

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

**SOVERAIN IP, LLC,**

*Plaintiff,*

v.

**CENTURYLINK, INC.**

*Defendant.*

**Civil Action No.** \_\_\_\_\_

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Sovereign IP, LLC (“Sovereign” or “Plaintiff”), by and through its attorneys, brings this action and makes the following allegations of patent infringement relating to U.S. Patent Nos.: 7,191,447 (“the ‘447 patent”); 8,606,900 (“the ‘900 patent”); 8,935,706 (“the ‘706 patent”); 5,708,780 (“the ‘780 patent”); and 6,212,634 (“the ‘634 patent”) (collectively, the “patents-in-suit” or the “Sovereign Patents”). Defendant CenturyLink, Inc. (“CenturyLink” or “Defendant”) infringes each of the patents-in-suit in violation of the patent laws of the United States of America, 35 U.S.C. § 1 *et seq.*

**INTRODUCTION**

1. This case arises from CenturyLink’s infringement of Sovereign’s data extraction and network management patent portfolio. Sovereign is the owner by assignment and exclusive licensee to twenty-four issued United States patents, multiple pending patent applications,<sup>1</sup> and numerous foreign patent assets.<sup>2</sup>

2. The patents asserted in this case arose from the innovative work of Open Market, Inc. (“Open Market”), an innovative tech firm that in 1993 developed groundbreaking technologies for the then-nascent Internet. Open Market was founded at a time when conducting

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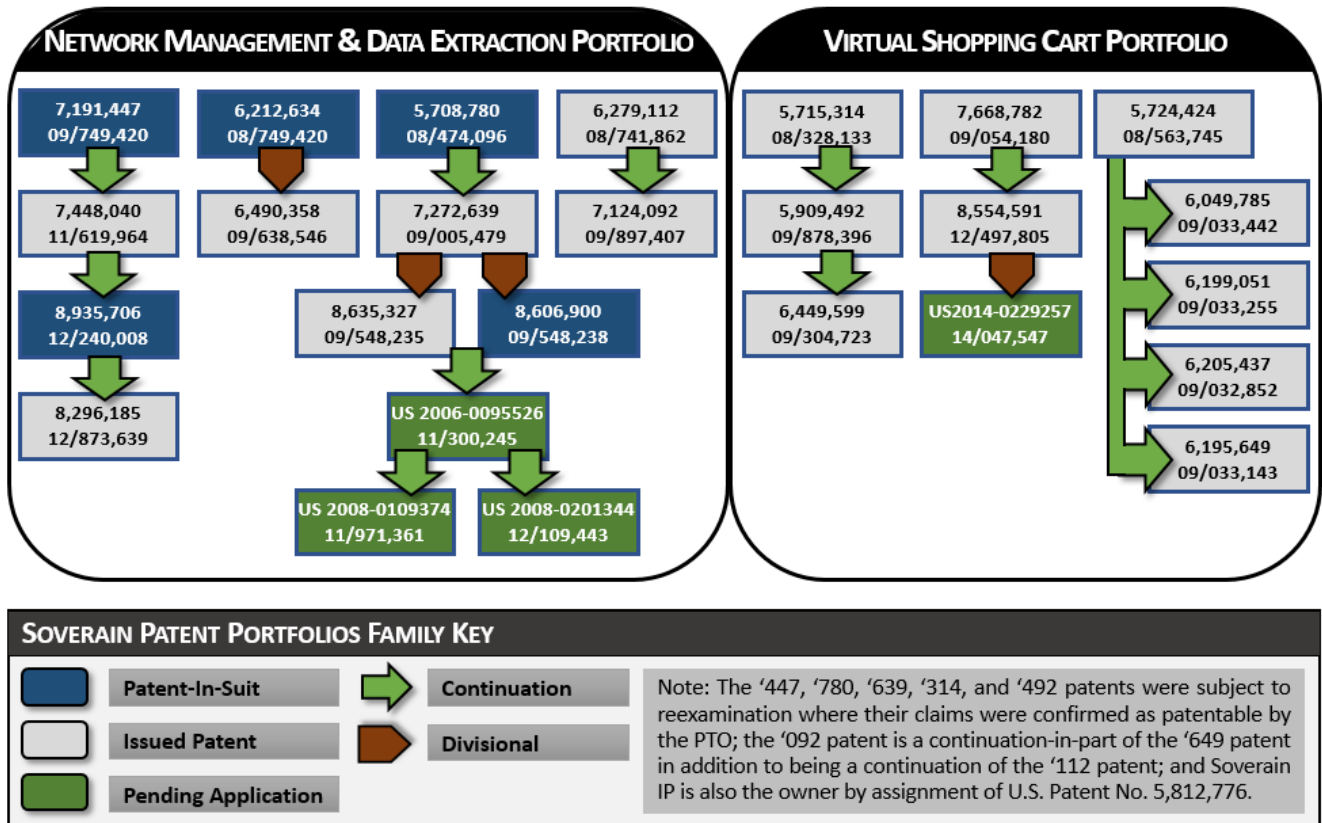
<sup>1</sup> See U.S. Patent App. Nos. 11/300,245; 11/971,361; 12/109,443; 14/047,547.

<sup>2</sup> See *e.g.*, JP 4485548, JP 3762882B2, EP 0803105B1, DE 69633564T2.

commercial transactions over the Internet was in its beginning stages. Previous uses of the Internet had largely been limited to academic research and military defense work.

3. Professor David K. Gifford of the Massachusetts Institute of Technology, co-founder of Open Market, and inventor of fourteen of the Sovereign patents, recognized the potential of enabling secure transactions over computer networks. Professor Gifford and other Open Market employees raced against other companies to bring one of the first secure transaction management systems to market. With the technology developed, Open Market filed for the patents that would comprise the two Sovereign Patent Portfolios.

4. Open Market’s groundbreaking inventions led to the issuance of patents that comprise two technology portfolios: (1) the virtual shopping cart portfolio and (2) the network management and data extraction portfolio. The below diagram shows Sovereign’s patents, pending patent applications, and the Sovereign patents CenturyLink infringes.



**SOVERAIN'S LANDMARK DATA EXTRACTION AND NETWORK TECHNOLOGIES**

5. Open Market's flagship Internet transaction product, the Open Market Transact system ("Transact") offered a full suite of software technologies, including content management, authorization protocols, and customer relationship management. Transact contained functionality for separating the management of transactions from the management of content, allowing companies to securely and centrally manage transactions using content located on multiple distributed Web servers.

6. In 1995, Open Market began commercial shipment of Transact.<sup>3</sup> Transact was quickly embraced by the market, and its early customers included: Novell,<sup>4</sup> Sprint,<sup>5</sup> Disney,<sup>6</sup> AT&T,<sup>7</sup> and Hewlett-Packard.<sup>8</sup> In March of 1996, the New York Times described Open Market's transaction management products as being adopted by Time Warner, Banc One, and First Union.

Open Market will be competing with Netscape's I-Store and Merchant Server of Microsoft. Besides Time Warner, Open Market has signed several big customers

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<sup>3</sup> Ellis Booker, *Internet Security Boosted*, COMPUTERWORLD at 14 (April 17, 1995) ("Last month, Open Market became the first vendor to release a Web server that supports both SHT'IP and SSL.").

<sup>4</sup> Jessica Davis, *Novell, Open Market Ink Deal*, INFOWORLD at 6 (March 25, 1996) ("Novell has licensed OM-SecureLink commerce server software for the Internet, and plans to integrate OM-SecureLink with Novell's Web server by the third quarter.").

<sup>5</sup> *Sprint Chooses Open Market's Transact as Key Offering of its E-Commerce Services*, PRESS RELEASE (September 27, 2000) ("Sprint will host Transact and offer its functionality as a service for these enterprise sites.").

<sup>6</sup> Eric Nee, *Surf's Up*, FORBES ONLINE (July 27, 1998), available at: <https://www.forbes.com/forbes/1998/0727/6202106a.html> ("Today Open Market is a leading supplier of Internet commerce software. More than 1,000 Web sites use Open Market software to transact business. Its clients include Disney, which sells on the Internet everything you can buy in one of its shopping mall stores, and Analog Devices, which allows engineers to find and order examples of integrated circuits on its Web site.").

<sup>7</sup> Jeff Symoens, *Transact 3.0: Scalable Solution*, INFOWORLD at 68 (September 8, 1997) ("AT&T is using Transact as part of SecureBuy, a service that gives merchants the infrastructure to run an electronic store on the internet.").

<sup>8</sup> *HP And Open Market Offer Mission-Critical E-Commerce Services*, HP OPEN MARKET PRESS RELEASE (November 18, 1998) ("Open Market is the first member of HP's Domain Commerce alliance program to integrate HP's MC/ServiceGuard with its products.").

including Banc One, First Union Bank, Hewlett-Packard, Digital Equipment and Bloomberg, the financial publisher. Time Warner has been offering electronic versions of Time, People, Sports Illustrated, Money and other publications free on its Pathfinder Web site.<sup>9</sup>

7. By the late 1990s, Transact was an established market leader in e-commerce technology, commanding dominant market share of the transactional software market against companies like Microsoft and IBM.<sup>10</sup>

8. The following collection of news articles shows some of the headlines that Open Market's Transact product garnered in the computer industry press from 1996 to 2000.



Sandy Reed, *First-Ever Review of I-commerce System Right For New Section Debut*, INFOWORLD at 73 (September 8, 1997); Matthew Nelson, *Open Market adds Object Support to I-commerce Product*, INFOWORLD at 58 (February 16, 1998.); Ellen Messmer, *Open Market to*

<sup>9</sup> Glenn Rifkin, *Open Market Hopes It'll be Next Netscape*, N.Y. TIMES (March 4, 1996).  
<sup>10</sup> Eric Nee, *Surf's Up*, FORBES ONLINE (July 27, 1998); *3 Big New Customers for Open Market, Inc.*, N.Y. TIMES (April 24, 1995) ("Open Market Inc. will announce today that three major media companies will use its software and services to provide content and conduct business on the Internet. A privately held company based in Cambridge, Mass., Open Market said it had signed agreements to provide technology to the Tribune Company, Advance Publications and the Time Inc. unit of Time Warner.").

*Liven Up Web-Based Publishing*, NETWORK WORLD at 16 (November 9, 1998); Mitch Wagner, *Open market Upgrade Will Support Big Business On 'Net*, COMPUTERWORLD at 8 (December 9, 1996); Ellen Messmer, *Open Market to Debut e-Comm Tools*, NETWORK WORLD at 12 (March 27, 2000); Kim Nash, *Open Market Aids Web Site Upkeep*, COMPUTERWORLD at 12 (March 11, 1996).

9. The inventors of the Sovereign Patents include Open Market's founders and engineers. The inventors of the Sovereign Patents comprise:

10. Professor David K. Gifford is a professor of electrical engineering and computer science at the Massachusetts Institute of Technology ("MIT") and co-founder of Open Market. Mr. Gifford has been a member of the MIT faculty since 1982 and leads the Programming Systems Research Group at the MIT Laboratory for Computer Science. Professor Gifford is a named inventor on fourteen of Sovereign's issued patents.<sup>11</sup>

11. Professor Gifford is the author of over one hundred journal articles and his research areas focus on programming language development; information discovery, retrieval, and distribution; and computation using biological substrates. Professor Gifford earned his S.B. in 1976 from MIT and his M.S. and Ph.D. in electrical engineering from Stanford.

12. Professor Gifford was elected as a fellow by the Association for Computing Machinery, for "contributions to distributed systems, e-commerce and content distribution."<sup>12</sup>

13. Dr. Lawrence Stewart was Open Market's Chief Technology Officer. Dr. Stewart is the co-inventor of nine of Sovereign's patents.<sup>13</sup> Dr. Stewart previously held positions at Xerox Palo Alto Research Center ("PARC") and Digital Equipment Corporation. Recently, when writing about his role as a co-inventor of Sovereign's patents, Dr. Stewart described the intellectual effort behind the inventions.

The relevant source code of the Open Marketplace system as of October 1994 was included with the patent application for anyone to read – over 50 printed pages of

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<sup>11</sup> See U.S. Patent Nos. 4,845,658; 5,812,776; 5,724,424; 6,279,112; 6,205,437; 6,195,649; 6,199,051; 6,049,785; 7,191,447; 7,124,092; 7,448,040; 8,935,706; 8,554,591; and 8,286,185.

<sup>12</sup> *Gifford Named ACM Fellow*, MIT COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LABORATORY NEWS (December 13, 2011), available at: <https://www.csail.mit.edu/node/1651>.

<sup>13</sup> See U.S. Patent Nos. 7,272,639; 6,449,599; 8,635,327; 8,606,900; 8,554,591; 5,715,314; 5,708,780; 5,909,492; and 7,668,782.

code. In other words, *Open Market showed that these inventions weren't just a theory but an actual working system*. Open Market submitted the source code to the Patent Office on microfiche since there was no way to submit machine readable appendices back in 1994.<sup>14</sup>

Dr. Stewart received an S.B. in Electrical Engineering from MIT in 1976, followed by M.S. and Ph.D. degrees from Stanford University in 1977 and 1981, respectively. Dr. Stewart is also the author (with fellow Soverain patent inventor Winfield Treese) of the computer science textbook, *Designing Systems for Internet Commerce* (Addison-Wesley, 2002).

14. Dr. John R. Ellis was Open Market's Architect and Technical Lead. Dr. Ellis subsequently was the Senior Vice President of Engineering at AltaVista Internet and has held positions at Xerox PARC and Amazon.com. Dr. Ellis is a named inventor of four Soverain patents.<sup>15</sup> Dr. Ellis holds a Ph.D. from Yale University and BSE from Princeton University.

15. Dr. Daniel Earl Geer, Jr. served as Director of, Engineering at Open Market and named inventor of two Soverain Patents.<sup>16</sup> Dr. Geer was the former President of USENIX, the advanced computing systems association and served as Chief Scientist at Verdasys, Inc. and Digital Guardian, Inc. Dr. Geer holds degrees from Harvard University and MIT.

16. Winfield Treese was previously the Associate Director of the Hariri Institute for Computing at Boston University. Mr. Treese served as Open Market's Vice President of Technology where he was responsible for the security architecture of Open Market's products. Mr. Treese is a named inventor of eight Soverain patents.<sup>17</sup> Mr. Treese was the chair of the Transport Layer Security (TLS) Working Group of the Internet Engineering Task Force (IETF), the Internet standard successor to SSL. Mr. Treese also chaired the 8th USENIX Security

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<sup>14</sup> Lawrence Steward, *The CAFC Got It Wrong In Soverain v. Newegg*, IPWATCHDOG.COM WEBSITE (December 30, 2013), available at: <http://www.ipwatchdog.com/2013/12/30/the-cafc-got-it-wrong/id=47141/> (emphasis added).

<sup>15</sup> See U.S. Patent Nos. 7,448,040; 8,935,706; 8,286,185; and 7,191,447.

<sup>16</sup> See U.S. Patent Nos. 6,490,358 and 6,212,634.

<sup>17</sup> See U.S. Patent Nos. 7,448,040; 8,935,706; 8,286,185; 5,708,780; 7,272,639; 8,635,327; 8,606,900; and 7,191,447.

Symposium. Mr. Treese is the co-author of the book *Designing Systems for Internet Commerce* (Addison-Wesley, 2002).

### **SOVERAIN'S TRANSACT SYSTEM**

17. From 1996 through 2000, Open Market's product, Transact, was a leader in the e-commerce field, holding the majority of the global market for transaction management systems.<sup>18</sup> When the first Soverain patents issued in 1998, Open Market was hailed for its "secure, robust, distributed architecture." Jeff Symoens, *Transact 3.0: Scalable Solution*, INFOWORLD at 63 (September 8, 1998). Gary Eichorn, chief executive officer of Open Market, stated that Open Market was selling its "transaction engine to telecommunications companies, banks and Internet service providers. They're then offering commerce services to smaller companies." HOTSEAT: GARY EICHORN, CEO OF OPEN MARKET, DESCRIBES HOW TRANSACTIONS WILL HIT THE WEB, InfoWorld at 47 (March 17, 1997).

18. Transact provided an end-to-end solution for secure transaction management over the Internet. Transact included the following components: (1) a transaction server for managing orders, (2) a subscription server for security and authentication by managing access to digital content, (3) a log server for secure management of log entries, and (4) a settlement server for managing the authorization of transactions. A review of Transact in InfoWorld magazine stated "if you're comfortable with Transact's \$125,000 opening price tag, it offers an exceptional architecture and a strong feature set that will handle back-end transaction processing." Jeff Symoens, *Transact 3.0: Scalable Solution*, INFOWORLD at 63 (September 8, 1998).

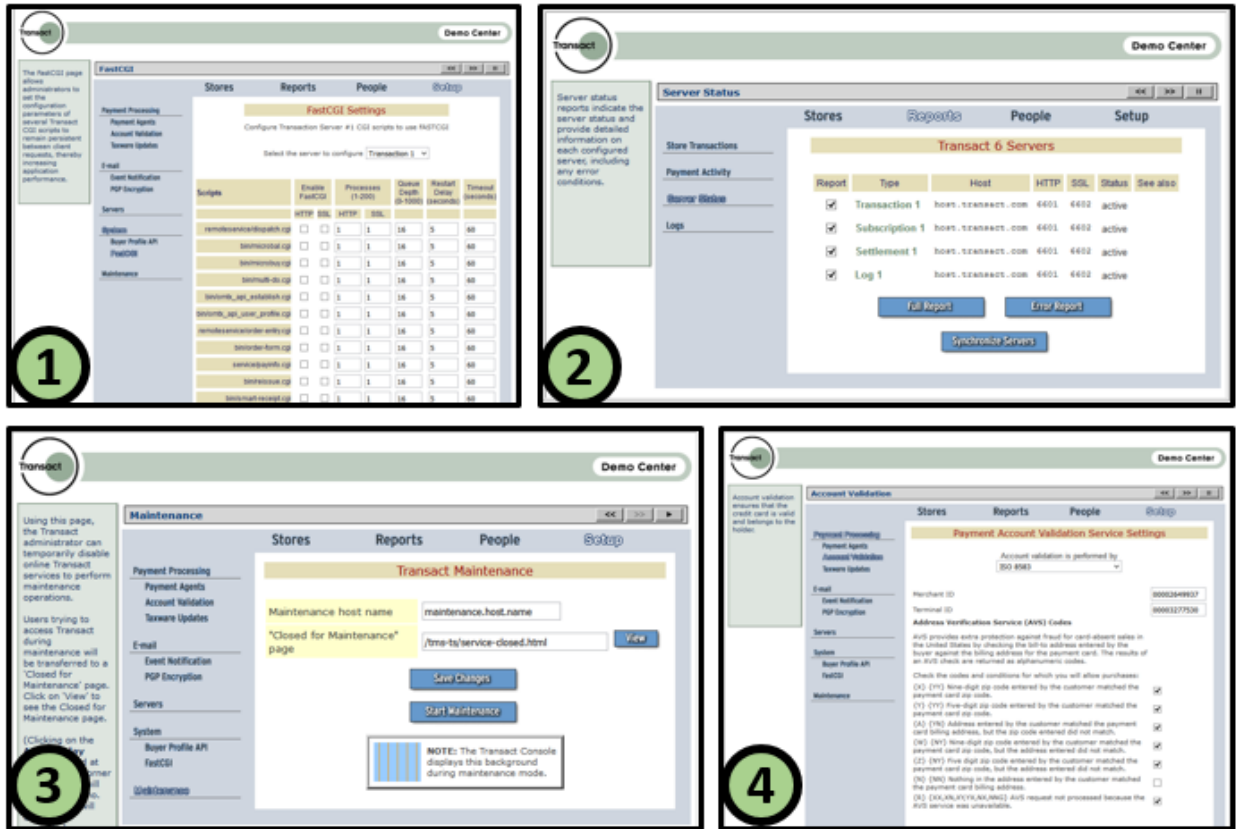
19. The following images of Soverain's Transact product show: (1) FastCGI configuration screen for keeping application processes running between requests (unlike CGI the system did not require extra overhead by requiring the system start a new process and initializing an application each time a request is made on the system); (2) a server status screen for

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<sup>18</sup> *Investors Bid Up Internet Stock*, N.Y. TIMES (May 24, 1996) (In May 1996, Open Market made an initial public offering valuing the company at \$1.2 billion.).



monitoring the status of multiple hosts running Transact; (3) a maintenance screen for managing system maintenance; and (4) an account validation service setting screen for managing transaction security and authentication.



A COLLECTION OF IMAGES OF THE OPEN MARKET TRANSACTION SYSTEM (the numbered annotations correspond to the (1) FastCGI settings, (2) server status screen, (3) Transact maintenance settings, and (4) account validation settings).

20. As the 2000s approached, larger technology companies entered the transaction management field; the dot-com bubble then burst.<sup>19</sup> As a result, Open Market went through a restructuring and was purchased by Divine interVentures, Inc. (“Divine”) for approximately \$70 million in 2001.<sup>20</sup> As a result of the purchase, Divine acquired Open Market’s patent portfolio and its Transact software product.

<sup>19</sup> See Editorial, *The Dot-Com Bubble Bursts*, N.Y. TIMES, Dec. 24, 2000, at WK8 (describing the aftermath of the dot-com bubble bursting).

<sup>20</sup> *Divine to Buy Open Market*, NETWORK WORLD at 8 (August 20, 2001) (“Professional services and software company Divine last week agree to buy struggling Open Market in a stock deal worth about \$59 million.”).



21. Divine was a venture capital investment company founded in May 1999. Divine focused on “professional services, Web-based technology, and managed services.” *Id.* At its peak, Divine employed approximately 3,000 people in more than 20 locations worldwide and offered approximately 50 software products.

22. In 2003, Transact was acquired by Sovereign Software. Sovereign Software also acquired the patents from the original Open Market inventors and innovators.

**FOCUS ON I-COMMERCE**

• Transaction-processing software

## Transact 3.0: scalable solution

*By Jeff Symoens*

**IF YOU THINK** that Internet-commerce begins and ends with putting your product catalog online and adding a neat shopping cart feature, think again. Although there are literally dozens of new catalog products popping up all the time, they generally don't solve the more complex business problem associated with I-commerce: processing the transactions associated with orders.

Open Market Transact 3.0 from Open Market, however, focuses almost exclusively on this aspect of online business. It's an Internet cash register that can support multiple distributed Internet stores.

If you're comfortable with Trans-

act's \$125,000 opening price tag, it offers an exceptional architecture and a strong feature set that will handle back-end transaction processing for online stores. After evaluating the latest version of Transact, I was very impressed with the product's breadth and depth.

**Distributed architecture**

In a corporate IS setting, Transact is most suited for companies that either anticipate a huge purchase volume or want to provide a single transaction-processing system to support a number of different divisions, each with its own store.

The Transact system is built on top of Open Market's base HTTP server, with an integrated Tool

Command Language (TCL) server-side interpreter. The product's logic components are distributed across interpreted TCL-based dynamic Web pages and scripts, as well as a number of C libraries. In future versions, Open Market plans to rewrite the interpreted logic components in platform-independent ECMAScript.

Transact is built to be a distributed system. It consists of several different subsystems: a transaction server, a subscription server for handling content subscriptions, a settlement server that communicates with the payment processor, and a log server. Optional components include a fax server for faxing orders to merchants, a tax computation server, and a postal code server. These components can run

**THE BOTTOM LINE**

**Open Market Transact 3.0**

**T**ransact 3.0 is a comprehensive, high-end solution for processing Internet-commerce transactions.

**Pros:** Secure, robust, distributed architecture; content isolated from transaction engine for flexible toolkit choice; integration with financial processors; good customization options.

**Cons:** Prohibitive price; not enough preconfigured reporting options; programming required for some types of customization; lack of support for Secure Electronic Transaction in current version.

**Open Market Inc.,** Cambridge, Mass.; (800) 673-4658 (toll-free); fax: (617) 373-8063; sales@openmarket.com; http://www.openmarket.com.

**Price:** Starts at \$125,000 for base product; \$250,000 plus quarterly fees for Commerce Service Provider licensing.

**Platforms:** See Solaris (for Sparc), SGI Irix, HP-UX, and Stratus FTX.

on a single system or on several different machines. Sites can also run multiple instances of the transaction, postal code, tax, and fax servers for added scalability.

In addition, merchants typically deploy their content on a separate Web server. This approach lets developers use their choice of catalog and Web-development tools

**A typical transaction**

Diagram illustrating the flow of a typical transaction through Transact 3.0 components:

- Client connects to Web server.
- Web server connects to Transaction server (1).
- Transaction server connects to Subscription server (2).
- Subscription server connects to Postal code server\* (3).
- Postal code server\* connects to Tax server\* (4).
- Transaction server connects to Log server (5).
- Log server connects to Settlement server (6).
- Settlement server connects to Payment processor (7).
- Payment processor connects to Customer database (8).

Jeff Symoens, *Transact 3.0: Scalable Solution*, INFOWORLD at 63 (September 8, 1998) (“Transact 3.0 is a comprehensive, high-end solution for processing Internet-commerce transactions. Pros: Secure, robust, distributed architecture.”).

### SOVERAIN’S PATENT PORTFOLIO

23. Sovereign’s patents and published patent applications have been cited in over 6,000 issued United States patents and published patent applications as prior art before the United

States Patent and Trademark Office.<sup>21</sup> Companies whose patents and patent applications cite the Soverain patents include: Microsoft Corporation, Oracle Corporation, Facebook, Inc., AT&T, Inc., International Business Machines Corporation, Dell, Inc., etc.

24. It is difficult today to recall a time before Soverain's patented technology had become part of the platform used to operate many websites. But prior to the mid to late 1990's, when the applications leading to the patents in suit were filed, nothing like the patented functionality had been devised, let alone implemented. The simplicity and intuitive features of the patented technology soon became apparent. Almost overnight, companies abandoned older technologies that often required customers to dial in directly to specific sites, shop for products using function codes or other keypad commands, and fax or phone in orders rather than complete transactions online.

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<sup>21</sup> The over 6,000 forward citations to the Soverain Patents do not include patent applications that were abandoned prior to publication in the face of the Soverain Patents.



The above images show major Internet properties contemporaneous (and later) to the inventions conceived in the Sovereign patents, including: (1) Microsoft.com (August 1995), (2) Amazon.com (July 1995), and (3) Apple.com (July 1997).

25. The Sovereign network management and data extraction patent portfolio includes technology that allows companies to streamline and secure the single sign-on process, extract data from hosts over a network, and authenticate and encrypt data using asymmetric keys.

26. Sovereign has maintained and developed the Open Market patent portfolio, which now consists of over 50 issued and pending U.S. and international patents covering key aspects of e-commerce technology.



Nick Wingfield, *Three Patents Lift Open Market as Observers Guess Their Worth*, WALL ST. J., Mar. 4, 1998 (reporting that one analyst stated: "The most important thing is that it will allow them to be acknowledged as a leader and be sought after for strategic relationships"); Matthew Nelson and Dylan Tweney, *Open Market Wins Three I-Commerce Patents*, INFOWORLD at 10 (March 9, 1998).

27. Confirming the value of Sovereign patents, licensees have paid millions of dollars for a license to practice the technology taught in the Sovereign patents. For example, Amazon.com, Inc. paid 40,000,000 dollars to license the Sovereign patents.<sup>22</sup>

### THE PARTIES

#### SOVERAIN IP, LLC

28. McKinney, Texas based Sovereign owns the intellectual property rights to information management solutions that allow companies and individuals to manage Internet content, encrypt network based information, and manage access to network based information.

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<sup>22</sup> Thom Weidlich, *Amazon.Com Set to Pay On Patents*, THE SEATTLE TIMES (August 12, 2005) ("Amazon.com, the world's largest Internet retailer, agreed to pay \$40 million to Sovereign Software to settle two lawsuits over patents related to online shopping.").

29. Soverain's principal place of business is located at 6851 Virginia Parkway, Suite 214, McKinney, Texas 75071. Like Defendant CenturyLink, Soverain relies on its intellectual property for its financial viability.

*Intellectual property is an important asset to CenturyLink that helps with our competitive advantage* and must be protected. Examples of intellectual property include the Company's: Copyrights, Inventions, Patents . . . Suppliers must respect the Company's intellectual property rights. While engaged in business for CenturyLink, Suppliers must not infringe upon the intellectual property rights of CenturyLink or of other companies, CENTURYLINK SUPPLIER CODE OF CONDUCT: DOING THE RIGHT THINGS at 9 (July 23, 2014).

30. CenturyLink has placed great emphasis on obtaining patents for their own systems relating to the accused products.

We rely on various patents, copyright, trade names, trademark, service mark, trade secret and other similar laws, as well as confidentiality procedures and contractual restrictions, to establish and protect our proprietary rights. . . If we are unsuccessful in protecting or enforcing our intellectual property rights, our business, competitive position, results of operations and financial condition could be adversely affected. CENTURYLINK 2015 FORM 10-K at 23 (February 24, 2016).

31. A 2015 CenturyLink white paper quotes CenturyLink's Chief Architect of Big Data Strategy as stating that the ability to aggregate data from multiple hosts is critical to cloud applications.

Martin says scalable, secure big data implementations require several layers of capabilities. Each can be delivered as a managed or cloud service, faster than in-house deployment. . . . The data layer should also include big data skills, processes, and management tools. Any new big data solution should be able to integrate with existing internal and external data sources.

*Executive Brief: Big Data and the Cloud*, CENTURYLINK WHITE PAPER at 2 (2015).

32. CenturyLink's sale and distribution of products and services that infringe the patents-in-suit has caused and continues to cause injury to Soverain.

**CENTURYLINK, INC.**

33. On information and belief, Defendant CenturyLink is a Louisiana corporation, with its principal place of business at 100 CenturyLink Dr., Monroe, Louisiana 71203.

34. On information and belief, CenturyLink can be served through its registered agent, C T Corporation System, 3867 Plaza Tower Dr., Baton Rouge, LA 70816.

35. On information and belief, Defendant CenturyLink operates datacenters in Texas, including two datacenters located in Dallas. “With more than 264,000 sq/ft of combined space, the Dallas data centers supply a suite of colocation-to-public and private cloud services that meets the rising demands for interconnectivity and infrastructure in this strategic communications crossroads.”<sup>23</sup>

36. On information and belief, a “substantial number” of CenturyLink’s facilities are located in Texas.<sup>24</sup>

37. On information and belief, CenturyLink has at least 11 subsidiaries that are incorporated in the State of Texas, including: CenturyTel of Port Aransas, Inc., CenturyTel SM Telecorp, Inc., CenturyTel Telecommunications, Inc., CenturyTel of San Marcos, Inc., CenturyTel/Tele-Max, Inc., CenturyTel of Lake Dallas, Inc., Centel-Texas, Inc., Central Telephone Company of Texas, EQ Central Texas Equipment LLC, United Telephone Company of Texas, Inc., and EQ United Texas Equipment LLC.<sup>25</sup>

38. On information and belief, CenturyLink maintains offices throughout the State of Texas, including: Dallas, Killeen, Fort Worth, Houston, and San Antonio.<sup>26</sup>

39. On Information and belief, CenturyLink provides managed services to the State of Texas through DIR Contract #DIR-TSO-2621.<sup>27</sup>

40. CenturyLink, in its contract with the Texas Department of Information Resources, consented to any dispute arising under the contract be governed by Texas law.<sup>28</sup>

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<sup>23</sup> *CenturyLink Dallas Datacenters & Colocation Services*, CENTURYLINK BUSINESS WEBSITE, available at: <http://www.centurylink.com/business/enterprise/colocation/data-centers/dallas.html> (last visited April 2017).

<sup>24</sup> CENTURYLINK 2015 FORM 10-K at 35 (February 24, 2016).

<sup>25</sup> CENTURYLINK, INC. AFFILIATE LIST OF SUBSIDIARIES (January 15, 2015).

<sup>26</sup> *CenturyLink Career Listings*, CENTURYLINK WEBSITE, available at: <https://jobs.centurylink.com/search/?q=texas> (last visited April 2017).

<sup>27</sup> CENTURYLINK AND TEXAS DEPARTMENT OF INFORMATION RESOURCES CONTRACT NO. DIR-TSO-2621 (2014), available at: <http://publishingext.dir.texas.gov/portal/internal/contracts-and-services/Contracts/Contract%20DIR-TSO-2621.pdf>

41. On information and belief, CenturyLink has entered into contracts with the State of Texas Health and Human Service Commission to provide managed IP-based voice service for more than 400 locations.<sup>29</sup>

42. On information and belief, CenturyLink reported that it had invested over 1.8 billion dollars in Texas, employed 890 employees in the State, and had an annual payroll of over 61 million dollars in the State of Texas.<sup>30</sup>

43. On information and belief, CenturyLink is registered to do business in the State of Texas.

44. On information and belief, CenturyLink Data Centers located in Dallas provide the infringing functionality throughout the United States.

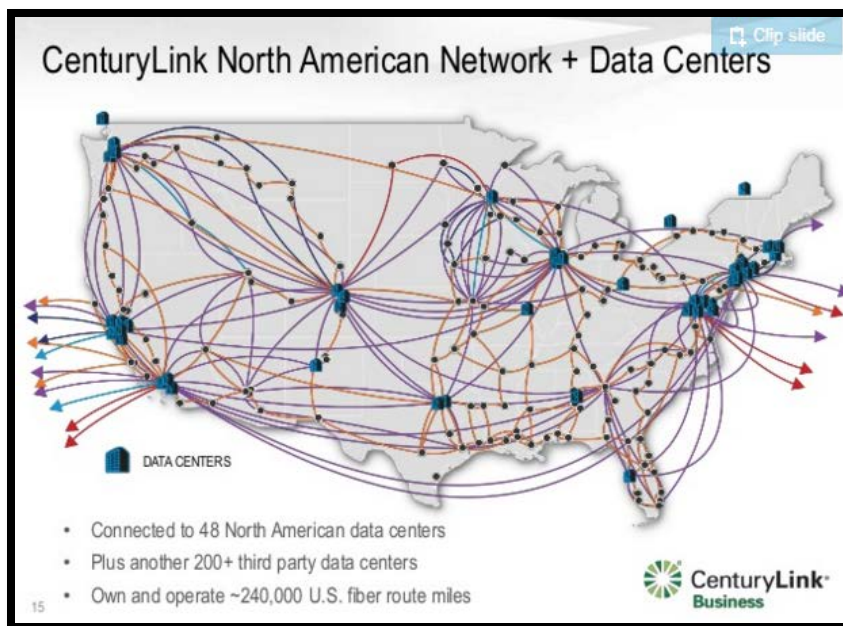
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<sup>28</sup> APPENDIX A TO THE CENTURYLINK AND TEXAS DEPARTMENT OF INFORMATION RESOURCES CONTRACT NO. DIR-TSO-2621 at § 10(A)(1) (2016), available at: [http://publishingext.dir.texas.gov/portal/internal/contracts-and-services/Contracts/DIR-TSO-2621%20Appendix%20A%20Standard%20Terms%20and%20Conditions%20\(per%20Amendment%202\).pdf](http://publishingext.dir.texas.gov/portal/internal/contracts-and-services/Contracts/DIR-TSO-2621%20Appendix%20A%20Standard%20Terms%20and%20Conditions%20(per%20Amendment%202).pdf)

<sup>29</sup> *CenturyLink Selected to Provide Statewide Voice Service for The Texas Health and Human Services Commission*, CENTURYLINK PRESS RELEASE (August 31, 2015).

<sup>30</sup> *CenturyLink Texas Fact Sheet*, CENTURYLINK WEBSITE (December 31, 2014), available at: [http://cms.ipressroom.com.s3.amazonaws.com/200/files/20140/Texas\\_SFS\\_2013.pdf](http://cms.ipressroom.com.s3.amazonaws.com/200/files/20140/Texas_SFS_2013.pdf)





CENTURYLINK ENTERPRISE PORTFOLIO AND PLATFORM at 15 (May 27, 2015).

#### **JURISDICTION AND VENUE**

45. This action arises under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has exclusive subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a).

46. Upon information and belief, this Court has personal jurisdiction over CenturyLink in this action because CenturyLink has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over CenturyLink would not offend traditional notions of fair play and substantial justice. Defendant CenturyLink, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the patents-in-suit. Moreover, CenturyLink is registered to do business in the State of Texas, has offices and facilities in the State of Texas, and actively directs its activities to customers located in the State of Texas.

47. Venue is proper in this district under 28 U.S.C. §§ 1391(b)-(d) and 1400(b). Defendant CenturyLink is registered to do business in the State of Texas, has offices in the State of Texas, and upon information and belief, has transacted business in the Eastern District of Texas and has committed acts of direct and indirect infringement in the Eastern District of Texas.

### **TECHNOLOGY BACKGROUND**

#### **U.S. PATENT NO. 7,191,447**

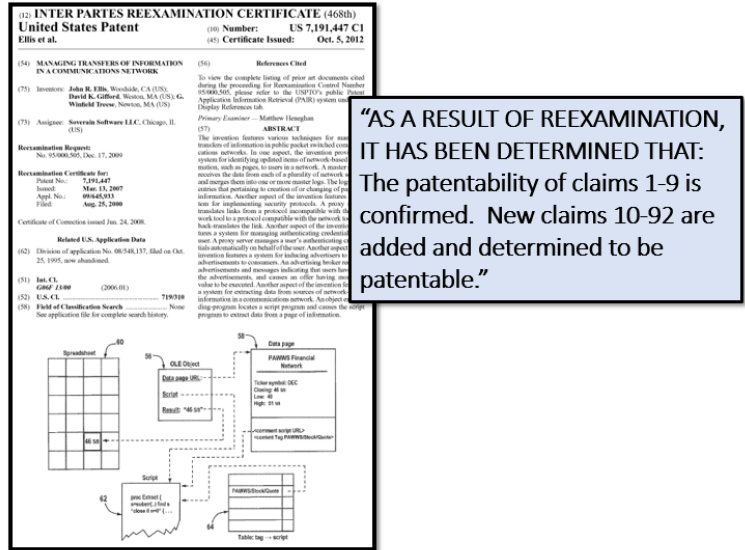
48. U.S. Patent No. 7,191,447 (“the ‘447 patent”) entitled, *Managing Transfer of Information in a Communications Network*, was filed on August 25, 2000, and claims priority to October 25, 1995. The ‘447 patent is subject to a 35 U.S.C. § 154(b) term extension of 615 days. Sovereign is the owner by assignment of the ‘447 patent. A true and correct copy of the ‘447 patent is attached hereto as Exhibit A. The ‘447 patent claims specific methods and systems for managing transfers of information in communications networks such as the World Wide Web.

49. All the claims in the ‘447 patent were subject to *inter partes* reexamination before the United States Patent Office. The reexamination certificate confirming all claims was issued on October 5, 2012. In addition to confirming the patentability of all claims of the ‘447 patent, 83 additional claims were added and determined to be patentable over multiple references that were not cited during the prosecution of the ‘447 patent.

50. During the reexamination proceeding, the United States Patent and Trademark Office Board of Patent Appeals and Interferences confirmed the patentability of the claims over four references.<sup>31</sup>

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<sup>31</sup> *Decision of the United States Patent and Trademark Office Board of Appeals and Interferences, INTER PARTES REEXAMINATION CONTROL NO. 95/000,505 (January 26, 2012).*



Reexam Ctrl. No. 95/000,505, ‘447 PATENT, CERT. ISSUED, OCTOBER 5, 2012.

51. The ‘447 patent teaches various techniques for managing transfers of information in public packet switched communications networks. For example, the ‘447 patent teaches a system where a server receives data from one or more networked servers and merges the data into one or more master logs. The ‘447 patent also teaches a system for implementing security protocols wherein a proxy server translates links between an incompatible network protocol to a compatible network protocol and then back-translates the link. The ‘447 patent also discloses a system for extracting data from sources of network-based information in a communication network using an object embedding program that locates a script program and causes the script program to extract data and make it available over a computer network.

52. The ‘447 patent and its underlying application, foreign counterparts, and its related patents have been cited by 135 United States patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ‘447 patent family as relevant prior art:

- International Business Machines Corporation
- Telefonaktiebolaget L M Ericsson
- Alcatel-Lucent USA, Inc.
- Juniper Networks, Inc.
- Yellowpages.Com LLC
- General Electric Company

- Microsoft Corporation
- Kaspersky Lab Zao
- Lucent Technologies, Inc.
- AOL, Inc.
- Facebook, Inc.
- Siemens Aktiengesellschaft
- Fujitsu Limited
- Vodafone Group plc
- Charles Schwab & Co., Inc.
- Salesforce.com, Inc.
- Samsung Electronics Co., Ltd.
- Amazon.com, Inc.

**U.S. PATENT NO. 8,606,900**

U.S. Patent No. 8,606,900 (“the ‘900 patent”) entitled, *Method and System for Counting Web Access Requests*, was filed on April 12, 2000, and issued on December 10, 2013. The ‘900 patent is subject to a 35 U.S.C. § 154(b) term extension of 1,645 days. Sovereign is the owner by assignment of the ‘900 patent. A true and correct copy of the ‘900 patent is attached hereto as Exhibit B. The ‘900 patent claims specific methods and systems for processing service requests from a client to a server through a network. In particular, the ‘900 patent teaches methods and systems applicable to processing client requests in an HTTP (Hypertext Transfer Protocol) environment.

53. The ‘900 patent teaches the processing of service requests from a client to a server through a computer network. Specifically, the ‘900 patent describes forwarding a service request from the client to the server and appending a session identification to the request and to subsequent service requests from the client to the server within a session. A session identifier may include an authorization identifier to allow a user to access controlled files.

54. The ‘900 patent and its related patents have been cited by 139 United States patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ‘900 patent family as relevant prior art:

- Sprint Communications Company L.P.
- Qualcomm, Inc.

- Netscape Communications Corporation<sup>32</sup>
- SAP AG
- Facebook, Inc.
- AOL, Inc.
- Fuji Xerox Co., Ltd.
- About, Inc.
- Bellsouth Intellectual Property Corporation
- AT&T, Inc.
- Citrix Systems, Inc.
- International Business Machines Corporation
- Nokia Corporation
- Yahoo! Inc.
- Dell, Inc.
- Microsoft Corporation
- Paramount Pictures Corporation
- Cisco Systems, Inc.
- McAfee, Inc.

**U.S. PATENT NO. 8,935,706**

55. U.S. Patent No. 8,935,706 (“the ‘706 patent”) entitled, *Managing Transfers of Information in a Communications Network*, was filed on September 29, 2008, and issued on January 13, 2015. The ‘706 patent is subject to a 35 U.S.C. § 154(b) term extension of 524 days. Sovereign is the owner by assignment of the ‘706 patent. A true and correct copy of the ‘706 patent is attached hereto as Exhibit C. The ‘706 patent claims specific methods and systems for implementing security protocols over a network. The patent teaches the use of a server to translate links from a protocol incompatible with an Internet browser to a protocol that is compatible with the same browser. The patent also teaches systems and methods for managing the authentication credentials of a user over a computer network.

56. The ‘706 patent teaches a system for managing authentication credentials on a public packet switched communications network that includes network servers that receive requests for data that is then transmitted to the requesting party. In one example, a proxy server, maintains a table of authenticating credentials for each network server. The proxy server

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<sup>32</sup> Netscape Communications Corporation was originally founded under the name Mosaic Communications Corporation and was one of the early developers of web browsing technology. It was subsequently purchased by AOL, Inc.

receives a request for authentication from a network server, retrieves authentication credentials from the table, and transmits the authenticating credentials to the network server. The network server upon receiving the credentials forwards the requested data to the requesting computer.

57. The '706 patent teaches the managing of user authentication credentials using a proxy server. The '706 patent is directed at solving a problem unique to computer networks – centrally managing numerous authentication credentials for computer users. Using the same authenticating credentials for a large number of services increases the risk that a breach in security in connection with one service will affect other services. Moreover, a user may be able to use a particular set of authenticating credentials in connection with one service but not another service, for example if one of the credentials is already being used by another user of the other service. The invention is directed at solving issues relating to having users type in a user ID and password each time a user visits a network service.

58. The '706 patent and its underlying application, foreign counterparts, and related domestic patents and patent applications have been cited by 135 United States patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the '706 patent family as relevant prior art:

- International Business Machines Corporation
- Telefonaktiebolaget L M Ericsson
- Alcatel-Lucent USA, Inc.
- Juniper Networks, Inc.
- Yellowpages.Com LLC
- General Electric Company
- Microsoft Corporation
- Kaspersky Lab Zao
- Lucent Technologies, Inc.
- AOL, Inc.
- Facebook, Inc.
- Siemens Aktiengesellschaft
- Fujitsu Limited
- Vodafone Group plc
- Charles Schwab & Co., Inc.
- Salesforce.com, Inc.
- Samsung Electronics Co., Ltd.

- Amazon.com, Inc.

**U.S. PATENT NO. 5,708,780**

U.S. Patent No. 5,708,780 (“the ‘780 patent”) entitled, *Internet Server Access Control and Monitoring*, was filed on June 7, 1995, and issued on January 13, 1998. Sovereign is the owner by assignment of the ‘780 patent. A true and correct copy of the ‘780 patent is attached hereto as Exhibit D. The ‘780 patent claims specific methods and systems for controlling and monitoring access to network servers. In particular, the process described in the invention includes client-server sessions over the Internet involving hypertext files.

59. The reexamination proceeding culminated with the United States Patent and Trademark Office confirming the patentability of all 45 claims of the ‘780 patent over 260 prior art references, including over 120 patent references.<sup>33</sup>

Reexam Ctrl. No. 90/007,183, ‘780 PATENT, CERT. ISSUED, APRIL 4, 2006.

60. In addition to confirming the patentability of all claims in the ‘780 patent, the United States Patent and Trademark Office confirmed the patentability of 90 new claims which were added to the ‘780 patent.

<sup>33</sup> Reexam Ctrl. Nos. 90/007,183, ‘780 PATENT, CERT. ISSUED, APRIL 4, 2006.



61. The '780 patent has been subject to review by Courts in the Eastern District of Texas. In prior orders, the Court denied a motion for partial summary judgment that claims 28 and 32-42 are indefinite under 35 U.S.C. § 112.<sup>34</sup>

62. The '780 patent teaches the use a "session identifier" to permit web servers to recognize a series of inquiries (or "service requests") from the same client during an online session, and to control and monitor the client's access to information on a website. This technology is important due to the "stateless" nature of the Internet.

63. The '780 Patent discloses the use of a web server that assigns a session identifier, which can be as simple as a string of text or numbers, in response to an initial service request from a client. When the server receives a subsequent request with the same session identifier appended to it, the server can then associate that request with earlier requests. The session identifier allows the web server to recognize the client during a series of requests and responses, to provide access to information resources which the user is authorized to access, and to monitor the user's access.

64. The '780 patent discloses the use of a "session identifier" for operating on a "stateless network," such as the Internet, meaning that the system can simultaneously handle multiple communications from different users. The claimed methods and systems achieve this, in part, by appending a unique "session identifier" to each user request.

65. The '780 patent has been the subject of a *Markman* Order in the Eastern District of Texas. Specifically, the Court interpreted seventeen disputed terms in the '780 patent. The Court grouped the terms "in groups relating to: (1) path name in a URL, (2) session, (3) hypertext, (4) authentication server, and (5) means-plus-function elements."<sup>35</sup>

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<sup>34</sup> *Soverain Software LLC v. Amazon.com, Inc.*, Case No. 04-cv-00014-LED, Dkt. No. 497 (August 8, 2005).

<sup>35</sup> *Soverain Software LLC v. Amazon, Inc.*, Case No. 04-cv-00014-LED, Dkt. No. 246 (April 7, 2005).

66. The means-plus-function claims in the ‘780 patent have been previously construed by the Court:

The Court agrees with Sovereign that limiting the claims beyond what is disclosed in the block diagrams is not required by case law and penalizes the inventors for submitting software code during prosecution. . . <sup>36</sup>

67. The court went on to identify specific structures for the mean-plus-function elements that corresponded to the means-plus-function elements. The below excerpt from the Court’s *Markman* Order shows the means-plus-function elements and the associated structure for two exemplary terms.

DISPUTED CLAIM TERMS	COURT’S CONSTRUCTION
<p><b>means for servicing service requests from a client which include the session identifier</b></p> <p>Claim 32</p>	<p>Content server (element 120 in Fig. 2A and element 52 in Fig. 3), executing a computer program implementing algorithm shown in Fig. 2A, including blocks 110, 112, and 116, or the client server exchange 9 and 10 in Fig. 3.</p>
<p><b>means for providing the session identifier</b></p> <p>Claim 33</p>	<p>Authentication server (element 200 in Figs. 2A and 2B, element 54 in Fig. 3), executing a computer program implementing algorithm steps as shown in Fig. 2B, including blocks 228, 230, and 232.</p>

*Sovereign Software LLC v. Amazon, Inc.*, Case No. 04-cv-00014-LED, Dkt. No. 246 at 24 (April 7, 2005).

68. One or more of the claims of the ‘780 patent recite a means or step for performing a specified function. The corresponding structure(s) in the ‘780 patent specification and appendix include computer code that improves the functioning of a computer. ‘780 patent, cols. 11-114.

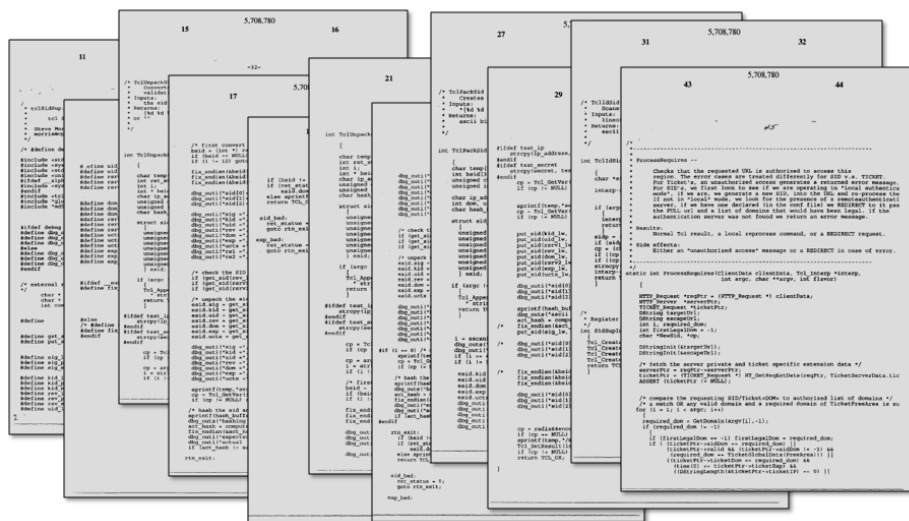
69. One or more of the claims in the ‘780 patent recite means-plus-function claim limitations governed by 35 U.S.C. § 112, ¶ 6.

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<sup>36</sup> *Id.* at 9.

70. The ‘780 patent discloses computer algorithms in an appendix to the specification.

In addition to the structures and algorithms disclosed throughout the specification, these algorithms correspond to means-plus-function claims in the ‘780 patent.



‘780 patent, cols. 11-114 (excerpt of some of the computer algorithms disclosed in an appendix to the specification).

71. Means-plus-function claims such as those included in the ‘780 patent are inherently not abstract ideas. In *Enfish LLC v. Microsoft Corp.*, the Federal Circuit upheld the patentability of claims containing means-plus-function elements. “Accordingly, we find that the claims at issue in this appeal are not directed to an abstract idea within the meaning of Alice. Rather, they are directed to a specific improvement to the way computers operate, embodied in the self-referential table.” 822 F.3d 1327, 1336 (Fed. Cir. 2016). Stanford Law Professor Mark Lemley described the basis for means-plus-function elements conferring patentability:

If the patent is interpreted as a means-plus-function claim, it will be limited to the particular software implementation the patentee actually built or described. Such a narrow, specific claim should not be an unpatentable “abstract idea.”<sup>37</sup>

<sup>37</sup> Mark A. Lemley, *Software Patents and the Return of Functional Claiming*, 2013 WISC. L. REV. 905 (2013).

72. The '780 patent has been cited by 1,840 United States patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the '780 patent as relevant prior art.

- International Business Machines Corporation (cited in 61 patents and patent applications)
- Microsoft Corporation (cited in 62 patents and patent applications)
- Oracle Corporation
- Amazon.com, Inc.
- AT&T Corp.
- Cisco Systems, Inc.
- Dell, Inc.
- eBay, Inc.
- First Data Corporation
- Google, Inc.
- Hewlett-Packard Company
- Level 3 Communications, LLC
- McAfee, Inc.
- Ricoh Co., Ltd.
- Yahoo!, Inc.
- Xerox Corporation
- NEC Corporation
- Goldman Sachs & Co.
- Facebook, Inc.
- Comcast Corporation
- Intel Corporation
- Akamai Technologies, Inc.

73. The '780 patent relates to methods for controlling and monitoring access to network servers through the use of a session identifier. This session identifier allows web servers to recognize and service multiple requests from the same client and control access to the server without repeated authentication.

**U.S. PATENT NO. 6,212,634**

74. U.S. Patent No. 6,212,634 (“the '634 patent”) entitled, *Certifying Authorization in Computer Networks*, was filed on November 11, 1996, and issued on April 3, 2001. Sovereign is the owner by assignment of the '634 patent. A true and correct copy of the '634 patent is attached hereto as Exhibit E. The '634 patent claims specific systems for certifying authorization of a computer over a network. The patent teaches specific systems wherein the authorizing computer creates a public key pair comprising a new public key and a new private

key, and creates an authorization certificate that certifies that a holder of the authorization certificate is authorized to perform an action referred to in the authorization certificate.

75. The '634 patent and its related domestic patent<sup>38</sup> have been cited by 254 United States patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the '634 patent as relevant prior art:

- NBC Universal, Inc.
- Adobe Systems, Inc.
- Nokia Corporation
- EMC Corporation
- Microsoft Corporation
- Fujitsu Limited
- International Business Machines Corporation
- Siemens AG
- Intel Corporation
- NCR Corporation
- Samsung Electronics Co., Ltd.
- France Telecom
- Oracle Corporation
- NEC Corporation
- Telefonaktiebolaget L.M. Ericsson
- Hewlett-Packard Company
- AT&T, Inc.
- Lucent Technologies, Inc.
- Intertrust Technologies Corporation
- General Electric Company
- Novell, Inc.
- General Electric Company
- Hitachi, Ltd.
- eBay, Inc.

**COUNT I**  
**INFRINGEMENT OF U.S. PATENT NO. 7,191,447**

76. Sovereign references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

77. CenturyLink designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for extracting data from sources of network-based information.

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<sup>38</sup> See U.S. Patent No. 6,490,358.

78. CenturyLink designs, makes, sells, offers to sell, imports, and/or uses the CenturyLink Website located at <https://shop.centurylink.com> (the “CenturyLink ‘447 Product(s)”).

79. On information and belief, one or more CenturyLink subsidiaries and/or affiliates use the CenturyLink ‘447 Products in regular business operations.

80. On information and belief, one or more of the CenturyLink ‘447 Products include technology for extracting data from sources of network-based information in a communications network having a plurality of network servers programmed to transmit network-based information.

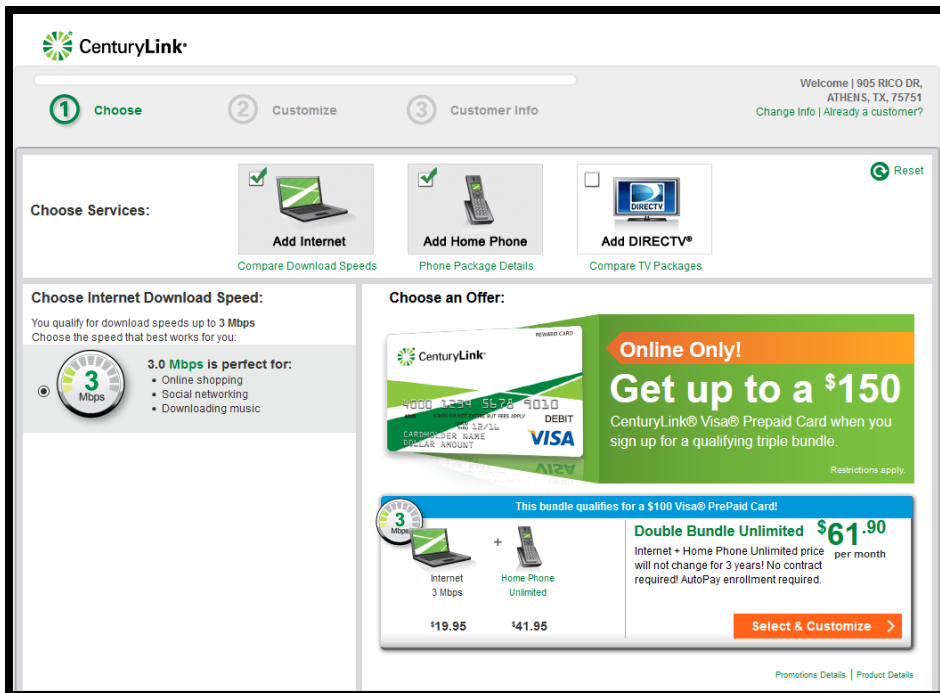
Method	File	Domain	Cause	Type	Transferred	Size	0 ms
GET	standard?mboxHost=shop.centurylink.com&mboxPage=1491211633243-414...	centurylink.tt.omtrdc.net	JS	script	678 B	1.55 KB	→ 51 ms
GET	checkout_sprite.png	shop.centurylink.com		img	113.95 KB	113.95 KB	→ 324 ms
GET	s_code.js	shop.centurylink.com		script	cached	91.52 KB	
POST	custinfo.section-ajax.vm	shop.centurylink.com	JS	xhr	119 B	129 B	→ 182 ms
GET	s56188896898646?AQB=1&ndh=1&tt=3/3/2017 2:27:14 1 420&fid=73107E...	smetrics.centurylink.com	JS	img	43 B	43 B	→ 164 ms
GET	/ctn_v2/wr/711655780327671248&8x10&0&0&0&264&susid=233107&Khttp...	ing-district.clicktale.net	JS	xhr	1 B	1 B	→ 86 ms
GET	cookies2.js	www.centurylink.com	JS	script	1.35 KB	4.12 KB	→ 353 ms
GET	res.checkout.css	shop.centurylink.com	JS	stylesheet	cached	85.49 KB	
GET	global.css	shop.centurylink.com	JS	stylesheet	cached	13.63 KB	
GET	bootstrap.min.css	shop.centurylink.com	JS	stylesheet	cached	120.74 KB	
GET	reset.css	shop.centurylink.com	JS	stylesheet	cached	1.08 KB	
GET	43906703?sid=w1SRfi-V55CBt2molf5wIw&cb=lpCb85060x79483&tt=sp&ts=14...	va.v.liveperson.net	JS	script	204 B	218 B	→ 90 ms
GET	storage.secure.min.html?loc=https://shop.centurylink.com&site=43906703&...	lpcdn.lpsmedia.net	JS	subdocument	cached	28.85 KB	
POST	ShopNC_addToCart	shop.centurylink.com	JS	document	28.03 KB	162.99 KB	→ 242 ms
GET	anchorCartSummary?redirectUrl=/freeRange/order/ctcustomerInfoCheckou...	shop.centurylink.com		document	28.03 KB	162.99 KB	→ 2146 ms
GET	s57611791247664?AQB=1&ndh=1&tt=3/3/2017 2:27:4 1 420&fid=73107E138C...	smetrics.centurylink.com	JS	img	—	0 B	→ 0 ms

*CenturyLink Shop Network Inspection Report, CENTURYLINK SHOP WEBSITE*, available at: <https://shop.centurylink.com/MasterWebPortal/freeRange/shop/> (last visited March 2017) (showing some of the domains of network based data).

81. On information and belief, one or more of the CenturyLink ‘447 Products enable an object embedding program implemented on a computer. The object embedding program contains functionality to locate a script program.

82. On information and belief, the CenturyLink ‘447 Products are available to businesses and individuals throughout the United States.

83. On information and belief, the CenturyLink ‘447 Products are provided to businesses and individuals located in the Eastern District of Texas.



*CenturyLink Shop Homepage*, CENTURYLINK WEBSITE, available at: <https://shop.centurylink.com/MasterWebPortal/freeRange/shop/> (last visited March 2017) (showing the availability of the CenturyLink Shop for a customer in Texas).

84. On information and belief, the CenturyLink ‘447 Products comprise a system containing functionality for a script program that is implemented on a computer on a communication network.

85. On information and belief, the CenturyLink ‘447 Products contain a script program wherein the script program is structured to extract data from network-based information provided by a networked server.



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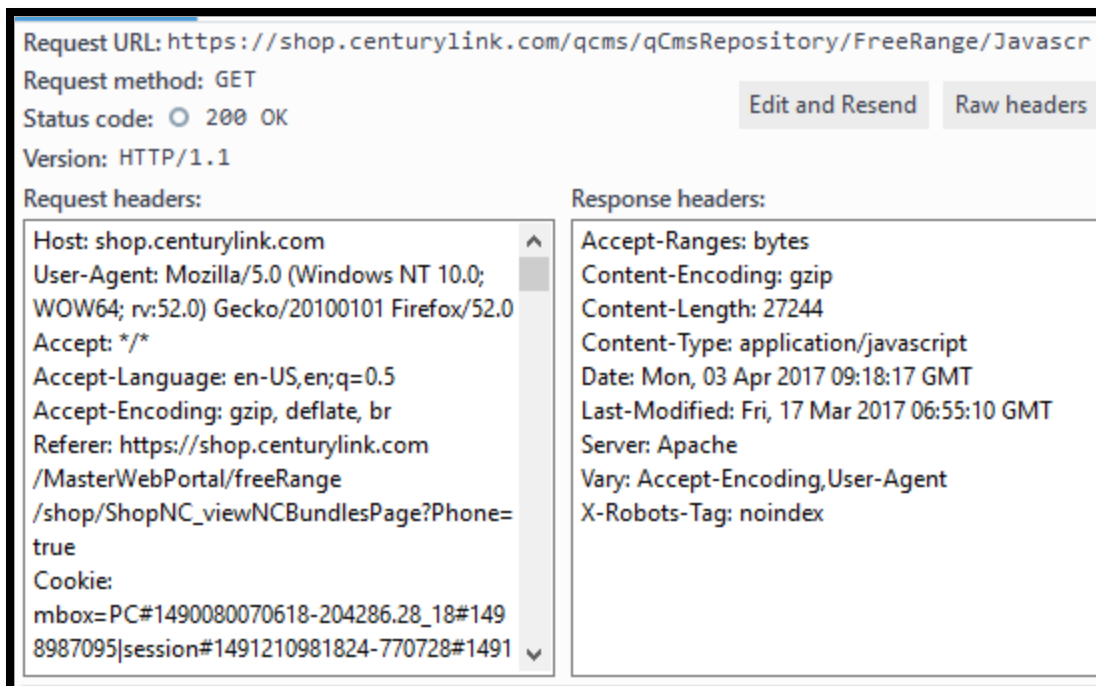
1  /* TEST COMMENT - ST 091211 */
2  /* TEST COMMENT - ML 091311 v2 */
3  var generalUrls = {
4    'myaccount': {
5      'Q': qcookie_url + '/MasterWebPortal/myaccountAuthentication',
6      'CTL': ctlearn_url + '/entrycheck/eam/loggedin.html'
7    },
8    'shop': {
9      Q: qcookie_url + '/MasterWebPortal/shopAuthentication',
10     CTL: qshop_url + '/MasterWebPortal/freeRange/login/shop'
11   }
12 };
13
14 /* Link Matrix for ALL pages - template links
15  *
16  * Format is : id=>EC/NC=>Q, CTL, EQ=>URL
17  */
18
19 var linkMatrix={"zam":{
20   "account-autopaybill-benefits-download":{
21     CTL: ctl_url+"/common/pdfs/CenturyLink-Autopay-Enrollment-Form.p
22     Q:  ctl_url+"/common/pdfs/CenturyLink-Autopay-Enrollment-Form-Q.p
23   },
24   "account-autopaybill-expect-terms":{
25     CTL: ctl_url+"/Pages/AboutUs/Legal/webSiteUserAgreement.jsp",

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*CenturyLink Shop Template\_Link\_Matrix.js Response*, NETWORK INSPECTION REPORT, available at: [https://shop.centurylink.com/assets/js/template\\_link\\_matrix.js](https://shop.centurylink.com/assets/js/template_link_matrix.js) (last visited March 2017).

86. On information and belief, the CenturyLink '447 Products contain an object embedding program, implemented on computers. The object embedding program implemented on the '447 Product comprises a link to said network-based information provided by a networked server.

87. On information and belief, the CenturyLink '447 Products enable an object embedding program to (via a link) locate a script program.



*CenturyLink Network Inspection Report For Main.js*, CENTURYLINK SHOP WEBSITE, available at: <https://shop.centurylink.com/MasterWebPortal/freeRange/shop/> (last visited March 2017) (showing the request and response headers for the Main.js script).

88. On information and belief, the CenturyLink ‘447 Products enable an object embedding program that is structured to apply the script program to the network-based information. The application of the script program causes data to be extracted from a networked server.

89. On information and belief, the CenturyLink ‘447 Products enable the embedding of data in a compound document that is on the communications network.

90. On information and belief, the CenturyLink ‘447 Products enable the object embedding program to locate the script program via a link. Further, the ‘447 Products enable the network-based information to be linked to the scripting program.

91. On information and belief, the CenturyLink ‘447 Products comprise a system for executing an object embedding program to embed said data within a compound document implemented on a computer in said communications network.

Method	File	Domain	Cause
GET	.jsonp?df=0&ts=consumer-sales-cart-ens&b=3	lptag.liveperson.net	JS script
GET	jquery-ui.min.js	shop.centurylink.com	JS script
GET	template_link_matrix.js	shop.centurylink.com	JS script
GET	satelliteLib-203dbecc4d364d7db40bdcdebb64d13058915546.js	assets.adobedtm.com	script
GET	main.js	shop.centurylink.com	script
GET	jquery-1.7.1.min.js	shop.centurylink.com	script
GET	s_code.js	shop.centurylink.com	script
GET	s_code.js	shop.centurylink.com	script
GET	jquery.qwest-core.phil.js	shop.centurylink.com	script
GET	WR102b.js	cdnssl.clicktale.net	JS script
GET	WR102b.js	cdnssl.clicktale.net	JS script
GET	pricing.js	shop.centurylink.com	script
GET	options.js	shop.centurylink.com	script
GET	require.js	shop.centurylink.com	script
GET	interface.js	shop.centurylink.com	script

*CenturyLink Network Inspection Report, CENTURYLINK SHOP WEBSITE*, available at: <https://shop.centurylink.com/MasterWebPortal/freeRange/shop/> (last visited March 2017) (showing a network inspection report for the CenturyLink Shop website including the scripts used to embed network based information).

92. On information and belief, CenturyLink has directly infringed and continues to directly infringe the ‘447 patent by, among other things, making, using, offering for sale, and/or selling technology for extracting data from sources of network-based information, including but not limited to the CenturyLink ‘447 Products, which include infringing technology for managing transfers of information in a communications network. Such products and/or services include, by way of example and without limitation, the CenturyLink ‘447 Products.

93. By making, using, testing, offering for sale, and/or selling products and services, including but not limited to the CenturyLink ‘447 Products, CenturyLink has injured Sovereign and is liable to Sovereign for directly infringing one or more claims of the ‘447 patent, including at least claim 5, pursuant to 35 U.S.C. § 271(a).

94. On information and belief, CenturyLink also indirectly infringes the ‘447 patent by actively inducing infringement under 35 USC § 271(b).

95. On information and belief, CenturyLink had knowledge of the ‘447 patent since at least service of this Complaint or shortly thereafter, and on information and belief, CenturyLink knew of the ‘447 patent and knew of its infringement, including by way of this lawsuit.

96. On information and belief, CenturyLink intended to induce patent infringement by third-party customers and users of the CenturyLink '447 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. CenturyLink specifically intended and was aware that the normal and customary use of the accused products would infringe the '447 patent. CenturyLink performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '447 patent and with the knowledge that the induced acts would constitute infringement. For example, CenturyLink provides the CenturyLink '447 Products that have the capability of operating in a manner that infringe one or more of the claims of the '447 patent, including at least claim 5, and CenturyLink further provides documentation and training materials that cause customers and end users of the CenturyLink '447 Products to utilize the products in a manner that directly infringe one or more claims of the '447 patent.<sup>39</sup> By providing instruction and training to customers and end-users on how to use the CenturyLink '447 Products in a manner that directly infringes one or more claims of the '447 patent, including at least claim 5, CenturyLink specifically intended to induce infringement of the '447 patent. On information and belief, CenturyLink engaged in such inducement to promote the sales of the CenturyLink '447 Products, e.g., through CenturyLink user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '447 patent. Accordingly, CenturyLink has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '447 patent, knowing that such use constitutes infringement of the '447 patent.

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<sup>39</sup> See *CenturyLink User Guides*, CENTURYLINK WEBSITE, available at: <https://www.centurylink.com/help/welcome/> (last visited March 2017); *CenturyLink Guidance Center*, CENTURYLINK WEBSITE, available at: <http://www.centurylink.com/home/help/guidance.html> (last visited March 2017); *CenturyLink Contact Center*, CENTURYLINK WEBSITE, available at: <http://www.centurylink.com/help/contact/?ent=c> (last visited March 2017).

97. The '447 patent is well-known within the industry as demonstrated by the over 135 citations to the '447 patent in published patents and patent applications assigned to technology companies and academic institutions. Several of CenturyLink's competitors have paid considerable licensing fees for their use of the technology claimed by the '447 patent. In an effort to gain an advantage over CenturyLink's competitors by utilizing the same licensed technology without paying reasonable royalties, CenturyLink infringed the '447 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

98. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '447 patent.

99. As a result of CenturyLink's infringement of the '447 patent, Sovereign has suffered monetary damages, and seeks recovery in an amount adequate to compensate for CenturyLink's infringement, but in no event less than a reasonable royalty for the use made of the invention by CenturyLink together with interest and costs as fixed by the Court.

**COUNT II**  
**INFRINGEMENT OF U.S. PATENT NO. 8,606,900**

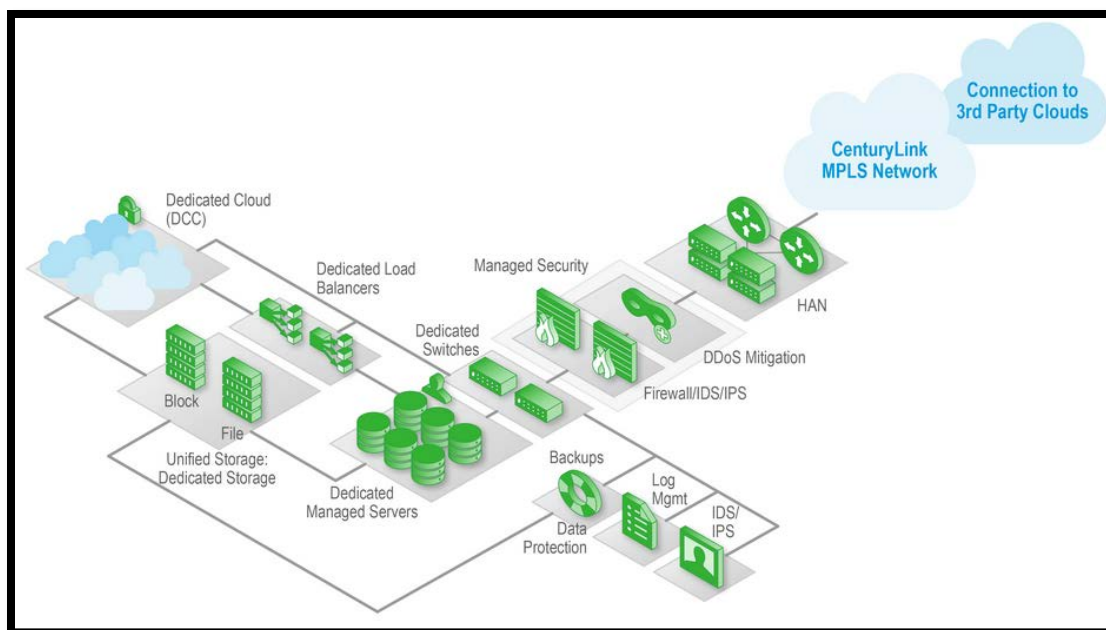
100. Sovereign references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

101. CenturyLink designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for tracking web page requests received at a web server.

102. CenturyLink designs, makes, sells, offers to sell, imports, and/or uses the CenturyLink Cloud Hosted Services, including Managed Microsoft Internet Information Services (IIS) versions: Microsoft IIS 7.5, Microsoft IIS 8.0, and Microsoft IIS 8.5 and Managed Apache Webhosting versions: Apache Httpd 2.4 with PHP 5.4, Apache Httpd 2.4 with PHP 5.5, and Apache Httpd 2.4 with PHP 5.6 (the "CenturyLink '900 Product(s)").

103. On information and belief, one or more CenturyLink subsidiaries and/or affiliates use the CenturyLink '900 Products in regular business operations.

104. On information and belief, one or more of the CenturyLink '900 Products include technology for tracking webpage requests received at a web server from multiple clients.



*CenturyLink Managed Hosting Reference Architecture*, CENTURYLINK BUSINESS WEBSITE, available at: <http://www.centurylink.com/business/enterprise/assets/reference-architecture/managed-hosting.html> (showing the reference architecture of CenturyLink managed hosting services which includes CenturyLink Managed Microsoft Internet Information Services and Managed Apache Web Hosting).

105. On information and belief, the CenturyLink '900 Products generate multiple session identifiers. The session identifiers that are generated by the CenturyLink '900 Products are text strings that identify a series of requests and responses to perform a complete task or set of tasks between a client and a server system.

106. On information and belief, the CenturyLink '900 Products generate session identifiers that have information associated with a particular accessing computer where the accessing computer is making a webpage request to the web server.

SERVICE DETAILS				
Managed Web Server Services are available in the following Web Server Technologies:				
WEB SERVER TECHNOLOGY	VERSIONS	AVAILABILITY SLA	SUPPORTED OS	INCLUDED FEATURES
Apache HTTP Server	2.0 & 2.2	98.5% - 99.9%	Linux & Unix	<ul style="list-style-type: none"> <li>• PHP 5.2.5</li> <li>• 45 included modules</li> <li>• 18 available modules</li> </ul>
IBM HTTP Server	6.1 & 7.0	Not available	Linux & Windows	<ul style="list-style-type: none"> <li>• 58 included modules</li> </ul>
Microsoft IIS	6.0, 7.0 & 7.5	98.5% - 99.9%	Windows	<ul style="list-style-type: none"> <li>• ASPNet 2.0, 3.0, 3.5 &amp; 4.0</li> <li>• FTP services</li> <li>• SMTP services</li> <li>• WWW Services</li> </ul>

*CenturyLink Managed Applications, CENTURYLINK SERVICE SOLUTIONS FACT SHEET at 4 (2015) (showing that CenturyLink managed web server services include Apache HTTP Server and Microsoft IIS).*

107. On information and belief, the CenturyLink ‘900 Products enable the storing of the session identifiers at the accessing computer in the accessing computer’s web browser. For example, if an accessing computer is running a browser such as Microsoft Internet Explorer, the session identifier is stored in the web browser.

Apache Modules	Apache 2.2.x	Apache 2.4.x
mod_session		X
mod_session_cookie		X
mod_session_dbd		X
mod_setenvif	X	X
mod_slotmem_plain		X
mod_slotmem_shm		X
mod_so	X	X
mod_socache_dbm		X
mod_socache_memcache		X
mod_socache_shmcb		X
mod_speling	X	X
mod_ssl	X	X
mod_status	X	X
mod_substitute	X	X
mod_suexec	X	X
mod_unique_id	X	X
mod_unixd		X
mod_userdir	X	X
mod_usertrack	X	X
mod_version	X	X
mod_vhost_alias	X	X
mod_watchdog		X
mod_xml2enc		X

*CenturyLink Technology Solutions Service Guide: Web Application Software 1.0 Apache Httpd Server, CENTURYLINK TECHNOLOGY SOLUTIONS GUIDE at 7 (2014) (showing that the CenturyLink managed services enables mod\_session, mod\_session\_cookie, and mod\_sessiondbd modules).*



108. On information and belief, the CenturyLink '900 Products enable the receipt of web page requests at the web server. Each web page request includes a session identifier associated with a particular client making the web page request. Specifically, the CenturyLink '900 Products receive requests from accessing computers wherein each request for a web page includes the session identifier associated with the requesting computer.

109. On information and belief, the CenturyLink '900 Products enable storing data regarding the web page requests. The data includes the webpage that is requested and the session identifiers associated with the request. Specifically, the CenturyLink '900 Products keep a log of access requests wherein the log includes the requests for specific web pages and related session identifiers.

110. On information and belief, the CenturyLink '900 Products are provided to businesses and individuals located in the Eastern District of Texas.

111. On information and belief, the CenturyLink '900 Products enable the tracking of webpage requests by evaluating the information stored at the web server and by counting the number of requests for particular web pages exclusive of repeated requests from a particular client utilizing information associated with a particular client. Specifically, the CenturyLink '900 Products contain website analytics functionality that allows tracking the number of webpage requests that exclude multiple requests from the same computer associated with a unique session identifier.

112. On information and belief, the CenturyLink '900 Products enable counting the number of requests for a webpage wherein the counting performed by the CenturyLink '900 Products excludes repeated requests from a particular client computer that occur within a predetermined period of time, and thereafter counts a repeated request for the same web page from the particular client. Specifically, the CenturyLink '900 Products enable frequency thresholds that exclude counting access requests where the frequency exceeds a specific threshold within a set period of time.

113. On information and belief, CenturyLink has directly infringed and continues to directly infringe the '900 patent by, among other things, making, using, offering for sale, and/or selling web tracking technology, including but not limited to the CenturyLink '900 Products, which include infringing web server tracking technologies. Such products and/or services include, by way of example and without limitation, the CenturyLink '900 Products.

114. By making, using, testing, offering for sale, and/or selling web tracking products and services, including but not limited to the CenturyLink '900 Products, CenturyLink has injured Sovereign and is liable to Sovereign for directly infringing one or more claims of the '900 patent, including at least claims 1 and 5, pursuant to 35 U.S.C. § 271(a).

115. On information and belief, CenturyLink also indirectly infringes the '900 patent by actively inducing infringement under 35 USC § 271(b).

116. On information and belief, CenturyLink had knowledge of the '900 patent since at least service of this Complaint or shortly thereafter, and on information and belief, CenturyLink knew of the '900 patent and knew of its infringement, including by way of this lawsuit.

117. On information and belief, CenturyLink intended to induce patent infringement by third-party customers and users of the CenturyLink '900 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. CenturyLink specifically intended and was aware that the normal and customary use of the accused products would infringe the '900 patent. CenturyLink performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '900 patent and with the knowledge that the induced acts would constitute infringement. For example, CenturyLink provides the CenturyLink '900 Products that have the capability of operating in a manner that infringe one or more of the claims of the '900 patent, including at least claims 1 and 5, and CenturyLink further provides documentation and training materials that cause customers and end users of the CenturyLink '900 Products to utilize the

products in a manner that directly infringe one or more claims of the '900 patent.<sup>40</sup> By providing instruction and training to customers and end-users on how to use the CenturyLink '900 Products in a manner that directly infringes one or more claims of the '900 patent, including at least claims 1 and 5, CenturyLink specifically intended to induce infringement of the '900 patent. On information and belief, CenturyLink engaged in such inducement to promote the sales of the CenturyLink '900 Products, *e.g.*, through CenturyLink user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '900 patent. Accordingly, CenturyLink has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '900 patent, knowing that such use constitutes infringement of the '900 patent.

118. The '900 patent is well-known within the industry as demonstrated by the over 139 citations to the '900 patent in published patents and patent applications assigned to technology companies and academic institutions. Several of CenturyLink's competitors have paid considerable licensing fees for their use of the technology claimed by the '900 patent. To gain an advantage over CenturyLink's competitors by utilizing the same licensed technology without paying reasonable royalties, CenturyLink infringed the '900 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

119. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '900 patent.

120. As a result of CenturyLink's infringement of the '900 patent, Sovereign has suffered monetary damages, and seeks recovery in an amount adequate to compensate for

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<sup>40</sup> See *CenturyLink Managed Applications*, CENTURYLINK SERVICE SOLUTIONS FACT SHEET (2015); *CenturyLink Technology Solutions Service Guide: Web Application Software 1.0*, CENTURYLINK TECHNOLOGY SOLUTIONS GUIDE (2014); *CenturyLink Technology Solutions Service Guide: Intelligent Monitoring 1.0*, CENTURYLINK TECHNOLOGY SOLUTIONS GUIDE (2014); *CenturyLink Technology Solutions Service Guide: Web Application Software 1.0 Apache Httpd Server*, CENTURYLINK TECHNOLOGY SOLUTIONS GUIDE (2014); *Century Link Knowledge Base*, CENTURYLINK CLOUD SERVICES WEBSITE, available at: <https://wwwctl.io/knowledge-base>.

CenturyLink's infringement, but in no event less than a reasonable royalty for the use made of the invention by CenturyLink together with interest and costs as fixed by the Court.

**COUNT III**  
**INFRINGEMENT OF U.S. PATENT NO. 8,935,706**

121. Sovereign references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

122. CenturyLink designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for managing authentication credentials for access to data stored on servers.

123. CenturyLink designs, makes, sells, offers to sell, imports, and/or uses the CenturyLink Cloud, which enables user authentication functionality (the "CenturyLink '706 Product(s)").

CenturyLink Cloud provides a secure multi-tenant platform by strictly segmenting customer accounts from each other. This includes a strict separation between customer accounts including: cloud servers, networks, users, firewall policies, and all associated metadata. The ability to create hard fenced accounts has been fully extended to customers through the introduction of Sub Accounts.

Chris Little, *Account Hierarchy User, Network, Service Catalog, and Firewall Policy Primer*, CENTURYLINK KNOWLEDGE BASE (June 16, 2015);

124. On information and belief, one or more CenturyLink subsidiaries and/or affiliates use the CenturyLink '706 Products in regular business operations.

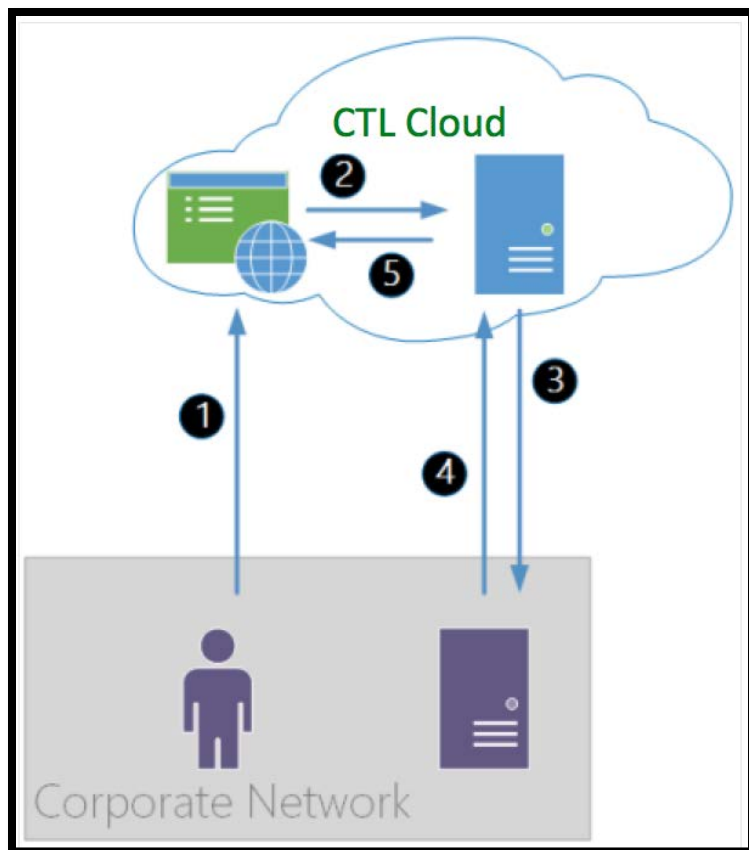
125. On information and belief, one or more of the CenturyLink '706 Products include technology for managing authentication credentials for access to data stored on a network.

126. On information and belief, one or more of the CenturyLink '706 Products include functionality for receiving and storing authentication credentials for each of the plurality of sources of network based information. Specifically, the CenturyLink '706 Products enable storing access credentials that relate to specific systems that are connected via a network.

127. On information and belief, one or more of the CenturyLink '706 Products enable storing authentication credentials in a table of pairs. The table that is used by the '706 Products

to store the credentials is organized so that each pair stored in the table represents a subscription service network server and corresponding credentials for the subscription service.

128. On information and belief, one or more of the CenturyLink ‘706 Products enable forwarding access requests to a server where network based information is stored.



Kelly Malloy, *Using SAML for Single-Sign-On to the CenturyLink Platform Control Portal with Windows 2012 R2*, CenturyLink Knowledge Base (July 29, 2015) (Describing that in step 4 “The IdP returns a signed (and optionally, encrypted) SAML authentication response message to the CenturyLink Cloud SP. This message includes a Name ID assertion and that value is matched to a User record in the CenturyLink Cloud.”).

129. On information and belief, one or more of the CenturyLink ‘706 Products enable receiving a request for authentication from a server where network based information is stored. The authentication request received by the CenturyLink ‘706 Products related to the access request forwarded to the server where the network based information is stored.

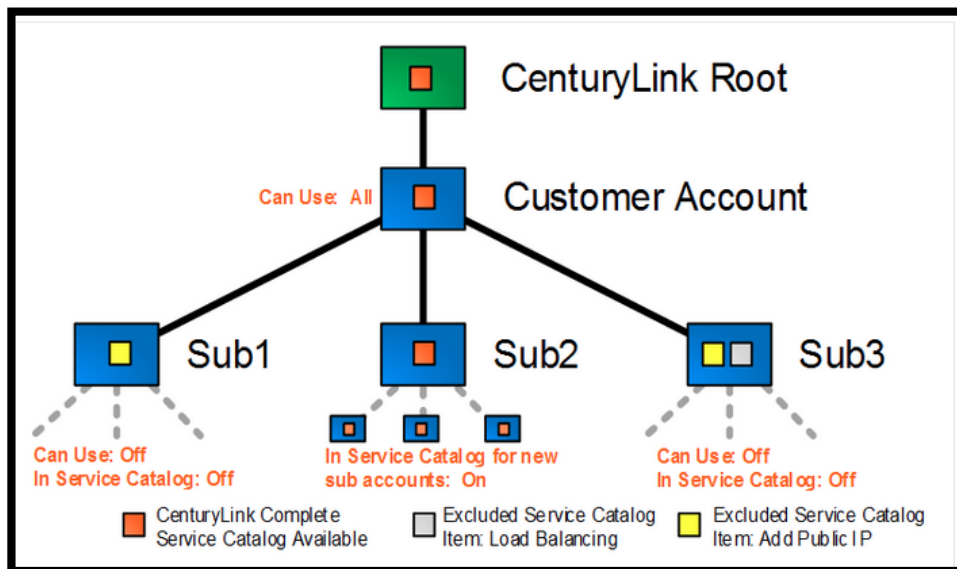
130. On information and belief, one or more of the CenturyLink ‘706 Products, in response to an authentication request retrieve the stored authentication credentials that are specific to the server where the network based information is stored.

*Identity and Access Management options from CenturyLink Cloud includes granular Role-Based Access Controls (RBAC), as mentioned in the first post. For integrated identity, which has become a key enabler to quickly provision and de-provision access to company resources and data, it is best to integrate with your existing processes through Security Assertion Markup Language (SAML) 2.0. SAML lets you leverage your existing identify management processes and tools and mechanisms. CenturyLink Cloud supports SAML enabling single-sign-on (SSO). For example, the platform could enable SSO against Microsoft Active Directory Federation Services (ADFS), Oracle Identity Manager, Microsoft Forefront Identity Manager, and others.*

Ben Brauer, *Is CenturyLink Cloud Secure?*, CENTURYLINK KNOWLEDGE BASE (June 9, 2015) (emphasis added).

131. On information and belief, one or more of the CenturyLink ‘706 Products retrieve the authentication credentials that are assigned to a user upon registration with the subscription service.

132. On information and belief, one or more of the CenturyLink ‘706 Products enable associating a password with stored authentication credentials.



Chris Little, *Account Hierarchy User, Network, Service Catalog, and Firewall Policy Primer*, CENTURYLINK KNOWLEDGE BASE (June 16, 2015) (“The Service Catalog allows Account Administrators to enable or disable certain cloud platform services for users of individual parent or sub accounts.”).

133. On information and belief, one or more of the CenturyLink '706 Products enable receiving a password in response to a user initiating a network session with the network server.

134. On information and belief, one or more of the CenturyLink '706 Products enable transmitting authentication credentials to the server where network based information is stored. The transmission of authentication credentials occurs in the CenturyLink '706 Products following successful verification of the user's password.

135. On information and belief, the CenturyLink '706 Products are provided to businesses and individuals located in the Eastern District of Texas.

136. On information and belief, one or more of the CenturyLink '706 Products enable the using the single password to authenticate a user for multiple sources of network based information (e.g., network based information stored on two different servers).

137. On information and belief, CenturyLink has directly infringed and continues to directly infringe the '706 patent by, among other things, making, using, offering for sale, and/or selling technology for managing authentication credentials for access to a plurality of sources of network-based information, including but not limited to the CenturyLink '706 Products, which include infringing authentication credential management technologies. Such products and/or services include, by way of example and without limitation, the CenturyLink '706 Products.

138. By making, using, testing, offering for sale, and/or selling products and services for managing authentication credentials for access to a plurality of sources of network based information, including but not limited to the CenturyLink '706 Products, CenturyLink has injured Sovereign and is liable to Sovereign for directly infringing one or more claims of the '706 patent, including at least claims 1-5, pursuant to 35 U.S.C. § 271(a).<sup>41</sup>

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<sup>41</sup> See *CenturyLink Cloud Security Overview*, CENTURYLINK IMPLEMENTATION GUIDE (2015); Bryan Friedman, *Practical Guide for Using Roles*, CENTURYLINK KNOWLEDGE BASE (December 15, 2014); Troy Schneringer, *User Permissions*, CENTURYLINK KNOWLEDGE BASE (September 16, 2016); Chris Little, *Account Hierarchy User, Network, Service Catalog, and Firewall Policy Primer*, CENTURYLINK KNOWLEDGE BASE (June 16, 2015); Ben Brauer, *Is CenturyLink Cloud Secure?*, CENTURYLINK KNOWLEDGE BASE (June 9, 2015); Kelly Malloy, *Using SAML for Single-Sign-On to the CenturyLink Platform Control Portal with Windows 2012 R2*, CENTURYLINK KNOWLEDGE BASE (July 29, 2015).

139. The '706 patent is well-known within the industry as demonstrated by the over 135 citations to the '706 patent in published patents and patent applications assigned to technology companies and academic institutions. Several of CenturyLink's competitors have paid considerable licensing fees for their use of the technology claimed by the '706 patent. To gain an advantage over CenturyLink's competitors by utilizing the same licensed technology without paying reasonable royalties, CenturyLink infringed the '706 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

140. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '706 patent.

141. As a result of CenturyLink's infringement of the '706 patent, Sovereign has suffered monetary damages, and seeks recovery in an amount adequate to compensate for CenturyLink's infringement, but in no event less than a reasonable royalty for the use made of the invention by CenturyLink together with interest and costs as fixed by the Court.

**COUNT IV**  
**INFRINGEMENT OF U.S. PATENT NO. 5,708,780**

142. Sovereign references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

143. CenturyLink designed, made, used, sold, and/or offered for sale in the United States products and/or services for processing service requests from a client to a server system through a network.

144. CenturyLink designed, made, sold, offered to sell, imported, and/or used the CenturyLink Cloud Hosted Services including Managed Microsoft Internet Information Services (IIS) versions: Microsoft IIS 7.5, Microsoft IIS 8.0, and Microsoft IIS 8.5 and Managed Apache Webhosting versions: Apache Httpd 2.4 with PHP 5.4, Apache Httpd 2.4 with PHP 5.5, and Apache Httpd 2.4 with PHP 5.6 (the "CenturyLink '780 Product(s)").



145. On information and belief, one or more CenturyLink subsidiaries and/or affiliates used the CenturyLink ‘780 Products in regular business operations.

146. On information and belief, one or more of the CenturyLink ‘780 Products include technology for processing service requests from a client to server system through a network.

SERVICE DETAILS				
Managed Web Server Services are available in the following Web Server Technologies:				
WEB SERVER TECHNOLOGY	VERSIONS	AVAILABILITY SLA	SUPPORTED OS	INCLUDED FEATURES
Apache HTTP Server	2.0 & 2.2	98.5% - 99.9%	Linux & Unix	<ul style="list-style-type: none"> <li>• PHP 5.2.5</li> <li>• 45 included modules</li> <li>• 18 available modules</li> </ul>
IBM HTTP Server	6.1 & 7.0	Not available	Linux & Windows	<ul style="list-style-type: none"> <li>• 58 included modules</li> </ul>
Microsoft IIS	6.0, 7.0 & 7.5	98.5% - 99.9%	Windows	<ul style="list-style-type: none"> <li>• ASPNet 2.0, 3.0, 3.5 &amp; 4.0</li> <li>• FTP services</li> <li>• SMTP services</li> <li>• WWW Services</li> </ul>

CenturyLink Managed Applications, CENTURYLINK SERVICE SOLUTIONS FACT SHEET at 4 (2015) (showing that CenturyLink managed web server services include Apache HTTP Server and Microsoft IIS).

147. On information and belief, one or more of the CenturyLink ‘780 Products append to a path name in a uniform resource locator a session identifier. Specifically, the ‘780 Products tag, add, affix, or supplement to the sequence of zero or more elements that follows the host address in a URL a text string that identifies a session.

Imagine you request a page like `http://yourserver/folder/default.aspx`. As you can see from the MapPoint screenshot, the slash immediately preceding the resource name is expanded to include parentheses with the session ID stuffed inside, as below.

```
http://yourserver/folder/(session ID here)/default.aspx
```

The session ID is embedded in the URL and there's no need to persist it anywhere. Well, not exactly.. Consider the following scenario.

You visit a page and get assigned a session ID. Next, you clear the address bar of the same browser instance, go to another application and work. Then, you retype the URL of the previous application and, guess what, retrieve your session values as you get in.

If you use cookieless sessions, in your second access to the application you're assigned a different session ID and lose all of your previous state. This is a typical side effect of cookieless sessions. To understand why, let's delve deep into the implementation of cookieless sessions.

Dino Esposito, *Cookieless ASP.NET*, MICROSOFT MSDN DOCUMENTATION (2005), available at: <https://msdn.microsoft.com/en-us/library/aa479314.aspx> (describing how IIS servers append a session ID to the URL).

148. On information and belief, one or more of the CenturyLink ‘780 Products process service requests between a client and server using hypertext transfer protocol. Specifically, the

‘780 Products process service requests using a client/server protocol used to access information on the World Wide Web.

When the first request of a new browser session comes in, the session state module reads about the cookie support in the web.config file. If the **cookieless** attribute of the <sessionState> section is set to true, the module generates a new session ID, mangles the URL by stuffing the session ID just before the resource name, and redirects the browser to the new URL using the HTTP 302 command. When each request arrives at the IIS gate—far before it is handed over to ASP.NET—aspnet\_filter.dll is given a chance to look at it. If the URL embeds a session ID in parentheses, then the session ID is extracted and copied into a request header named **AspFilterSessionId**. The URL is then rewritten to look like the originally requested resource and let go. This time the ASP.NET session state module retrieves the session ID from the request header and proceeds with session-state binding.

Dino Esposito, *Cookieless ASP.NET*, MICROSOFT MSDN DOCUMENTATION (2005), available at: <https://msdn.microsoft.com/en-us/library/aa479314.aspx> (emphasis added) (describing how servers such as IIS embed a session ID in the URL).

149. On information and belief, one or more of the CenturyLink ‘780 Products return requests hypertext pages to a client in response to requests for hypertext pages received from the client through a network. Specifically, the ‘780 Products return requests for screen renderings referenced by (or including) hypertext links.

150. On information and belief, the ‘780 Products respond to further client requests related to links in hypertext pages. Specifically, the ‘780 Products respond to requests from a client computer relating to a non-sequential web association which the user can use to navigate through related topics.

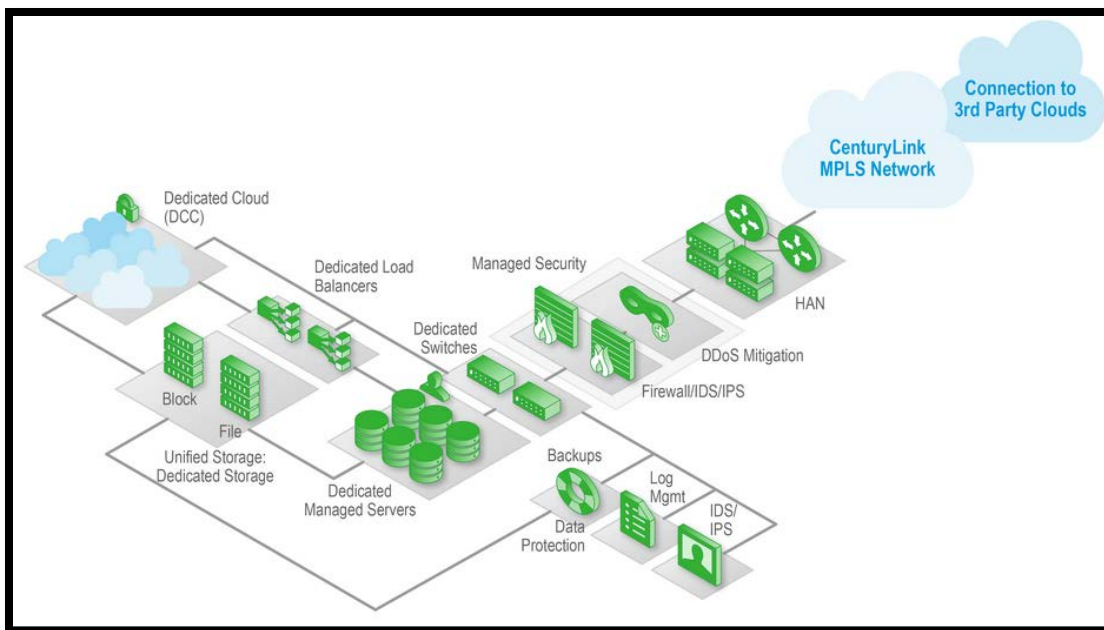
151. On information and belief, the ‘780 Products track further requests from a client computer relating to a particular hypertext page. Specifically, the ‘780 Products track additional client computer requests for screen rendering referenced by (or including) hypertext links.

152. On information and belief, the ‘780 Products enable the use of a session identifier where the session identifier is a common session identifier and the server tracks client request within a session of requests.

153. On information and belief, the CenturyLink ‘780 Products have been provided, sold, and/or offered for sale to businesses and individuals located in the Eastern District of Texas.

154. On information and belief, the ‘780 Products contain a means for receiving service requests from clients and for determining whether a service request includes a session identifier. Specifically, the ‘780 Products contain a content server as shown in the ‘780 patent specification at element 120 in Fig. 2A and element 52 in Fig. 3, executing a computer program implementing algorithm steps as shown in Fig. 2A, including block 104, and equivalent structures.

155. On information and belief, the ‘780 Products enable methods for controlling and monitoring access to network servers through the use of a session identifier. Further, the ‘780 Products utilize a session identifier that allows web servers to recognize and service multiple requests from the same client and control access to the server without repeated authentication.



*CenturyLink Managed Hosting Reference Architecture*, CENTURYLINK BUSINESS WEBSITE, available at: <http://www.centurylink.com/business/enterprise/assets/reference-architecture/managed-hosting.html> (showing the reference architecture of CenturyLink managed hosting services which includes CenturyLink Managed Microsoft Internet Information Services and Managed Apache Web Hosting).

156. On information and belief, the '780 Products contain a means for appending the session identifier as part of a path name in a uniform resource locator in response to an initial service request in a session of requests. Specifically, the '780 Products contain an authentication server as shown in the '780 Patent specification at element 200 in Figs. 2A and 2B, element 54 in Fig. 3, executing a computer program implementing algorithm steps as shown in Fig. 2B, including blocks 228, 230, and 232, and equivalent structures.

157. On information and belief, the '780 Products comprise means for servicing service requests from a client which include a session identifier where subsequent service requests are processed in the session. Specifically, the '780 Products comprise a content server as shown in the '780 Patent specification at element 120 in Fig. 2A and element 52 in Fig. 3, executing a computer program implementing algorithm shown in Fig. 2A, including blocks 110, 112, and 116, or the client server exchange 9 and 10 in Fig. 3, and equivalent structures.

158. On information and belief, the '780 Products comprise a means for providing a session identifier. Specifically, the '780 Products comprise an authentication server as shown in the '780 Patent specification at element 200 in Figs. 2A and 2B, and element 54 in Fig. 3, executing a computer program implementing algorithm steps as shown in Fig. 2B, including blocks 228, 230, and 232, and equivalent structures.

159. On information and belief, the '780 Products enable the use of a uniform resource locator that includes a transfer protocol identifier, a host name, one or more directory names, and a file name.

160. On information and belief, the '780 Products enable the use of session identifier where the session identifier is appended to the path name in the uniform resource locator between the transfer protocol identifier and the file name. Specifically, the '780 Products use a text string that identifies a series of requests and responses to perform a complete task or set of tasks between a client and a server system. The '780 Products tag, add, affix, or supplement the text string that identifies a session to the sequence of zero or more elements that follows the host address in a URL between the transfer protocol identifier and file name.

161. On information and belief, the ‘780 Products comprise a server system that tracks access history information within a client-server session.

162. On information and belief, the ‘780 Products use a session identifier that enables the client to access files within a protected domain. Specifically, the ‘780 Products use a text string that identifies a session to enable a client computer to access files within a protected domain.

163. On information and belief, the ‘780 Products enable the use of a session identifier to access files with a plurality of servers.

Apache Modules	Apache 2.2.x	Apache 2.4.x
mod_session		X
mod_session_cookie		X
mod_session_dbd		X
mod_setenvif	X	X
mod_slotmem_plain		X
mod_slotmem_shm		X
mod_so	X	X
mod_socache_dbm		X
mod_socache_memcache		X
mod_socache_shmcb		X
mod_speling	X	X
mod_ssl	X	X
mod_status	X	X
mod_substitute	X	X
mod_suexec	X	X
mod_unique_id	X	X
mod_unixd		X
mod_userdir	X	X
mod_usertrack	X	X
mod_version	X	X
mod_vhost_alias	X	X
mod_watchdog		X
mod_xml2enc		X

*CenturyLink Technology Solutions Service Guide: Web Application Software 1.0 Apache Httpd Server*, CENTURYLINK TECHNOLOGY SOLUTIONS GUIDE at 7 (2014) (showing that the CenturyLink managed services enable mod\_session, mod\_session\_cookie, and mod\_sessiondbd modules).

164. On information and belief, the ‘780 Products enable the use of a client computer running a web browser (e.g., Internet Explorer) and a web server where the session of requests include hypertext transfer protocol GET requests transmitted from the web browser on the client computer to the web server. Further, the ‘780 Products use GET requests which include a uniform resource locator having the session identifier appended to it. Specifically, the GET

requests include a text string that identifies a session where the text string is tagged, added, affixed, or supplemented to the URL as part of a path name.

165. On information and belief, CenturyLink has directly infringed the '780 patent by, among other things, having made, used, offered for sale, and/or sold technology for processing service requests from a client to a server system over a computer network, including but not limited to the CenturyLink '780 Products, which include infringing technologies for processing service requests from a client to a server system over a computer network. Such products and/or services include, by way of example and without limitation, the CenturyLink '780 Products.

166. By having made, used, tested, offered for sale, and/or sold products and services for processing service requests from a client to a server system over a computer network, including but not limited to the CenturyLink '780 Products, CenturyLink has injured Sovereign and is liable to Sovereign for directly infringing one or more claims of the '780 patent, including at least claims 22, 23, 32, 33, 112-114, 127, 128, and 129, pursuant to 35 U.S.C. § 271(a).

167. The '780 patent is well-known within the industry as demonstrated by the over 1,840 citations to the '780 patent in published patents and patent applications assigned to technology companies and academic institutions. Several of CenturyLink's competitors have paid considerable licensing fees for their use of the technology claimed by the '780 patent. To gain an advantage over CenturyLink's competitors by utilizing the same licensed technology without paying reasonable royalties, CenturyLink infringed the '780 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

168. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '780 patent.

169. Because of CenturyLink's infringement of the '780 patent, Sovereign has suffered monetary damages, and seeks recovery in an amount adequate to compensate for CenturyLink's infringement, but in no event less than a reasonable royalty for the use made of the invention by CenturyLink together with interest and costs as fixed by the Court.

**COUNT V**  
**INFRINGEMENT OF U.S. PATENT NO. 6,212,634**

170. Sovereign references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

171. CenturyLink designed, made, used, sold, and/or offered for sale in the United States products and/or services for certifying authorizations between computers over a network.

CenturyLink Cloud provides a secure multi-tenant platform by strictly segmenting customer accounts from each other. This includes a strict separation between customer accounts including: cloud servers, networks, users, firewall policies, and all associated metadata. The ability to create hard fenced accounts has been fully extended to customers through the introduction of Sub Accounts.

Chris Little, *Account Hierarchy User, Network, Service Catalog, and Firewall Policy Primer*, CENTURYLINK KNOWLEDGE BASE (June 16, 2015).

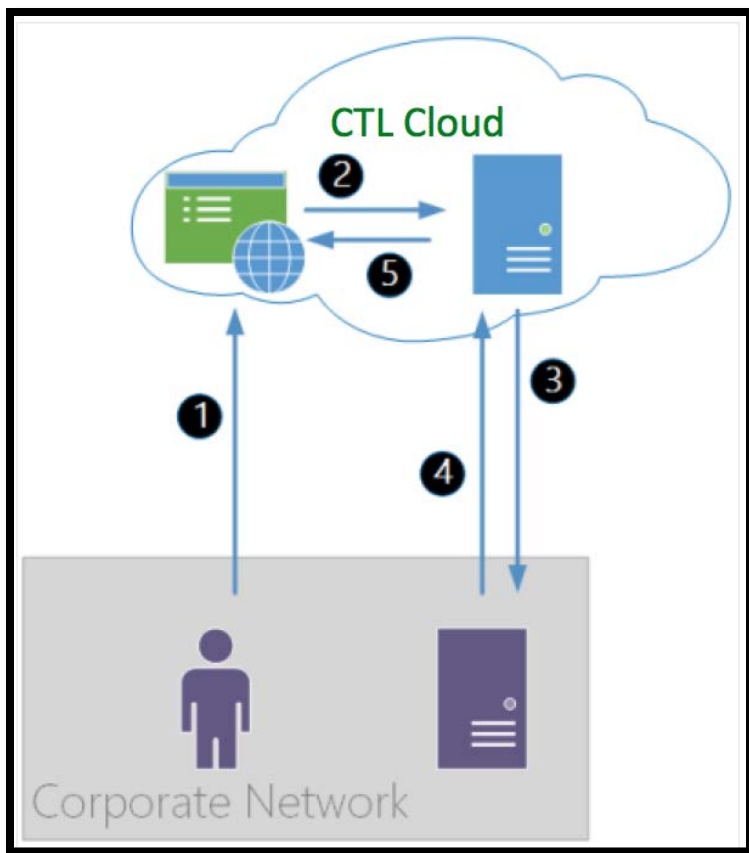
172. CenturyLink designed, made, sold, offered to sell, imported, and/or used the CenturyLink Cloud, which enables user authentication functionality (the “CenturyLink ‘634 Product(s)”).

***Identity and Access Management options from CenturyLink Cloud includes granular Role-Based Access Controls (RBAC)***, as mentioned in the first post. For integrated identity, which has become a key enabler to quickly provision and de-provision access to company resources and data, it is best to integrate with your existing processes through Security Assertion Markup Language (SAML) 2.0. SAML lets you leverage your existing identify management processes and tools and mechanisms. CenturyLink Cloud supports SAML enabling single-sign-on (SSO). For example, the platform could enable SSO against Microsoft Active Directory Federation Services (ADFS), Oracle Identity Manager, Microsoft Forefront Identity Manager, and others.

Ben Brauer, *Is CenturyLink Cloud Secure?*, CENTURYLINK KNOWLEDGE BASE (June 9, 2015).

173. On information and belief, one or more CenturyLink subsidiaries and/or affiliates used the CenturyLink ‘634 Products in regular business operations.

174. On information and belief, one or more of the CenturyLink ‘634 Products include technology for certifying authorizations between computers over a network.



Kelly Malloy, *Using SAML for Single-Sign-On to the CenturyLink Platform Control Portal with Windows 2012 R2*, CenturyLink Knowledge Base (July 29, 2015) (Describing that in step 4 “The IdP returns a signed (and optionally, encrypted) SAML authentication response message to the CenturyLink Cloud SP. This message includes a Name ID assertion and that value is matched to a User record in the CenturyLink Cloud.”).

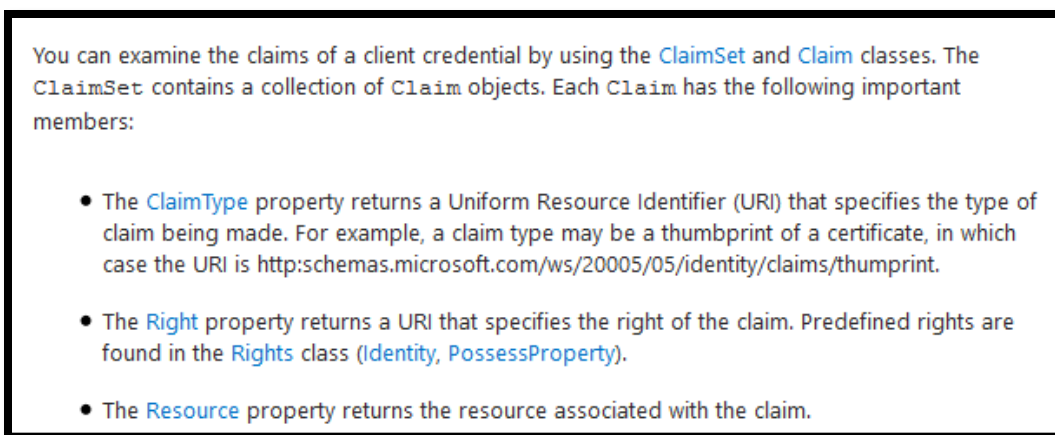
175. On information and belief, one or more of the CenturyLink ‘634 Products create an authorization certificate that certifies that a holder of the authorization certificate is authorized to perform a particular action specified in the authorization certificate.

176. On information and belief, one or more of the CenturyLink ‘634 Products create an authorization certificate that has a file structure that supports critical components and extension components.

177. On information and belief, one or more of the CenturyLink ‘634 Products cause the authorization certificate to be transmitted to the authorized computer. The authorized computer is programmed to accept certificates having file structures that support critical components and extension components.



178. On information and belief, one or more of the CenturyLink ‘634 Products cause the authorization certificate to be transmitted to an authorized computer that is programmed to accept the critical components but to reject certificates having file structures that support critical components and extension components when the authorized computer is not programmed to accept the critical components. The below excerpt from Microsoft documentation of SAML 2.0 describes the use of a “Right property” that defines a predefined right to access a specific program or perform a specific action. On information and belief, CenturyLink’s implementation of SAML 2.0 enables certificates to define a predefined right to access a specific program.



*Claims and Tokens .NET Framework*, MICROSOFT MSDN DOCUMENTATION, available at: [https://msdn.microsoft.com/en-us/library/aa347996\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/aa347996(v=vs.110).aspx) (last visited March 2017).

179. On information and belief, one or more of the CenturyLink ‘634 Products include in the authorization certificate information that is unique to a particular action specified in the authorization certificate as at least one critical component of the authorization certificate. The SAML Token from the CenturyLink ‘634 Products includes extension components as identified in the below documentation regarding SAML 2.0.

	Name	Description
🔗	<code>CanCreateKeyIdentifierClause&lt;T&gt;()</code>	Gets a value indicating whether this security token is capable of creating the specified key identifier. (Overrides <a href="#">SecurityToken.CanCreateKeyIdentifierClause&lt;T&gt;()</a> .)
🔗	<code>CreateKeyIdentifierClause&lt;T&gt;()</code>	Creates the specified key identifier clause. (Overrides <a href="#">SecurityToken.CreateKeyIdentifierClause&lt;T&gt;()</a> .)
🔗	<code>Equals(Object)</code>	Determines whether the specified object is equal to the current object. (Inherited from <a href="#">Object</a> .)
🔗	<code>Finalize()</code>	Allows an object to try to free resources and perform other cleanup operations before it is reclaimed by garbage collection. (Inherited from <a href="#">Object</a> .)
🔗	<code>GetHashCode()</code>	Serves as the default hash function. (Inherited from <a href="#">Object</a> .)
🔗	<code>GetType()</code>	Gets the <a href="#">Type</a> of the current instance. (Inherited from <a href="#">Object</a> .)
🔗	<code>MatchesKeyIdentifierClause(SecurityKeyIdentifierClause)</code>	Returns a value indicating whether the key identifier for this instance is equal to the specified key identifier. (Overrides <a href="#">SecurityToken.MatchesKeyIdentifierClause(SecurityKeyIdentifierClause)</a> .)
🔗	<code>MemberwiseClone()</code>	Creates a shallow copy of the current <a href="#">Object</a> . (Inherited from <a href="#">Object</a> .)
🔗	<code>ResolveKeyIdentifierClause(SecurityKeyIdentifierClause)</code>	Gets the key for the specified key identifier clause. (Inherited from <a href="#">SecurityToken</a> .)
🔗	<code>ToString()</code>	Returns a string that represents the current object. (Inherited from <a href="#">Object</a> .)

*Saml2SecurityToken Class: .NET Framework*, MICROSOFT MSDN DOCUMENTATION, available at: [https://msdn.microsoft.com/en-us/library/system.identitymodel.tokens.saml2securitytoken\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.identitymodel.tokens.saml2securitytoken(v=vs.110).aspx) (last visited March 2017).

180. On information and belief, one or more of the CenturyLink ‘634 Products include information unique to the particular action specified in the authorization certificate as at least one critical component of the authorization certificate in order to prevent the authorization certificate from being accepted by computers that are not programmed to accept the information unique to the action referred to in the authorization certificate.

181. On information and belief, the CenturyLink ‘634 Products have been provided, sold, and/or offered for sale to businesses and individuals located in the Eastern District of Texas.

182. On information and belief, CenturyLink has directly infringed the ‘634 patent by, among other things, having made, used, offered for sale, and/or sold technology for certifying authorizations between computers over a network, including but not limited to the CenturyLink ‘634 Products, which include infringing technologies for certifying authorizations between computers over a network. Such products and/or services include, by way of example and without limitation, the CenturyLink Products.

183. By having made, used, tested, offered for sale, and/or sold products and services for certifying authorizations between computers over a network, including but not limited to the CenturyLink '634 Products, CenturyLink has injured Soverain and is liable to Soverain for directly infringing one or more claims of the '634 patent, including at least claim 4, pursuant to 35 U.S.C. § 271(a).

184. The '634 patent is well-known within the industry as demonstrated by the over 196 citations to the '634 patent in published patents and patent applications assigned to technology companies and academic institutions. Several of CenturyLink's competitors have paid considerable licensing fees for their use of the technology claimed by the '634 patent. To gain an advantage over CenturyLink's competitors by utilizing the same licensed technology without paying reasonable royalties, CenturyLink infringed the '634 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

185. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '634 patent.

186. Because of CenturyLink's infringement of the '634 patent, Soverain has suffered monetary damages, and seeks recovery in an amount adequate to compensate for CenturyLink's infringement, but in no event less than a reasonable royalty for the use made of the invention by CenturyLink together with interest and costs as fixed by the Court.

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff Sovereign respectfully requests that this Court enter:

- A. A judgment in favor of Plaintiff Sovereign that CenturyLink has infringed, either literally and/or under the doctrine of equivalents, the '447 patent, the '900 patent, the '706 patent, the '780 patent, and the '634 patent;
- B. An award of damages resulting from CenturyLink's acts of infringement in accordance with 35 U.S.C. § 284;
- C. A judgment and order finding that Defendant's infringement was willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate within the meaning of 35 U.S.C. § 284 and awarding to Plaintiff enhanced damages.
- D. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Plaintiff its reasonable attorneys' fees against Defendant.
- E. Any and all other relief to which Sovereign may show itself to be entitled.

**JURY TRIAL DEMANDED**

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Sovereign IP, LLC requests a trial by jury of any issues so triable by right.

Dated: April 11, 2017

Respectfully submitted,

/s/ Dorian S. Berger  
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