Consumers and Markets Group

Proposals to take forward the NATS Independent Enquiry recommendations with regards to resilience

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Chapter 1

Introduction

1.1 This document sets out the outcome of work carried out jointly by the Civil Aviation Authority (CAA) and NATS with regards to NATS' resilience and seeks views on a proposed enforcement tool and a new licence condition.

1.2 NATS' en route part of its business (NATS en Route plc, otherwise known as NERL) has a licence (the licence), granted by the Secretary of State on 28 March 2001, to provide air traffic services in the en route UK and Oceanic areas.[1]

1.3 On 12 December 2014 a disruption in NATS en route air traffic services caused 14,863 minutes of NATS attributable delay. This followed a more severe disruption on 7 December 2013 which caused 137,225 minutes of NATS atributable delay. The 2014 disruption led us to set up an Independent Enquiry[2] 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.

1.4 In both incidents, we found it difficult to answer the question as to whether NATS was compliant with the requirements of its licence to meet a reasonable level of demand on a continuing basis. This is because, although the regulatory framework clearly envisages some disruption in service to ensure the safety of aircraft, we had no formal view on what level of disruption should be considered to be acceptable.

1 The Licence can be found at http://www.caa.co.uk/Commercial-industry/Airspace/Air-traffic-control/Air-navigation-services/NATS-En-Route-plc-NERL-Licence/.

2 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/.

1.5 We also found it difficult to assess whether NATS could be said to have taken 'all reasonable steps to secure that…demand is met'[3] and that it had 'at all times develop[ed] and maintain[ed] its assets, personnel, systems and other parts of its business'[4] to be able to meet demand in accordance with its statutory duties and licence obligations. We accepted that NATS had taken a number of steps to recover each time 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 NATS to account should we find that NATS's 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 report did not find that there had been deficiencies in NATS's actions in this regard but accepted our concerns about better oversight and assurance in the future.

1.6 The Independent Enquiry therefore recommended that we and NATS 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.[5] The Independent Enquiry also recommended that we include a new condition in the licence requiring NATS to submit a resilience plan to us for our approval.[6]

1.7 This document proposes definitions of resilience, contingency and business continuity. It sets out the approach we and NATS have taken to developing the definitions, the context in which they are defined and the proposed definitions themselves.

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

4 Condition 2 of the licence.

5 Recommendation 20 of the Independent Enquiry.

6 Recommendation 30 of the Independent Enquiry.

1.8 We also set out our joint proposals for setting the requirements for contingency, resilience and business continuity in the context of these baseline definitions, considering a range of factors in their development, including the principles we used in developing the resilience requirements.

1.9 We explain the proposed methodology and set out how we will use these requirements to gain greater assurance that NATS is taking all reasonable steps to minimise and manage disruption.

1.10 Finally this document also includes our proposals for a new licence condition that will require NATS to consult on and submit a resilience plan setting out how it will comply with its licence obligations.

Views invited

1.11 Any comments on the proposals in this document should be sent by email to economicregulation@caa.co.uk by 21 April 2017. Alternatively, comments may be sent by post to:

Rod Gander
Consumers and Markets Group
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CAA House
45-59 Kingsway
London WC2B 6TE

1.12 We intend to hold a short workshop to have an open discussion on our proposals as part of this consultation. This will take place on the morning of Tuesday 21 March at the CAA's London office at the address above. If you would like to attend please email abigail.grenfell@caa.co.uk.

1.13 We expect to publish responses on our website for other interested parties as soon as practicable after the consultation period ends. Any material that is regarded as confidential should be clearly marked as such. Please note that we have powers and duties with respect to information

under section 102 of the Transport Act 2000 (TA00) and the Freedom of Information Act 2000.

1.14 If you have any questions on this document please contact Abigail Grenfell on 020 7453 6243 or by email to abigail.grenfell@caa.co.uk.

Next steps

1.15 Once we have considered your comments we will decide what modifications we propose to make to NERL's licence and to our policy on the enforcement of the licence. Licence modifications will require another short consultation under section 11 of the TA00 which we will publish shortly after this consultation closes, with details of the changes we are making to our enforcement policy.

Chapter 2

The relevant regulatory framework

2.1 We have a primary duty under section 2 of the TA00 to exercise our functions under Chapter 1 of the TA00 so as to maintain a high standard of safety in the provision of air traffic services. There are secondary duties to exercise its functions in a manner we think best calculated to (among other things) further the interests (with regards to range, availability, continuity, cost and quality of air traffic services) of operators and owners of aircraft, owners and managers of aerodromes, persons travelling in aircraft and persons with rights in property carried in them.

2.2 Section 8 of the TA00 gives NERL 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 - the system is considered safe if (and only if) NERL complies with requirements imposed by the Air Navigation Orders with regard to its services;
- 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;
- have regard, in providing, developing and maintaining the system, to likely future demands.

2.3 Condition 2 of the licence gives NERL 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 (in accordance with the forecast capacity set out in the Service and Investment Plan under Condition 10). 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 In May 2015 we published our Enforcement Policy[7] for enforcing economic licences issued under the TA00 and, in respect of airport licences, the Civil Aviation Act 2012. The main principles of this policy are that we will concentrate on serious and systemic issues and, as far as possible, we will take a stepped approach to enforcement, with increasing levels of involvement depending on the severity of the issue. This would 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 incidents or where we considered that action was not being taken quickly enough. Ultimately, for serious issues that we consider could be an indication of a licence breach, a more formal investigation into the issues can lead to an enforcement order requiring specific action. Our policy is clear that we do not necessarily need to go through each step of the process but could move immediately to an investigation of licence breach if necessary.

2.5 NATS resilience performance is already implicitly measured through the application of the C4 performance metric within the licence (Condition 21(12) and (13)) and associated performance regime. Effectively NATS has an allowance of (currently) 2000 points and excess delay on any given day scores a number of points. If NATS 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 is relatively complex, varying according to the time of year and level of delay, but broadly it is based on the average delay per aircraft on that day.

7 www.caa.co.uk/cap1234.

Chapter 3

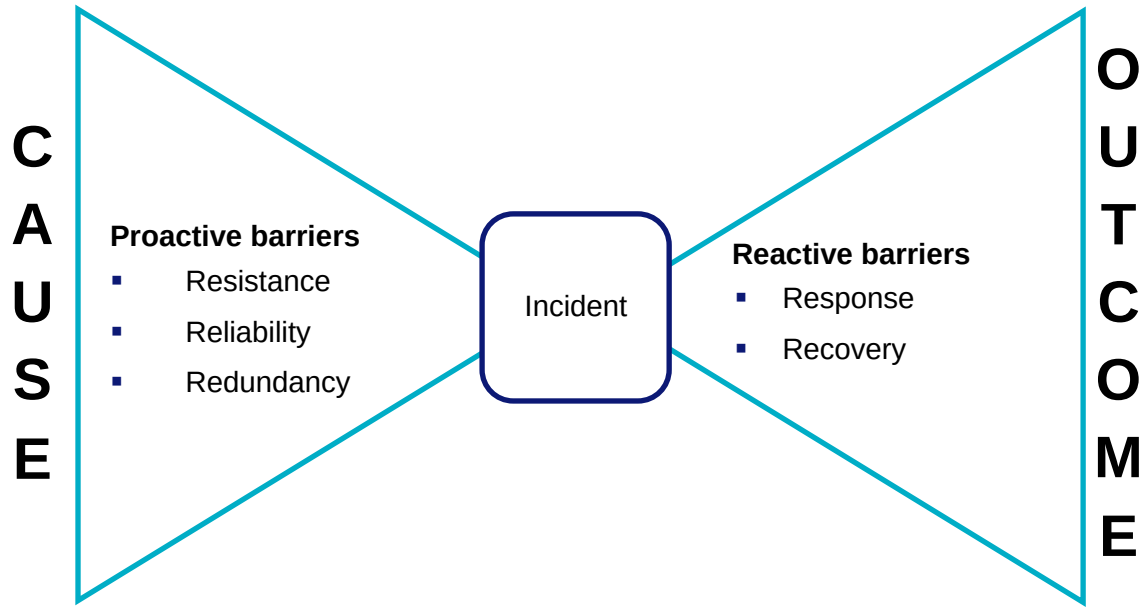
Background

3.1 Resilience performance concerns the service provided during, and recovery from, disruptive events. These include technical failures, security, extreme weather, staff sickness, industrial action and other external causes. While the ideal is to eliminate any impact on customers from these disruptive events altogether, in practice this is not realistic – ensuring extremely high levels of performance through any failure or other event is disproportionately expensive to achieve and, in any case, is not required under the TA00. During a disruptive event, NATS must ensure that safety is maintained and this will influence the level of performance that can be provided. So long as safety is maintained, however, NATS must take all reasonable steps to deliver as high level of performance as possible to avoid unacceptable levels of impact to customers, as well as reputational impact for NATS.

3.2 Resilience performance also concerns the actions NATS takes to minimise the occurance of disruptive events. For example, during normal operations NATS uses standard processes and procedures to provide the operational service based on use of a standard set of equipment. During these normal operations output performance can vary dependent on a range of factors, but there is no change to the way in which the service is provided. The use of reliability techniques, for example redundancy, can extend the availability of normal operations allowing standard procedures to continue to be used even in the presences of some failures.

3.3 Once the extent of any system failure goes beyond that protected by reliability techniques, then some level of failure incident will be caused and a response / recovery will be required, as illustrated in the “bow-tie” resilience model in Figure 1 below.

Figure 1: 'Bow tie' resilience model - high level representation



Chapter 4

Resilience, contingency and business continuity

Definitions

4.1 There are no clear, universal definitions for resilience, contingency and business continuity. There are differing definitions both within the aviation industry and in wider use, with further definitions used in various dictionaries. Furthermore, different industries have different practices in the use of these terms. We jointly considered that the terminology used for the International Standards and UK Government documents matched our objectives most closely and are therefore proposing to base the NATS definitions on those, with some tailoring to be more specific to ATM.

4.2 Business continuity is the overarching term relating to the overall capability of a business to continue operating, building on the lower level capabilities necessary to support it.

4.3 Resilience typically has a more specific meaning in relation to failure and recovery of an operation. This is represented by the bow-tie model described above. Hence resilience relates directly to the business's ability to ensure the resistance, reliability, redundancy and recovery of its operational service typically within its primary systems and processes.

4.4 Operational (as opposed to financial) contingency again has more specific use, relating to the capability to resume service (typically from a different location) when the primary system(s) become totally unavailable.

4.5 We, with NATS, are therefore proposing to adopt the following definitions:

- **Business continuity:** 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.

- **Resilience:** 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.
- **Contingency:** 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.

4.6 For clarity, we are content that the resilience plan and the contingency arrangements will together comprise the contingency requirements of Commission Regulation (EU) 1035/2011 (the "Common Requirements Regulation" at Annex I para 8.2).

Resilience requirements

Underlying principles underlying the resilience requirements

4.7 In developing the methodology for the resilience requirements, we, jointly with NATS, have at all times ensured we do not compromise either the CAA's primary duty to maintain a high standard of safety or NATS's absolute duty to maintain a safe system. We have therefore avoided hardwired targets that could put NATS at odds with its requirements under the Air Navigation Order (in practice now, the EU requirements in the Common Requirements Regulation).

4.8 We were also mindful of the need to use a proportionate approach that would not unduly increase the regulatory burden on NATS or cut across the last price control settlement (RP2). We also needed to avoid setting new requirements that might conflict with, or duplicate, existing requirements, or which might create perverse incentives. We therefore sought to use existing processes and methodologies as far as possible.

4.9 The resilience requirements are not intended to set new performance targets or drive performance improvements and they do not replace the triggers in the RP2 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.

4.10 Instead the requirements are intended to be guidance for informing our enforcement process, using indicators that would trigger intervention by us in accordance with our enforcement policy. As such, we are not proposing that these are hardwired into the licence itself but will be set out in an update to our policy on the enforcment of the licence.

4.11 Although the resilience requirements are not intended to drive improvements in performance in PR2, the methodology could be used to inform the debate around performance targets in RP3.

4.12 The requirements 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 becomes unacceptable and would trigger an investigation into possible licence breach. Within each range, we would still seek an explanation for each event from NATS at an appropriate level but would be unlikely to trigger a formal investigation.

4.13 Setting a requirement for resilience performance requires agreement on the form of measurement of the impact of any resulting disruption. There are a number of potential options, such as flight delays, cancellations and impact to passengers. However, we have agreed with NATS that the best option is to use the standard delay metric (as measured by Eurocontrol). This is a readily available, well understood and independently assessed industry standard benchmark for measuring ATM performance while other metrics, such as cancellations, are not routinely collected in a format where it is easy to attribute the cause directly to NATS.

4.14 We have used NATS performance over the last 10 years as an indication of acceptable performance. This is because, although we have raised concerns and investigated a number of incidents over this period, we have not found that we needed to take formal enforcement action. We have

also looked at NATS performance compared with other EU ANSPs, as well as other causes of delay, and this shows that NATS historical performance is a reasonable starting point for setting the regulatory requirements. Furthermore, we are mindful that requiring a more onerous set of requirements may be more costly and may not be consistent with the costs and delay incentives set out in RP2.

4.15 We are proposing that incidents that cause delay of less than 10,000 minutes will not normally be considered under this methodology but instead will be managed through the RP2 performance regime. This is consistent with the proportionate approach in our enforcement policy that we will concentrate on serious and systemic failures and is consistent with our current approach to enforcing NATS performance. However, we will continue to monitor the frequency of these failures to ensure that there are no underlying systemic issues.

4.16 The methodology has been developed to deal with engineering or systems failures only, as recommended by the Independent Enquiry. We did consider whether to extend the methodology to include other types of failure, such as assets, personnel, or other parts of its business, as NATS is required by its licence to develop and maintain these, as well as its systems, to comply with its general service obligation. However, the historical data shows that events associated with non-engineering failures have not caused delays over the 10,000 minute threshold mentioned above so we decided that at this stage such events should continue to be managed under the RP2 performance regime. We will continue to monitor closely the severity and frequency of these types of events over the next year and if there are significant increases we will form a view of whether non-engineering failures should be added to the requirements as part of RP3.

4.17 In the meantime we will treat non-engineering failures seperately. For the most part we are content that the existing performance regime in RP2, where rebates are paid, is sufficient to deal with these types of failure; but if it becomes clear that there are serious or systemic failures in service,

we will take any necessary action needed to ensure NATS takes all reasonable steps to rectify the failure and restore the service expected.

Proposed methodology for setting resilience requirements

4.18 The proposed methodology is based on the Risk Analysis Framework that is already is 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 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. This sets out a classification systems that ranks the severity of service impact as having no effect, Minor, Moderate, Major and Severe.

4.19 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. This gives us an indication of current average performance for each severity level.

4.20 The methodology then provides an acceptable range of frequency of events for the different severity levels, from a stretch target for performance improvement to an upper limit of acceptable performance which would identify a level at which the severity and frequency of the impact of failure would lead us to consider whether more formal intervention action was required.

The resilience requirements

4.21 Based on this methodology, we are proposing to base our intervention and enforcement on the the levels of performance as set out in Table 1 below.[8] Figures for events causing less than 10,000 minutes are for

[8] These performance figures would not include incidents caused by factors outside of NATS control (such as industrial action) or planned reductions in capacity for maintenance or

guidance only as these would be managed under the existing performance regime. Events causing more than 10,000 minutes of delay would come under the auspices of the resilience regime and, where appropriate, would 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 performance	Formal intervention threshold
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 / year
Very major	100,000	100,000+	<1 in 10 years	1 in 10 years	More than 1 in 3 years

Enforcement of resilience requirements

4.22 The proposed resilience requirements would 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.

4.23 For example, we would be unlikely to be concerned by individual incidents of a Minor or Low Moderate nature. However, this process does allow for closer monitoring, and a rise of such incidents towards the limit of acceptable performance may lead us to investigate whether this was an indication of a more systemic problem with NATS'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.

upgrades, although significant overruns beyond the planned outage may count towards the overall total of delay.

4.24 Moderate incidents are also 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 (taking into account any incidents of a higher severity level), 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 NATS's policies, processes or procedures. A breach of the limit of acceptable performance would likely be considered to be *prima facie* evidence of a possible breach of the licence.

4.25 Major incidents initially 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 limits of acceptable performance.

4.26 The regulatory requirements for Very Major incidents 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.

4.27 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.

4.28 Any investigation into individual or potentially systemic issues must take into account that the level of delay will have been influenced by the need for NATS to ensure the safety of aircraft both en route and on the ground. Once that is satisfied, NATS must then take all reasonable steps to ensure that service is restored as quickly and as safely as possible. In assessing whether NATS has taken all reasonable steps and that it has complied with its licence obligations, we will also consider the capacity set out in NATS's SIP and the resilience plans that will be required under Condition 2 of the licence in line with the Independent Enquiry's Recommendation 30. We will investigate to ascertain whether NATS had

adequate policies, processes and procedures in place to assess and mitigate risks and to respond and recover from the incident.

4.29 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 NATS was taking all reasonable steps to provide services during dispution, taking into account its safety requirements. Although there are many reasons for airlines to cancel flights and it is not always possible to attibute 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 NATS engineering failure, especially if NATS was close to the formal intervation threshold for any severity level. The results of this investigation may be considered *prima facie* evidence of a breach of NERL's duties or its licence.

4.30 As mentioned above, the methodology does not include disruption to service for non-engineering aspects of its system such as personnel and 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 its enforcment policy. In particular, such failures are more likely to manifest themselves as lower-level, longer-term issues 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 NATS's policies or procedures that have caused or contributed to the failure.

Chapter 5

Contingency requirements

5.1 NATS current policy for contingency originated in the early 2000s based on its view of the business need, and has been refined subsequently in consultation with airline customers and other stakeholders. The core elements of this policy are as follows:

- Contingency shall be available for both Prestwick and Swanwick.
- The contingency capabilities shall be able to cope with the loss of either, but not both centres.
- The contingency capabilities shall be able to be in operation within 48 hours of being invoked.
- The total level of traffic that can be accommodated should reach 85% of normal capacity within 10 days of continuous use.

5.2 These policy statements are embedded within a set of requirements used to manage and maintain contingency capabilities within the business, the key ones of which are below:

- The contingency facilities shall be able to provide a service continuity capability such that 85% of the capacity of the impacted unit can be provided within 10 days of continuous use of those facilities with an average delay per flight of 1 minute.
- The contingency facilities shall be able to provide service continuity levels of air traffic service 48 hours after a decision being taken to invoke these facilities.

5.3 NATS is currently looking at the opportunity to improve the response time for contingency as part of the Deploying SESAR programme. However, while the performance may improve, it is not recommended that we change the agreed requirement at this stage as it will be some time before these improvements are available and we do not yet know what level of performance can be cost effectively delivered. As the options for future

contingency performance and timescales for delivery are more fully understood, NATS will consult with customers on this capability through the SIP. As a result it is anticipated that the contingency requirement could subsequently be amended with a likely timescale for the revised standard to become effective being during RP3.

Chapter 6

The resilience plan licence condition

Proposed new licence condition

6.1 In line with the Independent Enquiry's recommendations, we have developed a proposed new licence obligation, requiring NATS to develop and maintain resilience plans setting out how it will comply with its service obligations in Condition 2 of its licence. This condition is similar to requirements in the airport, gas and rail sectors and would require NATS to submit plans or other documents setting out the principles, policies and procedures by which it will comply with its obligations in Condition 2 to supply the services. NATS must consult on elements of the plans such as the principles and policies and must submit the whole plan to us for scrutiny and approval. We will appoint an independent reviewer to carry out this scrutiny and may require NATS to amend all or part of the plan if there are any deficiencies. Although we will have this oversight role, it will remain NATS's responsibilty to ensure that the plans are fit for purpose, up to date and properly understood and applied within the business.

6.2 The proposed licence condition is set out in the Appendix.

Enforcement of the new condition

6.3 Enforcement of this condition will be carried out in line with our enforcement policy and the resilience requirements set out above.

6.4 We would carry our an urgent review if NATS 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 etc. are materially inadequate, we may also consider this to be *prima facie* evidence of a breach (depending on the extent of the

problem) although, in light of our enforcement policy and the existing terms of the NATS licence, it is more likely, in the first instance at least, that we would require NATS to resolve the issues and resubmit the plans.

6.5 Any potential licence investigations would take into account NATS's adherence to its plans etc, 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 us to exercise a degree of judgement. For example, if NATS finds during an incident that the plans etc. are not suitable in that particular case for safety reasons and/or that there is a more effective remedy, then it might decide to deviate. 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 would consider more formal enforcement action if there were not clear reasons for the change and it 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.

Appendix A

Proposed resilience licence condition

(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 s 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 if 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".