From: Woollard, Jayne [mailto:Jayne.Woollard@time4lime.com]
Sent: 10 August 2010 10:05
To: David Archbold; David Laliberte; Mark Connors; Jasper Mikkelsen; Vandendries, Frans; Austin, Donald; Facey, Camille; Victor.Corcoran@digicelgroup.com; Tom.Kinstler@telecayman.com; Richard.Brazeau@javelinbermuda.com; Edenholm@westtel.ky; Gareth.Forbes@digicelgroup.com; Jan.Tjernell@digicelgroup.com; Raul.Nicholson-Coe@digicelgroup.com; Nadine.Ramsay@digicelgroup.com; Consultations; Smith, Pete; mark.scanlan@digicelgroup.com; andrew.gorton@digicelgroup.com; kevin.barrins@digicelgroup.com; ageorge@telcordia.com; jhayes@telcordia.com; Burnstein, David; Ritch, Anthony; Mellaneo, Dwayne
Subject: FLLRIC Phase III third round ICTA interrogatories to LIME Redacted

Good Morning,

Please find an attached document pertaining to the above subject matter.

Please do not hesitate to contact me should you have any questions.

Kindest Regards,

Jayne Woollard

PA - General Manager

D: +1 345 815 3550
M: +1 345 926 5533
F: +1 345 949 6286
Jayne.Woollard@time4lime.com

PO Box 293 George Town, Grand Cayman, Cayman Islands
www.time4lime.com

Cost Modules

1. All three cost modules in their current versions contain links to other worksheets.

    The fixed module contains links to:

    (a) '09_11_16 Appendix IV-FAC-TD Values 07-04-09 conf_revised (int 120).xls',

    (b) 'Appendix V-TD LRIC Input_10_06_30 conf.xls',

    (c) 'CVR_06.xls',

    (d) 'CVR_01.xls' and

    (e) 'CYM Mobile 2G - updated 10_06_30 conf.xls'.

    While (b) and (e) are files received as part of the most recent submission, (c) and (d) are unknown to the Authority and (a) points to "C:\Documents and Settings\ewhitlock001\Local Settings\Temp\wzf22b\". While the module user could modify the link to point to a file previously received, this creates uncertainty and should not be necessary. In this particular case the latest version of Appendix IV received by the Authority is named slightly differently than the one referred to. It uses square parenthesis in the file name ("[int 120]" instead of "(int 120)").

    The 2G module contains links to:

    (a) 'CYM fixed - updated 10_06_25 Conf.xls',

    (b) '09_11_16 Appendix IV-FAC-TD Values 07-04-09 conf_revised (int 120).xls',

    (c) 'CYM fixed - updated 10_06_30 Conf.xls', and

    (d) 'Appendix V-TD LRIC Input_10_06_30 conf.xls'.

    The Authority has not received the file referred to in (a) which would appear to be an older version of the fixed module and which points to "C:\Documents and Settings\ewhitlock001\-Local Settings\Temp\wz47bf \". As above the file '09_11_16 Appendix IV-FAC-TD Values 07-04-09 conf_revised (int 120).xls' is named slightly differently than the one received by the Authority.

The 3G module contains links to:

(a) '09_11_16 Appendix IV-FAC-TD Values 07-04-09 conf_revised (int 120).xls',

(b) 'CYM fixed - updated 10_06_30 Conf.xls',

(c) 'CVR_01.xls',

(d) 'CVR_06.xls', and

(e) 'Appendix V-TD LRIC Input_10_06_30 conf.xls'.

Item (a) points to "C:\Documents and Settings\ewhitlock001\Local Settings\Temp\wz47bf\" and is named slightly differently than the file received by the Authority, and (c) and (d) are unknown to the Authority.

The Authority notes that the links between the modules and various files must be made and saved in the same folder to work as intended. When files are open simultaneously and linked, then saving a file to a new file name will result in the links moving to the saved file. As noted in 13 May 2010 letter to LIME, when submitting revised versions of the FLLRIC cost model, LIME is directed to provide all modules and all linked spreadsheets with fully functional links between them. Further, each spreadsheet and module should be identifiable by a version number. Provide updated modules and any linked files where all links are working as intended.

2.   In LIME's response to the second round interrogatory No. 17a, it explained how the cost of the HLR has been derived noting that the figure obtained was drawn from a bill of materials. However, this bill of materials was not provided in response to the interrogatory. In interrogatory No. 17a the Authority specifically requested detailed documentation (for example an invoice) to show the cost of the HLR cost element as indicated in cell E27 of the 'Cost assumptions' sheet. The Authority further noted that in ICTA Decision 2008-2 paragraph 361, it directed LIME to document the HLR cost and other cost inputs. Provide the bill of materials.

3.   In LIME's response to the second round interrogatory No. 22, it referred to calculations set forth in 'Appendix III Fixed Assets Revaluation_20-09-09.xls'. While the Authority has received several versions of Appendix III these would all appear to be older versions of the one referred to by LIME. Provide 'Appendix III Fixed Assets Revaluation_20-09-09.xls'.

4.   In LIME's response to the second round interrogatory No. 23 it explained that it had removed the macro that performs an update of the 'Demand

Calculations' sheet. However, inspection of the VBA Module 5 in the fixed module shows that the 'update_fac' macro which performs the task of updating cell C41 in the 'Demand Calculations' sheet is still present. In addition, the formula in cell D41 'Demand Calculations' sheet is not used in the calculations. In order to remove all reference to the macro, the pasted value in cell C41 must be replaced with or linked to the formula in cell D41 and the relevant portions of the 'update_fac' macro removed.

In LIME's response to the second round interrogatory No. 25, it explained that it had removed the macro that performs an update of the 'Network Costs' sheet. However, inspection of the VBA Module 5 in the fixed module shows that the 'update_fac' macro which performs the task of updating cells F56:Q56 in the 'Network Costs' sheet is still present and that values in cells F56:Q56 are still used in the calculations. In order to remove all reference to the macro, the pasted values in cells F56:Q56 must be replaced with or linked to the formula in cells F55:Q55 and the relevant portions of the 'update_fac' macro removed.

More generally, the Authority notes that all three modules contain macros. For example, the 3G module contains: 'CopyOriginalVolumes', 'define', 'GenerateRF', 'gotocontents', 'Macro1', 'temp' and 'test'. In ICTA Decision 2008-2 paragraph 246 LIME was directed to eliminate the use of macros where possible. Ensure only macros that are essential for the functioning of each module are retained. Delete all other macros in the fixed, 2G and 3G modules and submit the revised modules.

5. In LIME's response to the second round interrogatory No. 30, it stated that there must be a misunderstanding regarding the network components listed in the 'Cost Assumptions' sheet and the network elements. It provides examples of where there is not a one-to-one mapping between the two, including the 'MSC' network element which is made up of the 'MSS', 'media gateway' and 'TCU' components, and the 'IP Core' network element which is made up of the 'SGSN', 'GGSN' and 'internet gateway' components. The Authority recognizes that the network elements can contain sub-elements or components. The list of components in the 'Cost Assumptions' sheet (cells C18:C38) in the 3G module should be accounted for on the 'Network Cost' sheet or somewhere else in the module. Linking all the instances where the components are referenced in the module to the 'Cost Assumptions' sheet will simplify module maintenance and reduce the chances of errors if and when the component list is changed. A further update to the modules is therefore required. Update the module by linking all the instances where the components are referenced in the module to 'Cost Assumptions' sheet, or define the components separately (as is done

with the network element in the 'Network Elements' sheet) and link all references to the components back to that central location.

6. In LIME's response to the second round interrogatory No. 32(a), it noted that the term 'HLR/VLR/AUC' in the 3G module has been replaced by the term 'HLR'. The Authority's inspection of the module indicates that the term 'HLR/VLR/AUC' is still used in some cases, e.g. in the 'Network Element' sheet. Correct the module to ensure that the term 'HLR/VLR/AUC' is consistently replaced with 'HLR' throughout the 3G module.

7. In LIME's response to the second round interrogatory No. 36, it argued that the 850MHz 3G data cell radius reduction factor of 25% is a reasonable assumption. As corroboration, LIME cited an Ofcom analysis from 2007 which implied a cell range reduction of between 11% (for a shift from GSM900 to UMTS900 data) and 48% (for a shift from UMTS900 voice to UMTS900 data). The Authority notes that the Ofcom report referred to by LIME is an old one; a new one was published by Ofcom in May 2009 "Application of spectrum liberalization and trading to the mobile sector – A further consultation". In Annex 13 to that report (available here: http://stakeholders.ofcom.org.uk/binaries/consultations/spectrumlib/annexes/annex13.pdf), page 30-31, Ofcom refers to two whitepapers published by Global mobile Suppliers Association (GSA) and Nokia-Siemens. Both show that UMTS900 voice coverage is better than GSM900, and that GSM900 voice coverage in a suburban area indoors is similar to the coverage obtained by the same network for 1 Mbps data service using WCDMA 900. Update the 3G module to take into the account the findings in the 2009 Ofcom report. If LIME is of the view that such changes should not be included in the module provide a detailed explanation justifying the continued use and appropriateness of the radius reduction factor.

8. In LIME's response to the second round interrogatory No. 40, it noted that the 3G module has been revised by labeling cost items appropriately and modifying formulas to refer directly the 'Cost Assumptions' sheet. The Authority's inspection of the module suggests it has not changed compared to previous versions. For avoidance of doubt, the relevant cell range subject to modification is G138:G149 in the 'Network Costs' sheet in the 3G module. Revise the 3G module accordingly.

9. In LIME's response to the second round interrogatory No. 41, it reported that it had made appropriate corrections to the reported number of national retail calls in the fixed module (C27 in the 'drivers' sheet of '09_11_16 Appendix V-TD LRIC Input 07-04-09 conf_revised.xls' versus X33 in the 'TD Volume input for TD' sheet in the latest version of the fixed module). The Authority has been unable to identify this correction. Identify how this

correction has been made or make the appropriate corrections to the fixed module.

10. Second round interrogatories Nos. 42-48 all contained questions on the routing factors used in the 3G module and the documentation for them contained in the spreadsheet 'CYM 3G Routing Factors 20091012.xls'. An updated version of the spreadsheet 'CYM 3G Routing Factors 20091012.xls' was not provided by LIME in their submission of responses to second round interrogatories. Provide an updated version of 'CYM 3G Routing Factors 20091012.xls' including all corrections made to routing factors following second and third round interrogatories and justification for these changes.

11. In LIME's response to the second round interrogatory No. 43, no explanation of the '400-3G: IP Core Network' routing factors was provided. Provide a detailed explanation to justify the '400-3G: IP Core Network' routing factors.

12. In LIME's response to the second round interrogatory No. 50, it provided a spreadsheet showing how the impact of substitution was taken into account in their demand projections. It is not clear to the Authority how the figure of ##% of mobile subscribers who have "cut the cord" is reflected in LIME's demand projections. For example, how is the figure of ##% reflected in 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 module.

13. The 'Mobile Service Costs' sheet in the 2G module is unable to provide meaningful results due to the presence of #ref errors (invalid cell reference). These would appear to result from a faulty link to an older version of the fixed module 'CYM fixed - updated 10_06_25 Conf.xls'. Correct the module to remove the #ref errors.

14. The 'Routing Factors Input' sheet in the 3G module contains routing factor information from column AG to DG which would not appear to be used and contains #ref errors. Provide an updated version of 3G module with the input in columns AG to DG of the 'Routing Factors Input' sheet removed or explain why the input in columns AG to DG should be retained.

Direct Mobile Interconnection

15. In LIME's response to the second round interrogatory No. 57 it provided additional information on the "(Budgetary) Mobile to Mobile Costing for Digicel Cayman". In particular, LIME submitted the confidential spreadsheet '10_06_30 3rd round FLLRIC interrog – 57 – attach 1 – conf.xls'. According to LIME this spreadsheet includes separate sheets with calculations of how each cost item is determined. These items include: 'Omnil.inc SS ADM', 'E1 Ports', 'IRM', 'Nokia Signalling Ports' and 'Mobile CDR Processing'. The Authority has reviewed the cost items contained in the spreadsheet and has been unable to reconcile the input costs and calculations in the sheets 'Carrier cost', 'cayman' and 'Joining Servces – Inputs' with the final costs shown in the 'Schedule' sheet. The Authority notes that, in second round interrogatory 57a, LIME was directed to provide detailed calculations for the cost items shown in "(Budgetary) Mobile to Mobile Costing for Digicel Cayman". LIME, in its response, did not provide the calculations. Explain in detail and provide the calculations for how the once-off and monthly recurring costs for the items 'Omnil.inc SS ADM', 'E1 Ports', 'IRM', 'Nokia Signalling Ports' and 'Mobile CDR Processing' have been derived using the information contained in the sheets 'Carrier cost', 'cayman' and 'Joining Services – Inputs'.

16. In LIME's response to the second round interrogatory No. 57c it notes that the 2G and 3G modules contain only costs associated with interconnect via the fixed network and that there are no costs associated with direct mobile interconnect. In order to allow the Authority to evaluate the two interconnection scenarios, LIME is requested to provide the following:

    (a) 2G, 3G and fixed cost modules which reflect interconnect via the fixed network taking into account changes identified in the interrogatories above.

    (b) Revised 2G, 3G and fixed cost modules which have been adjusted to accommodate direct mobile interconnection in addition to direct fixed interconnection. In addition, provide detailed documentation explaining the assumptions used to determine those costs and the changes to each module.

    (c) A table, as set out below, showing for each module (2G, 3G and fixed) the interconnection functions needed and associated cost items (e.g. E1 Ports, Signalling Ports, Billing etc.) in each of the interconnection scenarios. Accompanying this table, provide documentation for each cost item, identifying any assumptions used to determine those costs.

List of cost items (incl. cell references)					
Indirect interconnect			Direct mobile interconnect		
2G	3G	Fixed	2G	3G	Fixed