

TELECOMMUNICATIONS REGULATORY
COMMISSION
VIRGIN ISLANDS

**SPECTRUM AWARD 2015 -
CONSULTATION REPORT DOCUMENT**

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1. Introduction¹

- 1.1. This Report summarises the issues raised in response to the Commission's Spectrum Award 2015 Consultation Document² (Consultation) the Commission's view on matters raised in the responses and the action the Commission will take as a result including where amendments have been made to the Invitation to Apply (ITA).
- 1.2. This Report is being published at the same time as the Spectrum Award 2015 ITA. The ITA provides the definitive version of the rules for the Award. Where there is any difference between this report and the ITA, the ITA will take precedence.
- 1.3. Written responses were received from CCT, Digicel and LIME. These are published on the Commission's web site.
- 1.4. This document follows the structure of the Spectrum Award 2015 Consultation Document. A summary of the questions is shown at Appendix A.
- 1.5. In this document the term Act refers to the Telecommunications Act 2006. Award refers to the Spectrum Award 2015.

2. The need for a spectrum award

- 2.1. The responses to the consultation echo the interest in acquiring additional spectrum expressed by the three mobile operators during initial discussions with the Commission. Responses indicate a strong interest in 700 MHz, 1900 MHz and the US AWS-1 allocations. There was no interest in the 1800 MHz and 2100 MHz allocations. Only CCT expressed an interest in the 2500 MHz band.
- 2.2. Given the interest expressed by operators for the available spectrum the Commission will issue the ITA and proceed with the Award.

3. Overview of approach to the Award

- 3.1. The Consultation proposed that only the holders of Unitary Licenses that operate mobile networks in the VI should be eligible to take part in the Award (see Question 1). Two existing mobile operators explicitly agreed with this position and no respondent raised an objection to it. Therefore the Commission will only accept applications from holders of Unitary Licenses that operate mobile networks in the VI.
- 3.2. All respondents expressed demand for spectrum. Given the potential substitutability between uses of the bands in which interest has been expressed, the need for efficient use of spectrum and minimisation of the time and cost of awarding spectrum, the Commission confirms that it will proceed with a single common process for the Award. Given that there is likely to be competition for spectrum

¹ Disclaimer: All references to frequency assignments, allocations or similar terms in this document should not be interpreted as granting or confirming any legal right of access to the frequencies mentioned (and in most cases should be considered as simple references to the actual declared usage of spectrum), except where such a right is given in a frequency authorisation issued by the Commission. This document does not constitute legal, technical or commercial advice; the Commission is not bound by this document and may amend it from time to time. This document is without prejudice to the legal position or the rights and duties of the Commission to regulate the market generally.

² published on 30th June 2015

based on the expressions of demand, the Commission confirms that it will award the spectrum using a “comparative evaluation” of non-money bids.

- 3.3. Two respondents agreed with the use of a comparative evaluation (see Question 2), while another raised concerns that the format of the proposed Award has embedded characteristics of a spectrum auction into the process by including a performance bond. The Commission disagrees with the assertion that the Award design resembles a spectrum auction but agrees that there is potential for the performance bond as stated to be used to gain additional points by offering a performance bond in excess of what might be reasonable for the Commission to call upon as a penalty for non-compliance with other additional commitments.
- 3.4. In the ITA, the Commission has introduced a cap on the performance bond that may be offered. Any performance bond in excess of the cap will not attract a higher score.

4. Spectrum to be included in the Award

- 4.1. Initial discussions with operators indicated that there appeared to be strong interest in the 700 MHz, band and some interest in the 1900 MHz, AWS-1 and 2500 MHz bands. Little or no interest was expressed in initial discussions in the 450 MHz, the 1800 MHz and the 2100 MHz bands. This position was confirmed by respondents to the Consultation.

450 MHz band

- 4.2. No interest was expressed in this band and the Commission confirms it will not be part of the Award (see Question 3).

700 MHz band

- 4.3. All operators responding expressed interest in the 700 MHz band and the Commission confirms that it will be part of the Award (see Question 4).

Responses from operators

- 4.4. All operators disagreed with the proposed packaging for the 700 MHz band.
 - CCT stated that it believed that there should be only two packages offered because a smaller package of 2x6 MHz would have lower value and an LTE based service requires at least 2x10 MHz. Although CCT did not propose a specific alternative we assume that their preference would be for the Commission to offer one package comprising the A, B and C blocks in the lower band and a second package of C1 and C2 in the upper band.
 - Digicel stated that regarding the A/B package, an operator can have “no use of the spectrum packaged as such” but offered no reason why. It favoured packaging that facilitates B and C in the same package because it represents Band 17 and is therefore prime spectrum.
 - LIME stated that with regard to the A, B and C blocks, LTE has only been deployed with carrier sizes of 10 MHz or greater and that the device ecosystem available to LIME is only able to use 10 MHz carriers comprising blocks B and C. LIME further states that:
 - Band 17 mobiles are filtered for an entire 10 MHz channel and are not able to use a subset of Band 17. They would cause interference into the adjacent block if they attempted to use half the band.
 - No handsets are available to use blocks A and B simultaneously.

- 4.5. Although all of the VI operators appear to be in agreement regarding their preference to maintain blocks B and C within the same package, we note that none of the operators considered the outcome from the perspective of an operator that obtains the weakest package of the three. It is important that the Commission includes such consideration when considering responses to the consultation.

The number of packages to be offered

- 4.6. The Commission does not agree that the number of packages offered should be two. The Commission has acknowledged that one package will inevitably have less utility than the other two packages, nevertheless it may still be used to offer LTE-based services to VI consumers and visitors from the US. The Commission has also made provision within the Award rules for the successful applicant for the smaller package to be assigned their preferred lot in the 1900 MHz and AWS-1 bands. Using inter-band carrier aggregation to be included in 3GPP release 12, the operator with the smaller 700 MHz package should be able to offer its customers higher bandwidth services in due course.
- 4.7. The Commission continues to believe that offering three packages in the 700 MHz bands and three packages in the higher frequency bands is the best way of promoting a competitive environment in the VI.

Technical issues raised by the operators

- 4.8. The two technical issues raised by LIME are discussed below:
- Ability of Band 17 mobiles to work on a single 2x6 MHz block – the frequency and channel characteristics of LTE mobiles is addressed by 3GPP specification TS 36.101³. This stipulates that Band 17 mobiles must be capable of supporting both 5 and 10 MHz channel bandwidths. Therefore any 3GPP compatible Band 17 handset should be able to use a subset of Band 17 (i.e. a single B or C block).
 - Availability of devices that will operate over Blocks A and B – these blocks form part of Band 12. TS 36.101 further stipulates that Band 12 mobiles must be capable of supporting both 5 and 10 MHz channel bandwidths therefore and a device compatible with Band 12 should be able to utilise any single or contiguous pair of blocks simultaneously as a subset of Band 12. However, it is less clear whether a base station supporting Band 17 and Band 12 (using MFBI) will be able to support a channel using A and B simultaneously.
- 4.9. It should be noted that precedent has been set by Industry Canada which awarded lower 700 MHz spectrum as three discrete blocks. We also note that AT&T does not hold both the B and C blocks in every Cellular Market Area (CMA) of the US. In some areas it holds an individual B or C block and is able to provide LTE based services in those areas.
- 4.10. Therefore the Commission does not consider that there are technical impediments to the packaging proposed in the Consultation Document but there is uncertainty regarding the practical ability to deliver high data rate services using blocks A and B whilst retaining the ability to support Band 17 mobiles.

Handset and device ecosystem issues

- 4.11. The main influences on the handset and device ecosystem in the 700 MHz are the networks operated in the US by the major mobile operators AT&T, T-Mobile and Verizon. Both AT&T and Verizon offer a wide range of handsets and devices for their networks based on blocks B/C and C1/C2 respectively. However in recent events:

³ 3GPP TS 36.101 - LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception.

- T-Mobile has launched LTE using Block A in the US and currently has around 11 phones⁴ and tablets able to support Band 12. T-Mobile says it is working with all its handset partners to ensure all new devices launched in 2015 are Band 12 compatible⁵.
- AT&T is required by FCC order 13-136 to:
 - Implement Multi-Frequency Band Indicator (MFBI) software within its network by September 30, 2015. From this rollout date onwards its LTE network is to be able to support both Band 17 and Band 12 mobiles.
 - In the first 12 months following the rollout date, ensure that 50% of new device models are Band 12 compatible.
 - In the second 12 months following the rollout date, ensure that 75% of new device models are Band 12 compatible.
 - After Sept 30 2017, ensure that 100% of new device models are Band 12 Compatible.

4.12. From this we conclude that there is a reasonable ecosystem of Band 12 handsets and devices that includes Alcatel, HTC, LG, Nexus and Samsung devices. We expect the number of Band 12 compatible devices to increase rapidly as AT&T introduces new models to its product range.

Comparison of packaging options from the consumer perspective

4.13. To compare the current proposal and the alternative proposed by operators we must first consider how each satisfies the needs of consumers in the VI. This can be considered from the perspective of coverage, access to high speed data services and a having choice of a wide range of handsets and devices as shown in Table 1. The impact on visitors roaming from the US is also shown.

Table 1: Relative strengths of the two proposals from a consumer perspective

	Current proposal Lower 700 MHz band packages as Blocks A/B and Block C	Alternative proposal Lower 700 MHz band packages as Blocks A and Block B/C
Coverage	All of the packages carry the same minimum service requirements obligation therefore coverage can be expected to be equivalent.	
Access to high data rate services	Subscribers will have access to high data rate services from two operators.	Subscribers will have access to high data rate services from two operators.
Handset and device ecosystem	A good range of devices for all three packages. On one of the two high data rate networks, a smaller range of devices will be available to access high data rates over the next two years.	A good range of devices for packages P2 and P3. The weak package (P1) will have a smaller range of devices in the over the next two years.

⁴ <http://www.tmonews.com/2015/05/list-all-current-t-mobile-700mhz-band-12-lte-compatible-smartphones/>

⁵ <http://newsroom.t-mobile.com/issues-insights-blog/uncarrier-8-blog.htm>

	Current proposal	Alternative proposal
	Lower 700 MHz band packages as Blocks A/B and Block C	Lower 700 MHz band packages as Blocks A and Block B/C
Ability to roam in the VI from the US	All US visitors will be able to roam onto VI networks. AT&T subscribers with Band 17 only mobiles will not be able to access high data rate services.	All US visitors will be able to roam onto VI networks and access high data rate services.

4.14. It can be seen from Table 1 that VI consumers are better off with the Alternative proposal, in that they will have a wide range of device options immediately that will be able to access high data rate services. In addition, all visitors from the US will be able to access high data rate services, whereas under the Current proposal, some AT&T subscribers will not be able to access high data rate services.

Comparison of packaging options from the mobile network operators' perspective

4.15. From the network operators' perspective, we must compare each package under the two proposals. In both options Package P3 is the same so Table 2 compares packages P1 and P2 under each option.

Table 2: Relative strengths of the two proposals from an operator perspective

	Current proposal		Alternative proposal	
	P1 (blocks A/B)	P2 (block C)	P1 (block A)	P2 (blocks B/C)
Package size	2x12 MHz	2x6 MHz	2x6 MHz	2x12 MHz
Coverage		Lower bandwidth likely to mean more sites and network capex to achieve the minimum service requirements.	Lower bandwidth likely to mean more sites and network capex to achieve the minimum service requirements.	
Provision of high data rate services	Can deliver high data rate services using Band 12 mobiles.	Limited to lower data rate services	Limited to lower data rate services	Can deliver high data rate services using Band 12 or Band 17 mobiles.
Handset and device ecosystem	A good range of devices including Band 12 and 17 devices.	A good range of devices including Band 12 and 17 devices.	A more limited range of Band 12 devices in the short term.	A good range of devices including Band 12 and 17 devices.
Ability to obtain roaming revenues from the US mobiles	Can provide roaming to T-Mobile and AT&T customers. AT&T customers limited to lower data rate services in the short term.	Can provide roaming to T-Mobile and AT&T customers. All roamers limited to lower data rate services	Can provide roaming to T-Mobile customers and increasing numbers of AT&T customers over the next two years. All roamers limited to lower data rate services	Can provide roaming to T-Mobile and AT&T customers. All roamers are able to access high data rate services.

- 4.16. It can be seen from Table 2 that the mobile operator that obtains the larger package is likely to be better off under the Alternative proposal; it would be able to support high data rate services in the short term with a wide range of handsets and devices. It would also be able to provide a better service to all AT&T roamers.
- 4.17. The mobile operator that obtains the weakest package is likely to be worse off under the Alternative proposal. It is limited to a smaller range of handsets and devices in the short term and would be limited in its ability to access AT&T roaming revenues.
- 4.18. However these effects are alleviated to some extent by the following:
- We would expect the range of handsets and devices to increase rapidly as AT&T is obliged to include more Band 12 devices within its product portfolio.
 - Its ability to access AT&T roaming revenues using the band is likely to improve as device churn in the US migrates AT&T customers to Band 12 compatible devices.
 - Roaming to AT&T customers for LTE can be provided using spectrum in the AWS-1 band albeit to a lesser degree of coverage. The Award rules ensure that the holder of the weakest 700 MHz package is able to choose an AWS-1 package in preference to 1900 MHz.

Conclusion on 700 MHz packaging

- 4.19. The Commission considers that either of the two proposals is technically feasible to implement although there is uncertainty under the current proposal regarding the ability of P1 to support high data rate services and Band 17 mobiles simultaneously. The alternative proposal is marginally better from the perspective of VI consumers and visitors from the US.
- 4.20. From the operators' perspective, the Commission considers that the current proposal is marginally better than the alternative in that it equalises the usefulness of the spectrum packages as far as possible. The substantive disadvantage of alternative proposal is that the weakest 700 MHz package is likely to have reduced access to AT&T roaming revenues in the short term, but we note that this is mitigated by the availability of AWS-1 spectrum in the award.
- 4.21. Therefore, on balance, given the benefits to VI consumers and the strong preference for coupling blocks B and C expressed by the operators themselves, the Commission has decided to adopt the following packages for the 700 MHz band in the Spectrum Award 2015:
- Lot P1: Block A
 - Lot P2: Blocks B and C
 - Lot P3: Blocks C1 and C2.

1800 MHz, 2100 MHz, 1900 MHz and AWS bands

- 4.22. All operators responding expressed interest in the 1900 MHz and AWS-1 bands (see Question 6). Little or no interest was expressed in the 1800 MHz and 2100 MHz bands. The Commission therefore confirms that 1900 MHz and AWS-1 spectrum will be part of the Award and that 1800 MHz and 2100 MHz will not be part of the Award.
- 4.23. In the Consultation the Commission set out three possible combinations of the available 1900 MHz and AWS-1 spectrum (Options A, B and C) and based on initial responses from operators, proposed that there would be one 2x15 MHz lot of 1900 MHz spectrum and two 2x15 MHz lots of AWS-1 spectrum. Digicel and Lime in their responses agreed with this proposal (see Question 7).

- 4.24. CCT, in its response, stated a concern that, in its view, the packaging appears to be structured to facilitate one of its competitors to continue its current use of unallocated 1900 MHz spectrum to operate a public telecommunications network in the British Virgin Islands. For the avoidance of doubt the Commission has structured the award to ensure the most efficient use of spectrum given the demand expressed by operators. In doing this it has considered the utility likely to be delivered by both the 1900 MHz and AWS-1 spectrum. The Commission has not made any proposal based on the existing operations of or the preferences of one operator.
- 4.25. While some agreement was expressed by operators for the need for a new provision in the Frequency Authorisation that requires operators to realign their spectrum holdings should they be requested to do so by the Commission (see Question 8), it is understood that there are concerns about the potential refarming of the 1800 MHz allocation for AWS-1 purposes.
- 4.26. The Commission notes these concerns but does not believe they are sufficient for it to adopt a different approach to what it has already set out. The Commission has a duty to ensure efficient use of spectrum in the VI and the realignment of spectrum where required is one of the measures the Commission may need to meet this objective. The Commission therefore confirms that the Frequency Authorisation will contain a provision requiring operators to realign spectrum if required to do so. A question was also raised regarding the treatment of spectrum released as a result of realignment. For the avoidance of doubt any spectrum released as a result of realignment will be returned to the Commission and its award will be the subject of a future consultation.

2500 MHz band

- 4.27. The Consultation noted that initial discussion had shown that the 2500 MHz band is of interest to one operator and that there may be interest from other operators at some time in the future. This position was confirmed in the consultation responses (see Question 9).
- 4.28. The Consultation also noted the need for formal cross border coordination to resolve interference issues at 2500 MHz originating from the USVI. One operator disagreed with the need for such cross border coordination but failed to present the necessary analysis to characterise the interference and make proposals for the mitigation measures that might be required. The Commission remains of the view that further investigation of the interference problem is required to establish the potential to use the 2500 MHz band and to develop the measures required to mitigate any issues identified. This work would be necessary to ensure that spectrum offered in the band would offer a good quality of service.
- 4.29. In light of the lack of a pressing need for this spectrum in the VI and the requirement to deal with interference issues in the band, the Commission confirms its decision not to include 2500 MHz spectrum in the Award.

5. Award design

Overview of the Award process

- 5.1. The Commission has noted the requests from operators to describe the decision process for the 2015 Spectrum Award. The Commission has set out the decision process below, which is based on the Act and other relevant documentation. The process is documented in the ITA.
- The Commission shall evaluate Applications which have been submitted in accordance with the Rules contained in the ITA and which have not been rejected by the Commission in accordance with the process outlined in Section **Error! Reference source not found.** of the ITA.

- The Commission’s Executive will make a recommendation to the Board of the Commission regarding the successful Applicants and the Frequency Authorisations to be granted. The Commission Board shall decide whether to accept the recommendation.
- The Board of the Commission will notify and advise the Minister for Communications and Works of their decision in advance of notification to Applicants.

Comparative evaluation process

5.2. The Commission proposed a comparative evaluation process⁶ for the spectrum Award (see Question 10). In their responses two operators agreed with the Commission’s proposed approach while another did not explicitly disagree with it. On this basis the Commission confirms that it will proceed with the approach it set out in the Consultation. Namely that applicants will be asked to provide a single set of Additional Commitments, the assessment of which will establish a ranking of applicants and that Lots will then be assigned from the 700 MHz band in order of ranking according to applicants’ lot preferences. Lots from the 1900 MHz and AWS-1 bands will be assigned firstly to those that did not obtain a 700 MHz lot, secondly to the applicant that is assigned the weakest 700 MHz lot⁷, and thereafter in reverse order of ranking.

5.3. No respondent put forward an alternative method of assignment (see Question 11).

Spectrum caps

5.4. The Commission has proposed that a 60 MHz cap for spectrum below 1 GHz and an overall cap of 170 MHz be applied to mobile spectrum in the VI. These caps are in line with those set out in the Spectrum Management Framework (SMF). Operators, in their responses, raised concerns raised about the interpretation of the spectrum caps and their application. Specifically the treatment of Region 1 and Region 2 spectrum holdings and how the assessment of the cap would be made in each specific case (see Question 12).

5.5. The Commission notes the comments made by CCT in respect of the treatment of Region 1 and Region 2 spectrum and CCT’s argument that there should be two separate sub 1 GHz caps rather than a single cap. The spectrum management framework treatment of caps is based on a consideration of the likely overall supply of spectrum and the number of operators likely to be in competition for the spectrum. It did not distinguish between characteristics of spectrum other than the frequency range. The Commission does not believe that CCT has made any case for changing the approach to spectrum caps set out in the SMF (such a change would need to be the subject of a further consultation) and it will therefore apply the caps stated in the Consultation.

5.6. In respect of the interpretation and application of caps the Commission, having noted the comments made by operators, has agreed that there is a need for greater clarity of the requirements set out in the ITA. The ITA has been amended to specify how each of the sub 1 GHz and overall caps will be applied. This treatment is set out below. The definition of Existing Frequency Assignments used below is any spectrum in the VI that had been assigned to the Applicant either by the Commission or by the Government of the VI prior to the enactment of the Telecommunications Act, 2006 and is held by the Applicant at the Application Submission Date.

- Rule 2.5: Applicants for whom the sum of their Existing Frequency Assignments across all spectrum below 1 GHz in bands identified by the International Telecommunications Union (ITU) for IMT

⁶ See paras 5.8-5.12 of the Consultation.

⁷ Noting that under the revised packaging for the 700 MHz band, Block A (designated “P1” in the ITA) is considered to be the weakest lot.

Telecommunications Services and the quantity of spectrum in each bid for lots P1, P2 or P3 exceeds 60 MHz shall not be awarded such lots in the 700 MHz band unless they agree to the release of spectrum to the Commission from Existing Frequency Assignments such that the 60 MHz spectrum limit is not exceeded.

- Rule 2.6: Applicants for whom the sum of their Existing Frequency Assignments across all spectrum in bands identified by the International Telecommunications Union (ITU) for IMT Telecommunications Services and the quantity of spectrum in each bid for lots P1, P2 or P3 exceeds 170 MHz shall not be awarded such lots in the 700 MHz band unless they agree to the release of spectrum to the Commission from Existing Frequency Assignments such that the 170 MHz spectrum limit is not exceeded.
- Rule 2.7: Where Bids for 700 MHz band spectrum are compliant with Rules 2.6 and 2.8 and proposals for the release of spectrum where required are approved by the Commission, such bids are termed “Eligible 700 MHz Bids” in this ITA. Only Eligible 700 MHz Bids will be considered in the Evaluation of Applications stage of the Award.
- Rule 2.8: Applicants for whom the sum of their Existing Frequency Assignments across all bands identified by the ITU for IMT Telecommunications Services and each Bid for lots Q1, Q2 or Q3 and the corresponding category P lot (if any) that corresponds to that category Q lot Bid exceeds 170 MHz shall not be awarded that category Q lot spectrum unless they agree to the release of spectrum to the Commission from Existing Frequency Assignments such that the 170 MHz spectrum limit is not exceeded.
- Rule 2.9: Where Bids for 1900 MHz and AWS-1 band spectrum are compliant with Rule 2.7 and proposals for the release of spectrum where required are approved by the Commission, such bids are termed “Eligible 1900 MHz and AWS-1 Bids” in this ITA. Only Eligible 1900 MHz and AWS-1 Bids will be considered in the Evaluation of Applications stage of the Award.

5.7. In the ITA the Commission also makes clear that spectrum to be released to comply with the rules set out above will be the subject of undertakings to be agreed with operators.

Pre-qualification requirements

- 5.8. The Consultation set out a number of pre-qualification requirements for applicants to participate in the award. These include requirements for compliance with the Act, terms and conditions of licenses and frequency authorisations; and any other request for information. Applicants must also be compliant with the ITA rules and with the spectrum caps.
- 5.9. The Consultation set out the Commission’s proposals for minimum service requirements (see Question 13). Operators raised concerns with the requirement as it is currently set out and argued that the requirement for coverage using 1900/AWS-1 spectrum should be less stringent than that applied for 700 MHz spectrum. The basis of the argument is the relative propagation characteristics of the 700 MHz and 1900 MHz/AWS bands and the corresponding difference in network cost between a 700 MHz network and a 1900/AWS-1 network.
- 5.10. The Commission has considered these arguments and agrees that there is a material difference between meeting the minimum service requirement with 700 MHz spectrum and with 1900 MHz/AWS-1 spectrum. The Commission has therefore amended the requirement in the ITA to be as follows.

Guidance for Applicants – Minimum Service Requirements

The Authorisation Holder shall provide using the Authorised Spectrum, and thereafter maintain a telecommunications network that is capable of providing to users:

- *within 12 months of the Date of Issue*
- *to at least 90% of the population of each of the islands of Tortola, Anegada, Jost Van Dyke and Virgin Gorda*
- *where the Frequency Authorisation includes spectrum in the 700 MHz band to at least 95% of the population of each of the islands of Tortola, Anegada, Jost Van Dyke and Virgin Gorda*
- *a mobile telecommunications service with a sustained downlink speed of not less than 2 megabits per second when that network is lightly loaded*
- *at 90% of locations within any area of 100m by 100m.*

Evaluation criteria

- 5.11. The Commission proposed a range of evaluation criteria for the comparative evaluation. Two operators had no comment on the criteria (see Question 15).
- 5.12. CCT questioned the Commission’s decision not to provide preference for the locally owned operator. Having reviewed the Act and other relevant legislation and policies the Commission is of the view that there is no basis on which such a preference would be made.
- 5.13. No operator proposed changes to the criteria weightings set out in the Consultation (see Question 16).

Assignment Process

- 5.14. The Commission set out the process by which it will assign the 1900 MHz/AWS-1 spectrum in paragraphs 5.24 to 5.26 of the Consultation. There were no specific comments raised by operators to the proposals (see Question 17). However, responses from operators raised concerns regarding the use of spectrum for coverage and capacity purposes and the substitutability of 1900 MHz and AWS-1 spectrum.
- 5.15. The Commission has not made any distinction in the Consultation or the ITA between “coverage” and “capacity” spectrum and it believes it is not appropriate to do so given that there is a degree of substitutability of use between bands.
- 5.16. In the US operators have begun the process of refarming the 1900 MHz band for use with LTE and this is driving availability of LTE devices that support 1900 MHz. There are already devices available from Apple, Samsung and others and the range of devices is expected to increase rapidly as Verizon and T-Mobile refarm more of their 1900 MHz spectrum. Channel aggregation possibilities between 1900 MHz LTE and other LTE supporting bands will also increase in 3GPP Release 12.

Invitation to Apply (ITA)

- 5.17. Respondents raised a number of points on the draft ITA attached to the Consultation (see Question 18).
- 5.18. Note that the ITA has been amended to take account of the change to the 700 MHz packaging and the new definition of Lots P1, P2 and P3.

- 5.19. **Process for granting Frequency Authorisations.** Digicel questioned whether Clause 1.5 of the ITA made reference to the correct process for the granting of Frequency Authorisations. The Commission has reviewed this matter and has amended Clause 1.5 to refer to both the Act and the Telecommunications Code (Part 5) for the granting of Frequency Authorisations for the spectrum within the Award.
- 5.20. For the avoidance of doubt the Commission is the awarding body that will grant Frequency Authorisation for the Offered Spectrum. Frequency Authorisations will be granted in accordance with the Commission's powers under section 19 (c) of the Act, according to the procedures set out in the ITA and to the procedure outlined in the Telecommunications Code (Part 5) (Granting Frequency Authorisation (Interim Procedure)) Requirements, 2011.
- 5.21. **Spectrum fees.** The figure in the ITA has been amended to be consistent with the figure in the Spectrum Award 2015 Consultation.
- 5.22. **Release of spectrum – Clause 2.6 of the draft ITA.** Frequency Authorisations will not be granted unless and until there is agreement and release of spectrum in compliance with the spectrum cap. The text in the ITA has been updated to make the requirement clearer. See Sections 5.4 to 5.7 of this Report.
- 5.23. **Material changes to information in Qualification Documents – Clause 7.2 of the draft ITA.** The Commission has amended this clause to reflect the situation that the 3 day time limit for notifications cannot apply closer than 3 days to the grant of a Frequency Authorisation. The Commission has amended the text to say that "Provided, however, that if such change occurred later than three (3) days before the frequency authorisation grant date but before the frequency authorisation date, the Applicant shall notify the Commission forthwith"

Grant of Frequency Authorisations

- 5.24. Respondents raised a number of points on the draft Frequency Authorisation (see Question 19).
- 5.25. The draft Frequency Authorization referred to an "electronic communications network". This has been amended to say "telecommunications network".
- 5.26. **Definition of population coverage – Schedule B, Clause 7a of the draft Frequency Authorisation.** The Commission has considered the question raised by Digicel in respect of the definition of "population" and "population coverage". To be clear the Commission's intention is that the applicant should set out how it will meet the specified coverage requirement but that the definition of "population" and "population coverage" is not for the applicant to define.
- 5.27. **Regulatory framework and applicable laws.** The word "lawful" has been inserted between "any" and "instruction" in Clause 2.1.2.
- 5.28. **Construction of sites.** There was a request from a respondent to issue guidance on what the Commission intends with Clause 3.2.1b of the draft Frequency Authorisation. It should be noted that the Commission has certain responsibilities in relation to works and access to land under Part VI, Sections 30-33 of the Act. These responsibilities include coordinating with the Chief Planner and protecting the environment. The Commission therefore does not consider further guidance is required when the ITA is published. However, the Commission is always available to discuss planning issues with operators should problems arise.
- 5.29. **Quarterly reporting – Clause 3.3.2 of the draft Frequency Authorisation.** Concern was raised regarding the requirement for quarterly reporting to the Commission. The Commission believes this is not an onerous requirement and that the keeping of good records and regular reporting is essential for efficient spectrum management in the VI.

6. Licence conditions and spectrum fees

- 6.1. **Licence duration.** Respondents agreed Frequency Authorisations should be granted for a 15 year period (see Question 20).
- 6.2. **Use it or lose it.** Respondents agreed that Frequency Authorisations should not include a “use it or lose it” condition (see Question 21).
- 6.3. **Spectrum fees.** Respondents agreed that annual fees will be payable as a condition of the frequency authorisations and with the Commission’s proposals for the level of spectrum fees (see Question 22).

Appendix A: Summary list of questions

No.	Question
1	Do you agree that only the Unitary Licence Holders that operate mobile networks in the VI should be eligible to take part in the comparative evaluation process?
2	Do you agree that a comparative evaluation award process is the most appropriate in light of the demand for valuable spectrum?
3	Do you agree with the Commission's proposal not to include the 450 MHz band in the award? If not, please give reasons for your response.
4	Do you agree that the 700 MHz band should be included in this award? If not, please give reasons for your response.
5	Do you agree with the Commission's proposals for the packaging of the 700 MHz band? If not, please give your reasons and propose an alternative approach showing how it best meets the Commission's objectives in respect of competitive provision of high speed mobile services in the VI.
6	Do you agree that the 1900 MHz and AWS-1 bands should be included in this award? If not, please give reasons for your response.
7	Do you agree with the Commission's proposals for the packaging of the 1900 MHz and AWS-1 bands? If not, please give your reasons and propose an alternative approach showing how it best meets the Commission's objectives in respect of competitive provision of high speed mobile services in the VI.
8	Do you agree with the Commission's proposal for a new provision in the draft Frequency Authorisation that requires operators to realign their spectrum holdings should they be requested to do so by the Commission? If not, please give your reasons.
9	Do you agree with the Commission's proposal not to include the 2500 MHz band in the award? If not, please give reasons for your response and indicate how you think the spectrum should be packaged to address interference with the US VI in line with the objectives and timetable for this Award.
10	Do you agree that the proposed comparative evaluation process (described in paras 5.8 - 5.12 above) is most appropriate for assignment of spectrum in the 700 MHz, 1900 MHz and AWS-1 bands?
11	Do you propose an alternative method of assignment? Please justify such proposal in terms of the most efficient use of spectrum and other Commission objectives and the ease of implementation.
12	Do you agree that the spectrum caps of 60 MHz for an operator's holdings below 1 GHz and 170 MHz for all of an operator's spectrum holdings should be applied in this award? If not, please give your reasons.
13	Do you agree that minimum service requirements be applied to all spectrum blocks awarded?
14	Do you have any other comments on the minimum service requirements?

No.	Question
15	Do you have any comments on the evaluation criteria?
16	Do you propose any changes to the evaluation criteria weightings? Please justify such changes in terms of the Commission's objectives and the ease of implementation.
17	Do you have any comments on the Commission's proposals to assign lots in the 1900 MHz and AWS-1 as described in para 5.26?
18	Do you have any comments on the draft Invitation to Apply (ITA) that is published in a separate document?
19	Do you have any comments on the draft frequency authorisation that is appended to the draft ITA?
20	Do you agree that licences should have a 15 year duration? If not, please propose an alternative with reasons.
21	Do you agree that the Commission should not include a use it or lose it condition in licences?
22	Do you have any comments on the level of spectrum fees proposed by the Commission?

Glossary

Acronym	Meaning
AWS	Advanced Wireless Services
CMA	Cellular Market Area
ITA	Invitation to Apply
IMT	International Mobile Telecommunications
ITU	International Telecommunications Union
LTE	Long Term Evolution
MFBI	Multi-Frequency Band Indicator
SMF	Spectrum Management Framework
US	United States
VI	British Virgin Islands
3GPP	3 rd Generation Partnership Project – the body responsible for development of standards for LTE