PROPOSED SPECTRUM HOLDINGS POLICY

NOVEMBER 16, 2020

SPECTRUM MANAGEMENT AUTHORITY
KINGSTON, JAMAICA

REVIEW
OF
MOBILE SPECTRUM HOLDING POLICY

Table of Contents

REVIEW
OF
MOBILE SPECTRUM HOLDING POLICY

A. Introduction

This Position Paper has been prepared by the Spectrum Management Authority ("the SMA" or "the Authority"), the regulatory body with responsibility for the management of the radio frequency spectrum in Jamaica and an agency under the Ministry of Science, Energy and Technology (MSET). The document was prepared by the SMA, in collaboration with the Fair Trading Commission (FTC), the administrative body responsible for implementing the Fair Competition Act (FCA). The information provided herein are primarily for those parties currently providing or are considering providing mobile services to the public in Jamaica. The paper outlines the proposed mobile spectrum holdings policy, which recommends the following:

- Removing the spectrum cap and utilizing a spectrum screen for assignments above 120 MHz of spectrum in the listed frequency bands: 700MHz, 850MHz, 900MHz, 1800MHz, 1900MHz, and 1700/2100 MHz (AWS Band);
- A 30% in-band Screen on all other suitable and available bands allocated for mobile services, (1500 MHz, 25 GHz, 37 GHz, 43 GHz, and 66 GHz, …etc.) and,
- The policy to be reviewed six (6) months following the next World Radiocommunications Conference (WRC).

Comments are being sought, with rationale for your position, on:

1. General policy considerations related to this issue;
2. The proposed spectrum holdings policy;
3. The duration of the spectrum holdings policy.

All comments in relation to the Position Paper must be addressed **in writing to**:

The Managing Director
Spectrum Management Authority
13-19 Harbour Street,
Kingston
consultation@sma.gov.jm

The deadline for submission of comments is 2020 December 10

Publication of Submission
The SMA will publish in whole or in part, all comments received in relation to this Position Paper. The identity of those making the comments will be published and requests for confidentiality of subject material will be considered in accordance with the need for transparency, or as authorized by law.

The timeline for the consultation is summarized in the Table below. This includes an indicative timing for the submission of SMA's recommendation to MSET.

Events	Deadline Dates
Posting of Position Paper - **SMA**	2020 Nov 16
Submission of comments on Position Paper - **Industry**	2020 Dec 10
Responses to Industry's comments - **SMA**	2020 Dec 18
Submission of final comments - **Industry**	2021 Jan 12
Submission of recommendation to the MSET - **SMA**	2021 Jan 27

B. Background

- In 2013, the Government of Jamaica (GoJ), in keeping with global trends and consistent with its policy objectives to promote increased competition and to provide all Jamaicans with access to ubiquitous communications connections sought to make additional spectrum available for licensing. In particular, the GoJ approved the licensing of the 700 MHz to accommodate mobile broadband wireless services.

- In 2013 April, the Information Memorandum – Licensing the 700 MHz Band was issued, which proposed the imposition of an aggregate spectrum cap. The proposed cap related to the maximum amount of spectrum that any operator would be allowed to hold, in aggregate, within the following bands: 700 MHz, 850 MHz, 900 MHz, 1800 MHz, and 1900 MHz. Based on initial queries/comments received, a second round of consultations was initiated with the issuance of the Position Paper on Mobile Spectrum Holdings Policy on 2013 August 12.

- On September 16, 2013 the Minister with portfolio responsibility for Telecommunications (hereinafter "the Minister") at that time, issued a Notice of Decision to Implement an Aggregate Spectrum Cap Policy (hereinafter "the Notice of Decision") limiting the maximum holding of operators to a maximum of 80 MHz with respect to the 700 MHz, 850 MHz, 900 MHz, 1800 MHz and 1900 MHz bands. This Decision was later reviewed on the commencement of the process to assign the 700 MHz band and increased to 120 MHz effective April 1, 2014 (hereinafter "the 2014 Decision").

- The 2014 Decision made provision for its review every two (2) years or at such earlier time, in consultation with the SMA, as may be determined. In keeping with this, in June, 2016 the 2014 Decision was reviewed and the decision taken to maintain the spectrum cap at 120 MHz and to include the Advanced Wireless Spectrum band (that is, the 1700/2100 MHz band) effective 2017 March 24 (hereinafter "the 2017 Decision").

REVIEW
OF
MOBILE SPECTRUM HOLDING POLICY

- The 2017 Decision made provision for its review within six (6) months of the conclusion of the World Radiocommunication Conference in 2019 (WRC-19). However, based on the assessment of the World Health Organization (WHO) that the Coronavirus (COVID-19) was a pandemic and the Prime Minister's declaration that the whole Jamaica was a disaster area, the SMA recommended a delay in the review of the Policy. Subsequently, the Minister, acting on the recommendation of the SMA, has seen it fit to extend the period of review for the 2017 Decision for a further period of nine (9) months commencing 2020 May.

- Further, in light of the urgent and timely need to satisfy work from home and online school arrangements, and upon the recommendation of the SMA, the Minister, on review took the decision to suspend the Aggregate Spectrum Cap Policy on 2020 October 23. This decision took effect from 2020 October 30, and will remain in effect for three (3) months or such longer period as the Minister shall, in consultation with the SMA, determine.

C. Policy Goal, Principles and Objectives

Having considered the current state of affairs, including the need by existing operators for additional spectrum and the corresponding need to attract new players to the Information and Communications Technology ("ICT") sector, the former Minister, the Honourable Fayval Williams, directed the SMA, in letter dated 2020 July 31 that in reviewing the Spectrum Cap, in addition to the fair, efficient and effective management of the spectrum, thought should be given to the following Policy considerations:

i. ***ICT Policy Goal - Section 2.3(ii)***: Increased local and international investments. It is anticipated that the establishment of world-class high capacity ICT infrastructure and services across the island will facilitate increased investments in the country;

ii. ***ICT Policy Main Principles - section 2.4(i)***: ICT as a development instrument. The intention is that ICT will be utilized as a key enabler for human, social and economic development and improve the quality of life of all Jamaicans;

iii. ***ICT Policy Main Principles – Section 2.4(iv)***: Promotion of competition within the ICT sector; and,

iv. ***ICT Policy Objectives - section 4(b)***: Efficient spectrum planning, allocation and assignment in accordance with international best practices, protocols and standards. In so doing, the SMA is asked to take account of the need to:

    - facilitate the deployment of existing and emerging wireless technologies;
    - derive maximum benefit (from the allocation of the spectrum) and promote development; and,
    - attract investment.

D. General Spectrum Holdings Rules/Policy

Spectrum rules or policies primarily in the form of spectrum caps have been introduced in telecommunication markets from the 1990s in order to bolter competition, and to promote innovation as well as efficient use of the spectrum. The instrument proposed in this document is a spectrum screen. A spectrum screen, *inter alia*, is used to maintain and to further bolster competition in the marketplace.

Spectrum Cap

Already in existence in Jamaica since 2013 is an aggregate spectrum cap, which relates to the maximum amount of spectrum that any operator is allowed to hold, in aggregate, within the following bands: 700MHz, 850MHz, 900MHz, 1800MHz, 1900MHz, and 1700/2100MHz (AWS Band). Internationally, as mentioned before, the imposition of spectrum caps has been introduced from the 1990s in an effort to help to ensure the development of effective competition in mobile markets by providing new entrants access to sufficient spectrum resources and to preclude spectrum hoarding. The proposal is to switch to a spectrum screen at this time.

Spectrum Screen

Spectrum screen (screen) acts as a benchmark to determine reasonable levels of spectrum holdings. The screen as proposed by the SMA considers the total spectrum suitable and available for commercial mobile services and establishes a trigger point at which the SMA will conduct a more detailed competitive analysis for assignment. Therefore, mobile service providers will be able to freely acquire spectrum up to the predetermined threshold, after which, each transaction will be evaluated on a case-by-case basis.

E. International Market Trends

Spectrum holding policies and rules continues to be used as an ex-ante means to implement competition policy in mobile communications markets, to help ensure that no single mobile operator, or a very small number, can acquire all or almost all spectrum on offer either at the time of initial spectrum awards or in subsequent mergers of, or deals between operators[1]. Below are a few examples implemented internationally.

Average Spectrum Holdings and Spectrum Caps in Selected Countries - 2008

Country / Region	Spectrum Holdings per Operator in MHz
EU Average	**92.6 MHz**
United Kingdom	**82.2 MHz**
Germany	**65 MHz**

[1] ITU Regional Training Workshop on "Spectrum Management: Strategic Planning and Policies for Wireless Innovation" – Presenter Jan Verduijn, 2019 December 1-5.

More Recent Spectrum Caps: 700, 800, 900, 2500 MHz Bands[2]

Country, Regulator and Frequency Band	Cap	Maximum spectrum permitted
United Kingdom, Ofcom - 800 MHz and 2.6 GHz Auction	cap on spectrum awarded and cap on total spectrum holdings by operator	maximum of 2x27.5 MHz of sub-1 GHz spectrum and 2x105 MHz of mobile spectrum in total (2x132.5 MHz).
Republic of Ireland, ComReg – 800, 900 and 1800 MHz Band Auction	Cap for 1800 MHz band to avoid one operator acquiring rights to entire 1800 MHz band, which would adversely affect downstream competition	Existing cap for spectrum below 1.0 GHz of 2x20 MHz confirmed. Combined limit of 2 x 50 MHz on total spectrum any one bidder could be awarded in the joint auction
United States	Not recently used spectrum caps to promote competition. However, US Department of Justice decision denying AT& T and T-Mobile merger in 2011 noted the combined would be detrimental to completion	

Source: ITU Regional Training Workshop on "Spectrum Management: Strategic Planning and Policies for Wireless Innovation"

United States

Spectrum Caps were introduced in the United States at a time when the level of competition that existed, if any, was in the form of a duopoly. Subsequently, with the mobile market becoming more competitive, the Federal Communications Commission (FCC) eliminated, 'per se', its limit on the aggregation of Commercial Mobile Radio Services (CMRS) spectrum effective January 1, 2003. In the alternative, some carriers requested that the FCC implement a spectrum screen that would trigger increased review of certain long-form auction applications for anticompetitive effects, similar to the screen applied to merger and acquisition transactions. As such, on 2014 May 15, the FCC developed Mobile Spectrum Holdings Rule, which included a screen with a one third (1/3) or more threshold for suitable and available spectrum in a given market.

United Kingdom

Notwithstanding that the UK telecoms market generally operates well with ongoing innovation and relatively low prices compared with other markets internationally, the importance of maintaining strong competition was noted, and so, certain detrimental outcomes of a spectrum auction must be avoided, such as a result that sees very asymmetrical shares of spectrum among operators. As such, in 2019, aligned with the trend whereby regulators have sought to introduce spectrum caps to prevent a situation like this from arising, Ofcom too proposed to impose a cap of 37% on the total proportion of spectrum an operator may hold for mobile services. This is

[2] ITU Regional Training Workshop on "Spectrum Management: Strategic Planning and Policies for Wireless Innovation" – Presenter Jan Verduijn, 2019 December 1-5.

equivalent to 416MHz of spectrum and would limit the amount of spectrum that EE could acquire during the award to 120MHz, while Vodafone would be limited to acquiring a further 190MHz, and Three would be limited to acquiring 185MHz. This is the same cap that Ofcom originally set during the previous auction in 2018, but some of EE's competitors may still feel that the operator is not restricted enough.[3]

Trinidad and Tobago

Similar to other National Regulatory Agencies (NRAs), regionally within the Caribbean, the Telecommunications Authority of Trinidad and Tobago (TATT) in its **Spectrum Plan for the Accommodation of Public Mobile Telecommunications Services[4] document** has instituted the following in-band spectrum caps;

Frequency Bands	In-band Cap	Total
700 MHz	2 x 12 MHz	24 MHz
850 MHz	2 x 5 MHz	10 MHz
1900 MHz	2 x 20 MHz	40 MHz
AWS	2 x 15 MHz	30 MHz

Of note as well is that TATT has also implemented an aggregate spectrum cap, totaling 50 MHz for broadband wireless services, in the following bands, 2.3, 2.5, and 3.5 GHz bands. This means that a Licensee who is assigned spectrum blocks in 2.3 GHz, 2.5 GHz and 3.5 GHz bands shall not exceed the total Spectrum Cap of 50 MHz. Individually, there is also a band specific cap of 30 MHz for the 2.3 GHz and 50 MHz for the 2.5 and 3.5 GHz.

F. Local Market Assessment

As noted previously, one of the primary purposes of a spectrum cap is to bolter competition in the market. With this in mind, the SMA sought to collaborate with the FTC, the local authority on competition, in examining the competitive state of the mobile industry in Jamaica. In conducting the assessment, the FTC benefitted from information provided by the SMA, the Office of Utilities Regulation (OUR), Digicel (Jamaica) Limited ('Digicel'), and Cable and Wireless Jamaica Limited (trading as 'FLOW'). The FTC completed its report, "***Assessment of Competition in the Mobile Telecommunications Market***" on 2020 November 2.

The conclusions (**see Annex 1 for complete report**) arrived at by the FTC on the telecommunications market are as follows:

[3] OFCOM Addresses possible competition concerns by limiting the amount of spectrum operators can acquire in auctions – by Sarah McBride, 2019 January 25

[4] https://tatt.org.tt/Portals/0/PMTS%20S.pdf

REVIEW
OF
MOBILE SPECTRUM HOLDING POLICY

- The regulatory environment in which telecom services are offered in Jamaica is more conducive to competition now, than it was in the competitive period prior to Digicel Jamaica's acquisition of Oceanic Digital Jamaica in 2011.
- Adverse competitive effects arising from unilateral conduct is no more likely now, than it was in the competitive period prior to Digicel Jamaica's acquisition of Oceanic Digital Jamaica in 2011.
- The FTC's assessment was inconclusive on the prospect for adverse competitive effects arising from coordinated conduct.
- The FTC's overall conclusion is that while the telecoms market in Jamaica is competitive, the sustainability of this environment is fragile given that only two operators serve the market. Digicel's acquisition of Oceanic Digital Jamaica in 2011 significantly lessened competition in the telecoms market in Jamaica. Subsequent market events helped to place the market along a trajectory of recovery. The period of recovery is almost complete as the market is just about as competitive presently as it was immediately prior to the acquisition. If policymakers are to maintain, if not consolidate, these gains, then policy must be implemented to facilitate competitive entry thereby limiting the scope for coordinated conduct.

With regards to the scope for safeguarding competition, the FTC had this to say:

i. While there is no significant concern for adverse competitive effects arising from unilateral conduct, the market remains vulnerable to the vagaries of coordinated conduct. Concerns for anticompetitive effects arising from coordinated conduct are tempered presently by the observed easy conditions of entering the market.

ii. Going forward, the competitive environment presently observed in the market is considered to be fragile as the society transitions to the new normal occasioned by the COVID-19 pandemic. One consequence of the pandemic is a significant non-transitory increase in the demand for mobile telecommunication services. This means that mobile telecoms operators are likely to increase their derived demand for mobile spectrum in the immediate future. If the spectrum assignment is not carefully managed, there is a risk that conditions of entry may no longer be easy if the available spectrum—in quantum or frequency, become insufficient for competitive entry.

iii. As managers of mobile spectrum, the SMA has a crucial role in safeguarding competition.

iv. The FTC outlined a dual use of pricing & spectrum cap policies in promoting competition.

v. The FTC looked at the benefits of spectrum caps and the reduction of spectrum prices to assist operators in expanding services.

REVIEW
OF
MOBILE SPECTRUM HOLDING POLICY

In the FTC's summary and recommendation, the following were cited:

a) The main conclusion of this study is that the mobile telecommunication market is competitive. In the absence of the easy conditions of entry, the competition in this market would be highly susceptible to coordinated conduct.

b) The anticipated increased demand for mobile telecommunication services could make it more difficult for future entry to occur if the mobile spectrum is not properly managed.

c) The SMA, with oversight responsibility for the assignment of mobile spectrum, has a singular opportunity to safeguard the competition in the mobile telecommunication sector by striking the appropriate balancing between (i) preserving the ease at which entry of a third operator; and (ii) allowing incumbents to meet the increased demand for mobile telecommunication services.

d) Based on the above, the FTC recommends:
   - Spectrum should be assigned to each operator in the customary manner up to the assignment of 33% of the assignable spectrum managed in Jamaica. Requests for assignment between 33% and 37% should be approved by the SMA on a case by case basis; and,

   - The Minister with responsibility for Telecommunications should consider implementing the recommended revisions to the pricing of spectrum in Jamaica.
     Note: See Annex 1, for the complete report.

G. World Radiocommunications Conference 2019 (WRC-19)

The International Telecommunication Union (ITU) world radiocommunication conferences (WRC) are held every three or four years, and are mandated to review, and if necessary, revise the Radio Regulations, the international treaty governing the use of radio-frequency spectrum and satellite orbit resources. This process involves extensive studies and preparatory discussions among stakeholders (equipment makers, network operators, regulators, and users of the spectrum) at national, regional and global levels. The decisions of the conferences are agreed by the ITU Member States and applied in all 193 countries of the Union.

WRC-19 identified (allocated) additional globally harmonized (millimetre wave) frequency bands for International Mobile Telecommunications (IMT), including IMT-2020 (otherwise known as 5G mobile). In total, **17.25 GHz** of spectrum has been identified for IMT by the Conference, in comparison with 1.9 GHz of bandwidth available before WRC-19. Out of this number, 14.75 GHz ***(24.25-27.5 GHz, 37-43.5 GHz, and 66-71 GHz)*** of spectrum has been harmonized worldwide, reaching 85% of global harmonization. In Region 2 where Jamaica is located, in addition to the globally harmonized bands, the 47.2 – 48.2 GHz is also allocated for 5G. The 45.5-47 GHz is not allocated for 5G in Region 2.

REVIEW
OF
MOBILE SPECTRUM HOLDING POLICY

H. Spectrum Availability

AUDIT OF MOBILE SPECTRUM							
FREQUENCY BANDS WITHIN THE SPECTRUM CAP							
Band (MHz)	**Assignable (MHz)**	**Assigned (MHz)**	**Available (MHz)**	**Duplex**	**Available Assignments (MHz)**	**3GPP Bands**	**Notes**
700	74	30	24	FDD	2x2 2x10	Band 12 Band 13	**20 MHz is '***reserved***'** for GoJ use for Public Protection Disaster Recovery (PPDR).
850	26	20	6	FDD	2x3	Band 5	The 2 x 3 MHz in the 850 MHz overlaps in the 900 MHz hence only one can exist.
900	39	20	19	FDD TDD	2x3 13	Band 8 Band 8	
1800	105	40	65	TDD	60	Band 3	Due to the overlap of portions of the 1800 and 1700/2100 MHz bands, assignment in one impacts the other. That is, increased assignment in one reduces the other.
1900	120	70	50	FDD	2x25	Band 2	
1700/2100	120	60	60	FDD	2x5 2x25	Band 66	Due to the overlap of portions of the 1800 and 1700/2100 MHz bands, assignment in one impacts the other. That is, increased assignment in one reduces the other.
			140	FDD	2x70		
			73	TDD	73		

BANDS OUTSIDE THE CURRENT SPECTRUM CAP			
Bands (GHz) / (MHz)	**Assignable (MHz)**	**Assigned (MHz)**	**Available (MHz)**
1500 MHz	90	0	90
25 GHz	3250	0	3250
37 GHz	6500	0	6500
43 GHz	1000	0	1000
66 GHz	5000	0	5000
TOTAL	**15840**	**0**	**15840**

REVIEW
OF
MOBILE SPECTRUM HOLDING POLICY

I. Proposed Spectrum Holdings Policy for Jamaica

Cognizant of the changes brought about in the market place by the onset of the Coronavirus (COVID-19), and bearing in mind the need to safeguard competition by preserving the opportunity for new entry, which is align with the policy considerations, the following spectrum holdings policy for Jamaica is being proposed:

1) Removing the spectrum cap and utilizing a spectrum screen for assignments above 120 MHz of spectrum in the listed frequency bands: 700MHz, 850MHz, 900MHz, 1800MHz, 1900MHz, and 1700/2100 MHz (AWS Band); and,

2) A 30% in-band Screen on all other suitable and available bands allocated for mobile services, (1500 MHz, 25 GHz, 37 GHz, 43 GHz, and 66 GHz, …etc.).

Spectrum Screen at 120 MHz for the Bands Listed Above

The primary motivating factors influencing the spectrum screen are, *inter alia*: the necessity to have spectrum available for new entrant(s) to the market, to ensure equity in the mobile market, and, the need to maintain competition in the market. Cognizant of the limited nature of the spectrum, the SMA took under advisement, as articulated by the FTC, the need for appropriate balancing between (i) preserving the ease at which a third operator may enter the market; and (ii) allowing incumbents to meet the increased demand for mobile telecommunication services.

The SMA noted that low band or sub-1 GHz mobile access spectrum is a scarce resource globally. Additionally, the SMA recognizes that certain bands, for example 1900 MHz, enjoy a bit more economies of scale than others, as all bands are not equal. Therefore, whilst taking on board the FTC's recommendation for the use of a screen, however, not for it to be at a trigger point of 33% of the total mobile spectrum suitable and available for use, the SMA's proposal, as mentioned above, is aimed at preventing results that see very asymmetrical shares of spectrum among operators. The SMA is cognizant of the fact that if a prospective new entrant is to compete effectively in the market, there will be the need for low band spectrum as well as some of the more mature bands that are currently listed in the cap. The SMA's aim is to ensure that all operators are given equal opportunity to compete.

Based on the Audit of Mobile Spectrum table in the previous section, a prospective third operator will have access to 120 MHz of spectrum from the bands currently under the cap as follows;

1. 2 x 12 MHz (24 MHz) of spectrum in the 700 MHz band;
2. 2 x 3 MHz (6 MHz) of spectrum in the 850 or 900 MHz band;
3. 2 x 25 MHz (50 MHz) of spectrum in the 1900 MHz band; and,
4. 2 x 30 MHz (60 MHz) of spectrum in the 1700/2100 MHz band.

A total of 140 MHz of spectrum in the mobile bands.

If the spectrum screen was at a trigger of 33% of total available spectrum, the possibility exists that there would be insufficient "preferred" spectrum (spectrum currently in the cap) for the new entrant to effectively compete. This would be inconsistent with the GoJ's policy considerations. Further, with an additional 20 MHz available after a prospective new entrant reaches 120 MHz, it is best to make that spectrum available for use as well.

In-band Screen

As noted in the previous section, there are several mobile bands with suitable and available spectrum outside of the bands currently listed under the aggregate cap. The SMA, in looking ahead, aims to ensure that the spectrum may be shared equitably. As such the recommendation in licensing these bands are to utilize in-band screens. The spectrum screens will consider the total amount of spectrum suitable and available for mobile broadband held in each of the listed band by a wireless provider. The screen may trigger a more detailed competitive analysis by the SMA. As proposed, the trigger would occur when an operator holds 30% or more of the available spectrum in any of the listed frequency band. Transactions thereafter will would be evaluated on a case-by-case basis. Notably as well is the opportunity for operators to access said spectrum to aid in meeting spectrum demands.

J. Next Review Period for The Spectrum Holdings Policy

World Radiocommunication Conferences (WRCs) are held every 3 – 4 years to allocate spectrum for use by different services. It is the SMA's opinion that a review of the spectrum holdings policy may be best served if conducted within 6 months after the conference to take advantage of the deliberations and decisions of said conference. This would allow the SMA to make recommendations to the spectrum holdings policy in line with global standards and Jamaica's own international obligations, and to ensure that the ICT policy considerations are met.