



Telecommunications Decision 2012 – 7

700 MHz Spectrum Policy Decision

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**Turks and Caicos Islands
Telecommunications Commission**

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SUMMARY

In this Decision, the Turks and Caicos Islands (“TCI”) Telecommunications Commission (the “Commission”) establishes a licensing policy for the 700 MHz spectrum¹ band in TCI (the “700 MHz Policy”).

The Commission's 700 MHz Policy takes into account the policy objectives of the Government's Telecommunications Policy for the Turks and Caicos Islands 2003, the Telecommunications Ordinance 2004, the Frequency Management Regulations 2005 along with the frequency allocations set out in the 2011 Turks and Caicos Islands Table of Frequency Allocations 88 MHz to 59 GHz. In addition, the Commission also took into account interested parties' submissions on 700 MHz spectrum policy matters provided over the course of two public consultation processes.

A key objective of the Commission's 700 MHz Policy is to promote the timely deployment of 4G Long-Term Evolution (“LTE”) mobile broadband technology for the benefit of consumers and businesses in TCI.

The Commission's 700 MHz Policy largely reflects the Commission's proposals set out in its Second 700 MHz Spectrum Policy Consultation Document (the “Second Consultation Document”) which was issued 29 May 2012. The details and rationale for the 700 MHz Policy are described in the main body of this Decision.

The main elements of the Decision can be summarized as follows:

i) 700 MHz Spectrum Channel Plan

The Commission has decided to follow the Federal Communications Commission's (“FCC”) 700 MHz spectrum channel plan in TCI (the details of the channel plan are provided in Annex 1).

Consistent with the FCC Plan, the Commission is reserving certain spectrum blocks in the 700 MHz band for future public safety use. The Commission also considers that some or all of the reserved spectrum blocks could potentially be used in the future for joint public safety and commercial use. The balance of the spectrum in the 700 MHz band will be made available for immediate commercial use where demand for the spectrum exists. Further, the available commercial spectrum is being divided into two categories: “prime” and “non-prime” spectrum blocks. The “prime” spectrum category corresponds to the 700 MHz spectrum blocks for which 4G LTE terminal devices and network equipment are currently available at relatively affordable prices (i.e., the Lower A and B and Upper C blocks). The remaining commercial use blocks, where this is currently not the case, are designated as “non-prime” spectrum (i.e., the Lower A and unpaired Lower D and E blocks).

The specific 700 MHz spectrum block designations are summarized in the following table:

¹ Note that “700 MHz spectrum” refers to spectrum in the frequency band 698 – 806 MHz.

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Final 700 MHz Spectrum Block Designations (698 – 806 MHz)				
Reserved for Future Use				
Block	Designation	Pairing	Frequency	Total MHz
Public Safety	<i>Reserved *</i>	<i>Paired</i>	763-775 MHz/793-805 MHz	12 + 12 = 24 MHz
Upper D	<i>Reserved **</i>	<i>Paired</i>	758-763 MHz/788-793 MHz	5 + 5 = 10 MHz
Guardbands	<i>Reserved</i>	<i>Unpaired</i>	757-758, 775-776, 787-788, 805-806 MHz	4 MHz
Sub-Total				38 MHz
Available for Immediate Commercial Use				
Block	Designation	Pairing	Frequency	Total MHz
Lower A	<i>Non-Prime</i>	<i>Paired</i>	698-704 MHz/728-734 MHz	6 + 6 = 12 MHz
Lower B	Prime	<i>Paired</i>	704-710 MHz/734-740 MHz	6 + 6 = 12 MHz
Lower C	Prime	<i>Paired</i>	710-716 MHz/740-746 MHz	6 + 6 = 12 MHz
Lower D	<i>Non-Prime</i>	<i>Unpaired</i>	716-722 MHz	6 MHz
Lower E	<i>Non-Prime</i>	<i>Unpaired</i>	722-728 MHz	6 MHz
Upper C	<i>Prime</i>	<i>Paired</i>	746-757 MHz/777-788 MHz	11 + 11 = 22 MHz
Sub-Total				70 MHz
TOTAL				108 MHz

* Joint public safety/commercial use may be permitted.

** Public safety and/or commercial uses may be permitted.

ii) "Prime" 700 MHz Spectrum Assignment Policy

The Commission has decided to adopt the Option 2 spectrum assignment approach set out in the Second Consultation Document. Under this approach, two licensed public mobile telecommunications ("PMT") operators will be granted a license for "prime" 700 MHz spectrum (i.e., at least 10 + 10 or 20 MHz of "prime" 700 MHz spectrum in each case). The objective in this respect is to ensure that each of the two licensed PMT operators who are granted "prime" 700 MHz spectrum have a sufficient quantity of spectrum to immediately launch high quality/high speed 4G LTE mobile broadband services in TCI.

iii) "Prime" 700 MHz Spectrum Assignment Methodology

The Commission has decided to adopt the two-stage comparative selection approach set out in the Second Consultation Document.

In the first stage of this process, licensed PMT operators will be required to submit new applications for 700 MHz spectrum licence for the purpose of providing 4G LTE mobile broadband services by selecting one of the two available "prime" 700 MHz spectrum blocks. If there are competing applications for the same spectrum blocks, the Commission will proceed to the second stage of the process.

In the second stage, applicants will be required to file specific information in support of their spectrum licence applications which will be used to assess and rank the relative merits of each application. Based on this comparative selection process, the Commission will award "prime"

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700 MHz spectrum licences for the purpose of providing 4G LTE mobile broadband services. The proposed comparative selection criteria are set out in the Decision.

iv) 700 MHz Spectrum Fees

The Commission has set the level of 700 MHz spectrum licence fees in relation to existing fees for other licensed PMT spectrum in TCI while also taking into account current 700 MHz spectrum licence fees in other Caribbean jurisdictions.

The "prime" and "non-prime" commercial 700 MHz spectrum fees adopted by the Commission are summarized in the following table:

Final Commercial 700 MHz Spectrum Licence Fees (by Block)			
Block(s)	Total Spectrum	Classification	Annual Fee
Lower A	12 MHz	Non-Prime	\$20,000
Lower B + C	24 MHz	Prime	\$60,000
Lower D	6 MHz	Non-Prime	\$10,000
Lower E	6 MHz	Non-Prime	\$10,000
Upper C	22 MHz	Prime	\$60,000

v) "Prime" 700 MHz Spectrum Licence Conditions

The Commission has adopted the following licence conditions for "prime" 700 MHz spectrum licences.

- *Licence Term: 15 years*
- *Deployment Requirements for "Prime" 700 MHz Spectrum Licensees:*
 - *The licensee must commercially deploy 4G LTE mobile broadband services within 18 months of the issuance of its licence.*
 - *The licensee must cover 98% of the population of TCI with 4G LTE-based mobile broadband services within 36 months of the issuance of its licence.*
- *Reporting Requirements for "Prime" 700 MHz Spectrum Licensees:*
 - *The licensee must file a 4G LTE mobile broadband service deployment status report with the Commission (i) 18 months, (ii) 36 months and (iii) every 2 years thereafter following the issuance of its licence.*

vi) Implementation Process

The Commission intends to issue a First-Stage Call for 700 MHz Spectrum Licence Applications ("First CFA") within a period of about four weeks of the date of this decision. The First CFA will set out in detail the process and requirements for the first stage of the two-stage comparative selection spectrum assignment process. Assuming the second stage process is required, the Commission would issue a Second CFA within a period of about two weeks after the completion of the first-stage. The Second CFA will set out in detail the process and requirements for the

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second stage of the two-stage comparative selection spectrum assignment process, including the final comparative selection criteria, set out in greater detail with the related weights/scores for each criterion.

While the precise timing for first-stage and second-stage submissions will be finalized in the First CFA and Second CFA, the Commission is of the preliminary view that applicants' first-stage submissions could be filed as early as 2 weeks following the issuance of the First CFA. In addition, the Commission is of the preliminary view that the more detailed second-stage submissions, addressing the comparative selection criteria, could be filed with the Commission within 6 additional weeks following the issuance of the Second CFA. In this way, applicants' second-stage submissions would be filed with the Commission prior to year-end 2012 and a decision on the applications could be rendered by the Commission in the first quarter of 2013.

As discussed in the Decision, the Commission notes that applications for "non-prime" 700 MHz spectrum will also be addressed at the same time as "prime" 700 MHz spectrum.

1 Introduction

1.1 Background

The Turks and Caicos Islands (“TCI”) Telecommunications Commission (the “Commission”) set out a detailed 700 MHz spectrum² licensing proposal (the "Revised 700 MHz Policy Proposal" or “Revised Proposal”) in its *Second 700 MHz Spectrum Policy Consultation Document* (the "Second Consultation Document") which was issued 29 May 2012.

The Revised Proposal was developed based on the initial policy proposal set out in the Commission's initial Public Consultation Document, entitled *A Policy for the Assignment of 700 MHz Spectrum* (issued on 18 April 2011) and took into account the submissions of interested parties on same³ as well as experience and practice in Caribbean and other international jurisdictions and subsequent developments in TCI.

The Commission received responses to the Second Consultation Document from the following Respondents:

- Andrew's Communications Ltd. ("ACL"), dated 20 July 2012
- Digicel TCI Limited ("Digicel"), received 27 July 2012
- Cable & Wireless (TCI) Limited, trading as "LIME", dated 23 July 2012 with additional reply comments dated 6 August 2012
- Islandcom Telecommunications Ltd. ("Islandcom"), received 20 August 2012

Based on the Revised Proposal and parties' comments on the Revised Proposal, in the current Decision the Commission adopts a licensing policy for the 700 MHz spectrum band in TCI. This 700 MHz Policy includes a channel plan for the band, a licence assignment methodology, conditions of licence, licence fees and implementation process, among other elements. The details of and rationale for the Commission's adopted 700 MHz Policy are set out in this Decision.

1.2 Policy Considerations

The Commission notes that in reaching this Decision it has been guided by the policy objectives of the Government's *Telecommunications Policy for the Turks and Caicos Islands 2003* ("the Telecommunications Policy"), the *Telecommunications Ordinance 2004* (the "Ordinance"), the *Frequency Management Regulations 2005* (the "Frequency Management Regulations") and the

² Note that "700 MHz spectrum" refers to spectrum in the frequency band 698 – 806 MHz.

³ Respondents to the Initial Consultation Document included Andrew's Communications Ltd., Digicel TCI Limited, Cable & Wireless (TCI) Limited (or LIME), Islandcom Telecommunications, Ltd. and the 911 Emergency Communications Center.

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frequency allocations set out in the *Turks and Caicos Islands Table of Frequency Allocations 88 MHz to 59 GHz* (dated 21 March 2011) (the “TCI Frequency Plan”).

Specifically, the Telecommunications Policy requires, among other things, the development and maintenance of a spectrum management framework that ensures (i) timely access to spectrum for new services and technologies and (ii) economically and technically efficient spectrum use.

Further, section 39 of the Ordinance sets out spectrum planning guidelines for the Commission must follow, namely that:

39 (1) The Commission shall make, amend or revoke a plan to achieve a balanced, efficient and effective management and use of the spectrum.

(2) A plan shall -

- (a) address market expectations and user requirements for allocation, allotment and assignments of the spectrum;
- (b) promote efficient spectrum use;
- (c) minimise risks of interference;
- (d) maximise economic benefit and sustainable competition; and
- (e) conform, as necessary, to relevant spectrum plans in the region.

In addition, section 3 of the Frequency Management Regulations sets further specific guidelines for the Commission relating to public interest considerations when establishing spectrum management policies, namely:

In making all decisions regarding spectrum allocation, frequency assignments, and other matters under these Regulations, the Commission shall take into account the following considerations –

- (a) the objects of the Ordinance;
- (b) the likely effects on existing and future availability and uses of spectrum;
- (c) the efficient use of spectrum;
- (d) any regional agreements, standards and arrangements applicable to the allocation and use of spectrum in the Turks and Caicos Islands;
- (e) any applicable international standards, the treaties of the International Telecommunication Union, the Radio Regulations and other agreements; and
- (f) the overriding public interest in efficient utilisation of the spectrum for various public and private telecommunications purposes.

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Consistent with the International Telecommunications Union ("ITU") Region 2 spectrum use designations, the TCI Frequency Plan allocates the 700 MHz band to three possible uses:⁴ mobile, fixed and broadcasting. In addition, as noted in the Second Consultation Document,⁵ in response to growing demand for new spectrum to accommodate emerging advanced mobile broadband technologies, an ITU-sponsored international treaty was reached in 2007 under which a range of new spectrum bands were designated for such purposes, including the 700 MHz spectrum band in ITU Region 2 countries. In keeping with the ITU treaty in this respect, the Revised Proposal included a proposed allocation of "prime" 700 MHz band spectrum blocks for advanced mobile broadband applications, specifically to 4G Long-Term Evolution ("LTE") technology. Therefore, a key objective of the 700 MHz Policy adopted by the Commission in this Decision is to promote the timely deployment of 4G LTE mobile broadband services in TCI, which will provide a means of offering higher data transmission speeds, more consistent quality of service and a far richer mobile broadband experience for end-users, including mobile multimedia applications, for the benefit of consumers and businesses in TCI.

⁴ The TCI Frequency Plan includes the following footnote for the 700 MHz band: "Those parts of the band 698-960 MHz in Region 2 and the band 790-960 MHz in Regions 1 and 3 which are allocated to the mobile service on a primary basis are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) See Resolution 224 (Rev. WRC-07) and Resolution 749 (WRC-07). This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-07)"

⁵ See Section 2.2 of the Second Consultation Document.

2 Review of Questions Raised in the Second Consultation Document

In this section the Commission reviews each of the Consultation Questions set out in the Second Consultation Document, including Respondents' comments on each question where applicable. The Commission also provides its analysis and conclusions in each issue.

The Revised Proposal included the following main elements:

- i) channel plan and related details,
- ii) spectrum assignment policy,
- iii) spectrum assignment methodology,
- iv) spectrum licence fees,
- v) licensing conditions, and
- vi) implementation process.

Each of these elements is addressed in the following sections.

2.1 Channel Plan

The Revised Proposal called for the adoption in TCI of the Federal Communications Commission's ("FCC") 700 MHz spectrum channel plan, currently implemented in the United States of America ("USA").⁶ The details of the channel plan are provided in Annex 1. The rationale for adopting the FCC channel plan was explained in detail in the Second Consultation Document.

In addition, the Revised Proposal included a series of other elements relating to specific aspects of the FCC channel plan:

- **Block-Splitting:** The Commission suggested that it is not necessary or appropriate at this time to split or sub-divide any of the 700 MHz spectrum blocks under the FCC channel plan into smaller sub-blocks of 1 MHz, 1.5 MHz or 2 MHz.
- **Reserved Public Safety Use Spectrum:** The Commission proposed to reserve some 700 MHz spectrum for future public safety use as contemplated under the FCC channel plan. However, it also proposed that this spectrum could be used for joint public safety and commercial use to the extent a commercial use is identified for the reserved spectrum,

⁶ The Commission notes that the FCC 700 MHz band plan was also recently adopted in Canada (with a minor modification to the Upper C block).

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which could also accommodate public safety agency requirements. The reserved public safety use spectrum blocks in this respect are shown in Table 1 below.

- **Reserved Upper D Block:** Given that the Upper D block in the 700 MHz spectrum band has also been designated for public safety use under the FCC channel plan, the Commission proposed to follow the same usage policy in TCI. However, the Commission also indicated that if a commercial use is identified for this spectrum, it could potentially be licensed to an operator for commercial use in TCI. The reserved spectrum blocks in this respect are shown in Table 1 below.
- **Reserved Guardband Blocks:** The Commission also proposed that the four 1 MHz guardbands included in the FCC channel plan should also be reserved for future use. If a commercial use is identified for one or more of these 1 MHz blocks that does not create interference concerns, they could be potentially licensed to an operator. The reserved spectrum in this respect is shown in Table 1 below.
- **"Prime" vs "Non-Prime" Spectrum Designations:** The Commission indicated that certain 700 MHz spectrum blocks available for commercial use for may be considered more desirable than others, largely due to the fact that 4G LTE terminal devices and network equipment are currently available at relatively affordable prices in the USA in some blocks, but not others. For instance, the Lower B and C blocks are currently being used to provide LTE-based services in the USA by AT&T and the Upper C block is currently in use by Verizon in the USA for the same purpose. Consequently, these blocks were designated by the Commission as "prime" 700 MHz spectrum blocks given that LTE terminal devices and network equipment are currently available at relatively affordable prices for these blocks. On the other hand, the same is not true for Lower A and unpaired Lower D and E blocks. The ability to deploy 4G LTE services using these spectrum blocks is less certain, at least for the near term. Consequently, these blocks were designated by the Commission as "non-prime" 700 MHz spectrum. Indeed, the applications for 700 MHz spectrum that the Commission has received to date have generally been focused on the designated "prime" 700 MHz spectrum blocks.⁷

Table 1: Reserved 700 MHz Spectrum for Future Use		
Reserved Spectrum Category	Frequency	Total MHz
Public Safety or Possible Joint Public Safety/Commercial Use	763-775 MHz/793-805 MHz	12 + 12 = 24 MHz
Upper D Block – Public Safety and/or Commercial Use	758-763 MHz/788-793 MHz	5 + 5 = 10 MHz
Guardbands	757-758, 775-776, 787-788, 805-806 MHz	4 MHz
Total		38 MHz

⁷ A summary of the 700 MHz spectrum applications received by the Commission to date is provided in Section 2.2 below.

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Table 2 below provides a summary of the 700 MHz spectrum blocks under the FCC channel plan that are available for licensing for commercial use at this time, and also identifies blocks that are designated as "prime" and "non-prime" in the Revised Proposal.

Table 2: 700 MHz Spectrum Available for Commercial Use				
Block	Designation	Pairing	Frequency	Total MHz
Lower A	Non-Prime	Paired	698-704 MHz/728-734 MHz	6 + 6 = 12 MHz
Lower B	Prime	Paired	704-710 MHz/734-740 MHz	6 + 6 = 12 MHz
Lower C	Prime	Paired	710-716 MHz/740-746 MHz	6 + 6 = 12 MHz
Lower D	Non-Prime	Unpaired	716-722 MHz	6 MHz
Lower E	Non-Prime	Unpaired	722-728 MHz	6 MHz
Upper C	Prime	Paired	746-757 MHz/777-788 MHz	11 + 11 = 22 MHz
Total				70 MHz

With respect to the above-noted 700 MHz channel plan proposals, interested parties were invited to respond to a series of questions, each of which is addressed below.

Question 1: FCC Channel Plan: Do you agree with the Commission's proposal to adopt the FCC 700 MHz spectrum channel plan for TCI? If not, explain why not and provide a specific alternative proposal with supporting rationale.

All four Respondents agreed with the Revised Proposal to adopt the FCC 700 MHz spectrum channel plan in TCI. LIME, for one, noted that the FCC channel plan is the most cost effective approach to follow.

Accordingly, for the reasons set out in the Second Consultation Document and given there is consensus on this issue, the Commission adopts the Revised Proposal in this respect and, therefore, will implement the FCC 700 MHz spectrum channel plan in TCI.

Question 2: Public Safety Spectrum Reserve: Do you agree with the Commission's proposal to reserve for future use the 700 MHz spectrum designated for public safety use under the FCC channel plan (i.e., 763-775 MHz paired with 793-805 MHz)? If not, explain whether there are any immediate or near term commercial uses for this spectrum, in whole or part, that could also support future public safety requirements.

LIME and ACL agreed with the Revised Proposal in this respect. In LIME's case it added that this spectrum should be available for commercial use where such usage would also facilitate public safety requirements and, therefore, its ongoing status should be reviewed periodically.

Islandcom indicated that it considers that this spectrum should be set aside for future use either as public safety or for commercial use.

For its part, Digicel suggested that this spectrum would be better used for commercial purposes given that public safety requirements in the TCI will likely be delivered over commercial

operators' networks rather than a dedicated public safety network. Although, at the same time, Digicel also acknowledged that it is not aware of any prospect of the designated 700 MHz public safety spectrum being used for commercial purposes in the immediate future.

In the Commission's view, the Respondents' positions generally align with the Revised Proposal in this respect— i.e., to reserve the designated public safety spectrum for future public safety use or, if the opportunity arises, for future joint public safety/commercial use. Given that public safety uses can be expected to be developed for this spectrum in the coming years in light of the FCC's designation for this spectrum, the Commission does not consider that the spectrum should be designated solely for commercial purposes. Accordingly, the Commission adopts the Revised Proposal in this respect and, therefore, will reserve the noted public safety spectrum for future use, including possible joint public safety/commercial use.

In addition, rather than review this designation periodically as suggested by LIME, the Commission will leave it to commercial operators to submit applications for this spectrum if and when a potential commercial use arises in the future, under the condition that any such applicant undertake to accommodate both public safety and commercial uses when using this spectrum.

Question 3: Upper D Block Reserve: Do you agree with the Commission's proposal to reserve the Upper D block designated for public safety use under the FCC channel plan for future public safety and/or commercial use? If not, explain whether there are any immediate or near term commercial uses for the Upper D block.

LIME, ACL and Islandcom agreed with the Revised Proposal to reserve the Upper D block for public safety purposes. Digicel, for its part, simply referred to its response to Question 2 on this issue.

Again, in the Commission's view, the Respondents' positions align with the Revised Proposal with respect to the treatment of the Upper D block. Accordingly, the Commission adopts the Revised Proposal in this respect and, therefore, will reserve the Upper D block for future public safety and/or commercial use. Licensed operators will be free to submit applications to the Commission to make use of this spectrum should an opportunity to do so arises in the future.

Question 4: Band 14: Digicel proposed that Band 14 (i.e., as illustrated in Annex 1, 758-768 MHz paired with 788-798 MHz, 20 MHz in total) could licensed for commercial uses. This band includes the Upper D block and part of the public safety spectrum reserve. Comment on whether there are any immediate or near term commercial uses for this specific spectrum band.

As noted in the Second Consultation Document, Digicel's proposal in this respect involves designating 700 MHz spectrum for commercial use under the FCC plan in conformance with the 3rd Generation Partnership Project ("3GPP") technical equipment specifications for the 700 MHz band. The first grouping includes Lower A, B and C blocks (Band 12); the second includes most of the Upper C block (Band 13); and the third combines the Upper D block with the portion of the public safety use block designated for broadband use under the FCC plan (Band 14).

In its response to this question, Digicel noted that it maintained its position on this issue, which is consistent with its views on Questions 2 and 3 above.

LIME noted in its response that while it is not aware of any commercial plans or networks in Band 14, it is aware of the fact that the 3GPP has assigned “Band 14” to this spectrum. All the same, LIME indicated that it assumes this band will be allocated by 3GPP to public safety systems, although it recognized that over time spectrum assignments can change.

Islandcom added that it is not aware of any commercial use of this spectrum at this time, any commercial wireless carriers at this time planning to deploy in this band or any infrastructure or terminal manufacturers building equipment for this band at this time.

For its part, ACL recommended that the Commission not adopt Digicel's proposal at this time since it would preclude following public safety strategies deployed in the USA and Canada using this spectrum. ACL suggested that spectrum reserved for public safety be protected for at least three years to allow the Commission to gauge the advancements in public safety devices and networks in the USA and Canada.

The Commission notes that Digicel has acknowledged that it is not aware of any near term prospect of the Band 14 spectrum being used for commercial purposes. Consequently, the Commission sees no reason to designate Band 14 for commercial use at this time. The Commission considers that its policy to the reserve 700 MHz spectrum for public safety use (which includes spectrum in Band 14) while permitting possible joint public safety/commercial uses or commercial uses for some or all of that spectrum provides sufficient flexibility for licensed commercial operators to make use Band 14 spectrum in the future should the opportunity arise.

Question 5: Lower A Block: Comment on whether there are any immediate or near term practical and economic options for deploying LTE-based services in TCI in the Lower A block in comparison to the Lower B, C and/or Upper C blocks.

In its response, Digicel noted that relative to the Lower B and C blocks, equipment for use in the Lower A blocks is not as readily available at this time.

Islandcom added that interoperability and interference are the big issues surrounding the Lower A block.⁸ It claimed that, in the USA, the spectrum block is not currently usable due to interference from adjacent high power broadcast stations and, as a result, equipment for Lower A block is not in high demand. Once these interference and interoperability issues are resolved, Islandcom expects that the Lower A block would become viable for commercial use in TCI. But in any event, Islandcom does not consider that the Lower A block by itself is sufficient for LTE deployment.

⁸ Further, the Commission notes that Islandcom subsequently wrote to the Commission (letter dated 27 August 2012) to highlight the fact that in the USA, the FCC is currently investigating whether and how to resolve the lack of interoperability in the lower 700 MHz spectrum band in *Promoting Interoperability in the 700 MHz Commercial Spectrum*, WT Docket No. 12-69, Notice of Proposed Rulemaking released 21 March 2012.

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ACL noted that manufactures are currently focused on providing devices to operate in the Lower B and C blocks and Upper C blocks given that AT&T and Verizon have large subscriber bases in these spectrum blocks. While ACL suggested that devices that operate in the Lower A block will become available to address the rural market in the USA, no expected timeframe estimate was provided.

On the other hand, ACL also suggested that it could make use of the Lower A block to provide backhaul to its WiFi access network, replacing its current use of 5.8 GHz spectrum for this purpose and, thereby eliminating inherent interference anomalies it claims are historically associated with the 5.8 GHz band.

LIME noted in its response that officially the 3GPP starts the 700 MHz LTE allocation at 698MHz (Band 12). It also suggested in response to the Question 6 (addressed below) that there are "numerous devices available at a reasonable cost point to serve the public in the A, B and C block allocations"; however it provided no evidence in support of this claim.⁹ Moreover, LIME did not indicate in its response whether the immediate or near-term options for deploying LTE-based services in TCI for using the Lower A block are equivalent to those using the Lower B and C blocks (consistent with its response to Question 7 below where it suggested that Lower B and C blocks are more desirable or "prime" 700 MHz spectrum).

Otherwise, LIME suggested that the Commission consider implementing a contiguous allocation of A and B blocks to allow for more efficient use of available 700 MHz spectrum.

In the Commission's opinion, the Respondent's comments generally support the Commission's view that there are limited immediate or near term practical and economic options for deploying LTE-based services in TCI in the Lower A block at this time. Consequently, the Commission adopts the Revised Proposal in this respect and designates the Lower A block as "non-prime" spectrum at this time.

Question 6: Unpaired Lower D and E Blocks: Comment on whether there are any immediate or near term commercial uses in TCI for the unpaired Lower D and E blocks, and also comment on their relative attractiveness compared to the Lower B, C and/or Upper C blocks.

In its response, Digicel noted that the Lower D and E blocks are probably of limited use currently as it are not aware of LTE equipment that operates in these bands.

LIME also noted that currently there are very few commercial LTE devices in the D and E block allocation frequencies and that of those that are available, most tend to be focused on public safety systems.

⁹ Contrary to LIME's assertions, it is the Commission's understanding that there are relatively few devices currently available that operate in the Lower A block and, moreover, that there are outstanding interoperability issues with respect to such devices (which is the subject of the FCC's ongoing Notice of Proposed Rulemaking referenced in the preceding footnote).

Islandcom, for its part, noted that these two unpaired blocks could potentially be used in the future to supplement LTE Frequency Division Duplexing systems should terminals be made to support such a deployment. However, for now, Islandcom indicated that the current attractiveness of these two unpaired spectrum blocks is very low compared to the Lower B/C and Upper C blocks. As well, it also indicated that it is not aware of any immediate or near term uses of this spectrum in TCI.

While ACL did not identify any LTE-based uses for the Lower D and E blocks, it suggested that the spectrum could be used for broadcast services.

In the Commission's opinion, the Respondent's comments support the Commission's view that there are limited immediate or near term practical and economic options for deploying LTE-based services in TCI in the Lower D and E blocks at this time. Consequently, the Commission adopts the Revised Proposal in this respect and, therefore, designates these two unpaired blocks as "non-prime" spectrum at this time.

Question 7: “Prime” Spectrum Blocks: Comment on whether you agree that the Lower B, Lower C and Upper C to be the relatively more desirable or "prime" 700 MHz spectrum blocks available for commercial use in TCI at this time.

All Respondents agreed that the Lower B, Lower C and Upper C blocks are the most desirable 700 MHz spectrum blocks given they are the most prevalent blocks in current use in the USA and soon Canada.

Accordingly, the Commission adopts the Revised Proposal in this respect and, therefore, designates the Lower B, Lower C and Upper C blocks as "prime" spectrum and, pursuant to the Commission's policy objectives set out in Section 1.2 above, correspondingly allocates these specific spectrum blocks for mobile broadband applications and specifically for 4G LTE mobile technology applications.

2.2 Spectrum Assignment Policy

As of the date when the Second Consultation Document was issued, the Commission had received three 700 MHz spectrum applications, all for the stated purpose of providing mobile 4G LTE services. The applications were filed by licensed public mobile telecommunications ("PMT") operators: LIME,¹⁰ Islandcom and Digicel (referred to as the "Applicants" in the Second Consultation Document).

The Commission also notes that while ACL had expressed interest in using 700 MHz spectrum for the purpose of providing fixed Internet services, it had not filed an application for 700 MHz

¹⁰ The Commission notes LIME indicated in its Response (paragraph 3) that it amended its initial 700 MHz spectrum licence application (of August 2008) in August 2011. However, a copy of the proposed amendment was only provided to the Commission in June of this year following the issuance of the Second Consultation Document. The details of the proposed amendment were provided in confidence to the Commission. Given this fact, LIME's amended 700 MHz spectrum application is not on the public record and, therefore, not part of the record of this proceeding.

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spectrum with the Commission at the time the Second Consultation Document was issued. However, following the submission of parties' comments and reply comments on the Second Consultation Document, ACL subsequently filed a formal request with the Commission, dated 20 August 2012, to amend its existing Telecommunications and Spectrum Licence to include 700 MHz spectrum for the purpose of providing fixed wireless broadband Internet services.

As discussed in the Second Consultation Document, the amount of 700 MHz spectrum available for near term deployment of commercial 4G LTE-based broadband services is relatively limited – i.e., at 70 MHz in total (as summarized in Table 2 above). The available spectrum for commercial use is even more limited when considering "prime" 700 MHz spectrum blocks alone – i.e., which amounts to only 46 MHz in total (or effectively 40 MHz in total in practical terms). Based on the applications submitted to the Commission to date, the demand for "prime" 700 MHz spectrum far exceeds supply.

As required by the Telecommunications Policy, Ordinance and Frequency Management Regulations, the Commission must ensure timely access to spectrum to deploy new services and technologies and promote and sustain competition when assigning spectrum. The Commission must also balance these objectives against others set out in the legal and regulatory framework, including promoting efficient spectrum use, addressing market expectations and user requirements while and also taking into account effects on existing and future availability and uses of spectrum as well as international standards and treaties.

Taking these considerations into account, the Commission proposed two options for assigning "prime" 700 MHz spectrum to two or all three of the existing licensed PMT operators (i.e., the Applicants as defined in the Second Consultation Document). In developing these options, the Commission was of the view that the licensed PMT operators are best positioned to make immediate use of the spectrum for the deployment of 4G LTE mobile broadband services and, indeed, each had filed applications for 700 MHz spectrum with the Commission for this purpose. Under both options, the three existing licensed PMT operators would be required to re-apply for a 700 MHz spectrum licence based on the spectrum assignment methodology set out in the Revised Proposal.

The two spectrum assignment options included in the Revised Proposal can be summarized as follows:

Option 1 – Three Licensed PMT Operators Granted "Prime" 700 MHz Spectrum

Under Option 1, each of the three existing licensed PMT operators would be granted a license for "prime" 700 MHz spectrum – i.e., a minimum of 6 + 6 or 12 MHz of spectrum. The contemplated spectrum assignments under this option are summarized in the following table.

Table 3: Option 1 – "Prime" 700 MHz Spectrum Assignments			
No.	Block(s)	Pairing	Total Spectrum
Licensed PMT Operator 1	Lower B	Paired	12 MHz in total
Licensed PMT Operator 2	Lower C	Paired	12 MHz in total
Licensed PMT Operator 3	Upper C	Paired	22 MHz in total

Under this option, the two licensed PMT operators who are granted the Lower B and C blocks, along with other licensed operators, would be permitted to apply for "non-prime" commercial use 700 MHz spectrum – i.e., the Lower A block (12 MHz) or the Lower D and E blocks of unpaired spectrum (6 MHz each or 12 MHz in total). The third licensed PMT operator, who is awarded the Upper C block, would be precluded from acquiring any additional 700 MHz spectrum designated for commercial use at this time.

Option 2 – Two Licensed PMT Operators Granted "Prime" 700 MHz Spectrum

Under Option 2, two of the three licensed PMT operators would be granted a license for "prime" 700 MHz spectrum – i.e., at least 10 + 10 or 20 MHz of "prime" 700 MHz spectrum in each case. The objective in this case would be to ensure that each of the two licensed PMT operators granted "prime" 700 MHz spectrum would have a sufficient quantity of spectrum to immediately launch high quality/high speed 4G LTE mobile broadband services in TCI. The contemplated spectrum assignments under this option are summarized in the following table.

Table 4: Option 2 – "Prime" 700 MHz Spectrum Assignments			
No.	Block(s)	Pairing	Total Spectrum
Licensed PMT Operator 1	Lower B & C	Paired	24 MHz in total
Licensed PMT Operator 2	Upper C	Paired	22 MHz in total

It is important to note that these options would not preclude any licensed operator, including any of the three licensed PMT operators that is assigned less than 20 MHz of "prime" 700 MHz spectrum, from being awarded "non-prime" 700 MHz spectrum subject to demand and availability considerations. In addition, 700 MHz spectrum "reserved" for future use could also be made available for licensing if a licensed operator identified an immediate or near term commercial and/or joint public safety/commercial use for the spectrum.

As well, the Commission also noted in the Second Consultation Document that while 700 MHz spectrum is well suited for 4G LTE deployment purposes, there are other options for deploying 4G LTE services, including using spectrum in the 1700/2100 MHz and 2.5 GHz bands, among other frequency bands. The Commission suggested in this respect that operators consider making use of other spectrum bands in conjunction with or as an alternative to using 700 MHz spectrum for such purposes, given the limited supply of 700 MHz spectrum for current commercial use. Again, the two proposed prime 700 MHz spectrum assignment options noted above would not preclude any licensed operator from being awarded spectrum for such purposes subject to demand and availability considerations.

The Commission indicated in the Second Consultation Document that it considers that, on balance, Option 2 would appear to provide the greatest net benefit for TCI. It ensures that at least two licensed PMT operators be assigned "prime" 700 MHz spectrum to provide high quality 4G LTE mobile broadband services in TCI in the immediate future, while providing a third licensed PMT operator the opportunity to do the same using either "non-prime" 700 MHz

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spectrum and/or spectrum in another 4G LTE compatible frequency band. Option 1, on the other hand, would potentially allow only one licensed PMT operator to launch high quality LTE mobile broadband services in TCI in the immediate future using "prime" 700 MHz spectrum.

With respect to these two proposed 700 MHz spectrum assignment options, parties were invited to respond to three questions, each of which is addressed below.

Question 8: 700 MHz Spectrum Assignment Options: Provide your views on the Commission's two 700 MHz spectrum assignment options, indicating your preference for either Option 1 or 2 with supporting rationale. Please provide any alternative proposals you may have, with supporting rationale.

In response to this question, LIME indicated that while Option 1 would provide all Applicants with a minimum of 12 MHz of spectrum, it considers that 12 MHz of spectrum to be insufficient to provide an acceptable level of wireless broadband service. LIME noted that in its comments on the Initial Consultation Document, it had indicated that 40 MHz of spectrum was required to provide an "ideal" service offering. Consequently, it considers Option 2 most closely meet this requirement.

Digicel also supported Option 2. Digicel added that if two operators were prepared to network share or provide wholesale services one to the other, then it suggested that such operators (working jointly) could be eligible under Option 2 to be awarded either the Lower B and C blocks or the Upper C block and, in addition, have first right of refusal on a remaining block of their choice.

IslandCom also supported Option 2, since in its view LTE requires a minimum of 2 X 10 MHz to deploy commercially in the 700 MHz spectrum band. At the same time, however, it also indicated that it considers that all three wireless carriers should be awarded the same aggregate amount of spectrum and, in this respect, that total spectrum holdings should be taken into account.

ACL provided no comments on the proposed spectrum assignment options. Instead, ACL claimed that it has a pre-existing authority to make use of any or all of the spectrum in the 700 MHz frequency band. As explained in Section 2.7 below, the Commission considers ACL's claims in this respect to be unfounded.

Given the Commission's stated preference for Option 2 together with parties' support for that option, the Commission accordingly adopts the Revised Proposal in this respect and selects Option 2, as described above, for the assignment of "prime" 700 MHz spectrum for the purpose of providing 4G LTE mobile broadband services.

In addition, with respect to Digicel's proposed treatment of joint spectrum applications, the Commission notes that it would be prepared to consider an application for 700 MHz spectrum brought forward by two operators working jointly or in association with one another. The details of any such arrangement would need to be explained in detail in the application process.

Question 9: Spectrum for LTE Deployment Purposes: The Initial Consultation Document focussed exclusively on the use of 700 MHz spectrum for the deployment of 4G LTE technology. Provide your views on whether 4G LTE technology could be effectively deployed using spectrum in other frequency bands (e.g., 1700/2100 MHz, 2500/2600 MHz or other frequency bands) taking into account the geography and demographics of TCI. If not, explain why not.

In its response, Digicel indicated that LTE could be deployed in other frequency bands, but that in its view it would be more difficult to do so due to propagation issues. At the same time, Digicel also noted that there is more spectrum available at the higher bands, so faster speeds are attainable in the higher bands.

LIME also indicated that LTE could be deployed in the 1700/2100 MHz bands, but suggested that a better option would be the use of PICO or FEMTO (small, indoor) coverage scenarios. It added that macro deployment of AWS bands would increase the required base stations to provide an adequate service by up to two times, which would greatly increase service cost and, therefore, service price to end-users.

Islandcom noted that LTE can and is being deployed in other frequency bands across the globe. However, it suggested that higher frequency bands are best suited for dense urban environments where capacity not coverage is the main design driver. For TCI, with its light population density, Islandcom considers that lower frequency bands provide the best economic model. It claimed that deploying LTE solely in the higher frequency bands would be "prohibitively expensive" due to the number of sites required in TCI, though it added that at a later date higher frequency bands could be used to supplement capacity in targeted areas of high usage through carrier aggregation or small cell deployments.

For its part, ACL noted that there are numerous spectrum bands that have been identified by the ITU as being LTE compatible (including the 800 MHz, 850 MHz, 900 MHz, 1500 MHz, 1700/2100 MHz and 2500 MHz frequency bands, among others). ACL suggested that the Commission focus on assigning spectrum in these other frequency bands, rather than the 700 MHz band given that, in ACL's view, it has a pre-existing authority to make use of any or all of the spectrum in the 700 MHz frequency band. Again, this latter claim made by ACL, which the Commission considers to be unfounded, is addressed in Section 2.7 below.

In the Commission's opinion, the Respondents' comments support the Commission's view that other spectrum bands could be effectively used to deploy 4G LTE in conjunction with or as a substitute to using 700 MHz spectrum. The Commission appreciates, however, that the propagation characteristics of 700 MHz spectrum generally make it more attractive for this purpose compared to higher frequency spectrum. Given the limited availability of prime 700 MHz spectrum, however, the Commission considers that use of higher frequency spectrum will ultimately be necessary to complement and/or substitute for 4G LTE deployment in the 700 MHz spectrum band in TCI. The Commission will take this consideration into account in relation to future allocations and assignments for spectrum bands other than the 700 MHz band.

Question 10: Spectrum for LTE Deployment Purposes: Explain whether any spectrum currently assigned to your company could potentially be used for the deployment of 4G LTE services and, if so, in what time frame.

In its response, LIME indicated that since it was required to relinquish spectrum in the 850 MHz band, LIME does not believe that it could now divert any of the spectrum it currently uses to the deployment of 4G LTE service without sacrificing the quality of current services. LIME added that diverting existing spectrum for 4G LTE use would take significant time and increase costs relative to using 700 MHz spectrum.

Digicel indicated that it does not have enough existing spectrum to allow it to deploy 4G LTE. It claimed that its existing spectrum is fully utilized for GSM services and planned UMTS services.

Islandcom, for its part, indicated that both frequency bands currently assigned to Islandcom (850 MHz and 1900 MHz) can be used for LTE, but only at the expense of its existing UMTS and CDMA network services. Islandcom stated that it does not presently have enough bandwidth to launch LTE services.

ACL did not provide a response to this question.

Based on the responses to this question, the Commission concludes that there may only be very limited opportunity at this time for licensed PMT operators to deploy LTE using their existing spectrum holdings in TCI.

2.3 Spectrum Assignment Methodology

The Revised Proposal included a two-stage comparative selection process to assign "prime" 700 MHz spectrum for the purpose of providing 4G LTE mobile broadband services. The Commission noted that the proposed process would depend on which spectrum assignment option is adopted by the Commission – i.e., Option 1 or 2 as described above.

As set out in the Second Consultation Document, the two stages of the proposed comparative selection process would involve the following:

First Stage of the Comparative Selection Process

In the first stage, licensed PMT operators (or Applicants) would re-apply for a 700 MHz spectrum licence for the purpose of providing 4G LTE mobile broadband services by selecting one of the specified "prime" 700 MHz spectrum block options set out under adopted spectrum assignment (i.e., Option 1 or 2 as set out in Table 2 and 3, respectively, above). If there are no overlapping spectrum block requests, then the Commission would award the requested "prime" 700 MHz spectrum licences to each Applicant for the purpose of providing 4G LTE mobile broadband services. If there are competing applications for the same spectrum blocks, however, the Commission would proceed to the second stage of the process.

Second Stage of the Comparative Selection Process

In the second stage, assuming it is necessary, Applicants would be required to file specific information in support of their spectrum licence applications which would be used to assess and rank the relative merits of each application so that the Commission could award "prime" 700 MHz spectrum for the purpose of providing 4G LTE mobile broadband services on a comparative selection basis. The Commission's proposed list of required supporting information to be included in each Applicant's second-stage submission includes the following:

- i) The Applicant's first and second choice of eligible "prime" 700 MHz spectrum block options, including the rationale for the selected spectrum block choices and their ranking.
- ii) A complete summary of the spectrum licences currently held by the Applicant, their current uses and the identification of any available existing unused capacity.
- iii) A detailed description of the Applicant's 4G LTE deployment plans using the requested "prime" 700 MHz spectrum, including planned investments, service launch timing, service coverage and service features and capabilities.
- iv) As may be applicable, a detailed description of the Applicant's 4G LTE deployment plans using spectrum outside of the 700 MHz spectrum band, including planned investments, service launch timing, service coverage and service features and capabilities in this respect.
- v) A description of the Applicant's financial capability to deploy the planned 4G LTE services.
- vi) A description of the Applicant's technical capability to deploy the planned 4G LTE services, including their track record on deploying services in TCI using currently assigned spectrum.
- vii) A description of any specific benefits that would accrue to consumers or, more generally, the TCI economy associated with the Applicant's proposals.
- viii) Any other information deemed relevant by the Applicant.

The Commission proposed to place an equal weight on each of the criteria when assessing the relative merits of each licence application.

The Commission also suggested that, if necessary, these same selection criteria could also be used to award "non-prime" or "reserved" 700 MHz spectrum should competing requests be made for this spectrum.

The Commission notes that in view of the fact that it has decided to adopt Option 2 for the purposes of assigning "prime" 700 MHz spectrum, the Commission expects that stage 2 of the comparative selection process will likely be necessary.

With respect to these 700 MHz spectrum assignment methodology proposals, parties were invited to respond two questions, each of which is addressed below:

Question 11: Spectrum Assignment Methodology: Provide your views on the Commission's conditional two-stage comparative selection process for awarding 700 MHz spectrum. Please provide any alternative proposals you may have, with supporting rationale.

In its response, Digicel indicated that it considers the proposal to be "sensible".

For its part, LIME indicated that the two-stage selection process proposed by the Commission is reasonable for cases where (i) the spectrum is limited and (ii) multiple operators have requested the same blocks of spectrum – effectively the case at hand.

Islandcom also indicated that it also considers the proposed two stage selection process to be "reasonable".

ACL did not provide a response to this question. Instead, ACL reiterated that the Commission does not have the authority to assign 700 MHz spectrum given that in ACL's opinion it has a pre-existing right to make use of any or all of the spectrum in the 700 MHz frequency band. Again, as explained in Section 2.7 below, the Commission considers ACL's claims in this respect to be unfounded.

Based on the support for the Commission's proposal expressed by Digicel, LIME and Islandcom, the Commission adopts the Revised Proposal in this respect and selects the two-stage spectrum assignment methodology described above. As also noted in the previous section, the Commission will use spectrum assignment Option 2 when conducting the spectrum assignment process.

The Commission also notes that if licensed operators decide to submit a spectrum application as joint or associated entities, they would be permitted to do so. However, they would be required to provide a detailed description of the nature of their joint arrangement, including a detailed description of how they intend to make joint use of the requested 700 MHz spectrum and also compete with one another in the retail mobile broadband market.

Question 12: Stage Two Comparative Selection Criteria: Provide your views on the proposed second-stage comparative selection criteria, including what specific criteria you consider should be either added to or deleted from the list, if any, with supporting rationale. In addition, provide your views on the possible relative weighting of the criteria.

In response, Digicel indicated that the proposed criteria are "sensible" and that it had no additional criteria to add.

Islandcom, for its part, agreed with all of the proposed criteria.

LIME indicated that the criteria are general robust. However, it suggested that criterion (ii) be dropped, since it considers that an Applicant's existing spectrum holdings, spectrum use and unused spectrum capacity should not be used to determine or evaluate requests for 700 MHz

spectrum. In addition, it also suggested that an Applicant's "track record on deploying services using currently assigned spectrum" (which forms part of criterion (vi)) should also be dropped.

Otherwise, LIME suggested that the criteria need not be weighted at all, since all of the listed factors are important to one degree or another. That said, if the criteria are weighted, LIME indicated that it considers that criterion (iii) as it proposes be modified, and criterion (vi) are of greatest importance and should receive the greatest weight.

For the same reasons as already noted, ACL did not respond to this question.

The Commission notes that Digicel, LIME and Islandcom all generally supported the proposed selection criteria. LIME, however, suggested dropping two elements of the proposed list of criteria. The Commission disagrees with both of LIME's suggested modifications to the set of criteria. First, the Commission considers that competing applications for 700 MHz spectrum can only be properly assessed when considering each Applicant's existing spectrum holdings, including how the spectrum is being used and the extent to which there may be unused capacity. The Commission agrees, however, that this consideration may not be equal in importance to some of the other criteria included in the list of criteria. Second, the Commission considers that an Applicant's track record in deploying currently assigned spectrum in TCI is relevant to the question of the Applicant's general technical capabilities, including its ability to deploy 700 MHz spectrum were it granted a 700 MHz spectrum licence. Therefore, the Commission intends to maintain criterion (vi) as proposed.

The Commission agrees with LIME's suggestion that not all of the listed criteria should necessarily have equal weight. The Commission notes that it intends to establish specific weighting factors for each of the identified comparative selection criteria in the follow-up implementation process for this Decision.

2.4 700 MHz Spectrum Licence Fees

As indicated in the Second Consultation Document, the Commission intends to conduct a comprehensive review of all existing spectrum fees in the future, including the methodology used to determine them. However, such a review was not within the scope of this current consultation. Consequently, the Commission proposed that 700 MHz spectrum licence fees be set in relation to existing fees for other licensed PMT spectrum in TCI.

The current annual PMT spectrum licence fees in effect in TCI are summarized in Table 5 below. They are reported as shown in the *2007 Telecommunications Fee Structure Regulations*, Schedule 3, and also expressed on a per MHz per population ("pop") count basis. The current average spectrum fee comes to 8.3¢/MHz/pop.

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Table 5: Current PMT Spectrum Licence Fees in TCI		
Spectrum Band	Annual Fee *	Annual Fee/MHz/pop **
850 MHz	\$30,000 / 10MHz	3.9¢
900 MHz	\$30,000 / 10MHz	3.9¢
1800 MHz	\$40,000 / 10MHz	5.2¢
1900 MHz	\$78,000 / 5MHz	20.3¢
Average		8.3¢

* Note that the fees are currently applied on a paired spectrum basis.

** The estimated 2010 population of TCI is 38,400. Source: World Bank.

In its Revised Proposal, the Commission also took into account current 700 MHz spectrum licence fees in other Caribbean jurisdictions, where available, as a further test of reasonableness of its proposed 700 MHz spectrum licence fees. Based on available information, the Commission found that the average 700 MHz spectrum fee in the surveyed Caribbean jurisdictions is US 6.2¢/MHz/pop.¹¹

As noted by the Commission in the Second Consultation Document, without normalizing for factors such as per capita income and population density, this finding supports setting a fee for 700 MHz spectrum in TCI which is closer to the lower end of the range of current fees in TCI listed in Table 5 above.

Accordingly, the Commission proposed to set the 700 MHz spectrum fee closer to the lower end of this range, namely at a rate of \$30,000 per 6 MHz of paired spectrum (i.e., 12 MHz of spectrum in total), which translates to 6.5¢/MHz/pop. This proposed fee is slightly above the average rate found in the surveyed Caribbean jurisdictions, but below the current average spectrum fee in TCI.

The Commission proposed that this fee apply to "prime" 700 MHz spectrum, whereas that a somewhat lower fee should apply to "non-prime" 700 MHz spectrum in recognition of the latter's lower immediate term value. Accordingly, the Commission proposed that at a fee of \$20,000 per 6 MHz of paired spectrum or, equivalently, 4.3¢/MHz/pop apply to "non-prime" 700 MHz spectrum. This proposed fee is close to but still somewhat higher than the current 850 MHz and 900 MHz spectrum fees.

Table 6 below provides a summary of the proposed 700 MHz licence fees by spectrum block:

¹¹ A detailed summary of the survey methodology and results are provided in Annex 3 of the Second Consultation Document.

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Table 6: Proposed Commercial 700 MHz Spectrum Licence Fees			
Block(s)	Total Spectrum	Classification	Annual Fee
Lower A	12 MHz	Non-Prime	\$20,000
Lower B	12 MHz	Prime	\$30,000
Lower C	12 MHz	Prime	\$30,000
Lower D	6 MHz	Non-Prime	\$10,000
Lower E	6 MHz	Non-Prime	\$10,000
Upper C	22 MHz	Prime	\$55,000

With respect to the Commission's 700 MHz spectrum fee proposals, parties were invited to respond to two questions, each of which is addressed below:

Question 13: Proposed Spectrum Fees: Provide your comments on the Commission's proposed "prime" and "non-prime" 700 MHz spectrum fees and the approach used to derive them. Please provide any alternative proposals you may have, with supporting rationale.

In its response, LIME indicated that the approach to pricing the spectrum proposed by the Commission is "reasonable" and that, in its opinion, the proposed "balanced approach" to the pricing of the 700 MHz spectrum is commendable.

For its part, Digicel did not comment on the specific rates proposed, but rather referred to its response to the Initial Consultation Document in which it called for a "phased-in" approach to pricing 700MHz spectrum, since licensed operators will also have to keep paying fees for existing spectrum holdings.

Islandcom indicated that it has no alternative proposals to offer.

ACL indicated that it is open to discussions on 700MHz spectrum licence fees.

The Commission notes that it addressed Digicel's proposal for a phased-in 700 MHz spectrum licence fee structure in the Second Consultation Document. Digicel's proposal involved very significant 700 MHz spectrum fee discounts over a 10-year time horizon (amounting, on average, to a 75% discount relative to the existing annual 850 MHz spectrum fee). The Commission does not agree that spectrum fees should be discounted in this manner and, in effect, backend loaded beyond the tenth year of a licence term. In the Commission's view, spectrum fees should be set on a fair and reasonable basis, and they should be consistent with existing spectrum fees which are generally set on the basis of a fixed annual rate. The Commission considers that its proposal achieves these objectives and, moreover, is supported by experience and practice in other Caribbean jurisdictions.

Accordingly, the Commission adopts the Revised Proposal in this respect and selects the 700 MHz spectrum fees listed in Table 6 above, with one modification. Under the adopted Option "prime" 700 MHz spectrum assignment process, one licensee would be granted the Lower B and

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C blocks (24 MHz of spectrum in total) while another would be granted the Upper C block (22 MHz of spectrum in total). However, for practical purposes, when deploying LTE technology both licensees would effectively be making use of 10 + 10 MHz or 20 MHz spectrum in total. Consequently, the Commission considers that both licences should be subject to the same annual spectrum fees. Accordingly, the Commission considers the annual licence fee applicable to the Upper C block should be set at \$60,000, which is equal to the sum of the annual licence fees for the Lower B and C blocks. The revised, final 700 MHz spectrum fees are set out in Table 7.

Table 7: Final Commercial 700 MHz Spectrum Licence Fees			
Block(s)	Total Spectrum	Classification	Annual Fee
Lower A	12 MHz	Non-Prime	\$20,000
Lower B & C	24 MHz	Prime	\$60,000
Lower D	6 MHz	Non-Prime	\$10,000
Lower E	6 MHz	Non-Prime	\$10,000
Upper C	22 MHz	Prime	\$60,000

The Commission adds that to the extent that a licensed operator applies for 700 MHz spectrum that has been reserved for future use, the Commission would consider applying the "non-prime" spectrum fee in such cases. In the longer term, to the extent that LTE devices become widely available for use in "non-prime" spectrum blocks and/or reserved 700 MHz spectrum blocks, the Commission would also consider harmonizing the fees paid for designated "prime" and other 700 MHz spectrum blocks.

Question 14: Spectrum Fee Survey Results: Provide your comments on the survey of 700 MHz spectrum fees included in Annex 3, including identifying any revisions and/or additions you consider appropriate with supporting references and explanations.

In its response, LIME indicated that it had not identified any revisions or additions to the Commission's table on spectrum fees included in Annex 3 of the Second Consultation Document at this time.

While Digicel did not provide any revisions or additions, it asked that the Commission clarify whether all fees were calculated on a paired spectrum basis and whether the Commission had been able to verify that all the prices it has are based on paired spectrum to ensure consistency across surveyed jurisdictions.

Islandcom noted that it believes the reported spectrum fees are reasonable.

ACL provided no comments on the surveyed spectrum fees.

The Commission notes that the basis for the application of spectrum fees varies across jurisdictions. Some spectrum fees are applied on a service basis, others on a paired or unpaired spectrum basis. The Commission can confirm, however, that it was careful to convert all fees collected for the survey to a common basis when calculating the USD/MHz/pop spectrum fees

shown in Annex 3 of the Second Consultation Document to ensure, to the greatest degree possible, consistency in the reported rates.

2.5 Conditions of Licence

The Revised Proposal included the application of several conditions to all granted 700 MHz spectrum licences. These included the following:

Licence Term

The Commission proposed to apply a ten year licence term to all 700 MHz spectrum licences with a high likelihood of licence renewal at the end of the ten-year period as long as licensees have complied with their licence obligations as set out below.

4G LTE Deployment Commitments

To ensure that any "prime" 700 MHz spectrum licence that may be granted is used as quickly as possible to deploy 4G LTE mobile broadband services in TCI, the Commission proposed to include deployment and coverage commitments as conditions of licence for any operator granted a "prime" 700 MHz license. In particular, the Commission proposed to apply the following two "prime" 700 MHz spectrum conditions of licence:

- i) The licensee must deploy 4G LTE technology using the awarded "prime" 700 MHz spectrum within 18 months of the issuance of its 700 MHz spectrum licence.
- ii) The licensee must cover 100% of the population of TCI with 4G LTE-based services within 36 months of the issuance of its "prime" 700 MHz spectrum licence.

The Commission also indicated that while the primary objective of licensing 700 MHz spectrum is to facilitate the deployment of 4G LTE mobile broadband technology in TCI, the Commission would be prepared to grant exemptions from these conditions of licence where a licence applicant makes a compelling case for the deployment of an alternative technology or application using "non-prime" 700 MHz spectrum band and as long as the proposed use did not raise interference concerns. However, under the adopted comparative selection criteria listed in Section 2.3 above, licensing preference would be given to applicants seeking to deploy 4G LTE technology.

Deployment Compliance Safeguards

As noted, the proposed term of 700 MHz spectrum licences is ten years, whereas the 4G LTE technology deployment commitments for licensed "prime" 700 MHz spectrum apply in the initial 18 to 36 months of the licence term. Consequently, the Commission considered that an additional safeguard in the form of a performance bond may be necessary to ensure that any licensed PMT operator awarded a "prime" 700 MHz spectrum licence follows through with the required deployment commitment and does and not merely “warehouse” the spectrum. The

Commission suggested that the value of the contemplated performance bond could be set relative to the total value of the spectrum licence fees for the full 10 year licence term.

With respect to these proposed 700 MHz spectrum licence conditions, parties were invited to respond to the following question:

Questions 15: Licence Conditions: Provide any comments you may have on the Commission's proposed 700 MHz licence (i) term, (ii) spectrum deployment and population coverage commitments and (iii) deployment commitment safeguard (and value). Please provide any alternative proposals you may have, with supporting rationale.

In its response, Digicel stated that, in its opinion, it is generally impractical to provide 100% population coverage short of hugely subsidizing the last few per cent points of coverage. Digicel suggested, therefore, that the population coverage commitment should be limited to 95% or at most 98%. In addition, it suggested that if the coverage commitment were set below 100% initially (e.g., 95%), then the remaining coverage commitment could be determined by the Commission in consultation with each licensed operators' radio engineers.

LIME, for its part, raised several concerns with the proposed licence conditions:

- First, LIME took issue with the proposed 10-year term for 700 MHz spectrum licences. It suggested that the licence term should be increased to 15 years to be consistent with the current practice in TCI of generally granting spectrum licences for 15 rather than 10 years.
- Second, while not opposed to the application of reasonable spectrum deployment and population coverage commitments, LIME suggested that the population coverage commitment be reduced to just under 100% to avoid an operator being in breach of its coverage commitments merely because someone chooses to relocate to an outlying Cay.
- Third, with respect to the deployment commitment safeguard (i.e., performance bond requirement), LIME proposed that the Commission allow for exigent circumstances that may force an operator to slow, rethink or temporarily halt service rollout to provide an opportunity for relief due to circumstances beyond the control of the parties. LIME suggested that the Commission could assess any such occurrences on a case by case basis and determine if the operator has made a valid case for relief. Further, LIME proposed that the Commission should allow an operator to return the spectrum assigned in the event that the operator has continuously failed to fulfill its licence obligations. Lastly, LIME indicated that, in its view, the enforcement of a performance bond should be the very last resort and that careful thought to the actual process that would trigger its enforcement is imperative so as not to fetter the Commission's discretion to consider the circumstances of any such case that may arise.

Islandcom also indicated that it considers that the licence term should be 15 rather than 10 years, in line with other spectrum licences. In addition, it suggested that the population coverage

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requirement after 36 months should be reduced to 95%. Lastly, it disagreed with the proposal for a performance bond requirement as a deployment commitment safeguard.

ACL provided no comments on the proposed conditions of licence.

As noted, both LIME and Islandcom suggested that the term of 700 MHz spectrum licences should be 15 rather than 10 years. The Commission considers that, with the deployment condition safeguards set out below, a 15-year term would be appropriate in the case of 700 MHz spectrum licences. As well, a 15-year licence term would be generally consistent with the term of comparable spectrum licences. Accordingly, the Commission agrees with LIME and Islandcom's proposed change to the licence term condition included in the Revised Proposal.

Digicel, LIME and Islandcom all expressed concerns with the proposed 100% population coverage obligation by the end of the third year of the licence term of "prime" 700 MHz spectrum licences. The Commission agrees that achieving 100% population coverage within three years and then maintaining 100% population coverage annually for the balance of the licence term could prove difficult. Consequently, the Commission considers that the obligation should be reduced to 98%, consistent with Digicel's and LIME's suggestions to accommodate any relatively minor gaps in population coverage that may exist at the end of the third year of the licence term and beyond.

Lastly, both LIME and Islandcom expressed concerns with respect to the need for and the administration of the proposed performance bond based deployment commitment safeguard. In the latter case, the Commission agrees with LIME that an operator should have an opportunity to explain and, if possible, justify any failure to meet its licence obligations. The Commission would certainly address any such occurrence on a case-by-case basis, which would include taking into account any circumstances beyond the control of the operator than may have led to such an occurrence as well as the degree to which the licence deployment commitment obligations had not been met. Nevertheless, given that "prime" 700 MHz spectrum would have been awarded to the operator on the basis of its submissions and commitments to the Commission, effectively depriving a competing operator from making use of that same spectrum in the process, the Commission considers that the operator should be fully prepared to stand behind and comply with its licence commitments. A performance bond safeguard ensures that there will be a greater penalty than simply returning the spectrum if the operator fails to meet its deployment obligations.

However, the Commission notes that, under Sections 51 and 52 of the Ordinance, it has alternative measures it can rely on to deal with any instances where a licensee fails to comply with its conditions of licence. These measures include imposing penalties and suspending or revoking the licence of the licensee in question. The Commission considers that relying on these measures would provide a more efficient and less administratively burdensome means to address any case(s) where a licensee failed to comply with its licence obligations. As discussed, where any such concerns to arise, they would be addressed on a case-by-case basis by the Commission.

The Commission notes that to facilitate the monitoring of each "prime" 700 MHz spectrum licensee's compliance with the specified deployment obligations, these licensees will be required to file deployment reports with the Commission 18 and 36 months after the issuance of their

respective licences. In the reports, each licensee will be required to describe its progress in deploying 4G LTE technology in TCI, including population coverage as of the date of the report. From that point on, each "prime" 700 MHz spectrum licensee will be required to provide an update deployment report every second year demonstrating its ongoing compliance with the population coverage obligation.

In sum, therefore, the revised conditions of licence adopted by the Commission that will apply to "prime" 700 MHz spectrum licences include the following:

- Licence Term: 15 years
- Deployment Requirements for "Prime" 700 MHz Spectrum Licensees:
 - The licensee must commercially deploy 4G LTE mobile broadband services within 18 months of the issuance of its licence.
 - The licensee must cover 98% of the population of TCI with 4G LTE-based mobile broadband services within 36 months of the issuance of its licence.
- Reporting Requirements for "Prime" 700 MHz Spectrum Licensees:
 - The licensee must file a 4G LTE mobile broadband service deployment status reports with the Commission (i) 18 months, (ii) 36 months and (iii) every 2 years thereafter following the issuance of its licence.

2.6 Implementation Process

As indicated in the Second Consultation Document, the Commission considers that 700 MHz spectrum assignment process should be implemented as quickly as possible. The first stage of the conditional two-stage comparative selection spectrum assignment process could be completed in a period of about 6 weeks of the Commission's decision. Should a second stage process prove necessary, Applicants would be required to file second-stage spectrum application submissions within a further 6 week period. The Commission would then endeavour to complete the resulting comparative selection process within three months.

Assuming the second stage process is required, which is very likely under the adopted spectrum assignment Option 2, the Commission estimates that it should be in a position to award 700 MHz spectrum licences before the end of first quarter 2013.

With respect to the proposed implementation approach and timing, parties were invited to respond to the following question:

Questions 16: Implementation Process: Provide any comments you may have on the Commission's proposed "prime" 700 MHz spectrum licence comparative selection implementation process and timelines. Please provide any alternative proposals you may have, with supporting rationale.

The Commission notes that none of the Respondents provided comments on this specific question. Consequently, absent any alternative proposals, the Commission intends to adhere to the proposed process and timelines to the greatest degree possible. Details of the implementation process and timelines are provided in Section 3 below.

2.7 Other Matters

As noted in the preceding sections, ACL argued in its 20 July 2012 submission in response to the Second Consultation Document that ACL has a pre-existing authority to use all of the spectrum bands in TCI, including the 700 MHz spectrum band.¹² Consequently, ACL maintains that the Commission does not have the authority to assign spectrum in the 700 MHz spectrum band to other operators.

ACL bases its claim to a pre-existing authority to use all spectrum bands in TCI, including the 700 MHz spectrum band, on a letter from the Minister of Tourism, Communications and Transportation to Andrew's Communications, dated 3 July 1997 (referred to by ACL as the 1997 Executive Council or ExCo Letter and referred to herein as the "1997 Letter").¹³ In particular, ACL points to section 5 of the 1997 Letter which states that

“... by Minute No: 358/97 (Paper No. 97/178 Council advised that: ... (5) It granted Andrew's Communications the right to use all Cable TV spectrums – Analog and Digital – to receive and broadcast TV systems over the air or by cable wire commercially in Providenciales for the purposes of E-Mail, the Internet and alarm security services subject to the grant of any exclusive rights to another party.”

ACL also asserts that the Commission issued to ACL a Telecommunications and Spectrum Licence dated 12 May 2006 (“ACL's 2006 Licence”) that “has the effect of regularizing parts of ANDREW'S rights over the spectrum”.¹⁴ As such, ACL maintains that ACL's 2006 Licence bolsters its case for certain rights to the 700 MHz spectrum.

In its reply comments,¹⁵ LIME disagreed with ACL's position, and argued (among other things) that any spectrum rights granted to ACL in the 1997 Letter have long since expired through the operation of s. 62(1) of the Ordinance, that ACL has failed to produce any licence under the Wireless Telegraphy Ordinance or any other ordinance covering 700 MHz spectrum, and that ACL's rights to use spectrum are limited to the bands set out in Annex D of the ACL's 2006 Licence, which Annex does not mention 700 MHz.

After considering ACL's arguments, and the comments from LIME, the Commission has determined that ACL does not hold any licence or other authorization to use the 700 MHz

¹² ACL Response to Second 700 MHz Spectrum Policy Consultation Proposal, dated 20 July 2012, submission page 4 and accompanying transmittal letter pages 1-2.

¹³ A copy of the Minister's 3 July 1997 letter to ACL was attached to ACL's 20 July 2012 ACL Response to Second 700 MHz Spectrum Policy Consultation Proposal.

¹⁴ ACL Response to Second 700 MHz Spectrum Policy Consultation Proposal dated 20 July 2012, submission page 4

¹⁵ LIME's Comments on Responses to Second 700 MHz Spectrum Policy, dated 6 August 2012.

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spectrum band, and hence there is no impediment to the Commission licensing 700 MHz spectrum to other parties.

3 700 MHz Policy Implementation

As discussed in the previous sections, the Commission has indicated that its 700 MHz Policy will include the following elements:

- the FCC 700 MHz channel plan, with
 - Lower B and C and Upper C blocks designated as "prime" 700 MHz spectrum blocks and allocated for the purpose of providing 4G LTE mobile broadband services
 - Lower A and unpaired Lower D and E blocks designated as "non-prime" 700 MHz spectrum blocks
 - Other 700 MHz spectrum blocks, including Public Safety and Upper D spectrum blocks, reserved for future public safety or joint public safety/commercial use
- the Option 2 spectrum assignment approach, under which two Applicants will be assigned PMT operators "prime" 700 MHz spectrum (with each receiving at least 20 MHz of "prime" 700 MHz spectrum)
- a two-stage comparative selection spectrum assignment process

The Commission intends to issue the first-stage Call for 700 MHz Spectrum Licence Applications ("First-Stage Call for Applications" or "First CFA") within a period of about four weeks of the date of this decision. The First CFA will set out in detail the process and requirements for the first stage of the two-stage comparative selection spectrum assignment process, including the final conditions of licence for "prime" 700 MHz spectrum licences.

For the avoidance of doubt, all parties seeking 700 MHz spectrum licences will be required to submit new 700 MHz spectrum licence applications in accordance with the procedures and requirements established by the Commission in the First CFA.

Assuming the second stage process is required, the Commission would issue a second-stage Call for 700 MHz Spectrum Licence Applications ("Second-Stage Call for Applications" or "Second CFA") within a period of about two weeks after the completion of the first-stage. The Second CFA will set out in detail the process and requirements for the second stage of the two-stage comparative selection spectrum assignment process, including the final comparative selection criteria, set out in greater detail with the related weights/scores for each criterion.

While the precise timing for first-stage and second-stage submissions will be finalized in the First CFA and Second CFA, the Commission is of the preliminary view that applicants' first-stage submissions could be filed as early as 2 weeks following the issuance of the First CFA. In addition, the Commission is of the preliminary view that the more detailed second-stage submissions, addressing the comparative selection criteria, could be filed with the Commission within 6 weeks following the issuance of the Second CFA. In this way, applicants' second-stage

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submissions would be filed with the Commission prior to year-end 2012 and a decision on the applications could be rendered by the Commission in the first quarter of 2013.

Annex 1 – FCC 700 MHz Spectrum Plan

Figure A1-1
FCC Channel Plan Detail and 3GPP Technical Equipment Specifications Equipment

