 3.1 Although air transport has a significant impact on the environment in terms of carbon emissions and noise, the difference that NERL can make to these externalities by changing the way it provides its services is more limited.
- 3.2 The performance scheme assesses environmental performance in terms of flight efficiency, as a proxy for carbon emissions. In the short-term, flight efficiency can be improved through the decisions that air traffic controllers make, such as tactically providing direct routings. In the long-term, more sustained improvements can be achieved through changes in airspace design and airspace modernisation to provide more efficient flight trajectories.
- 3.3 We expect NERL to take accountability for mitigating the environmental impacts of the services it provides, to the extent it is reasonable and practicable. Improved environmental performance and flight efficiency were recognised as a priority for airspace users in NERL's customer consultation process – along with the benefits of reduced emissions. More efficient flights also reduce fuel burn for airlines and costs for consumers.
- 3.4 This chapter:
- sets out the requirements under the performance regulation regarding the environment, including the base KPI against which NERL's environmental performance will be monitored;
 - sets out our proposals for the additional 3Di metric and the targets for NERL's environmental performance in RP3;
 - outlines the financial incentive we propose to apply to NERL's 3Di environmental performance;
 - describes the other environmental performance indicators that will be monitored; and
 - summarises what we said in our business plan guidance on NERL taking account of the impact of noise in carrying out its activities and how NERL has responded to these challenges in its business plan.

SES requirements

- 3.5 The performance regulation environment KPI is the horizontal en route flight efficiency of the actual trajectory (KEA). The target is applied at the local (national) level. KEA is defined as:
- a comparison between the length of the en route part of the actual trajectory derived from surveillance data and the achieved distance in local airspace, summed over Instrument Flight Rules (IFR) flights within or traversing the local airspace;
 - the 'en route part' refers to the distance flown outside a circle of 40 nautical miles diameter around the origin and destination airports;
 - where a flight departs from or arrives at an airport outside the local airspace, the entry or exit points of the local airspace are used for the calculation of this indicator;
 - the indicator is calculated for the whole calendar year and for each year of the reference period, excluding the ten highest and ten lowest daily values.
- 3.6 We propose to continue to engage with the PRB and the Commission on the development of UK reference values before setting a target for KEA. We do not propose to apply a financial incentive on KEA but will do so on the 3Di metric (discussed below) as the latter is more suited to assessing flight efficiency in UK airspace and is preferred by airspace users over KEA. We will continue to report annually to the Commission on KEA performance.

Additional UK indicator – 3Di

- 3.7 The performance regulation allows NSAs (including the CAA) to implement additional environmental KPIs.
- 3.8 In its business plan NERL proposes to continue to use the broader 3Di metric as the main measure against which their environmental performance is assessed in RP3, with KEA retained for monitoring purposes only. This approach was supported in the CCWG Co-Chairs' Report.
- 3.9 We consider that NERL's 3Di metric provides a more comprehensive view of environmental performance in the UK, given the complex interaction of ascending and descending traffic in our congested airspace.
- 3.10 At an operational level, 3Di encourages NERL to provide efficient routing both horizontally and vertically, in the climb, cruise and descent phases of flight. It also incentivises NERL work with other ANSPs to provide as direct as possible 'point to point' flights from beyond and through UK airspace. At a more strategic

level, it encourages NERL to consider airspace redesign to promote fuel efficient (direct) routes too. The closer to efficient routes NERL provides, the lower their three-dimensional inefficiency (3Di) score.

NERL's 3Di performance in RP2

- 3.11 The 3Di metric was introduced in RP1 and refined for RP2. It is calculated using a linear regression model that incorporates flight path inefficiencies in both the vertical and horizontal dimensions. The modelling is two-stage and is based on a sample of flights for which the estimated fuel inefficiency due to flight path is regressed upon the various drivers of flight path inefficiency. The resulting coefficients are then applied to flight path inefficiencies and a 3Di score is estimated for each UK flight in the year. The annual average of these scores provides a measure against which a financial incentive is applied.
- 3.12 Table 3.1 sets out the 3Di target for each year of RP2, including the deadband (with lower and upper bounds) beyond which NERL earns a financial advantage (bonus) or disadvantage (penalty),²² and NERL's performance to date. The deadband around the target is designed to allow for statistical variation in the metric that may not be due to NERL's performance. So far in RP2 NERL has underperformed its target but has remained within the deadband and so it has not incurred any penalties.

Table 3.1: NERL's 3Di performance in RP2

	2015	2016	2017	2018	2019
Par value	29.7	29.3	28.9	28.1	27.7
Annual change in par value	N/A	-1.3%	-1.4%	-2.4%	-1.4%
Lower bound of deadband	28.2	27.8	27.5	26.7	26.3
Upper bound of deadband	31.2	30.8	30.3	29.5	29.1
NERL's performance	30.1	30.3	29.6	29.3*	N/A

Source: CAA

* The 2018 figure is based on data to the end of October 2018.

Approach to calculating 3Di in RP3

- 3.13 NERL's RP3 business plan proposes a 3Di target range for RP3 consistent with the RP2 targets, after making a series of adjustments:
- exclusion of training, positioning, surveillance, calibration flights and other non-revenue flights;

²² The performance regulation refers to bonuses and penalties as 'financial advantage' and 'financial disadvantage' respectively. For general clarity we continue to use the language of the previous performance and charging regulation which refers to bonus and penalty.

- exclusion of diversions due to runway closure;
- including vertical cut-offs: removing data below 7,000 feet for arrivals and 9,000 feet for departures;
- including exemptions of up to 10 days where 3Di is significantly influenced by factors that NERL considers are outside of its control (such as air traffic control strikes in other countries, activation of abnormally large military exercises, severe thunderstorms);
- adjustments to base data to neutralise the impact of changes to the volume of airspace or accuracy of data used for 3Di; and
- modulated targets if traffic levels markedly diverge from the base traffic forecast.

- 3.14 We propose that only the first of these proposed adjustments should be made to the reported 3Di metric. Non-revenue flights of the types listed are a small proportion of overall flights in a given year but may have a disproportionately large impact on the 3Di score. Since those flights do not typically seek to maximise flight efficiency, it is appropriate to exclude them from the metric and incentive. Based on data from NERL, it is estimated that excluding these types of flights would result in a downward adjustment of the 3Di score of around 0.6.
- 3.15 NERL proposes the vertical cut-off as a way of setting a demarcation line between prioritising noise impact (which NERL considers is the responsibility of airports) and prioritising flight efficiency. However, we consider that 3Di already implicitly captures that trade-off through its vertical component. Additionally, the proposed vertical cut-off would result in the flight efficiency benefits of airspace redesign not being reflected fully in 3Di. We therefore propose that a vertical cut-off should not be introduced.
- 3.16 NERL's rationale for the remaining proposed adjustments is that there are a number of factors that are beyond NERL's direct control, and as such should be removed from the metric. Our view is that the proposed adjustments may sanitise the 3Di metric of any real insight into how NERL performs on flight efficiency given real operational and business constraints. The adjustments could also result in a disconnect between NERL's score in a year and users' experience in that year. For example, if NERL can exclude certain days from the metric, its 3Di score could improve in a year in which users experienced significant flight inefficiencies as a result of actions NERL has taken in response to adverse weather. While NERL may not have direct control over certain factors that influence the 3Di score, we consider it is important that NERL continues to consider flight efficiency in responding to these factors.

Management of changes to the calculation of 3Di

- 3.17 NERL will be required to maintain a consistent method for calculation and the input measurements that affect the value of the 3Di value throughout RP3.
- 3.18 Any further measurement or method changes NERL wishes to make to the model in RP3 will not be incorporated into the regulatory reporting. This will maintain the consistency of the regulatory time series and ensure NERL is not penalised or rewarded for changes in the 3Di score that are not due to performance improvements.
- 3.19 Where unavoidable changes to the input measurements occur as a by-product of operational developments (for example, changes to the radar processing data) and these cannot be implemented in a manner that allows for parallel reporting, we expect to be fully appraised of such changes prior to implementation.

Annual review of the 3Di model

- 3.20 The annual review process tests whether the model that was used to set the RP3 targets remains sufficiently representative of NERL's operating environment and is a suitable basis for the incentive.
- 3.21 NERL uses a sample of at least 50,000 flights in the year to re-estimate the 3Di model according to a linear regression with the same terms that were used to set the RP3 targets, and then uses this revised model to calculate the test 3Di score for the year. If the test 3Di score is more than $\pm 8\%$ from the score derived using the base model, the test will be deemed to have failed.
- 3.22 The financial incentive on 3Di (discussed below) does not apply in a year in which the test 3Di model has failed. If the test 3Di model fails in two consecutive years, the 3Di incentive will automatically be withdrawn for the remainder of RP3. Consecutive failures could imply that there has been a step-change in NERL's operating environment (for example, the amount of airspace managed or volume of traffic) such that the regression coefficients and, by extension, the target derived for RP3 are no longer appropriate.

CAA proposals

- 3.23 Taking into account the above adjustments, we propose the following targets and deadbands for the 3Di metric in RP3:

Table 3.2: CAA proposed 3Di targets and deadbands

	RP2 (recalculated for model changes)					RP3				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NERL performance	29.5	29.7	29.0	28.7 ¹	N/A	N/A				
Par value ²	29.1	28.6	28.3	27.5	27.1	26.8	26.5	26.2	25.9	25.6
Lower bound of deadband	N/A					25.5	25.2	24.9	24.6	24.3
Upper bound of deadband						28.1	27.8	27.5	27.2	26.9

Source: CAA

Notes: ¹ The 2018 figure is based on data to the end of October 2018.

² The par value for RP2 has been adjusted downwards by 0.6 to reflect the exclusion of various types of non-revenue flights.

3.24 Our proposal involves a 1.0% improvement in 3Di target values relative to the previous year.

3.25 Our proposals are based on:

- a review of NERL's 3Di performance in RP2 so far, with the 3Di metric recalculated to exclude non-revenue flights²³;
- the traffic forecast set out in chapter 1 and the operational improvements that are set out in NERL's RP3 business plan and are expected to improve flight efficiency, including airspace modernisation and the deployment of SES ATM Research (SESAR) technologies.

3.26 In summary our proposal involves a 1.0% per annum improvement in 3Di target values relative to the previous year. In terms of the 3Di score, this translates to approximately a 0.3 reduction in the par value annually. We also propose a deadband of +/-5% for RP3, as in RP2. Beyond the deadband, the incentive will follow a smooth sliding scale until +/-25% of the target (narrowed down from 28% in RP2) at which point maximum financial bonus or penalty will be reached.

²³ Note that since the proposed change to the calculation of 3Di would only apply from the start of RP3, it has no impact on how NERL's performance in RP2 is assessed.

Financial Incentives on the 3Di KPI

- 3.27 Member States may set a financial incentive for KEA and additional environmental KPIs.²⁴ The regulation caps the incentive set in any year at 2% of Determined Costs for bonuses and 4% of Determined Costs for penalties. Any incentive on environmental measures can be applied in addition to the incentive schemes on capacity and cost efficiency.
- 3.28 We propose that the 3Di incentive is capped at $\pm 1\%$ of Determined Costs. This is broadly consistent with the approach in RP2, albeit the value will vary slightly as the RP2 incentive is currently based on a fixed percentage of revenue, rather than Determined Costs.
- 3.29 Calculation of the 3Di incentive rate is set out in Appendix E.

Other Performance Indicators

- 3.30 The performance regulation also requires the monitoring of a number of other performance indicators on the environment:²⁵
- a. horizontal en route flight efficiency of the last filed flight plan (KEP) – applicable at the European Network Management level and not considered further in this document;
 - b. horizontal en route flight efficiency of the shortest constrained trajectory;
 - c. additional time in the taxi-out phase;
 - d. additional time in terminal airspace; and
 - e. share of arrivals applying Continuous Descent Operations (CDO).
- 3.31 The performance regulation requires the monitoring of the ratio of the number of arrivals performing a CDO from a reference point at a height above ground, defined by the NSA, and the total number of arrivals. The Eurocontrol Performance Review Commission has proposed harmonised monitoring of CDO from 7000 feet. Whereas, the UK Arrivals Code of Practice²⁶ establishes 5,500 feet above aerodrome level for monitoring of CDOs. For RP3, we propose to

²⁴ Article 11(4) of the performance regulation.

²⁵ Annex I, section 2, 2.2 of the performance regulation.

²⁶ [*Noise from Arriving Aircraft: An Industry Code of Practice*](#). The Arrivals Code of Practice is a voluntary Code of Practice that has been compiled by a group representing airlines, air traffic control, airports, the CAA and DfT (November 2006).

define the CDO monitoring threshold as 5,500 feet above aerodrome level, consistent with the definition from the Arrivals Code of Practice, as this will avoid flights being recorded as non-CDO due to any level segments that might occur as a result of the 6000 feet transition altitude or routine holding at flight level 70 (FL70) in the London airport holding stacks. We would welcome stakeholders' views on the appropriate CDO monitoring reference height.

Noise

- 3.32 There can be important interactions between flight efficiency and the noise impacts on overflowed communities. For example, departure routes from several UK airports are fixed up to 4,000 feet in order to minimise the noise impact and this may constrain the extent to which flight efficiency could be maximised at lower heights.
- 3.33 We set out our expectations for NERL's RP3 business plan with regard to noise and the trade-off between flight efficiency and minimising noise impact, stating that NERL should expect to abide by existing and emerging DfT policy and CAA requirements on noise, including in relation to airspace design, the redistribution of air traffic and any new requirements from the DfT's Aviation Strategy.²⁷ We also indicated that NERL should expect to take account of noise in designing their operational activities (within the framework of safety, policy and process requirements) and to work with wider stakeholders as part of the UK airspace design and implementation masterplan, in support of our AMS, to identify opportunities to mitigate noise impacts.
- 3.34 In its RP3 business plan NERL said it would:
- work collaboratively with local airports and airlines to mitigate the impacts of noise on communities, recognising difficult trade-offs between reducing noise and operational efficiency and the commercial interests of airlines;
 - develop new data and processes to analyse noise mitigation options when making changes to procedures or airspace; and
 - expand its community engagement strategy.
- 3.35 We support NERL's proposals in relation to these matters and, in the context of the AMS, will monitor their progress. While we do not make any specific proposals in respect of noise as part of the draft performance plan, we note that NERL has been asked to reflect noise reduction in our joint (with DfT) commission for an airspace change masterplan. We intend to bring forward modifications to NERL's licence that will set out their obligations with respect to

²⁷ [Letter](#) from Paul Smith, CAA to Martin Rolfe, NATS (25 September 2018).

airspace modernisation and noise, including the production of the masterplan through the new Airspace Change Organising Group (ACOG).

Consultation questions

- 3.36 We welcome comments on any of the issues raised in this chapter and in particular on our proposals for changes to the calculation of the 3Di metric, the revised 3Di targets and financial incentives.
- 3.37 We also welcome comments on our proposed approach to defining the RP3 CDO monitoring reference height.