



## ICT Decision 2011-2

Grand Cayman, 1<sup>st</sup> December 2011

### Decision on a Policy for the Assignment of 700 MHz Spectrum (CD 2011-1)

#### Summary

*The Authority determines that, even though it is currently minded to harmonize 700 MHz spectrum assignments with the United States of America ("USA") F.C.C. assignments, at this time it is premature to set the assignment policy for the 700 MHz spectrum.*

#### Background

1. In ICT Consultation 2009-3, Policy for the Assignment of 700 MHz Spectrum, the Authority received responses from LIME and Digicel. At that time neither licensee had definitive plans for the use of the spectrum and a determination for the assignment of the 700 MHz spectrum was not completed by the Authority.
2. Licensees expressed renewed interest in the 700 MHz spectrum earlier this year. As there had been no previous determination on the assignment of this spectrum, the Authority decided it should issue a second public consultation on the subject.
3. The Authority therefore initiated public consultation, (CD 2011-1, *A Policy for the Assignment of 700 MHz Spectrum*), on 29 June 2011 inviting industry participants and the general public to provide their views, with supporting rationale, on how the Authority should assign the 700 MHz spectrum band.<sup>1</sup>
4. In the consultation document the Authority requested responses to the following three questions in particular:

*Question 1: Do you agree that the 700 MHz spectrum should be channelized in the Cayman Islands based on 18 channels of 6 MHz each as was done in ECTEL and if so, why? If not, what channelization method do you consider appropriate (e.g. the FCC 'method') and why?*

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<sup>1</sup> [http://www.icta.ky/docs/700MHz\\_2/CD%202011-1%20Policy%20for%20the%20Assignment%20of%20700%20MHz%20Spectrum3.pdf](http://www.icta.ky/docs/700MHz_2/CD%202011-1%20Policy%20for%20the%20Assignment%20of%20700%20MHz%20Spectrum3.pdf)

*Question 2: Do you agree that the number of channels to be assigned by the Authority to each operator and how they should be assigned should be left to the discretion of the Authority after consideration of the operators' business and technical proposals?*

*Question 3: Do you consider that it is appropriate to reserve 24 MHz of the 700 MHz for use by public safety agencies and 24 MHz for future use?*

## **Process**

5. The Authority received written submissions from the Office of Telecommunications ("OFTEL"), Cable and Wireless (Cayman Islands) Ltd. T/A LIME ("LIME"), Digicel (Cayman) Limited ("Digicel") and TeleCayman Ltd. ("TeleCayman"). The following paragraphs set out a brief synopsis of those submissions.

## **Submissions of the participants**

6. **OFTEL Submission**<sup>2</sup>

OFTEL submitted that its position remains the same as in its original submission. (The Authority notes that OFTEL's original submission was received after the closing date of CD 2009-3 and was therefore not posted on the ICTA website. For completeness, as OFTEL did respond within the timeframe required for this consultation, its previous submission is included in the record for this consultation.)

OFTEL's submission dealt primarily with its area of concern, namely question 3.

*Question 3 response:*

OFTEL stated that as it is using equipment from the USA its position is to harmonize with the FCC plan. (At the time of the original submission the FCC had allocated 24 MHz for Public Safety Agencies and an additional 24 MHz was set aside for future use. This has since changed and OFTEL did not address the change.)

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<sup>2</sup> [http://www.icta.ky/docs/700MHz\\_2/OFTEL\\_Memo\\_to\\_Minister\\_5\\_June\\_2009.pdf](http://www.icta.ky/docs/700MHz_2/OFTEL_Memo_to_Minister_5_June_2009.pdf)

7. **LIME Submission**<sup>3</sup>

*Question 1 response:*

“LIME recommends that the Cayman Islands adopt the approach taken by the FCC. The advantage of channelization of the 700 MHz spectrum in accordance with the FCC approach is the major benefit of accessing affordable equipment since any new equipment deployed for use will be compatible with the FCC's channelization.”

“LIME strongly advocates channelization in accordance with the FCC approach. Alternatively, without prejudice to LIME’s position, should the Authority favour staying closer to the traditional channelization of the 700 MHz spectrum, LIME proposes that the band be segmented into 10MHz or 12MHz blocks rather than the proposed 6MHz scheme.”

*Question 2 response:*

“LIME supports the Authority’s proposal to „.. *allow the applicants to request the assignment of one or more channels. The Authority would consider these proposals on their merits and look to assign more than one channel to operators if the Authority determines that this is fully justified by their business and technical proposals.*“

“LIME is of the view that each service provider who applies for spectrum in the 700 MHz block should be allotted the minimum amount of spectrum assigned by the Authority. The beauty contest can subsequently be used as a tool to determine which operator(s) are assigned additional spectrum.”

LIME does believe, though, that existing licensees requesting spectrum in a new band ought to be given priority over new entrants of that band.

*Question 3 response:*

“In LIME’s view, the reservation of two (2) channels for public safety would be adequate. While some channels of the 700 MHz band could be reserved for future use, this should not be at the expense of legitimate requests by operators who have a present use for the spectrum.”

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<sup>3</sup>

[http://www.icta.ky/docs/700MHz\\_2/2011\\_08\\_02%20LIME\\_Response2\\_to\\_ICTA\\_700\\_MHz\\_Spectrum\\_Policy.pdf](http://www.icta.ky/docs/700MHz_2/2011_08_02%20LIME_Response2_to_ICTA_700_MHz_Spectrum_Policy.pdf)

8. **Digicel Submission**<sup>4</sup>

*Question 1 response:*

“In Digicel’s view the Cayman Islands must adopt a channelization plan which is consistent with the plan in the United States. This is because LTE handsets are, and equipment is, being manufactured in mass quantities for the US market. As a consequence, if the Cayman and US band plans are consistent it has the potential to reduce and make more affordable the price at which handsets and equipment could be obtained to build a network and sell handsets to consumers in the Cayman Islands. It will also enable roaming to take place (between equipment and handsets corresponding to that used by a particular US operator in particular spectrum).”

“Digicel is aware that it did not voice opposition to the use of 18 X 6 MHz channels previously, but that is unsurprising given that was two years ago, that this is a rapidly changing industry and that Digicel had not spent as much time considering LTE at that time. Things have moved on since then as the Authority states itself.”

*Question 2 response:*

“As indicated, the start point should be the FCC band plan so that handsets and equipment made for the US market can be used in the Cayman Islands and within and across the entirety of each operator’s allocation.”

*Question 3 response:*

“Digicel thinks that if 24 MHz is reserved for future use it is more likely simply to undermine the development of the technology in the Cayman Islands by limiting what LTE services can deliver.”

“The maximum that should be retained for public safety should be as determined by the FCC for the United States.”

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<sup>4</sup>[http://www.icta.ky/docs/700MHz\\_2/2011\\_08\\_02%20Digicel%20Response%20to%20Cayman%20700%20MHz%20Consultation.pdf](http://www.icta.ky/docs/700MHz_2/2011_08_02%20Digicel%20Response%20to%20Cayman%20700%20MHz%20Consultation.pdf)

9. **TeleCayman Submission**<sup>5</sup>

*Question 1 response:*

“Telecayman agrees that the 700 MHz spectrum should be channelized in the Cayman Islands based on 18 channels of 6MHz each.”

*Question 2 response:*

“Telecayman agrees that the assignment should be left to the discretion of the Authority based on the operator’s business and technical proposals.”

*Question 3 response:*

“Telecayman agrees it is appropriate to reserve 24 MHz for public safety and 24MHz for future use.”

## **Authority Analysis**

10. The Authority has reviewed each submission carefully and notes the following:
11. While the 700 MHz spectrum is being used in the USA for the implementation of Long Term Evolution (“LTE”) technology, other spectrum bands are being used for LTE in other countries around the world. However, the 700 MHz spectrum is slated to be used for LTE over the next couple of years in a number of regions, primarily North America, Central America, South America and the Caribbean.<sup>6</sup> As noted by LIME, Digicel and OFTEL, the equipment currently being manufactured in the 700 MHz spectrum range is for the USA.
12. In terms of channelization, the Authority notes that 3GPP (3<sup>rd</sup> Generation Partnership Project) states that LTE can support bandwidths of 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz and 20 MHz.<sup>7</sup>

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<sup>5</sup> [http://www.icta.ky/docs/700MHz\\_2/2011\\_07\\_08%20Telecayman%20Response.pdf](http://www.icta.ky/docs/700MHz_2/2011_07_08%20Telecayman%20Response.pdf)

<sup>6</sup> A report by Global mobile Suppliers Association (“GSA”) as of August 31<sup>st</sup>, 2011 gives more in-depth information as to which countries, cities and companies are currently implementing and those looking to implement in the near future. The report can be found at:-  
[http://www.gsacom.com/downloads/pdf/GSA\\_evolution\\_to\\_lte\\_report\\_310811.php4](http://www.gsacom.com/downloads/pdf/GSA_evolution_to_lte_report_310811.php4)

<sup>7</sup> Ref. <http://www.3gpp.org/LTE>

13. Below is a Band comparison of 3GPP and the FCC model for the 700 MHz band

700 MHz Spectrum Comparison

<u>3GPP Bands</u>			<u>FCC Bands</u>		
<u>Band 12</u>	<u>Bandwidth Total</u>		<u>Block A (Lower)</u>	<u>Bandwidth Total</u>	
698-716	728-746	36 MHz Paired	698-704	728-734	12 MHz Paired
<u>Band 13</u>			<u>Block B (Lower)</u>		
777-787	746-756	20 MHz Paired	704-710	734-740	12 MHz Paired
<u>Band 14</u>			<u>Block C (Lower)</u>		
788-798	758-768	20 MHz Paired	710-716	740-746	12 MHz Paired
<u>Band 17</u>			<u>Block D (Lower)</u>		
704-716	734-746	24 MHz Paired	716-722		6 MHz
			<u>Block E (Lower)</u>		
			722-728		6 MHz
			<u>Block A (Upper)</u>		
			757-758	787-788	2 MHz Paired
			<u>Block B (Upper)</u>		
			775-776	805-806	2 MHz Paired
			<u>Block C (Upper)</u>		
			746-757	776-787	22 MHz Paired
			<u>Block D (Upper)</u>		
			758-763	788-793	10 MHz Paired
			<u>Public Safety</u>		
			763-768	793-798	10 MHz Broadband Use
			769-775	799-805	12 MHz Narrowband Use

14. Due to the propagation and building penetration properties of the 700 MHz spectrum it is widely accepted that fewer transmitters are required to be installed for a given area compared to higher frequency bands. It is therefore less expensive for the licensees to build a network in this area of spectrum. For a good example of how 1900 MHz and 2400 MHz frequency coverage's compare to 700 MHz go to the following website: <http://gigaom.com/2007/03/14/700mhz-explained>
15. Currently the two largest providers using this spectrum in the U.S. are Verizon Wireless and AT&T. Each company is having its handsets manufactured to work only in its specific part of the 700 MHz spectrum. This could cause a potential problem for customers going forward as they will not be able to change from one of these providers to the other without buying a new handset. As ICTA licensees are looking to source their equipment from the U.S., it is possible that we would have a similar situation here.<sup>8</sup>
16. Given the above, the Authority is in agreement in principle with LIME, Digicel and OFTEL, that the allocation of 700 MHz spectrum should be similar to that made by the FCC in the USA. This should minimize the cost of network build-out as well as providing cost savings to the end-users. However, as LTE technology is still in the early stages of development and implementation, the Authority believes it would be in the best interest

<sup>8</sup> The FCC held an online workshop on this subject on 26<sup>th</sup> April 2011. The video can be found at the following website address: <http://www.fcc.gov/events/700-mhz-interopability-workshop>

of Cayman at this current time to wait and see what develops over the coming months before making final decisions on this issue.

17. That said, the Authority will keep this issue under review. The Authority would therefore welcome detailed proposals on how licensees (or potential licensees) would utilize 700 MHz spectrum in order to deploy a commercial (LTE or newer technology) cellular network within 12 to 18 months of their applications. This would assist the Authority in making its final determination.
18. In relation to setting aside an allocated amount of spectrum for public safety purposes, the Authority notes that in the chart shown in paragraph 13 above, it is clear that the FCC has designated for Public Safety 10 MHz for Broadband use and 12 MHz for Narrowband use; so by using the FCC model the amount of spectrum to be assigned to Public Safety would be 22MHz. Again, while the Authority is of the preliminary view that the allocation of the spectrum for this purpose should be similar to the FCC's allocation, it will wait until there is evidence that any such spectrum will be used before considering its allocation.

## **Determination**

19. The Authority determines that, even though it is currently minded to harmonize 700 MHz spectrum assignments with the United States of America ("USA") F.C.C. assignments, at this time it is premature to set the assignment policy for the 700 MHz spectrum. The Authority will keep this issue under review and would welcome applications from licensees (or potential licensees) who can commit to deploying a commercial (LTE or newer technology) cellular network in the Cayman Islands within 12 to 18 months of applying for 700 MHz spectrum.