EXHIBIT DD-5 TO THE

RESPONSE TESTIMONY OF

DOUGLAS DENNEY

ON BEHALF OF

INTEGRA TELECOM

STATE OF MINNESOTA
FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION

Ellen Anderson	Chair
David Boyd	Commissioner
J. Dennis O'Brien	Commissioner
Phyllis Reha	Commissioner
Betsy Wergin	Commissioner

In the Matter of the Joint Petition for Approval of Indirect Transfer of Control of Qwest Operating Companies to CenturyLink	**MPUC Docket No. P-421, et.al./PA-10-456**
In the Matter of the Complaint by Joint CLECs against Qwest and CenturyLink Regarding OSS Implementation	**MPUC Docket No. P-5340, et al./C-11-684**

REPORT ON MEDIACC RISKS

INTRODUCTION

On September 6, 2011, the Commission issued an Order[1] in this matter requiring Qwest Corporation d/b/a CenturyLink QC ("CenturyLink QC") to, among other things, "make a compliance filing within 30 days detailing the specific concerns and risks associated with the Merged Company's current operational support systems."[2] This report is being filed in response to that request. This report is divided into several sections. The first section describes Mediated Access ("MEDIACC") and Maintenance Ticketing Gateway ("MTG"), the systems at issue in this case. Section two details the hardware risks associated with MEDIACC. Section three details the software risks associated with MEDIACC. Section four discusses CenturyLink QC's efforts to deal with the unsupported hardware and software. The fifth section discusses

[1] Order Barring Implementation of New Operational Support Systems and Requiring Cooperation and Filings, Docket Nos. P-421, et al./PA-10-456 and P-5340, 5643, 5323, 5981, 438, 465, 5986, 421/C-11-684 (Sept. 10, 2011) ("Order").
[2] *Id.* at p. 8.

MEDIACC's current system stability and the risk of failure. The sixth section discusses the unique status of MEDIACC among legacy Qwest systems. Section seven discusses CenturyLink QC's intention to "use and offer" MEDIACC as required by the terms of the settlement agreements. The final section of this report details the impacts if the MEDIACC application fails, and how MTG can mitigate these impacts.

DISCUSSION

I. THE SYSTEMS AT ISSUE

A. MEDIACC

A Business-to-Business ("B2B") gateway, also known as a computer-to-computer interface, is an electronic interface that allows a business to use its own computer systems to transmit information to the computer systems of another business. For a B2B interface to function, both companies must program their systems to transmit and receive information from each other. MEDIated ACCess ("MEDIACC") is a B2B interface that allows legacy Qwest wholesale customers to submit electronic requests for repair to legacy Qwest's repair systems via their own computer systems.[3] Thirteen wholesale customers across the legacy Qwest region use the MEDIACC B2B gateway. Of these, nine are CLECs. Eight of these CLECs use software from a vendor for their interface to MEDIACC.[4]

CenturyLink QC will keep the MEDIACC system in place until late 2013, withdrawing it only after complying with our merger commitments and settlement agreements for replacing such a system, including obtaining CLEC approval. CLECs will have the option of converting to MTG early, but they are not required to do so.

[3] See Attachment A – MEDIACC Technical Specifications and Attachment B – MEDIACC Implementation Guidelines.
[4] See Highly Sensitive Trade Secret Attachment C – List of MEDIACC Customers.

CenturyLink QC will continue to "use and offer" MEDIACC to CLECs for at least 30 months as required by the merger settlements, and MEDIACC will not be "retired or replaced" until all the agreed-upon time periods and procedures are completed.

B. MTG

Maintenance Ticketing Gateway ("MTG") is the new XML-based B2B gateway that CenturyLink QC is developing for its wholesale customers. MTG will have the same functionality as MEDIACC, and will allow wholesale customers, including CLECs, to submit electronic requests for repair to Legacy Qwest repair systems.[5] Several wholesale customers have requested the development of an XML-Based Gateway to Legacy Qwest's repair systems.[6]

As will be discussed in greater detail below, Legacy Qwest's Information Technologies ("IT") division performed an analysis of the feasibility of upgrading the MEDIACC hardware and software in 2007 and determined that the costs and programming efforts involved would be on par with developing a new repair system interface. IT also determined that it made more sense to develop a new system based on a current industry standard for computer communication protocol, XML,[7] rather than trying to upgrade an old system that used CMIP,[8] an outdated industry standard computer communication protocol. Given that all of Legacy Qwest's other B2B interfaces for CLECs had already been

[5] See Attachment D – MTG Gateway Technical Summary and Attachment E – MTG Initial Release Technical Specifications.
[6] See Trade Secret Attachment F – Details of Customer requests for XML Gateway.
[7] Extensible Markup Language ("XML") is a set of rules for encoding documents in machine readable form. The design goals of XML emphasize simplicity, generality, and usability over the Internet. XML has been adopted by the Alliance for Telecommunications Industry Standards ("ATIS") for pre-ordering, ordering and maintenance and repair gateways.
[8] The common management information protocol ("CMIP") is a protocol for network management. CMIP was created by the International Organization for Standardization ("ISO"). CMIP is not an ATIS standard.

converted to XML[9] and that Legacy Qwest had other wholesale customers requesting an XML interface for submitting repair requests, Legacy Qwest determined the best business decision for Qwest and its wholesale customers was to build a new XML based B2B interface for the repair system.

The planned design for MTG is based on the current XML standard and will incorporate new hardware and software that is vendor supported. This eliminates the risk of an unrecoverable failure, creates an interface that is consistent with current industry standards, and retains all of the functionality that was present in the MEDIACC application. CenturyLink QC plans to make MTG available to all wholesale customers, including CLECs, in December 2011 for optional implementation by interested customers (except in Minnesota).

Development of the initial release of MTG is in accordance with the Change Management Process ("CMP"). The CMP team has conducted a number of meetings with the CLECs to review MTG and the MTG technical specifications. Through this process, the CLECs have provided valuable input to the development team, and the result has been a positive impact on the design of MTG.

C. CEMR

Customer Electronic Maintenance and Repair ("CEMR") is another gateway that allows CLECs and other customers to submit electronic requests for repair to Legacy Qwest's repair systems via the Internet. CEMR is a Graphical User Interface ("GUI"). A GUI, also known as a human-to-computer interface, allows a computer user to interact with a

[9] See Attachments G through K – Change Requests submitted to convert CLEC pre-ordering and ordering gateways to XML.

computer system by navigating screens or menus, and entering prompted information.[10] A customer that uses a GUI does not have to do any programming to use the application. There are no plans at CenturyLink QC to create an alternative GUI for CEMR. It should be noted that CEMR is impacted by MEDIACC, in that some of the repair functions performed by CEMR require access to MEDIACC. As a part of the project to create MTG, CenturyLink QC is creating a version of CEMR that will use MTG instead of MEDIACC. The current CEMR/MEDIACC configuration will remain in place for those customers who do not wish to switch to MTG at this time. There are currently 1,490 customers using CEMR across Legacy Qwest's region.[11]

II. HARDWARE RISKS ASSOCIATED WITH MEDIACC

The hardware and software used by the MEDIACC application are interdependent, as the use of one impacts the use of the other. In an effort to simplify the discussion, hardware risks will be discussed in this section, and software risks will be discussed in the next section of this report. The MEDIACC application runs on four Hewlett-Packard ("HP") servers.[12] The MEDIACC Servers are identified as ebco-1, ebco-2 ebco-3 and ebco-4. Three of the servers are used for the components of the application. If one of these servers is unavailable for any length of time, most of the components on the other two servers can still be used.

The fourth server, ebco-1, houses the MEDIACC database and some HP operating system middleware. If this server is unavailable for any length of time, a more significant

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[10] The CEMR User Guide is accessed online at http://www.centurylink.com/wholesale/systems/WebHelp/Introduction.htm. See Attachment L – CEMR Online User Guide first page.

[11] See Highly Sensitive Trade Secret Attachment M – List of CEMR users. Six of these users are retail customers that are state or local government entities. CenturyTel and Embarq are listed as CEMR users, but records indicate that these accounts are inactive, and no trouble tickets have been submitted by them in the last six months.

[12] All four servers are model HP 9000/889/K460.

effort is required to move the database and the middleware, and get the system back up and running either on the original server or on an alternate server.

These HP servers are no longer manufactured by HP, and no longer receive full support from HP. The support level for these servers is categorized as "best efforts level." This means that the manufacturer will attempt to assist CenturyLink QC with hardware problems experienced by these servers, but HP cannot guarantee that the hardware can be fixed.[13] Replacement parts if needed may not be available locally, and CenturyLink QC could have to wait extra time should parts need to be shipped from another location. And as the hardware is no longer manufactured, the availability of replacement parts will diminish over time.

If a server experiences a failure, CenturyLink QC has contingency plans in place to deal with such failures. These are known as failover plans. These plans provide contact points, tasks to be performed and timing for these tasks, in order to get servers back into operation. There is a failover plan specifically designed to address any failure of the server that houses the database and middleware used by MEDIACC.[14] These are the steps that CenturyLink QC will follow to restore the server. These steps do not guarantee that the server can be restarted.

III. SOFTWARE RISKS ASSOCIATED WITH MEDIACC

The software used by MEDIACC includes communications software, operating systems and a database. The operating system is the software that runs the HP servers. The

[13] See Trade Secret Attachment N – Email from HP regarding Hardware support.
[14] See Highly Sensitive Trade Secret Attachment O – ebco-1 Failover Plan.

operating system currently in use on these servers is HPUX 10.20. Support for this operating system was discontinued by HP on June 30, 2003.[15]

The communications software used to process transactions between MEDIACC and the customers' computer systems is known as the CMIP toolkit. The version of this CMIP product used by MEDIACC is Vertel 2.1.1. Vertel was acquired by Xelas Software in 2004. Xelas has informed CenturyLink QC that support for the version of CMIP in use for MEDIACC is limited. Xelas has recommended that CenturyLink QC use a more current version of the CMIP Toolkit.

The database used by MEDIACC is Sybase version 11.5.1. Support for this database was discontinued in 2001.[16]

IV. CENTURYLINK QC'S EFFORTS TO DEAL WITH THE LACK OF SUPPORT FOR THE HARDWARE AND SOFTWARE USED BY MEDIACC

A logical question after reading the above discussion of hardware and software is why hasn't CenturyLink QC upgraded any of the components that are no longer supported? CenturyLink QC has evaluated the options of upgrading each of the various hardware and software components described above. The answer is complicated because of interdependencies between the various hardware and software components. If one component is changed, others are impacted.

For example, it was noted above that Xelas has recommended that CenturyLink QC convert to a more current version of the CMIP Toolkit. Doing so would require CenturyLink QC to reprogram the gateway interface, which in turn would require a rewrite of the component programs within MEDIACC.

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[15] See Attachment P – HPUX Support Matrix.
[16] See Attachment Q – Sybase End of Support Letter.

As another example, a move to more current server hardware would also require a more current operating system, which would require a more current database, which would again necessitate a rewrite of the component programs within MEDIACC.

CenturyLink QC's IT Division has analyzed the MEDIACC situation,[17] and determined that since any upgrade solution would require a rewrite of the repair B2B Gateway, then that rewrite should:

- Use a more current communication protocol, as endorsed by ATIS, namely XML, instead of CMIP;
- Use more current and supported servers;
- Use more current and supported databases;
- Use more current and supported operating systems; and
- Take advantage of existing XML-based legacy Qwest programs, instead of rewriting the MEDIACC programs.

The conclusion of this in-depth analysis is that it would be more efficient, and no more costly, to create a new B2B gateway rather than to attempt to modify MEDIACC. The result of this analysis forms the basis for the design of MTG.

Legacy Qwest introduced the original change request to convert MEDIACC to MTG in 2008. Unfortunately, funding for the change was not available and, the change request had to be deferred. By deferring the change request rather than withdrawing it, Legacy Qwest informed the CLECs at the CMP that it had every intention of restarting the change request in the future. Legacy Qwest was able to obtain the needed funding for the project and restart the change request in November, 2010.

[17] See Trade Secret Attachments R, S and T for IT analyses of MEDIACC.

V. MEDIACC IS AN EXCEPTION

Given the above discussion, this Commission might be concerned that there are other applications needing the same attention as MEDIACC. While CenturyLink QC has not performed a thorough analysis of all of the Legacy Qwest systems, a review of systems status maintained by the Life Cycle Management team indicates that MEDIACC is the only system that faces the myriad of support issues reported above. No other system has been classified by this team as having reached "end of life" status.

During the oral argument before the Commission on this case, Integra cited testimony that was submitted in a prior case in Minnesota. In that case, the Minnesota Department of Commerce ("DOC") submitted testimony claiming that Legacy Qwest's systems in general are old, out-dated and need to be replaced.[18] Dr. Fagerlund of the DOC was especially critical of the systems that Legacy Qwest leases from Telcordia. Dr. Fagerlund's testimony provided an overall global indictment of all of Legacy Qwest's systems. Qwest submitted responsive testimony in which it stated that reviewed over 200 Qwest systems and opined that those systems are state of the art.[19] Qwest's position was supported by testimony from a witness from Telcordia, who confirmed that Qwest's systems are state of the art.[20]

Qwest still considers that testimony in Minnesota to be true and accurate. The testimony should be evaluated in light of the scope of OSS. Qwest has in excess of a thousand applications within the scope of OSS. It has hundreds of applications that support CLECs. In an industry that is evolving, it should come as no surprise that individual pieces of such a massive system need to be updated and replaced from time to time. MEDIACC is

[18] Attachment U - Testimony of Ed Fagerlund.
[19] Attachment V - Testimony of Renée Albersheim.
[20] Attachment W – Testimony of Nancy Lyness.

the only application identified out of the entire OSS that carries the risk of unrecoverable failure discussed in this report. MEDIACC is still operating, it is currently stable and CenturyLink QC intends to keep MEDIACC in place until its retirement is approved by the CLECs. The existence of one currently stable system with an increasing risk of failure does not alter the assessment of the overall condition of nearly 200 Legacy Qwest OSS made in that Minnesota case.

VI. SYSTEM STABILITY AND RISK OF FAILURE

Both the MEDIACC and CEMR applications are stable. The most objective measures of system stability are the gateway availability Performance Indicator Definitions ("PIDS"). MEDIACC is measured by PID GA-3 Gateway Availability – EB-TA. CEMR is measured by PID GA-6 Gateway Availability – GUI – Repair. Both of these systems are required to be available during standard business hours for 99.25% of those hours. A system is considered unstable if it misses this measure for three consecutive months. MEDIACC has missed its availability target once in the last year, performing at 98.8% availability in June 2011.[21]

CenturyLink QC cannot predict if or when MEDIACC might fail. CenturyLink QC can say, however, that available vendor staff with knowledge of the unsupported software will diminish over time, so even "best efforts support" will continue to decline. Furthermore, the availability of parts for unsupported hardware will also diminish over time. Hence the risk of an unrecoverable failure of MEDIACC will increase over time.

[21] See Attachment X – PID Report for July 2011, Region wide, and Attachment Y – PID Report for July 2011, Minnesota.

VII. IMPACT OF MEDIACC FAILURE.

The impact of an unrecoverable failure of the MEDIACC application could be significant. If MEDIACC fails and MTG is not available, all CLECs will have to submit repair requests to CenturyLink QC by telephone. This is true of both MEDIACC users and CEMR users, as CEMR relies on MEDIACC to perform repair functions. This would impact the CLECs' end-user customers. It could also impact CenturyLink QC end-user customers since the lack of automation for CLEC repair requests will inevitably slow down CenturyLink QC's responsiveness to CLEC repair requests, and is likely to slow down CenturyLink QC's responsiveness to its retail customers, as CenturyLink QC would have to divert resources to assist with telephonic CLEC repair tickets.

If MEDIACC fails and MTG is available, those CLECs who use CEMR, such as Integra, will be able to take immediate advantage of MTG's availability. It will be an easy matter to switch CEMR/MEDIACC to CEMR/MTG. This is due in part to the fact that CEMR already uses XML as a communication protocol.

If those CLECs that interface with MEDIACC have already developed an interface to MTG, then they should be able to transition fairly quickly from MEDIACC to MTG. The amount of time required for the transition will depend on the stage of the development of their interface. If a vendor such as Synchronoss has developed an interface to MTG, the CLECs who use MEDIACC will have the option of using the vendor interface to MTG. Those CLECs using MEDIACC who have not developed an interface to MTG, and who do not wish to use a vendor, will have to develop that interface before they can transition to MTG.

CenturyLink QC has received inquiries from several companies who wish to begin developing an interface to MTG when it becomes available or shortly thereafter. It should be noted that these companies face a financial and technical decision if they do business in Minnesota. As a result of the Commission Order in this case, these companies cannot migrate to MTG in Minnesota. While they may develop an interface to MTG, and can implement it in the other 13 legacy Qwest states, they will have to maintain their interface to MEDIACC in Minnesota. It could be costly for them to maintain interfaces to two systems, especially if they use a vendor like Synchronoss for their MEDIACC interface.

In conclusion, the impact of a failure of MEDIACC depends on when it takes place and whether or not MTG is available when that failure occurs.

VIII. CENTURYLINK QC PLANS TO "USE AND OFFER" MEDIACC FOR THE AGREED UPON 30 MONTH PERIOD

MTG is a new Legacy Qwest B2B interface for repair. It is being made available in addition to the Legacy Qwest systems existing at the time the merger closed.[22] It is being made available to the CLECs as an optional alternative to an existing Legacy Qwest system, MEDIACC which is also still available. The CLECs are not required to switch to MTG. As agreed to in the merger settlements, CenturyLink QC intends to continue to "use and offer" MEDIACC for at least 30 months as agreed to by the company in the settlement agreements. In addition, the company will follow all the required steps outlined in the settlement agreements, when and if, the company decides to "retire or replace" any OSS system, including MEDIACC.

There is nothing in the settlement agreement that prohibits the development (and optional availability and use) of a new system. The piece of the original MTG project that needed

[22] MTG was originally introduced to the CMP in 2008, was deferred for lack of funding, and was re-introduced in 2010. See Attachment Z – SCR121608-02.

clarification following the merger is that MEDIACC would not be replaced for 30 months. Following the close of the merger and at the request of the CLECs, CenturyLink QC confirmed its commitment to the merger settlements. The CLECs were notified through CMP that:

1) The CR to retire MEDIACC was being withdrawn;[23]

2) MEDIACC would continue to be used and offered to CLECs; and

3) A new implementation schedule for MTG was published clearly demonstrating both of these changes.[24]

Contrary to contentions made by parties to this proceeding, CenturyLink QC believes it performed proper due diligence in researching system replacements during the merger negotiations. CenturyLink QC does not believe it was necessary as a part of the merger to investigate whether CenturyLink QC might consider adding an optional repair interface while still using and offering existing systems, or which systems might experience a force majeure event in order to enter the Integra Settlement. The settlement CenturyLink QC negotiated allows for the implementation of MTG provided the company continues to "use and offer" MEDIACC and does not "replace or retire" it until the 30-month settlement period expires. What is important at this point in time is that CenturyLink QC has been very responsive to CLEC concerns about the optional offering of MTG, has been diligent in clearing up any misstatements or confusion and is committed to honoring the settlement agreements in their entirety. As has already been stated, CenturyLink QC will continue to "use and offer" the legacy Qwest OSS systems for the required 30 months and fully understands its obligations in regards to the retirement and replacement of MEDIACC at some point in the future.

[23] See Attachment AA – SCR121806-01 Retirement of MEDIACC – Withdrawn. No new CR to retire MEDIACC has been introduced.
[24] See Attachment BB – Implementation Timelines.

IX. CONCLUSION

The MEDIACC system is stable, and CenturyLink QC will use and offer MEDIACC as required by the merger settlements. However, CenturyLink QC recognizes that the MEDIACC system is at risk. As a result, CenturyLink QC has taken the prudent step of preparing an alternative system, MTG, for the optional use of the CLECs. This system will serve as a backup to MEDIACC, should the MEDIACC system experience an unrecoverable failure.

CenturyLink QC hopes that this report addresses the Commission's concerns in this area and would be pleased to appear and respond to questions the Commissioners may have.

Dated this 6th day of October, 2011.

CENTURYLINK QC

/s/ Jason D. Topp

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VERIFICATION

I, Renée Albersheim, Staff Witnessing Representative for Qwest Corporation, state that I have first-hand knowledge of the matters set forth above and hereby verify that, to the best of my knowledge and belief, the allegations and statements contained herein are true and correct.

Dated: October 6, 2011

Renée Albersheim