NERL NR23 Periodic Review

Customer Consultation Working Group

Report of the Co-Chairs

13 December 2021

ISSUE 1

1 Introduction

1.1 Context

National Air Traffic Services (NATS) En route plc (NERL) is subject to price control by the Civil Aviation Authority (CAA) in accordance with the licence issued to NERL under the Transport Act 2000, which sets the maximum recoverable charges from airspace users for the provision of air traffic services; these are specifically those related to Eurocontrol en route, London Approach and Oceanic en route services.

The NR23 periodic review will update this price control for 2023 to 2027, and the CAA has set out its process in its CAP2160 publication[1][2]; as part of this process, a Customer Consultation Working Group (CCWG) was established, Co-Chaired by Alex Dawe, appointed by the airlines, and Mike Shorthose, appointed by NERL.

6 CCWG meetings were held with broad airline attendance. The CAA's NR23 process was also informed by a separate meeting with airports. In addition, before the CCWG meetings took place, 3 pre-meetings were held (2 with airlines, 1 with airports) to agree formats and agendas.

It should be noted that the CCWG forms part of the consultation on the NR23 price control, which will establish the economic incentive framework for and set maximum levels for NERL's charges over the five-year period from 2023 to 2027. This is distinct from the annual Service and Investment Plan (SIP) process and other consultations conducted by NERL with customers[3].

1.2 Objectives of the CCWG

The aim of the CCWG was to facilitate quality conversations between NERL and airline customers on the key building blocks of the economic price control. The goals of the CCWG were to:

1. encourage mutual understanding of each other's perspectives;
2. discuss the building blocks of NERL's emerging business plan for NR23 that meets airline customers' needs as far as possible over the NR23 period.

---

[1] *Civil Aviation Authority CAP2160*

[2] *Civil Aviation Authority: NERL licence*

[3] *NERL produces 2 SIP documents and consultations per year, together with quarterly updates. There are 2 Technical Customer Advisory Board (TCAB) meetings per year in addition to bi-laterals with customers.*

1.3 Impact of COVID 19 on the process

The timing of the NR23 periodic review, only 3 years after the previous RP3 review, has come about because of the impact of COVID-19 on the aviation industry. The significant fall in traffic in 2020 has been unprecedented and has resulted in the need to re-set the regulation, as required by the Competition and Markets Authority (CMA). At the time of the NR23 business planning process, traffic levels according to October 2021 forecast were recovering and were at 55% of 2019 levels[4]. The recovery remains "fragile" as many countries retain travel restrictions and COVID-19 levels remain high. As a result, there is considerable planning uncertainty which has led to a need to regard many of the assumptions presented by NERL as subject to revision as the recovery progresses, should the traffic recovery stall or quicken relative to forecasts. This has also prevented NERL from having time available to present a detailed initial business plan prior to the start of the CCWG and, for NR23, it was agreed with the CAA to present its emerging plan as a series of building blocks presented and discussed through the course of the CCWG meetings. An intended benefit of this approach, which had been consulted on by the CAA[5], was that NERL's customers could be taken through the building blocks and comments incorporated into the business plan, rather than being presented with a fully worked business plan at the start of the process.

2 The Consultation Process

2.1 Customer representation in the process

NERL issued invitations to join the NR23 Customer Consultation process to 61 airlines, IATA, 35 airports and business aviation customer organisations. Following this invitation, 23 customer representatives from 15 airline and trade associations as well as 10 airports and airport groups. Many of the representatives were present throughout the sessions with additional attendance for the Oceanic and Regulatory sessions. There was representation of 4 low fares airlines / holiday operators (Ryanair, easyJet, TUI and Jet2). Together meeting attendees represented the majority of movements through UK airspace and a cross section of airline interests with diverse country of origin and trade associations.

2.2 Observers

The CAA took part in the CCWG sessions as observers – 10 representatives attended the Consultations and typically there were at least 6 representatives at every session. The final two sessions were also supported by CAA consultants, Steer and Integra. The CAA role was more participative than in previous consultations with regular contributions to the discussions as well as useful presentations on the changes to the regulatory process, handling of new users and Oceanic ADS-B which were appreciated by the meeting attendees.

With the support of airline representatives, it was agreed that a representative from NATS' Trade Unions could also attend the CCWG as observers. There was representation at all meetings and there was only a single regulatory session, covering details of pensions and employee compensation,

---

[4] *Data presented by NERL at meeting on 6th October 2021*

[5] CAA 2020, *Economic regulation of NATS (En Route) plc: consultation on approach to the next price controls review: CAP 1994*, pp. 30-31, CAA 2021, *Economic regulation of NATS (En Route) plc: Update on approach to the next price control* review: *CAP 2119*, p. 28, CAA 2021, *Economic regulation of NATS (En Route) plc: further update on approach to the next price control review ("NR23"): CAP 2160*, p. 8, p. 11, pp. 19-21.

where there was a request for the representative to leave the meeting temporarily. The NATS' Trade Unions representative was therefore able to hear in full the vast majority of the debates between NERL and customers.

2.3 Working arrangements

A number of meetings were held by NERL and the CAA with airlines prior to the full sessions of the CCWG. These were held to inform on various aspects of NERL's planning, to seek agreement on the timetable and mode of consultation, and included discussion and agreement on the appointment of the Co-Chairs. The Co-Chair remit was to provide an independent chairing of the meetings and to ensure that all parties were able to contribute.

To encourage participation, the Co-Chairs wrote to all potential participants informing them of the process. The CAA encouraged participation not only by the relevant regulatory and technical experts in the airspace user community but also appropriate engagement from their senior leadership[6].

An impact of COVID-19 was that many meetings have been held virtually. Although at the time of the CCWG process, restrictions were lifting, it was decided to hold the meetings in "mixed mode" with the opportunity to attend in person at NERL's premises and also virtually. Generally, airlines and airports chose the virtual option which made it possible to obtain a good attendance at each meeting, particularly from overseas airlines who might otherwise not make the choice to attend every session.

For each CCWG meeting, a pre-meeting for airlines was arranged and chaired by the airline appointed Co-Chair. The purpose was to understand in advance the airline key points in order to assist in the running of the full meeting.

NERL proposed an initial list of topics for the meetings. These remained broadly as planned although the contents evolved through the process. At the request of airlines, an additional workshop[7] was also added to enable subject experts/specialists to discuss detailed regulatory issues related to pensions and cost of capital. This framework was in line with the high-level approach set out by the CAA in relation to the NR23 customer consultation[8].

To support the meetings, NERL set up a "Virtual Exhibition" (VE) which provided a structured way of accessing background information. A more conventional website approach was also used to contain the supporting material. The VE will be maintained in its current format until the revised business plan is submitted to the CAA in February. NERL will publish its business plan on its public website. The material in the VE, including minutes, actions and recordings will continue to be available for stakeholders to access and refer to with clear notices that the content may be out of step with the business plan. NERL is considering how best to achieve this but will ensure adequate signage on the customer portal.

NERL provided minutes of each meeting and maintained an action tracker through the process. The full list of actions is contained in Appendix 2, which were all addressed by early December 2021.

---

[6] *CAA 2021, Economic regulation of NATS (En Route) plc: further update on approach to the next price control review ("NR23"): CAP 2160, p. 20.*

[7] *At the time of preparation of this report, this meeting has not yet happened. It is planned for 14th December 2021*

[8] CAA 2020, *Economic regulation of NATS (En Route) plc: consultation on approach to the next price controls review: CAP 1994*, p. 30

The final schedule of meetings is shown below

Date	*Session title*	*Topics covered*
06-Oct-21	Context discussion	• Overview/implications of COVID • Traffic outlook • Plan outcomes • Scenarios
07-Oct-21	Service delivery, operational resourcing, training & technical resilience	• Performance metrics and outcomes (safety, environment, capacity) • Operational resourcing • Technical resilience
13-Oct-21	Capital Investment	• Structure of investment programme • ACOG • Essential programmes and those in progress from SIP21 • NR23 Options • Capital portfolio benefits • Opex implications • Proposed changes to capital governance • Portfolio risks
20-Oct-21	Oceanic	• CAA update on regulatory framework • CAA update on ADS-B • Traffic forecast • Service performance outcomes • Capital investment • Costs and prices
02-Nov-21	Airports	• Context • Plan outcomes • Traffic outlook • Performance metrics and outcomes • Investment portfolio
03-Nov-21	Regulatory mechanisms	• Determined costs (operating costs, cash pensions, regulatory depreciation, regulatory return, single till income) • Determined Unit Costs • Regulatory mechanisms • Price estimates
11-Nov-21	Closing session	• Updated traffic forecast • Discussion on investment plan and service quality • Revisit option within plan
14-Dec-21	Workshop on Regulatory issues	• Pensions: Briefing and Q&A • Cost of capital, including CAA commentary on H7 initial proposals and their applicability to NR23, and NERL commentary on Oxera's report for NERL on "Cost of Capital for NR23" (available as part of the NR23 Virtual Exhibition)

3 NERL's presentation of the business plan building blocks

The NR23 process is a reset of the regulatory process because of the need to respond to the impact of COVID-19. This resulted in NERL completing its business planning processes in half the time of previous reviews[9] in the midst of a very complex and fast-changing situation for the industry. As a result, NERL's approach, agreed with CAA, was to present the material as a series of building blocks with various supporting materials in the VE, rather than as a fully worked up initial Business Plan, and short presentations to aid discussion. The VE was launched with key material on 28 September 2021 and an overview of NERL's development of its NR23 Business Plan ("Prospectus") was made available to customers on 4 October 2021. Information about the building blocks were discussed through the series of CCWG meetings progressed.

NERL presented its plan against a challenging background brought about by the impact of COVID-19 on NERL:

- UK traffic levels reduced to just 10% of the previous year in April 2020, causing serious liquidity challenges for NERL;
- underlying cash receipts fell by almost £300m in 2020;
- further cash shortfalls of around £700m are expected across 2021 and 2022.

Despite these challenges, NERL kept UK airspace open and safe throughout the pandemic ensuring essential cargo, emergency services and military flights could continue to operate.

Key actions taken by NERL to respond to the challenge of COVID-19 included:

- reduction of cash outgoings in RP3 (the current regulatory period) by over £450m (outturn);
- change to underlying cost base by implementing a voluntary redundancy programme which reduced non-operational headcount by around 350 employees without impacting NERL's ability to support recovery;
- utilising UK-wide Government support schemes;
- supporting the CAA's policy decision to defer the price control reset to 2023;
- refinancing of the business, injecting around £0.9bn of additional funding and liquidity support into the aviation sector.

These actions were essential to secure NERL's ongoing viability. Net debt has increased significantly and is expected to increase further whilst gearing increased from pre-pandemic levels of 30% to a forecast of [✂ redacted] in September 2022 (vs a gearing reporting threshold in NERL's licence of 65%).

The overall context was presented in the first meeting and summarised the main objectives of NERL's emerging business plan[10] to deliver

- a safe air traffic system;
- good, efficient service levels;
- capacity increases;

[9] CAA 2021, *Economic regulation of NATS (En Route) plc: Update on approach to the next price control review - CAP 2119*, p. 29

[10] *At the time of the consultation, NERL did not have a business plan. It was being built in parallel using feedback from the CCWG consultation as a critical input. It will not be finalised until published on the 7th February 2022.*

- enhanced environmental and fuel benefits;
- affordable prices;
- financial resilience.

NERL's emerging plan requires resources to:

- develop and train the next generation of air traffic controllers;
- sustain legacy technical equipment while progressing our technology transformation programme;
- advance airspace modernisation;
- invest in solutions targeting 'net zero' carbon emissions by 2035.

NERL's emerging plan outcomes can be summarised as:

Area	Metric	Target
Traffic	UK flights (base case)	2.1m to 2.7m pa (-17% to +5% v 2019)
	Chargeable Service Units (base case)	10.8m to 13.9m pa (-13% to +12% v 2019)
Safety	Range of European & UK based metrics	Maintaining or improving safety performance v 2019
Service quality	C1: all causes delay	11.5 – 15.3 seconds per flight
	C2: NERL related delay	7.0 – 10.8 seconds per flight
	C3: weighted score	14 – 22 seconds per flight
	C4: variability of daily average delays	1800 score
	Technical resilience	Compliance with Licence Condition 2
Environment	3Di flight efficiency	27.5 – 27.8 score pa
	Contribution to net zero	On target for 4.4% reduction by 2035
Investment	Total NR23 capital investment	£545m - £680m (£565m base case estimate)
Financials	Total operating costs	£429m pa average (2% lower v 2019)
	Total Determined Costs	£666m pa average (in line with 2019)
	Underlying en route DUC	£51 pa average (in line with 2019)

The CCWG sessions provided an opportunity to discuss information on the key plans/assumptions in the "Prospectus" (single document summary of NERL's emerging proposals) and the VE.

4 Key outcomes/conclusions from the Consultation

Summary of discussions

The NERL business plan building blocks were presented during the CCWG meetings. The key discussions are summarised in the table contained in Annex 1 broadly in the order in which they were presented at the meetings. The table provides for each topic:

- details of the building block/NERL's proposal;
- level of support from airlines;
- main points of discussion / concerns raised;
- comments on way forward as the process moves towards issuing of the initial business plan.

Areas of agreement

Broad agreement was obtained in the following areas:

- The high level priorities of the programme in terms of safety and service outcomes (although not their precise level).
- The use of Eurocontrol's Specialist Panel on Air Traffic Statistics & Forecasts (STATFOR) data to provide a broadly independent approach to traffic forecasting noting the context of great uncertainty as the demand recovers after COVID.
- The approach to a baseline scenario assuming planned traffic and outcome derived from updated STATFOR base forecasts.
- Airlines were of the view that the regulatory mechanism should be able to accommodate the level of uncertainty surrounding the price control, which affects the ability to accurately forecast. there was little appetite to have repeated re-determinations of the price control, therefore widening the range of the traffic band used in the traffic risk sharing (TRS), as well as moving away from the dead band (currently set at +/- 2%), could be a sensible way to manage this uncertainty, so long as this were consistent with incentives and efficiency throughout.
- Proposed airspace modernisation projects noting some concern to remain even-handed between airports.
- Single till income methodology based upon that established at RP3.

Areas where there is a lack of support

There were some areas where there was a clear lack of support. These included:

- No support for adjustment of capacity targets if there is a deviation of traffic from base case. The airlines felt that more information was required before support could be given. The airline view is that, at this stage, they cannot see the detail behind the proposals until the business plan is built, but also there is conflict in the incentives with the dead band of the TRS. These metrics are critical for outcomes so airlines are reserving their view pending the presentation in the final plan.
- No support for charging airlines for the integration of new airspace users. It was recognised that there is a clear need to integrate new users safely but that a new charging model was needed so that those new users take their fair share of the resultant costs.
- Airlines are not supportive of funding certain navaids (Doppler Very High Frequency Omnidirectional range - DVOR) serving airports through the NR23 price control at present, though they have not heard directly from airports as to their case for inclusion of these costs in the NR23 settlement

Areas of qualified support

For most other areas there was considerable debate and qualified support for NERLs proposals. The key areas are described below:

Justification of the Investment programme

There was a basic acceptance of investment priorities in the base case but a desire for greater levels of justification including presentation of benefits on a programme basis along with how individual projects are expected to contribute to the delivery of those benefits, along with an expectation that the investment programme will lead to future operating cost base reductions.

Particular comments were raised on the level of the significant sustainment programme, portions of which had yet to pass through the SIP process, and the increase in costs and length for some of the major programmes related to legacy escape, with benefits deferred to NR28 and beyond. There was a general welcome of an option to provide a "2+5 year" governance for investment projects noting that such a programme would need careful working through to ensure harmony with the 5 year nature of the regulatory process. There was full support for NERL remaining interoperable with Europe whilst recognising that there may be some opportunities for agility given the separation of the UK from the European regulatory process. Concern was raised to ensure that delays remain acceptable during major system transitions.

Regulatory building blocks

NERL's presentation on business plan costs including the efforts made to reduce costs as a result of COVID-19 were generally welcomed and it was noted that the underlying Determined Cost (DC) had been reduced relative to 2019 levels, while average Determined Unit Costs (DUC) were in line with 2019 levels. However, the imposition of charging for revenue lost as a result of COVID-19 was not agreed by airlines feeling that, although recovery of lost revenue is an allowed component of the regulatory framework, more governmental support should be provided to cover shortfalls.

Price profiling

There was support to defer TRS revenue recovery into the next regulatory period (NR28) but differing views on the detail of the profile. Consensus is unlikely to be easily achievable, though presentation of the price control around a flat real profile across NR23 is a likely useful starting point for the business plan, leaving profiling to a subsequent discussion after other building blocks have been set.

Oceanic programme and ADS-B

The discussions around the Oceanic programme were dominated by the charges related to the provision of Automatic Dependent Surveillance – Broadcast (ADS-B) and concern that insufficient benefits were being generated.

ADS-B charges: There remains airline frustration at the level of ADS-B charges. Under its licence, NERL has an obligation to commission an independent review of ADS-B as a separate process outside the NR23 settlement. It was generally agreed that the original timing of the review was pre-mature given the low levels of traffic in the last years. There was general agreement that the review should be delayed and CAA will be bringing forward a paper in the first half of 2022 seeking views on the content of the review. Pending the outcome of this review, NERL will pass on the ADS-B charge.

Oceanic benefits: Airlines offered support for collaborative work on metrics and to maximise benefits as a result, although they remain of the view that insufficient benefits are being generated at the moment. Airlines are keen to ensure that NERL uses real data for assessment of collision risk estimate (CRE) performance, rather than basing it solely upon a theoretical exercise under the Reich mode[11]l.

[11] Note that the International Civil Aviation Organisation (ICAO) Maths Working Group perform this function for Safety Oversight Group, and that group has representatives from the airline community.

Environment focus

There was general support for an increasing focus on sustainability to achieve net zero in 2050,[12] and whilst 3Di has served as a key environmental metric until now, airlines have some reservations over its continued use where optimal flight plans and aircraft onboard telemetry suggest better options given temperature and wind conditions. NERL will work with airlines to evolve this metric in future albeit not within the NR23 plan. It was felt that insufficient information was presented on a NERL proposal to modulate service targets in light of actual traffic, taking account of the interaction with other metrics such as capacity and operating costs and therefore airlines felt that proposals for change were pre-mature.

Operational resourcing

There was support for returning to full capacity the training of controllers after reductions during COVID-19. But there was concern that, should traffic return faster than expected, the expected capacity shortfall, caused by a controller shortage, in 2023/24 could increase and cause unacceptable operational disruption.

Consideration of options

At various times in the process, NERL presented options for inclusion in the business case. The views of airlines on all of the options were taken in the final meeting. The discussions and levels of agreement are documentation in the Appendix on each Option.

[12] 2050 is aviation's target. NERL has set an internal target to achieve this by 2035

5 The Co-Chairs' assessment of the Consultation process

Observation 1: Airline diversity

The consultation achieved a greater range of airline attendance compared with RP3 with good attendance from low fare airlines with representation at every meeting. This was helped by the virtual nature of meetings enabling non-UK based airlines to attend. ***Maintaining this option for future meetings should be considered.***

Observation 2: Knowledge of representatives

With the exception of the specialist economic areas, the knowledge of airline representatives was appropriate and sufficient. In particular, there were good operational inputs from many airlines. Some financial representatives attended the sessions (eg from British Airways). However, more generally, there was limited ability to interpret the financial consequences of individual decisions without taking away for internal discussion, and it can be difficult for operational representatives to consider second order implications across the price control.

As a result, ***it is recommended that effects on other building blocks are clear for any options included in NERL's business plan***

Observation 3: Role of CAA

The CAA attended each session with at least 6 representatives. Valuable interjections, questions and guidance were given throughout the sessions which were welcomed by the participants and seen as a positive step compared to the more passive role (observer only) used in RP3. ***It is recommended that this active involvement is maintained for future consultations.***

CAA provided senior attendance at the first meeting to provide an introduction to the process. The Co-Chairs consider this to have been sufficient.

Observation 4: Role of NATS Trade Unions

The presence of the Trade Union representative was welcomed by airlines. The representative was appropriately briefed to step out when sensitive matters were discussed. ***The representation of NATS Trade Unions should be continued in future consultations.***

Observation 5: Information provided

In line with the requirements of various CAA policy updates and the terms of reference agreed through the CCWG, NERL provided online briefing materials via a virtual exhibition in advance of consultation sessions which in turn provided the opportunity for discussion on plan topics. Material was largely provided, and then discussed, as a series of regulatory building blocks. The process was designed to enable collaborative engagement between all stakeholders and to encourage participation, both through attendance at the meetings and through engaging in the discussions. There was feedback during meetings from airlines and CAA that the information in presentations alone was insufficient to assess fully NERL's intentions and, in particular, the proposed options, scenarios, cost base and capital plan. Significant additional information was requested on the capital investment programme and on the levers available to change the business to meet dynamic demand, some of which was available in the VE ahead of the presentations and more was added to the VE in response to the actions.

The Co-chairs proposed mid-process that airlines, NERL and CAA set out which further information was required and how this would be reviewed within the CCWG remaining meetings. NERL provided additional information in response to action items in good time and additional agenda items were added to the final consultation meeting. NERL endeavoured to complete most actions within 10 days, and all were closed through the submission of a response by early December. In the event, airlines had not been able to review fully this additional material in time for the discussions and reserved the right to make further inputs, particularly when updated for new passenger forecasts.

Part of the problem of having time to read the material provided was associated with the high level of activity on other consultations, notably the Heathrow consultation, which took a major part of airline time during the CCWG process. ***It is recommended that, if possible, CAA de-conflicts the timing of future consultations.***

The Co-chairs believe that the lack of an initial sufficiently detailed Business Plan is probably at the heart of the sense that there was insufficient information provided and this in turn relates to the compressed timescales available for the consultation so that the detailed information was not available at the start. The trialling of the virtual exhibition as a new method for sharing information was innovative but received mixed views from the airlines. The Co-Chair view is that airlines do not have time to guide themselves through the VE to find information. ***We therefore recommend that future consultation processes start with the delivery of an initial Business Plan containing sufficient detail to enable evaluation.*** The Co-Chairs note NERL's perspective that feedback from the RP3 process indicated that the presentation of a complete business plan was seen by airlines as presenting a fully worked document with little room for adjustment to take account of airline comments received during consultation. Nevertheless, the Co-Chairs feel that it should be possible to structure a future consultation based on the production of an initial Business Plan with sufficient detail to allow assessment of issues and also a narrative which makes it clear that adjustments are possible in line with airline comments.

Observation 6: Presentation of options

The RP3 Co-Chair report mentioned airline requests for more options particularly on staffing. Despite the accelerated planning timescales, NERL provided a range of options in the NR23 building block information but airline views were that the information provided for some options was insufficient to make an informed decision on the options, and some had not found the additional material on the VE. Nevertheless, useful debate was had at the final meeting against the slides on each option provided by NERL. For some options, airlines were able to express a clear view in support of or against. However, the position reached for most was "not agreed" and this was in part because of insufficient information and context (ie the relationship to the rest of the programme) and some stakeholders being unable to find sufficient time to read and analyse the material in advance of meetings. ***We recommend that details of all options are provided further in advance of discussions at meetings together with a full justification for each option*** and this will enable airlines to make informed judgements on the options with an appropriate level of detail***.***

Observation 7: Efficiency of process and relationship with other consultation methods

The RP3 Co-Chair report highlighted the effort required by all parties and asked whether a means be found to make the process more efficient. The RP3 Co-Chair report also mentioned use of the SIP as a means of improving the process.

The Co-Chairs notes that considerable effort falls on NERL and airlines to support the process. NERL has to provide the appropriate effort to prepare the Business Plan and the consultations with customers and airlines have to put in considerable effort when already being involved in many different consultations across Europe. It is noted that positive comments were received during the consultation from airlines who commented that NERL consultations are a good example compared with many others.

There is also an interaction between the SIP/TCAB and NR23 processes where the demarcation is potentially confusing not least because during the consultation, there was uncertainty whether parts of the programme (eg sustainment) had been included fully in the SIP process. There will be further interactions with the proposed 2+5 process as well since approval of the investment components for each 2 year plan will need to be covered by the SIP process, which complements and supports the price-control process.

The Co-Chairs observe that it is important to be clear how strategy is formed with the NR23 price control being prime rather than TCAB. The NR23 price control process will create the envelope within which the SIP and TCAB will need to operate.

The Co-Chairs recommend that the remits of these various consultation processes are made clear and, in particular, that the lines of demarcation are consistently expressed and agreed by stakeholders, including the CAA and that there is clear signposting between various consultation and engagement activities.

Observation 8: Representation of customer views

The CCWG represented one opportunity for customer comment. The CCWG Co-Chair report has captured as far as possible the level of airline agreement and concerns on the material presented but in the context of the overall consultation, it is only a starting point. Airlines provided views on NERL's plans and responded to requests for early input and "no surprises" when comments are provided on the full business plan. Nevertheless, it was difficult to obtain full views with airlines citing insufficient information and insufficient time to review material (see above).

During the final meeting it was commented that while there was general agreement with the intent of a "no surprises" approach for the CCWG, airlines had to reserve their positions on many aspects of the plan and options pending further detailed information in the full business plan. It was also apparent that, for some issues, eg price profiling, airlines views differ on priorities due to competing commercial priorities during the recovery period. It was confirmed by CAA in the final meeting that airlines will have other opportunities to comment including:

- a short window of around one month to comment direct to the CAA on NERL's business plan, following publication on 7 February 2022 (timescale to be confirmed by the CAA);
- response to the CAA's initial proposals in summer 2022
- engagement with CAA bilaterally at any time.

Observation 9: Purpose and usage of the report by CAA

As per RP3 report, there was general agreement that it is important that CAA take note of the areas of agreement and also of concerns expressed.

6 Conclusions and Next Steps

This report has summarised the key outcomes of the CCWG process. It is the final report but further comments are always welcome. Please send these comments to the Co-Chairs at the email addresses shown below and/or directly to NERL/CAA.

The Co-Chairs would like to thank all of the stakeholders for their engagement with the process and for commenting on the draft of this report. A particular mention to NERL for their hosting of the meetings and the support given to the Co-Chairs during the process.

Alexander Dawe

Head of Economic Regulation

Networks & Alliances

British Airways Plc

[✂ redacted]

[✂ redacted]

Mike Shorthose

Independent Aviation Advisor

[✂ redacted]

[✂ redacted]

NATS Public

ANNEX A

NATS (En Route) plc: Future price control 2023-27 (NR23)

Appendix: Points of agreement and concern

Context Discussion

<table>
<tr><td colspan="2">Traffic Forecasts</td></tr>
<tr><td rowspan="2">Details of building block/NERL's proposal:

NERL to use Eurocontrol STATFOR forecast for en-route element of NR23

Business plan submitted to CAA will reflect updated traffic forecast based on updated STATFOR

• UK flights (base case):
  ○ 2.1m to 2.7m pa (-17% to +5% v 2019)
• Chargeable Service Units (Base Case):
  ○ 10.8m to 13.9m pa (-13% to +12% v 2019)

Variations in traffic forecast (eg such as that in STATFOR Oct 21 relative to the previous forecast) will have relatively little impact on the main planning assumptions and outcomes (impact on price likely to be around £0.50, no major impact on capex or operational resourcing, no material change in service metrics)</td><td>Level of support:

En-route: Approach supported due to STATFOR's value as an independent source of forecasts, established as a principle following debates during RP3 that ultimately led to the CMA redetermination,

Oceanic: Approach to forecasting could be acceptable subject to greater visibility and granularity surrounding assumptions for North Atlantic and Tango routes, in particular given ICAO forecasting for Oceanic areas may exist in other forums</td></tr>
<tr><td>Discussion / concerns raised:

CAA confirmed that there is no legal requirement to use STATFOR. The main consideration in selecting forecasts is the reliability/plausibility of inputs and outputs, but it is recognised there could be some benefits in using an independent forecast. High uncertainty in industry at the moment reduces accuracy of any forecasts. NERL and airlines should provide input to STATFOR process to assist forecasting accuracy, and the CAA noted that it could consider reopening the debate over forecasts where justification existed and better information was available, although there did not appear to be broad appetite to do so. CAA will review assumptions used in light of evidence provided.

Given that the updated STATFOR forecast released in Oct 21, which will be used for the first draft business plan, shows UK traffic growth catching up with Europe, there is an airline expectation</td></tr>
</table>

Oceanic forecasts to be derived from STATFOR region data and extended using NATS oceanic forecast based on NATS methodology	that latest available information should be reflected by NERL in its business plan when available; this is particularly the case as airlines, at the time of the CCWG, were experiencing increase in demand at present Airports' view: May need to distinguish between carrier types. Low cost carriers were rebounding quickly as were traffic levels at Stansted and Manchester – need to ensure these factors are included within the forecasts to support planning for sectors. Airlines are keen to ensure that forecasting is as independent as possible, and that forecasts used are both realistic and consistent with those presented in other forums and relate to airline plans that are available. Oceanic: Airlines would like to see more granularity including differentiating NAT and Tango routes, and whilst Oceanic is not in the domain of STATFOR, suggesting use of STATFOR region data extended using NERL's methodology could be appropriate, airlines are keen to ensure traffic forecasts reflect most accurate and latest available information in a way that can be validated, noting that ICAO North Atlantic Economic & Financial Group (EFFG) provide forecasts[13]
	Comments on way forward: Airlines asked to provide data to assist forecasting if possible, both directly to Eurocontrol to updated STATFOR, and bilaterally with NERL where possible

[13] *NERL's view is that the latest ICAO NAT EFFG forecast is not a realistic one with a very low traffic base case.*

<table>
<tr><th colspan="2">Business Plan scenarios</th></tr>
<tr><td rowspan="2">Details of building block/NERL's proposal:

NERL proposal for scenarios
Initial planning based on STATFOR May 21 extended base case
Scenarios developed at high level using assumptions and expert judgements to illustrate choices available to NERL and customers
Not intended as alternative BPs but to allow substantive discussion about how NERL can adapt to changing levels of traffic
Scenario detail
Low case to be based on STATFOR extended low
High case to be based on STATFOR extended high
Scenarios generated by coupling High/base/low traffic with high/base/low outturn</td><td>Level of support:

Airlines find it difficult to comment on specific scenarios at present before greater detail is developed in the business plan; whilst they agree with NERL's approach to understanding how business can flex between alternate scenarios, they are keen to see greater details in the business plan, and an ability to make non-binary choices when developed to be able to respond in depth. For example, when more developed, the possible synthetic training options could follow numerous different paths with differing consequences for NERL's future operating model; this allows for greater discussion, ensures airlines are better informed of the risks involved, and is better than a yes/no decision on whether to pursue or not.</td></tr>
<tr><td>Discussion / concerns raised:

Airline expectations:
Greater information required to assess how operation can flex, and important to ensure both that business can respond to changes in demand to result in robust system that is cost effective and avoids delays
Scenarios need to be linked with capacity availability, capital requirements and service quality targets
Incremental demand needs to be served efficiently such that capital requirements are no more than necessary whilst proactively responding to changes to avoid falling behind and acting as brake on demand
Innovation critical to ensure that automation and digitalisation benefits can bring down staff costs and raise productivity
Expectation that retirement of experienced Air Traffic Controllers (ATCOs) and replacement with new ATCOs should reduce unit costs in the short term</td></tr>
</table>

	Airlines are keen to stress that they have ambitious plans for recovery that cannot be compromised by any inability to meet expected traffic levels or result in significant additional delays due to capacity constraints on NERL
	Comments on way forward: Ultimately, airlines seek to understand levers that could be moved to alter choices and provide material changes in business operations, rather than simple variability of charges to different forecasts traffic volumes

Service delivery, operational resourcing, training & technical resilience

<table>
<tr><th colspan="2">Safety</th></tr>
<tr><td rowspan="2">Details of building block/NERL's proposal:

Top priority during NR23

The overarching goal is maintaining or improving performance, structured around key metrics:
Rate or number of serious incidents (including airprox events and RAT events)
Rate runway incursions and losses of separation
Effectiveness of safety management
NERL would be keeping the same metrics and be targeting the same or a better performance in NR23 compared to RP3.

Key objectives
Controllers will be continuing to complete refresher training throughout NR23
Investment in technology and airspace modernisation to improve safety and help mitigate the effect of increasing traffic
Mitigate the risk from new airspace users to ensure the continued safety for NERL's commercial airline customers as a minimum
Continued use of ADS-B in oceanic operation with further demonstrable safety improvements</td><td>Level of support:

Airlines are consistently supportive of safety as the overriding priority for NERL, as set out in legislation and its licence, and are seeking to understand where these evolve given these targets have been comfortably exceeded in the past</td></tr>
<tr><td>Discussion / concerns raised:

Noted that CAA does not establish safety targets through the price control, under the licence. But that there are safety requirements on NERL established through the safety regulation framework, including safety management and safety reporting.

Airlines are keen to ensure that NERL's Safety Management System ("SMS") remains effective, and evolves in response to new developments to support the safe delivery of operations

Airlines are supportive of investment in safety-based measures that reduce controller workload and raise safety as a result, but will need to be convinced of the effectiveness of any safety measures introduced.

At present, airlines find it hard to comment on metrics in detail as they stand, and are keen to see how they have evolved from RP2 to see whether they remain appropriate in the future; this is particularly the case as the target safety levels have been achieved in the UK for a number of years. Its evolution is now important to ensuring Safety is continually improved

Airlines are particularly concerned that safety levels are maintained against background of rising traffic, with particular interest in the safety implications of</td></tr>
</table>

NERL to maintain EU system of safety rating measurement and aim to deliver parity of outcomes with other European ANSPs	new airspace users who might have a disproportionate effect on airlines e.g. space launches. When addressing potential safety concerns, NERL has highlighted capacity issues which might arise from, from example, closing airspace to accommodate a space launch. This would maintain safety levels but potentially cause significant delay impact. Airline expectation is that the new airspace users pay for new investments and services to support their safe integration into the airspace; this topic was covered separately by the CAA during the engagement sessions Finally, airlines are concerned about how safety benefits in oceanic are measured, with concern over the statistical method used to assess. Airlines acknowledge that the ICAO safety target measure is an agreed measure – it is just, given the high cost of the surveillance data that has enabled the calculation of an improved safety level in oceanic sectors. that airlines query the real-world/practical safety improvement that has actually ensued. This issue was considered separately in the Oceanic section of the consultation process.
	Comments on way forward: Airlines want to have line of sight between investment activities and ultimate safety outcomes to ensure those activities generate real value and a step change in safety through their implementation

Capacity	
Details of building block/NERL's proposal:	**Level of support:** Airlines are particularly concerned that NERL is able to meet capacity demands in the recovery period from the pandemic, and as a result, there is little support for

NERL's planned service performance outcomes are based on the same metrics and coding structure as the RP3 plan, including the continuation of exemption days. Achievement of the targets is dependent upon securing the benefits from the capital programme. Proposed C2 target is 7 seconds per flight for 2023, rising to 10.8 seconds by 2025 C3 projected performance is based on doubling the C2 targets RP3 C4 target is retained without change Mechanism proposed to adjust targets to respond to uncertain traffic volumes. • Traffic modulation: C2,C3 no modulation for traffic +/- 1 4% from forecasts then thresholds move 2% for every 1 % difference	traffic-based adjustment of targets that might reduce the incentive in certain scenarios Additionally, airlines seek more supporting information on the construction of targets, and how they incorporate investments and link to the other building blocks; there was a general impression that the targets might be weaker than they should be given achievements in 2019 and prior, though a proper assessment would be enabled by greater levels of information behind the targets **Discussion / concerns raised:** Airlines required more information, including an understanding of the relationship between capacity and the investment plan, the transitions to bring new investments into service, the exemption days needed, the impact of investments on reducing operating expenditure and the profile of delay performance sector by sector; NERL noted that there was a great deal of complexity underneath the targets presented, which airlines were keen to understand when available in order to connect the dots of the emerging business plan NERL noted that a sector by sector presentation was not possible at present, and emphasises that the network level effects are more important in understanding benefits. Airlines accept that this network view is the appropriate was to to understand the effect on capacity of investments that are planned, and ultimately what the appropriate level for capacity targets should be to ensure the incentive is effective Airlines observed that the targets did not appear stretching enough given lower levels of traffic compared to 2019, however NERL stated that it was not able to commit to lower delay targets at this stage given the volume of change in the proposed investment programme. Airlines were not supportive at this stage of a

	traffic-based adjustment of the target where actual traffic deviations exceeded 4% from forecast; this would need further justification if it were to find support Airlines are focussed upon ensuring that capacity demands are met such that NERL, as it stated itself, is not a brake on the recovery of traffic, and that concerns raised in Palamon do not recur
	Comments on way forward: NERL should provide further information on detail behind the traffic modulation proposal so that airlines can understand how the targets might be adjusted to ensure the incentive over NERL remains consistent and appropriate, in order to make informed judgement on the appropriate level of incentives; it is not clear at present how NERL arrived at its proposed numbers

Environment	
Details of building block/NERL's proposal: Support UK commitment to new zero emissions by 2050 Key objectives • Optimise flight plans to reduce fuel burn and CO_2 emissions • Deliver airspace modernisation • 3Di metric will continue to be the headline measure of performance	**Level of support:** Airlines remain supportive of environmental targets in general, but want them to be more ambitious, building on past metrics to take account of conflicts with what they are trying to achieve both in flight planning and tactically onboard the aircraft based upon aircraft telemetry OPTION 1: Airlines do not support increasing the financial incentive against 3Di performance and rebalancing the incentives away from other metrics, since those other metrics are as important to ensuring NERL service delivery as 3Di
	Discussion / concerns raised: NERL's target (4.4% by 2035) is designed to be consistent with achieving net zero by 2050. Airline concern that targets are insufficiently ambitious, and in particular that 3Di may conflict with flight planning and

OPTION 1: Increase focus on providing efficient routes Increased financial incentive against 3Di performance, with rebalanced incentives across other metrics • Penalty and bonus: maximum incentive from 0.5% to 1% of revenue • Traffic modulation: every +/1 100k traffic moves thresholds by +/1 0.5 points	tactical flight operations priorities. 3Di in particular needs ongoing development to modify the metrics in a way that unifies with other tools used by flight crews to optimise flight plans and flight profiles in real time. For example, flight planning is based around optimal wind and temperature profiles rather than great circle route or airway routings alone, and is further updated for inflight requests based upon actual environmental conditions: this results in profiles that differ from optimal 3Di profiles, resulting in potential conflict between controller, flight planning and flight crew objectives. Option 1: Airlines are clear that environmental performance is an area of focus, but this is complementary to capacity provision, particularly if delays arise. There remains concern in airlines where conflict arises between environmental and capacity objectives, and airlines do not support rebalancing the incentives away from other metrics, since those other metrics are as important to ensuring NERL service delivery as 3Di. Airlines are of the view that more thought is required to develop existing metrics, and in particular that more information is required on the linkage between the capital investment programme and airspace modernisation to understand how traffic modulation of the 3Di target might be appropriately set. As a result, it is not feasible to assess the level of the incentives in their present state, and this should be further developed and clearly linked to other areas of the price control if it is to gain broad acceptance. In addition, airlines cannot see how NERL is translating efficiency gains and investment into the 3Di scores proposed, and are concerned that it may not be reflective of what can actually be achieved, or is clear where dependencies exist on external parties and what their priorities might be e.g. in terminal area. Fundamentally need to understand how sample data that supports metric has been generated and updated for proposed numbers. Similarly, any change to the dead band and potential use of re-opener mechanisms needs to be consistent with the logic use across the price control for TRS and other regulatory mechanisms to ensure the incentives are not inadvertently undermined and remains appropriate based upon determined operating expenditure.

	Airlines have different views on modulation of charges[14] to incentivise environmental performance. A view was expressed that the UK Government needs to support the process of getting the right infrastructure in place through airspace modernisation.
	Comments on way forward: NR23 plan status: NERL will not include option 1 in core plan. NERL open to working with airlines on suitable metrics/incentives

Operational resourcing	
Details of building block/NERL's proposal: To deliver required supply of new controllers, NERL will restart Initial Training Organisation (ITO) in March 2022 OPTION 2: NERL propose an option to improve operational training capability by implementing a virtual training facility • Around £15m investment to reduce training lead times and improve agility in resource planning	**Level of support:** Airlines are highly focussed on the need for NERL to restart training and are deeply concerned if shortfalls were to materialise during NR23 that could compromise growth. In particular, airlines were keen to understand whether ab initio training could commence earlier than March 2022 and whether NERL could address issues in new ways to change the way in which controllers were trained OPTION 2: Airlines support the concept of more efficient training to reduce lead times and improve agility, but cannot assess this option without further detail on the business case or benefits arising; as a result, they cannot be supportive of £15m additional investment at this stage without further definition
	Discussion / concerns raised:

[14] IATA: "We welcome the necessity of a feasibility study to implement such a modulation at EU level. Airlines must be involved in all aspects of this assessment" (https://www.iata.org/contentassets/02dcd8ec59da4f798c13aebb738ffa76/iata-ses-position.pdf). A4E: "The effectiveness of modulation of charges to incentivise environmental behaviour of airlines should be assessed taking into account the competitive effects and known alternatives" (https://a4e.eu/publications/initial-assessment-of-the-draft-ses-2-regulation/)

	Airlines are concerned that capacity may be constrained by operational resourcing during the recovery from the pandemic; and in particularly NERL's ability to accommodate variation in traffic as it materialises; this is particularly the case in 2024 when STATFOR's forecast appears to exceed the NERL Full Time Equivalent (FTE) plan during the summer, and airlines are keen to have greater insights into how NERL plan to use those resources, which NERL note is more applicable than the actual number Airlines note that operational resourcing was already a key risk area for 2023/24 and any increase in traffic above that forecast could potentially put pressure on performance despite there being little difference in forecasts of traffic for this period. Airlines would like to see more detail behind the resourcing plan in order to better understand how the ramp-up of recruitment is sequenced, where opportunities to reduce the training footprint exist, and how efficiencies in licensing might be achieved whilst maintaining excellent safety standards. NERL licence validations appear to present an opportunity that could be exploited to achieving earlier initial operating capability for new controllers, and also might extend validations for existing controllers to increase flexibility across sectors, exploring new licence structures with the CAA in areas that are less operationally complex. NERL has clarified that ATCO Licensing, Training and Competency are subject to UK regulation by the CAA which is aligned with European Regulation (E.U. 2015/340) which themselves align with ICAO Regulations. The CAA has commented that it is an area for them to consider further. Airlines would be keen to see the NERL business plan expand upon these possibilities, and present cost/benefit analysis that might support alternative resourcing models throughout NR23.

	Underpinning assumptions on retirement profile should also be tested robustly to ensure that they remain both realistic and that controllers are encouraged to remain to prevent any operational disruption should new controller training be insufficient to support the recovery period; this links to the pension assumptions and incentives on controllers to retire at age 55 rather than remaining until age 60 or beyond. OPTION 2: Airlines would be interested in options such as this if they are fully costed and benefits clearly set out; however, they are unable to support this option in this form at present until the cost/benefit case is established and greater detail of the underlying plan is developed for the business plan
	Comments on way forward: OPTION 2: NERL proposes to include in core plan and address cost benefit questions in Feb plan

Technical Resilience	
Details of building block/NERL's proposal: Key issues/initiatives • Overall costs to maintain technical systems will reduce over time as legacy systems are turned off	**Level of support:** Airlines support the need for technical resilience in order to support the safe delivery of the service; whilst there is concern where the NERL workforce may be de-skilled through restructuring, NERL should ensure that it has access to appropriate technical expertise in whatever form in order to maintain systems
	Discussion / concerns raised:

• Transformation programme has re-aligned processes across our engineering community, reducing the need for specialisms • Reduced headcount in this area by almost 200FTEs contributing to the overall cost savings made through voluntary redundancy (VR) • Substantial cyber-security improvements working with National Cyber Security Centre (NCSC) and CAA	Airlines believe the ability of NERL to ensure that the technology in place is able to work effectively is a high priority, and that systems should not be subject to failures that could compromise the ability of NERL to deliver appropriate services Airlines therefore have concerns over the impact of retiring staff that may remove certain skillsets required for some for legacy systems, though support NERL in developing innovative business models to support its systems – for example through contractors – where this may be more efficient than retaining the skill set in house, and agree with NERL that scarce skills need to be maintained Nevertheless, at the aggregate level, the requirements are determined by the capital programme and the timing and sequencing of investment in new technology; airlines cannot therefore make an assessment of overall costs until the sequencing with the capital programme is set out in detail, though remain supportive of the general requirement to maintain technical resilience. Airlines have seen a number of cases of older technology continuing in use longer than estimated, elevating costs of sustainment, and would like to see clear committed timeframes to switch off older technology when it is no longer required
	Comments on way forward: NERL would be advised to set out greater clarity through its business plan, its resourcing plans, risks and opportunities such that airlines are more fully informed as to their planned evolution, and how this is impacted by the extensive series of investments proposed.

Capital Investments

<table>
<tr><th colspan="2">Capital Programme</th></tr>
<tr><td rowspan="2">Details of building block/NERL's proposal:

Develop a balanced portfolio
Maintaining safety
Delivering customer priorities
Maintaining availability of critical National Infrastructure
Providing a level of service in line with NERL's legal obligations
Ensuring NERL is not a constraint on recovery of traffic
Delivering legislative and compliance requirements to Europe
Also stated as
Sustaining the infrastructure to maintain technical resilience
Improving the airspace in alignment with the UK's airspace modernisation strategy
Replacing the technical infrastructure for future services
Blended plan is £565M plus £65m across 4 options

NERL will maintain interoperability with the EU as far as possible</td>
<td>Level of support:

Airlines raised a number of concerns of the capital programme, both in terms of visibility of the programme and need to ensure it remains realistic in the context of the recovery period, whilst ensuring legacy systems are replaced on a reasonable timescale and ability to meet capacity demands are not compromised

There was broad airline support to maintain alignment with the European Union (EU) in order to ensure operational benefits (e.g. arrival manager (AMAN)/cross border arrivals management (XMAN)) are retained, that continuity is maintained at borders with European neighbours and that technology requirements on airlines are consistent with those in other sectors of airspace.

Airlines also welcome the opportunity for NERL to be more agile, and the development of the 2+5 process appears to be a reasonable response to ensuring that the capital programme is sufficiently well-defined on a rolling basis, updated by TCAB and SIP processes as required

Airlines could be supportive of enhancement to the capital programme if they are better elaborated and benefits identified in the business plan; any changes that enable greater efficiency of spending delivery of tangible benefits are welcome, but airlines are not able to judge those enhancements until they can understand the details behind them in the business plan – regardless the existing pressure on charges that increase expenditure mean such options face a high hurdle</td></tr>
<tr><td>Discussion / concerns raised:

Airlines were keen to understand what had been agreed through the SIP process or not, and equally where the TCAB played a role in determining the shape of the capital programme; this did not seem clear at the presentation, but should be developed to enable a proper assessment of the NR23 capital programme. A particular example of uncertainty with the interaction between</td></tr>
</table>

OPTION 4: Enhancements to the capital programme • Changes to the mix and scope of NR23 capital programme: acceleration of iTEC v3 (£20m), surveillance capture opportunity (£10m) OPTION 5: Smaller capital programme • Reduce investment in technology transformation and airspace modernisation by £50m NERL is also proposing a revised governance approach for capital programme planning based on a 2 + 5 year cycle. General views from airlines are captured under the discussions /concerns raised section of this table, but a more detailed summary is provided later in this annex as part of a separate table.	processes arose during the discussion on sustainment (£305M of the £470M core programme) where a NERL response could have been interpreted as there being no scrutiny of sustainment within the SIP. NERL has since clarified the situation: • Sustainment does go through the SIP process; • Sustainment for the first 2 years of NR23 had been a part of SIP conversations (as it was part of RP3); • A long term view of sustainment and its relationship to replacement programmes (especially options for lower operation) had been discussed in SIP and the TCAB; • But the specifics of the final 3 years of NR23 (post old-RP3) sustainment budget and content hasn't been consulted through SIP yet, but will be continually consulted through SIP and TCAB throughout NR23 and will be adjusted through those processes. In particular, airlines were keen to see where the benefits of the investment programme actually materialised; there was little evidence many of benefits would arise in NR23 at all from the material presented, and it was not clear what the timing of investments required to support Airspace Modernisation might be, particularly given the lack of clarity over the delivery of modernisation NERL would be well-served in its business plan to set out clear dependencies between various systems to ensure that a clear line of sight can be drawn between the investment programme, operating costs and delivery of capabilities such that airlines can make an informed assessment and support the proposed level of expenditure It is also important that airlines are able to understand the constraints imposed by NERL's actual financing to deliver to different timescales as NR23 progresses; airlines neither want NERL's delivery to fall behind that of adjacent ANSPs compromising capacity and efficiency benefits, nor operate in advance such that the capability is ineffectively used and capital expenditure elevated unnecessarily As a result, airlines are keen to ensure that the regulatory mechanisms develop to ensure that true-up mechanisms can accommodate changing levels of expenditure that may be required to deliver

	more optimal outcomes, and that the plans contain an appropriate level of contingency to allow some flex At a project level, airlines are keen to ensure that expenditure delivers clear benefits, and NERL's business plan would be enhanced by ensuring that there is a clear articulation of the benefits in outcomes that are to the benefit of airspace users – the anticipated benefits is a starting point, but one that needs to be further developed. The CAA commented that, in RP3, NERL set up a Portfolio, Programmes and Projects Office (P3O). CAA's understanding is that this would provide a more structured approach to NERL's capex planning with greater availability of data (including on benefits) and understanding of interdependencies between projects. NERL has commented that it has indeed established a P3O way of working and used this to create the NR23 plan. One of the principles of a P3O approach is that the initial planning is at portfolio level, which generates a set of programmes. The portfolio planning seeks to balance the many drivers which include benefits needed, financial constraints, resource constraints and dependencies. The programmes are initiated at the appropriate time, when work needs to start. The programmes in turn, as an output from their second stage (definition), determine the project dossier required to deliver the targeted outcomes and outputs, and the first assessment of project level benefits is completed allowing reconciliation of top-down targets with the bottom-up estimates. Whilst NERL's view was that benefits by project could not simply be summed to the programme level, as each new change became the new operating baseline for the next, and that projects were at very different levels of maturity and hence some had wide ranges of potential benefit, nevertheless, airlines need more information to support capital expenditure, and any output from SIP and TCAB processes should be linked clearly to those presented in the business plan Airlines were supportive of the 2+5 capex governance proposals that would allow airlines to contribute to the relative prioritisation of projects as the benefits assessment developed. NERL stressed that it was important, though, to avoid spurious accuracy and giving airlines any false assurance on longer term plans, however airlines want to ensure that the programmes have

	sufficient definition to be able to make judgements over the suitability of their size and shape, particularly given the capital requirements presented over the course of NR23 Airlines are also supportive of the CAA's desire to ensure that information is supplied to support understanding of the incremental impact of layered projects, ideally using data already generated by NERL for its own decision-making. In order to determine the accuracy of forecast capital requirements, airlines believe it would support NERL's business plan to link this expenditure to past capital plans in RP2 and RP3, to establish clear visibility over the evolution from those previously presented programme benefits, capital costs and delivery of operating cost benefits, and in addition understand actual expenditure on key programmes vs plan to infer implications for NR23 Airlines have an expectation that the capex programme should deliver both cost efficiency and effectiveness benefits to NERL to enable the NR23 charge to be as efficient as possible to support the service outcomes. The combination of these factors is most important is understanding "legacy escape", for which airlines see increasing capital expenditure combined with continued sustainment costs, yet little in actual benefits apparently achievable before NR28; whilst NERL's view is that benefits will be delivered once legacy escape has been achieved, airlines are not in a position to endorse this view without a more detailed explanation of the underlying programmes, projected benefits, dependencies and risks. OPTION 4: Airlines are not clear as to how the iTECv3 increased pace of investment might result in benefits to airlines at this stage; whilst airlines would support spending that is more efficient and delivers capability earlier whilst reducing future costs, it is not clear how this £20m directly contributes to achieving better optimisation and value for money, and would welcome greater detail from NERL in its business plan; the same applies to the surveillance capture opportunity – given the pressure on charges and the already extensive capital programme with deliverability risk if increased, such options must have very clear airline benefits to achieve support

	OPTION 5: No support for reducing outcomes or compromising ability of NERL to delivery capacity, which would be contrary to strategic goals for airspace and technology; nevertheless airlines need to see the details of a more defined capital plan to ensure it is the right size and shape to support strategic outcomes; clearly smaller capital plans can help reduce short-term charges, but need to be cost effective and weighed up against avoidance of long-term inefficiencies Airlines are also keen to maintain alignment with European regulations and standards to avoid additional costs arising from use of different technology or inefficiency resulting from conflicting practices; NERL assured airlines that this was a high priority for their business, and it was unlikely to arise where certain areas of airspace were already controlled by adjacent ANSPs and different jurisdictions to enable free flow of traffic. Airlines also expressed concern over the loss of access to EU grants supporting change processes, which NERL may previously have had access to
	Comments on way forward: Airlines note and appreciate NERL's efforts to consult with customers through the TCAB, SIP and NR23 processes, but request that there is crystal clarity over the interaction between TCAB, SIP and NR23 processes, such that airlines have an unambiguous view over the state and level of definition of programmes, supporting investment plans, and where benefits arise Airlines are under no illusion that NERL operates a technologically complex set of systems to deliver its operational programme, but would appreciate a clear articulation of how the various elements come together and deliver tangible benefits in capability, capacity or efficiency when the business plan is developed OPTION 4: NR23 plan status: NERL indicates that there will be no change to core plan and that cost benefit questions will be addressed in the SIP with implementation through the SIP OPTION 5: Airlines are not supportive of the reduced outcomes alluded to by the smaller capital plan, and do not have appetite to raise charges further with an increased capital plan, yet also want to ensure value for money in the core plan is achieved, ensuring that the outcomes are most efficiently delivered to minimise any upward pressure on charges

Airspace	
Details of building block/NERL's proposal: Recommended OPTION (included in plan): Stansted time-based separation (TBS) • Deploy optimised mixed mode (OMM) or OMM+ • Link AMAN to TBS to enable self-separation on performance-based navigation (PBN) routes Recommended OPTION (included in plan): Advanced iACM • New capability to identify the best sector manning strategy to meet variable FRA demand OPTION 3: Integration of new airspace users • Option in plan for funding of new users from within the en route cost base Around £30m investment to support the safe integration of new airspace users such as drones and space flights Co-Chair note: During preparation of this report, CAA noted the airline's request for clarity on how airspace change is funded. CAA provided the following clarification which we include verbatim: *In general, the costs of airspace modernisation are to be met by the beneficiaries. Where NERL is required to make changes to airspace it*	**Level of support:** Airlines continued to support measures that achieve greater capacity; airlines have different priorities for investment at different airports, therefore support differs between airlines as to priority of timing and implementation, although in general airlines would prefer to see an even handed approach that balance is obtained and activity concentrated on where needs are greatest Airspace modernisation, facilitated with the right tools and systems, is the panacea for many issues identified in many sectors, with the present system being extremely complex, inefficient, and driven by historical design around airports that then supported a different balance of traffic Airlines continue to support targeted TBS and AMAN implementation, subject to even-handed implementation, particularly where this raises system capacity and is achievable within the existing airspace However, airlines need to be reassured that such expenditure delivers stated benefits and meets variable free route airspace demand, as a result, airlines are supportive where this results in tangible benefits that allow controllers to work all sectors in a region OPTION 3: Charging airlines for new users not supported **Discussion / concerns raised:** Airlines are keen to understand how ACOG work programme will feed into NERL's programme; whilst NERL has reassured airlines that all elements will be consulted through the SIP process, airlines are seeking to understand how all the pieces fit

manages, the costs will be met by NERL (and therefore included in its determined costs). *Where an airport is seeking to make changes in support of airspace modernisation, it will meet the costs of necessary changes. Separate to this, there is a central government fund to support specific FASI airspace changes – the cost of this fund is not recovered from the UK unit rate.* *In RP3, an allowance was included in NERL opex to establish and run the ACOG as an impartial unit within NERL. The role of Airspace Change Organising Group (ACOG) is to develop an airspace masterplan that coordinates individual airspace changes (NERL, airport or other) and support its implementation. While the requirement for ACOG and delivery of the masterplan remains an obligation on NERL, it will continue to be funded as part of NERL's determined costs, and – as before – is separate from NERL's own airspace capex.* *Also in RP3, an Opex Flexibility Fund (OFF) was included in NERL's determined costs. The OFF which had additional governance, was established on the basis of providing support to NERL activities in support of delivery of airspace modernisation, that were uncertain at the time of setting the RP3 price controls. During the NR23 customer consultation NERL has indicated it no longer requires the OFF.* *Alongside, the OFF, a further fund – the AMS Support Fund (ASF) – was established as part of the CAA component of the unit rate. The ASF was intended to continue the work of the RP2 Small Gaps Fund, to support the delivery of airspace modernisation by stakeholders other than NERL. It is expected that the ASF will continue into NR23*	together at an aggregate level to ensure that it is logically integrated, and would appreciate understanding this when NERL develops its full NR23 business plan Airlines also asked that NERL maintained even-handedness between airports to avoid leaving some airports behind in necessary capability OPTION 3: Airline views are against this option. But general acceptance that resourcing will be needed given the likely strong growth in drone activity (issue is who will pay). Airlines would like to ensure that new users pay their own way, and that the cost of work to accommodate those users does not fall on airlines, and instead that those new users contribute their fair share of total system costs. CAA and industry must try their best to create charging regime for NERL new user activity by NR23. CAA commented as follows*: it is not as simple as creating a new charging regime, and it would be challenging to design, consult and implement a new regime by 31 Dec 2022. CAA is considering the way forward, but think it more likely that it will be necessary to take a pragmatic approach in the first instance while CAA understands the scope of the issue and develops policy accordingly*. Airlines are concerned to differentiate commercial uses from nuisance users (eg drones) – building on guidance from EU. Airlines are also seeking to understand how airspace modernisation is funded, and how that is incorporated into the UK unit rate; NERL confirmed it was not including an Opex Flexibility Fund (OFF) for this in its plan for NR23, and that the CAA will needs to clarify if contingency money for airspace modernisation is to be included within the UK unit rate.
	Comments on way forward: Additional information on airspace plans and how they integrate into the NR23 business plan would provide airlines with greater visibility on how they impact on cost and investment plans

as part of CAA determined costs, and remain available to stakeholders other than NERL.	The CAA should address provision for a contingency that incorporates airspace modernisation within the UK unit rate if appropriate OPTION 3: NR23 plan status: NERL will not be included in core plan. The CAA has asked NERL to set out information on what the costs will be and propose approach to charging in February 2022 business plan.

Sustainment	
Details of building block/NERL's proposal: Maintain levels of service Meet business obligation	**Level of support:** Airline general view: • Not enough information for reasoned judgement • Need for a sustainment benchmark
	Discussion / concerns raised: Sustainment comprises a material portion of proposed capital expenditure for NERL, (£305M of the £470M core programme). There was little definition of this or analysis to fully support the number a present; for this could comprise analysis based upon historical expenditure and number of systems supported and/or failures and interventions required, which would enable airlines to understand how the number was generated Surveillance is a material number and one of the more expensive areas of the capital plan, and airlines are keen to ensure that NERL is evolving its views on an appropriate mix of technologies; whilst this is reviewed by TCAB, it needs further definition to be incorporated at this scale within the capital plan In order to make a reasoned judgement, airlines are keen to understand NERL's strategy on how it undertakes sustainment spend, and what level comprises preventative maintenance as opposed to fixing upon failure, the value of certain key operational systems, and how timing (e.g. NERL's option to accelerate iTec investment) could reduce sustainment expenditure on elderly systems in future Additional information such as this and benchmarking where appropriate and possible would support clarity over on the level of sustainment costs.

	Airlines also expressed concern that a delay of one to two years in the capex programme arising from pandemic has led to a 5 year extension of some implementation plans, resulting in dual running costs occurring for longer and at an elevated level; it would therefore be useful to understand the implications of the sequencing of expenditure when NERL comes to set out its business plans.
	Comments on way forward: Airlines would be keen to see NERL benchmark sustainment costs, and provide more detail on the sequencing and interaction with the existing operational platforms and future investment programmes and options as replanned post-pandemic

Sustainment (DVOR programme)	
Details of building block/NERL's proposal: During NR23, NERL will be in a position to remove navigational assets known as DVORs (Doppler Very High Frequency Omni Range). No funding was including in the NR23 business plan for any further sustainment of these assets	**Level of support:** Airlines are not supportive of funding airport DVORs through the NR23 price control at present, though have not heard directly from airports as to their case for inclusion of these costs in the NR23 settlement
	Discussion / concerns raised: A group of airports (LHR, LGW, AGS, MAG) made a formal request that funding be made available for NERL to continue sustainment on DVOR assets, at least on a best endeavours basis, to solely support airport operations during NR23 due to the delays in making airport led airspace and procedure changes. NERL noted this request. Airlines did not believe that these assets should be funded through the settlement where they supported operational requirements at specific airports, and the additional expenditure that would be required through NERL as a result Airlines were of the view that other sources of funding should be used, and furthermore asked if the CAA could clarify whether NERL was obligated to provide assets that are only used by airports, given the importance of separation between different businesses of NERL and NATS Services Ltd (NSL) within NATS. Despite the clear position of the CAA to withdraw DVORs in future, airlines are conscious that airports have to re-survey and certify certain procedures to enable the withdrawal of those assets, and note that this should not come to the detriment of operational capability, particularly given the withdrawal of the safety of life service for LPV approaches that has been in use at certain airports
	Comments on way forward:

	The CAA has provided the following clarification in a response to an action during the consultation process: *There is an ongoing discussion involving many stakeholders outside of the NR23 process to find a way forward on this issue. The CAA understands one option could be for NERL to continue to fund DVORs on a sustainment basis for a limited period as part of the infrastructure it provides for all airspace users. While the CAA is not opposed to this approach in principle, it does not have a fixed view at the moment and will seek to take account of any approach that is agreed in forming our view for Initial Proposals, which will in any case be subject to consultation in mid-2022*

DP En-Route and Voice	
Details of building block/NERL's proposal: Complete the transformation committed to in RP2 • Investment of £38M planned for NR23 When fully deployed will: • Support the modernisation of airspace • Strengthen safety, increase flight efficiency and improve environmental impact • Improve interoperability with other European centres • Provide a modern, flexible and resilient system architecture • Replace many current operational systems which cannot meet future needs Benefits will be realised progressively:	**Level of support:** No particular questions or concerns raised by airlines at this stage in advance of publication of a full NERL business plan, though airlines are keen to see detail behind the capital plans at that stage **Discussion / concerns raised:** Airlines are keen to understand the benefits that are delivered by the completion of the transformation that started in RP2, in particular how this has facilitated the delivery of operational efficiencies, and reduced expenditure on sustainability as current operational systems have been replaced by a more resilient system architecture This is particular important given the relationship between the operating costs resulting from DP En-route support and likely future reductions in operating costs

• Main Voice and Second Voice expected 2022 • Progressive approach to implementation and deployment	resulting from investment in a new common platform for delivery in the NR28 period and beyond Airlines need more clarity over the likely service life in the context of options to potentially increase expenditure in the iTEC platform, which could appear to result in duplication of capital costs when considering the reduction in operating costs portrayed in later slides presented by NERL at the CCWG Option 5: airlines are keen to ensure that the capital plan is the right size based upon the strategic outcomes required, and the capacity that needs to be available based upon likely scenarios for traffic; however, airlines need to understand the detail that supports NERL's statements for a £110-120m p.a. capital investment plan to ensure that it is consistent with these objectives, since if those same objectives can be achieved at lower capital expenditure, then this would clearly be a preferable outcomes
	Comments on way forward: NERL would benefit from setting out the benefits of DP En-route achieved since RP2 in more detail, along with the progress of its investment plan vs those delivered to date, to ensure airline buy in to continued progression of this strategy

Capital portfolio benefits and opex implications	
Details of building block/NERL's proposal: High level benefits	**Level of support:** Noted at high level but lack of context and detail Targets Quite laudable but not related to service targets

<table>
<tr>
<td rowspan="2">

- Replacement of ageing technology to maintain resilient service performance
- Enabling airspace modernisation to support recovery and meet future demand
- Strengthening safety to support growth
- Improving environmental performance

Moving towards 4D trajectory operation – contributing to schedule predictability

Opex

- Delivered at lower than RP3 plan

</td>
<td>Concerns on delays in transition, relationship to service targets</td>
</tr>
<tr>
<td>

Discussion / concerns raised:

Airlines appreciate the effort taken to restructure the business during the pandemic, but would challenge NERL to continue to seek new ways of working and maintaining ongoing effort to reduce costs where possible without compromising safety and service delivery

Airlines found the overview information hard to interpret at this stage, and without the detail of a business plan available as yet, it is difficult to understand the implications on the operating expenditure from the capital investment programme as it is presently proposed

Airlines are particularly focussed on the delivery of operating cost savings promised through the investment in new technology, which at present appear to materialise after the end of NR23; the detail supporting these projected benefits and the supporting investments needs greater scrutiny when the business plan is published

This is particularly important in relation to "legacy escape", since the benefits derived are unknown at present, but there needs to be greater clarity over timing of the investment required to achieve this escape

Understanding the capital requirements on a project level that are needed to support legacy escape, sequencing and estimated timing to delivery along with risk will allow airlines to make a more holistic and better-informed judgement on the necessity of the investment programmes as a result

Airlines are also concerned about delays that might materialise in delivering those benefits stemming from the capital investment programme; in particular the benefits realisation is most important and it is not clear how the regulatory

</td>
</tr>
</table>

	regime going forward could more effectively incentivise delivery of promised capabilities
	Comments on way forward: NERL would be advised to directly relate benefits of capital investment to both operating cost efficiencies and service targets outcomes in its business plan This will allow airlines to draw a direct line from the business plan to the likely future benefits and allow appropriate justification for the sequencing and level of the capital plan that is paid for by charges

Capital programme governance	
Details of building block/NERL's proposal: OPTION 6: NERL proposes 2+5 approach to planning • Build on extent of customer engagement by planning 2 years in detail with a joint strategic lookahead	**Level of support:** Airlines are keen to have greater near-term visibility over the capital programme, with shape of the outer years, updated by changes within the near term as time progresses This appears to be a welcome development to enable users to have a more informed view on the future direction of expenditure, tied to strategic vision of NERL's business Nevertheless, this support is subject to further definition of the process including the interaction with the NR23 and subsequent regulatory periods. Airlines would agree that where changes are required within regulatory period, that disagreements would flow back to CAA for determination. CAA commented that this is not its role and provided a clarification: "*Ultimately NERL will decides on its capex, however for such*

	capex to be ultimately included in the RAB NERL has to demonstrate that it has engaged properly, the CAA then has to determine whether the capex was efficient."
	Discussion / concerns raised: Airlines are keen to be more involved in shaping the capital investment portfolio throughout the NR23 period, ensuring alignment with outcomes and responding to events as they occur; this is therefore a welcome development to allow greater visibility and engagement on the future size and shape of the capital programme Nevertheless, airlines would like to avoid mis-alignment with the boundaries of regulatory periods, particularly where investment programmes span multiple periods and/or operating cost savings as a result of those investments are not wholly captured at the time of the periodic review Additionally, airlines are keen to ensure that optioneering results in real choices that can be made in an informed way; options needs to be presented with sufficient information and in a consistent way with implications across business for airlines to make those choices on an informed basis A good example of this would be presenting the option to bring forward iTec expenditure earlier in NR23, with consequences across the 2+5 year time horizon estimated explicitly, and consequent effect on other programmes determined to allow a real choice to be made, and airlines encourage this approach to be taken in the NERL business plan The CAA confirmed that any changes in the level of planned capex within NR23 would continue, as now, to be dealt with via the normal regulatory mechanism of rolling up over/under spend as changes to the RAB (as long as expenditure is efficient), which would only affect charges in the subsequent periods. By adjusting the RAB, allowed capex reflects efficient over and underspend in an NPV-neutral way. It is possible to disallow capex in the past deemed to be inefficient or wasteful. Additionally, sinceRP3, there also the new engagement incentive to make sure high-quality discussion occurs

	with users. CAA are not looking to introduce significant change for the NR23 regulatory framework unless good case made where there is evidence that current incentives are not working or could be improved
	Comments on way forward: Airlines voiced support for the 2+5 approach, and encourage NERL to build upon this within the business plan and SIP processes to allow airlines to make real informed choices on the investment programme We understand that NERL will include this option and develop governance mechanisms to accommodate this via the SIP forums

Oceanic

<table>
<tr><th colspan="2">Oceanic (ADS-B)</th></tr>
<tr><td rowspan="2">Details of building block/NERL’s proposal:

NERL’s plan for Oceanic assumes the continued use of space-based ADS-B through the NR23 period

ADS-B
NERL has obligation to commission an independent review of ADS-B. But not expected that this will be by May 22
CAA will issue a working paper to define appropriate timeline and content
Review will be within NR23 timeline but will be a separate process
NERL is contractually committed to ADS-B charging in that it cannot cancel it arbitrarily but:
It can maximise benefits
Structure commercial contracts to enable cancellation if there are insufficient benefits. NERL currently has annual extensions with Aireon throughout RP3 and is currently re-shaping the contract to align to it with the NR23 period.
NERL intends to
Develop appropriate metrics
Work to maximise benefits</td>
<td>Level of support:

Note: the CAA review of the cost-benefit of implementing ADS-B in the Oceanic sectors remains outstanding, and is outside of the NR23 process. CAA notes that the timing of the study is dependent on their being sufficient recovery in traffic levels to carry out the assessment.

Airlines welcomed the information that NERL had structured the Aireon contract to enable cancellation if no benefit demonstrated

Airlines offered support for collaborative work on metrics and to maximise benefits as a result, though remain of the view that insufficient benefits are being generated at the moment</td></tr>
<tr><td>Discussion / concerns raised:

Airlines and NERL agreed that the May 21 forecasts were now out of date, and given updates planned for the NERL business plan, these need to incorporate updated forecasts based upon latest available information

Airlines would like to see more granularity in forecasts where possible, including differentiating NAT and Tango routes, and whilst Oceanic is not in the domain of STATFOR, suggesting use of STATFOR region data extended using NERL’S methodology could be appropriate, noting that ICAO North Atlantic Economic & Financial Group (EFFG) provide forecasts using the STATFOR extended base case Latest STATFOR forecasts would suggest that the Q3 2025 expected recovery is too late, and that NERL risks not being able to accommodate traffic levels should it base its operational planning upon this recovery profile; airlines would</td></tr>
</table>

	therefore advise NERL to develop a business plan that is consistent with an earlier and steeper recovery profile Airlines welcomed information that NERL have structured the Aireon contract in a way that allows cancellation should benefits not materialise, which allays some airline fears that charging would continue regardless of actual benefits derived, though remain concerned that there are insufficient metrics to measure delivery of benefits at present, and note that desktop analysis is inadequate to demonstrate benefits. NERL notes that it reports on requested versus cleared tracks in accordance with Condition 11 of its Licence. The airline view is that are more factors that need to be taken account of in optimising Oceanic performance.
	Comments on way forward: NERL, airline, CAA collaboration on the already planned ADS-B review and also to establish an approach to ADS-B to develop metrics, conduct reviews, and ensure independent assessment of benefits can take place Airlines would advise NERL to update the business plan for NR23 to account for the change in shape of the recovery indicated by the most recent data

Oceanic (Service performance outcomes)	
Details of building block/NERL's proposal: NERL will retain CRE as the primary safety measure for NR23 and the proposed target is to achieve or better the TLS during the period. NERL will • Continue to report performance based on Flight level, entry point and speed	**Level of support:** Caveated support for metrics – need to support operational preferences better **Discussion / concerns raised:** Airlines are keen to ensure that NERL uses real data for assessment of CRE performance, rather than basing it solely upon a theoretical exercise under the Reich model

• Will support issuing clearances based on a variable mach level
• Will develop metrics in conjunction with customers and the CAA
  ○ Request for Clearance (RCL) versus issued clearance (OCM)
  ○ Percentage of aircraft receiving variable speed
	In particular, airlines would like to ensure that NERL can accommodate and take into account the fact that optimal trajectories differ between airlines, and that those preferences are based upon different planning and operational criteria than controllers might consider optimal
	
	Ultimately, airlines want to be able to plan and fly Oceanic routeings on an unconstrained basis, with free routing available to enable the greatest efficiency benefits possible given wind and temperature conditions, and allow the greatest possible fuel savings upon which routings could best be assessed.

	Comments on way forward: NERL would be advised to develop plans that build upon stronger linkages with operational preferences where possible.

Oceanic (Capital Investments/ costs and prices)	
Details of building block/NERL's proposal: NERL's investments will be aligned with partners and the ICAO NAT 2030 Vision Initial focus • Removal of oceanic clearances • Introduction of new profile optimiser and workload management tools • Reduction in the organised track structure footprint • core GAATS+ system elements	**Level of support:** Airlines are supportive of the general objectives of capital programme set out in the prospectus; however airlines remain keen to see more detail in the business plan and ensure that the detail receives sufficient scrutiny during the SIP process, particularly so that the cost-benefit of any investment made is established Airlines are always keen to ensure value for money is achieved, and that pricing is smoothed where possible to avoid a yo-yo of charges
	Discussion / concerns raised:

Costs and prices • Costs held broadly similar to 2019/RP3 • Lower traffic impact => 3% higher • £2 / flight increase • There will remain a core Oceanic charge and a separate ADS-B data charge for Atlantic and Tango routes which will operate on a pass through	Airlines are supportive of the objectives set out to meet the ICAO NAT 2030 vision to remove Oceanic clearances and the OTS footprint, and support delivery of those objectives with targeted investments where appropriate. Setting target dates for the delivery of changes like this will allow airline customers to access potential savings. Whether individual airlines then can or do take advantage of the new environment is up to them. There were specific concerns raised by airlines about the optimiser tool – with doubts raised that any 'optimiser' would know better what trajectory to follow in comparison to the onboard flight management system (FMS). Airlines were going to need persuasion that any spend here would be a worthwhile investment. Airlines are also keen to understand how approval of capital expenditure for Oceanic investments is determined (NERL view is that this is done through SIP) Airlines need to ensure that investment programmes remain cost effective and delivers stated outcomes at the best possible value, and where investment results in pricing pressure need assurance to understand whether it is wholly necessary In addition, airlines are also keen to ensure that the price profile of charges over the NR23 period is smoothed such that there are no spikes in charges as a result of investment programmes or traffic variation over the NR23 period Finally, airlines are interested to understand how the Oceanic Gateway Partnership feeds into savings that are likely to arise during NR23, which impacts on airlines' ability to consent to a TRS when there are other mechanisms likely to be operating
	Comments on way forward: NERL would be advised to build on the plans set out in the prospectus to demonstrate the outcomes achieved through specific investments, and link those investments where applicable to areas that reduce NERL's operating expenditure

Regulatory Mechanisms

Regulatory (determined costs)	
Details of building block/NERL's proposal: Average DC for NR23 in line with 2019 actuals By 2027, the cost base is 2% lower than in 2019 despite average flight volumes being 5% higher Compared to the RP3 plan, average DC are around £26m pa (4%) lower NR23 operating costs are £10m pa (2%) lower than 2019 despite unchanged service quality and transformation requirements Average total operating costs are around £51m pa (11%) lower than the RP3 plan Cost containment measures have reduced underlying operating costs by around £70m pa on average in each year of NR23 relative to 2019 Opex savings will results from new technology enabling legacy escape in NR28	**Level of support:** Airlines welcome measures taken by NERL to contain costs during the pandemic. However, they also hold an expectation that further future reductions will arise from investments made as part of the capital programme **Discussion / concerns raised:** Airlines were interested to understand a greater level of detail than was available and presented in the charts at present, and want to ensure that information is fully consistent across the business plan when it is developed In particular, airlines would benefit from understanding how key variances vs the settlement have arisen in operating costs in the past, to be able to infer how those will translate to future forecasts post pandemic restructuring, and that an appropriate baseline is established for efficient costs (subject to ongoing work by the CAA) Oceanic determined costs: airlines would be keen to see more detail of total determined costs in tabular form, benchmarked against KPIs to clearly follow how they are built up and determined to establish the core charge **Comments on way forward:** Airlines would be keen to see a greater level of detail on determined costs set out in the business plan when it is developed NERL would be advised to set out Oceanic determined costs in ways that enable them to be followed clearly by airlines, with supporting assumptions where they are derived from the total NERL cost base or separately contributed by other cost sharing arrangements with third parties

Regulatory (headcount)	
Details of building block/NERL's proposal: ATCOs and trainee FTE projections driven by operational demand and supply assumptions Non operational ATCOs and other ops support are 12% lower pa v 2019 following VR Average headcount around 10% lower pa than 2019 Significant reduction in engineering heads following VR with average engineering headcount 11pa lower in NR23 v 2019 Additional engineering staffing requirements across NR23 to support ageing legacy systems new cyber requirements and the revised capital programme profile including staff to support dual running following DP en route Corporate support staff around 6% lower on average in NR23 following VR Graduate and early careers programmes restarting from 2022 Contractors 75% lower in NR23 v 2019 following COVID-19 response	**Level of support:** Airlines are supportive of the restructuring efforts that have taken place, particularly given the difficulties surrounding refinancing, though remain concerned that controller headcount is able to accommodate various demand recovery scenarios and that as a result, charges are as efficient as possible **Discussion / concerns raised:** Airlines were pleased to see that NERL had acted to control costs in response to the pandemic, though note that assessment of cost efficiency during the pandemic remains subject to a separate CAA review. Airlines note that others in the industry have been forced to make deeper cuts in response to the pandemic, and remain keen to understand where further opportunity lies as a result in changes to working practices that might result from the pandemic; in particular, airlines would have expected to see further reductions in non-operational corporate headcount Airlines would also find it useful to understand more detail behind the projected increase in graduate headcount and reduction in contractor base given the voluntary redundancy programme, and whether this is the optimal strategy with potential future variation in demand – airlines would value insight into how longer-term planning processes are established Ultimately, airlines are keen to ensure that the underlying operating expenditure reflects business requirements and opportunities continue to be exploited to ensure costs are efficiently established that the charges are efficiently determined Similar to operational planning comments, airlines remain concerned that ATCO trainee numbers had fallen and the restart of the training college was still only

	planned for Q1 2021, despite significant increase in demand forecast by STATFOR in 2022 following latest forecasts.
	Comments on way forward: Airlines would value further insight into the detail behind headcount information presented in the prospectus, and as a result NERL would be advised to set out further insights into its planning process for operational and non-operational staff in its business plan. This will allow greater scrutiny of actions taken during the pandemic and identification of any further opportunities

Regulatory (pensions)	
Details of building block/NERL's proposal: £19m (34%) increase to cash pensions v 2019 actuals driven by adverse change to financial market conditions for DB scheme but significantly mitigated via NERL'S negotiations & CAA's regulatory policy statement Passthrough to be maintained	**Level of support:** Airlines are keen to see further details of the pension situation given this is a main driver of increased costs, and note that the future session on pensions will provide further information in advance of the business plan
	Discussion / concerns raised: Airlines were keen to understand the basis of the pension arrangements, and note that a more detailed session is arranged for December, when NERL will cover pensions and the cost of capital in more depth with airline subject matter experts. Discussion established that NERL's charges passed through both pension costs and the effect of positive and adverse market changes that resulted in a change to its valuation basis as a cost or benefit to users

	Airlines are keen to understand where further opportunities might be found to reduce the cost of pensions, for example, where new staff enter service or where contractors are hired in lieu of employees In particular, airlines were concerned that the employer contributions to the replacement DC scheme appeared high compared to industry norms; NERL stated that this was a result of industrial relations, and limited their ability to manoeuvre Finally, airlines would like to understand what the Trustee has considered in terms of alternative options for the DB scheme with NERL, and whether investment strategies and other restructuring options have been fully explored to date.
	Comments on way forward: Airlines would benefit from understanding more detail on the cost makeup of pensions, and how a further £360m cost reduction has been achieve through the regulatory policy statement

Regulatory (regulatory return)	
Details of building block/NERL's proposal: 3.55% RPI vanilla weighted average cost of capital (WACC) builds on 2020 decision by CMA for RP3 with key changes • Increase in gearing as NERL takes on additional debt • NERL refinancing locking a lower cost of debt • Investors reactions to risk – higher equity betas	**Level of support:** Subject to more detailed workshop on 14th December where further discussion will take place **Discussion / concerns raised:** There was some airline concern that the full cost of capital applied to the TRS debtor in addition to the underlying RAB, however it was explained by NERL that

	financing costs applied to any increment to the RAB, which has already been extended beyond the original n+2 recovery period
	Comments on way forward: Airlines welcome the additional workshop, and hope to see detail of the cost of capital proposed; in addition, the CAA's cost of capital proposal will also need to be considered

Regulatory (regulatory depreciation)	
Details of building block/NERL's proposal: £44mpa lower on average in NR23 v 2019 due to depreciation of the Regulatory Asset Base (RAB) as assets PPP assets become fully depreciated plus lower levels of capital investment in RP3 than previously planned	**Level of support:** Airlines appreciate the depreciation mechanism and its contribution to the charging base, but seek more information on the detailed calculations, particularly relating to the TRS debtor
	Discussion / concerns raised: Airlines were seeking to understand how the depreciation proposals had been built up, and why they appeared elevated compared to the expected depreciation vs the size of the RAB NERL provided further colour over the recovery of the TRS debtor over a 5-year period as compared to the underlying depreciation of investments comprising the remainder of the RAB, which resulted in a rate of depreciation greater than airlines were expecting to see There were some suggestions from airlines that the depreciation rate might have now changed, and airlines would appreciate a clarification of the rationale for the current rate of depreciation, and whether that might change in future based upon

	the underlying assets and accounting depreciation (note – this is separate from simply deferring depreciation as discussed below)
	Comments on way forward: Airlines would appreciate more information in the business plan on the calculation of depreciation based upon the RAB, and separately the calculations related to the TRS debtor

Regulatory (single till)	
Details of building block/NERL's proposal: 20m pa lower single till income v 2019 9m lower v RP3 plan most of the decrease was previously explained as part of the RP3 plan	**Level of support:** Airlines understand the calculation for the single till income figures was subject to extensive discussion at RP3, and are supportive of the benefits flowing through the price control
	Discussion / concerns raised: Airlines would be keen to ensure assumptions are further refreshed when the business plan is developed, and to ensure that they remain applicable for NR23; furthermore, any interaction between CAA final decision on determined costs and Ministry of Defence (MoD) Future Military Area Radar Service (FMARS) income noted
	Comments on way forward: Detail incorporated into the NERL business plan should allow airlines to scrutinise assumptions to ensure they remain applicable and consistent with RP3

Regulatory (determined costs – summary)	
Details of building block/NERL's proposal: Average DC for NR23 in line with 2019 actuals By 2027 the cost base is 2% lower than in 2019 despite average flight volumes being 5% higher Compared to the RP3 plan average DC are around £26m pa 4% lower Opex is £10m lower than 2019 / 51m lower than RP3 plan due to sustained efficiencies built i mitigating cost pressures Cash pensions market condition and regulatory return (size of RAB) are main drivers for increases	**Level of support:** Airlines note that this is an output of the previously discussed costs **Discussion / concerns raised:** n/a **Comments on way forward:** Airlines are focussed on ensuring determined costs are efficient and minimised

Regulatory (Determined Unit Costs)	
Details of building block/NERL's proposal: Underlying DUC is around average £51 per service unit broadly similar to 2019 or an illustrative £2-£3 per passenger	**Level of support:** Airline views subject to impact on price **Discussion / concerns raised:** Airlines observed that it is difficult to follow the impact of the pandemic through the DUC figures because mix between regulatory return and price adjustment **Comments on way forward:** Airlines would support the DUC being clearly set out in the business plan when the forecast cost makeup is finalised

Traffic Risk Sharing	
Details of building block/NERL's proposal: OPTION 7: Adjusted traffic risk sharing mechanism • Modified mechanism to spread the financial impact for customers of charge increases arising from any future major traffic downturns Traffic risk sharing • Maintain basis but • Extend band from -10% to -30% • Change TRS revenue recovered to over 2 years N+3 N+4 rather than 1 year N+2 • Apply to Core NERL costs in Oceanic • Potential extend TRS to extend recovery period in event of significant traffic shock NERL proposing a TRS for Oceanic based closely on the principles and parameters of the en-route TRS	**Level of support:** Airlines would be keen to understand the benefits of the existing TRS and NERL's proposed modifications in the round considering the incentives across the price control, and the basis of the price control (revenue vs price cap) Airlines need to understand the rationale for the adjusted bandwidths in more detail and consider potential out-turn scenarios when the business plan is developed in order to establish potential support Airlines query the benefit of an Oceanic TRS being applied in addition to the main TRS on the price control, and only then could determine the level of support **Discussion / concerns raised:** Airlines observe that the TRS was activated as a result of COVID-19, which has created a TRS debtor that is proposed to be recovered over a longer period than originally envisaged; this suggests the TRS needs to be updated to accommodate variations in future and avoid undue pressure on charges in n+2 as designed in the past Airlines are keen to understand the rationale for the TRS in its present form, whether a different sharing rate should be used to support incentives, and – particularly given the uncertainty surrounding forecasts – neither want to end up in repeated re-opening of the price control, nor undermine incentives through any changes to TRS Airlines have varying views on the risk to which airlines should be exposed – some views include removing the TRS and instead operate a price cap, with NERL fully

	exposed to volume risk – and others suggesting governments should underwrite shortfalls Specific TRS proposals need further development to be able to effectively explore, noting existing European proposals for modifying TRS schemes at other ANSPs. Airlines would be keen to understand the particular rationale for spreading the recovery between 10% and 30% over just two years, given more extreme events are likely to need greater support to build back traffic, and are particularly concerned that this will over-burden airlines with costs in extreme circumstances **Oceanic:** airlines are seeking clarification of the proposals based upon the benefits and potential impact on the allowed cost of capital; airlines would also need to understand the justification for any dead-band of sharing rates to ensure that incentives remained effective in different possible out-turn scenarios, and would in any case need to be consistent with other mechanisms within the price control – this is particularly the case given the agreed Oceanic Gateway Partnership feeds into savings that are likely to arise during NR23. NERL's view is that benefits stemmed from avoiding windfall gains for NERL if traffic exceeded forecast
	Comments on way forward: Airlines seek further information on the rationale for modifying the TRS as proposed, and are focussed on ensuring that airlines are not exposed to undue price changes that would be automatically applied, and whose automatic application has proved unsustainable as a result of the current pandemic It would be useful for NERL to set out worked examples in its business plan based upon potential out-turn scenarios to illustrate the effect both on subsequent charges and NERL's finances to understand the likely impact

	Furthermore, airlines would welcome further discussion over the rationale and basis for the TRS structure, and whether there may be more appropriate mechanisms or other modifications that should take place as a result of the current experience Airlines would welcome further information on the proposed Oceanic TRS, and its justification, particularly given the potential conflict with the Oceanic Gateway Partnership and other cost sharing structures that have been agreed already

Price profiling	
Details of building block/NERL's proposal: NERL presented options for price profiling constrained by NERL's financeability requirements including resilience to any future traffic shocks OPTION 8: Cost / price profiling between NR23 & NR28 • Reduced prices in NR23 to support customer recovery OPTION 9: Price profiling within NR23 • Reduced prices at the start of NR23 to support customer recovery	**Level of support:** Airline had differing views on the price profiles presented, with some preferring charges to be lower at the start for affordability reasons, and others preferring prices to fall towards the end of the NR23 period Airlines were interested in finding ways to defer TRS revenue recovery into NR28, though there was limited support for depreciation deferrals that might leave the RAB elevated for longer and result in greater long-term upward pressure on charges **Discussion / concerns raised:** Airlines were focussed on ensuring that options did not result in NERL taking on more debt following the experience of the pandemic, and the elevated debt that has resulted from financial restructuring

	Airlines have different views on profiles, with some that would not support profiles that result in rising prices, and others preferring lower prices in the earlier years to support affordability in the recovery Airlines are best able to assess NR23 with a flat, real price profile, allowing the building blocks to be set appropriately before discussing profiling that might take place once the incentives have been established
	Comments on way forward: Profiling of the price is likely to be a more productive conversation once all other aspects of the business plan have been established, with airlines likely to have differing views as a result of different financial targets within each business NR23 plan status: Taking account of feedback, NERL will modify its plans to a) spread recovery of the TRS with 75% in NR23, and the remaining 25% in NR28, exclude depreciation deferral; b) aim for flat real in NR23 (similar to the CAA's assumption for H7 initial proposals)

Changing the charging basis	
Details of building block/NERL's proposal: OPTION 10: Changing the charging basis • Proposal to work together in NR23 on charges based on aircraft emissions to increase focus on environmental performance	**Level of support:** Airlines would support undertaking further work to explore practicable options to address sustainability, subject to concerns about impact on emissions vs effort and managing unintended consequences; it is therefore premature to include in NR23.
	Discussion / concerns raised:

	Airlines are supportive of work on sustainability that might explore alternatives and agree with NERL that further analysis is required to understand the full implications of such a change in charging basis. The airline position is that there is a need for a single international scheme (CORSIA) to deal with carbon emissions – and not piecemeal individual local supplier initiatives
	Comments on way forward: NR23 Plan status: No change to core plan. Establish working group with airlines and CAA.CAA has commented: *"UK – as a member of Eurocontrol – is required to follow Eurocontrol Charging Principles – themselves rooted in ICAO. Therefore, any work on future charging approaches would need to be at least cognisant, if not coordinated with Eurocontrol and possibly ICAO activities"*

ANNEX 2

NATS (En Route) plc: Future price control 2023-27 (NR23)

Action log

(TO BE UPDATED BY NERL PRIOR TO RELEASE OF FINAL VERSION OF THIS REPORT)

Updated 8th December 2021

Action	**Raised on**	**Requestor**	**Description**	**By whom**	**By when**	**Status**
1	6 October 2021 (Context)	[✂redacted]	New UK law clarification: impact on regulatory framework including appeals, licence modifications and traffic forecast choice	[✂redacted]	13 October 2021	Closed *Info provided at Investment Plan session*
2	6 October 2021 (Context)	[✂redacted]	4.4% reduction by 2035 clarification: is this consistent with moving towards net zero emissions	[✂redacted]	7 October 2021	Closed *Info provided at Service Delivery session*
3	6 October 2021 (Context)	[✂redacted]	Clarification about the source of NERL's Oceanic traffic forecast: provide background about whether the NERL forecast is completely self-generated or based on data from an external source like EFFG	[✂redacted]	20 October 2021	Closed *Info provided at Oceanic session*
4	6 October 2021 (Context)	[✂redacted]	Airline offer of sharing intelligence under NDA: NERL welcomed the offer of airlines sharing their intelligence about likely traffic levels under NDA through the Customer Affairs team	[✂redacted]	Ongoing beyond NR23 consultation	Closed
5	6 October 2021 (Context)	[✂redacted]	Scenarios paper: provide requests for any additional information needed to the Customer Affairs Team	[✂redacted]	13 October 2021	Closed

8	7 October 2021 (Service Delivery)	[✂redacted]	Request for greater clarity on the regulatory principles and approach to the recovery of costs incurred by NERL in providing ANS services to new airspace users	[✂redacted]	3 November 2021 (at regulatory mechanisms session)	Closed *Info provided at Reg Mech session*
9	7 October 2021 (Service Delivery)	[✂redacted]	Request for more detail on the measurement of safety benefits for the oceanic service	[✂redacted]	20 October 2021 (at oceanic session)	Closed *Info provided at Oceanic session*
10	7 October 2021 (Service Delivery) 7 October 2021 (Service Delivery)	[✂redacted] [✂redacted] [✂redacted] [✂redacted]	Request for further information on the construction of 3Di, how it is calibrated with respect to sample and/or actual traffic, the targets for NR23 and how they relate to NERL's goal of 4.4% reduction in flight emissions, the interaction between 3Di and flight planning tools	[✂redacted]	21 October 2021 (paper on VE)	Closed *Paper published on Virtual Exhib.*
11	7 October 2021 (Service Delivery)	[✂redacted]	Request for further information on the operation of the proposed modulation of service performance targets (3Di, delay) for traffic variance from forecast	[✂redacted]	3 November 2021 (at regulatory mechanisms session)	Closed *Info provided at Reg Mech session*
12	7 October 2021 (Service Delivery)	[✂redacted]	Request for further information on projections of defined benefit pension scheme costs, as they relate to the evolution of NERL's workforce over NR23	[✂redacted]	3 November 2021 (at regulatory mechanisms session)	Closed *Info provided at Reg Mech session*
13	7 October 2021 (Service Delivery)	[✂redacted]	Request for more detail on the profile of training by location across the period	[✂redacted]	21 October 2021	Closed *Paper published on Virtual Exhib.*
14	7 October 2021 (Service Delivery)	[✂redacted]	Request for more information on the factors and assumptions supporting the presented controller supply/demand chart	[✂redacted]	21 October 2021	Closed

						Paper published on Virtual Exhib.
15	13 October 2021 (Capital Investment)	[✂redacted]	Progress report: Co-chairs to produce a progress report to identify the issues and questions raised by airlines up to and including Oceanic consultation on 20 October 2021.	[✂redacted]	25 October 2021	Closed *Email sent*
16	13 October 2021 (Capital Investment)	[✂redacted]	Progress report proposal: Co-chairs to email the details of the proposal to produce a progress report by 22 October for airline comment.	[✂redacted]	14 October 2021	Closed *Email sent*
17	13 October 2021 (Capital Investment)	[✂redacted]	Capex true up mechanism clarification: Will there be a review of the capex true up mechanism and its appropriateness for NR23?	[✂redacted]	3 November 2021	Closed *Info provided at Reg Mech session*
18	13 October 2021 (Capital Investment)	[✂redacted]	Airspace change: Request for contact details of any airspace experts who could potentially share best practice with ACOG to be provided to Mark Swan.	[✂redacted]	29 October 2021	Closed
19	13 October 2021 (Capital Investment)	[✂redacted]	Proposed costs: Request for breakdown on capital costs to identify between capex and opex plus address any inconsistencies in data caused by rounding	[✂redacted]	1 November 2021	Closed *Paper published on Virtual Exhib.*
20	13 October 2021 (Capital Investment)	[✂redacted]	Sustainment: Request for time series data for sustainment from start of RP2 to end of NR23. Information to be uploaded to the virtual exhibition when ready.	[✂redacted]	1 November 2021	Closed *Paper published on Virtual Exhib.*
21	13 October 2021 (Capital Investment)	[✂redacted] [✂redacted]	Request for a summary page with a breakdown of benefits for each capital investment project in term of safety, capacity, environment and cost effectiveness alongside performance targets and costs to help with assessment of options	[✂redacted]	3 November 2021	Closed *Paper published on Virtual Exhib.*
22	13 October 2021 (Capital Investment)		Request for extra data to be added to the non-staff opex high level forecast profile on slide 34 of the capital investment consultation material to enable comparison between original RP3 plan and revisions for NR23 plan	[✂redacted]	3 November 2021	Closed *Paper published on Virtual Exhib.*

23	13 October 2021 (Capital Investment)	[✂redacted]	Request for further information about the level of disruption expected during transition into operation for individual projects and a forecast date for when the disruption would occur.	[✂redacted]	3 November 2021	Closed *Paper published on Virtual Exhib.*
24	13 October 2021 (Capital Investment)	[✂redacted]	Request for an explanation of how VR and legacy escape delay impact the headcount and non-staff costs over 2019 – 2027 and comparison with the RP3 plan.	[✂redacted]	3 November 2021	Closed *Paper published on Virtual Exhib.*
25	13 October 2021 (Capital Investment)	[✂redacted]	Request for more detail on how the 2 + 5 approach could work in practice under the current regulatory mechanisms (e.g. under/overspend or a change in priority).	[✂redacted]	3 November 2021	Closed *Paper published on Virtual Exhib.*
26	20 October 2021 (Oceanic)	[✂redacted]	CAA to write a letter to NERL, to say that they do not expect NERL to have appointed a third-party reviewer for the ADS-B review by May 2022.	[✂redacted]	To be confirmed by James Wynn-Evans	Ongoing *Update published on VE*
27	20 October 2021 (Oceanic)	[✂redacted]	CAA to issue a working paper on ADS-B to look at defining an appropriate timeline and suitable conditions to start the review and develop meaningful metrics.	[✂redacted]	To be confirmed by James Wynn-Evans	Closed *Update provided at 11 Nov mtg*
28	20 October 2021 (Oceanic)	[✂redacted]	Request for CAA to set up separate session to discuss the current ADS-B situation with relevant stakeholders.	[✂redacted]	To be confirmed by James Wynn-Evans	Closed *Update provided at 11 Nov mtg*
29	20 October 2021 (Oceanic)	[✂redacted]	Request to signpost relevant ADS-B cost benefit analysis information and look at whether any of the materials presented in RP3 are relevant to be shared again.	[✂redacted]	11 November 2021	Closed *Paper published on Virtual Exhib*
30	20 October 2021 (Oceanic)	[✂redacted]	Request to airlines for any intelligence that may help to assist in refining the Oceanic traffic forecast.	[✂redacted]	3 November 2021	Closed

31	20 October 2021 (Oceanic)	[✂redacted]	Request for an updated forecast to be presented at the consultation close meeting.	[✂redacted]	11 November 2021	Closed
32	20 October 2021 (Oceanic)	[✂redacted]	Request for any further views on proposed performance measures for NR23	[✂redacted]	3 November 2021	Closed
33	20 October 2021 (Oceanic)	[✂redacted]	Request to breakdown the costs for each capex investment. *This is linked to the same action (21) in the capital programme session but recorded here for transparency*.	[✂redacted]	3 November 2021	Closed *Paper published on Virtual Exhib.*
34	20 October 2021 (Oceanic)	[✂redacted] [✂redacted]	Request for comparisons between forecast and actual traffic to better understand the impact of introducing a TRS	[✂redacted]	3 November 2021	Closed *Paper published on Virtual Exhib.*
35	2 November 2021 (Airports Eng't)	[✂redacted]	Traffic projections - the forecasting team in NERL to harvest information already provided by the airports to NERL in relation to the Future Airspace Strategy Implementation	[✂redacted]	11 November 2021	Closed *Internal follow up & establish channel to cascade future intel*
36	2 November 2021 (Airports Eng't)	[✂redacted]	SIP processes - offer to NERL to facilitate a discussion and coordinate a response from airports on NERL's 2+5 approach (detailed two-year planning within a broader five-year time horizon) to facilitate flexibility in the investment plan	[✂redacted]	5 November 2021	Closed *Session held on 22 November with AOA Policy Director*
37	2 November 2021 (Airports Eng't)	[✂redacted]	Feedback timing – request for comments to NERL about its NR23 plan – in particular, airports' preferences about the options that are relevant to them	[✂redacted]	11 November 2021	Closed
38	2 November 2021 (Airports Eng't)	[✂redacted]	Airspace modernisation funding - will there be any funding available in the UK Unit Rate for NR23 to fund airspace modernisation at airports?	[✂redacted]	11 November 2021	Closed *Update published on VE*

39	2 November 2021 (Reg Mech)	[✂redacted]	Explanation of the trends in trainee numbers, referencing proposed restart of initial training and cohorts of new trainees	[✂redacted]	10 November 2021	Closed *Paper published on Virtual Exhib*
40	2 November 2021 (Reg Mech)	[✂redacted]	Explanation of determined unit costs by reference to latest traffic forecasts	[✂redacted]	At 11 November meeting	Closed
41	2 November 2021 (Reg Mech)	[✂redacted]	Explanation of the composition of the RAB between TRS debt and other capex-derived amounts	[✂redacted]	10 November 2021	Closed *Included in Ready Reckoner*
42	2 November 2021 (Reg Mech)	[✂redacted]	Explanation of calculation of depreciation and repayment profile of TRS debt	[✂redacted]	10 November 2021	Closed *Included in Ready Reckoner*
43	2 November 2021 (Reg Mech)	[✂redacted]	Information on estimated costs for serving new airspace users	[✂redacted]	10 November 2021	Closed *Paper published on Virtual Exhib*
44	2 November 2021 (Reg Mech)	[✂redacted] [✂redacted]	Evidence on the calibration of 3Di and capacity targets with respect to traffic and capital investment	[✂redacted]	10 November 2021	Closed *Paper published on Virtual Exhib*
45	2 November 2021 (Reg Mech)	[✂redacted]	Feedback from airlines on NR23 plan options at 11 November meeting, request for outstanding queries before, by 5 November	[✂redacted]	At 11 November meeting	Closed
46	2 November 2021 (Reg Mech)	[✂redacted]	Clarification of the CAA's view on the appropriateness of NERL funding assets that relate to solely to airports' operations, given Licence requirements for NERL/NSL separation within NATS	[✂redacted] [✂redacted]	9 November 2021	Closed *Update published on VE*
47	11 November 2021 (Close)	[✂redacted]	Summary of latest oceanic traffic forecast	[✂redacted]	18 November 2021	Closed *Paper published on Virtual Exhib*

48	11 November 2021 (Close)	[✂redacted]	Summary of timetable for consultation and decision-making in SIP and TCAB forums for capex programme, including sustainment programme	[✂redacted]	18 November 2021	Closed *Paper published on Virtual Exhib*
49	11 November 2021 (Close)	[✂redacted]	Offer to exchange experience with relevant NERL colleagues on use of training simulations and achievement of operational benefits	[✂redacted] [✂redacted]	Ongoing beyond NR23 consultation	Closed

ANNEX 3

NATS (En Route) plc: Future price control 2023-27 (NR23)

Attendance log

Name	Organisation	Context discussion 06-Oct-21	Service delivery, operational resourcing, training & technical resilience 07-Oct-21	Capital Investment 13-Oct-21	Oceanic 20-Oct-21	Airports 02-Nov-21	Regulatory mechanisms 03-Nov-21	Closing session 11-Nov-21
Airlines								
[✂redacted]	Aer Lingus	Virtual	Virtual					
[✂redacted]	Aer Lingus	Virtual	Virtual	Virtual				
[✂redacted]	Air Canada		Virtual					
[✂redacted]	Air Transat	Virtual	Virtual		Virtual			
[✂redacted]	American Airlines	Virtual	Virtual	Virtual	Virtual		Virtual	Virtual
[✂redacted]	BA	In person	In person	In person	Virtual		In person	Virtual
[✂redacted]	BA	Virtual	Virtual	Virtual			Virtual	Virtual
[✂redacted]	BA		Virtual	Virtual	Virtual		Virtual	Virtual
[✂redacted]	BA	Virtual	Virtual	Virtual				

Name	Organisation	Context discussion 06-Oct-21	Service delivery, operational resourcing, training & technical resilience 07-Oct-21	Capital Investment 13-Oct-21	Oceanic 20-Oct-21	Airports 02-Nov-21	Regulatory mechanisms 03-Nov-21	Closing session 11-Nov-21
[✂redacted]	easyJet	Virtual	Virtual					
[✂redacted]	easyJet	Virtual	Virtual		Virtual			
[✂redacted]	easyJet	Virtual	Virtual	Virtual			Virtual	Virtual
[✂redacted]	Emirates	Virtual	Virtual	Virtual	Virtual		Virtual	Virtual
[✂redacted]	IATA		Virtual	Virtual	Virtual		Virtual	Virtual
[✂redacted]	IATA				Virtual			
[✂redacted]	Iberia				Virtual			
[✂redacted]	Jet2	Virtual	Virtual	Virtual			Virtual	
[✂redacted]	KLM	Virtual	Virtual	Virtual			Virtual	Virtual
[✂redacted]	Lufthansa Group				Virtual			
[✂redacted]	Ryanair	In person	In person	Virtual	Virtual		Virtual	Virtual
[✂redacted]	TUI	Virtual	Virtual					
[✂redacted]	United Airlines				Virtual			
[✂redacted]	Virgin Atlantic	Virtual	Virtual	Virtual	Virtual		Virtual	Virtual

Name	Organisation	Context discussion	Service delivery, operational resourcing, training & technical resilience	Capital Investment	Oceanic	Airports	Regulatory mechanisms	Closing session
		06-Oct-21	07-Oct-21	13-Oct-21	20-Oct-21	02-Nov-21	03-Nov-21	11-Nov-21
Airports								
[✂redacted]	Aberdeen, Glasgow and Southampton (AGS) airports					Virtual		
[✂redacted]	Airport Operators Association (AOA)					Virtual		
[✂redacted]	Gatwick airport (LGW)					Virtual		
[✂redacted]	Gatwick airport (LGW)					Virtual		
[✂redacted]	Gatwick airport (LGW)					Virtual		
[✂redacted]	Heathrow airport (LHR)					Virtual		
[✂redacted]	Liverpool airport (LJL)					Virtual		
[✂redacted]	Manchester airport (MAG)					Virtual		
[✂redacted]	Manchester Airport Group (MAG)					Virtual		
[✂redacted]	Stansted airport					Virtual		
CAA								
[✂redacted]	CAA	Virtual		Virtual	Virtual		Virtual	Virtual
[✂redacted]	CAA	Virtual	Virtual	In person	In person	Virtual	Virtual	In person

Name	Organisation	Context discussion	Service delivery, operational resourcing, training & technical resilience	Capital Investment	Oceanic	Airports	Regulatory mechanisms	Closing session
		06-Oct-21	07-Oct-21	13-Oct-21	20-Oct-21	02-Nov-21	03-Nov-21	11-Nov-21
[✂redacted]	CAA	Virtual	Virtual	Virtual	Virtual		Virtual	Virtual
[✂redacted]	CAA	Virtual	Virtual	Virtual	Virtual			
[✂redacted]	CAA	Virtual	Virtual	Virtual	Virtual	Virtual		Virtual
[✂redacted]	CAA		Virtual	Virtual		Virtual		Virtual
[✂redacted]	CAA	Virtual					Virtual	Virtual
[✂redacted]	CAA	Virtual	Virtual		Virtual			Virtual
[✂redacted]	CAA	Virtual						
[✂redacted]	CAA						Virtual	
[✂redacted]	Integra (with Steer)							Virtual
[✂redacted]	Steer						Virtual	Virtual
[✂redacted]	Steer							Virtual
Co-Chairs								
[✂redacted]	Co-chair (airline appointment)	In person	In person	In person		Virtual	In person	Virtual
[✂redacted]	Co-chair (NERL appointment)	In person	In person	In person	In person	Virtual	In person	In person

Name	Organisation	Context discussion 06-Oct-21	Service delivery, operational resourcing, training & technical resilience 07-Oct-21	Capital Investment 13-Oct-21	Oceanic 20-Oct-21	Airports 02-Nov-21	Regulatory mechanisms 03-Nov-21	Closing session 11-Nov-21
NATS								
[✂redacted]	NERL	In person	In person	In person	In person	Virtual	In person	In person
[✂redacted]	NERL			In person				
[✂redacted]	NERL	In person	In person	In person	In person	Virtual	In person	In person
[✂redacted]	NERL			In person		Virtual		
[✂redacted]	NERL			In person	In person			
[✂redacted]	NERL	In person	In person			Virtual		
[✂redacted]	NERL	In person	Virtual	In person	Virtual	Virtual	In person	In person
[✂redacted]	NERL	In person	In person	In person	In person	Virtual	In person	In person
[✂redacted]	NERL	In person						In person
[✂redacted]	NERL	In person	In person	Virtual	In person	Virtual	Virtual	Virtual
[✂redacted]	NERL	In person			In person	Virtual		
[✂redacted]	NERL	In person						In person
[✂redacted]	NERL	Virtual	In person	In person	In person	Virtual	In person	In person
[✂redacted]	NERL				Virtual			Virtual

Name	Organisation	Context discussion	Service delivery, operational resourcing, training & technical resilience	Capital Investment	Oceanic	Airports	Regulatory mechanisms	Closing session
		06-Oct-21	07-Oct-21	13-Oct-21	20-Oct-21	02-Nov-21	03-Nov-21	11-Nov-21
[✂redacted]	NERL	Virtual				In person		
[✂redacted]	NERL		Virtual					
[✂redacted]	NERL				Virtual			
[✂redacted]	NERL						In person	Virtual
[✂redacted]	NERL						In person	Virtual
[✂redacted]	NERL						In person	
[✂redacted]	NERL						In person	In person
[✂redacted]	NSL					Virtual		
[✂redacted]	NERL Trade Union representative	In person	Virtual	Virtual	Virtual	Virtual	Virtual	Virtual

ANNEX 4

Acronym List

ACOG	Airspace Change Organising Group
ADS-B	Automatic Dependent Surveillance – Broadcast
AMAN	Arrivals Manager
CAA	Civil Aviation Authority
CCWG	Customer Consultation Working Group
CMA	Competition and Markets Authority
COVID-19	COrona VIrus Disease 2019
CRE	Collision Risk Estimate
DC	Determined Cost
DUC	Determined Unit Cost
DVOR	Doppler Very High Frequency Omnidirectional range
EFFG	ICAO North Atlantic Economic & Financial Group
EU	European Union
FMARS	Future Military Area Radar Service
FMS	Flight Management System
FTE	Full Time Equivalent
ICAO	International Civil Aviation Organisation
MoD	Ministry of Defence
NATS	National Air Traffic Services
NCSC	National Cyber Security Centre
NERL	NATS En route plc
NR23	Price Control Review from 2023 to 2027
NR28	Price Control Review from 2028 to 2032
NSL	NATS Services Ltd
OFF	Opex Flexbility Fund
OMM	Optimised mixed mode
pa	Per Annum
PBN	Performance-based navigation
RAB	Regulatory Asset Base
RP3	Regulatory Period 3 (the current regulatory period)
RPI	Retail Price Index
SIP	Service and Investment Plan
STATFOR	Eurocontrol's Specialist Panel on Air Traffic Statistics & Forecasts
TBS	Time-based separation
TCAB	Technical Customer Advisory Board
TRS	Traffic Risk Sharing
UK	United Kingdom
VE	Virtual Exhibition
VR	Voluntary Redundancy
WACC	Weighted Average Cost of Capital
XMAN	Cross border Arrival Management