



BERMUDA
**REGULATORY
AUTHORITY**

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Consultation on the Criteria and Procedures for Assigning High Demand Spectrum

Consultation Document

Matter: HDS-1

Date: 12 August 2015

Responses Due: 2 September 2015

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1 EXECUTIVE SUMMARY

1. This consultation document confirms the set of frequencies identified by the Minister in his 2014 Spectrum Policy Statement¹ as High Demand Spectrum (the “**HDS Frequencies**”) and sets out the Authority’s proposed procedures and criteria for assigning these frequencies to eligible applicants.
2. The Regulatory Authority (“**Authority**”) proposes to assign the available HDS Frequencies in multiple phases, with the aim of completing the first phase of the process (“**HDS-1**”) by December 2015. It is proposed that HDS-1 will cover the B Blocks within the 850 MHz band and a subset of the available spectrum blocks in the 700 MHz band. The Authority expects to commence the assignment process for some of the remaining (unassigned) HDS Frequencies in a second phase (“**HDS-2**”) as soon as reasonably necessary based on its assessment of the relevant factors following the conclusion of HDS-1.
3. The Authority’s proposed procedures and criteria for conducting HDS-1 are set out in detail in the consultation draft of the Request for Applications (“**RFA**”), a Word version of which is attached as Appendix A. A general overview of the draft RFA is provided in this consultation document. Interested parties are invited to address the questions raised below and also to review the draft RFA and comment on its specific provisions (providing references to the relevant section numbers wherever possible and, where helpful, proposing redlined text of proposed material changes to the specific provisions, with explanatory side notes).

2 CONSULTATION PROCEDURE

4. This consultation is being undertaken in accordance with Sections 69 to 73 of the Regulatory Authority Act 2011 (“**RAA**”).
5. Written comments should be submitted before 5:00 PM (Bermuda time) on 2 September 2015.
6. The Authority invites comments from members of the public, operators of electronic communications networks and providers of electronic communications services, and other interested parties. The Authority requests that commenting parties, in their responses, reference the numbers of the relevant questions, as set forth in this consultation document or its Appendices, to which they are responding. A complete list of questions presented by this consultation document appears in Appendix B – CONSULTATION QUESTIONS. The Word version of Appendix A may also be used to provide proposed redline changes to relevant provisions of the draft RFA.
7. Responses to this consultation document should be filed electronically in MS Word or Adobe Acrobat format. Parties filing comments should go to the Authority’s website, www.rab.bm, follow the link to the Consultations and Response page, and click the “Click here to submit a response” icon which appears at the top of the page. All comments should be clearly marked “Response to Consultation Document Matter: HDS-1: Comments on “Criteria and Procedures for Assigning High Demand

¹ Spectrum Policy Statement by the Minister of Education and Economic Development, published and effective on 22 September 2014.

Spectrum” and should otherwise comply with Rules 18 and 30 of the Authority’s Interim Administrative Rules, which are posted on the Authority’s website.

8. The Authority intends to make responses to this consultation available on its website. If a commenting party’s response contains any information that is confidential in nature, a clearly marked “Non-Confidential Version,” redacted to delete the confidential information, should be provided together with a complete version that is clearly marked as the “Confidential Version.” Redactions should be strictly limited to “confidential information,” meaning a trade secret, information whose commercial value would be diminished or destroyed by public disclosure, information whose disclosure would have an adverse effect on the commercial interests of the commenting party, or information that is legally subject to confidential treatment. The “Confidential Version” should highlight the information that has been redacted. Any person claiming confidentiality in respect of the information submitted must provide a full justification for the claim. Requests for confidentiality will be treated in the manner provided for in Rule 30 of the Authority’s Interim Administrative Rules.
9. The Chief Technical Officer is the principal point of contact at the Authority for interested persons during this consultation. He may be contacted by email at mwells@rab.bm or by mail at:

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10. In this document, except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them by the RAA, the Electronic Communications Act 2011 (“**ECA**”), and Interpretation Act 1951.
11. This consultation document is not a binding legal document and does not contain legal, commercial, financial, technical or other advice. The Authority is not bound by the consultation document, nor does it necessarily set out the Authority’s final or definitive position on particular matters. To the extent that there might be any inconsistency between the contents of this document and the due exercise by the Authority of its functions and powers, and the carrying out of its duties and the achievement of relevant objectives under law, such contents are without prejudice to the legal position of the Authority.

3 PURPOSES OF CONSULTATION

12. The purposes of this consultation process are to:
 - (a) define, by means of a General Determination, the set of frequencies for which demand is expected to exceed supply and for which there is a particular need to ensure efficient spectrum assignments (the HDS Frequencies), as required by paragraph 19 of the Spectrum Policy Statement;
 - (b) identify, from amongst the HDS Frequencies, those that are suitable for assignment at this time (the “**Designated HDS-1 Frequencies**”) in line with the Spectrum Policy Statement, the

purposes of the ECA and the ECA's spectrum management objectives; and

- (c) establish the criteria and procedures for the assignment of specific blocks within the Designated HDS-1 Frequencies (the "**HDS-1 Blocks**").

4 LEGISLATIVE CONTEXT

- 13. ECA s. 9(2)(c)(xii) lists the functions of the Authority, which include the making of administrative determinations to provide for the control and conduct of public electronic communications. These include the assignment of spectrum and the establishment of conditions and requirements for the operation and use of radio stations and apparatus for the provision of electronic communications.
- 14. ECA s. 36(2)(b) gives the Authority the power to specify "*the criteria and procedures for the assessment of radio frequencies [and] awarding individual spectrum licences...*".
- 15. ECA s. 37(1) provides the objectives of spectrum management and requires that:

"In performing their functions under this Part, the Minister and the Authority shall ensure that radio spectrum is managed in a manner that—

- (a) is objective, transparent and non-discriminatory;*
- (b) is economically and technically efficient;*
- (c) facilitates the introduction and evolution of new technologies and innovative electronic communications services;*
- (d) gives due recognition to the level of investment in existing equipment configured for specific frequencies and the cost of migrating to other frequencies;*
- (e) preserves or promotes effective and sustainable competition in the provision of electronic communications services subject to this Act; ...".*

5 THE SPECTRUM POLICY STATEMENT

- 16. Paragraph 19 of the Spectrum Policy Statement identifies the HDS Frequencies that the Authority should classify as such by means of a General Determination. These are defined as the frequencies for which demand is likely to exceed supply in light of their suitability for the provision of mobile services. Because the award of licences for the use of these frequencies is likely to be contested, the frequencies classified by the Authority as HDS Frequencies will be subject to more stringent spectrum management procedures with respect to the assignment process and the application of spectrum fees.
- 17. The HDS Frequencies were identified by the Minister in Appendix A to the Spectrum Policy Statement. In its General Determination following this consultation, the

Authority proposes to define the HDS frequencies as those identified as such in Table 1 below.²

Table 1: HDS Frequencies

HDS BAND NAME	FREQUENCY RANGE	HDS BAND SIZE
700 MHz Band	698 to 806 MHz	108 MHz
850 MHz Band	824 to 849 MHz 869 to 894 MHz	50 MHz
1900 MHz Band	1850 to 1910 MHz 1930 to 1990 MHz	120 MHz
2100 MHz Band (AWS-1)	1710 to 1755 MHz 2110 to 2155 MHz	90 MHz
2100 MHz Band (AWS-3)	1695 to 1700 MHz 1700 to 1710 MHz 2155 to 2180 MHz 1755 to 1780 MHz	65 MHz
2500 MHz Band	2496 to 2690 MHz	194 MHz
3.500 GHz Band	3.300 to 3.700 GHz	400 MHz

18. The primary and secondary use allocations for each HDS band are set out in Section 3 of the Spectrum Policy Statement, largely in line with the band plan established by the US Federal Communications Commission.
19. The Spectrum Policy Statement leaves it to the discretion of the Authority as to how and when to assign the HDS Frequencies within the policy framework established by the Minister. The relevant framework is set out in Section 3.3.1 of the Spectrum Policy Statement and calls for the Authority to follow a hybrid First-Come First-Served ("**FCFS**") – Comparative Selection process when making assignments of HDS Frequencies.³ The Spectrum Policy Statement also sets out a number of general criteria as examples of the factors that could be considered by the Authority when assigning HDS Frequencies.

² The HDS Frequencies set out in Table 1 of this consultation document correct minor typographical errors contained in Appendix A to the Spectrum Policy Statement.

³ Spectrum Policy Statement at para. 130.

20. In order to promote competition, prevent spectrum hoarding and encourage spectrum efficiency, the Spectrum Policy Statement also imposes a spectrum cap in respect of HDS Frequencies. The policy established by the Minister provides that "*no firm, or affiliates⁴ [will] be permitted to hold more than 50% of any HDS band.*"⁵ The Authority may waive compliance with this cap to accommodate differences in block sizes within the established band plan.

6 PROPOSED PROCESS FOR THE ASSIGNMENT OF HDS FREQUENCIES

6.1 Relevant considerations in determining the optimal structure of the process for assigning HDS Frequencies

21. In line with the development of the electronic communications sector globally, it is becoming increasingly important for Bermuda's consumers and businesses to be able to access the full range of data applications and content that is available over the internet by means of mobile and other advanced wireless broadband services. The availability of superfast mobile broadband is essential to Bermuda's status as an international financial hub and a premier tourist destination. The Authority therefore wishes to make HDS Frequencies available as soon as possible to facilitate the delivery of advanced wireless broadband services, including superfast mobile broadband speeds.
22. Because of the strategic importance of the HDS Frequencies, however, the Authority has a responsibility to take appropriate steps to ensure that the HDS Frequencies are licensed to applicants that can demonstrate they will use the spectrum efficiently in the near term. This is required by ECA s. 37(b), which stipulates that the Authority must "*ensure that radio spectrum is managed in a manner that is economically and technically efficient.*" It is also in keeping with the objective of ECA s. 41(4), which empowers the Authority to impose licence conditions that promote the efficient use of spectrum.
23. The electronic communications sector is a highly dynamic one, especially in the wireless broadband space. It is impossible to foresee how the demand for spectrum, particularly HDS Frequencies, will evolve over the next ten years (the term of the proposed spectrum licences for HDS Frequencies ("**HDS Licences**")). Whereas the demand for superfast mobile broadband services is expected to increase, the introduction of new network technologies and the steady decline in equipment prices may generate substantial changes in the supply side of the market over the coming decade.

Consultation Question 1: Please comment on expected trends in the supply of, and demand for, mobile broadband services over the next five years.

24. The objective of making HDS Frequencies available as expeditiously as possible for efficient use must be balanced against the need to ensure that the market for wireless broadband services is reasonably open to new entry. This means that any near-term policy decisions around market opening and access should ideally be considered and resolved before the HDS Frequencies are assigned, particularly in light of the fact that the HDS Licences will be granted for a ten-year term. As the Spectrum Policy Statement makes clear:

⁴ Spectrum Policy Statement at paras. 131-32.

⁵ ECA s. 2 defines the term "affiliate".

"Spectrum is an essential input into the supply of many communications services. Spectrum assignments therefore have a fundamental impact on competition in downstream markets and, in particular, mobile markets. Moreover, the longevity of spectrum might mean that the assignment will affect the market strength over the longer term."⁶

25. The Authority is satisfied that there is more than adequate spectrum available for a third provider of wireless broadband services. Whether the entry of a potential third mobile operator or other wireless broadband provider would be commercially sustainable in Bermuda is an open question. The Authority, however, would not be meeting its statutory responsibilities if it were to foreclose that possibility for the next decade by making all of the HDS Frequencies available for assignment in HDS-1. There are two principal reasons for this position.
26. First, there is currently a moratorium in place which prevents the grant of any new licences to entities that are not already holders of Integrated Communications Operating Licences ("ICOLs"), pursuant to ECA s. 75. This moratorium limits the potential pool of eligible applicants substantially. The Minister, with the assistance of the Authority, is required to commence a review of the moratorium, no later than 1 January 2016, to consider whether it should be lifted in whole or in part. Although the ultimate disposition of the moratorium review is unknown, it is conceivable that the addition of at least one potential new ICOL holder will be approved, which will open the field of eligible applicants by the second half of 2016.

Consultation Question 2: Please comment on the need for and sustainability of a third mobile entrant in Bermuda, including niche wireless broadband operators.

27. Second, the policies and rules surrounding the availability of cell sites and passive infrastructure, including towers, have historically hampered new entry. Identifying and addressing these issues could benefit not only entrants but all stakeholders. Although it is not within the Authority's remit to resolve all of the issues relating to passive electronic communications infrastructure, the Authority proposes to meet with industry participants and confer with the relevant Government departments and other stakeholders over the coming months in an effort to bring greater clarity to the situation and develop practical solutions where possible.

Consultation Question 3: Please comment on the issues involving access to cell sites, towers and other passive infrastructure necessary to deploy network equipment needed for providing 4G services, for (1) existing mobile network operators, and (2) potential entrants.

28. Due to the uncertainties related to the upcoming ICOL moratorium review and the unresolved passive infrastructure issues, the Authority is currently of the view that it would be contrary to the public interest for the Authority to attempt to assign all of the available HDS Frequencies at the present time. To do so would be incompatible with:
- (a) the core policy objectives set out in ECA s. 5, in particular subsections (b) - (f) & (h), set out below:

⁶ Spectrum Policy Statement at para. 119.

(b) enhance Bermuda's competitiveness in the area of electronic communications so that Bermuda is well-positioned to compete in the international business and global tourism markets;

(c) encourage the development of an electronic communications sector that is responsive to the requirements of users (both individuals and businesses) and provides them with choice, innovation, efficiency and affordability;

(d) encourage the development and rapid migration of innovative electronic communications technologies to Bermuda;

(e) promote the orderly development of Bermuda's electronic communications sector;

(f) encourage sustainable competition and create an invigorated electronic communications sector that will lay the groundwork for the further development of communications-reliant industries;

(h) promote investment in the electronic communications sector and in communications-reliant industries, thereby stimulating the economy and employment; ... and

- (b) the spectrum management objectives established by ECA s. 37, in particular subsections (b) - (e), and set out at paragraph 15 above.

29. The Authority therefore proposes to make sufficient HDS Frequencies available for use by wireless broadband providers at this time (potentially including but not limited to the existing mobile incumbents) to offer superfast mobile and other advanced wireless broadband services before the end of 2015, with the prospect of additional HDS Frequencies becoming available for assignment in 2016. The Authority will consider valid applications from any existing and eligible⁷ ICOL holder that wishes to obtain one or more spectrum licences to use the Designated HDS-1 Frequencies ("**HDS-1 Licences**").

<p>Consultation Question 4: Do you have any comments on the proposed HDS assignment process and timing? Are there any additional factors that you believe the Authority should take into account?</p>
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6.2 Designated HDS-1 Frequencies

30. Balancing the various factors discussed above, the Authority considers that the priority for HDS-1 should be to make available an adequate amount of spectrum below 1 GHz in light of its favourable propagation characteristics (including indoor penetration). Of the HDS Frequencies in the 700 MHz band available in Bermuda, a total of 2 x 29 MHz is considered immediately useable for the provision of public mobile services. Also available are the two unassigned Blocks (B and B¹) in the 850

⁷ For example, an ICOL holder that is subject to the 50% spectrum cap established by the Spectrum Policy Statement – or that is an affiliate of such ICOL holder, defined by ECA s. 2 – would not be eligible to apply for any of the Designated HDS-1 Frequencies that would exceed the applicable cap. See paragraph 20 above.

MHz band The Authority believes, however, that an appropriate amount of useable HDS Frequencies below 1 GHz should be withheld for future assignment and use.

31. The choice of which of these sub-1 GHz HDS Frequencies to offer in HDS-1 depends on various factors, including:
 - (a) the availability of compatible devices on the market;
 - (b) the bandwidth of blocks of HDS Frequencies and the service data rates that can be offered;
 - (c) the ability to provide services to visitors roaming in Bermuda from overseas (in particular, from the United States); and
 - (d) the spectrum management objectives set out in ECA s. 37.
32. In summary, the Authority proposes to make a subset of the following HDS-1 Blocks available for potential assignment to applicants in HDS-1:

Table 2: (Potential) Designated HDS-1 Frequencies

BLOCK	FREQUENCY RANGE	BANDWIDTH
700 MHz Band		
Lower Band A	698-704 / 728-734	2 x 6 MHz
Lower Band B	704-710 / 734-740	2 x 6 MHz
Lower Band C	710-716 / 740-746	2 x 6 MHz
Upper Band C	746-757 / 776-787	2 x 11 MHz
850 MHz Band		
B	880.0-890.0 / 835.0-845.0	2 x 10 MHz
B'	891.5-894.0 / 846.5-849.0	2 x 2.5 MHz

33. The Authority intends to award one or more HDS-1 Licences authorizing the use of the Designated HDS-1 Frequencies if one or more applicants are selected in accordance with the criteria and procedures for HDS-1 that are approved by the Authority following this consultation. The proposed rules are set out in detail in the draft RFA, which is attached as Appendix A to this consultation document.

Consultation Question 5: Please indicate which of the HDS-1 Blocks listed in Table 2 above should be made available in HDS-1, and which should be withheld for later assignment. Please provide a detailed explanation for your response.

6.3 Average download user data rates

34. The Authority wishes to take the minimum steps necessary to facilitate the availability of superfast mobile and other wireless broadband services without delay. At present, mobile broadband customers in Bermuda are able to obtain average download user data rates which are well below the average use in North America and Europe

(Bermuda's main trading partners). Using the latest 4G technology or the equivalent, it should be possible for a mobile network operator in Bermuda to improve substantially on the current data rates. However the data rates that are achievable also depend upon the bandwidth of assignment.

35. A priority for the HDS-1 award process is to enable access to high data rate services for consumers and enterprises in Bermuda. Accordingly, the Authority wishes to ensure that mobile network operators which are assigned Designated HDS-1 Frequencies deploy networks capable of delivering high data rates services. In line with international benchmarks, the Authority believes that an incumbent mobile network operator in Bermuda should be able to achieve minimum average download user data rates of at least 25 to 30 Mbps⁸ within a six-month period⁹ after being awarded sufficient Designated HDS-1 Frequencies. This minimum data rate corresponds to that achievable in a lightly loaded network as defined in the RFA.
36. The Authority also wishes to ensure that high speed data rates continue to be made available as data traffic grows and networks become loaded. The Authority is of the view that the spectrum to be made available in HDS-1 should be adequate to enable mobile licensees to meet a busy hour¹⁰ minimum average download user data rate of no less than 50% of the minimum stipulated for lightly loaded conditions. Furthermore, the Authority would expect HDS-1 licensees to upgrade their networks to ensure that Bermuda benefits from state-of-the-art technology in the provision of wireless broadband services over the term of the licence.

Consultation Question 6:

- (a) Do you have any comments on the Authority's expectations in regard to delivery of the minimum average download user data rates where an operator obtains at least 2 x 10 MHz of spectrum in the 700 MHz and or 850 MHz bands?
- (b) How do you foresee the minimum average download user data rates affecting mobile markets in Bermuda over the next 3 to 5 years, and over the life of the spectrum licence (10 years)?

6.4 HDS-2

37. The Authority intends to commence the process for assigning some of the remaining HDS Frequencies, as set forth in Table 1 above, as soon as there is a reasonable degree of clarity concerning the issues identified in paragraphs 26 - 27 above.
38. The Authority expects the structure of HDS-2 to be similar to that set out in the draft RFA for HDS-1. However, adjustments may need to be made based on experience

⁸ The actual rate may vary depending upon the highest amount of Designated HDS-1 Frequencies awarded in a single band. For example, the spectrum quantity obtained by each applicant awarded Designated HDS-1 Frequencies ("**Successful HDS-1 Applicant**") may vary between the Lower 700 MHz band, the Upper 700 MHz band or the 850 MHz band. The Authority also recognizes the difficulties with providing voice services over 4G technologies that are optimized for data traffic and that most 4G deployments internationally currently use alternative bands for the provision of voice services. Respondents may comment on how they foresee the minimum average download user data rate affecting the mobile markets in Bermuda in the short term and into the future.

⁹ The Authority's expectation would be twelve months for a new entrant.

¹⁰ As defined in the RFA.

gained in HDS-1, to accommodate the greater number and diversity of bands that will be made available for assignment, and to address other differentiating factors.

39. The proposed multi-phase process will also give the Authority the opportunity to monitor the performance of Successful HDS-1 Applicants with respect to the roll-out, quality of service and other commitments that the Authority proposes to impose as mandatory licence conditions ("**Mandatory Licence Conditions**") for the award of HDS-1 Licences.
40. The Authority currently expects to commence HDS-2 sometime in 2016.

Consultation Question 7: Do you have any comments on the proposed timing of HDS-2 and the next tranche of HDS Frequencies that should optimally be assigned in HDS-2 (in line with your response to Consultation Question 5)? Please provide a detailed explanation for your response.

7 OVERVIEW OF HDS-1

7.1 Process Phases and Timetable

41. The proposed process is divided into four main stages:
- (a) registration;
 - (b) application;
 - (c) selection; and
 - (d) licence award.
42. The proposed process and the indicative timetable for each step of HDS-1 are set out in detail in Sections 2 and 3 of the attached RFA.

Consultation Question 8: Do you have any comments on the basic structure of the HDS-1 process or the proposed timetable?

7.2 Eligibility Requirements

43. The eligibility requirements that must be met by all prospective applicants in order to apply for an HDS-1 Block or a group of HDS-1 Blocks ("**HDS-1 Package**") are set out in Section 13.4 of the draft RFA.

Consultation Question 9: Please indicate whether any additional eligibility requirements should be included as part of the registration stage of HDS-1, or if any modifications should be made to those proposed in the RFA. Please provide a detailed explanation for any proposed changes.

7.3 Application Fee

44. The Authority proposes a non-refundable fee of BMD 40,000 to be paid by all prospective applicants for an HDS-1 Block or HDS-1 Package at the time of registration. In line with paragraph 116 of the Spectrum Policy Statement, the

Authority has considered the expected costs of preparing for and conducting the HDS-1 process, as well as the impact of the fees on the finances of potential serious applicants and in deterring frivolous applications. The Authority has also considered relevant international benchmarks and considers the amount of BMD 40,000 to be reasonable and appropriate for the HDS-1 process.

Consultation Question 10: Do you have any comments on the proposed amount of the HDS-1 application fee? Please explain your answers by reference to the policy considerations set out in paragraph 116 of the Spectrum Policy Statement.

7.4 Hybrid First-Come First-Served / Comparative Selection Process

45. In line with the Spectrum Policy Statement, the Authority proposes to review the initial requests for assignments of specific HDS-1 Blocks or HDS-1 Packages ("**Requests for HDS-1 Assignments**") that are submitted during the registration stage of the process (see RFA Section 13.10) and, on that basis, determine whether two or more Requests for HDS-1 Assignments are received by the Authority for any particular HDS-1 Block or HDS-1 Package.
46. If only one ICOL holder submits a Request for HDS-1 Assignment for a particular HDS-1 Block (or HDS-1 Package), the spectrum may be eligible for FCFS assignment provided the applicant meets the minimum Baseline Application criteria and score as described in Section 14.3.2 of the RFA. An HDS-1 Block (or HDS-1 Package) will not be eligible for assignment by the FCFS process if any of the scenarios in Section 13.10.1 of the RFA arise.
47. Where the Authority has determined that the FCFS process applies to a particular HDS-1 Block or HDS-1 Package, the Authority will proceed to evaluate for that HDS-1 Block or HDS-1 Package whether:
 - (a) the applicant's Baseline Application is complete, in accordance with Section 14.1 of the RFA; and
 - (b) the applicant has achieved a passing score in relation to its Baseline Application in accordance with Section 14.3.1 of the RFA.
48. If the Applicant achieves a passing score, the applicant will be selected as the Successful HDS-1 Applicant for that particular HDS-1 Block or HDS-1 Package.

Consultation Question 11: Do you have any comments on the proposed FCFS process or criteria?

49. If two or more Requests for HDS-1 Assignment are received for a particular HDS-1 Block or HDS-1 Package, the Authority will proceed on a comparative selection basis for the evaluation of that spectrum. Among other criteria, the evaluation will take into account the degree to which the applicant can demonstrate a need for, and the planned efficient use of, the requested HDS-1 Block or HDS-1 Package in combination with its existing holdings of HDS Frequencies (if any), to provide superfast broadband services in line with the minimum average download and coverage requirements set out in the Mandatory Licence Conditions, discussed in Section 8 below.

50. In the event that two or more Requests for HDS-1 Assignment are received for any particular HDS-1 Block or HDS-1 Package, the Authority proposes to appoint an expert Advisory Panel to assist it with the overall evaluation process in accordance with RAA s. 35. The Authority envisages that the Advisory Panel will be composed of five members including the Authority's Chief Executive, the Authority's Chief Technical Officer and three external experts who have been selected on the basis of their expertise and high level of independence and impartiality. Independent experts may include: (i) persons with experience reviewing mobile/wireless business plans; (ii) mobile technology expert; (iii) persons with the relevant financial and/or economic expertise knowledge; (iv) a retired civil court judge who has presided in Bermuda; and/or (v) any other person that the Authority deems appropriate.

Consultation Question 12: Do you have any comments on the appointment of an Advisory Panel to assist the Authority with the comparative selection process or its proposed composition?

51. Where two or more Requests for HDS-1 Assignment are received for any particular HDS-1 Block or HDS-1 Package, the evaluation of the Baseline Application will proceed in accordance with Section 14.3.3 of the RFA.
52. If the applicant achieves a passing score on the Baseline Application for a requested HDS-1 Block or HDS-1 Package, the process for selecting the Successful HDS-1 Applicant for the requested HDS-1 Block or Package will proceed to its conclusion in accordance Section 14.3.3 of the RFA, which will involve consideration of the Applicant's Optional Commitments among other factors. If only one applicant achieves a passing score on the Baseline Application for a particular HDS-1 Block or HDS-1 Package, an applicant will be selected as the Successful HDS-1 Applicant for that spectrum, and will be subject to any Optional Commitments it has proposed (as discussed in Section 9 below).

Consultation Question 13: Do you have any comments on the proposed comparative selection procedures set out in Section 14.3.3 of the RFA?

8 MANDATORY LICENCE CONDITIONS

53. The assignment of HDS Frequencies solely on the basis of a comparative selection process (or hybrid FCFS/comparative selection process) is a relatively rare phenomenon in global spectrum licensing practice. The typical approach is a hybrid comparative selection process combined with an auction. By foregoing an auction, and by setting the recurring spectrum fees for the various HDS Frequencies at values that are somewhat lower than the fair market value established on the basis of international benchmarks,¹¹ the Government of Bermuda has effectively declined to maximize revenues and in doing so has potentially increased demand for the spectrum. Instead, the Government has decided to focus the selection process on the Authority's evaluation of qualitative factors designed to promote the spectrum management objectives – including access to new technologies, enhanced services, price reductions and increased competition in the relevant markets – along with other Government policies¹².

¹¹ See Spectrum Policy Statement, Section 3.4.1.

¹² See Spectrum Policy Statement, at paras. 118 and 133

54. Given the duopoly that currently exists in the mobile market in Bermuda and the size of the Bermuda market, there is a real concern that competition in and of itself may not be sufficient to deliver state-of-the art technologies and innovative services at a pace that is adequate or in keeping with international trends. For this reason, the Authority's preliminary view is that eligibility to participate in HDS-1 should be conditional on the prospective applicant's commitment to comply with certain minimum conditions. These are classified as Mandatory Licence Conditions in the draft RFA and will be imposed on Successful HDS-1 Applicants as a condition of the grant of any HDS-1 Licence. These obligations will also apply to all HDS Frequencies held by a Successful HDS-1 Applicant. The Authority proposes to implement these requirements by means of modification of the existing Commercial Mobile Radio Service Licence (for incumbent mobile operators) or the award of a new mobile licence (for any new entrant), as well as modification of the corresponding ICOLs at the Authority's discretion.
55. The proposed requirements include four "Key Performance Obligations." The first is a minimum average download user data rate of 25-30 Mbps as outlined above in paragraph 35 of this consultation document. Licensees will also have a geographic coverage obligation (99.9% of the total land mass of Bermuda), which must be achieved within six months of the date of award of an HDS-1 Licence for incumbent mobile operators, or within twelve months for any new entrant.
56. The Authority proposes to impose a separate licence condition on Successful HDS-1 Applicants requiring them to continue to deliver state-of-the-art services using the awarded spectrum during the term of the HDS-1 Licence. The proposed condition will also allow the Authority unilaterally to modify the HDS-1 Licence on or following the fifth anniversary of the licence if the Authority considers that an increase in the prescribed minimum average download user data rate (and/or the addition of other new parameters) is necessary and appropriate to ensure that Bermuda remains in line with international best practice. The proposed conditions are set out in Section 10.1 of the RFA.

Consultation Question 14: Do you have any comments on the proposed Key Performance Obligations discussed in this Section that are not already covered in your response to Consultation Question 6?

57. The Authority considers the satisfaction of the proposed minimum speed, coverage and roll-out obligations to be of fundamental importance to the people of Bermuda. The Authority is therefore also proposing to stipulate in the RFA the indicative fines that will be imposed, following an adjudication, should these conditions fail to be met (see Section 11 of the RFA). Applicants will thus be on notice of the penalties they can expect to incur if they fail to meet any of these obligations within the established deadline, in the absence of any objectively justifiable mitigating circumstances.

Consultation Question 15: Do you have any comments on the amount or structure of the indicative fines proposed in the draft RFA?

58. The Authority also proposes to impose three other Mandatory Licence Conditions, referred to as "Core Service Obligations", on Successful HDS-1 Applicants (Section 10.2 of the RFA):
- (a) A modified "efficient use" requirement and "use or lose it" provision is applicable to the awarded spectrum, taking into

account all of the HDS Frequencies held by the licensee, and at a minimum based on the principle of "use it or lose it", which the Authority will be entitled to enforce any time after the third anniversary of the award of an HDS-1 Licence.

- (b) A basic "**net neutrality**" obligation, which will apply as a transitional measure until completion of the Authority's upcoming comprehensive consultation on this issue. The Authority considers a basic requirement to be necessary to prevent the occurrence of unfair practices following grant of the HDS-1 licences, prior to coming into force of a potentially more comprehensive set of rules. The transitional requirement will, at a minimum: (1) prevent unfair discrimination in the treatment of internet traffic; (2) prevent any blocking or throttling that is not objectively justified for purposes of legitimate traffic management; and (3) require transparency towards customers regarding traffic management policies, volume limitations and other restrictions on the use of the licensee's wireless broadband services.
- (c) A **contingent mobile obligation to supply wholesale capacity** on a fair and reasonable basis to third parties seeking to act as mobile virtual network operators subject to terms and conditions approved by the Authority if, following a consultation, the Authority determines that this is required for the benefit of consumers in accordance with ECA s. 38(b).

59. Following consideration of any comments received on these proposed Mandatory Licence Conditions, the Authority will prepare the detailed text of the conditions and seek comment on the proposed text when it publishes its Draft General Determination on the HDS-1 procedures and conditions in the next phase of this consultation procedure.

Consultation Question 16: Do you have any proposals for the detailed text of the Mandatory Licence Conditions, including the technical parameters for measuring compliance with the minimum average download user data rate licence condition and verification procedures?

9 OPTIONAL COMMITMENTS

60. As set out in Section 14.2.2(b) of the draft RFA, the Authority also invites applicants in HDS-1 to propose one or more enhanced commitments ("**Optional Commitments**") in line with the nine options provided. Any Optional Commitments proposed by an applicant in conformity with the RFA will be evaluated as part of the HDS-1 comparative selection process (if applicable).
61. Any Optional Commitments that are deemed by the Authority to provide material benefits to consumers and to be objectively enforceable will receive a positive score and be considered in the evaluation phase, as set out in Section 14.3.3 of the RFA. At the Authority's option, the proposed conditions may be included as conditions of the HDS-1 Licences awarded by the Authority to the respective proponent in the licence award phase of HDS-1. These commitments may, at the Authority's

discretion, also be mirrored in the relative applicant's ICOL through modification of the existing ICOL conditions.

Consultation Question 17: Do you have any comments on the proposed list of Optional Commitments? Please provide a full explanation of any proposed changes or additions.

10 DRAFT RFA

62. The draft RFA also establishes the rules of conduct for participants in HDS-1 as well as the confidentiality obligations that will apply during HDS-1. These are set out in Part B of the RFA.
63. It should be noted that the draft RFA is a preliminary draft that reflects the Authority's tentative views on the basic format and procedures for HDS-1. The RFA may be refined on the basis of comments received from interested parties. A final and complete draft will be made available for comment as part of the Draft General Determination, which the Authority aims to issue, along with its Report on this consultation, in mid-September 2015.

Consultation Question 18:

(a) Please provide any comments on the draft rules of conduct and confidentiality provisions of the draft RFA (Part B).

(b) Do you have any comments on other provisions of the draft RFA that are not already addressed in your comments? Please ensure that your comments make specific reference to the relevant section or paragraph of the draft RFA. A Word version of the draft RFA has been provided for making proposed textual changes, which should be shown in redline or in a comparison version, accompanied by a brief explanation where helpful.

APPENDIX A

Request for Applications (Consultation Draft)

APPENDIX B:

CONSULTATION QUESTIONS

Consultation Question 1: Please comment on expected trends in the supply of, and demand for, mobile broadband services over the next five years.

Consultation Question 2: Please comment on the need for and sustainability of a third mobile entrant in Bermuda, including niche wireless broadband operators.

Consultation Question 3: Please comment on the issues involving access to cell sites, towers and other passive infrastructure necessary to deploy network equipment needed for providing 4G services, for (1) existing mobile network operators, and (2) potential entrants.

Consultation Question 4: Do you have any comments on the proposed HDS assignment process and timing? Are there any additional factors that you believe the Authority should take into account?

Consultation Question 5: Please indicate which of the HDS-1 Blocks listed in Table 2 above should be made available in HDS-1, and which should be withheld for later assignment. Please provide a detailed explanation for your response.

Consultation Question 6:

(a) Do you have any comments on the Authority's expectations in regard to delivery of the minimum average download user data rates where an operator obtains at least 2 x 10 MHz of spectrum in the 700 MHz and or 850 MHz bands?

(b) How do you foresee the minimum average download user data rates affecting mobile markets in Bermuda over the next 3 to 5 years, and over the life of the spectrum licence (10 years)?

Consultation Question 7: Do you have any comments on the proposed timing of HDS-2 and the next tranche of HDS Frequencies that should optimally be assigned in HDS-2 (in line with your response to Consultation Question 5)? Please provide a detailed explanation for your response.

Consultation Question 8: Do you have any comments on the basic structure of the HDS-1 process or the proposed timetable?

Consultation Question 9: Please indicate whether any additional eligibility requirements should be included as part of the registration stage of HDS-1, or if any modifications should be made to those proposed in the RFA. Please provide a detailed explanation for any proposed changes.

Consultation Question 10: Do you have any comments on the proposed amount of the HDS-1 application fee? Please explain your answers by reference to the policy considerations set out in paragraph 116 of the Spectrum Policy Statement.

Consultation Question 11: Do you have any comments on the proposed FCFS process or criteria?

Consultation Question 12: Do you have any comments on the appointment of an Advisory Panel to assist the Authority with the comparative selection process or its proposed composition?

Consultation Question 13: Do you have any comments on the proposed comparative selection procedures set out in Section 14.3.3 of the RFA?

Consultation Question 14: Do you have any comments on the proposed Key Performance Obligations discussed in this Section that are not already covered in your response to Consultation Question 6?

Consultation Question 15: Do you have any comments on the amount or structure of the indicative fines proposed in the draft RFA?

Consultation Question 16: Do you have any proposals for the detailed text of the Mandatory Licence Conditions, including the technical parameters for measuring compliance with the minimum average download user data rate licence condition and verification procedures?

Consultation Question 17: Do you have any comments on the proposed list of Optional Commitments? Please provide a full explanation of any proposed changes or additions.

Consultation Question 18:

(a) Please provide any comments on the draft rules of conduct and confidentiality provisions of the draft RFA (Part B).

(b) Do you have any comments on other provisions of the draft RFA that are not already addressed in your comments? Please ensure that your comments make specific reference to the relevant section or paragraph of the draft RFA. A Word version of the draft RFA has been provided for making proposed textual changes, which should be shown in redline or in a comparison version, accompanied by a brief explanation where helpful.