Reference to the Competition and Markets Authority of the NERL RP3 price controls

CAP 1857

[RP3 reference CAA document 002]

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Foreword

The referral

1. We provide this introductory submission to set out the background and reasons for our decision to refer the price controls of NATS (En Route) Plc (NERL) to the Competition and Markets Authority (CMA). The reference follows NERL's rejection of our final decisions[1] for the economic regulation of its monopoly air traffic services for the period 2020 to 2024 (known as RP3) on 10 September 2019.

2. The present reference is made under Section (s.)12 of the Transport Act 2000 (TA 2000) as the Civil Aviation Authority (CAA) and NERL were unable to agree on the modifications to NERL's licence under s.11 TA 2000.

3. We consider that the proposed modifications would be in the public interest, and in particular, could be expected to improve outcomes for users of NERL's services, including passengers and airlines. They would allow NERL to continue to provide a high level of service and operational performance, while delivering the strategically important modernisation of UK airspace.

4. When making any decisions about the regulation of NERL, the CAA's overriding priority is to allow NERL to continue to maintain the safe operation of air traffic control services in and over the UK. We consider that nothing in our proposals compromises NERL's ability to maintain the safety of air traffic services and NERL has provided no evidence to suggest otherwise.

5. Our final decisions on RP3 followed extensive consideration of the wider strategic context for this review (as discussed in the section below), the information set out in NERL's business plan, the views of a wide range of stakeholders (including the Customer Consultation Working Group) and the analysis and assessments provided by expert consultants and advisors. We consider they will allow NERL to finance the necessary investment to support airspace modernisation and will provide it with the flexibility to manage the transition to these new arrangements. At the same time NERL should be able to continue to provide its customers with a reliable, cost-effective service that to the extent that is reasonably practicable, minimises delays and maximises capacity in its day-to-day operations, which are of vital importance to the users of its services. We consider that this overall approach is fully consistent with our duties and the public interest.

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[1] Our final decisions were published as CAP 1830 and appendices as CAP1830a, on 29 August 2019.

6. Specifically, our proposed licence modifications would:

- allow an appropriate remuneration of NERL's investments, properly reflecting the risks to which investors are exposed;
- provide NERL with the financial resources to achieve airspace modernisation while maintaining reasonable pressure on the organisation to continue to deliver operational efficiencies;
- provide appropriate performance incentives for the protection of the quality of service provided to airspace users;
- strengthen NERL's accountability for carrying out its investment plans by putting in place appropriate incentive arrangements and encouraging NERL to develop new and improved governance arrangements; and
- provide for technological enhancements in the Oceanic service necessary to create safety benefits for this operation.

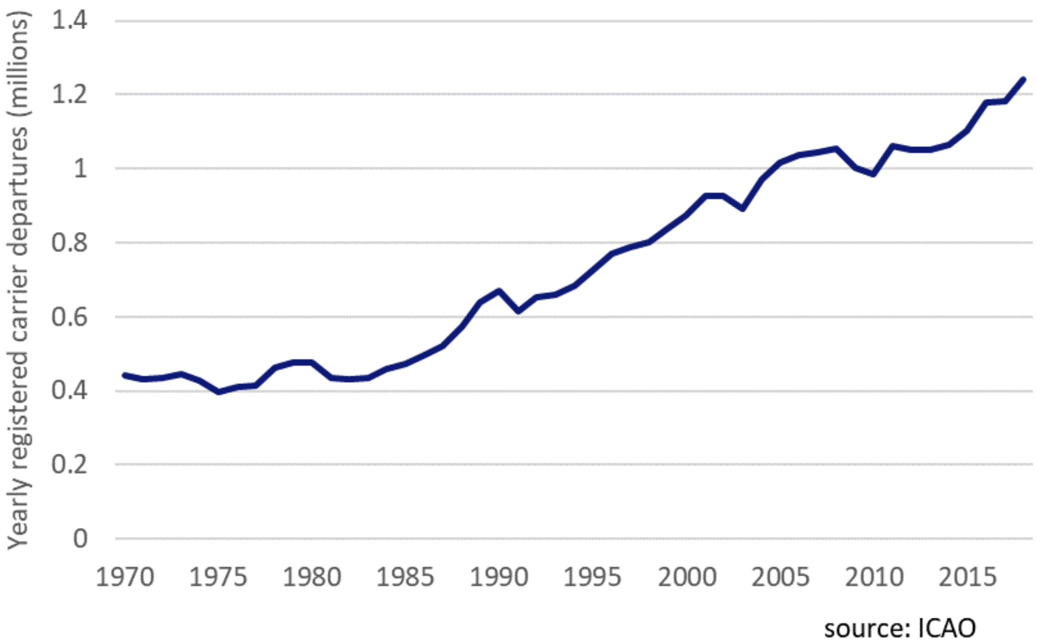
7. This reference invites the CMA to consider whether or not a failure to set these price controls and impose the consequent licence modifications would be expected to operate against the public interest. If so, the CMA is respectfully invited to either confirm that the CAA's proposals would remedy that adverse effect, or set out alternative price controls or licence modifications which would do so.

Context

8. To be able to best understand our final decisions, it is important to consider the wider context for this review. There are three particular issues that we wish to draw to the CMA's attention.

9. The first is the UK's Airspace Modernisation Strategy (AMS). This has been our key strategic consideration for RP3. The AMS is being introduced at the request of Government and delivers Government policy. Its delivery is jointly sponsored by the CAA and the Department for Transport (DfT). It involves updating the design of the network of routes in the air and using new technology to improve how air traffic is managed. It is intended to deliver a fundamental, system-wide upgrade to modernise critical national infrastructure and deliver a broad range of benefits in all key performance areas and more widely. Modernisation is essential to respond to the growth in air traffic movements that has occurred over the last thirty years and the growth expected for the foreseeable future.

Figure 1: Air traffic in the UK has grown significantly in recent decades



10. With growing consumer demand, the AMS is necessary to reduce delays and improve the efficiency of aircraft flight paths to benefit passengers and manage the environmental impacts.[2] While the AMS is not the sole responsibility of NERL, it has a key role, including the provision of necessary air traffic control infrastructure and playing an overall planning and coordination role. Delivering the AMS is fundamental to furthering the interests of airspace users and the public interest. Recognising its importance, we allowed in full all of the costs NERL proposed to deliver the AMS.

11. The second set of issues is the difficulties experienced with previous airspace modernisation initiatives and the sharp differences between NERL's previous business plans and its subsequent delivery. One of the reasons that it is important to make substantial progress with airspace modernisation in RP3 is the failure of previous attempts to deliver airspace modernisation. Shortly after the start of the current price control period (known as RP2) NERL made significant changes to its capital expenditure programme. It chose to focus on the replacement and updating of its legacy systems rather than airspace modernisation. NERL said that there were issues outside of its control that had prevented the implementation of airspace modernisation in the London area,

2 NERL produced a report, 'Feasibility Report into Airspace Modernisation in the South of the UK', in which it found that the current airspace structure has led to "routes and procedures that whilst currently safe and fit for purpose will not be able to cope with the forecast growth in air traffic in the next 20 years." https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/763085/nats-caa-feasibility-airspace-modernisation.pdf)

including integration issues with approach that Gatwick Airport was prepared to take with respect to airspace change. NERL also noted that the DfT had changed its policy, and that the CAA had changed the Airspace Change Proposal process. However, stakeholders were still concerned that the changes in NERL's priorities and capital programme were made without effective consultation and governance mechanisms.

12. As a result of this experience and given the importance of airspace modernisation, we have formulated new incentives on NERL to encourage it to develop new and improved governance mechanisms for expenditure in RP3. Our intention is to permit NERL an appropriate degree of flexibility in how it implements necessary investment while at the same time providing greater regulatory and stakeholder oversight (particularly for users represented through airlines) and greater incentives for delivery. This approach to oversight is intended to give stakeholders more influence over and confidence in investment plans and decisions, and provide better change management arrangements. Nonetheless, NERL remains ultimately accountable for delivery of investment and the associated benefits to consumers. The overarching aim is that NERL plays its full part in helping deliver the AMS.

13. The third set of issues concerns the RP3 review and NERL's business plan. There was a significant gap between NERL's Initial Business Plan (IBP) and the views of both our consultants and airspace users who thought NERL could deliver its plans more cost efficiently than it was proposing. This gap is highlighted in the report by the co-chairs of the Customer Consultation Working Group (CCWG)[3], and in reports that we commissioned by Steer and Helios.[4] Both highlighted a lack of ambition in NERL's plan regarding efficiency targets, while Steer and Helios identified a lack of strong evidence in the plan in support of NERL's cost forecasts. It was our wish that the review process would result in a greater level of consensus between NERL and its stakeholders to deliver a control that would be in the public interest. But despite extensive feedback, we found that NERL's position changed little from its IBP to its revised/final plan.

14. In our final decision we decided to provide a bridge between these divergent views, informed by a range of evidence and analysis. While there is some evidence that suggests NERL could outperform the targets for operational efficiency in our final decision we decided to prioritise the financing and delivery of airspace modernisation rather than shorter-term efficiency targets, consistent with the delivery of the AMS and the public interest. We expect that the

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3 The CCWG was the mechanism by which NERL engaged with customers on the content of its IBP between April and September 2018

4 NERL's forward-looking capital programme and expenditure efficiency, Steer (with support from Helios) February 2019

technology and procedures that NERL uses to help implement the AMS will also enable it to deliver significant operational efficiencies during the latter stages of the RP3 period and for the RP4 period. We expect that these cost savings will be passed through to airspace users in the form of lower charges at the RP4 review.

The issues of difference between us and NERL

15. Because all the main elements of the price control package must be considered in determining the public interest, our reference is framed so that the CMA is required to consider NERL's price controls in their entirety. Nonetheless, the CMA may wish to focus on and pay particular attention to what we understand to be the four main areas of difference between our final decision and the position of NERL. Our understanding of these issues is summarised below and we provide our views on each of these in this initial submission:

- **Cost of capital.** This drives the biggest difference in financial value between our relative positions. It is important to make an appropriate allowance for the cost of capital to allow for the efficient financing of investment (including in the systems to allow airspace modernisation) and to ensure that users pay no more than is necessary for the use of a monopoly service. We undertook extensive analysis and consultation and reached a view on a cost of capital that we consider appropriate for NERL given the characteristics of its regulated business. On a vanilla WACC basis, our final decision of 2.68% (real RPI) compares to NERL's final position of 4.21%. Over 90% of this difference is driven by the differences in view on the appropriate cost of equity for NERL's activities. We see NERL as a low risk business:
  - it is a statutory monopoly, which recognises that there needs to be a single provider of air traffic control services in controlled airspace, where complex interactions of aircraft movements require careful coordination;
  - it faces very limited financial risk if volumes turn out lower than forecast; and
  - it benefits from a large amount of statutory and regulatory protection with regard to the funding of pension costs, which are very significant, with both the level of protection and the size of the underlying pensions costs very significant compared to companies more generally and those where the CMA has previously determined price controls (including for water companies).

On this basis we consider that NERL's proposal that its equity should be remunerated on the basis of a company with a risk profile significantly higher than the average for companies in the market (which is dominated by firms operating in competitive markets) is inappropriate and unduly generous. Our assessment, that NERL's equity should be remunerated on the basis of a company with a risk profile consistent with the average for the overall market, could still be argued to be a relatively generous to NERL's shareholders.

- **Operating cost allowances and operational performance.** This was a key issue for stakeholders. Opex is the single largest building block of our price control, representing 70% of NERL's determined costs.

  We note that our consultants, Steer and Helios, struggled with the clarity of NERL's business plan. They considered significantly greater reductions in costs were plausible, with their projections between £48 million and £110 million lower than NERL's business plan over the course of RP3. However, in our final decision we agreed to NERL's projections up to 2022, implying a 26% real cost increase from 2017, reflecting the need for flexibility during a period of rapid change, and the priority attached to delivering the AMS. Nevertheless, after considering a wide range of evidence, we disagreed with NERL as to the best assumptions for reductions in costs thereafter, with our proposal taking account of the potential for new technology to create efficiencies. Ultimately, our final projection of determined costs is around £45 million lower than NERL's projection over the course of RP3 but still £64 million higher than what our consultants' analysis suggested was plausible. Even after our assumptions on efficiency our projection of opex in 2024 (the last year of the RP3 control) is 15% higher in real terms than NERL's spending in 2017.

  We consider our decision on opex to include sufficient flexibility for NERL at a time when it is being expected to implement significant operational changes. As part of our decision, between our draft proposals and our final decision, we also made NERL's capacity/delay targets less stretching (consistent with the operational challenges of introducing airspace modernisation) and we also reduced the size of potential penalties for failing to meet those targets.

  Consistent with our statutory duties, our assessment is that NERL should not find it unduly difficult to finance its activities and also deliver a high-quality service and high level of operational performance.

- **Capital expenditure (capex) governance and incentives.** Improving governance and holding NERL to account for delivery was a key issue for stakeholders. As already mentioned, early on in RP2, NERL's capex programme changed significantly. Forecast costs also increased by around 25% and airspace users commented that they had little opportunity to fully challenge NERL on the scope and cost of the revised programme. In parallel, NERL also did not deliver a key strategic project related to airspace modernisation, LAMP2[5], during RP2 as originally planned. Our view is that, with greater accountability over delivery, then NERL may have already delivered at least some of this project and the benefits to airspace users.

  Despite us emphasising that capex governance is one of our key outcomes for RP3, in our view NERL has not yet fully responded to this challenge. Our final decisions for RP3 include a new delivery incentive designed to encourage timely delivery of NERL's capex programme. We will not compel NERL to deliver individual capital projects, but will hold it accountable for delivering the benefits of its capital programme for users, and if circumstances change such that NERL wishes to make substantial changes to the capital programme envisaged in its business plan, this will need to be communicated to, and to the extent it is practicable agreed with, airspace users in an appropriate manner. Depending on the results of this review, there could ultimately be a penalty, capped at £36 million, which is linked to NERL's return on equity on its capex in RP3. Taken together, our proposals for capex incentives and the obligations on NERL to improve governance arrangements should ensure that all capex spending agreed with airspace users (including any overspend) is added to NERL's regulatory asses base (RAB), as long as (i) projects are delivered in a timely matter, including scope for NERL to delay or change projects if airspace users agree; (ii) the projects are delivered efficiently; and (iii) NERL provides airspace users with convincing and reasonable reasons for any overspend, in a timely manner. In addition, annual reporting requirements on NERL should allow it to highlight any difficult issues that might arise and allow these to be addressed and dealt with at the earliest opportunity.

5 NERL had planned to address airspace redesign in RP2 through its London Airspace Management Programme phase 2 (LAMP2). However, in 2015, it was decided in the light of several key challenges to delay the implementation of LAMP2 to RP3 and replace ageing infrastructure instead.

- **The Oceanic price control.** The Oceanic service is a relatively small part of NERL's business, constituting about 4% of NERL's total costs and revenues in RP2. It relates to the air navigation services that NERL provides for North Atlantic traffic. NERL's proposals for delivering the Oceanic service in RP3 include introducing new satellite-based surveillance technology to provide more accurate and timely aircraft position information. There was particular disagreement between stakeholders and NERL about the value of this new technology. Nonetheless, we considered that it was important to facilitate the investment in this technology given the potential safety benefits. While our analysis supported NERL's view about the potential value of these investments, we felt that efficiencies were possible in the cost of its delivery and improved governance arrangements were needed to give stakeholders reasonable comfort over its introduction.

16. Overall, we had to make difficult regulatory judgements in the light of the information available and our knowledge of the industry to set these price controls. In reaching our final decisions we sought to act, as required by law, in a manner that was best calculated to comply with our statutory duties, and in particular to deliver a safe and reliable airspace service, provide funding and incentives for NERL to play its full part in airspace modernisation, while also having regard to the financeability of NERL's regulated business and the value for money for the users of its services.

17. The remainder of this paper gives further supporting information, including references to the main background papers and other documents. Our staff will be available to provide the CMA with any further assistance that it may require, and we look forward to discussing these matters with the CMA in due course.

Chapter 1

Introduction and background

Purpose of this document

1.1 NATS (En Route) plc, known as NERL, is the monopoly provider of en route and certain approach air traffic services (ATS) in the UK.[6] It is a statutory monopoly under domestic and EU law and as such it is the only company licensed to provide these services in the UK. NERL is subject to economic regulation of its en route services under the European Union Single European Sky (EU SES) performance scheme, the TA 2000 and through the application of its licence conditions. The CAA is charged with implementing the EU SES and making such proposed changes to NERL's licence as best serve the public interest. In particular, the CAA is required by EU SES to set targets and incentives for NERL with regard to four key performance areas – safety, capacity, environment and cost efficiency – over five-year regulatory cycles, known as reference periods.

1.2 Reference Period 2 (RP2) ends on 31 December 2019. Reference Period 3 (RP3) will run from 1 January 2020 to 31 December 2024. On 29 August 2019 the CAA published its proposals for RP3 in CAP 1830. These proposals, which are referred to in this document as our final decisions (or decision, as appropriate) have been rejected by NERL, and the CAA has chosen to refer the matter to the CMA under s.12 TA 2000 for resolution.

1.3 A letter from the CAA making this reference accompanies this document.[7] This reference invites the CMA to consider whether or not a failure to set these price controls and impose the appropriate licence modifications would be expected to operate against the public interest. If so, the CMA is respectfully invited to either confirm that the CAA's proposals would remedy that adverse effect, or set out alternative price controls or licence modifications which would do so.

1.4 The licence modifications that the CAA is requesting that the CMA reviews are:

- Condition 10: Business plans, service and investment plans, periodic reports and a new financial incentive linked to the licence delivery programme;

6 In simple terms, "en route ATC" controls aircraft movements through UK airspace and between airports, while "approach ATC" controls aircraft in the immediate vicinity of airports, coordinating take-offs and landings.

7 RP3 reference CAA document 001

- Condition 10a: New condition setting out roles and responsibilities of NERL in respect of airspace modernisation;
- Condition 21: Control of Eurocontrol[8] service charges and changes in environmental and capacity deliverables;
- Condition 21a: Control of London Approach charges; and
- Condition 22: Oceanic charges and the introduction of a space-based automatic dependent surveillance – broadcast (ADS-B) system

1.5 This document sets out the basis for the referral and puts forward the view that unless the licence modifications are made, the provision of air traffic services by NERL will operate against the public interest.

1.6 During the course of developing our final decisions for RP3, much has been written by the CAA, NERL and by other stakeholders. The purpose of this document is not, as far as possible, to repeat these arguments, as these documents are already available to you to review. Rather, in this document we summarise the factors that are, in our view, the most significant that the CMA may wish to consider and explain the judgements that we have made in arriving at our final decision.

1.7 In the rest of this chapter, we provide:

- further information on the CAA and the legal frameworks underpinning our decisions on RP3;
- background information on NERL and its regulated activities; and
- a broad description of the RP3 process and key issues.

The CAA and our Statutory Duties

1.8 The CAA is the UK's specialist aviation regulator. We work so that:

- the aviation industry meets the highest safety standards;
- consumers have choice, value for money, and are protected and treated fairly when they fly;
- through efficient use of airspace, the environmental impact of aviation on local communities is effectively managed and CO_2 emissions are reduced; and
- the aviation industry manages security risks effectively.[9]

[8] This is the main UK en route price control; in the NERL licence it is referred to as the "Eurocontrol service"

[9] S.4 Civil Aviation Act 1982

1.9 With respect to safety, most aviation regulation and policy is harmonised across the world to ensure consistent levels of safety and consumer protection. Worldwide safety regulations are set by the International Civil Aviation Organisation (ICAO) and within Europe by the European Aviation Safety Agency (EASA).

1.10 As well as our responsibilities for aviation safety and consumer protection, we act as the economic regulator of UK airports and certain aspects of air traffic control, specifically en route and certain approach services which are covered by this referral.

1.11 NERL is currently regulated under (i) the EU SES performance scheme (ii) the TA 2000 as amended[10] and (iii) the terms of its licence. The EU SES provides for the setting of targets and incentives in four key performance areas – safety, capacity, environment and cost efficiency – over five-year reference periods. The two regimes complement each other in that the broad framework provided for in the EU SES is consistent with our statutory duties in the TA 2000 and provides advantages of a complementary approach to airspace and ATS regulation across Europe.

Statutory Background

1.12 The CAA has the power to propose changes to NERL's licence. However, the CAA does not have the statutory power to make unilateral changes to these terms, other than to specify the charges which NERL can apply to end users. Section 11(1) TA 2000 allows the CAA to make modifications to the Licence by agreement with the licence holder. However, NERL has not consented to the licence changes proposed for the RP3 price controls.

1.13 In the absence of consent from NERL under s.12 TA 2000 the CAA may request the CMA to:

> *"investigate and report on-*
>
> *(a) whether any matters which are specified in the reference and which relate to the provision of air traffic services by or on behalf of a licence holder operate against the public interest or may be expected to do so;*
>
> *(b) if so, whether the effects adverse to the public interest which the matters have or may be expected to have could be remedied or prevented by modifying the conditions of the licence."*

[10] Full texts of the relevant provisions are set out in appendix C to this reference.

1.14 Section 12(8) expands upon the definition of "public interest" by citing sections 1 and 2 TA 2000, which the CMA is to take into account upon making its determination, as set out in appendix C.

1.15 In summary, we consider that our final decisions on the price control for RP3 and associated licence modifications further the interests of stakeholders (which include operators and owners of aircraft, owners and managers of aerodromes, persons travelling in aircraft and persons with rights in property carried in them) in respect of range, availability, continuity, cost and quality of air traffic services. They are also consistent with the governing EU legislation in this area, as summarised in this chapter and also in appendix C.

1.16 In reaching our conclusions regarding RP3, we took account of international obligations notified to us by the Secretary of State (s.2(2)(d) TA 2000). These concern the Chicago Convention 1944, Eurocontrol Multilateral Agreement relating to route charges 1981, provisions in air services agreements between the European Community or the United Kingdom with other countries, and agreements between the United Kingdom and Republic of Ireland on parts of the Atlantic Ocean. We have not been notified by the Secretary of State of any "guidance on environmental obligations" (s.2(2)(e) TA 2000).

Allowing for the regulatory margin of discretion

1.17 Both the Competition Commission (as it then was), the CMA and the Competition Appeal Tribunal (CAT) have recognised that appropriate weight must be given to the judgements of expert regulators that are familiar with a regulated industry. Accordingly, they have emphasised that regulatory judgements should not be readily dismissed on appeal and that the role of the CMA is not to impose its own solution where a number of alternative solutions are available, and a regulator has acted reasonably.[11] Although we recognise the appeal regime for energy markets has different characteristics, it noteworthy that the CMA has reiterated this approach recently in similar circumstances.[12]

1.18 We respectfully suggest that the CMA bears these considerations in mind in its review of the RP3 price controls and adopts an appropriate degree of restraint in relation to challenging the approach and judgements we have taken in reaching our final decisions on these matters.

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11 See, for example, the Competition Commission's MCT(1) determination (Hutchison 3G UK Limited and BT v Ofcom, consolidated, Cases 1083/3/3/07 and1085/3/3/07, Mobile Call Termination, 16 January 2000) at paragraphs 1.30-1.33 and British Sky Broadcasting Limited & Ors v Ofcom [2012] CAT 20, Case No. 1156-1159/8/3/10, p.40, para. 84 (c)-(d).

12 Letter from CMA to Ofcom - CMA Response: Clarification of our position on potential Energy Licence Modification Appeals – dated 30 October 2019

The Commission's process for assessing Performance Plans

1.19 The EU SES is currently provided by the Commission Implementing Regulation (EU) 2019/317[13] (the Implementing Regulation). The UK carries out its obligations under the Implementing Regulation through the TA 2000 licencing scheme and modifications to NERL's licence. It should be noted that an EU performance scheme has been in place since 2012 and any performance targets adopted by Member States must have been and still must be in compliance with the relevant EU regulations.

1.20 A performance plan for NERL was submitted to the Commission in September 2019 as required under Article 10 Implementing Regulation for the period referenced in Article 7 (beginning January 2020) of the same. In line with the legal framework, it is awaiting approval by the Commission.[14]

EU Exit

1.21 In the event of the UK's exit from the EU with an agreement the provisions set out in the Implementing Regulation would continue to apply for the foreseeable future. The withdrawal agreement as at the time of drafting this submission provides for the continuation of EU law under Article 7 at least for the duration of a transition period described in Article 126 (currently 31 December 2020) – see Article 127(1).[15]

1.22 In the event that the UK leaves the EU without an agreement it is proposed that the provisions in The Air Traffic Management (Amendment etc.) Regulations 2019[16] would revoke the Implementing Regulation and so NERL's regulation would be based solely on the provisions in the TA 2000 and the CAA's licencing scheme. However, the CAA's present intention is to maintain comparable performance targets to those set by the EU SES in the domestic regime. In either scenario therefore, nothing would change for the purposes of this reference.

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13 Commission Implementing Regulation (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the single European Sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) 391/2013 OJEU L 56, 25.2.2019, pp. 1–67. This is also known as the European Union Single European Sky performance scheme.

14 Under Article 16 of the EU law, performance plans may only be adopted once they have been approved by the Commission.

15 The most recent version is dated 19 October 2019 and is available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/840655/Agreement_on_the_withdrawal_of_the_United_Kingdom_of_Great_Britain_and_Northern_Ireland_from_the_European_Union_and_the_European_Atomic_Energy_Community.pdf..

16 The provisions revoking the Implementing Regulation have not been published owing to parliamentary decisions.

Background to CAA's Determination

NERL in outline

1.23 NERL provides a number of services, some which are regulated and some which are not.[17]

- NERL is the monopoly provider of the following three services:
  - i. en route air navigation services (ANS) in the UK, which involves managing aircraft movements on their journeys between airports in the UK. We refer to this service as the en route service[18];
  - ii. terminal approach air navigation services (TANS) for London airports, which involves managing the airport approach function for aircraft arriving to, and departure from, all London airports. We refer to this service as 'London Approach'; and
  - iii. en route ANS for the airspace in the Shanwick Flight Information Region in the North East Atlantic. We refer to this as 'Oceanic services'.
- NERL also provides a number of other services, including services to North Sea Helicopters and the military. These services are contestable, meaning that NERL is not necessarily a monopoly provider, and these services are not subject to price controls.

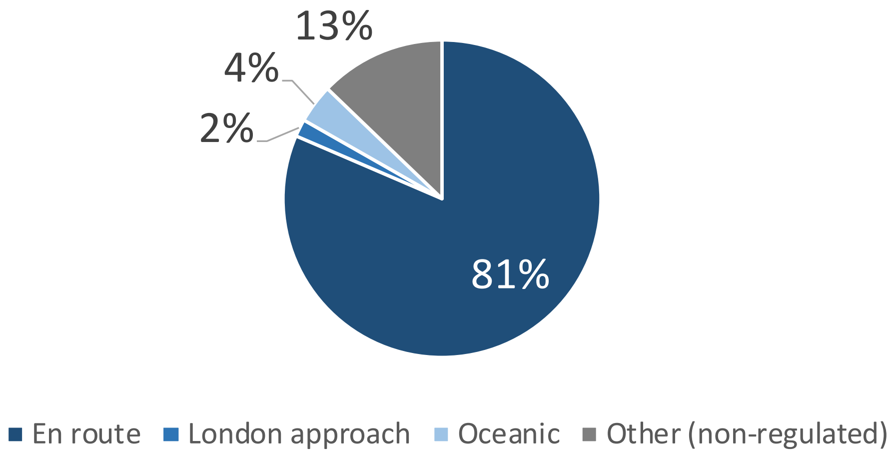
1.24 To provide a sense of relative scale, the chart below shows a breakdown of NERL's total revenues in 2018, split out across these different services, as reported in NERL's 2018 regulatory accounts.[19]

17 Further detail on the services that NERL provides are presented in appendix 2.

18 In the NERL Licence, the charge control for this service is referred to "Control of Eurocontrol Service Charges".

19 https://www.nats.aero/wp-content/uploads/2019/06/2018-NERL-Regulatory-Accounts.pdf

Figure 2: Breakdown of NERL's revenue in 2018

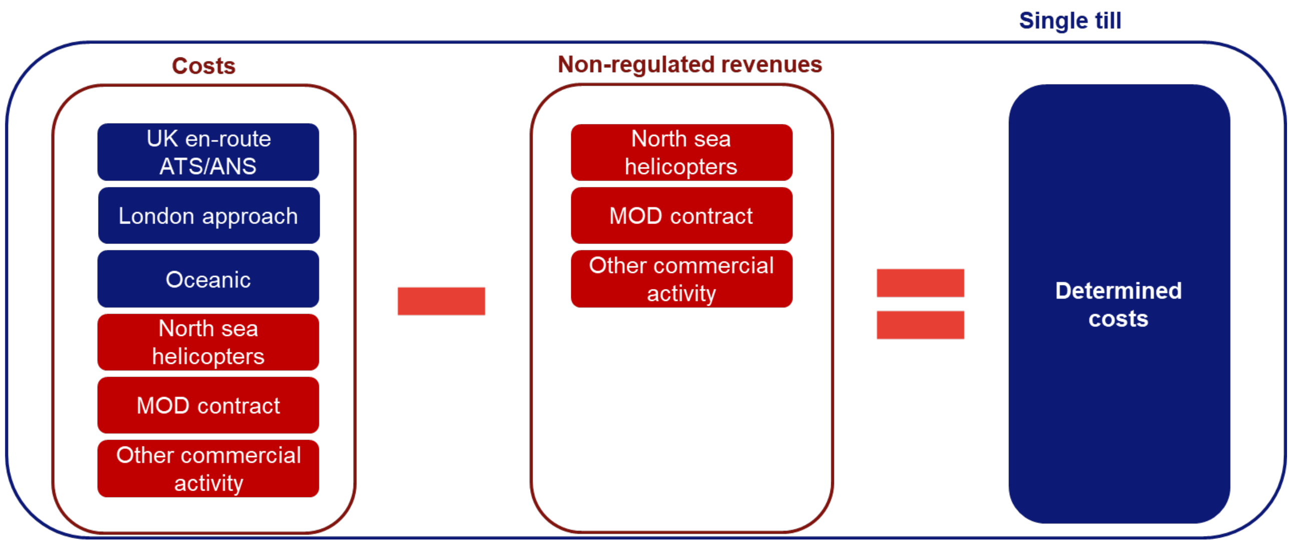


Source: NERL regulatory accounts

1.25 We set three separate price caps, one for each of the monopoly services, and all of these caps are included in this reference to the CMA.

1.26 Because there are significant shared costs between NERL's price control and other/non-regulated activities we have adopted a "single till" approach for RP3 (as with our previous determinations). This means that in determining NERL's allowed costs, we subtract our reasonable projection of non-regulated revenues from its total costs (which includes the costs of its regulated and non-regulated services) to arrive at determined costs, which must be recovered from regulated charges. This is designed to try and ensure that users of NERL's monopoly services benefit in lower regulated charges from profits made from non-regulated services that rely on the same assets for which NERL is remunerated for by our single till calculations. This is illustrated below.

Figure 3: We adopt a single till approach for RP3



Source: CAA

Economic regulation: the context coming into RP3

1.27 NERL has been subject to economic regulation since its privatisation in 2001 and has been subject to the SES Performance Scheme since 2012. To be able to understand our proposals for RP3, it will be important to understand the experience from the earlier control periods, in particular RP2.

1.28 Overall, there has been a general improvement across most key performance areas during RP2 and NERL has met most targets. NERL's unit costs have decreased in real terms over RP1 and the start of RP2. For instance, NERL's unit opex fell by around 2.3% per year from 2007 to 2017.

1.29 Nonetheless, RP2 was significantly affected by NERL's decision to make substantial changes to the composition of its capital expenditure (capex) programme, shortly after the start of RP2. NERL chose to divert resources from airspace re-design to the replacement of its legacy systems. NERL said this was because of issues with the alteration of plans for airspace change in the London area, specifically integration with the approach that Gatwick Airport was prepared to take to airspace change. It also referred to the DfT changing its policy and the CAA changing the Airspace Change Proposal process. Stakeholders were concerned that this was done without effective consultation and governance mechanisms. These concerns were raised early in our RP3 review process and provide an important context for assessing our final decisions. As a result of this experience, it was important for us to put in place mechanisms in RP3 that permit NERL an appropriate degree of flexibility in how it implements necessary investment while providing greater regulatory and stakeholder oversight. The incentives on NERL to improve its governance arrangements are designed to give stakeholders more influence over and confidence in investment plans and decisions and provide better change management arrangements. Nonetheless, NERL remains accountable for delivery of investment and the associated benefits to consumers. The overarching aim is that NERL plays its full part in helping deliver the AMS.

1.30 Further, notwithstanding its steady progress on cost efficiency and performance, stakeholders have also expressed concerns that the unit rates charged for users of UK airspace remain some of the highest in Europe. These charges have increased gradually in real terms since 2011, although they fell sharply in 2017, in part reflecting the devaluation of sterling – en route air navigation charges are collected by Eurocontrol on behalf of Member States (and their ANSPs) and paid in in euros.

Airspace modernisation

1.31 In addition to our European and domestic statutory duties, the key strategic consideration for RP3 has been airspace modernisation. In particular, this refers to the UK's Airspace Modernisation Strategy (AMS), which is intended to deliver a fundamental, system-wide upgrade to modernise critical national infrastructure and deliver a broad range of benefits in all key performance areas and more widely. The AMS is being introduced at the request of Government and delivers Government policy. Its delivery is jointly sponsored by the CAA and the Department for Transport (DfT). It involves updating the design of the network of routes in the air and using new technology to improve how air traffic is managed. Put simply, against a background of rising demand for air travel and improvements to aircraft performance, modernisation is necessary to reduce delays and improve the efficiency of aircraft flight paths to benefit passengers and manage the environmental impacts.

1.32 Airspace modernisation is not the sole responsibility of NERL. Other stakeholders, such as airports, have significant responsibilities. However, NERL has a key role to play, including to provide infrastructure in their areas of responsibility and an overall planning and coordination role for all airspace users. NERL is tasked through directions from government with a role in maintaining the effectiveness of the UK’s air traffic management network. NERL also has a responsibility for changing the design of upper airspace – which in turn, has to correlate with the designs that airports develop in lower airspace.

1.33 We consider this national strategic objective is fundamental to furthering the interests of airspace users and therefore a key priority for RP3.

1.34 NERL will need to build on the work it has done to update its legacy systems in RP2 and make further changes to allow it to make the airspace changes that will be necessary to implement airspace modernisation in a coordinated way and deliver significant improvements in its operational performance. We expect NERL not only to play a full role in coordinating and implementing airspace modernisation but also to take advantages of the opportunities provided by new technology and systems to deliver significant operational efficiencies during the latter stages of the RP3 period and for the RP4 period. We are expecting that these cost savings will be passed through to airspace users in the form of lower charges at the RP4 review.

How our proposals help NERL deal with the challenges of airspace modernisation

Although the implementation of airspace modernisation adds a significant element of uncertainty to the RP3 period with regards to the determination of key price control building blocks we have taken very substantial steps (as summarised below and explained further detail in chapter 2) to allow NERL to deliver its full part in airspace modernisation, including:

- the nature and scale of capital investment needed to deliver modernisation. We have allowed all the capital expenditure NERL has requested for its role in airspace modernisation (£115 million), and we will also allow any overspend provided that it is incurred efficiently, delivered on time, and NERL provides airspace users with convincing and reasonable reasons for any overspend and/or delay, in a timely manner;
- the transitional operating and other costs of delivery. We have allowed all of NERL's opex increases from 2017 to the start of RP3 and all of its opex projections for the first 3 years of RP3. We have also ringfenced funding for airspace modernisation-specific operating costs by allowing £42 million for the NERL Opex Flexibility Fund and £15 million for the Airspace Change Organising Group;
- the ongoing impact on cost levels and the scope for future efficiency. While the introduction of new technology should provide very significant scope for efficiency gains we have made only modest assumptions with respect to efficiency and only for the last 2 years of the RP3 price control period; and
- the short run impact on delay performance, resulting from airspace and technology transitions to deliver a modernised airspace. We have moderated the targets that NERL is incentivised to achieve, to allow for the challenges of introducing the new systems and processes that will

1.35 Therefore, our final decisions have provided for significant flexibility and should allow NERL to respond to the uncertainties in RP3 and play a leading role in the delivery of airspace modernisation.

The RP3 process

1.36 The overall aim of the price control review process was to provide a robust approach to resetting NERL's price controls in a way that satisfied the legal requirements placed on the UK as a member of the EU SES and the TA 2000.

How our Transport Act duties co-exist alongside the European Framework

Our final decision on the economic regulation of NERL forms the basis of the performance plan that the Department for Transport (DfT) has submitted to the European Commission for RP3. While running concurrently with the European Commission's process, we have determined our own timeline and approach to reach our final decision, which we have then confirmed to be consistent with the EU RP3 requirements.

Our final decisions were formulated on the basis of our Transport Act duties, with only minor adjustments needed to comply with the European framework. For example, the performance targets put forward by the European Commission set the format for the targets we have set for NERL. However, we have calibrated and added to these targets in light of our TA 2000 duties.

1.37 The RP3 price control process formally commenced in April 2017 and has included five substantive regulatory publications, three formal consultations, extensive stakeholder input and ongoing informal engagement with stakeholders and NERL.[20] In areas where expert input was appropriate, we commissioned reports from third party experts (hereafter referred to as "our consultants"), for example on the cost of capital and the efficient operating costs.[21] We sought to design a process that followed best practice in UK economic regulation to ensure an appropriate approach to both consultation and wider stakeholder engagement.[22]

1.38 The main stages of the RP3 process were as follows:

i. In April 2017, we published our discussion document on the desired main objectives for RP3[23] and in September 2017 we launched a consultation on our business plan guidance for NERL.[24]

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20 All details on our process and consultation can be found on our homepage here: https://www.caa.co.uk/Commercial-industry/Airspace/Air-traffic-control/Air-navigation-services/NERL-Licence/

21 Further detail on the consultant reports we commissioned is provided in appendix 2

22 For example, we followed recommendations set out by BEIS, such as in "Better regulation framework: guidance", BEIS August 2018, and the "Better Regulation Framework Manual", BEIS March 2015.

23 CAP1511 Strategic outcomes for the economic regulation of NERL 2020-2024: discussion document (April 2017)

24 CAP1593 Guidance for NERL in preparing its Business Plan for Reference Period 3: Consultation document (September 2017)

ii. In January 2018, we published our business plan guidance[25] and in April 2018, NERL produced an IBP which it used as the basis for customer consultation and engagement. During this engagement period, we sent a letter to NERL reflecting our views that the IBP had fallen short of expectations as put forward in the business plan guidance.[26]

iii. Extensive customer consultation on NERL's IBP was carried out by the Customer Consultation Working Group (CCWG) between May and September 2018, culminating in a report by the Group's co-chairs.[27] We sent a further letter in September 2018, outlining the CAA's expectations for the revised business plan.[28]

iv. In October 2018, NERL published a revised business plan.[29]

v. In February 2019, we published a document containing our draft decision on the economic regulation of NERL[30] and in August 2019 we published our final decision on RP3.[31] This was rejected by NERL.[32]

1.39 At every stage, consultation and stakeholder engagement was invited and encouraged, including in a number of formal consultations on the aims and findings of the regulatory process. Wherever a consultation was undertaken, the we published and addressed the responses of interested parties.

1.40 In coming to our final decisions we have considered a wide range of evidence including NERL's business plan, various reports produced by our consultants, the views of stakeholders and wider strategic considerations, including the pressing need for airspace modernisation.[33]

25 CAP1625 Guidance for NERL in preparing its Business Plan for Reference Period 3 (January 2018)

26 CAA letter from Richard Moriarty to Martin Rolfe, "NERL's RP3 initial business plan", 25 May 2018

27 RP3 Customer Consultation Working Group Report of the Co-Chairs (October 2018)

28 CAA letter from Paul Smith to Martin Rolfe, "NERL's RP3 business plan", 25 September 2018

29 NERL RP3 Business Plan, 26 October 2018

30 CAP1758 Draft UK RP3 Performance Plan proposals (February 2019)

31 CAP1830 UK RP3 decision document (August 2019)

32 NATS letter from Martin Rolfe to Richard Moriarty, "CAA RP3 Final Decision Document CAP 1830", 10 September 2019

33 Further detail on consultation with stakeholders is provided in appendix B

Chapter 2

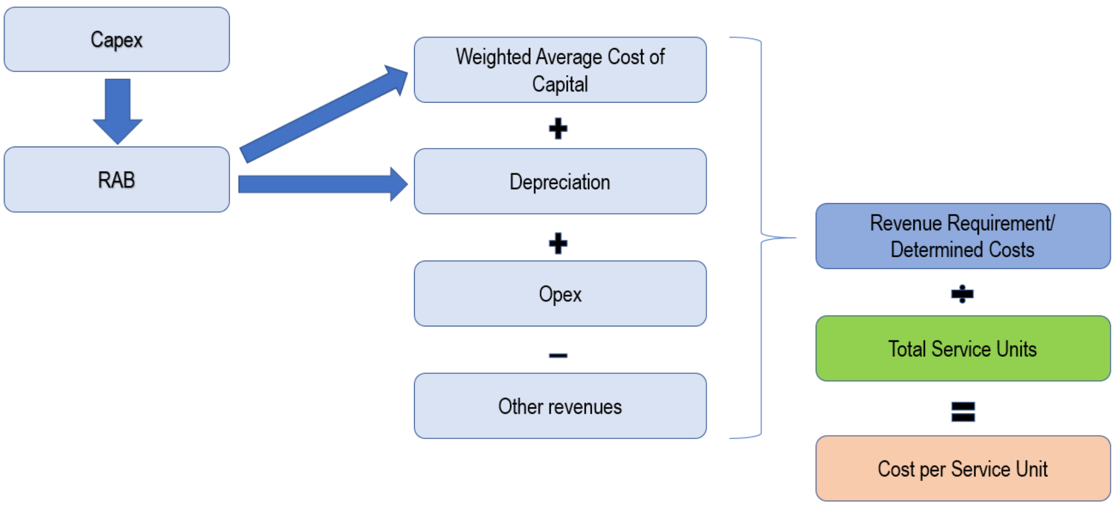
The price controls

2.1 This chapter provides an outline of our overall approach to determining NERL's price controls as well as providing an overview of the main areas that we understand NERL wishes to dispute.

2.2 Our approach was to try to determine the price controls in such a way as to meet our statutory duties – including in relation to the overarching objective of safety, to further the interests of users, promote efficiency and economy and to have regard to NERL's financeability. We recognise that there are challenges involved in doing this, given the inter-dependencies between these matters. Nonetheless, we have prioritised the delivery of airspace modernisation over short term efficiency targets, as this should best further the interests of users.

2.3 To determine the appropriate allowances, we calculated NERL's charges for RP3 on the basis of a 'building block' approach illustrated below. This highlights the key components that determine prices. It is typical of the approach used in UK economic regulation and is well understood and valued by investors, so it helps underpin the provision of cost-effective finance to support investment and long term investor confidence in the regime.

Figure 4: The 'building blocks' approach



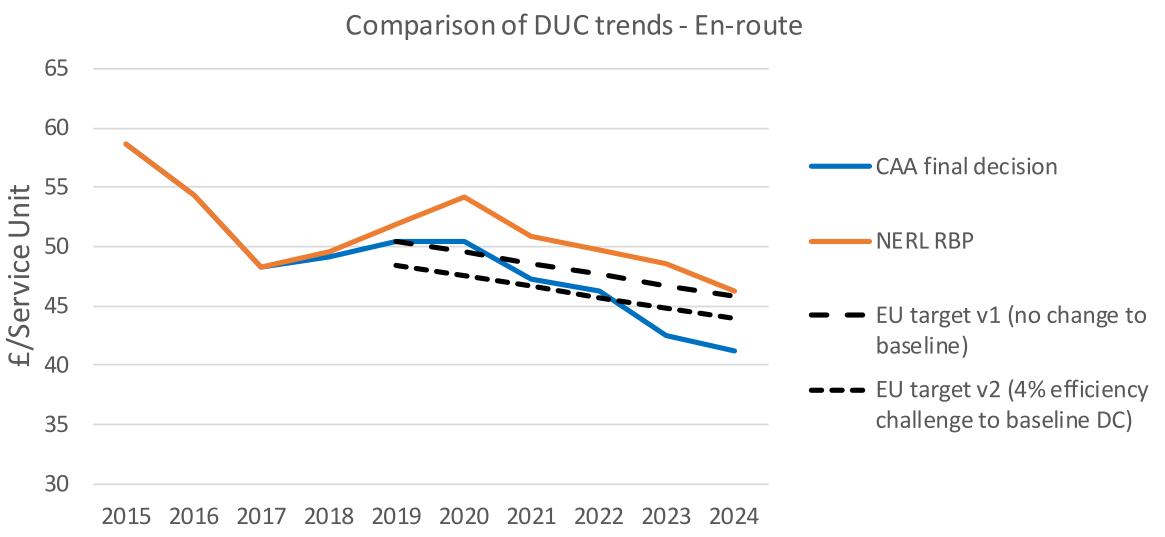
Source: CAA

2.4 Under this approach capital expenditure is not allowed in the year that it is incurred but is added to the RAB and financed by allowances for regulatory depreciation and a reasonable rate of return on undepreciated capital, reflecting the relatively long life of capital assets and the potential for year by year volatility in capital spending. These two building blocks (regulatory depreciation and returns) are then added to an allowance for operating expenditure, which in NERL's case includes a substantial allowance for pension costs, to make up the company's overall revenue requirement. Our reasonable estimate of non-regulated or other revenue is then taken into account in assessing the appropriate level of regulated revenue to be recovered from regulated services, as illustrated above.

2.5 Once the allowed revenue requirement (or determined costs) has been established, regulated charges are set on a per-unit basis (i.e. determined unit costs). NERL's volumes are measured in terms of "service units" (SUs), a standard definition based on the weight of the aircraft and the distance it travels within the controlled airspace.[34]

2.6 The EU SES performance scheme requires the setting of an overall UK cost efficiency target. This is established on the basis the overall determined unit cost (DUC)[35] for en route ANS. The performance scheme requires that the DUC must be consistent with a target set by the Commission. We illustrate below how our final decision compares with the EU target, and compares with the DUC implied by NERL's business plan.

Figure 5: Comparison of DUC trends



Source: CAA

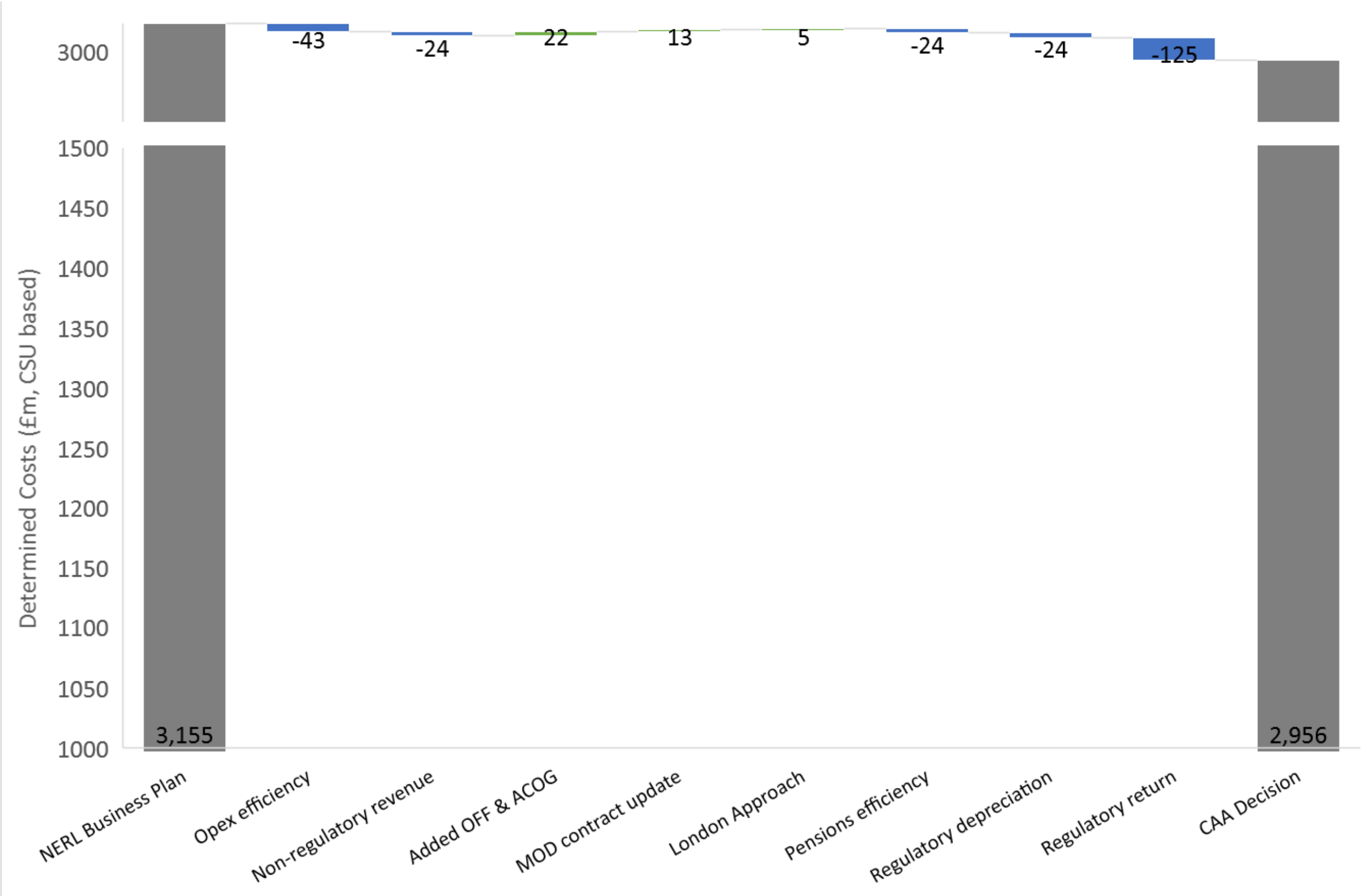
34 More detail on the definition of service units is provided in appendix B

35 The determined unit cost (DUC) is equal to the total costs divided by the total service units (TSUs). Total service units (TSUs) are equal to chargeable service units (CSUs) plus the units of military and exempt flights which are funded separately. Determined costs in our final decision are based on CSUs. However, the EU performance regulation establishes unit costs using TSUs, which is why both terms appear in our final decision document. Where we express determined unit costs (DUCs) on a TSU basis, we make an adjustment of £33m to account for the difference in CSUs and TSUs. This adjustment ensures that DUCs are neutral on a CSU and TSU basis.

2.7 NERL's business plan would only be consistent with the expected EU target in 2019 and 2024 (but not in the period in between) if the Commission allows in full the 2019 baseline DUC (which results in v1 of the target reported in the chart). The Commission has suggested that it might reduce the 2019 baseline to take account of historical outperformance (which results in v2 of the target). NERL's business plan would not be compliant with this in any year. We are awaiting the Commission's formal assessment of the UK performance plan to understand how they have evaluated these targets.

2.8 NERL's UK en route activities account for the largest component of its determined costs. The chart below[36] illustrates the main impacts of our final decisions on NERL's determined costs, compared with NERL's business plan.

Figure 6: En route Determined Costs (£m, CSU based)- NERL business plan vs CAA decision



Source: CAA

2.9 Because the final decisions must be considered in the round when determining the public interest, our reference is framed so that the CMA is required to consider NERL's price controls in their entirety. But our understanding of NERL's

[36] The calculation of this chart is explained in CAA CAP 1830 (2019) page10

main issues of dispute are that they are focussed on the following areas (which are explained in more detail in the remainder of this chapter):

- cost of capital;
- operating cost allowances and operational performance;
- capital expenditure incentives and governance; and
- the Oceanic price control.

Cost of capital

Context

2.10 The cost of capital determines the return that an efficiently-run NERL can expect to earn on the RAB and provides a return on investment. Therefore, it is an important component of the allowed revenue that underpins the price control.

2.11 The cost of capital is a key area of difference. This is highlighted in the table below. On a vanilla WACC basis, the final decision of 2.68% (real RPI) compares to NERL's final business plan of 4.21%, and the RP2 allowance of 4.25%.[37]

Figure 7: RP3 WACC (RPI deflated)

	CAA RP2 allowance	NERL RP3 business plan	CAA RP3 draft decision	NERL RP3 response to draft decision	CAA RP3 final decision
Gearing	60%	60%	60%	60%	60%
Pre-tax cost of debt	2.50%	1.08%	0.86%	1.07%	0.86%
Post-tax cost of equity	6.87%	9.65%	5.13%	8.93%	5.40%
Vanilla WACC	**4.25%**	**4.51%**	**2.57%**	**4.21%**	**2.68%**
Tax rate	37%	12.7%	11.7%		9.9%
Pre-tax WACC	**5.86%**	**5.07%**	**2.84%**		**2.91%**

Source: CAA

2.12 The most significant divergence between NERL's estimates and our own is in the appropriate cost of equity for the business. This accounts for over 90% of the difference in the overall WACC.

[37] The 'vanilla' WACC uses a pre-tax cost of debt and post-tax cost of equity, i.e. does not take into account the impact of taxes on required returns. The pre-tax WACC includes a tax uplift to the cost of equity, which provides a tax allowance for NERL. Other UK regulators typically use a vanilla WACC to determine an allowed return on the regulatory asset base and then make a separate allowance for corporation tax

2.13 In setting the WACC for RP3 we:

- took account of detailed analysis undertaken by our expert advisers which reflected the most recent market information and trends;
- paid regard to previous regulatory decisions and the latest academic review of best practice in setting regulatory WACC;[38]
- carefully reviewed and responded to the submissions and analysis from NERL and other stakeholders, including airlines and Heathrow Airport Limited (HAL); and
- considered the overall financeability of NERL's regulated activities.

Our decisions

2.14 In relation to the specific WACC components, we focus on the cost of equity, and the two components that account for the majority of the gap between our decision and NERL's: the total market return (TMR) and the relative risk profile (measured by beta). The positions on these core components of the cost of equity are summarised in the table below.

Figure 8: RP3 Cost of equity components (RPI deflated)

	CAA RP2 allowance	NERL RP3 business plan	CAA RP3 draft decision	NERL RP3 response to draft decision	CAA RP3 final decision
Total market return	6.25%	6.8%	5.4%	6.25%	5.4%
Asset beta	0.505	0.61	0.46	0.57	0.46
Equity beta	1.11	1.45	0.96	1.35	1.00
Debt beta	0.10	0.05	0.13	0.05	0.10
Post-tax cost of equity	**6.87%**	**9.65%**	**5.13%**	**8.93%**	**5.40%**

Source: CAA

Total market return

2.15 Our estimate of the TMR is based on evidence from studies of long-term equity returns, supported by forward-looking evidence, evidence from professional investor studies, and evidence from other regulatory decisions and the analysis

38 In particular, we refer to recent consultations and determinations from other UK regulators, including Ofwat, Ofcom and Ofgem and the CMA, and the cost of equity study by Professor Wright et al for the UK Regulators Network (UKRN), 'Estimating the cost of capital for implementation of price controls by UK Regulators', March 2018

that underpins them. Our approach to evidence is broadly consistent with previous CMA price control decisions, while also taking into account recommendations from the recent UKRN study on the cost of capital and most recent studies commissioned by other sector regulators, such as Ofgem and Ofwat.[39] We considered evidence provided by NERL and other stakeholders, and how this compared with the overall evidence base.

2.16 They key factors that underpinned our assessment are as follows:

- robust assessment of *ex post* long-term historical returns, reflecting latest information from the Credit Suisse Global Investment Returns Yearbook, combined with an updated assessment of historic inflation in particular with reference to the period during WWII (Bank of England Millennium dataset). This was the approach used in the UKRN cost of equity report;
- recent market trends that point to sharp reductions in the risk-free rate and expected returns on equity; and
- consistency with other recent regulatory decisions – our point estimate of 5.4% in real RPI terms is close to the mid-points of the ranges from Ofgem for RIIO-2, Ofwat's guidance for PR19 and PwC's advice to us in relation to HAL.

2.17 Overall, we consider that retaining the TMR of 5.4% in RPI-deflated terms is consistent with our review of the available evidence, as it is around the mid-point of the ranges from different sources and approaches. In particular, historical average returns appear to support a range of 5-6%, while the forward-looking evidence appears to support a range of around 5.0-5.8% (similar to the 5.1-5.6% recommended by PwC for CAA). Other cross-checks, such as market-to-asset ratios (MARs), investor surveys and international precedent appear to support a TMR towards or below the lower end of these ranges.

Risk profile and beta

2.18 The accepted approach to estimating the asset beta is to measure it directly if the company is listed on a stock exchange, or to use a sample of listed companies in the same sector. This is not possible for NERL. The parent company NATS is not listed and there is only one close comparator, ENAV in Italy, that was listed in 2016.

2.19 Our approach therefore was to estimate the asset beta based an estimate of ENAV's asset beta and wider comparators.

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39 See Figure E.4 in UK RP3 CAA Decision Document: Appendix E - Cost of capital for the full list of sources used

- Beta estimates carried out by our economic advisor (Europe Economics) for the only listed air traffic control comparator, ENAV in Italy, adjusted for terminal services and operational gearing (cross checked with an alternative method without adjustments on terminal services and operational gearing); and
- Beta estimates from companies that shared or had somewhat similar risk characteristics, which included UK utilities and international airports.

2.20 As part of our final decision, we also carried out further cross-checks of our estimates based on the approach adopted by NERL, and with recent estimates from other regulators.

2.21 The rationale for our approach is based on an understanding of the risk profile of NERL. It is a regulated infrastructure company subject to a UK system of regulation. The system of regulation plays an important role in determining how risks are shared between customers and investors. Therefore, other UK regulated activities are a relevant source of comparator evidence and may be at least as relevant as non-UK companies exposed to similar aviation risk.

2.22 Nevertheless, NERL likely faces higher risk than UK utilities, such as greater exposure to volume risk, although it is still heavily protected against the majority of volume risk.[40] Potentially the operational leverage could also drive some differential in level of risk compared to utilities. This is why we have used UK utility betas as a credible lower bound for our beta estimate.

2.23 On the other hand, airport comparators have a similar exposure to aviation demand risk but largely operate without the same level of regulatory protections, such as traffic risk-sharing and pension cost pass-through. We therefore considered Europe Economics' view on HAL's beta to set an upper bound for our beta estimate.

2.24 Given that the estimates from Europe Economics on the ENAV beta (with both specifications) lie towards the middle of the lower and upper bound, and that our cross-checks using NERL's approach support an asset beta slightly below that in our draft proposals, we felt confident that ours is a reasonable and conservative basis for setting the asset beta value.

2.25 In relation to the debt beta, and in light of evidence provided by NERL in its response to our draft decision that suggested a lower plausible range, we have adopted a slightly lower value in our final decision.

2.26 Taking the asset beta and debt beta together results in an equity beta of 1.0. Given the significant risk protections that NERL enjoys – including the fact that all

40 Note that we differentiate here between the actual volume risk that NERL faces, and the protections it enjoys under the volume risk sharing mechanism

its exceptional high pension costs are passed through in full – we consider it unlikely that NERL would be riskier than the market and have an equity beta greater than 1.0. We therefore consider our estimate of the equity beta to be reasonably generous to NERL's shareholders.

Other components of the WACC

2.27 This assessment has focussed on the main component of the WACC calculation. Other components, such as the risk-free rate, gearing and cost of debt, have been estimated using established methods adopted by other regulators or the CMA. There is little difference between NERL and CAA on these components.

2.28 Full details of the estimation of all components of the WACC are provided appendix E to our final decisions.

Conclusions on the WACC

2.29 It is important to note that while we have considered individual elements, we have also made an overall judgement about the appropriate WACC. In making this judgement, we have considered stakeholder views on the WACC and cross-checked the overall cost of equity and WACC with recent consultations and decisions from other UK regulators, while recognising the differences in the risks that NERL faces. This overall judgement is an important cross check to ensure that the judgements on individual parameters (that can be particularly difficult given the relatively wide range of technical analysis that is available) are reasonable. Our final decision on the cost of capital is based on robust and the most up-to-date evidence available at the time and is consistent with other regulatory decisions and best practice. We have carefully considered the evidence put forward by NERL, but we concluded that NERL's proposals would not be in the public interest.

2.30 Nonetheless, in considering the evidence provided by NERL our final decision reflects changes from our draft proposal to reflect where NERL had provided credible evidence for change. We consider that the cost of capital in our final decision allows an appropriate rate of return on investment and should help ensure that NERL remains financeable,[41] particularly in the context of its statutory monopoly, limited financial exposure to volume risk and significant statutory and regulatory protection to ensure the funding of pensions costs.

[41] Full details of our financeability assessment are provided in UK RP3 CAA Decision Document: Appendix G - Financeability

Operating costs and operational performance

Context

2.31 NERL's expenditure on operating costs (opex) funds its day-to-day activities, including ensuring it has sufficient air traffic controllers and support staff to allow it to provide a safe and high-quality service. Over the period of RP3 opex will also be important in supporting airspace modernisation as it will be appropriate for NERL to incur costs in training staff on new technology and operating processes and procedures.

2.32 Opex also makes up the largest single "building block" of our RP3 determination, representing more than 70% of NERL's determined costs.[42] The reasoning supporting our final decision, how it evolved from our draft proposal, taking into account representations from NERL and other stakeholders, is set out in chapter 5 of the final decision and appendix D to this submission, and is summarised below.

2.33 Our assessment of the appropriate regulatory allowances for opex was based around four main considerations:

- the paramount importance of safety and that our final decisions should support the safe provision by NERL of air traffic services;
- RP3 is not a business as usual period. Airspace modernisation is a key strategic objective of RP3, delivering a fundamental, system-wide upgrade to modernise critical national infrastructure and deliver a broad range of benefits to airspace users in all key performance areas;
- the importance of NERL's day-to-day operational performance to its customers and to airline passengers; and
- our statutory duty to promote economy and efficiency on the part of NERL.

Our decisions

2.34 In making judgements on NERL's price controls, and in particular in relation to opex, we have sought to estimate an appropriate revenue allowance based on a range of evidence about what an efficiently run company would require. Nonetheless, we do not seek to specify precisely how the company should either organise itself, spend its revenue allowances, meet its statutory requirements, meet demand or provide a high quality of service. The management of the company is accountable for those decisions.

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42 As detailed in Table 5.7 of CAP 1830, Opex (excl. pensions) accounts for £2,111m of £2,956m total determined costs over RP3.

2.35 We started our assessment by considering the information that NERL had provided in its IBP and then in its revised business plan (RBP). We commissioned consultants to assist us with this assessment and we published the report that Steer and Helios produced on operating and capital costs in February 2019.

2.36 The most striking feature of NERL's business plans was the very sharp increase in opex that it was forecasting between the end of the existing price control period and the start of RP3, with costs forecast to increase by more than 20% between 2017 and 2019.

2.37 Despite an extensive programme of engagement with stakeholders on its business plan the Customer Consultation Working Group (CCWG)[43] co-chairs' report expressed reservations about the evidence NERL had provided on operating efficiency. The work undertaken by Steer and Helios also sought to identify where NERL's business plan had not provided a satisfactory narrative and evidence on efficiency and where practicable attempted to develop an independent view on the likely range for the efficient levels of NERL's costs.

2.38 The figure below shows NERL's business plan forecasts compared to the projections made by Steer and Helios.

Figure 9: NERL's business plan forecasts and the Steer and Helios projections (£m)

		Actual	Actual	Estimated	RP3 – forecast				
		2017	2018	2019	2020	2021	2022	2023	2024
NERL Revised Business Plan		350	386	422	426	424	441	438	427
Steer Helios	High	-	-	-	425	416	429	424	414
	Low	-	-	-	418	407	417	408	396

Source: CAA and Steer/Helios

2.39 We also considered wider evidence and historical trends. For instance, NERL's opex per CSU fell by around 2.3% per year from 2007 to 2017 and the Performance Review Body's estimates that the potential for operating and capital cost efficiencies from NERL's 2014 to 2016 baseline was around 8%.

2.40 Recognising the challenges of providing both a high-quality service and managing the challenges of airspace modernisation it was clear it would not be appropriate to simply project forward historical trends in unit costs. Nonetheless, we had to consider carefully the views of Steer and Helios and stakeholders that NERL's business plan did not provide compelling evidence on efficiency and that it should be able to moderate the increases in costs shown in its business plan,

[43] The CCWG was established by NERL to engage its customers in the development of it RP3 business plan. It was co-chaired by senior NERL and airline representatives and produced a report at the end of the CCWG programme, setting out areas of agreement and disagreement between NERL and its customers.

while continuing to deliver a safe and reliable service and meeting the challenges of airspace modernisation.

2.41 Given the importance of NERL dealing with quality of service issues, making progress with technology change, and pushing forward work on airspace modernisation, our draft proposals recognised **all** of NERL's forecast cost increases between 2017 to 2019 and only applied assumptions about opex efficiencies from 2020 – but with costs in 2024 sill projected to be about 15% above 2017 levels.

Figure 10: NERL's business plan forecasts, Steer and Helios projections and the draft proposal

		Actual	Actual	Estimated	RP3 – forecast				
		2017	2018	2019	2020	2021	2022	2023	2024
NERL revised business plan		350	386	422	426	424	441	438	427
Steer	High	-	-	-	425	416	429	424	414
	Low	-	-	-	418	407	417	408	396
CAA draft prposals		-	-	-	421	414	426	419	404

Source: CAA

2.42 In moving from our draft proposals to our final decisions we took into account extensive stakeholder feedback from NERL, HAL, a number of airlines and trade unions.[44] We noted that airlines in general were content with our draft proposals (although Ryanair and IAG considered we had understated the scope for greater efficiencies from NERL). NERL presented a number of arguments to us as to why our draft proposals should be amended. In considering these arguments we particularly focussed on areas where NERL was able to provide new forecasts or compelling evidence that indicated it was appropriate to alter our proposals. For instance, we agreed to allow a further £15 million transitional costs related to Airspace Change Organising Group (ACOG) on the basis of new evidence presented by NERL that these costs had been excluded from its business plan.

2.43 NERL argued to us that the performance plan could not be delivered within our proposed cost allowance and that any cost savings would need to be targeted on frontline staff. However, NERL failed to provide substantive evidence to support its position on these matters.

2.44 Nonetheless, in recognition of the advantages to NERL's customers and airline passengers of NERL delivering both a high quality service and airspace modernisation we decided to allow NERL its business plan forecast operating

44 A summary of the stakeholder feedback in this area is available in paragraphs 5.13 to 5.19 of our Decision Document (CAP1830)

costs in full up to 2022 and to increase the Opex Flexibility Fund (OFF) by 20%.[45] Our draft proposals had allowed for a significant increase in NERL's costs and our final decisions went even further, allowing a total of £360 million of cost increases over 2017 levels, only £45 million less than the £405 million total increase in NERL's business plan, giving an overall difference between our projections of opex and NERL's business plan of only 2% in total.

2.45 We have not changed the allowances we made for 2023 and 2024, meaning that the annual opex forecast falls by about £24 million over the last two years. This rate of reduction reflects an ongoing efficiency target consistent with historical trends and in the region of 2.3% p.a, which should be achievable given the potential for new technology to allow very significant improvements in operating efficiency.

2.46 Our final decision on opex is shown in the figure below:

Figure 11: NERL business plan forecasts, CAA draft proposals and CAA final decision (£ millions 2017 prices, excluding pensions)

	2017	2018	2019	2020	2021	2022	2023	2024	RP3
NERL RP3 BP Opex	350	386	422	426	424	441	438	427	2156
CAA draft proposal	350	386	422	421	414	426	419	404	2084
CAA final decision	350	386	422	425	423	440	418	404	2111
Difference (NERL to final decision)	N/A	N/A	N/A	0	0	0	-20	-24	-45

Source: CAA

Adjustment for non-regulatory revenues

2.47 Our proposals for RP3 are on a "single till basis", including both the costs and revenues for services such as those related to the Ministry of Defence contract, North Sea Helicopters and other activities which are not directly regulated. The assumptions we have on the costs and revenues are discussed in chapter 5 of the final determination.

2.48 In general, these non-regulated activities fall outside of price control regulation, because they are provided on a competitive basis. They include NERL's Future Military Area Radar Service (FMARS) contract with the MOD, services to North Sea helicopters and services provided to NATS' subsidiary NATS Services Ltd (NSL).

45 The Opex Flexibility Fund is a fund (set at £42m in our final decision) available for NERL to utilise primarily to support its airspace modernisation activities. NERL, after consultation with stakeholders, can apply to us to use the Fund for specific activities.

2.49 In its business plan, NERL presented projections suggesting non-regulated revenues would fall by about 15% by the end of RP3, from a peak of £115 million in 2017 to £91 million by 2024.

2.50 To protect the users of NERL's monopoly services it is important that the single till calculations include consistent projections of both non-regulated revenues and the costs of providing these services. For example, we would expect the reductions in non-regulated activity to be reflected in reduced operating costs or to offset in whole or in part the need to increase costs.

2.51 In formulating our draft proposals, we took into account the lack of persuasive information in NERL's business plan on the reductions in regulated revenues and whether these had been properly reflected in NERLs forecasts of costs. To ensure users would be properly protected we allowed only half the projected fall in non-regulated revenue and so increased the forecast NERL had provided by £49 million in total over the five-year period of RP3. We also made repeated requests that NERL provide additional compelling evidence to demonstrate the impact of the cost savings from non-regulated activities. The additional evidence provided by NERL was limited in this area and did not meet our expectations.

2.52 As a result of these considerations, in our final decision we reduced the size of the adjustment from £49 million[46] in our draft decision (expressed as an upwards adjustment to forecast non-regulated revenues) to £24 million in our final decision (but expressed this as a reduction to opex). This was a judgement to reflect the balance between our concern that NERL had not demonstrated the impact on its business plan of the reduced non-regulated activity and cost savings, and the consideration that NERL faces challenges from delivering airspace modernisation and therefore a desire to avoid risks from setting the operating cost allowance at too low a level.

2.53 In our final decision we adopted NERL's forecasts of non-regulated revenues with modest adjustments to take account of the following factors:

- correct for technical issues raised by NERL around FMARS;
- reduce London Approach revenue by the same percentage change as we applied to en route determined costs in our final decision; and
- include Biggin Hill in the scope of the London Approach service.

46 The CMA should note that in our draft proposals we applied the £49 million adjustment as an increase to non-regulated revenue rather than a reduction opex. In our final decision we applied the adjustment £24 million adjustment to opex, reflecting the importance of NERL focusing on its core activities over the period of airspace modernisation.

Figure 12: NERL business plan forecasts, Steer and Helios ranges and CAA final decisions with non-reg adjustment (£ millions 2017 prices, excluding pensions)

Opex (£m)		Actual	Actual	Estimated	RP3 - forecast				
		2017	2018	2019	2020	2021	2022	2023	2024
NERL revised business plan		350	386	422	426	424	441	438	427
Steer	High	-	-	-	425	416	429	424	414
	Low	-	-	-	418	407	417	408	396
CAA draft proposals		-	-	-	421	414	426	419	404
CAA final decision (pre-revenue adjustment) *		-	-	-	430	428	445	423	409
Non-reg. revenue adjustment **		-	-	-	-5	-5	-5	-5	-5
CAA final decision		-	-	-	425	423	440	418	404

*Includes all NERL Business Plan opex for 2020-22, plus ACOG costs and higher Opex Flexibility Fund

** Non-regulated revenue adjustment made to align forecast costs with NERL's forecasts of non-regulated revenues and activities

Source: CAA

Capacity Performance/delay targets

2.54 Our final decision on opex for NERL's must be considered in the context of the capacity performance/delay targets we have proposed for them.

2.55 Consistent with the EU framework we monitor four different measures relating to NERL's capacity performance which affects flight delay, and we set targets for each of them:[47]

- C1: average minutes of en route air traffic flow management (ATFM) delay per flight;
- C2: average minutes of en route air traffic flow management (ATFM) delay per flight attributable to air navigation services (ANS) performance;

47 Further details are set out in chapter 4 of the final decision. In addition to the capacity performance/delays measures we also apply the 3Di incentive scheme intended to reduce vertical and horizontal flight path inefficiencies. We understand that NERL does not dispute our proposals with respect to this environmental measure, and so we focus here on the capacity measures. More details on the 3Di incentive scheme are in appendix D to the final decision.

- C3, or "Impact Score" which places greater weight on long delays and delays in the morning and the evening peaks; and
- C4, or "Daily Excess Delay Score", which is based on weighted delays exceeding pre-determined thresholds on a daily basis.

2.56 In setting these targets in our final decision we took into account NERL's business plan but with adjustments based on historical performance to seek to ensure that in areas that users most care about (including areas of concern raised by airlines) there interests would be reasonably protected, while moderating our targets from our draft proposals to reflect the impact of airspace modernisation and other investments, particularly in early part of RP3. This means that in general the targets are set at levels above the performance level that NERL has managed to achieve during the last five years. We have also moderated our proposals for financial incentives, to protect both NERL and users from windfall gains and losses arising from the uncertainties associated with airspace modernisation.

2.57 Taken in combination, the increased opex provision, moderated delay targets and lower power incentives, not only provide substantial flexibility to support NERL's airspace modernisation delivery activities, but are also a relevant consideration in terms of the decision on the appropriate cost of capital for NERL in RP3.

2.58 Further details of both the targets and the incentives set are presented in appendix D to this document.

Capital expenditure incentives and governance

Context

2.59 Another key area of dispute in this price control is around our proposals on capital expenditure (capex) incentives and governance. This is not about the level of capex that we have allowed (which is anyway a passthrough for efficiently incurred expenditure), but rather our proposals setting out the way in which NERL should engage with airspace users about its capex programme and for capex incentives.

2.60 Improving capex governance and ensuring that NERL is accountable for its capex programme has always been one of our key outcomes for RP3. When we laid out our strategic vision for RP3 in March 2017[48], an important outcome was for NERL to have greater accountability for delivering its plans.

48 CAP 1511 – Strategic Outcomes for the economic regulation of NERL 2020-2024: discussion document

2.61 Experience from RP2 highlighted the need for improved governance and incentives:

- early on in RP2, NERL changed its capex programme significantly, with forecast costs increasing by around 25%, focussing on replacement of legacy systems rather than airspace modernisation. At that time, airspace users commented that they had little opportunity to challenge NERL on the scope and cost of the programme. They also felt that NERL did not provide enough information for them to be able to scrutinise the plans or comment on how reasonable and justified they were.
- in parallel, we were also concerned by the fact that NERL did not deliver a key strategic project during RP2 as originally planned. NERL had planned to address airspace redesign in RP2 through its London Airspace Management Programme phase 2 (LAMP2). However, in 2015, it was decided in light of several key challenges to delay the implementation of LAMP2 to RP3 and replace ageing infrastructure instead. If NERL had greater accountability over delivery, then at least some of this project and the benefits to airspace users may have already been delivered. At the very least, NERL would have been required to provide a more robust and comprehensive explanation for why the project was delayed.

2.62 We note that NERL did go on to make some improvements to its governance processes during RP2, including increasing the transparency of its SIP.[49] And we also introduced the role of the Independent Reviewer (IR), tasked with reviewing the accuracy of NERL's reporting. This role was introduced following the significant change in NERL's capex plan early in RP2, to help the CAA and airspace users better understand NERL's capital programme and improve the quality of engagement between all stakeholders.

2.63 NERL also proposed some further improvements for RP3. However, as identified in the Customer Consultation Working Group co-chairs' report, even with these improvements, airspace users still remain concerned about NERL's capex governance. In addition to NERL needing to improve its transparency and engagement, airspace users are concerned that plans that are scheduled for RP3 may slip into RP4, thereby further delaying the benefits. Airspace redesign, including that formerly covered by LAMP2[50], must be delivered in RP3 to help

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49 Condition 10(3) of NERL's licence requires NERL to prepare a Service and Investment Plan (SIP) in which it sets out its most up to date capex plans, including updates relative to the previous version, the delivery status of projects against key milestones, and whether NERL foresees any material changes that may impact on its ability to deliver projects in future.

50 We note that the scope of LAMP2 has changed over time. What NERL referred to as LAMP2 in RP2 is different to what it now calls LAMP2. NERL now plans to implement the newly named LAMP1 and LAMP2

facilitate expansion at Heathrow and ease congestion in the South East of England more generally. It was delayed from RP2 to RP3, and further delays should be avoided, unless the decisions to delay have been taken following a robust and transparent consultation and engagement process with all relevant stakeholders.

2.64 We recognise that a large part of NERL's capital programme relates to a large IT programme which is required to help facilitate airspace modernisation (DSESAR[51]) and we accept that it is challenging for airspace users to engage on the details of the programme. However, in our view, it is precisely for this reason that NERL needs to engage more to ensure that airspace users have confidence in the plans.

Our decisions

2.65 Given the importance of enhanced capex governance in both our strategic vision for RP3 and also in the priorities of stakeholders, we undertook specific rounds of stakeholder consultation to develop our proposals in relation to these matters. Following our draft decision, we shared a working note with stakeholders on capex governance in April 2019[52]. The note included a draft proposal, discussion of key risks and a summary of outstanding issues where our policy was still in development. Having considered the views of respondents we circulated a draft policy and processes proposal in July 2019[53] and took account of the additional responses we received in formulating our final decisions on processes and capex incentives, as discussed further below.

Process

2.66 Our decision does not impose a prescriptive approach on NERL. We expect it to be pro-active and to work with airspace users to introduce greater levels of engagement and transparency into its capex governance. We suggested that NERL could learn from the model used at Heathrow, and have made initial suggestions for NERL to consider in developing its approach. The aviation sector benefits from airline stakeholders that are relatively well-informed large users of services, who can provide meaningful input to investment and expenditure decisions, similar to customers in contractual relationships in wholly competitive industries. We are committed to encouraging regulated companies in the sector (including NERL) to take advantage of this resource and utilise the expertise of

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in RP3, and LAMP3 and LAMP4 in early RP4.

51 Deploying Single European Sky ATM Research

52 CAA working note: Capex and Airspace Modernisation Strategy (AMS) funds governance policy development

53 NERL capital expenditure (capex) and Airspace Modernisation Strategy (AMS) funds governance policy and processes - draft for stakeholder comment

airlines to help best inform the approach to quality of service, investment and other expenditure decisions that have a direct impact on users.

2.67 It is important that NERL takes timely and meaningful steps to address stakeholders concerns about its consultation and governance arrangements. NERL should put in place mechanisms that provide for an appropriate degree of flexibility in how it implements necessary investment but also provide for greater stakeholder involvement and oversight. This oversight should be designed to give stakeholders more influence over and confidence in investment plans and decisions and provide better change management arrangements. Nonetheless, NERL will remain accountable for delivery of investment and the associated benefits to consumers.

2.68 As we note below in the discussion of capex incentives we will seek stakeholders' views on NERL's performance in relation to developing and implementing effective governance arrangements in reaching judgments on incentives one and three discussed below.

Capex incentives

2.69 In addition to improving governance we are proposing three types of capex incentives to hold NERL accountable for delivering its capex programme efficiently and on time. Further details can be found in appendix I to our final decision:

1. An overall delivery incentive designed to encourage timely delivery of NERL's capex programme and in particular the elements of the programme that should facilitate and help deliver airspace modernisation.

    a) This will involve a general assessment of NERL's capex delivery, with more focus on the delivery of specific milestones for key programmes related to airspace modernisation. Rather than focussing on whether the delivery was efficient (which is dealt with by incentive (2) below), this focusses on whether NERL delivers the benefits pf planned investment in a timely way. The Independent Reviewer (who will be appointed after a tender process) will have will have a key role in assessing NERL's performance, including taking on board comments from airspace users.

    b) We will not force NERL to deliver a project that turns out to be no longer required, or if circumstances arise such that the project should be rescoped into something new or different. However, this will need to be communicated to, and agreed with, airspace users in an appropriate manner.

c) Depending on the results of this review, there could be a penalty capped at £36 million (2017 CPI prices), which is linked to NERL's return on equity on its capex in RP3.

2. An *ex post* efficiency review, which will consider NERL's RP2 capex, and in due course RP3 capex.

   a) Whereas the incentive above focusses on whether NERL delivered the benefits of its projects in a timely way, this incentive focusses on whether that delivery was efficient.

   b) Before RP4, we will commission an independent review of the cost efficiency of NERL's RP2 capex and early RP3 capex. Due to timing, we would review the efficiency of late RP3 capex at RP5, rather than RP4. If the review identifies any expenditure as inefficient, we may decide to disallow some or all of the inefficient spend. This could be implemented by a downwards adjustment to NERL's starting RAB for RP4 (or RP5 for late RP3 capex).

3. An information incentive designed to ensure NERL provides stakeholders an appropriate level of detail as part of its engagement on its capex.

   a) In the event of any capex overspend during RP3, we will assess the quality of the information that NERL provided to airspace users as the project was developing. If NERL has failed to appropriately explain or justify the overspend to airspace users, we will impose a penalty whereby, NERL will only remunerated at the cost of new debt rather than the full WACC on the level of the overspend.

2.70 If we were to make an adjustment as a result of these incentives, NERL would be able to challenge the decision through a CMA referral at RP4 (or RP5 for late RP3 capex) if it considered the basis of the adjustment to be unreasonable.

2.71 In our view, taken together, our capex incentives should promote efficiency and the timely delivery of projects, which are in line with our statutory duties, and result in a positive outcome for airspace users. We will allow all capex spending (including any overspend), as long as (i) projects are delivered in a timely matter, including scope for NERL to delay projects if airspace users agree; (ii) the projects are delivered efficiently; and (iii) NERL provides airspace users with convincing and reasonable reasons for any overspend, in a timely manner.

Oceanic

Context

2.72 There are five Oceanic Control Areas across the North Atlantic. The management of one of these areas (the Shanwick area) is delegated to the UK and Ireland. NERL's Oceanic service provides air traffic services and datalink communications, while Ireland is responsible for high frequency communications.

2.73 The Oceanic service falls outside of the scope of the EU SES performance scheme. Instead, we regulate the maximum charge that NERL can levy on users for its Oceanic service by conditions in the NERL licence (issued under the TA 00). However, the regulatory periods are aligned and (where appropriate) we have made similar assumptions in setting the Oceanic and UK en route price controls. For the purposes of our financeability assessment we treat NERL as a single business.

2.74 The Oceanic service is a relatively small part of NERL's business, constituting about 4% of NERL's total costs and revenues in RP2. The Oceanic RAB represents about 4% of NERL's total RAB. We provide a brief overview of this price control below, with further detail included in appendix F.

2.75 At present, Oceanic is a non-surveillance operation (meaning there is no radar coverage). NERL's proposals for delivering the Oceanic service in RP3 included the introduction of a space-based automatic dependent surveillance – broadcast (ADS-B) system. This would involve satellites providing more accurate and timely aircraft position information, compared to the current procedural approach. NERL has said that this will improve flight efficiency, increase capacity and ensure a safe operating environment, and benefit airlines and their passengers through lower costs and the potential for more choice through additional flights.

2.76 The CCWG co-chairs' report noted that there were significant concerns from airlines about NERL's ADS-B proposal, particularly in relation to:

- the extent of safety improvements and whether any such improvements justify the (c.60%) increase in the cost of the service that NERL's proposed solution implied;
- whether the fuel benefits estimated by NERL are achievable; and
- whether the user preferred route (UPR) benefits are realisable in practice, given the operational change management challenges.

2.77 On 16 May 2018 it was announced that NSL had purchased a 10% stake in Aireon. This occurred while NERL was in the process of negotiating with Aireon for the use of its services to provide ADS-B coverage over the North Atlantic.

NSL's ownership stake in Aireon raised concerns over a possible conflict of interest given its potential role as provider of ADS-B services to NERL.

Our decisions

2.78 We are of the view that there is a positive benefits case of introducing the ADS-B for Oceanic services. This is based on our analysis of the costs and benefits of its introduction that we consider to be based on relatively conservative assumptions. While some stakeholders disagreed with this analysis, we have received no compelling evidence that suggests we had over stated the benefits of ADS-B.

2.79 We applied cost efficiency targets to the Oceanic price control building blocks that are in line with those applied to en route services in relation to opex, capex and pensions costs.

2.80 In addition, bearing in mind the continuing concerns raised by the airspace users, notably around whether actual benefits will be realised and the possible conflict of interest issues raised by NSL's ownership stake in Aireon, our final decision strengthens the proposed governance arrangements around this investment.

2.81 This includes a review after two years of the benefits of the ADS-B service. This review will seek to objectively explore whether the ADS-B related benefits have exceeded the costs, and whether this is expected to continue. The review will be conducted independently (rather than by NERL, as was the case in our draft decision), but will no longer be required to demonstrate user support for the conclusions (although this would be highly desirable). Should the review conclude that the benefits are broadly aligned to the ADS-B costs, we will not apply any penalty or reward. However, if this does not turn out to be the case, then the following incentive arrangements would apply:

- Should the delivery of ADS-B service by 2022 prove successful with a substantially high rate of the benefits being delivered, we would review our decision to apply a -5% efficiency adjustment to the data charge for 2023 and beyond.
- However, should the expected costs for users exceed the benefits then we will review the regulatory allowance for ADS-B costs with a view to reducing these allowances so that they are proportionate to the benefits, subject to a check on the financeability of NERL's activities.

2.82 We will also work with stakeholders to develop the metrics that we will require NERL to report against every six months and which also will form the basis for the two-year review.

Conclusion

2.83 In this chapter we have set out a summary of our views on those areas of our final decisions where we believe there is most disagreement with NERL. There are clearly other aspects of the control that the CMA may wish to consider and these are covered in the documents listed in appendix B to this submission.

2.84 Our approach was to try to determine the price controls in such a way as to meet our statutory duties – including in relation to the overarching objective of safety, to further the interests of users, promote efficiency and economy and to have regard to NERL's financeability. We recognise that there are challenges involved in doing this, given the interdependencies between these matters. In this context we have prioritised the delivery of airspace modernisation over short term efficiency targets, as this should best further the interests of users.

2.85 To do this we have allowed all the capital expenditure NERL has requested for its role in airspace modernisation and ringfenced other airspace modernisation-specific operating costs from our efficiency challenge. We have allowed for cost increases at the end of RP2, as well as NERL's forecast operating costs for the first part of RP3, which should provide a strong basis for airspace modernisation work that will take place through RP3 and allow NERL to deliver a more resilient service.

2.86 We also made a number of changes between our draft and final decisions that further support NERL's position, particularly in the early parts of RP3. Specifically, we have:

- reduced the efficiency challenges to NERL's allowed operating costs and have allowed NERL's forecast cost increases in 2020 to 2022;
- increased the allowed cost of capital to reflect our judgements on new evidence provided by stakeholders;
- reduced the traffic forecast reflecting more recent forecasts from STATFOR[54], which further reduces downside risks;
- reduced the efficiency challenge to NERL's allowed pension costs and in particular allowed NERL's forecast defined benefit pension deficit cost in 2022;
- proposed a mechanism to correct the allowed depreciation and allowed return in the calculation of the UK en route and Oceanic RABs for any unexpected changes in the wedge between RPI and CPI inflation; and

54 Statistics and forecast service of the Eurocontrol Agency

- reduced potential service penalties for capacity and environment service level targets, compared with our draft proposals and RP2.

2.87 We have assessed whether NERL will be able to finance its activities on the basis of our decisions on its performance plan for RP3 and tested the impact of plausible downside scenarios. These assessments suggest that our decision on RP3 is consistent with our statutory duty to ensure that NERL should not find it unduly difficult to finance its activities. On this basis there should not be a constraint on NERL financing efficient investment, including to support airspace modernisation. We provide further details on our financeability assessment in appendix G to our final decision.

2.88 In light of the decision we made regarding the level of efficient cost allowances, we believe that it is reasonable to also seek to reinforce governance and incentive arrangements around NERL's customer engagement and capital expenditure plans. This recognises NERL's privileged position as a monopoly provider of nationally vital services, and the need to earn the confidence of all relevant stakeholders. Airspace users can reasonably expect that NERL plays its full part in driving forward UK airspace modernisation and delivers its full programme effectively and efficiently. RP3 provides an opportunity for NERL and airspace users to take more ownership of the programme and establish a robust process for meaningful engagement on important decisions on capital expenditure.

2.89 As part of any price control settlement, it is vital that the licensee (NERL in this case) takes on responsibility and accountability for providing an appropriately high quality of service (in this case to airlines and their passengers). In practice, this means NERL meeting all its statutory duties and obligations with respect to service quality, which involve providing a high quality (but not necessarily uniform) experience for the users of its services. We will also intend to hold NERL accountable for fully discharging its key role in the delivery of airspace modernisation and all aspects of its performance plan. Nonetheless, NERL's focus in delivering these outcomes and outputs should always be in the context of its over-riding obligations to maintain and/or improve safety.

2.90 We therefore consider that our decisions will provide flexibility for NERL to play its role in the delivery of airspace modernisation, are consistent with the EU cost efficiency target, provide lower prices over the period and will serve the public interest.

2.91 We welcome the CMA's consideration of these matters.

APPENDIX A

Abbreviations

Abbreviations	
3Di	metric that incorporates flight path inefficiencies
ACOG	Airspace Change Organising Group
ACP	Airspace Change Proposals
ADS-B	automatic dependent surveillance – broadcast system
AIS	aeronautical information services
AMS	Airspace Modernisation Strategy
ANS	air navigation services
ANSL	Air Navigation Solutions Ltd
ANSP	air navigation services provider
APD	Air Passenger Duty
ASEPS	advanced surveillance enhanced procedural separation
ASBU	Aviation System Block Upgrades
ATC	air traffic control
ATCO	air traffic control officer
ATS	air traffic services
ATSA	air traffic services assistant
ATFCM	air traffic flow and capacity management
ATFM	Air Traffic Flow Management
ATM	air traffic management
ATMs	air traffic movements
BAATL	Birmingham Airport Air Traffic Ltd
C1	key performance indicator in the area of capacity - average minutes of ATFM delay
C2	performance indicator in the area of capacity - average minutes of ATFM delay attributable to NERL
C3	performance indicator in the area of capacity - delay impact score
C4	performance indicator in the area of capacity - daily excess delay score
CAAPS	CAA Pension Fund
CAPM	capital asset pricing model
CAS	controlled airspace

Abbreviations	
CAT	Competition Appeal Tribunal
CCO	Continuous Climb Operation
CCWG	Customer Consultation Working Group
CDO	Continuous Descent Operation
CEPA	Cambridge Economic Policy Associates
CMA	Competition and Markets Authority
CMG	Consumers and Markets Group
CNS	Communication Navigation Surveillance
CPI	consumer price index
CRCO	(Eurocontrol) Central Route Charges Office
CSU	chargeable service unit
DB	defined benefit
DC	defined contribution
DC	determined costs
DfT	Department of Transport
DMO	Delivery Monitoring and Oversight
DSESAR	Deploying SESAR – NERL's major technology programme
DUC	determined unit cost
EASA	EU Aviation Safety Agency
EBITDA	earnings before interest, tax, depreciation and amortisation
ENAV	Italian en route and terminal ANSP
EoSM	Effectiveness of Safety Management
EU	European Union
Eurocontrol	An inter-governmental organisation, based in Brussels, established under an international treaty that provide network management, route charging, ANS performance advice, ATM policy advice more broadly and fulfils a civil-military coordination function.
FAB	Functional Airspace Block
FAS	Future Airspace Strategy
FASI-S	Programme of airspace changes in Southern England, part of the wider AMS.
FFO	funds from operations
FIR	flight Information Region
FMARS	future military area radar service
FTE	full time equivalent

Abbreviations	
GA	General Aviation – a broad term that covers recreational flying, business jets and training.
GAD	Government Actuary's Department
Galileo	The EU's GNSS
GANP	Global Air Navigation Plan
GCD	great circle distance
GDP	Gross Domestic Product
GNSS	global navigation satellite system
GPS	Global Positioning System
HAL	Heathrow Airport Limited
IAG	International Airlines Group
IATA	International Air Transport Association
IBP	Initial Business Plan
ICAO	International Civil Aviation Organisation
IFR	instrument flight rules
IR	independent reviewer
KEA	horizontal en route flight efficiency of the actual trajectory indicator
KEP	horizontal en route flight efficiency of the last filed flight plan
KPA	key performance area
KPI	key performance indicator
LAMP	London Airspace Management Programme
MET	Meteorological service to aviation and/or the UK Met Office
MOCCA	Met Office Civil Contingencies Aircraft
LIBOR	London Inter Bank Offered Rate
MOD	Ministry of Defence
NATS	National Air Traffic Services
NATSPG	North Atlantic System Planning Group
NERL	NATS (En Route) plc
NERA	Economic consultancy firm that advised NERL through RP3 process
NM	Network Manager
NOP	Network Operations Plan
NPV	net present value
NSA	National Supervisory Authority
NSL	NATS Services Ltd
OEF	Oxford Economics forecast

Abbreviations	
Ofcom	Office of Communications
OFF	Opex Flexibility Fund
Ofgem	Office of Gas and Electricity Markets
Ofwat	Water Services Regulation Authority
OTS	organised track system
PBCS	Performance based communications and surveillance
PBO	Pensions Benefit Obligation
PBN	Performance Based Navigation
PI	Performance Indicator
PRB	Performance Review Body
RAB	Regulatory Asset Base
RBP	Revised Business Plan
RFR	risk free rate
RIIO-2	The name for Ofgem's next price controls for the network companies running the gas and electricity transmission and distribution networks. (Revenue=Incentives+Innovation+Outputs)
RORE	return on regulated equity
RPS	Regulatory Policy Statement
RP2	Reference Period 2
RP3	Reference Period 3
RP4	Reference Period 4
RPI	retail prices index
S&P	Standard & Poor's
SARG	Safety and Airspace Regulation Group
SES	Single European Sky
SESAR	Single European Sky ATM Research
SIP	Service and Investment Plan
SSP	State Safety Programme
STATFOR	(Eurocontrol's) Statistics and Forecasts Service
TA 2000	Transport Act 2000
TANS	terminal air navigation services

Abbreviations	
TFEU	Treaty on the Functioning of the European Union
TLS	target level of safety
TMR	total market return
TSU	total service units
UKRN	UK Regulators Network
UIR	upper information region
UPR	user preferred routes
VAAC	Volcanic Ash Advisory Centre
WACC	weighted average cost of capital
WAFS	World Area Forecast System

APPENDIX B

Background information

Introduction

B1 This appendix provides additional background information to assist the CMA with the referral of NERL's price control.

B2 First, it is intended to provide a short guide to key points of context regarding air traffic control services in the UK. We also suggest more detailed sources in case further information is needed.

B3 Second, it provides links to the key documents from the RP3 price control process.

Key context

B4 This section provides a standalone introduction to four contextual topics that appear regularly throughout this referral:

- the role of air traffic control;
- the business of air traffic management;
- airspace modernisation; and
- the European context.

The role of air traffic control

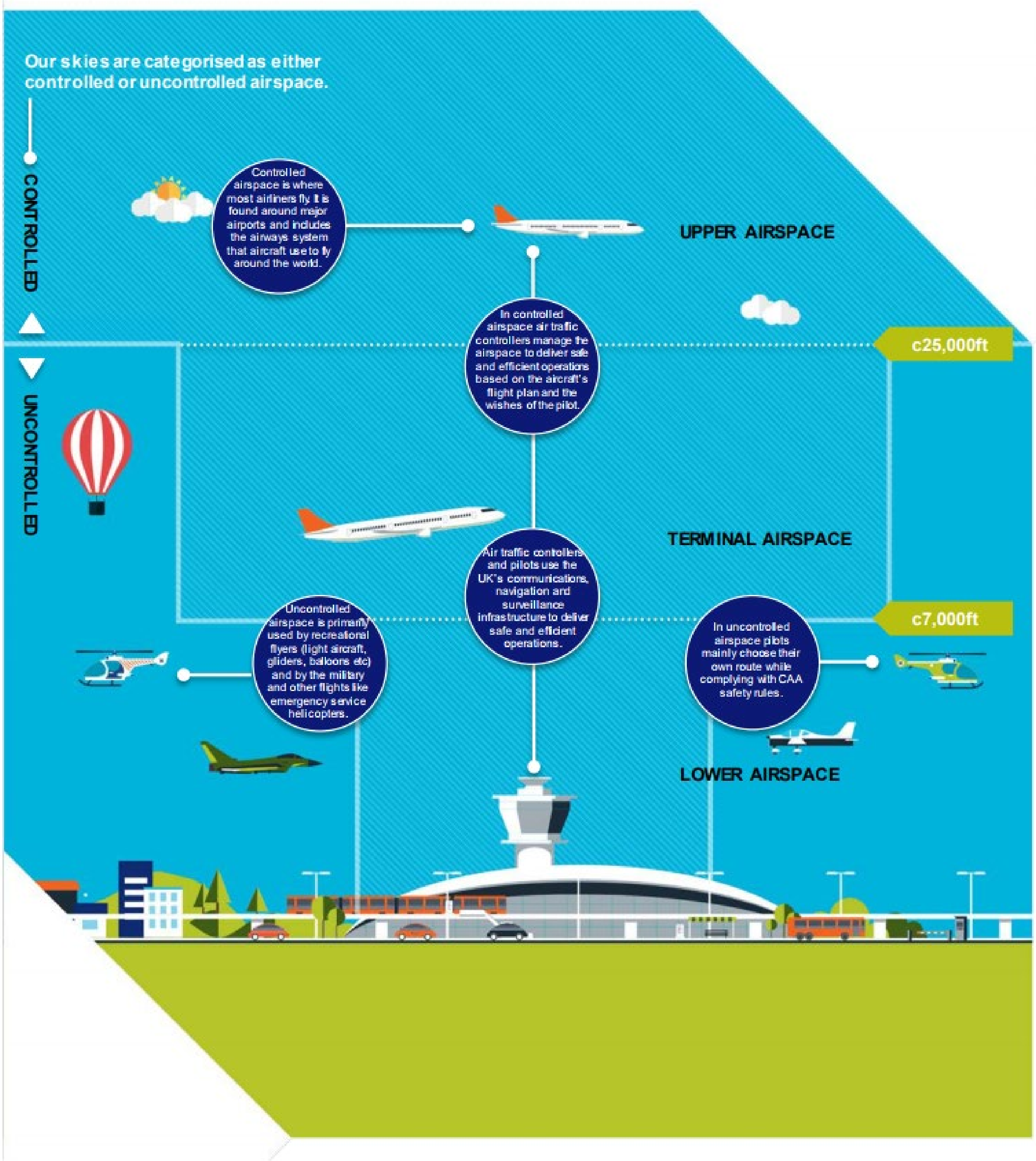
B5 Air traffic control is a service that manages the direction and location of aircraft in the air to avoid collisions and maintain an orderly flow of traffic.

Airspace

B6 The remit of air traffic control, for the purposes of this submission, extends only to "controlled" airspace, a subset of the airspace in the UK. In "uncontrolled" airspace, pilots are simply expected to see and avoid each other without any central control. Within controlled airspace, the sky is allocated to airspace structures or airways that allow the aircraft to be directed and managed. The airspace structures can be thought of as invisible highways that can be used to inter-connect and guide commercial and private aircraft from point to point. These airways are usually ten miles wide and reach up to a height of 24,000 feet from a lower bound of between 5,000 and 7,000 feet.

B7 The figure below from our Airspace Modernisation Strategy (AMS) provides an overview of the way airspace is defined and managed within the UK.

Figure B1: Airspace overview



Note: this diagram is representational only and does not necessarily depict the specific areas in which airspace users operate.
Source: CAA

B8 The airspace structures themselves are set by the CAA's Safety and Airspace Regulation Group, with guidance from the Government. NERL's air traffic controllers manage the movement of aircraft within those pre-defined airways. There is considerable interest in where airways are placed and how they can be changed:

- The location of airways has implications for the aircraft operators moving through them – some routes will be more efficient than others.
- People living under or near airways will be exposed to more noise from passing aircraft, especially if they are close to an airport and planes are flying lower.
- Above all, whatever the configuration of airspace, it must be safe for all users of the sky and safely manageable by air traffic controllers.

B9 Since there are important safety, environmental and efficiency implications of airspace structures, airspace change has formed a major part of the airspace modernisation agenda. Further information on the topic is available here.

Air traffic control services

B10 Air traffic controllers will direct aircraft through the appropriate airways to ensure they reach their destination safely, for example by keeping a safe distance between aircraft and avoiding dangerous weather. A safe distance for aircraft under radar surveillance usually means at least five nautical miles apart horizontally or 1,000 feet apart vertically, though other separation standards can be applied depending on the airspace and aircraft equipment.

B11 Air traffic control can be broken down into two key types: terminal and en route. Terminal air traffic control services manage the take-off and landing of aircraft from airports as they move between the runway itself and the rest of controlled airspace.

B12 Terminal services can be further divided into tower and approach functions. Tower services are those visual services provided from the control tower for aircraft on the airport surface and on final approach and take off. Approach services are normally provided from a separate room, using radar derived information to guide aircraft from the en route phase of flight to final approach, where they are handed over to the tower (and vice versa).

B13 Generally, both tower and approach services are provided from the airport by the airport ANSP. However, for the main London airports a combined approach function is provided by NERL under its monopoly licence. The combined function, called the London Approach, brings safety and operational benefits in heavily congested and complex airspace. Therefore, for the London airports only the tower services are provided at those airports by the airport ANSPs.

B14 Every other part of controlled airspace is covered by en route services.

B15 Terminal air traffic control services (other than the London Approach) can be provided competitively. The customer in this market is the airport itself, who contracts a provider to manage the movement of aircraft at take-off and landing. Examples of non-NATS terminal ATC providers are Air Navigation Solutions

Limited (which provides tower air traffic control services at Gatwick and tower and approach services at Edinburgh Airports), Highlands and Islands Airports Limited (HIAL) and Birmingham airport, which provides their own tower and approach air traffic control services.

B16 In the UK[55], all en route air traffic control services are provided by NATS (En Route) Plc - referred to as NERL – which is why they are regulated as a monopoly. NERL also has statutory duties regarding safety in its provision of air traffic control services.[56]

The business of ATM

B17 The customers for en route air traffic control services are primarily commercial airlines, however there are also non-civilian aircraft and non-commercial aircraft (i.e. private jets) that also require NERL's services.

B18 Air traffic control services in the UK work as follows:

i. A passenger aircraft taking off from a UK airport will be guided in its ascent using that airport's terminal air traffic control services until it reaches roughly 5,000 feet. The aircraft will pay for these services through charges to the airport.

ii. At that point, the aircraft will be handed over to NERL for en route services. The passenger aircraft will pay NERL[57] for the guidance throughout its time in controlled airspace. Whether it passes out of controlled UK airspace into international or uncontrolled airspace or moves directly from controlled airspace to its landing elsewhere in the UK, it must at some point leave NERL's area of control.

iii. Once it arrives at its destination, it pays for the terminal air control services required at landing. Those fees will again be paid to the airport rather than directly to the air traffic control service provider.

Service units

B19 The "service unit" for air traffic control services is a common measure defined by the European Commission in its regulation laying down a performance and

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55 UK airspace consists of the London Flight Information Region (FIR), the Scottish FIR (which includes Northern Ireland) and the Shanwick Ocean FIR (which covers much of the North East Atlantic)

56 More details on these duties are provided in appendix C on the legal framework

57 NERL charges are collected centrally by Eurocontrol's Central Route Charges Office (CRCO) and then dispersed to Member States and their ANSPs.

charging scheme in the single European sky.[58] This measure is important because it is the volume for which NERL charges its customers and the volume by which the Commission judges efficiency targets.

B20 A service unit is a function of the distance flown within the charging zone and the weight of the aircraft. A longer distance within the charging zone will increase the number of service units to be paid for. A heavier aircraft will also incur higher charges through an increased number of service units. Service units are specified as the product of the distance factor and the weight factor of the aircraft. The distance factor is the great circle distance in kilometres between the entry and exit point of the charging zones, divided by 100. The weight factor is equal to the square root of maximum certified take-off weight of the aircraft divided by 50. The equation below defines the service unit calculation mathematically. SU is the number of service units, D is the great circle distance between entry and exit. W is the maximum take-off weight of the aircraft.

$$\mathrm{SU} = \overbrace{\frac{\mathrm{D}}{100}}^{\mathrm{DF}} \times \overbrace{\sqrt{\frac{W}{50}}}^{\mathrm{WF}}$$

NERL's regulated charges

B21 NERL's price control is set on a per-unit basis. The units used are the service units defined above.

B22 In 2019, NERL's determined unit cost (DUC) is £58.37 per chargeable service unit (CSU)[59] and would be set at an average of £45.46 across RP3 under our final decision. To illustrate how this impacts on customers, an airline operating a Boeing 737, travelling from Heathrow to Edinburgh would pay about £290 in charges to NERL.

B23 Ultimately, airlines recover their costs from fares and so NERL's charges will be passed on to passengers by airlines. In 2018, NERL's revenue from its regulated Eurocontrol and London Approach charges was £610.9m and it served 292.25m UK passengers, equating to an average of £2.09 per passenger.[60] For

58 COMMISSION IMPLEMENTING REGULATION (EU) 2019/317 of 11 February 2019 laying down a performance and charging scheme in the single European sky and repealing Implementing Regulations (EU) No 390/2013 and (EU) No 391/2013

59 NERL's determined unit costs are expressed for civil flights only, as military and exempt flights are funded separately.

60 Regulated revenue from Eurocontrol (UK en route) and London Approach are used for this calculation as they provide the most reasonable estimate of revenue per passenger. The Oceanic service includes passengers who do not use UK airports and passenger numbers are therefore not readily available. Non-

comparison, the ‘reduced’ rate (i.e. economy class) of band A (i.e. short haul) Air Passenger Duty (APD) was £13 per passenger in 2018. As another comparison, Heathrow’s per-passenger revenue from airport charges to airlines in 2018 was £21.66.

Airspace modernisation

B24 Airspace modernisation has been an important strategic consideration throughout the RP3 process.

B25 The airspace structures currently operating within the UK were largely put in place in the 1960s. The volume and nature of aircraft in the UK have changed dramatically over the last few decades. The Eurostat transport database states that the number of commercial aircraft movements in the UK has increased from 0.79m in 1993 to 1.99m in 2017.[61]

B26 At the same time the technology available to manage air traffic has improved dramatically. Previously, the main technological solutions for air traffic control were radar and visual tracking from air traffic control towers. This meant that large distances between planes had to be observed to ensure safe management. The reliability, precision and cost of satellite location technology (i.e. GPS) has improved significantly, making this a viable alternative tool for tracking the location of aircraft. Aircraft tracked by using satellite-derived location data can safely be closer together than those using older technologies, meaning there are substantial improvements to efficiency of air traffic management available.

B27 The combination of trends in air traffic volume and available technology has provided the impetus to the project of airspace modernisation. There is also widespread agreement that largely unchanged practices and infrastructure with respect to take-off, landing and flightpaths over recent decades is contributing to avoidable delays and preventing important improvements in the environmental impact of air traffic and overall efficiency.

B28 A detailed description of the UK’s plans for airspace modernisation is contained in our Airspace Modernisation Strategy. The document describes the high level objectives of the programme, including:

- maintaining and enhancing high aviation safety standards;
- securing the efficient use of airspace and enabling integration;
- avoiding flight delays by better managing the airspace network;

regulated revenues (such as those from MoD or North Sea helicopters) do not come from commercial passengers. Even using UK en route passengers only will overstate the amount paid per passenger as aircraft overflying the UK will also pay NERL charges.

61 https://ec.europa.eu/eurostat/web/transport/data/database

- improving environmental performance by reducing emissions and by better managing noise; and
- facilitating the UK's defence and security objectives.

B29 Rather than being one particular investment, airspace modernisation is a package of changes and transitions intended to improve the efficiency of airspace management in the UK. For example, particular changes that form part of airspace modernisation will include:

- change in the use of technology by air traffic controllers, particularly in relation to NERL's en route service;
- improved governance structures to manage the process of airspace modernisation; and
- revision of airspace structures (e.g. around London) to make use of new technology and make it fit for increased volumes and environmental considerations.

B30 As the monopoly provider of en route air traffic services in the UK and a provider of some terminal services, NERL is expected to play a major role in the process of airspace modernisation, and has already taken a number of important steps with respect to these matters over recent years. A number of specific initiatives in the CAA's Airspace Modernisation Strategy make specific, NERL's responsibility for design and delivery.

B31 Nonetheless, as we have referred to in the main report, in RP2, allowances were made for capital expenditure as part of airspace modernisation that were not spent (although NERL did redirect funds to other projects to upgrade its IT systems).

B32 Key documents to consider in understanding the context of airspace modernisation include the following:

- DfT 2017, Upgrading UK Airspace: Strategic Rationale. This document formed the basis of proposals for consultation on changes to UK airspace management. It outlines the costs and problems anticipated as a result of growing demand without airspace reform. It then outlines the vision of the Future Airspace Strategy.
- CAA 2018, CAP 1711 – Airspace Modernisation Strategy. This document outlines the CAA's strategy for delivering and managing a transition to modern airspace, including new governance structures.

European context

Single European Sky

B33 The Single European Sky (SES) refers to the EU-level regulatory framework under which the UK's Air Navigation Service Provider (ANSP) must operate.

Strategic rationale for SES

B34 Under international rules set through the International Civil Aviation Organisation (ICAO), national governments are responsible for their own airspace.

B35 Any aircraft in controlled national airspace, whether taking off, landing or passing over, must have air traffic control services provided by the appropriate Air Navigation Service Provider (ANSP).

B36 The fragmentation of ANSPs at a national level has important implications for the way air traffic moves across countries. Especially in crowded skies with a large number of countries (e.g. Western Europe), aircraft can cross multiple national borders on a relatively short flight.

B37 The "handing-off" of aircraft from one ANSP to another, along with the lack of a coherent transnational airspace design, can lead to avoidable costs and delays for airlines and passengers. In addition, differences in safety, security, environmental and technological standards and practices can be a barrier to the efficient operation of international commercial air services.

B38 In 2009, the Transport Select Committee found that flights in Europe were on average 49 kilometres longer than they needed to be due to the fragmentation of airspace. This was estimated to cost €1 billion annually and led to the unnecessary emission of five million tonnes of carbon dioxide per year.

B39 The goal of airspace integration at a European level is to solve these problems and improve efficiency and environmental outcomes without compromising safety. This project mirrors the aims of the UK's airspace modernisation programme, but at an international level.

The UK and SES

B40 The European Commission first adopted the Single European Sky (SES) in 2004, which brought air traffic management under EU Common Transport Policy. The context within which the current price control takes place includes the Single European Sky II legislative package (SES II), which was adopted in 2009 and aims to create an integrated ATM system by 2030-35.

B41 Since the adoption of SES and SES II, the UK must comply with EU regulations on air traffic management. The precise legal relationship between the UK and EU with respect to airspace and air traffic management is set out in the annex on the legal framework.

Reference Period 3

B42 In practice, the EU-level regulation primarily functions as a set of targets with respect to safety, environment, capacity and cost efficiency that the ANSPs of Member States must meet.

B43 Member States meet these requirements by submitting and adhering to performance plans that cover each Reference Period, which include performance targets on each of the key areas outlined above. If necessary – through a process set out in the performance and charging regulation – the European Commission can amend national targets so that they are consistent with the EU-level targets. Reference Period 3 (RP3) begins on the 1st of January 2020 and lasts for five years.

B44 For the UK, the pre-existing domestic economic regulatory framework for ATS and regulatory cycle have been aligned with the performance plan process, with NERL's licence amended to implement delivery of key parts of the performance plan and targets we set out for adoption by DfT.

B45 For RP3, the EU's performance targets are set out in COMMISSION IMPLEMENTING DECISION (EU) 2019/903 of 29 May 2019 setting the Union-wide performance targets for the air traffic management network for the third reference period starting on 1 January 2020 and ending on 31 December 2024.[62] They can be summarised as follows:

- **Safety:** measuring the level of maturity of safety management systems of ANSPs, and requires achievement of specific levels of maturity for five key safety management objectives by all ANSPs in scope by the end of RP3.
- **Environment:** measuring horizontal flight (in)efficiency – the additional distance flown in excess of the most efficient route represented by the Great Circle Distance. The EU target is set for each year of RP3, with the 2024 target set such that the additional distance flown does not exceed 2.4%.
- **Capacity:** measuring the average air traffic flow management delay per flight. The EU target is set for each year of RP3, reducing from 0.9 minutes per flight in 2020 to 0.5 minutes per flight in 2023 and 2024.
- **Cost efficiency:** measuring the reduction in the average determined unit cost for ANS. The target for RP3 is a reduction of 1.9% per year.

B46 Since we operate the EU and domestic processes in a coordinated way, the EU targets are used to inform our approach to national target setting. Mindful of our domestic duties, while we seek to ensure we are consistent with the EU targets, we are not constrained by them and set our own performance targets and cost

[62] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D0903&from=EN

allowances consistently with our Transport Act duties, justifying our decisions as necessary to the Commission.

B47 Further details on the legal interaction between EU and UK law in this area are available in appendix C on the legal framework.

Relevant documents

B48 This section provides a list of the key documents relating to the RP3 price control review.

B49 A full listing of the documents published as part of RP3, including consultancy reports and views from other stakeholders, is available on the CAA website's page on NERL's economic licence, under the heading "Economic regulation for Reference Period 3 under the Single European Sky (2020-2024)".

The RP3 regulatory process

B50 A table containing the key CAA and NERL documents from the RP3 process is provided below in reverse chronological order.

Date	Event	Document
10/09/2019	NERL sends letter rejecting Final Determination	Letter to CAA re:CAP1830
29/08/2019	CAA publishes final decisions and appendices	CAP1830 and CAP1830a
12/04/2019	NERL responds to Draft Determination	Response to CAP1758
13/02/2019	CAA publishes Draft Determination	CAP1758
26/10/2018	NERL publishes RP3 Business Plan	RP3 Business Plan
25/09/2018	CAA provides expectations for revised business plan	Letter to NERL
06/06/2018	NERL responds to CAA views on early business plan	Letter to CAA
25/05/2018	CAA sends letter with early views on initial business plan	Letter to NERL
09/04/2018	NERL publishes initial business plan	RP3 initial Business Plan
09/01/2018	CAA publishes business plan guidance	CAP1625
10/11/2017	NERL responds to consultation on business plan guidance	Response to CAP 1593
29/09/2017	CAA launches consultation on business plan guidance	CAP1593
31/05/2017	NERL responds to strategic discussion on RP3	Response to CAP1511
03/04/2017	CAA launches discussion on strategic outcomes for RP3	CAP1511

Our consultants

B51 At key stages throughout the RP3 process, we have sought the advice of expert third parties on particular areas of interest. These reports should be considered by the CMA in reference to each of the specific areas of the price control that they relate to, and as general evidence of our use of outside expertise in the appropriate way. Our consultants were the following:

i. Europe Economics, who provided analysis on the appropriate cost of capital for NERL during RP3. They produced one report in February 2019 to support our draft decision, and a set of comments in June 2019 to support our final decision, responding to NERL and NERA's critiques of their February report.

ii. CEPA, who provided a report on cost allocation and non-regulatory income forecasts in February 2019 in support of our draft decision.

iii. Grant Bremer of Chase Partners Limited, who undertook a review of the SIP process published in February 2019 in support of our draft decision.

iv. Steer Group, with the support of Helios, who produced a report on the efficient capital and operating expenditure for NERL during the RP3 process. This was published in February 2019 alongside our draft decision.

v. Grant Thornton, who tested and reviewed the NERL financial model on our behalf, with the findings of those testing procedures published in February 2019 alongside our draft decision. An update of these findings was published in August 2019 to take account of changes made in our final decision.

vi. The Government Actuarial Department (GAD), who were commissioned to review NERL's pension arrangements and whose final report was published in September 2019.

B52 In addition, we made reference to work that we commissioned from PwC on the cost of capital for Heathrow during the H7 price control period. Other outside experts and consultants have analysed these matters as commissioned by NERL or other stakeholders.

Consultation with stakeholders

B53 At three key points throughout the RP3 process we invited submissions from stakeholders on specific questions. In each case, we have carefully taken into account the feedback we received from NERL, customers and other interested parties in progressing to the next stage. In each case, we have summarised and addressed the points and concerns raised in consultation submissions. The specific consultations were the following:

i. CAP 1511: our discussion paper on the strategic themes we intended to pursue as part of RP3. Responses to CAP 1511 are summarised in appendix C to CAP 1593.

ii. CAP 1593: our consultation document on the business plan guidance for NERL, the responses to which are summarised in appendix A to CAP 1625, the business plan guidance.

iii. CAP 1758: the draft Performance Plan document containing our draft decision, which invited comment from stakeholders. The responses to this were summarised and addressed in each of the relevant sections of CAP 1830, our final decision document.

B54 We also had three more focused consultations where we requested comments on the following:

- Capex and Airspace Modernisation Strategy funds governance policy development – working note (April 2019);
- NERL capital expenditure and Airspace Modernisation Strategy funds governance policy and processes (July 2019); and
- Horizontal flight efficiency target for RP3 (July 2019).

B55 As part of the process we designed, NERL was expected to undertake extensive engagement and consultation with its customers on the substance of its initial business plan (IBP). This consultation took the form of the Customer Consultation Working Group which met between May and September 2018. The full findings of the working group can be found in the co-chairs report, published in September 2018. The table below summarises the timeline and content of the working group meetings and workshops.

CCWG timeline and meetings

Date	Meeting / Workshop	Main Topics Covered
22nd February	Kick-off Webex	Pre-consultation Webex
3rd May	Meeting 1	Overview of iBP and regulatory framework
17th May	Meeting 2	Delivering the core en-route service
23rd May	Meeting 3	Evolving the core en-route service
5th June	Meeting 4	The Oceanic Plan
6th June	Meeting 5	UK Airports engagement
21st June	Meeting 6	Additional customer requests
27th June	Meeting 7	Key assumptions and performance metrics
18th July	Meeting 8	Summary to date and next steps
19th July	Meeting 9	Oceanic follow-up
25th July	Webex	Airports follow-up
15th August	Workshop 1	Euroconsult report on Aireon's costs
16th August	Workshop 2	ABS-B Business Benefit Case Workshop
23rd August	Workshop 3	RP3 Manpower Planning Workshop
13th September	Meeting 10	Consultation Closure

APPENDIX C

Legal framework

C1 This appendix sets out the relevant legal provisions which apply to the present reference to the CMA and a brief explanation as to how they interact with the EU legislation in this field. As noted in chapter 1, the domestic framework is substantially interlinked with the EU legal framework whilst operating independently in relation to areas outside the scope of the EU regime. The UK carries out its obligations under the EU framework (currently the Commission Implementing Regulation) through the licencing scheme under TA 2000 and through modifications to NERL's licence.

C2 This appendix contains (i) the principal provisions contained in the Civil Aviation Act 1982 and the TA 2000 concerning the CAA's licensing powers (ii) an overview of the EU's SES programme, including Union-wide performance indicators and (iii) a brief explanation of the potential impact of the UK's exit from the European Union.

Domestic legal framework

C3 The powers and functions of the CAA are contained in two principal statutes: the Civil Aviation Act 1982 ("CAA 1982") and Part I of the Transport Act 2000 ("TA 2000").

C4 <u>The CAA 1982</u>: The CAA 1982 contains provisions relating to the constitution of the CAA and its functions (s.3) but for the purposes of this reference, the CAA's general objectives listed in this statute at section 4 are not relevant, being dissaplied by s.2(7) TA 2000 (see below).

C5 <u>The TA 2000</u>: Chapter I of the TA 2000 provides for the regulation of Air Traffic Services. This includes the general duties imposed upon the Secretary of State for Transport (s.1) and the CAA (s.2):

> *"General duties*
>
> **1 Secretary of State's general duty.**
> (1) The Secretary of State must exercise his functions under this Chapter so as to maintain a high standard of safety in the provision of air traffic services; and that duty is to have priority over the application of subsections (2) to (5).
> (2) The Secretary of State must exercise his functions under this Chapter in the manner he thinks best calculated—
>
> (a) 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;
> (b) to promote efficiency and economy on the part of licence holders;

> (c) to secure that licence holders will not find it unduly difficult to finance activities authorised by their licences.
>
> (3) The only interests to be considered under subsection (2)(a) are interests regarding the range, availability, continuity, cost and quality of air traffic services.
>
> (4) The reference in subsection (2)(a) to furthering interests includes a reference to furthering them (where the Secretary of State thinks it appropriate) by promoting competition in the provision of air traffic services.
>
> (5) If in a particular case there is a conflict in the application of the provisions of subsections (2) to (4), in relation to that case the Secretary of State must apply them in the manner he thinks is reasonable having regard to them as a whole.
>
> (6) The Secretary of State must exercise his functions under this Chapter so as to impose on licence holders the minimum restrictions which are consistent with the exercise of those functions.
>
> ….
>
> **2 CAA's general duty.**
>
> (1) The CAA must exercise its functions under this Chapter so as to maintain a high standard of safety in the provision of air traffic services; and that duty is to have priority over the application of subsections (2) to (5).
>
> (2) The CAA must exercise its functions under this Chapter in the manner it thinks best calculated—
>
> (a) 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;
>
> (b) to promote efficiency and economy on the part of licence holders;
>
> (c) to secure that licence holders will not find it unduly difficult to finance activities authorised by their licences;
>
> (d) to take account of any international obligations of the United Kingdom notified to the CAA by the Secretary of State (whatever the time or purpose of the notification);
>
> (e) to take account of any guidance on environmental objectives given to the CAA by the Secretary of State after the coming into force of this section.
>
> (3) The only interests to be considered under subsection (2)(a) are interests regarding the range, availability, continuity, cost and quality of air traffic services.
>
> (4) The reference in subsection (2)(a) to furthering interests includes a reference to furthering them (where the CAA thinks it appropriate) by promoting competition in the provision of air traffic services.
>
> (5) If in a particular case there is a conflict in the application of the provisions of subsections (2) to (4), in relation to that case the CAA must apply them in the manner it thinks is reasonable having regard to them as a whole.
>
> (6) The CAA must exercise its functions under this Chapter so as to impose on licence holders the minimum restrictions which are consistent with the exercise of those functions.
>
> (7) Section 4 of the Civil Aviation Act 1982 (CAA's general objectives) does not apply in relation to the performance by the CAA of its functions under this Chapter.
>
> …"

C6 Sections 5 and 6 provide for the grant of a licence for the operation of Air Traffic Services in a managed area by the Secretary of State and/or the CAA. As to the provisions of the licence, section 7 provides:

> **"7 Licences: provisions.**
> (1) A licence may include such provisions as the licence authority thinks are necessary or expedient; and a provision need not relate to services authorised by the licence.
> (2) In particular, provision of the following kinds may be included—
> (a) provision requiring the licence holder to enter into an agreement for a purpose specified in the licence and provision for determining the terms of the agreement;
> (b) provision requiring the licence holder to comply with any requirements imposed at any time (by directions or otherwise) by a person with respect to any matter specified, or of a description specified, in the licence;
> (c) provision requiring the licence holder, except in so far as a person consents to its doing or not doing them, not to do or to do such things as may be specified, or of a description specified, in the licence;
> (d) provision requiring the licence holder to refer to a person for approval or determination such matters as may be specified, or of a description specified, in the licence.
> (3) A reference in subsection (2) to a person is to—
> (a) a person specified, or of a description specified, in the licence for the purpose concerned, or
> (b) if the licence so provides, a person nominated for the purpose concerned by a person falling within paragraph (a);
> and any of those persons may be the licence authority or some other person.
> (4) A licence may include provisions requiring a payment on its grant or payments during its currency (or both)—
> (a) of an amount or amounts specified in the licence or determined by or under it;
> (b) to a person or persons specified in the licence or determined by or under it.
> (5) A provision relating to the modification of a licence is to have effect in addition to the provisions of this Chapter regarding modification.
> (6) Such provisions as the licence authority thinks fit may be expressed as conditions.
> (7) The licence authority is the Secretary of State or the CAA (depending on the person to whom it falls to grant the licence)."

C7 Section 8 of the TA 2000 identifies the duties placed on licence holders, unless excluded by an exemption of the relevant services pursuant to s.9, as well as the consequences of breaches of licence conditions pursuant to s.10:

> "**8 Duties of licence holders.**
> (1) While a licence is in force its holder—
> (a) 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;
> (b) must take all reasonable steps to secure that the system is also efficient and co-ordinated;
> (c) must take all reasonable steps to secure that the demand for authorised air traffic services in respect of a licensed area is met;
> (d) must have regard, in providing, developing and maintaining the system, to the demands which are likely to be placed on it in the future.

(2) A licensed area is an area in respect of which the licence authorises its holder to provide air traffic services.
(3) Authorised services are services of the description specified in the licence as the description of services which the holder of the licence is authorised to provide.
(4) For the purposes of subsection (1)(a) a system for the provision of services is safe if (and only if) in providing the services the person who provides them complies with such requirements as are imposed by Air Navigation Orders with regard to their provision.
(5) An Air Navigation Order is an Order in Council under section 60 of the Civil Aviation Act 1982.
….

10 Breach of duties or conditions.
(1) No action is to lie in respect of a failure by a licence holder to perform—
(a) a duty imposed by section 8;
(b) a condition of a licence.
(2) But subsection (1) does not affect—
(a) a right of action in respect of an act or omission which takes place in the course of the provision of air traffic services;
(b) the power to make an order under section 20, a duty to comply with the order and a power to bring proceedings in respect of the duty."

C8 The TA 2000 provides for three mechanisms for the alteration of the provisions in a licence: (i) modification by agreement between the CAA and the licence holder (s.11) (ii) unilateral specification by the CAA of the charges which a licence holder may apply to its services (s.73) and (iii) referral to the CMA (s.12).

C9 Section 11 TA 2000 provides for modification of licence conditions by agreement:

"**11 Modification by agreement.**
(1) The CAA may modify the conditions of a licence if its holder consents to the modifications.
(2) Before making modifications under this section the CAA must—
(a) publish a notice in such manner as the CAA thinks appropriate for bringing it to the attention of persons likely to be affected by the making of the modifications,
(b) serve a copy of the notice on the licence holder,
(c) send a copy of the notice to the Secretary of State, and
(d) consider any representations made in accordance with the notice.
(3) The notice must—
(a) state that the CAA proposes to make the modifications and state their effect and the reasons for so proposing, and
(b) state the period (not less than 28 days starting with the date of publication of the notice) within which representations may be made regarding the proposed modifications.
(4) If within the period stated under subsection (3)(b) the Secretary of State gives a direction to the CAA requiring it not to make the modifications the CAA must comply with the direction.
(5) As soon as practicable after making modifications under this section the CAA must send a copy of them to the licence holder and a copy to the Secretary of State."

C10 Pursuant to ss.73-75 TA 2000, the CAA may set the charges for air traffic services (defined by s.77):

"**73 Charges for services.**
(1) The CAA may specify—
(a) the amounts of, or methods of calculating, the charges which are to be paid by virtue of this section in respect of chargeable air services (or of such descriptions of those services as the CAA specifies),
(b) the operators and owners of aircraft (or descriptions of such operators and owners) who are to pay the charges,
(c) the persons (or descriptions of persons) to whom they are to be paid, and
(d) the currencies in which they are to be paid.
(2) On or after making specifications under subsection (1) the CAA may stipulate—
(a) that charges are to be dispensed with in cases of specified descriptions;
(b) that interest at a specified rate is to be paid on charges in respect of any period in which they are due but unpaid;
(c) that interest is to be paid with the charges or separately;
(d) that charges of a specified description are payable elsewhere than in the United Kingdom;
(e) that charges of a specified description are to be disposed of in a specified way when received.
(3) Charges of the specified amounts, or calculated in accordance with the specified methods, must be paid in accordance with specifications made under subsection (1).
(4) But if stipulations are made under subsection (2)(a) the charges concerned are not to be paid.
(5) If stipulations are made under subsection (2)(b) or (c) interest must be paid accordingly.
(6) If stipulations are made under subsection (2)(d) the charges concerned are payable accordingly.
(7) If stipulations are made under subsection (2)(e) the charges concerned must be disposed of accordingly.
(8) Subsections (3) to (7) have effect subject to section 74.
(9) For the purposes of subsection (1)(c) persons include—
(a) Eurocontrol and other international organisations, and
(b) governments of countries or territories outside the United Kingdom.
…."

C11 Finally, section 12 of the TA 2000 provides for a power for the CAA to refer a matter to the CMA, as follows:

"**12 References to Competition and Markets Authority.**
(1) The CAA may make to the Competition and Markets Authority (referred to in this Chapter as "the CMA") a reference requiring the CMA to investigate and report on—
(a) whether any matters which are specified in the reference and which relate to the provision of air traffic services by or on behalf of a licence holder operate against the public interest or may be expected to do so;
(b) if so, whether the effects adverse to the public interest which the matters have or may be expected to have could be remedied or prevented by modifying the conditions of the licence.

> (2) The CAA may at any time by notice given to the CMA vary a reference by adding to the matters specified in it or by excluding from it one or more of those matters; and on receiving a notice the CMA must give effect to the variation.
> (3) To help the CMA in its investigation the CAA may specify in the reference or a variation of it—
> (a) any effects adverse to the public interest which in its opinion the matters specified in the reference or variation have or may be expected to have;
> (b) any modifications of the conditions of the licence by which in its opinion those effects could be remedied or prevented.
> (4) As soon as practicable after making a reference or variation the CAA must—
> (a) serve a copy of the reference or variation on the licence holder;
> (b) publish particulars of the reference or variation in such manner as the CAA considers appropriate for bringing it to the attention of persons likely to be affected by it;
> (c) send a copy of the reference or variation to the Secretary of State.
> (5) If before the end of the period of 28 days starting with the day on which the Secretary of State receives the copy he gives a direction to the CMA requiring it not to proceed with the reference or not to give effect to the variation,
> the CMA must comply with the direction.
> (6) To help the CMA in its investigation the CAA must give to the CMA—
> (a) any information the CAA has which relates to matters within the scope of the investigation and which the CMA requests;
> (b) any information the CAA has which relates to matters within the scope of the investigation and which the CAA thinks it would be appropriate for it to give without a request;
> (c) any other help which the CAA is able to give in relation to matters within the scope of the investigation and which the CMA requests.
> (7) In carrying out the investigation concerned the CMA must take account of any information given under subsection (6).
> (8) In deciding under this section whether a matter operates, or may be expected to operate, against the public interest the CMA must have regard to the matters as respects which duties are imposed on the Secretary of State and the CAA by sections 1 and 2.
> (8A)The functions of the CMA with respect to a reference under this section are to be carried out on behalf of the CMA by a group constituted for the purpose by the chair of the CMA under Schedule 4 to the Enterprise and Regulatory Reform Act 2013 (including functions relating to the making of modifications following a report on a reference, and functions under sections 109 to 115 of the Enterprise Act 2002, as applied by sections 12B and 18).
> …"

C12 Sections 12A-12B identify the time limit within which the CMA must report on a s.12 reference, as well as the provisions of Part 3 of the Enterprise Act 2002 which shall apply:

> "**12A References under section 12: time limits**
> (1) Every reference under section 12 shall specify a period (not longer than six months beginning with the date of the reference) within which a report on the reference is to be made.
> (2) A report of the CMA on a reference under section 12 shall not have effect (and no action

> shall be taken in relation to it under section 14) unless the report is made before the end of the period specified in the reference or such further period (if any) as may be allowed by the CAA under subsection (3).
> (3) The CAA may, if it has received representations on the subject from the CMA and is
> satisfied that there are special reasons why the report cannot be made within the period specified in the reference, extend that period by no more than six months.
> (4) No more than one extension is possible under subsection (3) in relation to the same reference.
> (5) The CAA shall, in the case of an extension made by it under subsection (3)—
> (a) publish that extension in such manner as it considers appropriate for the purpose of bringing it to the attention of persons likely to be affected by it; and
> (b) send a copy of what has been published by it under paragraph (a) to the licence holder and the Secretary of State.
>
> **12B References under section 12: application of Enterprise Act 2002**
> (1) The following sections of Part 3 of the Enterprise Act 2002 shall apply, with the modifications mentioned in subsections (1A), (2) and (3), for the purposes of references under section 12 as they apply for the purposes of references under that Part—
> (a) section 109 (attendance of witnesses and production of documents etc.);
> (b) section 110 (enforcement of powers under section 109: general);
> (c) section 111 (penalties);
> (d) section 112 (penalties: main procedural requirements);
> (e) section 113 (payments and interest by instalments);
> (f) section 114 (appeals in relation to penalties);
> (g) section 115 (recovery of penalties); and
> (h) section 116 (statement of policy).
> ….”

C13 Following its consideration of the reference, section 13 provides that the CMA must make a report on it, which includes definite conclusions on the questions raised, identifies specified effects adverse to the public interest which the proposed matters have or may be expected to have, and specifies modifications to licence conditions to remedy or prevent those effects:

> “**13.— Reports on references.**
> (1) In making a report on a reference under section 12 the CMA —
> (a) must include definite conclusions on the questions contained in the reference and such an account of its reasons for the conclusions as in its opinion facilitates a proper understanding of the questions and of the conclusions;
> (b) if it concludes that any of the matters specified in the reference operate against the public interest or may be expected to do so, must specify the effects adverse to the public interest which the matters have or may be expected to have;
> (c) if it concludes that any adverse effects so specified could be remedied or prevented by modifications of the conditions of the licence, must

> specify modifications by which the effects could be remedied or prevented.
>
> (1A) For the purposes of sections 14 to 17, a conclusion contained in a report of the CMA is to be disregarded if the conclusion is not that of at least two-thirds of the members of the group constituted by the chair of the CMA for the purpose of carrying out the functions of the CMA with respect to the reference.
>
> (1B) If a member of a group so constituted disagrees with any conclusions contained in a report made on a reference under section 12 as the conclusions of the CMA, the report shall, if the member so wishes, include a statement of his disagreement and of his reasons for disagreeing.
>
> (2) For the purposes of the law relating to defamation, absolute privilege attaches to any report made by the CMA on a reference under section 12.
>
> (2A) In making any report on a reference under section 12 the CMA must have regard to the
> following considerations before disclosing any information.
>
> (2B) The first consideration is the need to exclude from disclosure (so far as practicable) any
> information whose disclosure the CMA thinks is contrary to the public interest.
>
> (2C) The second consideration is the need to exclude from disclosure (so far as practicable)—
>
> (a) commercial information whose disclosure the CMA thinks might significantly
> harm the legitimate business interests of the undertaking to which it relates, or
>
> (b) information relating to the private affairs of an individual whose disclosure the CMA thinks might significantly harm the individual's interests.
>
> (2D) The third consideration is the extent to which the disclosure of the information mentioned in subsection (2C)(a) or (b) is necessary for the purposes of the report.
>
> (3) A report of the CMA on a reference under section 12 must be made to the CAA.
>
> (4) The CAA—
>
> (a) must on receiving such a report send a copy to the licence holder and a copy to the Secretary of State;
>
> (b) must, after the end of the specified period, publish the report in such manner as the CAA considers appropriate for bringing it to the attention of persons likely to be affected by it.
>
> (5) But if the Secretary of State thinks that the publication of any matter would be against the public interest or any person's commercial interests, he may before the end of the specified period give a direction to the CAA requiring it to exclude the matter from every copy of the report to be published as mentioned above.
>
> (6) The specified period is the period of 14 days starting with the day after the Secretary of State receives the copy under subsection (4).”

C14 If the CMA’s report on the reference identifies matters which operate against the public interest and specifies necessary licence modifications, section 14 requires the CAA to suggest appropriate modifications to address this:

> “**14.— Modification following report.**
>
> (1) This section applies if a report of the CMA on a reference under section 12—

> (a) includes conclusions to the effect that any of the matters specified in the reference operate against the public interest or may be expected to do so,
> (b) specifies effects adverse to the public interest which the matters have or may be expected to have,
> (c) includes conclusions to the effect that the effects could be remedied or prevented by modifications of the conditions of the licence, and
> (d) specifies modifications by which the effects could be remedied or prevented.
>
> (2) The CAA must suggest such modifications of the conditions of the licence as it thinks are needed to remedy or prevent the adverse effects specified in the report.
>
> (3) Before suggesting modifications the CAA must—
> (a) have regard to the modifications specified in the report,
> (b) publish a notice in such manner as the CAA thinks appropriate for bringing the matters to which it relates to the attention of persons likely to be affected by the making of the modifications,
> (c) serve a copy of the notice on the licence holder, and
> (d) consider any representations made in accordance with the notice (and not withdrawn).
>
> (4) The notice must—
> (a) state that the CAA proposes to suggest the modifications and state their effect and the reasons for so proposing, and
> (b) state the period (not less than 28 days starting with the date of publication of the notice) within which representations may be made regarding the proposals.
>
> (5) If the CAA suggests modifications under this section it must—
> (a) give notice to the CMA setting out the modifications it suggests and the reasons for its suggestions, and
> (b) send to the CMA copies of any representations made in accordance with the notice published under subsection (3) (and not withdrawn)."

C15 This remains subject to the CMA's power to direct that the CAA's proposals are not what is needed (s.15) in which case the CMA itself will make the necessary modifications to the licence conditions in question (s.16):

> "**15.— CMA's power to give direction.**
>
> (1) This section applies if the CMA is given notice under section 14.
>
> (2) Within the permitted period the CMA may give a direction to the CAA—
> (a) not to make the modifications set out in the notice, or
> (b) not to make such of those modifications as are specified in the direction.
>
> (3) But the CMA may give a direction only if it thinks the modifications set out in the notice are not the modifications which are needed to remedy or prevent the adverse effects specified in the CMA's report on the reference under section 12.
>
> (4) If the CMA gives a direction it must—
> (a) publish a notice in such manner as the CMA thinks appropriate for bringing the matters to which it relates to the attention of persons likely to be affected by the direction, and
> (b) serve a copy of the notice on the licence holder.

(5) The notice must set out—
(a) the modifications set out in the notice given under section 14,
(b) the direction, and
(c) the reasons for giving the direction.
(6) If the permitted period expires without a direction being given under subsection (2) the CAA must make the modifications set out in the notice given under section 14.
(7) If within the permitted period a direction is given under subsection (2)(b) the CAA must make the modifications which are—
(a) set out in the notice given under section 14, and
(b) not specified in the direction.
(8) As soon as practicable after making modifications under this section the CAA must send a copy of them to the licence holder and a copy to the Secretary of State.
(9) The permitted period is the period of four weeks starting with the day the CMA is given notice under section 14.
(10) But if within that period—
(a) the CMA applies to the Secretary of State to extend it to six weeks, and
(b) he directs that it is to be so extended,
the permitted period is the period of six weeks starting with the day the CMA is given notice under section 14.

16.— Position where CMA gives direction.
(1) This section applies if the CMA gives a direction under section 15(2).
(2) If the direction is given under section 15(2)(a) the CMA must itself make such modifications of the conditions of the licence as it thinks are needed to remedy or prevent the adverse effects specified in the CMA's report on the reference under section 12.
(3) If the direction is given under section 15(2)(b) the CMA must itself make such modifications of the conditions of the licence as it thinks are needed to remedy or prevent such of the adverse effects as—
(a) are specified in the CMA's report on the reference under section 12, and
(b) would not be remedied or prevented by the modifications set out in the notice under section 14 and not specified under section 15(2)(b).
(4) Before making modifications under this section the CMA must—
(a) publish a notice in such manner as the CMA thinks appropriate for bringing the matters to which it relates to the attention of persons likely to be affected by the making of the modifications,
(b) serve a copy of the notice on the licence holder and a copy on the CAA, and
(c) consider any representations made in accordance with the notice (and not withdrawn).
(5) The notice must—
(a) state that the CMA proposes to make the modifications and state their effect and the reasons for so proposing, and
(b) state the period (not less than 28 days starting with the date of publication of the notice) within which representations may be made regarding the proposed modifications.
(6) As soon as practicable after making modifications under this section the CMA must—

> (a) publish a notice in such manner as the CMA thinks appropriate for bringing the
> matters to which it relates to the attention of persons likely to be affected by the
> modifications, and
> (b) serve a copy of the notice on the licence holder, a copy on the Secretary of State and a copy on the CAA.
>
> (7) The notice under subsection (6) must—
> (a) state that the modifications have been made,
> (b) set them out, and
> (c) set out the reasons for making them."

EU legal framework

C16 The Treaty establishing the European Economic Community in 1957 identified the development of a common transport policy as an objective of the European Communities (Article 3(e) and Title 4 of Part II). The internal market in air transport was only introduced in the early 1990s.

C17 Since that time, the EU has introduced legislation designed to reduce the fragmentation of European airspace and to harmonise the management of air traffic services. The initial package of measures consisted of four high level European Parliament and Council Regulations (EC) 549/2004 (the Framework Regulation)[63], 550/2004 (the Service Provision Regulation)[64], 551/2004 (the Airspace Regulation)[65], and 552/2004 (the Interoperability Regulation)[66], which established the European "*Single European Sky*" (SES) Programme in order to improve the organisation and use of European airspace and the interoperability of the European Air Traffic Management Network (EATMN). These Regulations provide the basis for detailed European Commission Regulations on technical matters concerning the provision of air traffic services and other services relevant to aviation such as meteorological services. The Interoperability Regulation (EC) 552/2004 has since been repealed (save for certain provisions not relevant to this reference) by European Parliament and Council Regulation (EU) 2018/1139[67] on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency – known as the amended EASA Basic Regulation. That Regulation provides the basis for detailed European Commission Regulations across all aviation safety domains.,.

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[63] OJEU L96, 31.3.2004, pp.1-9.

[64] OJEU L96, 31.3.2004, pp.10-19.

[65] OJEU L96, 31.3.2004, pp.20-25.

[66] OJEU L96, 31.3.2004, pp.26-42.

[67] *OJEU L 212, 22.8.2018, pp. 1–122.*

C18 The SES I package was extended in 2009 by Regulation (EC) 1070/2009[68], which was designed to increase the overall performance of the air traffic management system in Europe (the SES II Package). This included an EU-wide Performance Scheme with common key performance indicators, designed over a five-year reference period (RP1).

C19 The CAA is the National Supervisory Authority for the UK under the SES programme.[69]

C20 The regulation governing the Performance Scheme for the next period, RP3 (1 January 2020-31 December 2024), is set out in Commission Implementing Regulation (EU) 2019/317 of 11 February 2019[70] ("the 2019 Regulation"). The 2019 Regulation is directly applicable in the UK pursuant to s. 2 European Communities Act 1972 and Article 288 of the Treaty on the Functioning of the European Union ('TFEU').

C21 Article 8(1) – alongside Section 1 of Annex 1 of the 2019 Regulation - establishes key performance indicators and indicators for monitoring the performance of air navigation services at EU level. Article 8(2) – alongside Section 2 of Annex 1 – requires the establishment of key performance indicators at national level:

> "Article 8 **Key performance indicators and indicators for monitoring**
> 1.The key performance indicators and the indicators for monitoring the performance of air navigation services at Union level for each key performance area shall be those established in Section 1 of Annex I.
> 2.The key performance indicators and the indicators for monitoring the performance of air navigation services at national level or at the level of functional airspace blocks shall be those established in Section 2 of Annex I."

C22 Both sets of KPIs are based around four key performance areas: (1) Safety (2) Environment (3) Capacity and (4) Cost-Efficiency.

C23 Article 9(4) of the 2019 Regulation requires the European Commission to establish a Union-wide "'baseline value for determined costs'" for the purposes of setting targets related to cost-efficiency. Article 22 also establishes detailed rules concerning the cost base for *en route* and terminal charges.

C24 National supervisory authorities of the Member States are required, by Article 10(1), to draw up "*performance plans*" which establish binding performance targets that must be submitted to the European Commission for assessment of consistency against the Union-wide performance targets set out in the 2019

68 OJEU L 300, 14.11.2009, pp. 34–50.

69 See the Single European Sky (National Supervisory Authority) Regulations 2013, SI 2013/2620, r.3(1) and Schedule 1.

70 *OJEU L 56, 25.2.2019, pp. 1–67.*

Regulation (Articles 12-15). A draft performance plan will be adopted by a member state whilst the European Commission considers the performance plan. A final performance plans may only be adopted once it has been approved by the Commission (Article 16). In the UK, the Department for Transport adopts the CAA's draft performance plan having independently scrutinised it.

C25 The specific Union-wide targets for RP3 are identified in Commission Implementing Decision (EU) 2019/903 of 29 May 2019[71] (Articles 2-5), as follows:

"Article 2 **Union-wide performance targets in the key performance area of safety**

Union-wide performance targets in the key performance area of safety, as referred to in point 1.1 of Section 1 of Annex I to Implementing Regulation (EU) 2019/317, to be achieved by the end of 2024 by air navigation service providers certified to provide services are set at the following levels of effectiveness of safety management:

(a) at least Level C in the safety management objectives 'safety culture', 'safety policy and objectives', 'safety assurance', and 'safety promotion';
(b) at least Level D in the safety management objective 'safety risk management'.

Article 3 **Union-wide performance targets in the key performance area of environment**

Union-wide performance targets for the key performance area of environment, as defined in point 2.1 of Section 1 of Annex I to Implementing Regulation (EU) 2019/317, shall be expressed as an average horizontal en route flight efficiency of the actual trajectory and measured as average additional distance flown compared to the great circle distance and shall not exceed the following percentages: 2,53 % in 2020, 2,47 % in 2021, 2,40 % in 2022, 2,40 % in 2023 and 2,40 % in 2024.

Article 4 **Union-wide performance targets in the key performance area of capacity**

Union-wide performance targets for the key performance area of capacity, in accordance with point 3.1 of Section 1 of Annex I to Implementing Regulation (EU) 2019/317, shall be an average en route ATFM delay attributable to air navigation services of a maximum of 0,9 minute per flight in 2020, 0,9 minute per flight in 2021, 0,7 minute per flight in 2022, 0,5 minute per flight in 2023 and 0,5 minute per flight in 2024.

Article 5 **Union-wide performance targets in the key performance area of cost-efficiency**

1.Union-wide performance targets for the key performance area of cost-efficiency, as defined in point 4.1 of Section 1 of Annex I to Implementing Regulation (EU) 2019/317, shall be a year-on-year change of the average Union-wide determined unit cost for en route air navigation services of -1,9 % for 2020,

[71] *OJEU L 144, 3.6.2019, pp. 49–55.*

> -1,9 % for 2021, -1,9 % for 2022, -1,9 % for 2023 and -1,9 % for 2024. The year-on-year change shall be calculated starting from the baseline value for the determined unit cost set in paragraph 3.
>
> 2.The baseline value for determined costs shall be set at:
>
> (a) EUR 6 245 065 000 in EUR2017 in the case where Union law ceases to apply to the United Kingdom at a date prior to the date of entry into force of this Implementing Decision and no withdrawal agreement concluded with the United Kingdom has entered into force by that date;
> (b) EUR 7 047 092 000 in EUR2017 in all other cases.
>
> 3.The baseline value for the determined unit cost shall be set at:
>
> (a) EUR 49,29 in EUR2017 in the case where Union law ceases to apply to the United Kingdom at a date prior to the date of entry into force of this Implementing Decision and no withdrawal agreement concluded with the United Kingdom has entered into force by that date.
> (b) EUR 50,65 in EUR2017 in all other cases."

C26 The Decision entered into force on 24 June 2019.

C27 The baseline described in Article 24 above applies to EU determined costs only. National performance plans specifications are outlined in Article 10(2)(a) Implementing Regulation 2019/317 which provides as follows:

> "Those baseline values shall be calculated in respect to the year preceding the start of the reference period.
>
> The baseline value for determined costs shall be estimated by using the actual costs available for the preceding reference period and shall be adjusted to take account of latest available cost estimates, traffic variations and their relation to costs.
>
> The baseline value for the determined unit costs shall be derived by dividing the baseline value for the determined costs with the latest available traffic forecast expressed in service units for the year preceding the start of the reference period;"

EU Exit:

C28 The impact on the domestic framework for air traffic services of the UK's exit from the European Union is unclear at present.

C29 The most recent form of the UK Withdrawal Agreement[72], provides – in relevant part:

[72] Dated 19 October 2019 and is available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/840655/A

> "ARTICLE 7
> References to the Union and to Member States
> 1.For the purposes of this Agreement, all references to Member States and competent authorities of Member States in provisions of Union law made applicable by this Agreement shall be understood as including the United Kingdom and its competent authorities…
> …..
> ARTICLE126
> Transition period
> There shall be a transition or implementation period, which shall start on the date of entry into force of this Agreement and end on 31December2020.
>
> ARTICLE 127
> Scope of the transition
> 1.Unless otherwise provided in this Agreement, Union law shall be applicable to and in the United Kingdom during the transition period."

C30 Accordingly, should the Withdrawal Agreement take effect in its current form, then the existing EU rules in the air traffic sector will continue to apply – at least until the end of the transition period. In the event of a no-deal Brexit, the EU performance scheme would no longer apply in the UK and the UK would default to the regulatory regime under the TA 2000, pursuant to which the economic regulation of NERL was previously carried out.

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APPENDIX D

Operating costs and capacity performance targets

D1 This appendix provides a commentary on the development of the CAA's final decision with respect to NERL's operating costs (opex) and capacity performance targets.

Operating costs

NERL's initial and revised business plans

D2 NERL issued its initial business plan (IBP) on 9th April 2018.

D3 This plan contained a forecast of operating costs for RP3 of £2,156m, i.e. slightly above £430m p.a. on average. To place these figures in some immediate context, NERL's operating costs for RP2 were £1,868m. Hence NERL's proposals were for a 15% increase.[73]

D4 At the time of publication of the IBP, the last complete year of data available was 2017. NERL's operating costs in that year were £350m. NERL's IBP forecast opex rising to £441m in 2022 (a 26% increase from 2017), then decreasing to decreasing to £428m by 2024 (still a 22% increase on 2017).

D5 NERL's explanation for the forecast increase in opex was due both to forecast growth in traffic and changes to the way in which it planned to structure its business. NERL's projections included a fall in total headcount, from 3,578 at the end of RP2 to 3,435 at the end of RP3, although operational ATCOs would increase significantly from 868 to 1,018 over the same period.[74]

Responding to NERL's IBP

D6 As part of its RP3 review programme CAA commissioned Steer – supported by specialist ATM consultancy, Helios – to analyse cost efficiency in NERL's IBP. Steer's analysis was circulated and discussed at workshops with stakeholders in two parts in May (looking back at RP2 cost efficiency to date) and August (looking at the IBP) 2018. The full Steer and Helios report on RP2, IBP and NERL's revised business plan (RBP) was published in February 2019, and is summarised later in this appendix.

[73] These costs cover the UKATS service only (UK en-route and London Approach) and do not include costs related to the Oceanic service. Depreciation and pension costs are also excluded.

[74] These employment figures all include the Oceanic Service.

D7 Additionally, in accordance with our business plan guidance, from May to September 2018, NERL carried out an extensive customer consultation exercise under the auspices of the Customer Consultation Working Group (CCWG), co-chaired by David Harrison, formerly NATS Safety Director and Neil Cottrell, Head of Infrastructure at BA. This led to a joint report, authored by the co-chairs of the CCWG, setting out areas of agreement and disagreement between NERL and its customers.

Report of the co-chairs of the CCWG

D8 The airlines agreed that there needed to be an increase in ATCO numbers, but felt they could not agree the ATCO numbers proposed by NERL. NERL gave detailed presentations on headcount, but it was difficult for airlines to assess the plan. In particular airlines were concerned that the forecast increase in ATCO productivity during RP3 was only 2% despite the introduction of new tools and technology. They considered that NERL should look at what could be achieved with stretch targets on productivity and training. In particular airlines wanted to see more ambition in relation to ATCO training and validations.

D9 The airlines could not agree the air traffic services assistant (ATSA) numbers and suggested that NERL should consider credible alternative ATSA options in its RBP. Again, the airlines called for NERL to consider what could be achieved with stretch targets on productivity.

D10 On central management and support staff, NERL presented a very detailed plan for increased numbers, mainly to support the change programme and to replace some more expensive engineers. However, they also proposed many new support roles (including 11 heads for communications) during the change programme. Airlines noted that they themselves had reduced headcount while delivering change programmes and challenged NERL to think creatively about how they could cover this work with fewer heads and no reduction in quality or timescales.

D11 Overall, airlines noted that Steer had estimated ranges that it considered realistic that were below those in NERL's IBP, combined with greater productivity gains.

D12 Airlines expressed concern about NERL's plan for the duration of "parallel running" in computer systems, the overall profile of combined asset management and technical staff costs which were expected to be higher by the end of RP3 than today.

D13 The airlines noted that Steer concluded that ATCO pay levels were realistic, although not necessarily efficient, and generally concluded that other pay rates were also realistic. However, they also noted that NERA's report commissioned, by NERL, suggested that ATSA and Management Support Grade (MSG) staff pay was above the top end of the expected pay ranges. Consequently, airlines asked for an appropriate ATSA/MSG pay reduction challenge in RP3.

D14 Finally, airlines supported the concept of the Opex Flexibility Fund (OFF), subject to reaching a view on its overall value, as well as proposals on capex and airspace modernisation governance. Specifically, the airlines called for use of the OFF to be subject to forward-looking NERL-airline governance procedures. They also called for more justification from NERL on the value of the fund (proposed to be £35m at that point).

D15 On 26 October 2018 NERL issued its revised business plan (RBP) for RP3. Notwithstanding the challenges NERL received from Steer and the CCWG, the opex forecast in this plan was not materially different to that in its IBP, and actually increased by £10m in total over RP3.This was despite a wide range of evidence suggesting that efficient levels of opex would be below the levels in its IBP, including:

- the conclusions from NERL's customer consultation process as set out in the CCWG Co-chairs' report;
- evidence from the Steer and Helios study;
- historical trends showing that NERL's opex per CSU fell by around 2.3% per year from 2007 to 2017; and
- the Performance Review Body's estimates that the potential for operating and capital cost efficiencies from NERL's 2014 to 2016 baseline was around 8%.[75]

CAA's response to NERL's RBP

Further evidence from Steer

D16 On 12 February 2019 we received Steer's Phase 3 report on NERL's RBP. In summary Steer's findings were:

Operating costs

- NERL's unit opex fell significantly since the end of RP1, with unit costs in 2017 12.4% lower than the 2014 cost level. However, NERL's unit opex was forecast to increase significantly in the final two years of RP2, with unit opex projected to increase by an average of 4.6% in 2018 and 2019. Total opex forecasts remain relatively constant in RP3 with unit costs decreasing slightly by 1.3%. Due to the significant increases at the end of RP2, unit costs in 2024 are forecast to be slightly above the 2017 level.

75 Annex 2. Air Navigation Service Providers: Advice on benchmarking ANSPS and EU-wide cost targets (June 2018)

Staff costs RP2

- Staff costs were projected to fall at the start of RP2, reflecting lower traffic projections. In the event outturn staff costs were consistently above plan and flat in the first three years of RP2, reflecting higher than expected traffic.
- Staff numbers were correspondingly above plan and were supplemented by additional external contractor staff to help deliver the enhance programme of technology development adopted early in RP2.
- Salaries for ATCO and other NERL staff were forecast to be constant in real terms in RP2. Outturn ATCO salaries were slightly above plan, with other staff salaries slightly below plan.
- Since 2012 NATS salaries have risen faster than salaries in UK transport and services sectors and in the UK as a whole. However, since 2014 the rate of growth in NATS salaries has been below that in those sectors and in the wider economy.
- Benchmarked against other European ANSPs, NATS salaries were towards the higher end, but not at the top, of the range, and in the middle of the large five European ANSPs.
- While recognising the unique characteristics of some NATS roles, especially ATCOs, NATS salaries are significantly higher than salaries in skilled roles elsewhere in the UK. This is particularly pronounced for ATSAs, as recognised in NERA's analysis for NERL.

Staff cost projections RP3

- NERL's ATCO staff number projections were higher than Steer's bottom-up analysis. The number of operational ATCOs at the upper range of Steer's projections was 8.1% higher than the number of operational ATCOs in 2017, while Steer's lower range projections was slightly lower than in 2017.
- NERL's ATSA projections were between 8% and 23% above Steer's projections by the end of RP3.
- ATSA salaries appeared high compared to benchmarks and, given the impact of new technology being adopted by NERL, Steer suggested it would be worthwhile considering restructuring some or all ATSA roles over the longer term and potentially introducing lower rates for new starters.
- Management and support staff roles and associated non-staff costs for business support roles (finance, legal and HR, as well as non-operational IT) appeared to be reasonable compared to benchmarks.

- For other support staff in MSG and Personal Contract Group (PCG) grades, NERL's planned growth in FTEs appeared to be very high compared to Steer's assessment of the underlying driver (traffic growth), in comparison to comparable organisations. NERL stated these grades played a vital role in delivering the level of safety, service, resilience and environmental performance. NERL said they also supported airspace modernisation and technology programmes, the development of future ATM systems, and NERL's response to the safety risks created by drones.
- Planned levels of technical services staff combined with asset management costs of NERL's operational systems showed combined costs increase during RP3 then fall back to slightly below 2017 level. NERL has provided an explanation for this pattern of costs, however it is difficult to establish that they reflect value for money.

Non-staff costs

- Most non-staff costs elements have remained constant over first three years of RP2, but are forecast to increase, in some cases significantly, in 2018 and 2019.
- Non-staff costs are less driven by traffic volumes than staff costs, so 0.3% Compound Annual Growth Rate (CAGR) in first three years of RP3 appears reasonable.
- Materially higher increases forecast for 2018 and 2019 also higher than projected RP3 traffic growth. NERL explains this by the dual running of systems, cyber security and increased training for operational staff.
- Asset management costs for operational systems increase significantly at end of RP2 and remain at level in RP3 significantly higher than historically. NERL explains them by dual running, resilience and cyber security. It is difficult to prove these costs provide value for money. It is possible they would reduce if RP3 capex was below projection, however, any restructuring costs would need to be allowed for.
- Proposed OFF levels of expenditure appear to be reasonable.
- Third-party costs (rent and rates, utility, maintenance and catering costs) have been benchmarked against similar organisations and in broad terms the costs appear reasonable.

Publication of draft proposals

D17 Our draft proposals for NERL for RP3 was published for consultation on 14th February 2019. It followed the discussions and decisions at ExCo and the CAA Board. The key factors we considered were most telling for our proposals were:

- The reduction in opex per CSU of 2.3% p.a. achieved from 2007-17;

- Average opex outperformance of 4.9% from 2007-17 compared to previous Performance Plans;
- The PRB's estimate of the potential for opex and capex efficiencies of 8% from the 2014-17 baseline.
- Steer's analysis, particularly where Steer and users aligned that cost projections not fully justified.

D18 In our draft plan we proposed accepting NERL projected cost increases 2017-19 acknowledging quality of service issues, the need to progress technology change and to push forward airspace modernisation, with 2.3% opex per Chargeable Service Unit (CSU) reduction each year from 2019. We did not apply 2.3% efficiency to OFF (which was set at £35m).

NERL's response to our draft proposals and our final decision

D19 With a view to capturing the benefits for users of early agreement with NERL on the price controls for RP3 the CAA Board authorised a number of changes to our approach to opex from our draft proposals that meant they would be significantly less challenging for NERL to achieve, including:

- an additional £15m for ACOG, which was not included in NERL's RBP determined costs;
- modifying opex in 2020, 2021 and 2022 to effectively accept NERL's forecasts for these years, to allow them even greater flexibility in achieving the desired technology transitions and airspace modernisation. This was worth a further £29m;
- we were persuaded to reduce our adjustment for non-regulated revenues from £45m to £24m. This last change amounted to accepting NERL's revenue forecasts, notwithstanding the views of our advisors that they lacked ambition, but adjusting opex accordingly to reflect a reduction we considered reasonable in response to the forecast loss of revenues;
- allowing a further £7m to the OFF (increasing it to £42m over RP3); and
- taking account of the impact of opex adjustments on pensions (about £1m pensions increase, for each £7m increase in opex). This provided an additional c.£3m.

D20 These changes were reflected in our final decision, first indicated in a letter from Paul Smith to Martin Rolfe, NATS CEO, published 5th August, [76] and then formally in the final decision document (CAP 1830) published on 29th August.

Capacity performance

D21 NERL's operational activities include providing sufficient airspace capacity to satisfy the demands of users and this is a significant driver of its opex. As part of our price control decisions we have also set performance targets. In doing so we have sought to establish targets that are realistic and encompass significant flexibility for NERL at a time when it is being expected to implement significant operational changes to support airspace modernisation.

D22 Details of the performance measures we applied are set out in Chapter 4 of the final decision. Our approach to targets and incentives is summarised below.

D23 We use four different performance measures, relating to capacity (as measured by delay):

- C1: average minutes of en route air traffic flow management (ATFM) delay per flight. This KPI is mandated under SES. The Commission sets an EU-wide target. Eurocontrol provides reference values that break down the EU target on a Member State basis. The CAA sets a national target, informed by a number of factors including the reference value, historic performance, NERL's business plans and stakeholder feedback;
- C2: average minutes of en route ATFM delay per flight attributable to air navigation services (ANS) performance (i.e. the C1 target adjusted to remove delay causes not attributable to NERL, in line with the provisions of the EU regulation);
- C3, or "Impact Score" which places greater weight on long delays and delays in the morning and the evening peaks; and
- C4, or "Daily Excess Delay Score", which is based on weighted delays exceeding pre-determined thresholds on a daily basis.

D24 We applied financial incentives to NERL with regard to C2-C4 in RP2 and have proposed continuing these incentives in RP3, albeit on a modified basis. Details

76 Exceptionally, we considered there was benefit in setting out the key tenets of our final decisions ahead of their publication in full at the end of August 2019, in order to provide the opportunity for NERL to clearly express its view as to whether it would accept our decisions. This recognised the strategic context of progressing airspace modernisation, the interplay between the EU and domestic legal frameworks for the regulation of NERL, and the advantages of allowing for the efficient functioning of the processes that allow for a possible reference to the CMA.

on the calculation of these financial incentives, including maximum and minimum payments and deadbands is given in appendix D to the final decision.

D25 In developing our final decisions in respect of these capacity/delay targets and incentives, we sought to:

- take account of the targets proposed in NERL's business plan, adjusted for historical performance;
- ensure consistency with the requirements and constraints of the EU regulatory framework;
- be mindful of the importance users placed on ensuring NERL continued to deliver a resilient and acceptable level of performance in the face of increasing traffic; and
- moderate the level of potential ambition, to ensure NERL was not distracted or disincentivised from pursuing its airspace modernisation programme.

Overall delay measures mandated by the Commission, C1 & C2

D26 In our draft proposals we accepted NERL's proposal, agreed in consultation with airline stakeholders, to set C1 and C2 targets the same level as RP2 (0.23 and 0.18 mins per flight, respectively) Our own analysis of NERL's historical delay performance suggested it could achieve a more ambitious C2 performance. Nonetheless, we accepted NERL's proposals because of the need to implement a significant airspace modernisation programme through RP3 and due to forecast traffic growth.

D27 NERL also proposed the addition of a new special event transition delay mechanism that would exclude specified delays associated with technical transitions. We did not accept NERL's special event transition delay mechanism as we considered that it was not consistent with the EU regulation in respect of the C2 metric.

D28 Following the publication in June 2019 of (national) reference values for the UK in the Eurocontrol Network Operations Plan (NOP), and concerns expressed by NERL that the more stringent targets could discourage it from undertaking key technology and airspace transitions, in the final decision we chose to adopt the higher NOP targets for C1 (and hence C2 and C3). As noted above our analysis suggested there was scope for NERL to improve performance *beyond* our draft proposals, and so this was a significant concession to NERL's concerns about the possible impact of airspace modernisation on its operational performance in the short-term.

D29 We also note NERL objected to the principle of our setting more stringent targets than the NOP. It is our view that the NOP reference values are advisory, and set out the *minimum* performance required by a Member State, if taken in aggregate with all other Member States setting reference values as targets, to meet the overall EU target. There is no legal impediment, nor economic argument, against our setting more stretching targets if such an approach were consistent with our statutory duties.

D30 We also reprofiled the C1 targets to better align with NERL's forecast performance in the short run and allow more flexibility for transitions later in the period, while leaving total target delay minutes unchanged overall for RP3. The evolution of C1 targets is shown in the table below.

Table D.1: CAA final decision on C1 target for RP3

C1	RP2					RP3				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Initial proposals (and NERL RP3 BP)						0.23	0.23	0.23	0.23	0.23
June 2019 NOP						0.34	0.34	0.30	0.26	0.27
CAA final decision RP2/3 (NOP values re-profiled)	0.25	0.26	0.26	0.26	0.26	0.26	0.32	0.32	0.30	0.32
NERL performance	0.04	0.21	0.10	0.21	N/A	N/A	N/A	N/A	N/A	N/A

Source: CAA

D31 C2 is calculated as a fixed ratio of C1, assuming 22% of all delays are non-ANS related. Hence C2 targets follow directly from C1.

D32 The table below summarises the C2 target for RP2 alongside NERL's actual performance so far in RP2 and sets out our final C2 target for RP3. It illustrates the extent of the performance "headroom" built into RP3 to allow for the transition effects of airspace modernisation.

Table D.2: CAA final decision on C2 target for RP3

ATFM delay minutes/flight[77]	RP2					RP3				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
C2 target	0.17	0.18	0.18	0.18	0.18	0.20	0.25	0.25	0.23	0.25
NERL performance	0.04	0.21	0.10	0.21	N/A	N/A	N/A	N/A	N/A	N/A

Source: CAA

77 Figures presented are for average minutes of en route ATFM delay per flight attributable to ANS, with the codes C, R, S, T, M and P

D33 To encourage NERL to perform well against these delay targets we apply a financial target to C2, the derivation of which is set out in appendix D to our final decision. This is mandatory under the EU framework in respect of our “C1/C2” measure.

D34 Taking into account stakeholder feedback we have designed this incentive were to:

- avoid undue intervention caused by year on year variation in performance,
- reflect the fact that the C2 target has been set generously with respect to current performance and so the scope for NERL to earn financial bonuses should be limited,
- ensure penalties for under-performance are not so large as to discourage NERL from embarking on the changes necessary to introduce airspace modernisation.

D35 To achieve this, we have set a wide deadband of ± 15% around the C2 target where no financial incentive applies. The maximum financial penalty NERL is exposed to is 0.25% of determined costs (this is slightly lower than RP2, where targets were established as a percentage of revenue, rather than costs), while the maximum bonus is set at 0.05% of determined costs. Performance outside the deadband causes penalties/bonuses as a percentage of costs to increase in a linear fashion, with the maximum penalty/bonus reached at performance that is ±40% of target over and above the deadband.

Additional performance targets, C3 & C4

D36 The logic of the C3 and C4 performance measures is to place more weight on delays which are more disruptive or costly to airlines and therefore passengers. The detailed weightings for these two measures are described in appendix D of the final decision.

D37 The C3 target is derived by multiplying C2 by a factor (after adjusting it from minutes/flight to seconds/flight), which means it also, in our judgement, also carries across “headroom” relative to current performance (as shown below) to provide NERL with the flexibility to undergo transitional steps for airspace modernisation.

Table D.3: CAA final decision on C3 target for RP3

ATFM delay minutes/flight[78]	RP2					RP3				
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Lower threshold (modulated)	16	16 (16.5)	16 (18)	16 (17)	16	16	20	20	19	20
Upper threshold (modulated)	24	24 (24.8)	24 (27)	24 (26)	24	24	30	30	28	30
NERL performance	5.2	25.0	12.6	17.05	N/A	N/A	N/A	N/A	N/A	N/A

Source: CAA

D38 As with C2 we have been conscious to neither over-reward out-performance nor discourage airspace modernisation that may have a short-run impact on performance. The lower and upper deadband thresholds and the points at which maximum penalties/bonuses apply have been calculated to be consistent with the C2 deadband. Penalties are capped at 0.75% of determined costs and bonuses at 0.25%, both a reduction from RP2 (both were 1% in RP2).

D39 The C4 performance target is intended to incentivise NERL to avoid major system outages which cause significant disruption.

D40 Because of the nature of this measure it is envisaged as a penalty only measure, because no level of system outage is “good”. Furthermore, by its nature the score is very variable. As shown in the table below, during RP2 when NERL suffered no major system outages, its C4 score was significantly below the RP2 target. But, by way of illustration, in 2013 when such an outage did occur, its C4 score exceeded 3,500.

Table D.4: CAA final decision on C4 target (penalty threshold) for RP3

Daily Excess Delay Scores	RP2					RP3				
	2015	2016	2017	2018[79]	2019	2020	2021	2022	2023	2024
Penalty threshold	2,000	2,000	2,000	2,000	2,000	1,800	1,800	1,800	1,800	1,800
NERL performance	14.2	176.7	0.6	350	N/A	N/A	N/A	N/A	N/A	N/A

Source: CAA

78 Figures presented are for average minutes of en route ATFM delay per flight attributable to ANS, with the codes C, R, S, T, M and P

79 NERL is forecast to come in below the threshold in 2018

D41 Given the relatively high penalty threshold there is no proposed deadband for C4. A penalty of up to 0.25% of determined costs is proposed, which would be reached if NERL's C4 score exceeded 120% of the penalty threshold.

Exemption days

D42 The final element of flexibility in our proposed performance incentives relates to concerns expressed by NERL and other stakeholder on the number of complex transitions planned for RP3 compared to RP2. We have addressed this in part, through aligning our C1 target (on which C3 is based) with the UK reference values in the NOP and then re-profiling the target level of delay for C3. However, in addition we propose to continue to allow NERL "exemption days" for the C3 and C4 targets.

D43 Exemption days are days NERL can specify in which system changes or airspace changes resulted in delay. When notified as an exemption day these days will be excluded from NERL's C3 and C4 performance score. Exemption days were also applied in RP1 and RP2, but we have chosen to increase the number of days from 75[80] to 100 to reflect the challenges of airspace modernisation.

[80] RP1 allowed 40 exemption days; RP2 allowed 75 exemptions days.

APPENDIX E

Capital expenditure incentives and governance

E1 In chapter 2 we discussed our decisions on capital expenditure (capex) incentives and governance during RP3. This is a key area of dispute in this price control. This is not about the level of capex that we have allowed (and efficient capex is anyway treated as a passthrough), but rather our decisions setting out the way in which NERL should engage with airspace users about its capex programme and mechanisms by which it can be held to account for delivery and efficiency of its capex programmes.

E2 This appendix expands on the context, content and rationale for our capex incentives for RP3. This appendix does not give an exhaustive description of our decision for capex governance. A complete description is set out in our final decisions, appendix I.[81]

Context

Strategic objective for RP3

E3 Improving capex governance and ensuring that NERL is accountable for the effective and efficient delivery of its capex programme has always been one of our key objectives for RP3. When we laid out our strategic vision for RP3 in March 2017[82], we discussed the importance of NERL having greater accountability for delivering its plans. We have also consistently stated that NERL should only accept our final proposals if it is committed to delivering its performance plan in full, including all the capex programmes it has proposed (subject to changes agreed with users and/ or the CAA).

E4 Air traffic management and airspace is currently undergoing significant modernisation in both the UK and the rest of Europe. NERL has an important role to play in airspace reform, the successful delivery of which will further the interests of airspace users.

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81 UK RP3 CAA Decision Document: Appendices, CAP 1830a https://publicapps.caa.co.uk/docs/33/CAP%201830a%20appendices.pdf

82 Strategic outcomes for the economic regulation of NERL 2020-2024: Discussion document, CAP 1511 https://publicapps.caa.co.uk/docs/33/CAP1511%20RP3%20scene%20setting%20consultation%20document.pdf

E5 Given NERL's critical role in the airspace modernisation process, in our strategic vision for RP3 we laid out the following objectives for NERL's investment planning and delivery:

- That NERL reflects user requirements and government priorities in the development of future capital investment programmes;
- That those programmes are fully justified, well thought through, properly coordinated and transparent;
- That NERL keeps its customers properly informed and that these customers have suitable opportunities to make meaningful inputs into NERL's investment planning processes; and
- That NERL can be held accountable for the delivery of appropriate airspace change on time and to budget through regulatory interventions and incentives.

E6 Despite stressing that capex governance is one of our key objectives, and despite the feedback from airspace users, in our view NERL has not fully responded to the challenge.

E7 We recognise that a large part of NERL's capital programme relates to a large IT programme which is required to help facilitate airspace modernisation (DSESAR[83]). And we accept that it is challenging for airspace users to engage on the details of the programme. However, in our view, it is precisely for this reason that NERL needs to engage more to ensure that airspace users have confidence in the plans.

E8 We consider that our capex incentive mechanisms for RP3 have the potential to provide much greater assurance that we would achieve our key strategic objectives, and lead to better outcomes for users. They would hold NERL accountable for delivery of the capital expenditure plan they proposed, ultimately through significant but proportionate financial incentives.

Capex governance during RP2

E9 Our key strategic objective of ensuring NERL's accountability for its proposed capital expenditure plan partly stems from the experience of capex governance during RP2.

E10 There were significant changes to NERL's investment programme both in terms of scope and cost during the RP2 period. These changes occurred early on during RP2 with forecast costs increasing by around 25%. At that time, airspace users commented that they had little opportunity to challenge NERL on the

83 Deploying Single European Sky ATM Research.

scope and cost of the programme. They also felt that NERL did not provide enough information for them on the benefits of the revised programme, different options and risks.

E11 We also note the fact that NERL did not deliver a key strategic project during RP2 as originally planned. NERL had initially planned to address airspace redesign in RP2 through the London Airspace Management Programme phase 2 (LAMP2). However, in 2015 it was decided that in light of several key challenges, certain elements of the plan would need to be reordered. NERL reviewed its technology programme and proposed taking the opportunity to accelerate the implementation of SESAR technologies and systems to replace its aging infrastructure earlier, to which the aviation industry agreed. However, airlines have stated that they still consider delivery of airspace redesign to be a high priority.

E12 Airspace redesign, including that formerly covered by LAMP2, must be delivered in RP3 to help facilitate expansion at Heathrow, ease congestion in the south east of England more generally and improve environmental performance. It was delayed from RP2 to RP3, and further delays must be avoided.

E13 We note that NERL made some incremental improvements to the transparency of its Service and Investment Plan (SIP) during RP2 and has proposed some further improvements for RP3.[84] These changes include providing users with more regular updates and introducing an escalation process when NERL and users do not agree on proposed changes. However, as identified in the Customer Consultation Working Group (CCWG) co-chairs' report, even with these improvements, airspace users still remain concerned about NERL's capex governance. In addition to NERL needing to improve its transparency and engagement, airspace users are concerned that plans that are scheduled for RP3 may slip into RP4, thereby delaying the benefits.

E14 During RP2, we also implemented the Independent Reviewer (IR) function to "review the accuracy of the Licensee's reporting". In practice, the IR has taken a more active role in assessing the quality of NERL's reporting more generally, and this has led to positive developments, for example on reporting risk management. NERL's RP3 business plan supported an enhanced role for the IR, and our decision also included expanding the IR's role to include assessing how well NERL has explained and justified its capital programme in its SIP document,

84 Condition 10(3) of NERL's licence requires NERL to prepare a Service and Investment Plan (SIP) in which it sets out its most up to date capex plans, including updates relative to the previous version, the delivery status of projects against key milestones, and whether NERL foresees any material changes that may impact on its ability to deliver projects in future.

as well as reviewing its reporting. We also set out a role for the IR in providing information for our operation of the capex incentives mentioned below.

Additional cost flexibility

E15 While it is true that our measures for capex governance developed between our draft proposal and our final decision, so did our allowance for cost flexibility. Our final decision for RP3 includes an extra £100m of determined costs compared to our draft proposal. These additional costs are intended to provide flexibility to NERL to deliver its proposed plan. They include:

- allowing NERL the full opex in its business plan for the first three years of RP3 to have additional resilience in its staffing to train operational staff on new systems and procedures;
- an additional £7million for the Opex Flexibility Fund [85] (OFF), raising the total fund to £42 million; and
- an additional £15 million over RP3 for the establishment and running of the Airspace Change Organising Group [86] (ACOG) function.

E16 These additional costs and flexibility further the need for robust governance procedures that hold NERL to account. The CCWG co-chairs' report found as one of its key conclusions that "the Airlines require an enhanced governance process to be determined which would allow them to fully support the other NERL proposed contingency mechanisms (Opex Flexibility Fund and the Wider Plan regulatory mechanism)".

Capex incentives

E17 As part of our wider capex and AMS funds governance measures are three types of capex incentives to hold NERL accountable for delivering its capex programme. These are:

1. a delivery incentive designed to encourage timely and effective delivery of NERL's capex programme;
2. an *ex post* efficiency review, which will consider NERL's RP2 (and in due course RP3) capex; and

85 The Opex Flexibility Fund is a fund (set at £42m in our final decision) available for NERL to utilise primarily to support its airspace modernisation activities. NERL, after consultation with stakeholders, can apply to us to use the Fund for specific activities.

86 The Airspace Change Organising Group is a programme management function that operates as an independent unit within NERL to manage the implementation of airspace changes required in Southern England, under the Airspace Modernisation Strategy and masterplan.

3. an information incentive designed to ensure NERL provides stakeholders an appropriate level of detail as part of its engagement on its capex.

E18 These three incentives are designed to provide much greater assurance that NERL delivers its proposed plan on time, efficiently, whilst ensuring that airspace users are well-informed throughout the process. We will describe each of these in turn and our rationale for their introduction.

E19 When taken together, we consider that these incentives result in a positive outcome for airspace users and are in line with our statutory duties. We will allow all capex spending (including any overspend), as long as (i) projects are delivered in a timely matter, including scope for NERL to delay projects if airspace users agree; (ii) the projects are delivered efficiently; and (iii) NERL provides airspace users with convincing and reasonable reasons for any overspend, in a timely manner.

E20 We have adopted this philosophy because we recognise that the aviation sector benefits from airline stakeholders that are relatively well-informed large users of services, who can provide meaningful input to investment and expenditure decisions, similar to customers in contractual relationships in wholly competitive industries. We are committed to encouraging regulated companies in the sector (including NERL) to lever on this resource and utilise the expertise of airlines to help best inform the approach to quality of service, investment and other expenditure decisions that have a direct impact on users.

E21 We do not expect airspace users to have a final veto on NERL's expenditure decisions, but we do expect NERL to be proactive and to work with airspace users to introduce greater levels of engagement and transparency into its capex governance, so that it makes informed and transparent decisions. We suggested that NERL could learn from the model used at Heathrow, and have made initial suggestions for NERL to consider in developing its approach, though we are not imposing a prescriptive approach, nor are we suggesting that it copies other models wholesale.

E22 We consider that NERL should put in place mechanisms that provide for an appropriate degree of flexibility in how it implements necessary investment but also provide for greater stakeholder involvement and oversight, which is designed to give stakeholders greater understanding of, influence over and confidence in investment plans. Nonetheless, NERL should remain accountable for delivery of investment and the associated benefits to consumers.

Delivery incentive

Description

E23 We set out a financial incentive on NERL's delivery of its capex programme. This will involve a general assessment of NERL's capex delivery, supplemented by a focus on the delivery of specific milestones for programmes or projects that lead to important outcomes that benefit users. The specific milestones that we sought feedback on and are included in our draft licence modification are:

- the DP (en route) and DP (lower) technology changes which together will provide a common operating platform for the Swanwick and Prestwick centres, allowing for legacy escape (replacement of old systems and associated maintenance burden) and mutual contingency, and will provide the capacity necessary for airspace modernisation;
- the "AD6" airspace change for Essex airspace which would increase capacity into Stansted and Luton airports; and
- LAMP airspace changes to modernise airspace in the South East of England to take account of the performance capabilities of modern aircraft.

E24 The IR will produce an annual report on NERL's progress on delivering its capex investment programme. The report is likely to include a judgement on NERL's overall delivery performance. The report will take account of comments from NERL and other stakeholders (including airlines, airports and the AMS co-sponsors). In part to recognise the expanded role, but also as good procurement practice, we intend to have an open tender process to appoint a new IR, once the precise role is confirmed after the considerations of the CMA.

E25 We will publish the report which will be used to inform our views on NERL's actual delivery of programmes and outcomes.

E26 Delivery in full of NERL's RP3 business plan capital programme will be the baseline assumption, and we will focus on whether NERL has done everything it could do, to deliver the programme. The process will be dynamic to take account of appropriate changes to NERL's capital programme over RP3, that have been agreed with users through the enhanced capital governance process.

E27 Assessment will allow flexibility for NERL and airspace users agreeing to sensible changes to NERL's capex programme, for example due to unforeseen circumstances outside NERL control or changes in user or strategic priorities. This flexibility is very important as we do not want to incentivise NERL to carry out a programme that users either no longer require or require but to a different timetable.

E28 The financial incentive will take the form of a reduction in NERL's RP4 revenue or starting RAB, based on both the general assessment of NERL's delivery and the delivery of the specific programme or project milestones above (as amended with the agreement of users and us). The amount of the incentive shall be capped at £36 million (2017 CPI prices) and is linked to NERL's return on equity on it's the RP3 capex allowance. The assessment shall be complementary to the *ex post* efficiency review of NERL's RP3 capital programme. As progress will be reviewed annually there would be no surprises for NERL in relation to any concerns that are identified, and potentially time would be available to address those concerns.

Rationale

E29 We have been clear from the outset about the need to hold NERL to account for delivery of its capex programme, with this being one of our key outcomes for RP3. The capex delivery incentive, in combination with the other capex incentives, will hold NERL accountable through a significant but proportionate financial incentive.

E30 We acknowledge that the RP3 CCWG process (as summarised in the co-chairs' report) identified airline concerns primarily related to their ability to assess the efficiency of NERL's capex programme, rather than explicitly delivery of the programme. However, experience through the annual SIP process for RP2 illustrates ongoing concerns with the level, consistency and quality of information provided by NERL to airspace users and other stakeholders, particularly where programmes change. Moreover, we note the significant changes NERL made early on in RP2 to its investment programme in terms of cost and scope.

E31 The Steer and Helios report on NERL's forward-looking capital programme[87] identified concerns that NERL's capital delivery plan was unrealistic. They noted:

> *"The risk is that RP3 will start with slippage already incurred on RP2 tasks and then further delays could arise that will particularly risk the legacy escape plans of 2022. This would then lead to a clear risk of the subsequent larger airspace change programme slipping into RP4, with significant delay to benefit achievement for the users."*

E32 This risk of further delays in the delivery of larger airspace change identified by Steer and Helios further highlights the need to hold NERL to account for delivery of its proposed capex programme.

E33 The capex delivery incentive is capped at £36 million (2017 CPI prices). We consider that this is sufficiently large to have a real impact on shareholders and therefore a meaningful incentive for delivery, while not being too large to create undue risk. The maximum incentive is linked to NERL's return on equity on its capex in RP3. Our assessment of NERL's delivery will inform whether it is necessary to apply a penalty, and the level of that penalty, up to the cap. We are seeking to get as much assurance as possible that NERL will do everything it

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87 Steer and Helios, NERL's forward-looking capital programme and expenditure efficiency, Feb 2019, https://www.caa.co.uk/uploadedFiles/CAA/Content/Accordion/Standard_Content/Commercial/Airports/Files/Steer%20cost%20efficiency%20report.pdf

reasonably can to deliver the programme, and work effectively with users to vary the programme where appropriate.

E34 We recognise that the capex delivery incentive was not included in our February 2019 initial draft proposal. However, we consider that the additional incentive is appropriate because it is consistent with our long-signalled need for robust capex accountability mechanisms. Secondly, the additional incentive was warranted by other changes between our initial proposal and our final decision. As noted above, our final decision allowed substantial additional determined costs and cost flexibility to support airspace modernisation. We consider that this additional allowance and flexibility warrants additional oversight and tools to hold NERL to account.

E35 Moreover, following our initial proposal we undertook additional rounds of stakeholder consultation on our capex incentive proposals. We shared a working note with stakeholders on capex governance in April 2019.[88] The intention of the working note was to inform stakeholder engagement on our developing policy for RP3 capex governance. The note included a draft proposal, discussion of key risks and a summary of outstanding issues where our policy was still in development. We invited comment on the working note and, following responses by stakeholders, circulated a draft policy and processes proposal in July 2019[89] for further comment by stakeholders.

Ex post efficiency review

Description

E36 Consistent with our duty to promote efficiency and economy, we will commission an independent review, before RP4, of the cost efficiency of NERL's RP2 capex and early RP3 capex. If the review identifies any expenditure as inefficient, we may decide to disallow some or all of the inefficient spend. This will be achieved through a downwards adjustment to NERL's starting RAB for RP4.

E37 In addition to the IR's role supporting stakeholder engagement and reporting on progress of delivery of NERL's capex programme, the IR will also provide a view on the cost efficiency of NERL's expenditure, on an annual basis.

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88 CAA working note: Capex and Airspace Modernisation Strategy (AMS) funds governance policy development, https://www.caa.co.uk/uploadedFiles/CAA/Content/Accordion/Standard_Content/Commercial/Airspace/Air_Traffic_Control/Working%20note%20-%20development%20of%20governance%20policy.pdf

89 NERL capital expenditure (capex) and Airspace Modernisation Strategy (AMS) funds governance policy and processes - draft for stakeholder comment, https://www.caa.co.uk/uploadedFiles/CAA/Content/Accordion/Standard_Content/Commercial/Airspace/Air_Traffic_Control/Capex%20governance%20draft%20policy%20process.pdf

Rationale

E38 The *ex post* efficiency review is complementary to the delivery incentive and therefore has a similar rationale. However, whereas the delivery incentive focusses on whether NERL delivered projects on time, this incentive focusses on whether capex was efficient. Our key objective for RP3 of holding NERL to account for its capital programme includes both delivery and efficiency of capex.

E39 During the CCWG process, airlines raised specific concerns around their ability to assess the cost efficiency of NERL's capex plans. An *ex post* review is a flexible and appropriate approach to ensuring the efficiency of NERL's capex over RP3.

E40 NERL accepted in its response[90] to our draft proposal that

> *"For NERL to be held accountable for the capex programme, we believe it would be appropriate to assess the efficiency of our expenditure in RP3 at the beginning of RP4."*

E41 Our decision is therefore in line with NERL's expectations to some extent, but NERL does not agree with our extension of the IR role to assess during RP3, on an ad hoc basis, the efficiency of aspects of NERL's capex as an input to the *ex post* review.

Information incentive

Description

E42 To encourage the provision of high quality information as part of capex engagement under the enhanced capital governance process (see below), we will apply a financial incentive on NERL, such that if there are significant weaknesses in NERL's ongoing provision of information on its capital spending, then any overspend during RP3 would only be remunerated at its cost of new debt finance (rather than the full WACC), even if it subsequently passes an efficiency test.

E43 The incentive will apply when there has been a serious failure in the provision of information to justify an overspend either at the project or programme level, or on its overall capex. We consider a significant failure would be where NERL has offered no reason for an overspend or provided information at too aggregated a level to show why the overspend has occurred. If NERL provided information showing why an overspend had occurred, but we and users do not agree with NERL's reasoning, this would not be considered as a weakness in information

90 NERL 2019, NERL's response to CAP1758: Draft UK reference period 3 performance plan proposals, https://www.caa.co.uk/uploadedFiles/CAA/Content/Accordion/Standard_Content/Commercial/Airspace/Air_Traffic_Control/NERL_RP3response_redacted.pdf

provision, but might still be subject to the *ex post* efficiency review. The incentive will take effect through a one-off reduction in RP4 revenue or starting RAB. The assessment shall be complementary to the *ex post* efficiency review of NERL's RP3 capital programme and the delivery incentive. While there is no cap to this information incentive, it would only apply to the capex overspend where information is lacking.

Rationale

E44 The provision of high-quality information is crucial for engagement between NERL and stakeholders on capital programmes. This is especially true for cases when there are changes to the investment programme plan, as experienced during RP2.

E45 As part of our RP3 review, we asked the IR to review the SIP process. The IR's report [91] noted that significant changes to the investment programme made early on during RP2 saw substantial increases in costs and delay of key programmes. They noted that the change in costs was not socialised before the start of the formal SIP process and that "*many stakeholders remain unclear on exactly what drove the scale of the change*".

NERL challenge

E46 If we were to make a downwards adjustment as a result of any of these capex incentives, it would not affect charges in RP3, but would do so in RP4 and RP5. This would be through either a downward adjustment to NERL's starting RAB for RP4 or a reduction in NERL's RP4 revenue, and similarly for RP5. NERL would be able to challenge the decision through a CMA referral at RP4 (or RP5).

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91 Review of Service and Investment Plan (SIP) process, Chase Partners, January 2019 https://www.caa.co.uk/uploadedFiles/CAA/Content/Accordion/Standard_Content/Commercial/Airports/Files/Grant%20Bremer%20Review%20of%20SIP%20process%20report.pdf

APPENDIX F

Oceanic

Introduction

F1 In chapter 2 we discussed our decision on the Oceanic price control for RP3. The CAA and NERL are in agreement about the value of NERL introducing ADS-B[92] surveillance services during this price control period, in terms of providing both safety and operational benefits for aircraft crossing the North Atlantic. However, we understand that NERL does not agree with the level of prices we have set in respect of the ADS-B data charge and approach to governance. We note that the Oceanic control, including ADS-B data charges, is worth c.£42m per year over RP3.

F2 This appendix provides additional information in respect of the Oceanic service and associated price control, to assist the CMA with the referral of NERL's price control. It does not give an exhaustive description of our decision for Oceanic. A complete description is set out in chapter 11 of our Final Decisions document, CAP 1830.

Oceanic background

F3 This section provides an overview to the regulatory framework for the Oceanic service, a high-level description of its operational characteristics and introduction to space-based ADS-B.

Regulatory framework

F4 Under the Chicago Convention[93] on international civil aviation, responsibility for airspace above the 'High Seas' lies with the International Civil Aviation Organization (ICAO). ICAO delegates this responsibility to States through "Air Navigation Agreements". As shown in Figure F.1, there are five Oceanic Control Areas across the North Atlantic.[94] In the eastern North Atlantic the relevant Air Navigation Agreement is the Exchange of Notes Constituting an Agreement Between the Government of Ireland and the Government of the United Kingdom relating to the Oceanic Area Control Centres at Shannon and Prestwick, signed on 28th March 1966 and amended on 23rd April 1990. Responsibility for ATS in

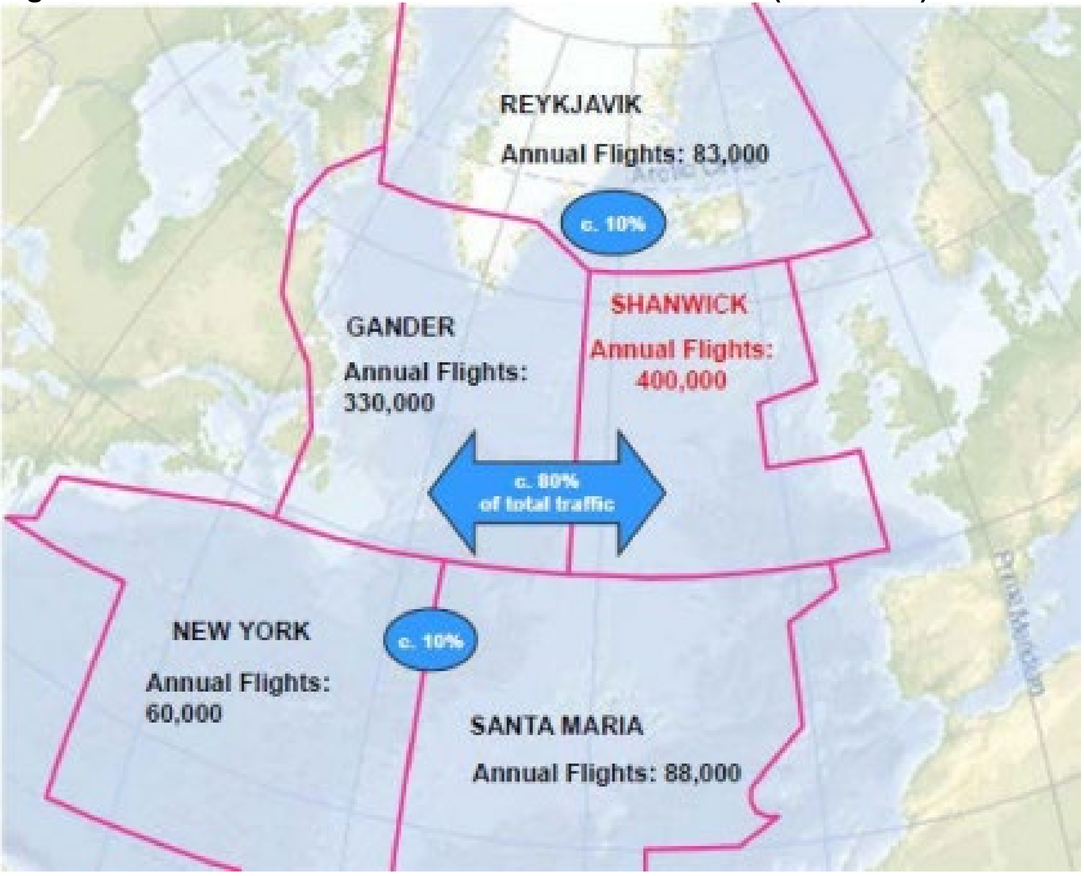
92 Automatic dependent surveillance – broadcast system.

93 Paragraph 2.1.2 of Annex 11 to the Chicago Convention on international civil aviation (signed in Chicago on 7 December 1944).

94 ICAO considers there are six Oceanic control areas – Bodo is not shown in Figure F.1

the eastern North Atlantic's "Shanwick" Flight Information Region is jointly delegated to the UK and Ireland. The UK fulfils its obligations through NERL.

Figure F.1: Oceanic Control Areas in the North Atlantic (from 2014)



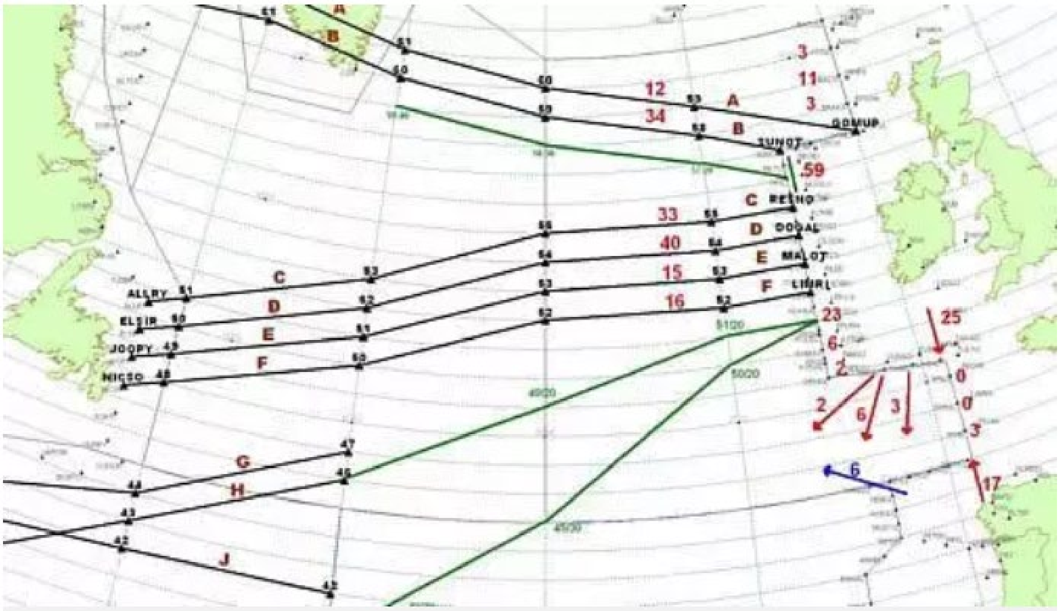
F5 The management and development of this airspace is governed by ICAO through the North Atlantic System Planning Group (NATSPG) and subgroups. The majority of flights (c.80%) are handled by a combination of the Shanwick service and the Gander service provided by NavCanada.

F6 Given the monopoly nature of the North Atlantic ATS provision, it is incorporated into NERL's licence under the Transport Act 2000. As it is a High Seas delegation of ATS outside the scope of the EU treaties, it does not fall within the competence of the EU, and therefore is out of scope of the EU performance scheme.

Operational characteristics

F7 Because of the challenges of creating a conventional electronic surveillance infrastructure in the middle of large expanse of ocean, historically the North Atlantic 'Oceanic' ATS has been provided on a procedural (non-radar) basis. Separation of aircraft is assured through clearance and management of planned flight trajectories. For transatlantic flights there is an organised track system (OTS), planned on a daily basis, depending on the position of the prevailing Jetstream, to minimise the adverse effect on westbound flights and maximise the benefit to eastbound flights. Aircraft follow the defined OTS routes with larger vertical and horizontal separation than would be required if there was electronic surveillance. Aircraft report their location on a periodic basis via existing communication systems.

Figure F.2: Typical track structure



F8 In addition to the main transatlantic routes (East to West and vice versa), the Oceanic service can also provide ATS to traffic flying south-west, around France, to Spain and beyond. These routes, known as ‘Tango routes’ allow traffic to avoid French airspace when there is congestion or other operational reasons.

Space-based ADS-B

F9 NERL is currently trialling and proposes to introduce on a permanent basis ADS-B for the Oceanic service in RP3. ADS-B is where equipment onboard aircraft automatically transmit identification and location information, based on “GPS”,[95] that can then be received using equipment that is ground based or satellite (space) based. This information is then converted into radar-like data and made available to ATS systems and ATCOs for the purposed of providing ATS.

F10 ADS-B for the oceanic service would involve using a satellite system receiving the ADS-B information from the aircraft and re-transmitting that to the ANSPs on the ground. This would provide significantly more accurate and timely aircraft position information than the current procedural approach. NERL will buy this space-based ADS-B information (data) under a commercial contract from the supplier.

[95] GPS is the US military Global Navigation Satellite System (GNSS), other States have or are introducing their own GNSS constellations, including Europe’s Galileo system.

Relationship between NERL and Aireon

F11 The space-based ADS-B service is provided by a single commercial (monopoly) supplier called Aireon. Its main shareholders are ANSPs, including NavCanada, the Irish Aviation Authority, ENAV (Italy's en route ANSP), Naviair (Danish ANSP) and NATS Services Ltd (NSL), which has a 10% equity shareholding in Aireon. NERL and NSL are both wholly owned subsidiaries of NATS Holdings Ltd.

F12 NATS Holdings Ltd is owned by the UK Government (49%), the Airline Group[96] (42%), Heathrow Airport Holdings Ltd (4%), Employees (5%). It is the parent company of both:

- NERL (the economically regulated monopoly provider of UK and Oceanic en route ATS), subject to price control regulation and this reference; and
- NSL (the unregulated provider of terminal ANS, engineering, consultancy, training and information services).

F13 Aireon has contractual arrangements to provide ADS-B surveillance data to various ANSPs, in this case including NERL, as well as the Irish and Canadian ANSPs. User concerns of a potential conflict of interest were raised with NSL's equity investment in Aireon during NERL's ongoing discussions and contractual negotiations with them. These are highlighted in the CCWG co-chairs report as well as in individual airspace user responses to our draft proposals.[97] These matters were into account when reaching our final decisions on the data charge as explained in paras F27 and F28.

Price control development

F14 This section provides some context to the Oceanic price control from RP2 and sets out the key issues for RP3.

RP2

F15 Historically, the Oceanic charge has been a single charge per flight, covering the cost of the procedural service and associated systems, regardless of the route. During the RP2 review process, the possibility of new surveillance technologies coming on line during the reference period was identified, but given the lack of detail and certainty, no cost allowances were included in the RP2 price control.

96 The Airline Group is owned by a combination of pension funds and airlines.

97 Consultation responses to our RP3 draft proposals are published under the "Economic regulation for RP3 under the Single European Sky (2020-2024)" heading at www.caa.co.uk/natslicence.

F16 However, our final decision did include a trigger that would enable an in period modification of the licence, using the provisions in condition 25,[98] allowing the introduction of new technology and costs, subject to two criteria:

a) The proposal had a strong cost benefit case, such that its introduction and associated higher charges were to the benefit of users; and

b) The proposal enjoyed widespread support from users.

F17 Despite numerous detailed discussions between NERL and its customers during RP2, the threshold was not met. Principally, this was because NERL was unable to convince users of the cost-benefits case once the expected cost was known, but also due to delays in the technology being rolled out.

RP3

F18 For RP3, NERL included the roll out of the space-based ADS-B technology, and associated surveillance service, as part of its business plan. It proposed a core charge (for conventional transatlantic and Tango routes), akin to the RP2 charge. In addition, it included a separate charge for the new ADS-B data to enable it to provide an electronic surveillance service. The proposed ADS-B charge for transatlantic routes would increase the charge for this route by about 60%.

Core charge

F19 NERL and users agreed on the approach to the proposed transatlantic and Tango core charge for existing services. However, our analysis of historical outperformance in NERL's Oceanic service, suggested that there was scope for efficiencies to be realised, in line with the efficiencies compared to NERL's business plan for the UK en route service. Taking account of our duties to further the interests of users and promote efficiency and economy on the part other licensee (NERL), we therefore applied efficiencies in our draft proposals and final decisions, taking account of our broader efficiency work.

Table F.1: Oceanic core charges, CAA final decision

(£2017, CPI)	2020	2021	2022	2023	2024	Total
Total core cost (£000)	27,8170	27,174	27,335	25,658	24,933	132,917
Traffic forecast North Atlantic crossing (000s)	497	507	519	530	540	2,594
Traffic forecast Tango (000s)	31	32	33	35	36	167
Core charge per flight	£52.65	£50.42	£49.49	£45.41	£43.29	£48.15

Source: CAA

[98] Condition 25 of NERL's licence set out the requirements for licence modification during a control period.

ADS-B data charge

F20 Aireon determined its charges on the basis of a flight/hour, with different charges depending on the density of the airspace and the availability of alternative sources of equivalent surveillance data. For instance, over (or near) land, conventional electronic surveillance is possible through land-based radar or similar systems. In such circumstances, Aireon charges a lower data charge. For the transatlantic oceanic service, which has relatively high density and no alternative equivalent surveillance provider, Aireon charges its maximum charge. NERL argued that its contract with Aireon is aligned with Aireon's global pricing model, and under non-disclosure arrangements, shared with its customers a report it had commissioned into Aireon's pricing structure.

F21 In respect of the introduction of ADS-B and associated data charge there was significant disagreement between users and NERL. In particular, in relation to the benefits users could expect to receive as a result of the increase in costs. Users noted that originally (in RP2), NERL's ADS-B case was based on operational improvements alone, but in its RP3 business plan NERL started to make the case that it was both for operational and safety reasons.

F22 NavCanada, which provides services in the western North Atlantic, stated in correspondence with IATA[99] and shared with the CAA as part of the RP3 process, that the level of risk is currently not acceptable over North Atlantic. However, users do not accept that there is currently a safety risk, nor that there is an operational case for introducing ADS-B.

F23 NERL's RP3 business plan proposed different ADS-B data charges for its North Atlantic crossing (East-West) transatlantic routes and its Tango (North-South) routes, with the Tango data charge being significantly lower. This was justified with reference to Aireon's differentiated charges explained above. Users have not raised concerns with NERL's proposed Tango ADS-B charge, but do not agree with the introduction of the ADS-B data charge for the North Atlantic crossing.

F24 We conducted a high level and broad CBA, using conservative assumptions and based on NERL data, that indicated that ADS-B had a positive net benefit. We also considered other evidence available – notably an ICAO study on ADS-B which concluded that there is positive NPV benefit (although this is smaller on per-flight basis than NERL's estimates).

F25 Users continue to dispute the level of benefits, but have provided limited evidence to support their position, other than they are content with the current operations and that there are no safety issues. However, joint NERL-NavCanada analysis, supported by ICAO, projects around a c.75% reduction in vertical

[99] International Air Transport Association – a global trade association for major airlines

collision risk, enabling the UK to meet the ICAO North Atlantic Tracks target level of safety (TLS). NERL has stated that it is not possible to meet the TLS through other available technologies. As a signatory to ICAO, the UK must seek to meet global safety standards, and in reaching our RP3 decision, we have taken account of our primary duty in respect of safety.

F26 It is noted that in its business plan, NERL initially proposed a fixed contract option for the ADS-B data service, which would result in a lower charge per flight if outturn traffic was higher than forecasted. NERL said this was subject to us allowing a full pass-through of ADS-B costs, which we proposed not to do in our draft proposals. While it has maintained this approach for the Tango charge, in responding to our draft proposals, NERL indicated that the contract with Aireon for the North Atlantic crossing would be based on a fixed price per flight that would not vary with traffic. This effectively removes volume risk on the ADS-B data charge for North Atlantic crossings for NERL. The fixed lump sum contract for Atlantic crossings was, therefore, no longer a feasible option on the basis of NERL's negotiation with Aireon. However, a lump sum arrangement remained feasible for Tango routes.

Table F.2: Oceanic ADS-B data charges, CAA final decision

(£2017, CPI)	2020	2021	2022	2023	2024	Total
ADS-B data cost North Atlantic crossing (£000)	14,782	15,070	15,437	15,752	16,048	77,089
Traffic forecast North Atlantic crossing (000s)	497	507	519	530	540	2,594
Data charge per flight North Atlantic crossing	£29.72	£29.72	£29.72	£29.72	£29.72	£29.72
ADS-B data cost Tango (£000)	143	142	142	141	141	709
Traffic forecast Tango (000s)	31	32	33	35	36	167
Data charge per flight Tango	£4.60	£4.45	£4.30	£4.04	£3.91	£4.25

Source: CAA

F27 In reaching our final decisions on NERL's Oceanic price control we were mindful of users' concerns about the expected level of performance benefits and potential conflicts created by NSL being an equity shareholder in Aireon. We therefore sought to:

- balance these concerns with potential operational gains,
- meet international safety obligations,
- take account of limited evidence from both NERL and users on levels of expected benefits and the lack of a suitable comparator/benchmark for the pricing structure Aireon has used, and

- understand NERL's contractual negotiations with Aireon and whether it has demonstrated that it has sought value for money for users.

F28 Our final decisions, therefore, allowed implementation of ADS-B and associated data charge, but:

- applied a 5% efficiency to the data charge which we considered to be in line with our wider efficiency challenge on non-staff related opex;
- included requirements for the monitoring of delivery of performance improvements against metrics that would be agreed with users;
- provided for a review of costs and observed benefits within the RP3 period; and
- required the NATS Board to certify that it is operating a full ADS-B-based service for its Shanwick airspace, in order for NERL to be permitted to recover the allowed ADS-B costs through the Oceanic charge from the beginning of RP3.