


Decision on modifications to Condition 2 of NATS (En Route) plc licence in respect of resilience planning, policy statement on enforcement and resilience plan guidance

CAP 1682



Published by the Civil Aviation Authority, 2018

Civil Aviation Authority
Aviation House
Gatwick Airport South
West Sussex
RH6 0YR

You can copy and use this text but please ensure you always use the most up to date version and use it in context so as not to be misleading, and credit the CAA.

First published 2018

Enquiries regarding the content of this publication should be addressed to: economicregulation@caa.co.uk

The latest version of this document is available in electronic format at: www.caa.co.uk

Contents

Contents	3
Chapter 1	4
Introduction	4
Purpose of this document – CAA decision to modify the NERL licence	4
Our proposals and representations	5
Policy statement on the requirements for resilience, contingency and business continuity	5
Chapter 2	6
The reasons for the CAA’s decision to modify NERL’s licence and the effect of that decision	6
Chapter 3	10
Responses to our consultation	10
Need to prioritise safety	10
Staffing	11
Funding improvements in performance	11
Independent reviewer	12
New licence condition 2	13
Resilience Plan Guidance issued to NERL under Condition 2.9	16
Policy statement on enforcement triggers and contingency arrangements	19
The methodology for deriving the resilience requirements and the triggers for formal intervention	20
Enforcement of resilience requirements	21
Contingency requirements	23

Chapter 1

Introduction

Purpose of this document – CAA decision to modify the NERL licence

- 1.1 This document explains our decision to modify the air traffic services licence (the licence) held by NATS (En Route) plc (“NERL”) under section 11(1) of the Transport Act 2000 (the Act), as proposed in our consultation document CAP 1639.¹ The modifications require:
- NERL to submit a resilience plan to us to setting out the principles, policies and processes by which it will comply with its obligation to develop and maintain its assets, personnel and systems to meet its requirement to provide the core service and specified services² under Condition 2 (2) with regards to resilience, contingency and business continuity;
 - NERL’s Board to take full ownership of the plan and submit a certificate to us confirming that it considers the plan is fit for purpose and complies with NERL’s obligations under its Licence;
 - NERL to ensure that the resilience plan is consistent with any guidance we have issued;
 - NERL to review the plan at least every two years, or when we direct it to do so; and
 - the plan submitted by NERL to be subject to review by an independent reviewer appointed by us to provide an opinion on the likely effectiveness of NERL’s principles, plans and processes to produce a resilient service.
- 1.2 NERL confirmed its unconditional consent to the modifications on 27 April 2018.
- 1.3 The reasons for, and effect of, our decision to modify the licence are set out in Chapter 2.
- 1.4 The modifications are at Appendix A to this document.

¹ CAP 1639: Proposal to modify Condition 2 of NATS (En Route) plc licence in respect of resilience planning, policy statement on enforcement and consultation on draft guidance (February 2018): www.caa.co.uk/cap1639

² The core services are the UK En route Air Traffic Control Service, the Oceanic En route Air Traffic Control Service, the Advisory Control Service and the London Approach Service, as defined in Condition 1 of the NERL Licence. The specified services are set out in Schedule 4 to the NERL Licence.

- 1.5 Under the modifications, NERL's resilience plan has to be developed in accordance with any guidance we have issued. CAP 1639 included draft resilience plan guidance for consultation. This document also sets out, in Appendix B, the finalised guidance. This guidance may be amended in the future following further consultation.

Our proposals and representations

- 1.6 With NERL's consent under section 11(1) of the Act, we published proposals to modify Condition 2 in NERL's licence by notice under section 11(2) of the Act in CAP 1639 on 26 February 2018.
- 1.7 We invited representations on our proposals by 26 March 2018. [Representations](#) were received from:
- NERL
 - British Airways
 - Colin Hume, AOC consultant
 - Prospect ATCO's branch
 - Guild of Air Traffic Control Officers
- 1.8 All respondents welcomed the licence modification supporting the requirement for NERL to produce a resilience plan. Respondents' views on the proposed conditions and the draft guidance are discussed in Chapter 3.

Policy statement on the requirements for resilience, contingency and business continuity

- 1.9 In addition to the licence modification summarised above we have been developing policy on the wider licence requirements on NERL in relation to resilience, and how we should enforce these requirements. CAP 1639 explained that, following an earlier consultation in February 2017³ we have adopted a policy on the principles and performance levels for resilience requirements for NERL to achieve, and how we proposed to enforce them. These requirements are intended to be used as guidance for informing our enforcement process, using indicators that would trigger intervention by us in accordance with our enforcement policy. They complement the requirements set out in NERL's licence. We anticipated that we could, if appropriate, amend these expected resilience levels during the RP3 price control period. Our latest policy statement with respect to these matters is set out in Appendix C.

³ CAP 1512: Proposals to take forward the NATS Independent Enquiry recommendations with regards to resilience: www.caa.co.uk/cap1512

Chapter 2

The reasons for the CAA's decision to modify NERL's licence and the effect of that decision

- 2.1 We have a primary duty under section 2 of the Act to exercise our functions under the Act so as to maintain a high standard of safety in the provision of air traffic services. We have secondary duties, including to exercise our functions in a manner we think best calculated to further the interests of users of air traffic services (including with regards to the availability, continuity, and quality of air traffic services).
- 2.2 Under section 8 of the Act NERL has a number of duties that it must fulfil in carrying out its functions in respect of the licensed area. It must:
- secure that a safe system for the provision of authorised air traffic services is provided, developed and maintained;⁴
 - take all reasonable steps to secure that the system is also efficient and co-ordinated;
 - take all reasonable steps to secure that the demand for authorised air traffic services is met; and
 - have regard, in providing, developing and maintaining the system, to likely future demands.
- 2.3 Under Condition 2 of the licence NERL has a general obligation to make available the Core Services (as defined in Condition 1(3)) so as to be capable of meeting on a continuous basis any reasonable level of overall demand for such services. Furthermore, NERL must at all times develop and maintain its assets, personnel, systems and other parts of its business so as to be able to comply with its general obligation.
- 2.4 Our enforcement policy⁵ explains that we concentrate on serious and systemic issues and, as far as practicable, take a proportionate approach to enforcement issues with increasing levels of involvement and intervention, depending on the severity of the issue. Our involvement and interventions can range from working level meetings to flag areas of possible concern to prevent these becoming more serious; through to more formal, high level discussions for more serious

⁴ For the purposes of Section 8 of the Act, the system is considered safe if (and only if) NERL complies with requirements imposed by the Air Navigation Order with regards to its services.

⁵ CAP 1234: Economic Licensing Enforcement Guidance (May 2015): www.caa.co.uk/cap1234

incidents; or ultimately, for serious issues that we consider could indicate a licence breach, a more formal investigation that can lead to an enforcement order requiring specific action.

- 2.5 NERL's resilience performance is already, to some extent, reflected in the delay performance metric within the licence.⁶ Effectively NERL has a points allowance with excess delay on any given day scoring a number of points. If NERL exceeds the allowance within a given year then it becomes liable for penalties within the incentive scheme. The formula for determining the excess delay score varies according to the time of year and level of delay, but is broadly based on the average delay per aircraft.
- 2.6 On 12 December 2014 a disruption in NERL's en route air traffic services caused 14,863 minutes of NERL attributable delay. This followed a more severe disruption on 7 December 2013 which caused 137,225 minutes of NERL attributable delay. The 2014 disruption led to the establishment of an Independent Enquiry,⁷ led by Sir Robert Walmsley, to review the circumstances around the events of that day, including addressing the levels of future resilience and service delivery that should be expected across the en route air traffic network, taking into account relevant aviation benchmarks and costs.
- 2.7 In relation to both incidents, we found it difficult to assess whether NERL could be said to have taken 'all reasonable steps to secure that...demand is met'⁸ and that it had 'at all times develop[ed] and maintain[ed] its assets, personnel, systems and other parts of its business'⁹ to be able to meet demand in accordance with its statutory duties and licence obligations. In respect of each incident we accepted that NERL had taken a number of steps to recover quickly and safely, that it had maintained good communications with its customers and had taken steps to minimise the impact of the disruption such as offering alternative routing. However, we did not consider that the licence obligations were clear enough to effectively hold NERL to account should we find that its policies, plans and procedures were inadequate to properly minimise the risk of disruption or to manage an efficient and effective recovery, in line with its statutory duties and licence obligations. The Independent Enquiry did not find that there had been deficiencies in NERL's actions in this regard but accepted our concerns about better oversight and assurance in the future.

⁶ C4 set out in Condition 21 (12) and (13) in NERL's licence.

⁷ The Independent Enquiry's final report can be found at <http://www.caa.co.uk/Commercial-industry/Airspace/Air-traffic-control/Air-navigation-services/Air-Traffic-Control---NATS-system-failure-enquiry/>.

⁸ Section 8 of the Transport Act 2000 (2000).

⁹ Condition 2 of the licence.

- 2.8 The Independent Enquiry recommended that we and NERL jointly develop and agree definitions of resilience, contingency and business continuity to be used in the context of air traffic control in the UK and a methodology for determining acceptable levels of disruption to give greater clarity.¹⁰ The Independent Enquiry also recommended that we include a new condition in the licence requiring NERL to submit a resilience plan to us for our approval.¹¹
- 2.9 In line with the Independent Enquiry's recommendations, we have developed the new licence condition. It contains definitions of resilience, contingency and business continuity and requires NERL to prepare and submit a resilience plan consistent with guidance. The requirements are similar to requirements in the airport, energy and rail sectors.
- 2.10 The new condition should focus NERL's attention on providing a resilient service with sufficient contingency, by requiring it to produce a resilience plan and to review it at least every two years, in accordance with any guidance issued by us. The requirement to submit a resilience plan certificate after every review will assure us and other stakeholders that its Board has visibility and ownership of the principles, policies and processes in the plan.
- 2.11 The new condition will allow us to obtain an independent expert opinion on the likely effectiveness of NERL's principles, policies and processes in the plan to produce a resilient service, by making provision for us to appoint an independent reviewer of NERL's resilience plan (and any revisions to the plan that NERL makes to ensure continued compliance). The independent reviewer will not decide on whether NERL is compliant with its licence conditions but, coupled with the resilience plan certificate, this review should give us greater assurance that NERL's plan is robust.
- 2.12 The new condition also requires NERL to consult stakeholders on the form, scope and level of detail in the plans and we must also consult NERL and stakeholders before we issue any guidance. These consultations will give users visibility of NERL's principles and policies to maintain resilience and an opportunity to comment. NERL will not be required to consult stakeholders on its internal processes and procedures.
- 2.13 Enforcement of the new licence conditions will be carried out in line with our enforcement policy. We would carry out an urgent review if NERL failed to produce the required plans and/or to provide updates when required and, if the matter was not resolved to an agreed timescale, this would be considered prima facie evidence of a breach of the licence. If the independent reviewer finds that the plans are materially inadequate, we may also consider this to be prima facie

¹⁰ Recommendation 20 of the Independent Enquiry.

¹¹ Recommendation 30 of the Independent Enquiry.

evidence of a breach (depending on the extent of the problem) although, in light of our enforcement policy and the existing terms of the NERL licence, it is more likely, in the first instance at least, that we would require NERL to resolve the issues and resubmit the plans.

- 2.14 Any potential licence investigations would take into account NERL's adherence to its plans, although its absolute duty to maintain a safe system and more flexible duty to take all reasonable steps to meet demand means that this will always require both NERL and us to exercise a degree of judgement. NERL might find during an incident that the plans are not suitable in that particular case (for example, for safety reasons and/or because there is a more effective remedy) and that it needs to deviate from them to avoid unacceptably poor outcomes in respect of safety or resilience. It is important that NERL is able to adapt and make the right operational decisions to comply with all its safety and service obligations, rather than prioritising the resilience obligation by strictly following the plan but achieving poorer outcomes. In such cases, we would expect to see clear and rational reasons for this following the incident and would expect a review and revision of the plans to take this into account for the future. However, we may consider more formal enforcement action if there were not clear reasons for deviating from the plans and doing so had worsened the impact for users. We may also consider more formal action if it was clear that plans had not been followed if, for example, there was little knowledge or understanding of these plans within the organisation.

Chapter 3

Responses to our consultation

- 3.1 All respondents agreed with the proposal to require NERL to produce a resilience plan and welcomed the clarity this would bring to stakeholders on NERL's resilience planning. They made various comments on the proposed condition, the draft guidance and the adopted policy. None of these comments have required any amendments to our proposals.
- 3.2 NERL said that it already had comprehensive plans and processes in place, however, it recognised the potential value to all stakeholders of consolidating existing policy and processes into an overarching resilience plan. It also highlighted that its performance targets under RP2¹² for normal operations are necessarily different to those targets agreed in our resilience policy for disruptive events and these two standards should not be conflated. It intends to make this difference clear in its Service and Investment Plans required under Condition 10 of its licence.

Need to prioritise safety

- 3.3 GATCO raised concerns about the potential for increasing the pressure on staff and stressed that there must not be any pressure on the operation to handle potentially unsafe levels of traffic or to force unsafe fast recovery times. It said staff should not be concerned about satisfying licence conditions whilst trying to safely manage disruption and suggested that the resilience plans should focus on having adequate back-up systems and that staff are fully trained on them.
- 3.4 We agree that the ATCO's priority must be to manage both the day to day operation and any disruptive events safely, without having to think about licence compliance as they do so. Our primary duty to exercise our functions to ensure a high standard of safety in the provision of ATS and NERL's duty to secure that a safe system for the provision of ATS is provided mean that NERL must be able to manage the impact of any incident according to the safety requirements at the time. However, it is NERL's responsibility to put in place measures to ensure that it is compliant with all its legal requirements. Good pre-planning, such as through the resilience plan, should allow many of the issues and potential conflicts to be managed in advanced, for example, through good fall-back procedures and staff training, based on a good understanding of users' needs. This will mean that decisions that are compliant can be taken on the day quickly. We recognise that

¹² RP2 is the regulatory period for the current UK-Irish FAB Performance Plan (2015-19). RP3 is the regulatory period for the next UK Performance Plan (2020-24).

it is difficult to plan for every eventuality, so we have made clear in our statement on enforcement of the resilience plan that NERL would be able to deviate from its plans if necessary.

Staffing

- 3.5 GATCO also said that staff planning and resilience should form a key element of any resilience plan. It strongly supported the requirements in the guidance regarding the inclusion of staff planning in the resilience plan but it raised concerns that staffing issues were not included in the methodology in our policy. It noted that it already has concerns about the current and forecast levels of staffing and urged us to monitor the situation closely.
- 3.6 We also agree that staffing issues should be addressed in the resilience plan. Serious performance issues relating to staffing tend to be more long-term and systemic, in contrast to engineering failures which tend to have more sudden, shorter term high impacts. We have therefore not included the more systemic issues within the thresholds set out in the resilience requirements policy but will assess whether there are any licence compliance issues separately on a case by case basis. We have said that short-lived / low impact issues will be best dealt with under the delay performance metric within the licence, but this does not preclude us from also taking action under the licence on longer-term, systemic failures.

Funding improvements in performance

- 3.7 Prospect said that resilience was highly dependent on the amount of funding and that continued investment and a long-term perspective is imperative to properly fund ATM provision. It noted that the 'perceived lack of performance improvement' is the result of decisions taken before RP2. Any requirement for increased resilience must be debated properly in the development of RP3.
- 3.8 Prospect agreed with us that non-engineering events should be excluded from the thresholds in our policy and reminded stakeholders of the pressure that RP2 is putting on NERL. It supported the requirement in the guidance that the resilience plans should cover services, assets, personnel, systems and other parts of NERL's business, but noted that this must be taken into account in the development of RP3.
- 3.9 British Airways thought it would be useful to understand the level of resilience the RP2 programme would support before moving into the RP3 period.
- 3.10 We agree that any changes to the resilience requirements will need to be agreed and funded at each price control. We will be seeking stakeholders' views on the levels of service they wish to pay for as part of our consultation on RP3.

Independent reviewer

- 3.11 Prospect asked why the Independent Reviewer would normally be paid for by NERL. The Independent Reviewer is appointed by and reports to us to help us protect users by commenting on the robustness and appropriateness of NERL's resilience plan. This is part of our normal compliance monitoring process and, as with any work we carry out or commission in this regard, our costs are passed on to NERL through NERL's licence fees.
- 3.12 NERL said that the Independent Reviewer could add most value if it had regular engagement with NERL and other stakeholders throughout the development and review of the resilience plan.
- 3.13 Other issues
- 3.14 Prospect questioned whether delay was the most important measure of resilience. It said that delay could be seen as a lagging indicator and may do nothing to address dormant and latent software issues like those that caused the December 2014 failure. GATCO agreed, saying that processes should be put in place to monitor the ongoing situation and ensure the required oversight was achieved. The delay minute thresholds in our policy on enforcement triggers are intended to deal with situations where a failure has happened. The new resilience condition, along with the general service delivery obligations, requires NERL to demonstrate that it has measures in place to minimise the risk of those failures happening in the first place and provides us with oversight of those measures.
- 3.15 BA welcomed the commitments in our policy to monitor disruptive incidents and to take into account other forms of delay and cancellations which may also be indicators of resilience performance. It supported our suggestion that we could investigate incidents and trends that fall short of formal intervention thresholds.

APPENDIX A**New licence condition 2**

The proposed new conditions are set out in paragraphs 9 to 12.

1. Without prejudice to the general power conferred under this Licence, the Licensee shall make available:
 - a) the Core Services so as to be capable of meeting on a continuing basis any reasonable level of overall demand for such services; and
 - b) the Specified Services.
2. The Licensee shall at all times develop and maintain its assets, personnel, systems and other parts of its business:
 - a) so as to be able to comply with its obligations under paragraphs 1 and 5; and
 - b) having regard to the objective of permitting access to controlled airspace on the part of all Users while making the most efficient overall use of airspace.
3. The Licensee shall be relieved of its obligations in paragraph 1 above to the extent that the CAA, in response to a written request from the Licensee, notifies the Licensee in writing that it is satisfied that any requirement is or is to be met by other means and that accordingly it would not be reasonable in the circumstances to require the Licensee to provide the services specified in the notice.
4. In determining what is reasonable for the purposes of paragraph 1(a), regard shall be had to:
 - a) the level of overall demand reasonably expected to be met at the relevant time on the basis of capacity to be made available in accordance with the Service and Investment Plan provided by the Licensee pursuant to Condition 10; and
 - b) the effect on overall demand of changes in legal or regulatory requirements made subsequent to the provision of such Plan, provided that the Licensee has taken all reasonable steps to meet the resulting changed demand.
5. Without extending the obligation as to the overall level of services to be provided under paragraph 1(a), the Licensee shall meet each request for the provision of the Core Services reasonably made by any person.

6. For the purposes of paragraph 5 above, a person shall be held to have reasonably made a request for the relevant services where:
- a) the Licensee has been notified of, and has not rejected, a legitimate flight plan from the commander of an aircraft or a recognised flight plan processing centre to a bona fide flight which is required by applicable standards, rules and safety requirements to submit to the instructions of a person providing air traffic control in the relevant area; or
 - b) that person is in control of an aircraft in flight which has entered or is about to enter Controlled Airspace in respect of a Licensed Area either:
 - i. with the approval of the Licensee; or
 - ii. otherwise where the Licensee is or ought reasonably to be aware of the fact and where the person responsible for such aircraft has had no reasonable opportunity to seek such approval and unforeseen circumstances have arisen where failure to provide the services would endanger the safety of any person; or
 - c) in such other circumstances as the Licensee acting reasonably considers appropriate having regard to the safety of any person.
7. In providing services under paragraph 1 the Licensee shall not unduly prefer or discriminate against any person or class of person in respect of the operation of the Licensee's systems, after taking into account the need to maintain the most expeditious flow of air traffic as a whole without unreasonably delaying or diverting individual aircraft or such other criteria as the Licensee may apply from time to time with the approval of the CAA.
8. Subject to paragraph 7, the Licensee shall not unduly discriminate against or give preferential treatment to any person or class of persons in respect of the terms on which services are provided, to the extent that such terms have or are intended to have or are likely to have the effect of preventing, restricting or distorting competition in any market.
9. The Licensee shall, within nine months of this paragraph 9 coming into force, submit to the CAA a Resilience Plan in accordance with any relevant guidance issued by the CAA.
10. The Resilience Plan shall set out the principles, policies and processes by which the Licensee will comply with its obligations under Paragraph 2 and its duties under section 8 of the Act, with regard to Resilience, Contingency and Business Continuity.
11. The Licensee shall submit a Resilience Plan Certificate with the Resilience Plan.

12. The form, scope and level of detail of the Resilience Plan shall be as reasonably approved by the CAA and shall take into account the views of Users consulted in accordance with Condition 16.
13. At least every 24 months or when so directed by the CAA, the Licensee shall review and, if necessary and following consultation, revise its Resilience Plan to ensure continued compliance with Paragraph 2. Following each review the Licensee shall submit any revised plan, or a letter confirming that no revision was required, to the CAA with a Resilience Plan Certificate.
14. The CAA may appoint a person (the Independent Reviewer) to review the Resilience Plan and any revisions to ensure continued compliance with Paragraph 2. The CAA will publish the conclusions reached by the Independent Reviewer. Unless the CAA directs otherwise, the Independent Reviewer will be paid for by the Licensee.
15. No CAA guidance, whether produced within the timeframe envisaged in Paragraph 9 or thereafter, or CAA direction under Paragraph 13, shall have effect unless the CAA has first consulted the Licensee and other relevant parties. If the CAA issues guidance at any time within the nine month period mentioned in paragraph 9, that nine month period will be extended accordingly.
16. Definitions
 - a) Business Continuity means the capability of an Air Navigation Service Provider (ANSP) to continue delivery of Air Traffic Management Services at a pre-agreed level of service following a disruptive event, including provision for both resilience and contingency;
 - b) Contingency means the capability of an ANSP to resume operation from an alternative site within a defined time period and at pre-defined levels following a catastrophic disruptive incident;
 - c) Resilience means the capability of an ANSP's assets, networks, people and procedures to anticipate, prevent, absorb and adapt to a disruptive event with any disruption or degradation of service managed in alignment with pre-agreed performance standards and to safely and rapidly recover to normal services;
 - d) A Resilience Plan Certificate means a certificate addressed to the CAA, approved by a resolution of the board of directors of the Licensee and signed by a director of the Licensee pursuant to that resolution in the following form:

“The Licensee has developed and reviewed its Resilience Plan. In the opinion of the directors of the Licensee the Resilience Plan is fit for purpose and complies with its obligations under its Licence”.

APPENDIX B

Resilience Plan Guidance issued to NERL under Condition 2.9

The NERL licence¹³ requires that it makes available Core Services, so as to be capable of meeting on a continuing basis any reasonable level of overall demand for such services, and Specified Services. Further, that NERL, shall at all times, develop and maintain its assets, personnel, systems and other parts of its business to comply with its obligations and having regard to permitting access to controlled airspace on the part of all Users while making the most efficient overall use of airspace. The level of demand reasonably expected, and thus the capacity to be made available, shall be as in accordance with the Service and Investment Plan provided by NERL, pursuant to Condition 10.

The overall service that NERL is required to supply must be consistent with the current and future regulatory settlements under the EU Performance Scheme,¹⁴ in particular in relation to service performance, and with its legal duties and obligations, as set out in NERL's ATS Licence and the Transport Act 2000. In addition, certain technical disruption criteria¹⁵ have been agreed between NERL and CAA in response to recommendation 20 of the Walmsley Independent Enquiry into the NATS system failure on 12 December 2014.¹⁶

The NERL Licence requires NERL to submit resilience plans to the CAA setting out the principles, policies and processes by which the Licensee will comply with its obligations under Condition 2.2 of its Licence and its duties under section 8 of the Act, with regard to resilience, contingency and business continuity. The resilience plans should:

- include a clear, high-level overview of NERL business continuity and resilience, both preventative and reactive, covering all aspects of the business, including its assets, personnel and systems that NERL relies on to supply the services required by its Licence; and

¹³ Air Traffic Services (ATS) Licence for NATS (En Route) PLC (NERL)

¹⁴ Until the UK leaves the EU it remains a full member with all the rights and obligations therein and so the UK currently remains subject to the Performance Scheme. Following Brexit the Transport Act 2000 will continue to apply, and the extent to which elements of the EU regulations will apply will depend on the nature of the agreement negotiated with the EU.

¹⁵ The additional criteria can be found at Appendix C to this document.

¹⁶ The NATS system failure 12 December 2014 Independent Enquiry final report dated 15 May 2015 can be found at: <https://www.nats.aero/wp-content/uploads/2015/05/Independent-Enquiry-Final-Report-2.0.pdf>

- draw on existing documentation, policies and plans to show how NERL will minimise the risk of the occurrence of, and minimise the impact of, the loss of key IT systems, infrastructure, personnel and suppliers.

In particular the plans should include the following elements:

- Policies, with reference to associated key processes, in place to provide proactive barriers to minimise the risk of occurrence of disruption, including:
 - Risk assessment and management;
 - Asset management;
 - Reliability and redundancy measures to enable systems to continue to function despite disruptive events (including errors or loss of data, failure of system components, denial of service attacks, loss of power etc);
 - Staff planning to ensure as far as practicable that adequate numbers of qualified staff are available to fulfil the service performance regime established for the relevant reference period.
- Policies in place to assess the value and effectiveness of relevant barriers that will be specified in new systems, architecture and business models.
- Policies and procedures in place to provide reactive barriers to minimise and mitigate the impact of disruption on services, including:
 - Incorporating measures into systems to allow them to continue to provide a reliable service during an unexpected event;
 - Plans for service fallback and recovery, to provide a service where possible without compromising safety, both during and following a disruptive event;
 - Plans for short term additional resource requirements whether as part of resilience plans for non-staff disruptive events or for specific staff based disruptive events;
 - Command and control – e.g. clear rules for triggering different command levels; formal training, practice and testing regimes for command level leaders; clear levels of authority (including spending authority); regular testing of facilities and equipment for command and control.
 - Stakeholder management – processes for keeping stakeholders informed on a regular basis of the situation, the likely size and duration of the impact and alternative arrangements available, such as rerouting;

- Policies and procedures for capacity reallocation and prioritisation, to the extent available to NERL, during the recovery process, (such policies and procedures having been subject to consultation with stakeholders);
- Exercises – continuous improvement / lessons learned: e.g. regular (to be decided in accordance with risk assessment processes) table top and practical exercises, where relevant in collaboration with stakeholders; reviews of exercises and actual events, including an assessment of the effectiveness of the current plans in light of the findings of those reviews;
- Options for rerouting services where possible to alternative sectors; and
- Contingency arrangements for offering an alternative service from an independent location

APPENDIX C

Policy statement on enforcement triggers and contingency arrangements

1. The Independent Enquiry recommended that we work with NERL to develop and agree definitions of resilience, contingency and business continuity to be used in the context of air traffic control in the UK. These have been included in the proposed licence condition. The Independent Enquiry further recommended that we jointly develop a methodology for determining acceptable levels of disruption to give greater clarity to our enforcement policy with regards to resilience requirements.
2. In February 2018 we adopted a methodology and policy for the resilience requirements which cover:
 - key principles underlying NERL's resilience requirements (including contingency arrangements);
 - the methodology for setting the requirements; and
 - details of how we propose to enforce them.
3. These are intended to be guidance for informing our enforcement process, using indicators that would trigger intervention by us in accordance with our enforcement policy.
4. The resilience requirements are not intended to set new performance targets or drive performance improvements and they do not replace the thresholds in the RP2¹⁷ performance scheme. The level of performance required was agreed with the industry as part of the RP2 process where the industry indicated it was content with the level of performance and unwilling to accept the higher charges that performance improvements would have required. However, we may use the methodology to inform the debate around improving performance targets in RP3 and in future price controls.
5. We expect NERL to comment on how its RP2 and RP3 capital programmes will affect resilience in its service and investment plans, particularly with regard to investment in new technology.

¹⁷ RP2 is the regulatory period for the current NERL Performance Plan (2015-19).

The methodology for deriving the resilience requirements and the triggers for formal intervention

6. We have based the resilience requirements on a number of underlying principles:
 - to maintain a high standard of safety;
 - to use a proportionate approach that will not unduly increase the regulatory burden on NERL or cut across the performance plan (for example the requirements do not replace the current delay targets); and
 - to use existing NERL processes and methodologies as far as possible.
7. The methodology is based on the Risk Analysis Framework that is already used within NATS to assess and classify the tolerability of incidents that cause disruption of ATC Services and result in NATS attributable ATC delay. The degree of risk posed to the operational service from such a possible failure is a product of the severity of the service impact should the failure occur and the likelihood of its occurrence. This is conceptually similar to the NATS Safety risk classification system, although a more qualitative approach is taken for the derivation of Service Resilience risk. The Risk Analysis Framework sets out a classification systems that ranks the severity of service impact as having no effect, Minor, Moderate, Major and Severe.
8. Working closely with NATS, we have extrapolated this risk scale to take account of the risk to a number of potential key system failures and used the historical performance as a baseline to show average performance.¹⁸ This gives us an indication of current 'normal' performance for each severity level.
9. We have used the standard delay metric (measured by Eurocontrol). Other metrics, such as cancellations, are not routinely collected in a format where it is easy to attribute the cause directly to NERL, although we note that other examples of delay, such as rotational delay and on-stand delay, may not be included in the metric.
10. The resilience requirements are set out in Table 1 below.¹⁹ They are based on a range of frequency of events of different levels of severity from a stretch target for improvements to an upper limit where the frequency would cause concern

¹⁸ The methodology uses NERL performance over the last 10 years as an indication of acceptable performance as, although we have raised concerns and investigated a number of incidents over this period, we have not found that we have needed to take formal enforcement action

¹⁹ These performance figures would not include incidents caused by factors outside of NATS's control (such as industrial action) or planned reductions in capacity for maintenance or upgrades, although significant overruns beyond the planned outage may count towards the overall total of delay.

and would trigger an investigation into possible licence breach. Figures for events causing less than 10,000 minutes are for guidance only as we consider that the financial incentives in the performance regime create adequate incentive for NERL to address these lower levels of delay. Events causing more than 10,000 minutes of delay would, where appropriate, lead to enforcement action as discussed below.

Table 1: Levels of performance for CAA intervention and licence enforcement

Description	Delay range (minutes)		Potential stretch target	Average historical performance	Threshold that triggers formal intervention
Minor	1,000	4,000	N/A	5-10/year	N/A
Low moderate	4,000	10,000	N/A	2-4/year	N/A
Moderate	10,000	20,000	1 in 2-3 years	1/year	More than 3 in 1 year
Major	20,000	100,000	1 in 5-10 years	1 in 3-5 years	More than 1 a year
Very major	100,000	100,000+	<1 in 10 years	1 in 10 years	More than 1 in 3 years

* A year means a 12 month period

Enforcement of resilience requirements

11. The resilience requirements will be used as triggers to inform our policy of a stepped approach to enforcement, giving an indication of the level of scrutiny each incident should require.
12. **Minor or low Moderate** - as explained above, we would be unlikely to be concerned by individual incidents, as the financial incentives in the performance regime provide adequate incentive for NERL to address these lower levels of delay. However, a significant rise of such incidents above average performance may lead us to look at whether this was an indication of a more systemic problem with NERL's policies, processes or procedures which could be seen as prima facie evidence of a possible breach of the licence, depending on the nature of the events.
13. **Moderate** - individual incidents are unlikely to cause us significant concern in their own right and we would most likely only seek an explanation at working level. But if the numbers of such incidents rise towards the formal intervention threshold, we would seek explanations at a more senior level, in particularly looking more formally at whether there were linkages between the failures to assess if there was a more systemic failure of NERL's policies, processes or procedures. A breach of the formal intervention threshold would likely be considered to be prima facie evidence of a possible breach of the licence.

14. **Major** - initially we would be likely to require a more formal written explanation of the causes of the incident, actions taken to rectify the failure and to mitigate the effects and any recommendations for improvements that NATS will take forward. However, we would be unlikely to seek to take formal enforcement action on individual incidents unless the number of incidents rose to the formal intervention threshold.
15. **Very Major** - our approach would depend largely on the amount of delay and we may decide to carry out a full investigation either ourselves or using an independent panel. Any severe incidents involving the closure of airspace or lack of availability of ATM service for a prolonged period would trigger an automatic investigation either by us or an independent panel.
16. Under our enforcement policy, there are a number of ways we can investigate incidents which fall short of formal interventions, such as discussions at a working level providing advice and guidance to NERL, as well as formal interventions. We intend to use these ways, as well as formal interventions, to hold NERL to account for its performance, depending on the nature and effect of the incident. NERL could also face automatic financial penalties under the price control incentive mechanisms for delays that do not trigger our formal investigation. Formal interventions, therefore, are just one way by which we can enforce the resilience requirements. Nevertheless we will consider using them in circumstances when the formal intervention thresholds are not met, if we consider it would be appropriate to do so, and always for incidents involving the closure of airspace or lack of availability of ATM service for a prolonged period.
17. We will also regularly consider the data to see whether we should undertake an analysis of longer-term trends. We would also welcome stakeholders informing us of concerns they have about trends in NERL's performance or individual incidents.
18. Any investigation into individual or potentially systemic issues will take into account that the level of delay will have been influenced by the need for NERL to ensure the safety of aircraft both en route and on the ground. Once that is satisfied, NERL must then take all reasonable steps to ensure that service is restored as quickly and as safely as possible. In assessing whether NERL has taken all reasonable steps and that it has complied with its licence obligations, we would also consider the capacity set out in NERL's service and investment plan and the resilience plans that are required under Condition 2 of the licence. We will investigate to ascertain whether NERL had adequate policies, processes and procedures in place to assess and mitigate risks and to respond and recover from the incident.
19. The methodology for the resilience requirements is based on delay minutes but we may also take into account the number of cancellations that were made during an incident to satisfy ourselves that NERL was taking all reasonable steps

to provide services during disruption, taking into account its safety requirements. Although there are many reasons for airlines to cancel flights and it is not always possible to attribute cancellations to a particular incident, we may seek further details from airlines and airports if there were significant numbers of cancellations that happened at the same time as a NERL engineering failure, especially if NERL was close to the formal intervention threshold for any severity level.

20. The results of these investigations may be considered prima facie evidence of a breach of NERL's duties or its licence.
21. The methodology does not include disruption to service for non-engineering aspects of its system such as personnel and other non-engineering assets. Such failures will not count towards the numbers for the formal intervention threshold for each level of severity but each incident or complaint will be dealt with on its own merits. We will continue to investigate and enforce these failures in line with the stepped approach in our enforcement policy. In particular, such failures are more likely to manifest themselves as longer-term issues which lead to ongoing lower-level disruption, rather than engineering failures which tend to be more obvious, sudden and higher impact disruption, so we will in particular look at whether there are systemic failures in NERL's policies or procedures that have caused or contributed to the failure.

Contingency requirements

22. As the independent enquiry also recommended that we and NERL develop and agree definitions of contingency and business continuity as well as resilience, we also consulted on contingency requirements in our February consultation. NERL's current contingency requirements originated in the early 2000s based on its view of the business need, and have been refined subsequently in consultation with airlines and other stakeholders. The core elements of the requirements are:
 - contingency shall be available for both the Prestwick and Swanwick centres;
 - the contingency capabilities shall be able to cope with the loss of either, but not both centres;
 - contingency facilities shall be able to provide service continuity levels of service 48 hours after being invoked;
 - the contingency facilities should be able provide 85% of the capacity of the impacted unit, with an average delay per flight of one minute within 10 days of continued use.
23. NATS is looking at the opportunity to improve the response time for contingency as part of its Deploying SESAR programmes. We do not propose to change the

agreed requirement at present as it will be some time before the improved capacity is available and the level of performance that can be delivered in a cost-effective way is not yet known. We anticipate that the contingency requirement could be improved when the capacity is available during RP3.

24. Where possible, NERL should explore the possibility of using its relationship with other ANSPs to ensure that the maximum possible service levels can be provided in the event of a system disruption. This may give NERL greater flexibility in times of disruption and could be a useful option to explore as part of its resilience planning, dependent on the ability and willingness of those other ANSPs to assist.