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10th November 2010

Mr. David Archbold
Managing Director
Information and Communication Technology Authority,
P.O. Box 2502GT,
3rd Floor Alissta Towers,
Grand Cayman.

Dear Mr. Archbold,

Re: Fourth Round Interrogatories Regarding LIME's FLLRIC Phase 3 Submissions – LIME's Response to Interrogatories

Cable and Wireless (Cayman Islands) Limited, trading as LIME ("LIME") is submitting the attached responses to the Authority's 20 October 2010 interrogatories on the above-noted subject. Some of the company's interrogatory responses are being submitted in confidence, and redacted versions of the responses will be provided for the public record.

Also attached are confidential revised versions of the fixed, 2G mobile, and 3G mobile modules, and relevant attachments. Redacted versions of the revised modules will be provided for the public record.

Please do not hesitate to contact the undersigned if you should have any questions.

Sincerely yours,

Cable and Wireless (Cayman Islands) Limited

'Signed'

Anthony Ritch
General Manager, LIME

c.c. Donald Austin, EVP Legal Regulatory and Corporate Affairs
Frans Vandendries, VP Legal Regulatory and Corporate Affairs (Central)
FLLRIC distribution list

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1. In the 'Mobile Services Costs' sheet of the 3G module (both with and without mobile-to-mobile (MTM) interconnect), cell B36 does not sum across all costs. To calculate the total network service cost the formula would need to be: "=SUM(B11:B29)". Correct the module or provide a detailed explanation for why it should sum over a subset of the element costs.

RESPONSE

LIME has corrected the 3G modules (both with and without mobile-to-mobile (MTM) interconnect) as instructed.

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2. In the 'Mobile Services Costs' sheet of the 3G module (both with and without MTM interconnect), cells K36 and Q36 show excessive total service costs. This error appears due to use of an erroneous formula. Specifically, the later part of the used formula adds together average component cost and routing factors. To correct this error the formula in cell K36 should be amended to:
"=(SUMPRODUCT(\$C\$11:\$C\$15,K11:K15)+SUMPRODUCT(\$C\$16:\$C\$18,K16:K18))*K32+SUMPRODUCT(\$C\$20:\$C\$23,K20:K23)*K33+SUMPRODUCT(\$C\$25:\$C\$26,K25:K26)*K34+(SUMPRODUCT(\$C\$28:\$C\$29,K28:K29))*K35." To correct the formula in cell Q36 it should be amended to:
"=(SUMPRODUCT(\$C\$11:\$C\$15,Q11:Q15)+SUMPRODUCT(\$C\$16:\$C\$18,Q16:Q18))*Q32+SUMPRODUCT(\$C\$20:\$C\$23,Q20:Q23)*Q33+SUMPRODUCT(\$C\$25:\$C\$26,Q25:Q26)*Q34+(SUMPRODUCT(\$C\$28:\$C\$29,Q28:Q29))*Q35". To check whether these changes are correct the sum of total network service cost calculated by adding together cost in cells E36:U36 should be the same as the cost shown in cell B36 (subject to making the corrections in the previous interrogatory). Make the appropriate corrections to the 3G module.

RESPONSE

LIME has corrected the 3G modules (both with and without mobile-to-mobile (MTM) interconnect) as instructed.

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3. In the 'Mobile Services Costs' sheet of the 2G module (both with and without MTM interconnect), cells E37:P37 calculate the total network service cost of each service. The formula used in each cell fails to include the cost of network element "400-GSM: Interconnect Specific Links". To correct this error each of cells E37:P37 need to be corrected. For example cell E37 should be amended to:
`=SUMPRODUCT(\$C\$11:\$C\$18,E11:E18)*E33+SUMPRODUCT(\$C\$20:\$C\$23,E20:E23)*E34+SUMPRODUCT(\$C\$25:\$C\$26,E25:E26)*E35+SUMPRODUCT(\$C\$28:\$C\$28,E28:E28)*E36`. Make the appropriate corrections to the 2G module.

RESPONSE

LIME has corrected the 2G modules (both with and without mobile-to-mobile (MTM) interconnect) as instructed.

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4. In the 'Expense Factors' sheet of the 2G module which has been adjusted to take account of MTM interconnect, the operating cost associated with the network element '400-GSM: Interconnect Specific Links' is calculated. The implementation of direct MTM interconnect results in an extraordinarily high amount of estimated operating costs for '400-GSM: Interconnect Specific Links' is increased very substantially. Confirm the reasonableness of the '400-GSM: Interconnect Specific Links' operating costs as shown in the 'Expense Factors' sheet cell V71 given the operating costs provided in 'FLLRIC Interrog 15 attachment 10_09_01 Conf.xls' and similar costs in the 3G module or revise the calculation documenting any changes to the module.

RESPONSE

The anomaly occurs because the Appendix III Fixed Asset Revaluation workbook was not revised to reflect the fact that the interconnection links have been revised at current cost. Rather than having two versions of Appendix III (one from no MTM interconnect and one with) we have linked the cell BJ2 in the Reval_Assets sheet to AC60 of the Network Cost sheet of the 2G module.

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5. Provide detailed documentation (for example an invoice or bill of materials as provided in LIME's response to the third round interrogatory No. 2, including a table summarizing the cost of relevant components) to show the cost of the MSC cost element as indicated in cell F25 of the 'Cost assumptions' sheet in the 2G module. The Authority notes that, in ICTA Decision 2008-2 paragraph 361, LIME was directed to document the cost assumptions used in the 2G module. LIME's response to this direction was to provide Appendix XVI, as well as Appendix X Part I. The Authority has reviewed this documentation and has been unable to derive the cost of the MSC as shown in the 2G module.

RESPONSE

Please see detailed documentation showing the cost of the 2G MSC in the attached file "FLLRIC Interrog 5 attachment 10_11_10 Conf.xls", cells F10 and F21.

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6. Provide detailed documentation (for example an invoice or bill of materials as provided in LIME's response to the third round interrogatory No. 2, including a table summarizing the cost of relevant components) to show the cost of the MSS and Media Gateway cost element as indicated in cell E27 and E28 of the 'Cost assumptions' sheet in the 3G module. The Authority notes that it in ICTA Decision 2008-2 paragraph 76 directed LIME to provide (among other things) a documented 3G module. The Authority has reviewed the documentation provided, "Revision of LRIC Mobile Model from 2G to 3G" and has been unable to find documentation for the cost the MSS and Media Gateway as shown in the 3G module.

RESPONSE

Please find attached a confidential quote for MSS and Media Gateway elements as part of a recent Cayman network upgrade. These figures are in USD. You will note that that after discount cost of the MSS is US\$## and of the Media Gateway is USD##. We have replaced the model values with these vendor values in the 3G module.

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7. In LIME's response to the third round interrogatory No. 2, it provided a bill of materials detailing the cost of the HLR. This cost is applied to the 3G module. The Authority notes that both second round interrogatory No. 17a and third round interrogatory No. 2 were related to the 2G module. In addition, the HLR cost provided as a response to third round interrogatory No. 2 differs from that provided as a response to second round interrogatory No. 17a. Accordingly, the Authority asks LIME to provide a detailed clarification of the following:
- a. Confirm whether the cost of the HLR provided as a response to the third round interrogatory No. 2 is to be used in the 3G module.
 - b. Explain the difference in cost between the HLR cost in the 2G module and HLR cost in the 3G module.

RESPONSE

- a. We confirm that the HLR cost provided as a response to the third round interrogatory No. 2 is to be used in the 3G module.
- b. We know of no reason why, given current technology, the HLR cost should be different between the two models, so we use the same figure in both models.

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8. In LIME's response to the third round interrogatory No. 9, it reported that it had made appropriate corrections to cell X33 in the 'Volume input for TD' sheet by inputting the correct value (##), as reported in Appendix V, sheet 'drivers,' cell C27. The Authority notes that this correction has been made in the fixed module without MTM interconnect but not in the fixed module with MTM interconnect. Perform this correction in the fixed module with MTM interconnect.

RESPONSE

LIME has corrected the fixed module (with mobile-to-mobile (MTM) interconnect) as instructed.

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9. In LIME's response to the second round interrogatory No. 50, LIME presented an analysis identifying the implied level of wireless substitution, based on the company's projected growth of fixed and mobile subscribers. In third round interrogatory No. 12, LIME was asked to provide a detailed explanation and the underlying calculations of how the figure is used in each module. LIME's response to that question did not provide any underlying calculations nor did it show how LIME's analysis has been implemented in each module. For example, how has the figure of ##% been used to adjust the demand assumptions for number of voice subscribers, data and SMS subscribers, and traffic for each service? Provide a detailed explanation and the underlying calculations of how the figure is used in each cost module.

RESPONSE

The demand assumptions for subscribers and traffic are based on separate forecasts provided by separate business units within LIME, without explicit (endogenous) linkages between the forecasts. Furthermore, those forecasts were not generated on the basis of a disaggregated bottom-up analysis of demand from sub-segments of subscribers, e.g. the overall number of mobile subscribers was not derived on the basis of subscribers who had mobile and fixed phones plus those who had mobile only. The ##% was estimated on the basis of observable trends of fixed line and mobile demand, but it is an implicit value. As such, there is not distinction made between the demand of subscribers who have cut the cord and the demand of other types of mobile subscribers. The model effectively treats all mobile subscribers as homogenous in their usage.

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10. In LIME's response to the third round interrogatory No. 15, it explains that a ##% reduction has been made for all billing-related interconnect specific opex ("FAC Input sheet" cells C45:C50) and ##% reduction for other opex on the assumption that they are volume driven ("FAC Input sheet" cell C44). However, inspection of the modules show that operating costs related to the cost category "100-Billing: Manage Interconnect Billing" in "FAC Input sheet" cell C44 has been reduced by ##% and the remaining interconnect billing items in "FAC Input sheet" cell C45:C50 have been reduced by ##%. This appears contrary to the explanation provided by LIME. Confirm the correct approach and make the appropriate adjustments where necessary.

RESPONSE

Firstly, we note that in consideration to changes made in response to interrogatory 11 below, we believe that the percentage reduction corresponding to variable cost is better estimated at ##% (##) rather than ##%. Secondly, LIME agrees that the one-off capital cost reduction and recurring opex reduction must be separated. Therefore, it has made the correction so that the ##% reduction applies to the billing related interconnect specific opex (at C44) and the ##% reduction applies at cells C45:C50.

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11. In LIME's response to the third round interrogatory No. 16, it explains that the Existing Billing system cost in the fixed cost module is reduced by CI\$## which consists of Billing Upgrade costs and CDR Mediation Processing (##). While LIME acknowledges that this is a rough proxy, the Authority notes that Billing Upgrade is a capital / installation cost, while CDR Mediation is an annual recurring cost. Provide a detailed explanation to justify summing an annual recurring cost and (one-off) installation cost and why the annual recurring cost is not included as an expense factor input.

RESPONSE

LIME agrees that only the one-off capital costs should be removed in the Cost assumptions sheet at cell E295. We therefore have made the appropriate change in the MTM interconnection fixed module.

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12. The file "FLLRIC Interrog 15 attachment 10_09_01 Conf.xls," was provided in LIME's response to the third round interrogatory No. 15. In this attachment various cost items are calculated including, OmniLinc SS ADM, E1 Ports, IRM*, Nokia Signalling Ports, Billing Upgrade and Civil Works. This compares to the following cost items used in the 2G and 3G modules with MTM interconnect: Signalling, STM-1 Cards, ADM Mux, Billing platform and Civil works. The Authority has attempted to match these cost categories in the following table:

<i>Cost category Budgetary Offer</i>	<i>Cost category Cost Module</i>
<p>Nokia Signalling Ports: equipment cost is based on the cost of 2 signalling points. To this is added freight (10% of equipment purchase price), installation labour (proportional mark-up based on CI## installation cost for all four items OmniLinc SS ADM, E1 Ports, IRM* and Nokia Signalling Ports) and planning (proportional mark-up based on CI\$\$\$ installation cost for all four items mentioned above). No account is taken of duty and spares.</p>	<p>Signalling: based on the cost of 2 Nokia Signalling Ports (the same as in the Budgetary Offer). Freight and installation is added by sharing US\$## in proportion to the equipment cost of Signalling, STM-1 Cards and ADM Mux (see below). Spares are estimated based on a transmission electronics spare percentage in the fixed module. Import duty is estimated as 20% on the equipment cost including freight, installation and spares. Finally, Planning costs equal to 20% of the total equipment costs including freight, installation, spares and duty are added</p>
<p>E1 Ports: equipment cost is based on the cost of two STM-1 divided by 63. Freight, installation, planning are added as per Nokia Signalling Ports above. No account is taken of duty and spares.</p>	<p>STM-1 Cards: based on one STM-1 (the same unit cost as in the Budgetary Offer). Freight, installation, spares and planning are as above.</p>
<p>OmniLinc SS ADM: based on the cost of an OmniLinc SS ADM unit, Optical patchcords, attenuators etc and a spare unit. Freight, installation, planning are added as per Nokia Signalling Ports above. No account is taken of duty.</p>	<p>ADM Mux: based on the cost of an OmniLinc SS ADM unit, Optical patchcords, attenuators etc and a spare unit (the costs are the same as in the Budgetary Offer). Freight, installation, spares and planning are as above.</p>

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<p>IRM*: equipment cost is based cost of one IRM. Freight, installation, planning are added as for Nokia Signalling Ports above. No account is taken of duty and spares.</p>	<p>No direct equivalent in the 2G and 3G cost modules.</p>
<p>Billing Upgrade: based on various cost items including CS Labour, IT Labour, Switch Engineer, Space, Project Management Costs etc.</p>	<p>Billing platform: based on various cost items including CS Labour, IT Labour, Switch Engineer, Space, Project Management Costs etc. (the same cost as in the Budgetary Offer). Spares are estimated based on a duct spare percentage of 14% in the fixed module. Import duty is estimated as 20% on equipment cost including spares. Finally, planning costs are added as 20% of total equipment costs including spares and duty.</p>
<p>Civil Works: annual and one off costs of 0.036Km of Exclusive (2 Bore) Duct, 0.191Km of Shared Duct (2 Bore) per Bore, 0.473Km of Shared Duct (4 Bore) per Bore 0.443Km of Shared Duct (6 Bore) per Bore 1.203Km of 48 Fibre Cable and Joint box. Annual and one-off costs are based on annualized equipment and installation costs and operating expenditure. No costs are added for freight, duty, planning or spares.</p>	<p>Civil works: The sum of one-off costs of 0.036Km of Exclusive (2 Bore) Duct, 0.191Km of Shared Duct (2 Bore) per Bore, 0.473Km of Shared Duct (4 Bore) per Bore 0.443Km of Shared Duct (6 Bore) per Bore, 1.203Km of 48 Fibre Cable and Joint box (all from Budgetary Offer). The cost of spares is added based on a duct spare percentage in the fixed module. Import duty is estimated as 20% of the civil work cost including spares. Finally, planning costs are added as 20% of total costs including spares and duty.</p>

Based on this comparison the Authority asks LIME to provide a detailed clarification of the following:

- a) Freight and installation costs associated with the Signalling, STM-1 Cards and ADM Mux totaling US\$## is added in an equi-proportional manner in the cost modules. LIME explained in its response to third round interrogatory No. 15 that the US\$## has

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been derived from cells E24:E26 of the 'Cayman' sheet in "FLLRIC Interrog 15 attachment 10_09_01 Conf.xls". These cells contain the following cost categories: "IRM*", "Installation Services*" and "Labor". Explain the adequacy of the using these cost categories considering that "Installation Services*" and "Labor" are not used in cost calculations performed in "FLLRIC Interrog 15 attachment 10_09_01 Conf.xls".

- b) Explain the adequacy of a 20% planning factor in the cost modules considering the planning cost of CI\$## allocated equi-proportionally to OmniLinc SS ADM, E1 Ports, IRM* and Nokia Signalling Ports in "FLLRIC Interrog 15 attachment 10_09_01 Conf.xls".
- c) Considering that a spare OmniLinc SS ADM unit would appear to be included in the equipment purchase price of OmniLinc SS ADM in the 'Cayman' sheet in "FLLRIC Interrog 15 attachment 10_09_01 Conf.xls", explain the appropriateness of taking spares into account when calculating the cost of the Signalling cost category in the 2G and 3G cost modules.
- d) Explain the adequacy of excluding duty for cost categories: OmniLinc SS ADM, E1 Ports, IRM*, Nokia Signalling Ports, Billing Upgrade in "FLLRIC Interrog 15 attachment 10_09_01 Conf.xls" ('Cayman' sheet, cells F97:F101), considering that duty is taken into account for similar cost categories in the 2G and 3G modules.
- e) Considering that no account is taken for spares, planning and duty in the calculation of civil work costs in the "FLLRIC Interrog 15 attachment 10_09_01 Conf.xls" ('Joining Services - Inputs' sheet), explain in detail the inclusion of spares, planning and duty costs in the 2G and 3G modules for civil costs related to MTM interconnection links.
- f) Explain in detail the use of one-off costs of 0.036Km of Exclusive (2 Bore) Duct, 0.191Km of Shared Duct (2 Bore) per Bore, 0.473Km of Shared Duct (4 Bore) per Bore 0.443Km of Shared Duct (6 Bore) per Bore, 1.203Km of 48 Fibre Cable and Joint box (from the 'schedule' sheet in FLLRIC Interrog 15 attachment 10_09_01 Conf.xls") in the 2G and 3G modules considering the use of both monthly and one-off costs in the Budgetary Offer.

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- g) Considering that no account is taken for spares, planning and duty in the calculation of Billing Upgrade costs in the "FLLRIC Interrog 15 attachment 10_09_01 Conf.xls" ('Joining Services - Inputs' sheet), explain in detail the inclusion of spares, planning and duty costs for Billing platform in the 2G and 3G modules.
- h) Explain the use of a spare percentage of 14% (used for ducts in the fixed module) as adequate for the Billing platform cost in the 'Cost Assumptions' sheet in 2G and 3G modules (with MTM interconnect).
- i) The STM-1 Card costs differ between the Budgetary Offer and 2G and 3G modules in the following regards: 1) in the offer 2 STM-1 cards are used and the cost of for an E1 port is estimated by dividing by 63. This cost is since multiplied by 30 to yield the cost used in the offer. 2) in the 2G and 3G module the cost of 1 STM-Card is simply used. Clarify if these two approaches will yield the same result and if not why this is appropriate.

RESPONSE

- a) In LIME's response to third round interrogatory 16 an incorrect reference was made to cells E24:E26 of the 'Cayman' sheet in "FLLRIC Interrog 15 attachment 10_09_01 Conf.xls." The correct reference should have been to cells E25:E27.
- b) LIME has changed the planning factor to 60% in the relevant cells under the "Interconnect Links" section of the Cost Assumptions sheet to the 2G and 3G modules with MTM interconnect.
- c) LIME has zeroed out the dollar value amount provided for spares in the Cost Assumptions sheet, cell F221 for the 3G module with MTM interconnect and cell F179 for the 2G module with MTM interconnect.
- d) LIME believes the cells the ICTA intended to reference are E15:E19 in the Joining Services – Inputs sheet. Duty was not excluded from this analysis, but was lumped into the freight costs in cells F15:F19.
- e) LIME agrees that because civil works are purchased from an on-island third-party provider spares, planning and duty should be excluded. LIME has, therefore, zeroed out the dollar value amount

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provided for the relevant figures in the 2G and 3G modules with MTM interconnect.

- f) At the time of calculation, LIME did not consider the monthly costs significant and, therefore, it did not include in the cost in the 2G and 3G modules with MTM interconnect. We have now remedied this omission and introduced a separate line in the Cost Assumption sheet, specifically cell J182 in the 2G module with MTM interconnect and cell J226 in the 3G module with MTM interconnect. This figure, in turn, flows through to the Network Costs and Scenario Output sheets.
- g) LIME considers that some elements of proper costing may have been left out of the Budget offer. It does not believe that just because that is so, an adjustment should be made in the the 2G and 3G Mobile modules with MTM interconnect. Therefore, we make no changes.
- h) LIME agrees that the duct percentage used previously was not the appropriate percentage. LIME has changed the spare percentage used from duct to "other."
- i) LIME notes that there is a slight difference between the two approaches identified. In order to achieve consistency between the Budgetary Offer and the model, LIME has modified the 2G and 3G modules with MTM interconnect, Cost Assumptions sheet, cells E176 and E218, respectively by multiply the product in each cell by 0.952381 [= (2/63)*30].

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13. The major cost category in the Budgetary Offer, CDR Mediation Processing, is only sparsely documented. The annual cost of CI\$## is taken from what would appear to be a Nokia offer and labeled "Intec License Cost Additional two (2) million recs/day". It is noted that "Intec costs are estimated as the requested quote has not been received". Provide additional documentation to substantiate the quoted amount.

RESPONSE

Documentation from the vendor detailing a quote for CDR Mediation Processing is attached. See "FLLRIC Interrog 13 attachment1 10_11_10 Conf.pdf." The quote provided from the vendor of US\$## differs from the estimated quote of US\$## provided in LIME's response to the third round interrogatory No. 15. Therefore, a revised spreadsheet is provided as an attachment with the now current vendor cost information. See "FLLRIC Interrog 13 attachment2 10_11_10 Conf.xls."