

Decision on modifications to NATS (En Route) plc licence in respect of reporting and Specified Services

CAP 1253



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Contents

Chapter 1: Introduction	2
Purpose of this document	2
The CAA's proposals	2
Chapter 2: Assessment	3
Regulatory reporting	3
Reporting requirements	5
Consequential change	7
Specified services	7
Chapter 3: The CAA's Decision	9
Appendix A: Reporting Requirements	10
Appendix B: Specified Services	17
Appendix C: Operational Specification	18

CHAPTER 1

Introduction

Purpose of this document

- 1.1 This document sets out the CAA's decision on modifications to the air traffic services licence held by NATS (En Route) plc ('NERL') in respect of regulatory reporting and Specified Services.

The CAA's proposals

- 1.2 With NERL's consent under section 11(1) of the Transport Act 2000 ('the Act') the CAA published, on 17 November 2014, proposals to modify conditions in NERL's licence by notice under section 11(2) of the Act¹. The effect of the proposed modifications was:
- to move NERL's regulatory reporting generally from a financial year to a calendar year basis;
 - to harmonise more closely CAA and EC reporting requirements; and
 - to modify the list of Specified Services in Schedule 4 that NERL is required to make available under its licence.
- 1.3 The CAA invited representations on its proposals by Monday 15 December 2014. The CAA received no representations on its proposed modifications.

1 Available at:

http://www.caa.co.uk/docs/33/CAP1242_Proposal_to_modify_the_NATS_licence_reporting.pdf

Chapter 2

Assessment

Regulatory reporting

- 2.1 Currently, NERL's statutory and regulatory accounts are based on a year end of 31 March. For regulatory accounts this date is a condition of NERL's licence. NERL currently reports financial performance (including regulatory accounts) and provides related certificates to the CAA on the basis of a 31 March year end. NERL also produces its multi-year Business Plans and its annual Service and Investment Plan (SIP) on a financial year basis.
- 2.2 At the same time NERL is required by European legislation to provide an increasing amount of financial information to the European Commission on the basis of a 31 December year end for a substantial part of its business. The UK is also required to provide performance plans (as part of the UK/Ireland FAB performance plan) on the basis of a 31 December year end.
- 2.3 The current arrangements duplicate work and require figures covering different but overlapping time periods to be reconciled. To improve transparency, efficiency and ease of monitoring and enforcement the CAA sees considerable merit in aligning the reporting arrangements for UK and EC regulatory purposes. This would also help to reduce the reporting burden on NERL and so satisfy the new duty placed on the CAA through section 104 of the Civil Aviation Act 2012 not to maintain unnecessary burdens in its regulation of air traffic services under the Transport Act 2000.
- 2.4 The CAA understands that NERL has no present intention to modify its statutory reporting period for Companies Act purposes and therefore its financial year will continue to end on 31 March. Consequently, the CAA did not propose to change the periods of the availability of resources statement or the financial gearing reports that NERL produces under Condition 5 of its licence, both being linked to NERL's financial year. It proposed rather to modify paragraph 26(b)(i) of Condition 5 so that reports on gearing refer to the future period of 1 April 2015 to 31 March 2020; and to delete paragraph 27 as this relates to a 31 December 2011 deadline for a gearing estimate. For the purposes of gearing measurements, the value of the Regulatory Asset Base (RAB) will be based on its value as at 31

December each year rolled forward as appropriate to March and September. The CAA proposed to modify the definition of the 'Value of the RAB' in paragraph 29 of Condition 5 accordingly.

- 2.5 The effect of the change proposed is that the following documents produced under the licence would be moved from a financial to a calendar year basis with effect from 1 January 2015:
- The annual regulatory accounts (Condition 6);
 - The NERL Business Plan (Condition 10);
 - The annual SIP (Condition 10); and
 - The annual service standards statement (Condition 11).
- 2.6 As a consequence of these changes, the annual Business Plan Report (BPR) under Condition 10 would also be prepared by NERL on a calendar year basis with effect from 1 January 2016.
- 2.7 Transitional arrangements would be needed in order to minimise any unnecessary burdens on NERL of moving from a financial to a calendar year basis for reporting purposes.
- 2.8 Annual regulatory accounts would be produced by NERL for the financial year 2014/15. NERL would ask its auditors to verify the RAB at 31 December 2014 and regulatory accounts would then be produced for the calendar year 2015 and onwards. NERL had proposed that for reasons of cost, internal workload and to avoid disruption, the audit of the regulatory accounts should continue to be undertaken during the same period as the audit of the NATS group's and NERL's statutory financial accounts. This would mean that while future regulatory accounts would be based on a 31 December year end, the audit of the regulatory accounts would be completed and the regulatory accounts signed off by 31 July. The CAA considers that this will satisfy its requirements under Condition 6.
- 2.9 For the annual SIP the CAA considered several options:
- Option 1. Run on the current 2014 SIP for the period from 1 April 2015 to 31 December 2015 with the next SIP covering the calendar year 2016.
 - Option 2. NERL to consult users on and produce a new SIP for the nine month period from 1 April 2015 to 31 December 2015 with the following SIP covering the calendar year 2016.

- Option 3. NERL to consult users on and produce a new SIP for the period 1 January 2015 to 31 December 2015 recognising that this will overlap with the current 2014 SIP for the period 1 January 2015 to 31 March 2015.
- 2.10 The CAA was not attracted to Option 1 because it would give users less opportunity to comment on NERL's plans. The longer time period would also mean that NERL would not have a 2015 SIP that could be used as part of the annual plan required by EU legislation. Options 2 and 3 are broadly similar in effect although Option 3, as it is on a calendar year basis, is perhaps better aligned with EU legislation which requires an annual plan covering 12 months. The CAA's proposal was therefore based on Option 3. However, as a transitional arrangement to allow time for the necessary process of user consultation and review to take place, NERL should be required to submit the SIP in respect of the period beginning on 1 January 2015 by no later than 28 February 2015. Subsequent SIPs would be submitted no later than 31 December in respect of the period beginning on 1 January the following year.
- 2.11 Should NERL subsequently introduce a calendar year reporting period for its statutory accounts the CAA would be ready to propose consequential changes to the licence to reflect this.
- 2.12 As far as NERL's charges are concerned, the CAA consulted separately on moving charging periods for London Approach and Oceanic charges from a financial year to a calendar year basis from 1 January 2015.
- 2.13 The charging period for North Sea Helicopters is not specified in Condition 23 of NERL's licence. It would be for NERL to decide whether to align the charging period for North Sea Helicopters with other of its charges.
- 2.14 The CAA appreciates that the changes will impose some additional costs on NERL but considers that these costs are likely to be outweighed by the benefits to NERL and users of harmonising reporting and charging periods.

Reporting requirements

- 2.15 At the same time as aligning the reporting and charging periods, the CAA wished to take the opportunity first, to harmonise more closely CAA and EC reporting requirements and second, to streamline some of the reporting requirements in the licence.
- 2.16 Under Condition 10 of its licence NERL has to produce a 10 year

Business Plan every five years. The equivalent European requirement under the Common Requirements Regulation is a Business Plan covering a minimum of five years². Bearing in mind its duty to minimise regulatory burdens on NERL, the CAA proposed that in future NERL should be required to produce a Business Plan covering five years that is aligned with the Reference Periods for Performance Plans under Single European Sky legislation³. Accordingly the first five year Business Plan would cover the RP2 reference period from 2015-2019. The CAA would not, however, expect NERL to produce a fresh Business Plan for this period but would instead treat the RP2 Revised Business Plan (2015-2019) delivered by NERL on 18 October 2013 and published on the CAA website⁴ (as amended subsequently for the purpose of producing the UK's RP2 Performance Plan and any further changes made as a result of the European Commission's assessment) as meeting the new requirement.

2.17 Currently, under Condition 24 NERL has to provide each year a separate audited statement of information on the operation of the price control conditions. The CAA considers that such information should in future be provided in the Regulatory Accounts produced by NERL under Condition 6 so that all information on NERL's financial performance during a price control period is available in a single audited document. This would be achieved by:

- deleting paragraphs 7 to 9 from Condition 24; and
- supplementing the Regulatory Accounting Guidelines produced each year under Condition 6 to include information currently reported separately under paragraphs 7 to 9 of Condition 24.

2.18 The CAA proposed that the annual BPR should in future be produced on a calendar year basis. In order to meet EU reporting requirements placed on national supervisory authorities, the CAA would expect NERL to provide relevant and timely information to the CAA that will enable the CAA to report to the European Commission by 1 June on its monitoring of performance plans and targets. The licence obligation on NERL would be to produce a BPR by the end of July which would include audited financial information.

2 Paragraph 2.2.1 of Annex1 to the Commission Implementing Regulation 1035/2011 of 17 October 2011 laying down common requirements for the provision of air navigation services.

3 Commission Implementing Regulation 390/2013 of 3 May 2013 laying down a performance scheme for air navigation services and network functions.

4 <http://www.caa.co.uk/docs/5/20131018%20RP2%20Revised%20Business%20Plan%20-%20Updated%20for%20PRB%20targets%2018%20Oct%20-%20se...pdf>

Consequential change

- 2.19 In condition 5.12(a)(vi) NERL may undertake other business within a limit of 4.5% of its en route turnover. As a consequence of the proposed change from a financial to a calendar year for regulatory purposes, the CAA proposed that this should be measured on a calendar year basis in future.

Specified services

- 2.20 Under its air traffic services licence, NERL is obliged to provide a number of services (termed Specified Services) that either support or are ancillary to NERL's Core Services. The Specified Services are described in Schedule 4 of the licence and currently include:
- Aeronautical Messaging Network;
 - Air Traffic Operational Telephone Network;
 - Emergency Fixing Facility;
 - Emergency Frequency Facility;
 - Navigational Infrastructure Services;
 - North Sea Helicopter Advisory Service;
 - Surveillance Infrastructure Services;
 - UK Aeronautical Information Services;
 - UK Flight Information Service; and
 - UK Meteorological Information Service.
- 2.21 The current definitions of the Specified Services in the licence are generally expressed in high-level terms and do not prescribe in detail how NERL is to provide them. In several cases, the definitions refer to the description of the particular service in the UK Air Pilot as amended from time to time by the CAA. There have been relatively few changes to the Specified Services set out in Schedule 4 of NERL's licence since its creation in 2001. During the same period there have been a number of changes in technology and to regulatory requirements arising from both national and international legislation.

- 2.22 The CAA and NATS completed a comprehensive review of the Specified Services with a view to ensuring that the Schedule 4 activities properly reflect the current requirements and provide some degree of future proofing with particular regard to the Navigational and Surveillance Infrastructure Services. As a consequence of that review and with NERL's agreement, the CAA proposed to make some modifications to the Specified Services in Schedule 4. The modifications would:
- remove the obligation on NERL to provide the Air Traffic Operational Telephone Network. Because of the changing nature of the telecommunications industry there is no longer a need for NERL to maintain a set of dedicated access lines. Users can now request the necessary connections from telephonic service providers; and
 - update the descriptions of the Navigational Infrastructure Services, Surveillance Infrastructure Services and the UK Flight Information Service.
- 2.23 As part of the review the CAA and NATS also agreed an operational specification to support the Navigational Infrastructure Services.

Chapter 3

The CAA's Decision

- 3.1 In the absence of any representations on its specific proposals, the CAA decided to modify the relevant conditions in NERL's licence with effect from 1 January 2015 as proposed in its notice of 17 November 2014 and consistent with its duties under section 2 of the Act.
- 3.2 The final modifications to licence conditions in respect of reporting requirements are set out in Appendix A while those in respect of the Specified Services are set out in Appendix B.
- 3.3 The CAA is also publishing in Appendix C an Operational Specification for the Navigational Infrastructure Services that has been approved by the CAA.

Civil Aviation Authority
21 January 2015

Appendix A

Reporting Requirements

The following modifications took effect on 1 January 2015 (except where shown)

Condition	Current text	Modified text
1: Definitions		
Condition 1.3 – definition of ‘financial year’	Means both the financial year in respect of which the Licensee prepares its accounts for the purposes of the Companies Act 2006 and that in respect of which it prepares its accounts for the purposes of Condition 6.	Means the financial year in respect of which the Licensee prepares its accounts for the purposes of the Companies Act 2006.
Condition 1.3 - new definition ‘regulatory year’	N/A	Means the period of 12 months commencing on 1 January in respect of which the Licensee prepares its accounts for the purposes of Condition 6.
5: Availability of Resources and Financial Ring-Fencing		
Condition 5.12(a)(vi)	any other business not otherwise permitted pursuant to any of paragraphs 11 and 12(a)(i) to (v) inclusive of this Condition and which is a Connected Business, provided the turnover of such business when aggregated with that of any related undertaking of the Licensee does not in any financial year of the Licensee exceed four and a half per cent of the aggregate turnover of the En route Businesses;	any other business not otherwise permitted pursuant to any of paragraphs 11 and 12(a)(i) to (v) inclusive of this Condition and which is a Connected Business, provided the turnover of such business when aggregated with that of any related undertaking of the Licensee does not in any regulatory year of the Licensee exceed four and a half per cent of the aggregate turnover of the En route Businesses;
Condition 5.26(b)(i)	Its best estimate of expected average Gearing over the period from 1 April 2011 to 31 March 2015 as a whole (as a simple arithmetic average of the eight measurement dates within that period)	Its best estimate of expected average Gearing over the period from 1 April 2015 to 31 March 2020 as a whole (as a simple arithmetic average of the ten measurement dates within that period)
Condition 5.27	The Licensee shall provide no later than 31 January 2011: (a) its best estimate of expected average Gearing over the period	Text deleted

Condition	Current text	Modified text
	<p>from 1 April 2011 to 31 March 2015 as a whole (as a simple arithmetic average of the eight measurement dates within that period); and</p> <p>(b) an explanation of any difference between expected average gearing in paragraph 27(a) and the target level of gearing of 60 per cent.</p>	
<p>Condition 5.29 'Value of the RAB'</p>	<p>Means:</p> <p>(a) at 31 March each year, the value of the Licensee's assets calculated in accordance with the Regulatory Accounting Guidelines prepared in accordance with Condition 6 of his Licence in force at the applicable time; and</p> <p>(b) at 30 September each year, the value interpolated between the value of the RAB at preceding 31 March and the forecast value for the following 31 March, taking into account the timing of material transactions affecting the RAB</p>	<p>Means:</p> <p>(a) at 31 December each year, the value of the Licensee's assets calculated in accordance with the Regulatory Accounting Guidelines prepared in accordance with Condition 6 of his Licence in force at the applicable time;</p> <p>(b) at 31 March each year, the value interpolated between the value of the RAB at the preceding 31 December and the forecast value for the following 31 December, taking into account the timing of material transactions affecting the RAB; and</p> <p>(c) at 30 September each year, the value of the RAB at the preceding 31 December and the forecast value for the following 31 December, taking into account the timing of material transactions affecting the RAB.</p>
6: Regulatory reporting requirements		
<p>Condition 6.4</p>	<p>The Licensee shall prepare on a consistent basis from the accounting records referred to in paragraph 3, in respect of the financial year commencing on 1 April 2001 and each subsequent financial year, regulatory accounts in conformity with the Regulatory Accounting Guidelines for the time being in force and identifying separately the amounts attributable to the UK Air Traffic Services Business, the En route (Oceanic) Business and the Licensee as a whole in accordance with this Condition and the Regulatory Accounting Guidelines.</p>	<p>The Licensee shall prepare on a consistent basis from the accounting records referred to in paragraph 3, in respect of the regulatory year commencing on 1 January 2015 and each subsequent regulatory year, regulatory accounts in conformity with the Regulatory Accounting Guidelines for the time being in force and identifying separately the amounts attributable to the UK Air Traffic Services Business, the En route (Oceanic) Business and the Licensee as a whole in accordance with this Condition and the Regulatory Accounting Guidelines.</p>
<p>Condition 6.6</p>	<p>The Licensee shall:</p> <p>(a) procure, in respect of the regulatory accounts prepared in accordance with paragraph 4 in respect of a financial year, a report by the Auditors addressed to the CAA stating whether in their opinion those accounts have been</p>	<p>The Licensee shall:</p> <p>(a) procure, in respect of the regulatory accounts prepared in accordance with paragraph 4 in respect of a regulatory year, a report by the Auditors addressed to the CAA stating whether in their opinion those accounts have been properly prepared in accordance with this Condition and the Regulatory</p>

Condition	Current text	Modified text
	<p>properly prepared in accordance with this Condition and the Regulatory Accounting Guidelines and on that basis fairly present the financial performance of the UK Air Traffic Services Business and the En route (Oceanic) Business, and the financial position of the Licensee;</p> <p>(b) deliver to the CAA the Auditors' report referred to in sub-paragraph (a) and the regulatory accounts referred to in paragraph 4 as soon as reasonably practicable, and in any event not later than six months after the end of the financial year to which they relate; and</p> <p>(c) arrange for copies of the regulatory accounts and Auditors' report referred to in sub-paragraphs (a) and (b), respectively, to be made publicly available and, unless not reasonably practicable, to do so when the annual statutory accounts of the Licensee are made available.</p>	<p>Accounting Guidelines and on that basis fairly present the financial performance of the UK Air Traffic Services Business and the En route (Oceanic) Business, and the financial position of the Licensee;</p> <p>(b) deliver to the CAA the Auditors' report referred to in sub-paragraph (a) and the regulatory accounts referred to in paragraph 4 as soon as reasonably practicable, and in any event not later than seven months after the end of the regulatory year to which they relate; and</p> <p>(c) arrange for copies of the regulatory accounts and Auditors' report referred to in sub-paragraphs (a) and (b), respectively, to be made publicly available.</p>
Condition 6.7	The first financial year of the Licensee shall run from 1 April 2001 to 31 March 2002 and thereafter each financial year of the Licensee shall run from 1 April to the following 31 March unless otherwise agreed with the CAA.	The regulatory year of the Licensee shall run from 1 January to 31 December unless otherwise agreed with the CAA.
10: Business Plans, Service and Investment Plans and Periodic Reports		
Condition 10.1	The Licensee shall prepare a full ten year business plan fulfilling the requirements of Paragraph 4 of this Condition. The business plan must be consistent with any overall business plan of the Licensee but, provided that it fulfils the requirements of paragraph 3, for the avoidance of doubt need not constitute the entirety of any such overall business plan.	<p>The Licensee shall prepare a full five year business plan fulfilling the requirements of Paragraph 4 of this Condition. The business plan must be consistent with any overall business plan of the Licensee but, provided that it fulfils the requirements of paragraph 3, for the avoidance of doubt need not constitute the entirety of any such overall business plan.</p> <p>The Licensee's RP2 Revised Business Plan (2015-2019) delivered on 18 October 2013 and published on the CAA's website as amended subsequently for the purpose of producing the UK's RP2 Performance Plan and any further changes made and published by the European Commission following its own assessment</p>

Condition	Current text	Modified text
		process shall be deemed to meet this requirement.
Condition 10.2	<p>Business plans prepared under paragraph 1 shall be submitted to the CAA as follows:</p> <p>(a) the first business plan shall be submitted as soon as practicable, and in any event not more than eight months, after the date of this Licence coming into effect and shall relate to the ten year period beginning 1 April 2001;</p> <p>(b) subsequent business plans shall be submitted not less than twelve months before each Plan Renewal Date and shall relate to the ten year period beginning on that Plan Renewal Date (or the period until expiry of the Licence whichever is the shorter period). Later business plans shall always supersede any earlier business plan in respect of a period which is covered by both.</p>	<p>Business plans prepared under paragraph 1 shall be submitted to the CAA not less than twelve months before each Plan Renewal Date and shall relate to the five year period beginning on that Plan Renewal Date (or the period until expiry of the Licence whichever is the shorter period). Later business plans shall always supersede any earlier business plan in respect of a period which is covered by both.</p> <p>Business plans shall also comply with the relevant requirements for a business plan in Annex 1 of Commission Implementing Regulation No 1035/2011 laying down common requirements for the provision of air navigation services (or in any successor legislation).</p>
Condition 10.3(a)	not later than the anniversary of the business plan in each year, a service and investment plan fulfilling the requirements of Paragraph 5 of this Condition; and	not later than 28 February 2015 and subsequently not later than 31 December in each year, a service and investment plan fulfilling the requirements of Paragraph 5 of this Condition; and
Condition 10.3(b) - with effect from 1 January 2016	not later than 4 months after the end of the financial year, a business plan report fulfilling the requirements of Paragraph 6 of this Condition which shall relate to the previous financial year.	not later than seven months after the end of the regulatory year, a business plan report fulfilling the requirements of Paragraph 6 of this Condition which shall relate to the previous regulatory year.
Condition 10.4 (i)	The implications of the licensee's business plans for the future course of charges.	Text deleted
Condition 10.11	In this condition, 'Plan Renewal Date' means 1 April 2006 and every fifth anniversary thereof.	In this condition, 'Plan Renewal Date' means 1 January 2015 and every fifth anniversary thereof.
11: Service Standards		
Condition 11.2	The Licensee shall, following consultation with Users and their representatives, revise the	The Licensee shall, following consultation with Users and their representatives, revise the statement referred to in paragraph 1 and re-

Condition	Current text	Modified text
	<p>statement referred to in paragraph 1 and re-submit it to the CAA for approval no later than six weeks before the beginning of the financial year to which it relates. Where the Licensee has re-submitted the statement to the CAA for approval no later than six weeks before the beginning of the financial year to which it relates, and the CAA has not responded to the Licensee before the end of the financial year, the revised statement shall have effect from the start of the following financial year.</p>	<p>submit it to the CAA for approval no later than six weeks before the beginning of the regulatory year to which it relates. Where the Licensee has re-submitted the statement to the CAA for approval no later than six weeks before the beginning of the regulatory year to which it relates, and the CAA has not responded to the Licensee before the end of the regulatory year, the revised statement shall have effect from the start of the following regulatory year.</p>
24: Information to be provided to the CAA in connection with the Charge Control Conditions		
Condition 24.7 to 24.9	<p>7. On publication to any interested parties, and in any event not later than seven months after the end of a Eurocontrol Relevant Year or four months after the end of an Oceanic Relevant Year or four months after the end of a London Approach Relevant Year the Licensee shall send the CAA a statement, in respect of that year containing the items set out in paragraph 9. If this statement does not also comply with the requirements of paragraph 8, the Licensee shall send a further statement at the time it is published to any interested parties, and in any event not later than seven months after the end of a Eurocontrol Relevant Year or four months after the end of an Oceanic Relevant Year or four months after the end of a London Approach Relevant Year meeting both the requirements in paragraph 8 and containing the items set out in paragraph 9.</p> <p>8. The requirements referred to in paragraph 7 shall be that the statement is:</p> <p>(a) accompanied by a report from the Auditors that in their opinion such statement:</p> <p>(i) fairly presents each of the specified items referred to in paragraph 9 in accordance with the requirements of the Charge Control</p>	Text deleted.

Condition	Current text	Modified text
	<p>Conditions and</p> <p>(ii) the amounts shown in respect of each of those specified items are in accordance with the Licensee's accounting records which have been maintained in accordance with Condition 6; and</p> <p>b) certified by a director of the Licensee on behalf of the Licensee that to the best of his knowledge, information and belief having made all reasonable enquiries:</p> <ul style="list-style-type: none"> - there is no element included in its calculations under Conditions 21, 21a and 22 which represents other than: <ul style="list-style-type: none"> (aa) bona fide Eurocontrol Service Charges or Oceanic Charges or London Approach Total Controlled Revenue as appropriate; or (bb) an element permitted under the Charge Control Conditions to be so included; - all amounts which should properly be taken into account for the purposes of the Charge Control Conditions have been taken into account. <p>9. The items to be contained in the statement referred to in paragraph 7 shall be the following:</p> <p>(a) the information relating to data for the relevant year specified in Annex II and Annex VI of the revised Charging Regulation (EC) No.1794/2006 as amended from time to time.</p> <p>(b) in relation to Eurocontrol Charges, an estimate of Service Units for relevant year t+1 and a forecast for relevant year t+2.</p> <p>(c) in relation to the Financial Incentives for Eurocontrol Charges:</p> <ul style="list-style-type: none"> (i) actual data for flights in year t and estimates for the number of flights for years t+1 and t+2; (ii) a report on the calculation of each of the T1, T2 and T3 metrics for each of: the relevant year t, and an estimate for relevant year t+1 with a reconciliation to data collected by the Eurocontrol 	

Condition	Current text	Modified text
	<p>Central Flow Management Unit and a reconciliation of the actual performance in year t and the estimate made one year earlier.</p> <p>(d) in relation to the London Approach Charge(s), the actual Total Controlled Revenue from the London Approach Service in relevant year t and an estimate of Total Controlled Revenue for relevant years t+1 and t+2.</p> <p>(e) in relation to Oceanic Charges, the quantity of Oceanic flights which attract an Oceanic Charge and the Average Charge per Oceanic flight.</p> <p>(f) in relation to business conducted in accordance with Condition 5(12)(a)(vi), the broad sources of income from any such business.</p>	

Appendix B

Specified Services

The following modifications to Schedule 4 (Specified Services) took effect on 1 January 2015

	Current text	Modified text
'Air Traffic Operational Telephone Network'	The making available of a system for the conveyance of messages, primarily in voice form, between providers of air traffic services in respect of the Licensed Areas, and to which other similar facilities may be connected.	Delete the Specified Service and the associated description.
'Navigational Infrastructure Services'	The making available, to Users, of services other than Core Services, using the navigational infrastructure described in the AIP as amended from time to time by the CAA.	The provision to all Users operating in the UK FIRs/UIRs of an appropriate navigation infrastructure which satisfies: (a) an operational specification, produced by the Licensee and approved by the CAA, governing the scope and nature of navigation coverage to be provided; and (b) the safety, regulatory and performance requirements, including accuracy, availability and integrity in each case relevant to the level of service to be provided to support agreed navigation performance as determined in international and national regulatory requirements as may be amended from time to time.
'Surveillance Infrastructure Services'	The making available, to Users, of services other than Core Services, using the surveillance infrastructure described in the AIP as amended from time to time by the CAA.	The provision of an appropriate surveillance infrastructure which satisfies the safety, regulatory and performance requirements, including accuracy, availability and integrity relevant to the level of service to be provided to meet the separation standards required in respect of Users of services of the Licensee as determined in international and national regulatory requirements as may be amended from time to time.

Appendix C

Operational Specification

Operational Specification for Navigational Infrastructure Services

1. Introduction

Under the terms of the NERL licence, NATS is required to make available a Navigational Infrastructure Service to all Users operating in the UK FIRs/UIRs. This Operational Specification describes the scope and nature of the navigation coverage to be provided.

Extensive documentation of required navigation specifications and concepts are available elsewhere in International Standards and related National documents. The aim here is not to repeat these documents, but to provide the context for the requirement for navigational infrastructure within the UK, together with a high level operating requirement.

2. Performance Based Navigation

The anticipated growth of aviation increases demands on airspace capacity therefore emphasizing the need for optimum utilization of available airspace. Improved operational efficiency derived from the application of area navigation techniques has resulted in the development of navigation applications in various regions worldwide and for all phases of flight.

Requirements for navigation applications on specific routes or within a specific airspace must be defined in a clear and concise manner. This is to ensure that the flight crew and the air traffic controllers (ATCOs) are aware of the on-board RNAV or RNP system capabilities in order to determine whether the performance of the RNAV or RNP system is appropriate for the specific airspace requirements.

RNAV and RNP systems have evolved with the availability of GNSS and increases in computing capacity in on-board Flight Management Systems (FMS). For domestic operations, the initial systems used VOR and DME for determining aircraft position. These 'new' systems were developed, evaluated and certified on an individual basis based on the performance of available equipment; and specifications for requirements were based on available capabilities.

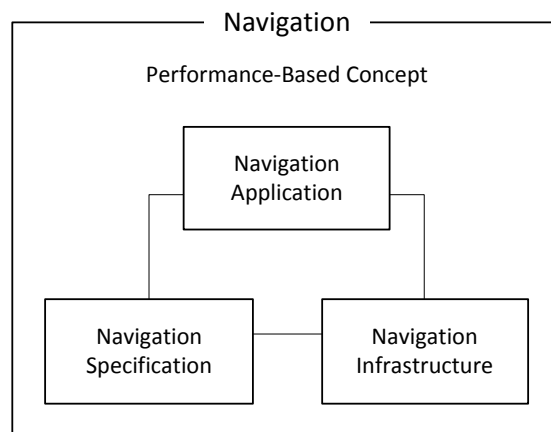
The PBN concept specifies that aircraft RNAV and RNP system performance requirements be defined in terms of the accuracy, integrity, continuity and functionality, which are needed for the proposed operations in the context of a particular airspace concept. The PBN concept represents a shift from sensor-based to performance-based navigation. Performance requirements are identified in navigation specifications, which also identify the choice of navigation sensors and equipment that may be used to meet the performance requirements. These navigation specifications are defined at a sufficient level of detail to facilitate global harmonization by providing specific implementation guidance for States and operators.

Under PBN, generic navigation requirements are defined based on operational requirements. Operators then evaluate options in respect of available technology and navigation services, which could allow the requirements to be met. An operator thereby has the opportunity to select a more cost-effective option, rather than a solution being imposed as part of the operational requirements. Technology can evolve over time without requiring the operation itself to be reviewed, as long as the expected performance is provided by the RNAV or RNP system.

Performance Based Navigation relies on the use of Area Navigation, and comprises three components:

- a) The navigation infrastructure
- b) The navigation specification; and
- c) The navigation application

All three parts need to be in place to support a specific airspace concept as illustrate in the diagram below.



3. Future Airspace Strategy

Within the UK, the proposed approach to evolving airspace concepts, and the required navigation capability to support it, is defined in the Future Airspace Strategy (FAS). For the time period out to 2030, for navigation, FAS identifies that the following development work will be required:

1. Development and implementation of Performance-based Navigation (PBN) in UK airspace aligned with UK/Ireland FAB airspace aspirations, utilising P-RNAV and progressing to Advanced Required Navigational Performance (A-RNP).
2. Reduced reliance on ground-based navigation aids and move to space-based navigation capability.
3. Facilitating the use of Required Navigation Performance (RNP) Approach (APCH) functions for UK airport arrival procedures.
4. Development of the future requirements for Precision Approach and Landing.

4. Current UK Navigational Infrastructure

The current navigational infrastructure was originally established to support aircraft navigation in an environment before the development of sophisticated avionics and satellite based systems. These required aircraft to fly point-to-point routes, directly over the supporting ground navigation aids. The beacons enabled aircraft to remain on, or close to a defined, designated track.

In the UK airway and terminal systems aircraft navigation was predicated on the use of VOR radio beacons which are typically co-located with a Distance Measuring Equipment (DME) facility. A small number of Non-Directional Beacons (NDB) remain in terminal areas where they typically support Standard Instrument Departures (SIDs) or provide some non-precision approach procedures. The formal requirement for the carriage of ADF equipment has been withdrawn and en-route navigation no longer relies on the NDB infrastructure.

RNAV-5 (previously known as Basic RNAV (B-RNAV)) is now a required capability for all aircraft in UK en-route controlled airspace. The employment of RNAV has provided significant operational benefits and this is expected to continue.

The continuing development of UK en route⁵ airspace will require introduction of airspace concepts requiring more accurate navigation performance in line with UK and international policies. In terminal airspace, a number of RNAV-1 (previously known as Precision RNAV (P-RNAV)) activities have been undertaken in the UK, notably associated with trial departures at Gatwick, Luton, Birmingham. The first large scale RNAV-1 implementation is expected to be under the LAMP programme. RNAV-1 procedures are also expected to be incorporated into the redesigns of the Manchester and Scottish Terminal Manoeuvring Areas (TMAs). RNAV 1 SIDs that replicate the existing conventional SIDs will also be implemented at a number of locations to facilitate VOR Rationalisation.

5. Future Navigational Infrastructure

This Operational Specification for navigation supports the transition to a Performance Based Navigation (PBN) environment for all phases of flight with the exception of final approach guidance aids, where there is expected to be a combination of ILS, MLS, and GNSS Landing Systems (GLS). The airfield approach aspects are outwith the scope of this Operational Specification, but there needs to be appropriate en-route infrastructure in place that provides seamless connectivity between the en-route and departure/arrival phases of flight.

The long term aim is to provide a navigational infrastructure primarily based on Global Navigation Satellite Systems (GNSS). It is expected that the GNSS will consist of complementary core satellite constellations e.g. GPS and Galileo, augmented by EGNOS. If appropriate some operations may be further supported by Ground Based Augmentation Systems (GBAS) predominantly in support of airfield approach procedures that are largely outside the scope of this document.

The objective is to provide a primary positioning method that has high integrity, availability and accuracy, which is robust to RF interference. Currently there is an unquantified risk of wide-area denial of one or more GNSS signals. To mitigate this risk, and to provide alternative means of positioning for aircraft, a ground based DME/DME network will continue to be provided for as long as is deemed necessary⁶. A rationalised VOR backbone capability will also be retained to provide operational resilience for RNAV-5 reversionary provision until at least 2030.

5 For the purposes of this document UK en-route airspace is defined as “that airspace within the En Route (UK) Area for which the UK En Route Air Traffic Control Service or Advisory Control Service are provided, as defined in the NERL licence”.

6 In due course and subject to international agreement it may be necessary to determine an appropriate replacement back-up capability not predicated on DME/DME

Hence, the RNAV GNSS navigation solution is expected to be based upon:

- a) The GNSS signal in space.
- b) Inertial Reference systems on-board the aircraft (IRU).
- c) Appropriate ground-based DME/DME coverage.

It will not be possible to move directly from the current VOR/DME/NDB architecture to a GNSS/DME architecture in a single step. A progressive process is expected, appropriate to operational needs. The first step will be for airfield procedures to remove current dependencies on en route aids by implementing RNAV-1 routes, particularly for Standard Instrument Departures (SIDs). This will provide a phased introduction of RNAV into the terminal areas, enabling a rationalisation of the VOR network. This will result in an intermediate navigation infrastructure which will approximately halve the current number of VOR stations⁷.

The transition to PBN operations predicated on GNSS supported by, inertial referenced capability and DME/DME ground infrastructure will yield operational, economic and environmental benefits for both infrastructure operators and Users. During the transition phase, ATC surveillance supporting conformance monitoring will also have a key part to play as not all aircraft are likely to be fully equipped to the higher performance standards.

This approach is fully aligned with the Eurocontrol navigation strategy, and generally aligned with the SESAR master plan, and is fully compliant with the UK FAS and UK/Irish PBN policy⁸.

6. Operating Assumptions

Based on the above strategy and context a number of operating assumptions have been defined which underpin the key requirements of the Operational Specification:

- A minimum navigation performance of RNAV5 will be retained throughout UK controlled airspace.
- Compliance with FAS will lead to an evolution to RNAV1 performance and RNP1 over time and for specific airspace and concepts.

7 VORs are expected to be rationalised from 46 to 19 as part of a phased drawn down by 2018/2020 in line with NATMAC Consultation on “Rationalisation of the United Kingdom’s VOR ground-based infrastructure” and, based on current estimates, completely withdrawn by 2030.

8 Policy for the Application of Performance-based Navigation in UK/Irish Airspace – published 11 October 2011

- Navigation capabilities for en-route commercial air transport traffic will migrate to a greater reliance on GNSS being the primary source of navigation data with ground-based infrastructure used primarily as a backup.
- The current extent of RNAV5 coverage support within UK en-route airspace is required to be maintained wherever it is efficient to do so.
- VORs will operate primarily as a backup to other navigation services and as such redundant coverage will not be required.
- Ground-based navigation infrastructure for en route navigation (over and above suitable DME/DME coverage) is not expected to be required beyond 2030. Given the advances in technology and aircraft equipage, this position will be reviewed at least every 5 years.
- Changes may be required to the navigation infrastructure in order to meet implementing rules/regulations that emanate from the European Commission.

7. Operating Specifications - Requirements

The requirements are as follows:

- a) Available Global Navigation Satellite Systems (GNSS) and augmentation systems shall form part of the navigation infrastructure used to enable airspace users to comply with the navigation performance requirements of the airspace concepts applicable throughout UK en route airspace.
- b) Ground-based navigation infrastructure shall be provided, as required, to ensure effective and resilient availability of the navigation capabilities necessary to support the airspace concepts applicable throughout UK en route airspace.
- c) The ground-based navigation infrastructure provided in accordance with requirement 7(b) shall be made available to all Users operating in the UK FIRs/UIRs.

- d) Any proposal to change the ground-based navigation infrastructure shall be subject to advanced notification and justification provided to SARG⁹ and any such changes made known to customers and users in line with the process for modification of Specified Services within the NERL Licence.

⁹ The Safety and Airspace Regulation Group of the CAA