

# DETERMINATION

## PUBLIC CONSULTATION

### ON A

#### PROPOSAL FOR ASSIGNMENT OF SPECTRUM IN THE 700 MHZ BAND

(MARCH 2013)

## 1.0 INTRODUCTION

ECTEL conducted a public consultation on a proposal for the assignment of spectrum in the 700 MHz band. The consultation began on 20<sup>th</sup> July 2012 with a first period for initial comments which was followed by a second period for comments on comments that ended on 20<sup>th</sup> September 2012.

Comments were received from the following respondents:-

Initial comments:

- Cable & Wireless (LIME)
- Digicel

Comments on Comments:

- Cable & Wireless (LIME)
- Digicel
- AisleCom Grenada Ltd.

This document presents ECTEL's determination on relevant issues that were raised in the consultation. It addresses all the issues/ matters proposed in the consultation document that were either challenged or rejected (in whole or in part) by respondents and all other matters that were raised or suggested for consideration by respondents.

Any matter proposed in the initial consultation document that is not addressed in this determination will essentially remain unchanged in the final proposal.

The following sections of this document (sections 2 to 10) present the submissions received from respondents, and outlines ECTEL's determination for each relevant matter.

## **2.0 700 MHz POLICY**

### **2.1 Cable and Wireless' (LIME) Comments**

*(Ref: Initial Comments: page 1 , part II, paragraph 3)*

Regarding the 700 MHz policy and band plan that has already been adopted by ECTEL, LIME said that LIME "... was at no point in time advised of the tabling or approval of the policy. Nor did ECTEL respond to the issues raised by the industry in its response to the first consultation."

### **2.2 Digicel's Comments**

*(Ref: Comments on Comments: page 3, last line )*

Digicel noted that LIME's comment (in "1.1 above) was consistent with Digicel's own experience.

### **2.3 ECTEL's Determination / Response**

ECTEL did not publish a notice that expressly advised of the tabling or approval of the 700 MHz policy and band plan that came out of the public consultation. ECTEL did however publish the policy and band plan on its website in August 2010 as part of a public consultation on the review of the ECTEL Regional Spectrum Management Plan. ECTEL nonetheless agrees that the final findings and policy should be formally published and will therefore proceed to do so.

## **3 REVISION OF 700 MHz POLICY**

### **3.1 Cable and Wireless' (LIME) Comments**

*( Ref: Initial Comments: page 2 , part II, paragraph 4)*

LIME essentially argued that because much have changed since ECTEL's first consultation on the 700MHz policy, ECTEL should take this opportunity to review best practice for 700 MHz at this time with a view to revising the Policy.

### **3.2 Digicel's Comments**

(Ref: Comments on Comments: page 4 , para 5)

Digicel said that it was its understanding that this [review of the Policy] was the entire raison d'être of the present consultation.

### **3.3 ECTEL's Determination / Response**

It should be noted that this consultation is not for the purpose of revising the Policy. However, under this consultation, if ECTEL determines a practice to be "best practice" that should be pursued, then ECTEL shall consider an appropriate review of the current 700MHz policy where that best practice is inconsistent with the current policy.

## **4 WASTAGE OF 6MHZ BLOCK 740-746MHZ**

### **4.1 Cable and Wireless' (LIME) Comments**

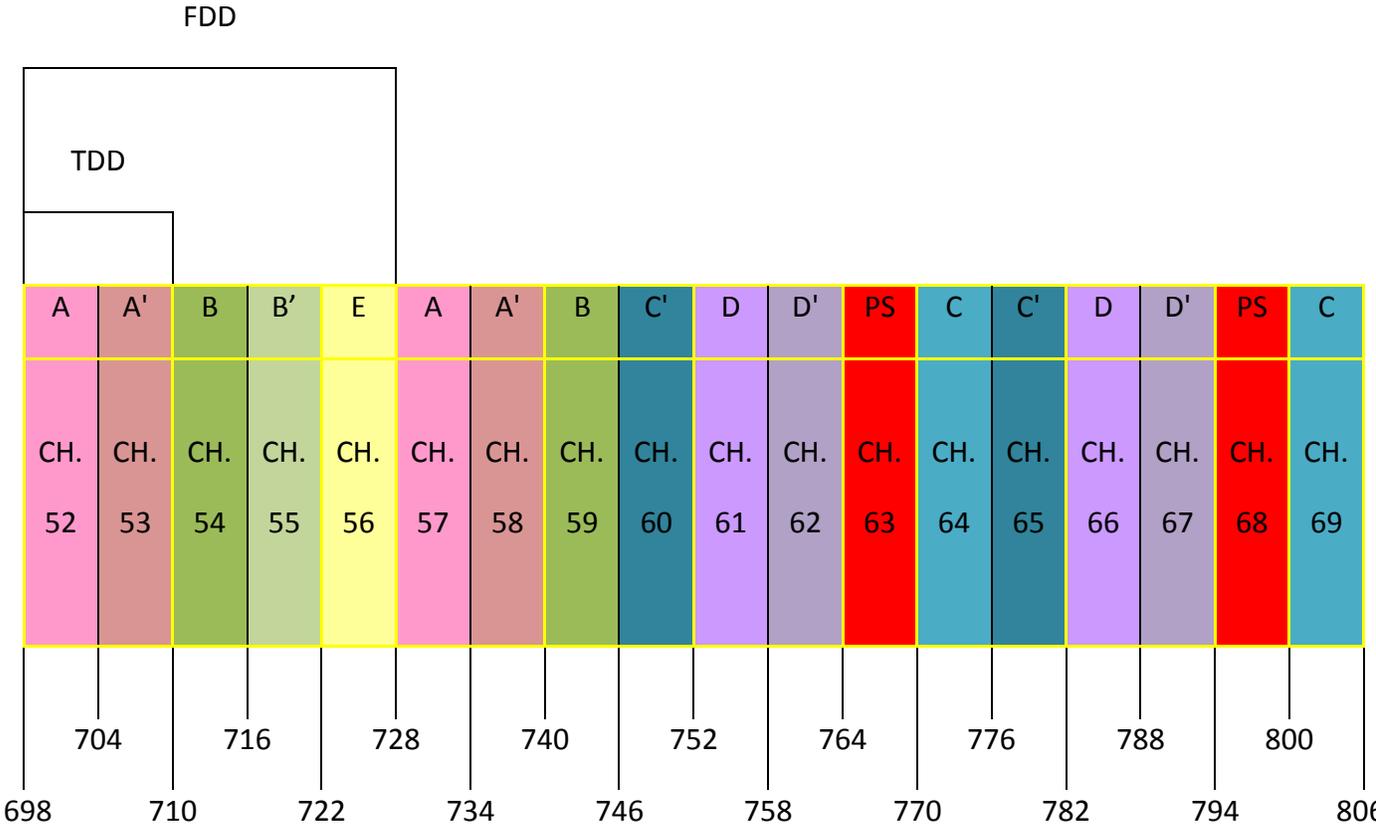
( Ref: Initial Comments: page 3 , part II, para. 7, Lines 3)

LIME urged the Commission to "...review its Block Subdivision Plan to align it with the HSPA+ frequency plan adopted by the FCC in the U.S. ... LIME recommends taking 740-746MHz from Block C and adding this to Block \*B. This would make block allocation \*B 12MHz and Block C 6MHz." This point was reemphasized in LIME's comments on comments.

### **4.2 ECTEL's Determination / Response**

ECTEL agrees with LIME's suggestion to better align the existing band plan to that of the FCC in order to ensure greater usefulness of the spectrum by preventing wastage of the 740-746 MHz block of frequencies. ECTEL will therefore amend the 700 MHz band plan to the one shown below:

# ECTEL PROPOSAL FOR THE 700 MHz BAND PLAN



- Reserved B'
- C

Reserved
- Reserved E
- Public Safety PS

This amendment simply changes the labels of the 740-746 MHz block and the 800-806 MHz block to “B” and “C” respectively. Those changes result in a paired 6 MHz block labeled “B” that corresponds to the FCC Lower Block “C” currently used by AT&T. The amendment also converts the two 6 MHz blocks previously labeled “C” (770-776MHz) and “E” (800-806MHz) into one paired 6 MHz block labeled “C”. In the amendment blocks B’, C and E (total of 24 MHz) are reserved, while the PS blocks (total of 12 MHz) are allocated to public safety.

AT&T’s LTE network uses blocks B and C in the FCC lower 700 MHz band plan. The amendment described above therefore ensures that those same 700 MHz spectrum blocks used by AT&T will be assignable in ECTEL States. It also prevents the wastage of the block that is labeled “C” in the existing ECTEL band plan.

## **5 QUANTITY OF SPECTRUM ASSIGNABLE TO EXISTING OPERATORS**

### **5.1 Cable and Wireless’ (LIME) Comments**

*(Ref: Initial Comments: [page 4, part III, para. 9, Line 3] ; [page 5, part III, para. 10, line 2] & [pages 5/6, part IV, para. 12] )*

LIME contended that “the assignment of 12 MHz of spectrum, while absolutely necessary, is not sufficient to provide wireless broadband service at an acceptable Quality of Service (QoS)...” LIME proceeded to suggest that a minimum of 20MHz should be assigned because it provided an opportunity to deliver wireless broadband at an acceptable, competitive QoS. This was reemphasized in LIME’s comments on comments.

### **5.2 Digicel’s Comments**

*(Ref: Initial Comments: page 6 , para 12 & page 7, para 14, page 8, para 15)*

DIGICEL urged that “... the previous efforts by Digicel in terms of obtaining 700 MHz spectrum be factored into the consideration of Digicel’s primary submissions that the minimum award of spectrum to existing operators (foremost of which is Digicel) be increased from 12 MHz to 24 MHz and that the maximum be increased from 24 MHz to 36 MHz.”

Digicel also submitted that “... the maximum level articulated by ECTEL of 24 MHz is simply insufficient. The bandwidth required in order to roll out these

services properly in the individual Member States is 36 MHz.... Digicel would strongly urge ECTEL to increase the maximum awarded to each qualifying entity in the Member States from 24 MHz to 36 MHz... 36 MHz is what is needed to do it properly – not 24 MHz.

... Digicel notes that the NTRC's propose that these existing and operational major providers (which obviously would include the licensed Digicel operator in each Member State) should be assigned a minimum of 12 MHz of 700 spectrum ... Digicel would submit that this minimum should be fixed at 24 MHz..."

Digicel also devoted a considerable portion of its comments on comments to emphasizing its position regarding the insufficiency of the proposed 12 MHz guarantee and the 24 MHz cap.

### **5.3 Aislecom's Comments**

*(Ref: Comments on Comments: page 1, para II)*

Aislecom said that it "... disagrees with the view that 20 MHz or 36 MHz of spectrum are required to properly roll out 4G LTE services. Several large US operators are currently providing 4G LTE services to millions of subscribers on 4G LTE carriers ranging from 1.4 MHz to 5 MHz ..."

### **5.4 ECTEL's Determination / Response**

In its comments LIME essentially recommends that a minimum of 20 MHz (i.e. a 10 MHz pair) of 700MHz spectrum would be required to deliver wireless broadband at an acceptable, competitive QoS. Because the cap set in the 700 MHz Policy is 24MHz per provider, ECTEL assumes that LIME's recommendation is intended to suggest that the proposed guarantee of at least 12 MHz of spectrum to existing PMT/BWA providers should be changed to a guarantee of at least 20 MHz. Digicel has more directly suggested a minimum guarantee of 24 MHz and a cap of 36MHz.

Notwithstanding the fact that both LIME and Digicel have suggested that 12MHz is insufficient to provide an LTE network of good quality, ECTEL has decided that the guarantee of the minimum of 12 MHz and the cap of 24 MHz will remain for the following reasons (among others):

1. Neither LIME nor Digicel submitted data or information or analysis to support their recommendations. Neither has therefore provided sufficient justification for the revisions being requested.
2. 12 Mhz (i.e. a 6 MHz FDD pair) is a reasonable minimum guarantee since it is able to provide LTE top download data rates of at least 30Mbps using 2 x 2 MIMO in 2 x 5Mhz of spectrum. ECTEL considers this to be a reasonable top download speed for broadband service of acceptable quality.
3. There are currently several examples of 2 \* 5 MHz LTE networks in other jurisdictions, including Sprint's (USA) 4G LTE network in the FCC lower 700 MHz A block. Note that the LTE standard is specified to be implementable in as little as 2 x 1.4 MHz of spectrum.
4. Population densities in ECTEL Member States are relatively low. A 2 x 5 MHz LTE network is therefore generally not expected to require high cell site densities in order to reasonably meet data volume demands. High demands in the few high population density areas can be addressed using smaller cells while the network still takes advantage of the long range and good obstacle penetrating characteristics of 700MHz spectrum. Furthermore, there is no reason why other LTE spectrum cannot be used for providing higher download speeds and in handling larger data volumes in dense population areas.
5. The proposal to guarantee a minimum of 12 MHz to existing PMT/BWA providers does not preclude them from submitting applications for up to 24 MHz of spectrum, which may be assigned to existing applicants where they are able to adequately justify the request in their applications.
6. 24 Mhz (i.e. a 12 MHz FDD pair) is able to provide LTE top download data rates of about 85 Mbps in 2 x 10MHz of spectrum with MIMO. ECTEL therefore considers 24 MHz to be a reasonable maximum assignment per provider given that the amount of 700 MHz spectrum is limited. This ensures that 3 providers can be accommodated in the amount of spectrum to be made available. Currently Verizon uses only 22 MHz of 700 MHz spectrum in its LTE network while AT&T uses only 20MHz. Both of these are less than ECTEL's 24MHz cap.
7. The areas of the 700 MHz spectrum that will be of most immediate valuable (and thus most attractive) will be determined by, and limited to those areas currently used by Verizon and AT&T. Guaranteeing a minimum of 24 MHz to existing PMT/BWA providers would therefore leave none of this "prime" spectrum for accommodating a possible third operator. This would

undesirably limit the potential for further competition in the use of 700 MHz spectrum.

Considering all the foregoing, ECTEL agrees with AilesCom's statement that 12 MHz can provide a good quality network. Consequently, a minimum of 12 MHz of 700 MHz spectrum will be guaranteed to existing PMT/BWA providers who apply within the prescribed time window and who meet the other set requirements. The maximum spectrum assignable to a provider is currently set in the existing 700 MHz Policy and will remain at 24 MHz.

The assignment process outlined in the consultation document will however be modified to permit the regulator to assign the 24MHz maximum to existing PMT/BWA providers who submit applications within the specified time window and whose applications provide adequate justification (to the Regulator's satisfaction) of a need for more than 12 MHz in order to ensure good quality service.

## **6 CLASHING APPLICATIONS**

### **6.1 Cable and Wireless' (LIME) Comments**

*( Ref: Initial Comments: page 6, para 13)*

LIME suggested that in the event that there are conflicting applications, "... ECTEL could use a beauty contest to decide which operator should be awarded 20 MHz of spectrum."

### **6.3 ECTEL's Determination / Response**

ECTEL acknowledges that the proposal to guarantee spectrum to existing operators applying within a specified time window may potentially result in a situation where multiple applicants may request the same spectrum block. This potential is particularly elevated given the limited amount of "prime" 700 MHz spectrum, and given the issues surrounding compatibility (especially related to roaming) between networks in ECTEL states and those of Verizon / AT&T. The possibility of clashing applications must therefore be addressed.

Designing a fair beauty contest, in addition to being difficult and inherently subjective, would likely yield varying results in different states and thus

potentially work against a desire to maximize harmonization of frequency block assignments across the ECTEL States. Besides, the existing two major wireless providers (LIME & DIGICEL) who may likely be the main contenders are both significant providers with substantial existing subscriber bases. It may therefore not be desirable to have a situation in which a beauty contest results in more favourable assignment of valuable prime spectrum to one provider over the other, on the basis of possibly inconsequential, subjective and/or sub-optimal differences revealed in a beauty contest.

Conflicting applications will therefore not be resolved by a beauty contest. Instead, the assignment process will be designed to optimize equity in access to prime spectrum, and any conflict between applications shall be resolved using the following two step procedure:-

Step 1: For any area/block of the spectrum where clashing applications occur, all the clashing applicants shall be invited by the Regulator to negotiate among themselves for the purpose of jointly agreeing on non-clashing assignments for the areas of spectrum in question. Negotiation shall proceed on a purely voluntary basis and must be for no consideration, save for the achievement of non-conflicting assignments. A period of up to one month shall be allowed for the negotiation / agreement process.

Step 2: Following a failure or the conclusion of the negotiations, or termination of the negotiation period, whichever is the soonest, any remaining conflict(s) shall be resolved by the Regulator using a lottery employing a process that is totally transparent to all the clashing applicants. The lottery will however be designed to conform to the following three rules:-

- i) Where an applicant has already been assigned a block of spectrum in an ECTEL State in response to an application under this spectrum assignment process, he shall be given the first right to be assigned that same block in subsequent assignments (under this process) occurring in other ECTEL States. That right shall not be overridden by the lottery.
- ii) An applicant for both blocks A' and B (i.e. the "AT&T blocks") may be assigned no more than one of the blocks if his application clashes with that of another successful applicant in respect of any of those two blocks.
- iii) An applicant applying for both blocks C' and D (i.e. the "Verizon blocks") may be assigned no more than one of the blocks if his

application clashes with that of another successful applicant in respect of any of those two blocks.

## **7 NOTICE TO BE PUBLISHED**

### **7.1 Cable and Wireless' (LIME) Comments**

*( Ref: Initial Comments: page 6, para 15 and Page 7, para 16)*

With regards to the proposed notice to be published inviting applications for 700 MHz spectrum, LIME was of the view that the Notice "...will contain positions which have significant impact on the existing providers and ought properly to be the subject of a consultation. Accordingly LIME anticipates that the Notice will be open to comments in keeping with the rules of natural justice..."

LIME also suggested that instead of just saying (in the consultation document) that all other existing spectrum assignment rules will continue to apply where they are not in conflict with the rules in the consultation document, it would be best, for the avoidance of doubt, to state all the criteria relevant for the assignment of 700 MHz spectrum in the Notice.

### **7.2 Digicel's Comments**

*(Ref: Initial Comments: Page 9; para 18)*

Digicel, referring to the 7 rules outlined in the consultation document for governing the assignment process, was of the view that the other existing non-conflicting rules to be applied to the process should be specifically identified and published in the Notice.

In its Comments on Comments, Digicel also supported LIME's view that the Notice ought properly to be the subject of consultation.

### **7.3 ECTEL's Determination / Response**

All the existing rules that normally govern the assignment process will be either outlined or appropriately referenced in the Notice. There is however no need or intention to consult on those other rules/procedures since they are established procedures (technical, legal etc) that are already normally used by the Regulator in the spectrum application process.

There is also no need or intention to consult on the Notice since it will not contain new rules /provisions that were not already in existence or applicable, or that were not derived pursuant to this consultation. ECTEL's final determination on this consultation will be published in advance of the Notice.

## **8 DEPLOYMENT TIMEFRAME**

### **8.1 Cable and Wireless' (LIME) Comments**

*( Ref: Initial Comments: Page 7, para 17 )*

According to LIME, "... of the countries in the English speaking Caribbean which have addressed the matter of the assignment of 700 MHz in recent times, none has proposed that the spectrum be deployed within six (6) months. Technically, it is likely to be challenging to deploy the spectrum in 6 months. ..Both the Bahamas and Turks & Caicos Islands have established an eighteen (18) month timeframe for deployment. LIME recommends the same to ECTEL."

### **8.2 Digicel's Comments**

*(Ref: Initial Comments: page 10, para 26 )*

Regarding the 6 Months (to avoid forfeiture) deployment timeframe proposed in the consultation document, Digicel had no objection save to say that "... Digicel would of course assume that any such forfeiture type action engaged in by any NTRC would be exercised judiciously and carried out in a manner consistent with natural justice and fair procedure. ..."

### **8.3 AisleCom's Comments**

*(Ref: Comments on Comments: page 2)*

AisleCom said that it was "... in agreement with LIME that it is not feasible to deploy a 4G LTE network within 6 months. Equipment order lead times are longer than six months. AisleCom urges the commission to extend that period from 6 months to 12 months."

### **8.4 ECTEL's Determination / Response**

Any forfeiture exercised by the Regulator would be fully guided by existing telecommunications law and the dictates of normal constitutional rights of natural justice and fairness of procedure.

Given the comments of the respondents, ECTEL has decided to revise the roll out timeframe. In doing so ECTEL takes consideration of:

- a) The need to prevent the hoarding of 700 MHz spectrum which is a scarce high value resource.
- b) The fact that the 12 MHz guarantee of spectrum proposed for existing PMT/BWA providers is explicitly predicated (in the consultation document) on a need to “ensuring the most rapid rollout /deployment of spectrum possible”.
- c) The fact that the existing PMT/BWA operators already (for the most part) have tower infrastructure in place.
- d) The fact that 700 MHz spectrum would require significantly less dense tower infrastructures (compared to other areas of LTE spectrum) given its long range coverage capability.

Taking account of all the foregoing, the rollout timeframe to avoid forfeiture shall be:-

- 1 year for start of offering 700 MHz wireless broadband access to the public.
- 18 months to achieve geographical coverage that will cover at least 60% of the size of the provider’s mobile wireless subscriber base existing at the time of assignment.
- 2 years to achieve geographical coverage that will cover at least 95 % of the size of the provider’s mobile wireless subscriber base existing at the time of assignment.

## **9 EXISTING DIGICEL 700 MHZ ASSIGNMENT IN ST VINCENT AND THE GRENADINES**

### **9.1 Digicel’s Comments**

*( Ref: Initial Comments: Pg 4; Para 5 & 6)*

In its comments Digicel stated,

“Digicel (SVG) Limited was formally granted a specified frequency allocation in the 700 MHz spectrum band by the Minister of Telecommunications on 6 December 2011. As such, Digicel has already been lawfully and properly awarded 700 MHz Spectrum by the Government of St. Vincent and the Grenadines and any action which would seek to interfere with or otherwise prejudice that award of 700 Spectrum would be impermissible and unlawful...

... Accordingly, Digicel has assumed certain inalienable legal rights relating to that spectrum allocation; including a right of legitimate expectation that the NTRC shall not now act in a manner inconsistent with that lawful allocation to Digicel ...”

## **9.2 Cable and Wireless’ (LIME) Comments**

*(Ref: Comments on Comments:- paras 3 to 9)*

A significant part of LIME’s comments on comments was devoted to challenging Digicel’s claim that it has been lawfully and properly awarded 700 MHz Spectrum by the Government of St. Vincent and the Grenadines. LIME said that it “...challenges the legality of the 700 MHz spectrum Digicel alleges has been ‘lawfully and properly awarded’ in St. Vincent and the Grenadines...”

In paragraphs 8 & 9, LIME asserts that it “... had formally applied to all five (5) NTRCs from as far back as 2008 for assignment of 700 MHz spectrum. To date LIME has not received an award of 700 MHz spectrum through any of the NTRCs and it would certainly seem anomalous for any other provider to have been awarded any portion of this valuable spectrum while not making an award of the said spectrum available to a comparable competitor. This is injurious to any business.”

LIME also said that it “...anticipates that ECTEL will also address the legality of the assignment of 700MHz spectrum in St. Vincent and the Grenadines. In any event LIME recommends that in St. Vincent and the Grenadines, equity must be restored ...”

## **9.3 ECTEL’s Determination / Response**

ECTEL notes the positions of Digicel and Cable and Wireless (LIME) on this matter. The Directorate will strive to ensure that where possible, existing PMT and BWA providers operating in St. Vincent and the Grenadines who qualify for the grant of 700MHz spectrum hold at least 12MHz.

## **10 AWARD OF SPECTRUM TO APPLICANTS OTHER THAN EXISTING PMT/BWA PROVIDERS**

### **10.1 Digicel's Comments**

*( Ref: Initial Comments: page 5, para 9)*

Digicel said that “the NRTC's ought not to involve itself in making awards of spectrum (in any band) to entities or applicants with speculative plans or where those entities have not proven their ability to provide telecommunications services in the relevant field ... In simple terms, the correct allocation of 700 MHz spectrum should be awarded, without much further delay, to those operators that already provide the relevant services in the ECTEL Member States.”

### **10.2 ECTEL's Determination / Response**

ECTEL will keep open the possibility of having new entrants in the sector to compete. This is consistent with the aim of maintaining a competitive telecommunications sector. ECTEL will continue to depend upon the application evaluation process for screening applicants who lack the ability to provide telecommunications services in the relevant field.

## **11 FAIR ACCESS AND PRACTICABILITY**

### **11.1 Digicel's Comments**

*( Ref: Initial Comments: page 6, para 11 & 12)*

Regarding the proposal in the consultation document to disregard past applications for 700 MHz spectrum, Digicel stated that the approach:- “ ... unfairly prejudices Digicel as an entity that had the foresight and aptitude to file applications for Frequency Authorisations in the 700 MHz range. Whilst Digicel notes ECTEL's position in this regard, it is somewhat disgruntled at the approach that essentially sets its efforts to date at nought so as to allow all other entities to 'catch up' with the play. Digicel would submit that its applications and attendant efforts to date in securing 700 MHz spectrum should not simply be discounted in full for the simple reason that other 'would be' applicants may have received mixed signals from the NRTC's. The serious operators would have made their intentions abundantly clear.”

**11.1 LIME’s Comments**

*( Ref: Comments on Comments: paragraphs 8 & 9)*

LIME said that it “... had formally applied to all five (5) NTRCs from as far back as 2008 for assignment of 700 MHz spectrum. To date LIME has not received an award of 700 MHz spectrum through any of the NTRCs ....”

**11.2 ECTEL’s Determination / Response**

The proposal to disregard past applications will stand: this means that the applications and attendant efforts to date of all operators in securing 700 MHz spectrum will be discounted in full.

ECTEL’s records show that Digicel was not the only existing past applicant for 700 MHz spectrum in ECTEL Member States. Given this fact, there would be a multiplicity of challenges if past applications were to be included and assessed on a first-come-first-served basis. In addition to the problems with practicability and fairness already outlined in the consultation document, this approach would also potentially create tremendous difficulties in attempting to ensure harmonized and consistent assignments to existing multi-island PMT operators.

\*\*\*\*\* **END** \*\*\*\*\*

---