



Notice of Interest

High Demand Spectrum “HDS”

Assessment of Demand for HDS Spectrum

Date: 16 May 2024

TABLE OF CONTENTS

I	INTRODUCTION AND BACKGROUND	3
II	DEFINITIONS	3
III	PURPOSE.....	4
IV	PROCESS FOR EXPRESSING INTEREST IN HDS SPECTRUM FREQUENCIES	4
V	PROCESS FOR ASSIGNMENT WHEN SUPPLY EXCEEDS DEMAND.....	5
VI	PROCESS FOR ASSIGNMENT WHEN DEMAND EXCEEDS SUPPLY	5
VII	PROCESS FOR FEEDBACK ON THE PROPOSED RECONFIGURATION OF THE SPECTRUM BANDS IDENTIFIED IN APPENDIX C	5
VIII	NEXT STEPS	6
	APPENDIX A: CURRENT HIGH DEMAND SPECTRUM TABLE.....	7
	APPENDIX B: SUMMARY OF CURRENT HDS APPLICATIONS	8
	APPENDIX C: SUMMARY OF PROPOSALS FOR RE-ORGANIZATION IN TWO HDS BANDS.....	9

I INTRODUCTION AND BACKGROUND

1. The purpose of this notice is to assess demand for HDS from interested sectoral providers as required in the Regulatory Authority (Grant of Spectrum Licences Permits and Exempted Frequencies) General Determination 2020 (**Spectrum GD**).
2. The Spectrum GD specifies that, upon receipt of a Qualified Application for HDS, the Regulatory Authority (**RA**) shall assess the availability of the requested HDS spectrum against overall demand by publishing a Notice of Interest (**Notice**) on its website and in the Official Gazette.
3. Additionally, the RA has received a request to consider re-organization of two HDS spectrum ranges to allow linear/contiguous use of larger blocks to permit more efficient and robust 4G or 5G channel usage. This Notice will allow sectoral participants to provide feedback on this proposal.

II DEFINITIONS

4. In this Notice, unless the context otherwise requires—

ECA means the Electronic Communications Act 2011;

HDS means high demand spectrum frequencies for Bermuda as detailed in Appendix A;

ICOL means an Integrated Communications Operating Licence granted pursuant to section 18 of the ECA;

NHDS means spectrum frequencies which are not in high demand;

Qualified Application means an application that the RA has determined meets: (1) the basic eligibility requirements (as set out in the GD); (2) the minimum necessary thresholds in relation to financial resources, technical experience, qualifications, business plan and financial plan;

RAA means the Regulatory Authority Act 2011.

Sectoral Provider in the context of HDS means the holder of an ICOL.

5. For purposes of interpreting this Notice —
 - i. unless a term is defined in this Notice or the context otherwise requires, words or expressions shall have the meaning assigned to them by the RAA and the ECA;
 - ii. where there is any conflict between the provisions of this Notice and the ECA or RAA, the provisions of the ECA or RAA, as the case may be, shall prevail;
 - iii. terms defined herein and in the ECA and RAA have been capitalized;
 - iv. headings and titles used herein are for reference only and shall not affect the interpretation or construction of this Notice;

- v. references to any law or statutory instrument include any modification, re-enactment or legislative provisions substituted for the same;
- vi. expressions cognate with those used herein shall be construed accordingly;
- vii. use of the word "include" or "including" is to be construed as being without limitation; and
- viii. words importing the singular shall include the plural and vice versa, and words importing the whole shall be treated as including a reference to any part unless explicitly limited.

III PURPOSE

7. The purpose of this Notice (as required by the Spectrum GD) is to:
 - i. notify the public that an applicant or applicants have expressed interest in the HDS detailed in Appendix B
 - ii. assess whether there is additional demand for the HDS set out in Appendix B
8. This Notice also advises the EC Sector that the RA has received a request to consider re-organization of two existing HDS spectrum ranges as set out in Appendix C. The reorganization (if adopted) would allow:
 - i. linear/contiguous use of larger blocks to permit more efficient and robust 4G or 5G channel usage.
 - ii. Removal of the Commercial Mobile Radio (**CMR**) limitation on the spectrum band(s). The proposal suggests that removing the specific limitation of CMR or Fixed Wireless Access (**FWA**) use will enable mobile networks to be designed to optimize efficiency, maximizing the use of the spectrum by blending its availability for all use cases.

Sectoral participants are encouraged to provide feedback to the RA on this matter.

9. This Notice outlines all relevant details and the way in which interested sectoral providers may formally submit written communication expressing their interest in the spectrum frequencies identified in this Notice (Appendix B & C).

IV PROCESS FOR EXPRESSING INTEREST IN HDS SPECTRUM FREQUENCIES

9. The principal point of contact at the RA for Sectoral Providers to submit written communication expressing interest in the spectrum frequencies identified in this Notice is Craig Davis. He may be contacted by email, referencing "Interest in HDS Spectrum Frequencies – May 2024" at cdavis@ra.bm or by mail at:

Craig Davis
Senior Manager – Electronic Communications
Regulatory Authority
1st Floor, Craig Appin House
8 Wesley Street
Hamilton, Bermuda

10. Sectoral Providers making formal application(s) for HDS spectrum must comply with the processes detailed in the Spectrum GD.

V PROCESS FOR ASSIGNMENT WHEN SUPPLY EXCEEDS DEMAND

11. If the RA fails to receive any additional Qualified Applications in response to the published Notice, this will confirm that supply for the requested spectrum exceeds demand.
12. The RA will then evaluate the sole Qualified Application against the spectrum specific qualifying criteria outlined below in the General Assessment Criteria for HDS as detailed in the Spectrum GD.
13. Subsequently, the RA may assign the requested HDS spectrum on a First Come First Served (**FCFS**) basis.

VI PROCESS FOR ASSIGNMENT WHEN DEMAND EXCEEDS SUPPLY

14. If more than one sectoral provider communicates an interest in the spectrum specified in this Notice (through the submission of a Qualified Application), the Spectrum GD requires the RA to conduct a Comparative Selection Process. In the Comparative Selection Process, the RA evaluates all Qualified Applications against specified eligibility criteria.
15. The Technical Criteria for a HDS Comparative Selection Process is detailed in the Spectrum GD.
16. The comparative selection process enables the RA to assign HDS to existing and/or prospective Sectoral Providers that can demonstrate a genuine need for the spectrum detailed in this notice. Sectoral Providers must also demonstrate that the grant of the spectrum promotes further competition, technical advancement and efficiency in the electronic communications sector. Ultimately, an effective and efficient comparative selection process allows the RA to assign spectrum in a manner that is consistent with the purposes of section 37 of the ECA and the RA's general functions outlined under section 12 of the RAA.

VII PROCESS FOR FEEDBACK ON THE PROPOSED RECONFIGURATION OF THE SPECTRUM BANDS IDENTIFIED IN APPENDIX C

17. There are currently two sectoral providers with existing HDS licences in the spectrum bands identified in Appendix C. It is expected that they will respond with feedback to this proposal.
18. Other feedback from sectoral participants is welcome.
19. All feedback will be considered by the RA before a decision is made either granting the proposal (and amending the existing spectrum licences accordingly) or rejecting the proposal.

VIII NEXT STEPS

20. Sectoral Providers have 14 days to respond to this Notice once the Notice has been published in the Official Gazette (“Notice Period”). The Notice will also be posted on the RA website.
21. At the conclusion of the Notice Period, the RA will commence the process of evaluating any applications for the HDS spectrum listed in Appendix B under Section V or Section VI of this Notice.
 - i. With respect to Section V where there are no new Qualified Applications received in the Notice Period and no overlaps with existing Qualified Applications, the RA intends to recommend assignment of any new HDS Spectrum Licences within 10 days of the end of the Notice Period.
 - ii. With respect to Section VI where there are Qualified Applications for the same HDS spectrum, the RA intends to commence a Comparative Selection Process within 10 days of the end of the Notice Period. The duration of the Comparative Selection Process may vary based on the level of contention for the requested HDS Spectrum.
22. At the conclusion of the Notice Period with respect to the proposed reconfiguration of the spectrum bands identified in Appendix C, the RA will follow the process identified in Section VII above. Since this process may involve discussions with several parties, the timeline may be longer than the 10 days listed in 19 above. The RA intends that this process be concluded no longer than 30 days after the conclusion of the Notice Period.

APPENDIX A: CURRENT HIGH DEMAND SPECTRUM TABLE

Bermuda High Demand Spectrum Bands – May 2021

HDS Band Name	Frequency Range (MHz)		HDS Band Size (MHz)
	Lower End of range	Upper end of range	
700 MHz Band	698	806	108
850 MHz Band	824 869	849 894	50
1900 MHz Band	1850 1930	1910 1990	120
2100 MHz Band (AWS-1)	1710 2110	1755 2155	90
2100 MHz Band (AWS-3)	1690 1700 2155 1755	1700 1710 2180 1780	70
2500 MHz Band	2496	2690	194
3500 MHz Band	3300	3700	400

APPENDIX B: SUMMARY OF CURRENT HDS APPLICATIONS

Reference #	Bermuda HDS Band	Proposed Service Grouping	Lowest allocation of range (MHz)	Upper allocation of range (MHz)	Block Size (MHz)	Band information (where applicable)	Current Spectrum Availability as on 14 May 2024
1	HDS – 1900 MHz Band	CMR	1865	1870	5	PCS Band 2 Block D FDD (Uplink)	Not currently in use or assigned
	HDS – 1900 MHz Band	CMR	1945	1950	5	PCS Band 2 Block D FDD (Downlink)	Not currently in use or assigned

APPENDIX C: SUMMARY OF PROPOSALS FOR RE-ORGANIZATION IN TWO HDS BANDS

Ref #	Bermuda HDS Band	Proposed Service Grouping	Lowest allocation of range (MHz)	Upper allocation of range (MHz)	Block Size (MHz)	Band information (where applicable)	Notes
1	HDS – 1900 MHz Band	Technology and use independent				Band 2 / PCS	<p>The HDS 1900 band is 60 MHz wide (FDD Uplink and Downlink).</p> <p>Currently there are 3 x 15 MHz and 2 x 5 MHz blocks assigned (uplink and downlink) in a non-contiguous manner to two sectoral providers for CMR.</p> <p>One provider currently holds 2 x 15 MHz blocks (non-contiguous) and the other holds 25 MHz (contiguous).</p> <p>1 x 5 MHz block (both uplink and downlink) is currently not assigned. <i>This block is part of a current HDS application (see Appendix B application reference 1).</i></p> <p>The proposal that has been brought to the RA is to consider re-organizing the band into 2 x 30 MHz contiguous blocks (uplink and downlink). This proposal would result in both sectoral providers having an equal share of this band.</p> <p>The larger contiguous blocks would provide for more efficient and robust 4G or 5G channel usage for both sectoral providers.</p> <p>Additionally, the proposal recommends that there be no service category (eg CMR or FWA) specified for this band. The proposal suggests that removing the specific limitation of FWA or CMR use will enable mobile networks to be designed to optimize efficiency, maximizing the use of the spectrum by blending its availability for all use cases.</p>
			1850	1910	2 x 30 MHz	FDD Uplink	
						Band 2 / PCS	
						5G NR n2	
2	HDS – 850 MHz Band	Technology and use independent	1930	1990	2 x 30 MHz	FDD Downlink	<p>The HDS 850 band is 25 MHz wide (FDD Uplink and Downlink).</p> <p>This band was originally divided by the FCC into sub bands A, A', B, B' and B''. These FCC sub-bands allow for only two useful 10MHz contiguous spectrum blocks leaving 5MHz that is not practically useable because it is divided into small (1.5 and 2.5MHz) blocks which are not compatible with 3G, 4G or 5G channelization. The smallest block size that is practically usable (for 3G/4G/5G) is 5 MHz.</p> <p>Each provider currently holds 12.5 MHz of non-contiguous capacity in this band. Practically only 10 MHz is usable. Both carriers are paying HDS fees for the additional bandwidth.</p> <p>The proposal that has been brought to the RA is to consider re-organizing the band into 1 x 15 MHz block and 1 x 10 MHz block.</p> <p>The larger contiguous blocks would provide for more efficient and robust 4G or 5G channel usage for both sectoral providers.</p> <p>Additionally, the proposal recommends that there be no service category (eg CMR or FWA) specified for this band. The proposal suggests that removing the specific limitation of FWA or CMR use will enable mobile networks to be designed to optimize efficiency, maximizing the use of the spectrum by blending its availability for all use cases.</p>
			824	849	1 x 15 MHz 1 x 10 MHz	FDD Uplink	
						Band 5	
						5G NR n5	
						1 x 15 MHz	
						FDD Downlink	
			869	894	1 x 10 MHz		