



LIME's Response to the Telecommunications Regulatory Commission's (TRC's)

Spectrum Management Framework Consultation Document

Reference Number C/1/2011 and dated May 2011

August 26th, 2011

Introduction

LIME values the opportunity to respond to the Telecommunications Regulatory Commission (TRC) Consultative Document entitled “Spectrum Management Framework – A Consultation Document”, (Reference Number: C/1/2011).

Questions and Answers

Question 1: Do you agree with the TRC’s proposal to follow Region 2 allocations unless it is in the territory’s interest to do otherwise?

LIME: LIME has no objection to the TRC’s proposal and accepts that it is a practical one.

Question 2: Do you agree that the TRC should first concentrate on bands allocated to cellular mobile and wireless broadband access services when developing a NFAT?

LIME: LIME concurs with the TRC on the importance of developing a NFAT since it will play a critical role in allowing Telecommunications Operators invested in the BVI more certainty in their the medium and long term planning. LIME agrees that the TRC should first concentrate on bands allocated to cellular and mobile wireless broadband. LIME has concrete plans to deploy 4G mobile technology throughout its network.

Question 3: Do you have a view on the band plans that should be adopted in specific frequency bands?

LIME: LIME is not in a position to share its comprehensive view of all the band plans that should be implemented with respect to all the frequency bands at this time. However in principle LIME is of the view that band plans should be put in place and should provide detailed information on allocation of the spectrum regarding types of services, as well as, detailed frequency channelling arrangements that build in a number of specific interference avoidance measures based on ITU-R Recommendations. For example LIME is of the view that in the 850 band each mobile operator (i.e. CCT and itself) should get 12.5 MHz of spectrum with a guard band of 0.2 MHz of spectrum between networks.

Question 4: Do you have any comments on the TRC’s proposals for harmonisation of licence exempt allocations and for making CB radio licence exempt?

LIME: LIME has no objection to the TRC’s proposed approach.

Question 5: Are there any specific issues you think should be raised in the proposed discussions with the FCC?

LIME: Due to its close proximity with the USVI, USVI Operators often blast their signal into the BVI with the aim of “capturing” the more expensive roaming traffic. One negative consequence is that not a few local mobile phones in the BVI connect to the mobile network of such a USVI Operator. Not only does this provide a poor customer experience but it also harms BVI Operators financially. As such, there needs to be better coordination between Operators in both Countries to control this negative externality. For example, LIME understands that on the US border with Mexico, Operators coordinate their efforts to prevent unnecessary interference to each other’s operations. LIME proposes that the TRC discusses how this problem can be minimized, if not eliminated with the FCC.

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Question 6: Do you have any comments on the TRC's proposed assignment policy?

LIME: In principle, LIME does not object to the TRC's assignment policy. LIME supports the TRC's resolve to ensure that prime spectrum is assigned equitably and fairly to ensure that licensees can compete on a "level playing field" as they seek to supply affordable products and services to consumers. However, LIME maintains that much of the details that are required to give the policy effect ought to be more clearly articulated by the TRC, worked through and agreed upon by the Industry e.g. the proposed simple auction.

Question 7: Are there any comments on the TRC's proposals to issue frequency authorizations to government users and unitary licence holders for their spectrum access and to take an incremental approach to spectrum trading?

LIME: LIME does not object to the TRC's approach.

Question 8: Do you have any comments on the TRC's proposals in respect of applying spectrum fees to all authorised spectrum use and on the proposed basis for setting these fees so as to promote efficient spectrum use (RSM13 and 14)?

LIME: In principle LIME does not object to the payment of fees for the use of spectrum. However, LIME recommends that the TRC dedicates a separate consultation process to determine the appropriate mechanism by which fees should be charged for spectrum in the BVI. LIME supports the approach that on the introduction of spectrum fees the effect on the Operators should be revenue neutral. LIME supports the TRC's consideration that Operators would require time to adjust to the introduction of annual spectrum fees and that the 3% royalty fee levied on Operators revenues would need to be reviewed.

Question 9: Do you see more value in holding user meetings with the TRC on a regular basis or only as the need arises?

LIME: Yes. LIME considers meeting on a quarterly basis to be beneficial. Since such meetings would serve to maintain consistency and visibility of all issues. It would also provide us a regular forum for any new initiatives we may want to introduce and perhaps have greater insight/foresight into future actions by the TRC.

Question 10: Is there interest in access to the 1800 MHz, 1900 MHz and 2100 MHz frequency bands (as indicated by Supply Option 1) or should an alternative frequencies be considered for release? Answers should take account of later proposals to apply coverage obligations and offer the spectrum on a competitive basis.

LIME: LIME is interested in the #####in the BVI. ##### band is also of interest since ##### have now deployed in this band as well.

Question 11: Do you have any comments on the benefits and costs of reassigning frequencies currently held by CCT in the 850 and 900 MHz bands to other operators seeking access to these frequencies? Please indicate the amount of spectrum in each frequency band, if any, you think should be reassigned.

LIME: The 850 and 900 MHz frequencies should be reassigned to create equity among the existing Operators for competitive, economic and technical reasons. It is a matter of fact that they are more cost effective to operate in based on the propagation characteristics of the frequency. LIME recommends that 12.5 MHz of spectrum 850 MHz spectrum should be assigned between CCT and itself with a .2MHz guard band between each other.

Question 12: What is your interest in the use of the 700 MHz, 2500MHz and 3500 MHz bands? In responding please indicate your views on:

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a. Options for the band plan

a. **LIME:** LIME is interested in the frequency assignments below given that they are adopted by the US:

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b. Alternative licence blocks and bandwidth that each operator would prefer for LTE and/or other broadband deployment within this band plan, taking account of the obstacles to interoperability between the various band classes in the US band plan.

b. **LIME:** LIME's preference is as per below;

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c. Procedure and fees for acquiring these licences

c. **LIME:** Please see LIME's response to question 8 above regarding fees. Regarding procedures for acquiring these licences, please see LIME's response to question 6 above.

d. Obligations associated with these licenses, including those related to ensuring that the significant population centres are covered within a specified time after the licenses are awarded by mobile broadband networks.

LIME: LIME accepts that there are benefits of associating obligations with the licences issued to Operators as outlined by the TRC. It is noteworthy, that the Telecommunications Industry is highly capital intensive as is evidenced when firms roll out new networks with cutting edge technology. Given this fact, coupled with the present economic downturn, it conceivable that a well intentioned Operator in the BVI could be forced to modify its roll out plan for a service due to further contraction of the world economy. Hence, LIME asks that any obligations contemplated should be reasonable and should take into account the good faith efforts on the part of an Operator to honor them.

Question 13: Do you agree with the TRC's proposals to consider the potential release of spectrum at 2300 MHz and 450 MHz after release of the 700 MHz and 2500 MHz bands? Are there other bands that should be considered? If you suggest additional bands should be released, please provide information for such bands according to the points outlined in Question 12.

LIME: LIME agrees with the TRC on this approach.

Question 14: The TRC welcomes comments on its preferred sequencing of actions to meet the requests of operators for additional spectrum, namely (i) Release of 700 MHz, 2500 MHz and 3500 MHz (if there is demand expressed in this consultation) bands, (ii) Refarming of 850/900 MHz frequencies, and (iii) Assignment of vacant frequencies at 1800/1900 MHz/2100MHz.

LIME: LIME accepts that these three sets of actions represented by the TRC are very important. However LIME disagrees with the TRC's order of prioritization. LIME is convinced that the more appropriate sequence should be;

- i) Refarming/Reassignment of 850/900 MHz frequencies
- ii) Assignment of vacant frequencies at 1800/1900 MHz/2100MHz
- iii) Release of 700 MHz, 2500 MHz and 3500 MHz

Question 15: Should TRC apply spectrum caps when releasing additional spectrum? If so at what level and for what frequencies should they be set? Should spectrum be set aside for a fourth operator? The TRC welcomes comments on the following proposals for spectrum caps and suggestions for alternatives with reasons: (i) 60 MHz for any one operator's total spectrum holdings in all bands below 1 GHz; and (ii) 170 MHz for any one operator's total spectrum holdings in all bands at frequencies up to and including 2.5 GHz.

LIME: LIME recommends that the TRC should establish the starting point in terms of spectrum bandwidth, emergency services and rf compatibility. This would promote more efficient use of the spectrum and facilitate new and better services.

LIME is of the view that by adopting a flexible approach to assigning spectrum, the Operator will have a greater say regarding what technology or equipment it will deploy and for which would spectrum band. By being flexible, the regulator will encourage Operators to develop innovative, spectrum-efficient and low-cost technologies. Any other approach is likely to yield a suboptimal outcome in the medium to long term.

LIME does not believe that placing a cap on existing or new frequency allocations is necessary. Instead the TRC should allow the market force dynamic to prevail. Only in circumstances where the market left on its own, cannot correct itself should the TRC intervene, as is the case with CCT's legacy assignment of an inordinate amount of 850 and 900 MHz spectrum.

Further, LIME posits that based on the total user population in the BVI and the resulting economies of scale, the market does not require a fourth Operator and as such, spectrum should not be reserved for the purpose of making such an assignment to a fourth licensee. In small Island states such as the BVI, three Operators are sufficient to guarantee better service, better pricing, and more efficiency.

Question 16: Do you have any specific comments on proposals for coverage and service obligations that may be attached to new spectrum releases? Are there any other aspects of service provision which TRC should consider as potential licence conditions?

LIME: LIME does not have any specific comments on proposals for coverage and service obligations at this time. However, LIME is very concerned that upon issuing a licence, with the attendant coverage and service obligations the TRC will should actively seek to need to prevent foreign operators from penetrating indiscriminately the space of the BVI. A case in point is the USVI, where their sites closer to BVI are operated at high signal strength. As such, it is recommended that those guidelines used at the border between US and Mexico be adopted by BVI and the USVI. Things such as maximum signal level thresholds and IS-41 links to provide better roaming efficiency, should prevent a mobile from operating as roamer in its local serving area because the signal strength from a foreign operator is much stronger.

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Question 17: Do government users and other interested parties have comments about future technologies and frequency bands suitable for delivery of digital communications services (including broadband) for the emergency services in the VI?

LIME: LIME considers that 911 services is suitable for the BVI and that the BVI should adopt Location Services such that when an emergency call is made from a mobile phone, the phone also sends out information on its latitude and longitude to the Public Safety Answering Service. This will greatly facilitate search and rescue efforts.

Question 18: Do you have views on whether government users should use commercial networks to meet their future needs for mobile broadband and the implications for the way mobile operators deploy their networks?

LIME: LIME has a proud track record of using its telecommunications network to promote the Public Interest and to facilitate search and rescue efforts during periods of national disasters, in all of the Caribbean territories in which it operates.

In principle, LIME is not opposed to partnering with the government to supply mobile broadband to its users/agents. LIME would however need to better understand under what circumstances and how it would be required to give priority to public safety traffic on its network.

The following features can be implemented in LIME's mobile network to provide the appropriate emergency services that the government is likely to require. This feature enhances the handling of Emergency Call in MSC-S with the sending of the location and identity information of the calling user to the emergency center

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Depending on the emergency, terminals that belong the the police and/or other government agency may be prioritize during an emergency event.

Question 19: Are better procedures required for obtaining licences necessary to implement international fixed links?

LIME: The approach outline by the TRC is adequate and can undoubtedly be improved upon overtime. LIME will promptly share any procedures that it considers to be better with the TRC in time.

Question 20: Is there any interest from fixed link users in having access to block assignments? If so, which frequency bands would be preferred?

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LIME: Yes. LIME is interested in blocks within #####

Question 21: Do you have any views on the frequencies that might in future be used in the VI to support smart meters and smart grids?

LIME: LIME has no comments at this time.

Question 22: Do you have any comments on the proposed approach to assigning AM and FM radio licences, including the nature and relative importance of the proposed award criteria?

LIME: LIME has no comments on AM and FM radio links at this time,

Question 23: Do you have any comments on the proposed approach to assigning spectrum for TV broadcasting services?

LIME: LIME does not object to the TRC's approach and looks forward to its invitation for expression of interest to operate terrestrial digital TV services and mobile TV services in the BVI.

Question 24: Is there any immediate interest in providing satellite services through filings in the VI?

LIME: Yes, for provision of VSAT Services to Corporate and SME Customers.

Question 25: Are there any comments on TRC's proposals to simplify the licensing of amateurs in the VI (RA1, RA2)?

LIME: The Government needs to define a process where amateurs are monitored on a regular basis to;

1. ensure that their use of the spectrum is responsible
2. ensure that their activities does not cause interference to any private operator, such that the quality of service they provide to end customers is impact negatively impacted.

Question 26: Is there any immediate requirement for test and development licences in the VI? If so, examples of applications that might be tested would be appreciated?

LIME: LIME accepts that there is practical value to the TRC putting in place an arrangement to facilitate Operators engaging in test and development activities. This should facilitate product research and innovation on the part of Operators. Hence, LIME is amenable to the concept of a test and development licence. For example in the medium term LIME would want to conduct tests in;

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By being allowed to test various technologies before going commercial, Operators are better positioned to resolve challenges and the consumer benefits in terms of service quality and reliability. LIME would wish to further discuss with the TRC exactly how this arrangement would work, since it anticipates that in some cases, when the test undertaken is successful, an Operator would reasonably require that the test or development licence be converted to a commercial licence for the same spectrum band used in the successful test e.g. this would hold in the case of mobile TV. This is so because radio equipment and terminal

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devices are often tuned or designed to work with a specific frequency. To address the concern that the test or development licence arrangement may be abused by an Operator, LIME proposes that it simply prohibits its holder to engage in any commercial activity (or revenue generating activity) while conducting tests or development activity. The TRC should also leave it in the hands of an Operator to choose whether or not it wants to introduce a new service or innovation using a test (or development)t licence or its "commercial spectrum licence.

Concluding Remarks

Please note that some of the information in this response, principally information on LIME's plans with respect to spectrum, is commercially sensitive information and LIME requests that the TRC designate it as confidential. Were confidentiality to be denied by the Commission, LIME would suffer financial harm, since on becoming aware its business strategy, its competitors will react so as to diminish, if not deny, LIME's aim to secure a competitive advantage based on its plans. As the TRC is well aware, the pursuit of competitive advantage through innovation to the benefit of customers is the life blood of competitive markets and should not be undermined. LIME is of the view that by making its submission confidential, the appropriate level of commercial sensitivity will be shown. Should the TRC request it, LIME would be willing to submit to it, a redacted version of this submission.

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