UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RED HAT, INC.
Petitioner

v.

COMPETITIVE ACCESS SYSTEMS, INC.
Patent Owner

Case No. IPR2025-01371
U.S. Patent No. 10,868,908

PATENT OWNER PRELIMINARY RESPONSE

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EXHIBIT LIST

Exhibit No.	Description
2001	Complaint from *Competitive Access Systems, Inc. v. Oracle Corporation et al*., No. 2:22-cv-00287 (E.D. Tex.)
2002	Red Hat Partnership webpage, https://www.oracle.com/cloud/red-hat/ (last accessed Sept. 30, 2025)
2003	Order transferring Oracle case the Western District of Texas
2004	Unified Patents member listing, https://www.unifiedpatents.com/members
2005	Red Hat's Complaint from *Red Hat, Inc. v. Competitive Access Systems, Inc.*, No. 5:24-CV-505-D (D.N.C.)
2006	Red Hat Joint Planning Report including Proposed Schedule
2007	Red Hat's Motion to Dismiss
2008	Red Hat Litigation Scheduling Order
2009	Complaint from *Competitive Access Systems, Inc. v. Apple Inc.,* No. 3:25-cv-04595 (N.D. Cal.)
2010	Complaint from *Competitive Access Systems, Inc. v. Samsung Elects. Co., Ltd., et al.,* No. 4:25-cv-00886 (E.D. Tex.)
2011	Complaint from *Competitive Access Systems, Inc. v. Motorola Mobility LLC*, No. 4-25-cv-00948 (N.D. Tex.)
2012	Apple, Inc.'s Motion to Dismiss
2013	Case Management Order in Apple, Inc. Litigation
2014	Oct. 2, 2023 Demand Letter
2015	Declaration of Dr. Stan Mcclellan

2016	CV of Dr. Stan Mcclellan
2017	Executive Summary
2018	photograph
2019	presentation slides
2020	Letter to McEntee
2021	April 2002 Draft Application
2022	Application Drawings
2023	Declaration of Eric M P. Delangis

Emphasis Added Throughout Unless Indicated Otherwise

I. INTRODUCTION

Although U.S. Patent No. 10, 868,908 (the "'908 Patent") (EX1007) issued more recently, its priority dates to Provisional Application No. 60/418,521 (the "'521 Application") filed on October 15, 2002. In the field of multilink computer communications, the '908 Patent's priority is downright ancient.

Because of the '908 Patent's early priority, Petitioner Red Hat, Inc. ("Red Hat") clearly struggled to find prior art for its Petition. Red Hat asserts as its lead prior art references an alleged (pre-AIA) 35 U.S.C. § 102(e) secret art references and a (pre-AIA) 35 U.S.C. § 102(a) article that was allegedly made publicly available approximately two months before to the '521 Application's filing date. Of Red Hat's two lead references, Kotzin (EX1018) was filed on August 2, 2001, and Phatak (EX1045) has allegedly been publicly available since August 6, 2002. But the invention claimed in the '908 Patent dates to January 2001—well before Kotzin was filed and when Phatak became publicly available.

As explained below, the inventor of the '908 Patent—Eric Delangis—has commenced identifying and collecting evidence corroborating his earlier conception and reduction to practice. Without surprise, the evidence collected to date is by no means complete. Mr. Delangis continues to search decades-old files and hard drives, and counsel continues to identify and locate third parties—including potential investors and long-since retired attorneys—whom are yet to be contacted to further

corroborate the conception and reduction to practice.

Even without antedating Challener and Kotzin, Red Hat's Petition fails to meet its burden of establish its prima facie case of obviousness.

Competitive Access Systems, Inc. ("CAS") respectfully submits that Red Hat's Petition should be denied either discretionarily as requested in CAS's October 6, 2025 Motion for Discretionary Denial or based on Red Hat's failure to demonstrate a reasonable likelihood that it will prevail on its unpatentability challenges.

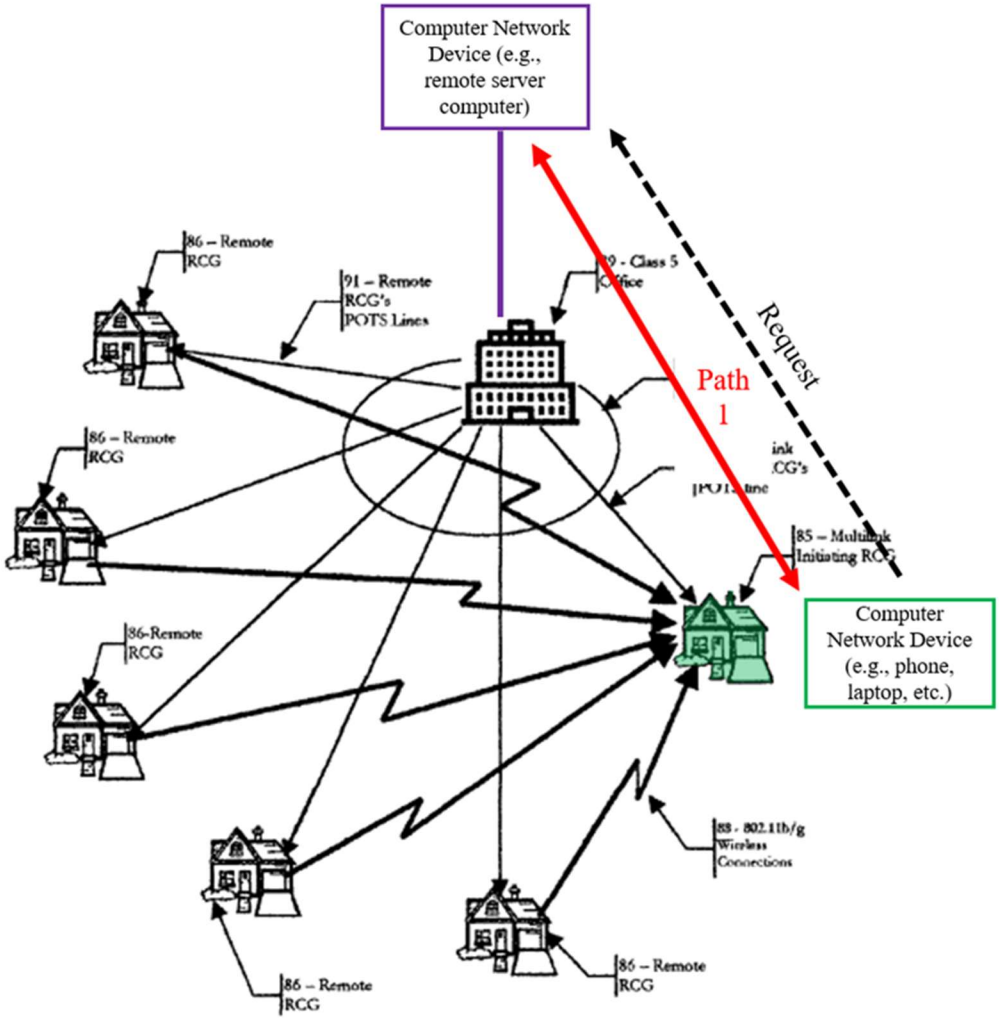
II. BACKGROUND

A. Background of the Invention

At its most basic level, the '908 Patent pertains to devices and methods to improve the effective bandwidth between a remote sending device (*e.g.*, a server) and a receiving device by leveraging the bandwidth of at least two separate communication paths to receive the data sent from a remote device. McClellan Declaration ("EX2015") ¶ 24. Without delving into any of the specific claims or claim limitations—which may be directed to only certain aspects of the configuration or to separate, but related embodiments—Figure 7 of the specification of the '908 Patent shows an example network configuration. EX2015 at ¶ 25.

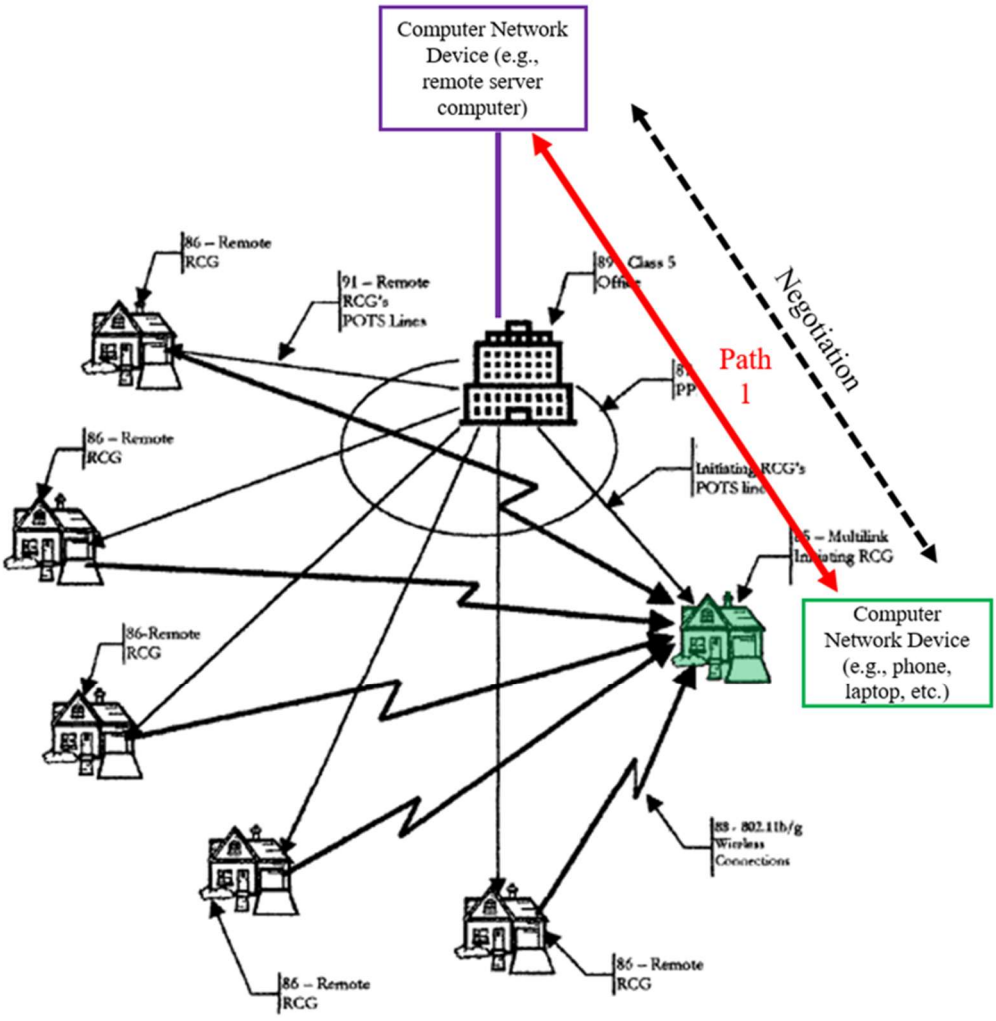
In this configuration, a request is sent from a computer network device (*e.g.*, phone, laptop, server, etc.) over a first link to another computer network device, such

as, for example, a remote server computer, for participation in a multilink session. EX2015 at ¶ 26. For example, the specification state: "Referring to FIG. 7, an RCG—85 that decides to initiate a multilink PPP session with a remote computer i.e. internet URL, requests a multilink PPP session with that URL resource via Link Control Protocol (LCP) session management." EX1007 at 12:2–6; *see also* EX2015 at ¶ 26.



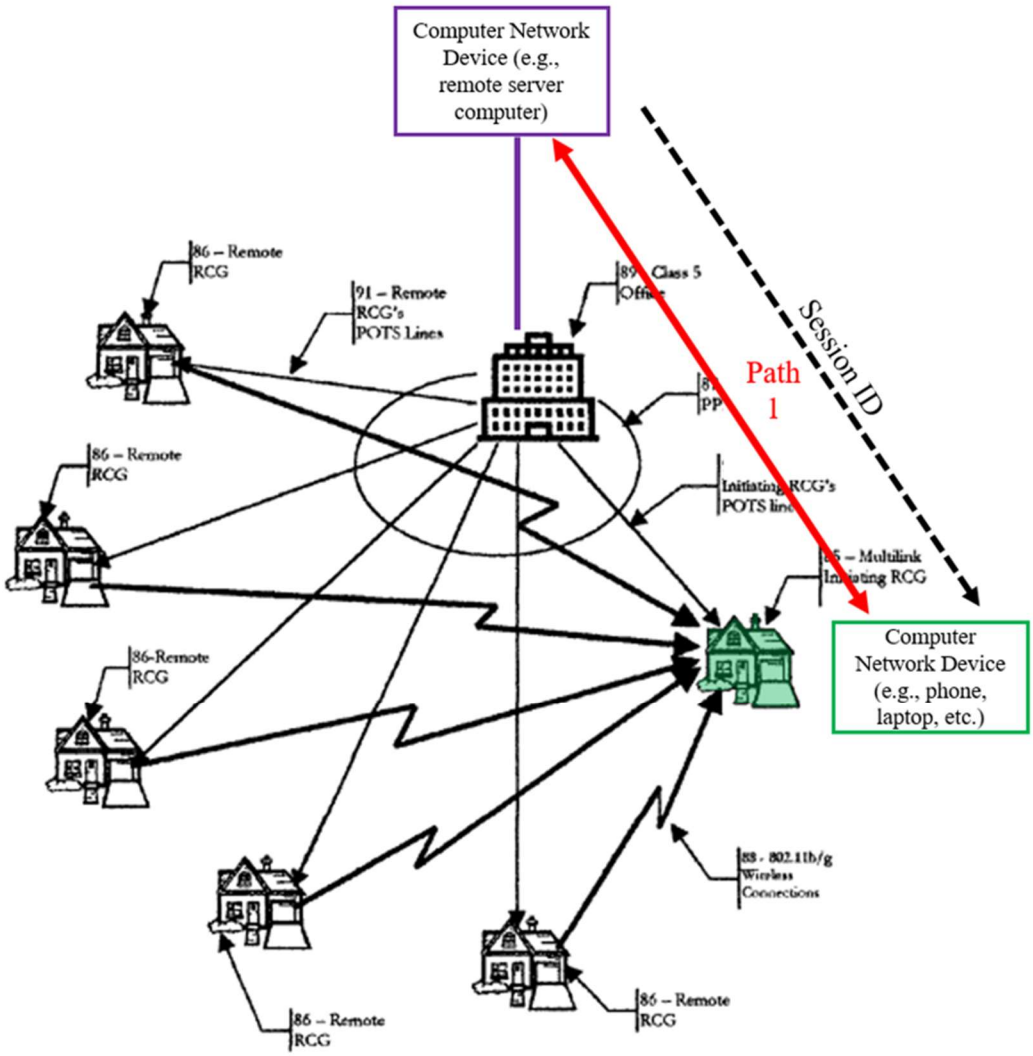
The two devices negotiate the pertinent multilink parameters such as

compression, packet size, sync/async, link quality monitoring, bit stuffing etc. EX2015 at ¶ 27. For example, the specification states: "The initiating RCG-85 and the remote server computer (not shown) will negotiate the pertinent multilink parameters such as compression, packet size, sync/async, link quality monitoring, bit stuffing etc." EX1007 at 12:6–9; *see also* EX2015 at ¶ 27.

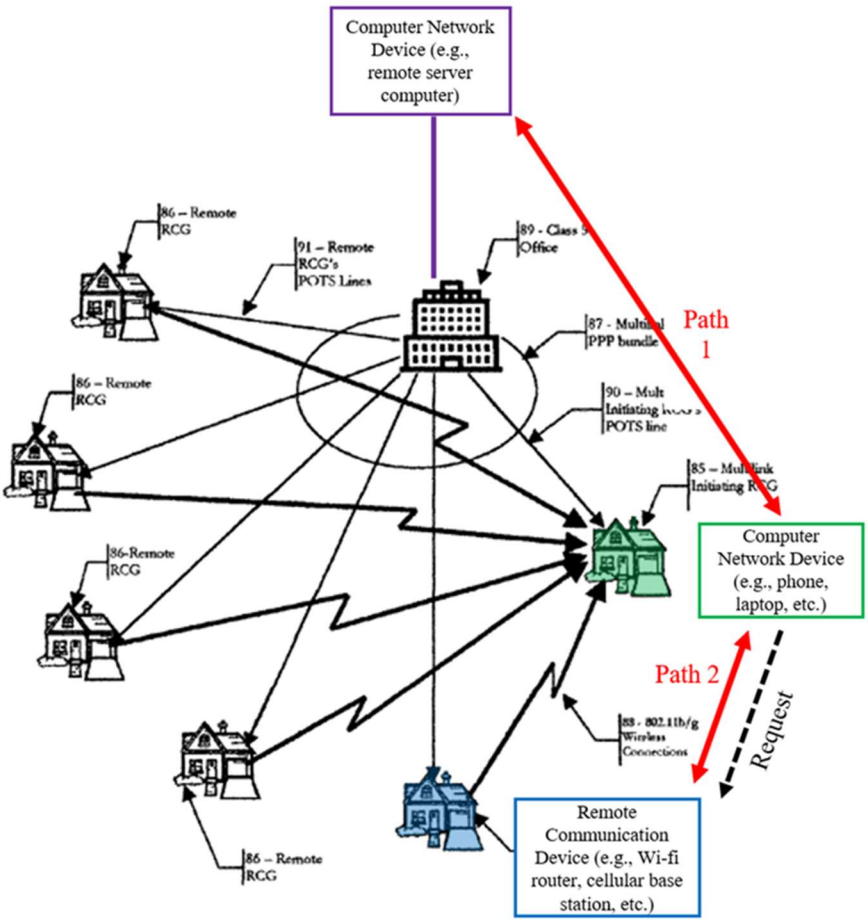


The multilink session setup is completed including that the remote server computer sends a multilink session ID to the computer network device (*e.g.*, phone,

laptop, etc.), which is used to identify this particular multilink session and is also used for adding or removing links from the multilink session. EX2015 at ¶ 28. For example, the specification states: "As part of a successful multilink PPP session setup, the initiating RCG-85 receives a multilink PPP session ID, or "magic number", which is used to identify this particular multilink PPP session and is also used for adding or removing links from the multilink bundle-87." EX1007 at 12:9–14; see also EX2015 at ¶ 28.

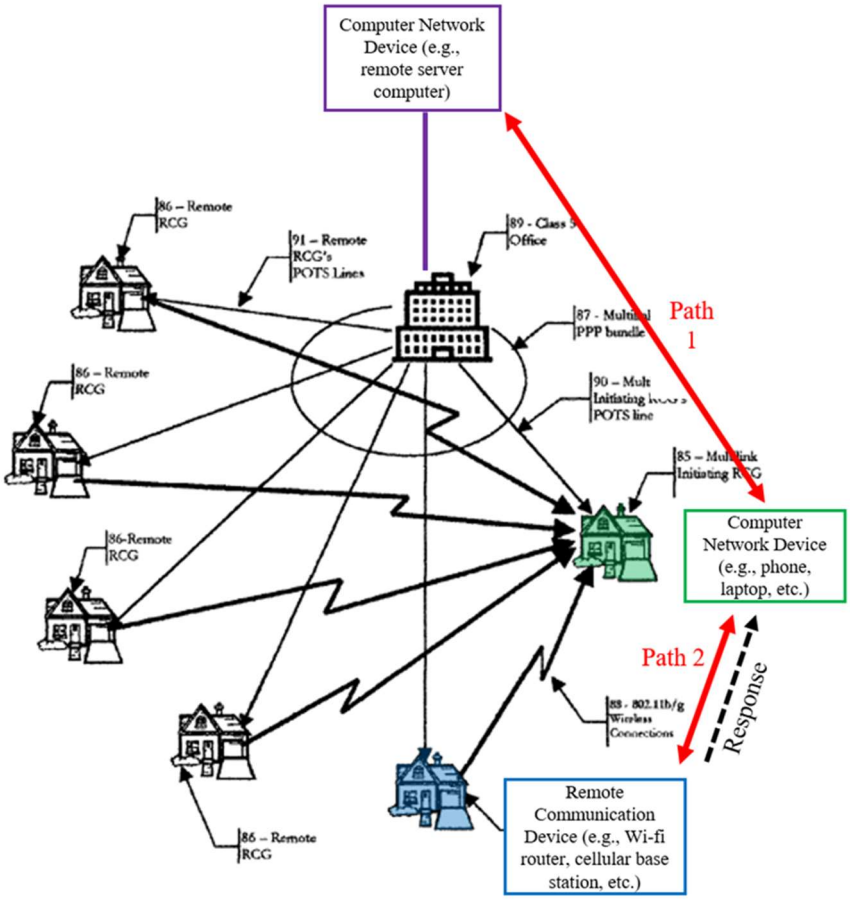


The computer network device (*e.g.*, phone, laptop, server, etc.) then sends a multilink request to one or more remote communications devices such as, for example, a router or base station to participate in the multilink session. EX2015 at ¶ 29. For example, the specification states: "[T]he initiating RCG—85 then looks up the addresses of up to 31 (in this embodiment) other RCGs in its router tables to use for the multilink PPP transfer. (If a Neighborhood Access Point is available the RCG could request service through it instead of setting up a Multilink PPP connection—see FIG. 8.) The initiating RCG—85 determines the number of remote RCGs—86 that it wants to use to get the desired bandwidth for the transfer and sends multilink PPP service requests via the 802.11b/g wireless connections—88 to the selected remote RCGs—86." EX1007 at 12:16–26; *see also* EX2015 at ¶ 29.



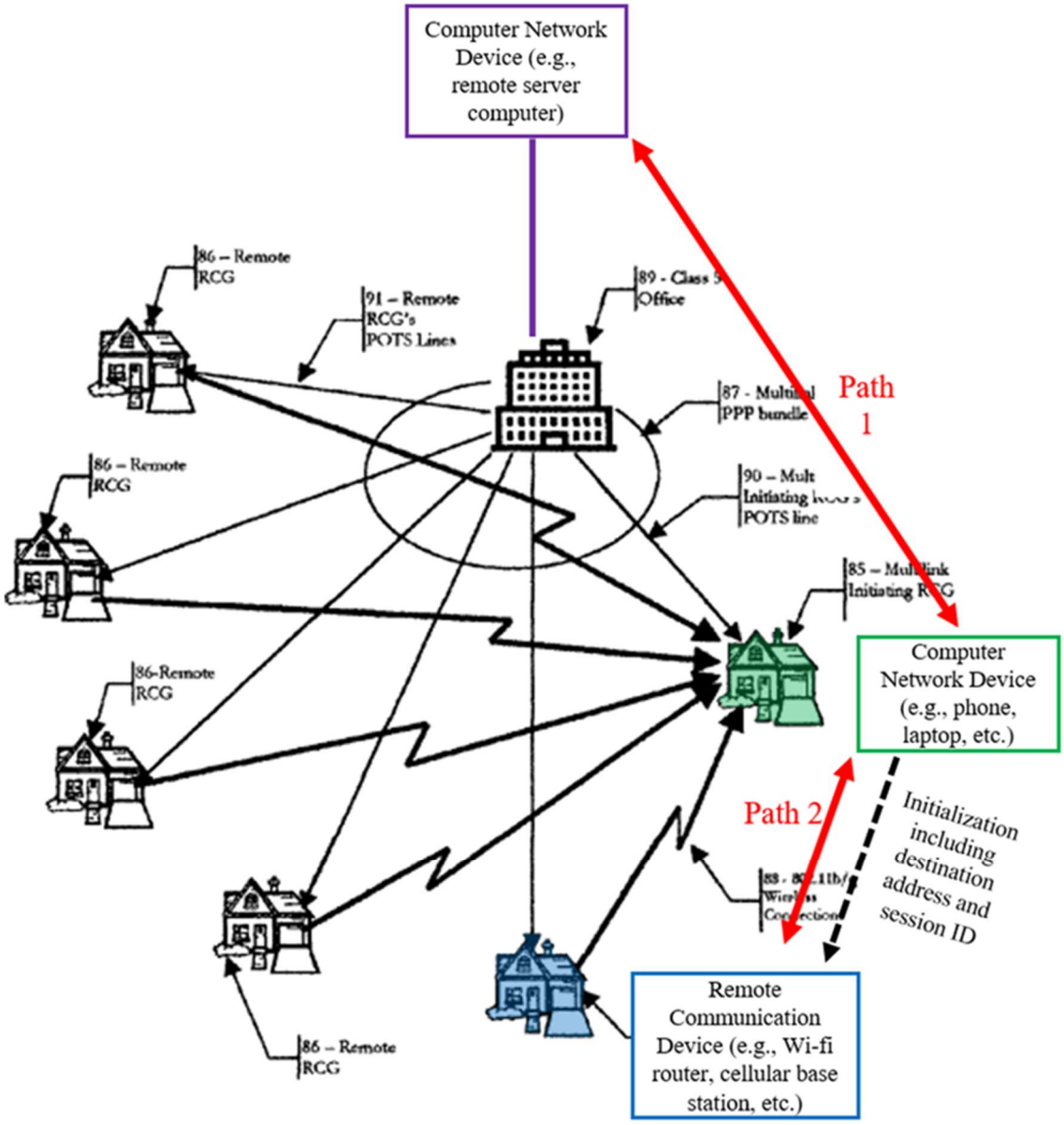
The remote communications devices respond back to the computer network device (*e.g.*, phone, laptop, etc.) with acceptance or denial. EX2015 at ¶ 30. For example, the specification states: "The selected remote RCGs—86 respond back to the initiating RCG with either an acceptance or denial of multilink PPP service request. This decision is made based upon the remote RCG's currently available POTS bandwidth and the current local demands for that bandwidth. The remote RCG—86 makes a decision to participate in a multilink PPP service for an initiating RCG . . . . If the remote RCG—86 accepts the multilink PPP service request from

the initiating RCG—85 it also sends its currently available bandwidth on its POTS line—91 that the initiating RCG—85 will have available to it for the multilink PPP transfers." EX1007 at 12:26–32; 12:46–51; *see also* EX2015 at ¶ 30.



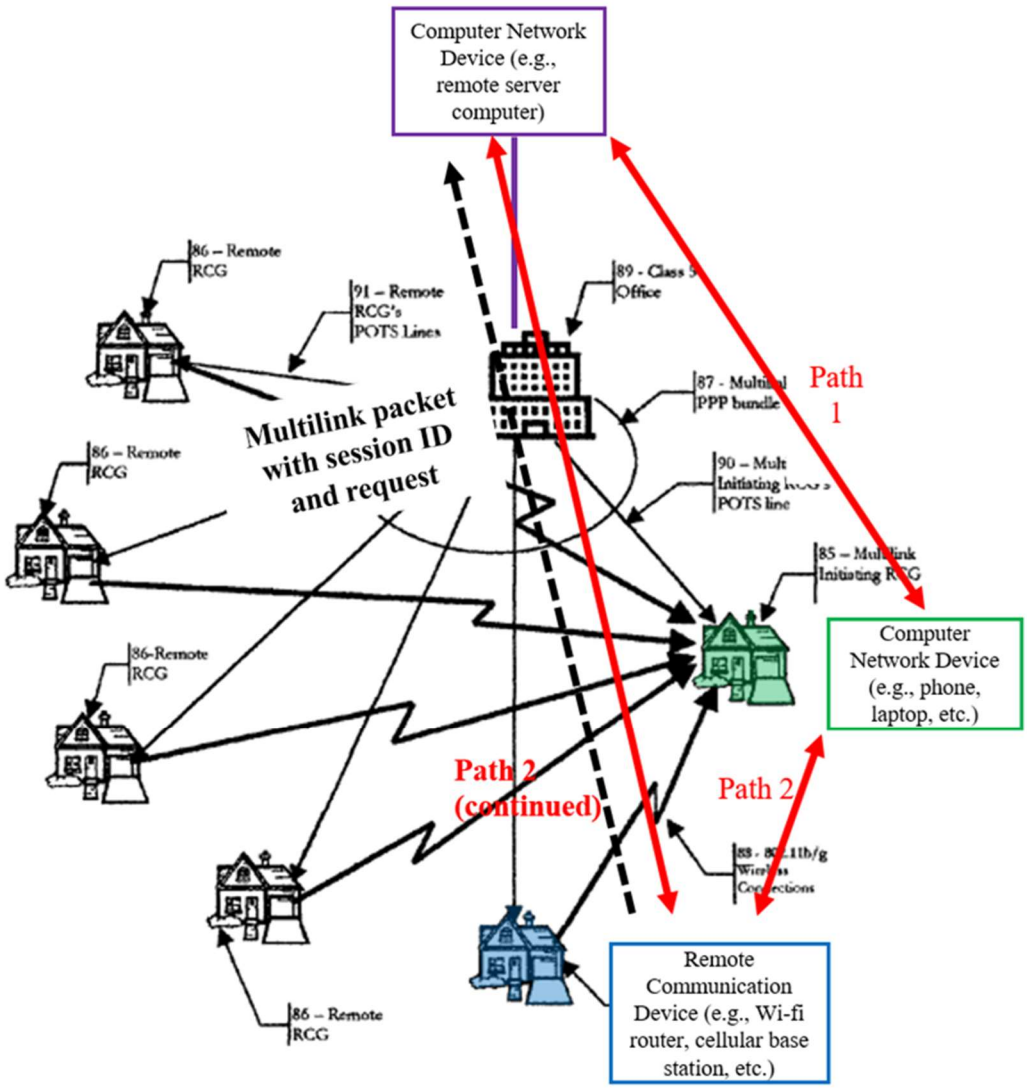
The computer network device (*e.g.*, phone, laptop, server, etc.) sends a multilink initialization packet containing the address of the destination as well as the multilink session ID (magic number) and any other pertinent information required for the remote communications device to join in the existing multilink session. EX2015 at ¶ 31. For example, the specification states: "The initiating RCG then selects which of the responding remote RCGs—86 it will use for the multilink PPP

bundle—87 and sends them a multilink initialization packet containing the URL of the destination as well as the multilink PPP session ID (magic number) and any other pertinent information required for the remote RCG to join in the existing multilink PPP bundle—87. Each remote RCG POTS interface—91 participating in a multilink PPP bundle, represents a logical 'link' in the initiating RCG's multilink PPP bundle—87." EX1007 at 12:51–63; *see also* EX2015 at ¶ 31.



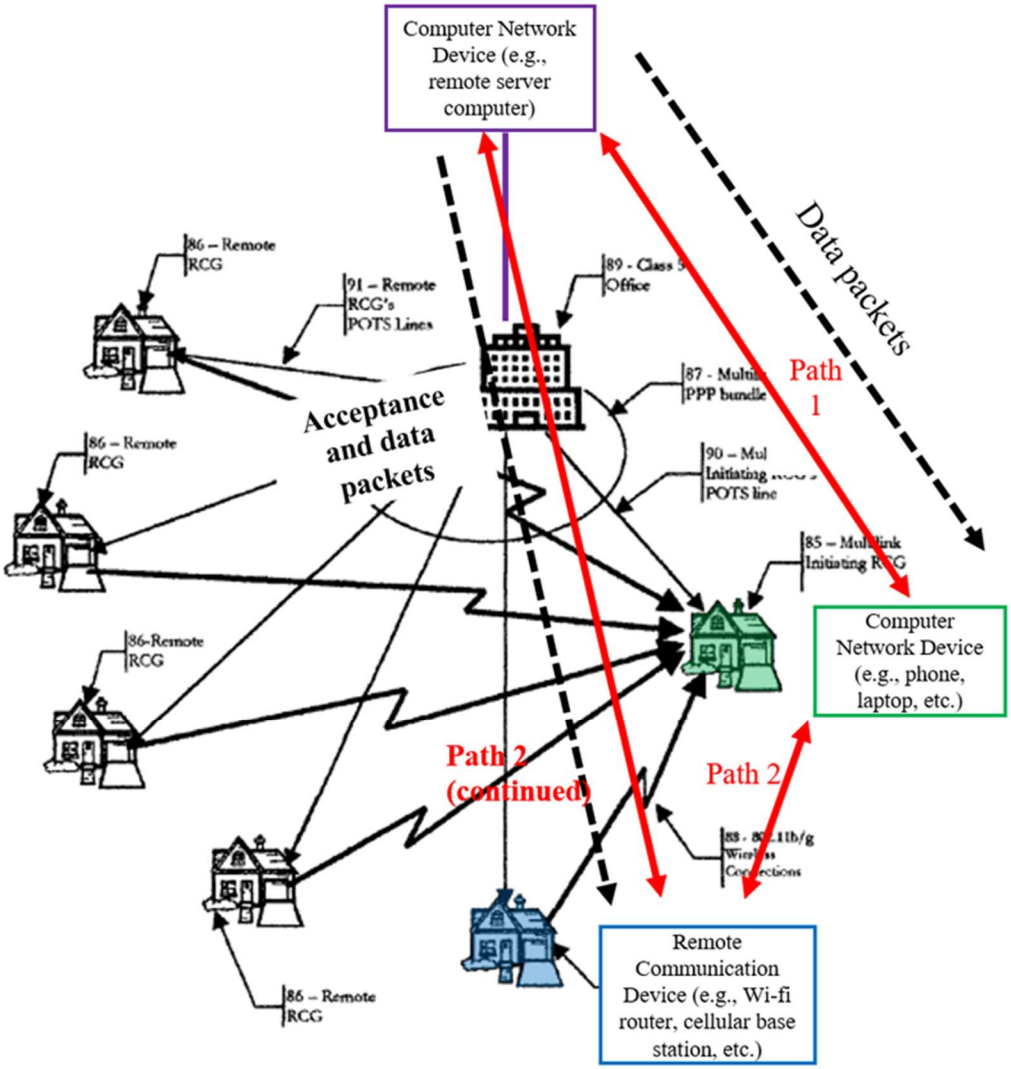
Each of the participating remote communications devices sends a multilink packet to the remote server computer with the multilink session ID and requests to be added to the multilink session. EX2015 at ¶ 32. For example, the specification states: "The remote RCGs—86 then send a multilink PPP packet (over their respective POTS lines—91) to the destination URL with the multilink PPP session

ID and request to be added to that multilink PPP bundle—87." EX1007 at 12:60–63; *see also* EX2015 at ¶ 32.



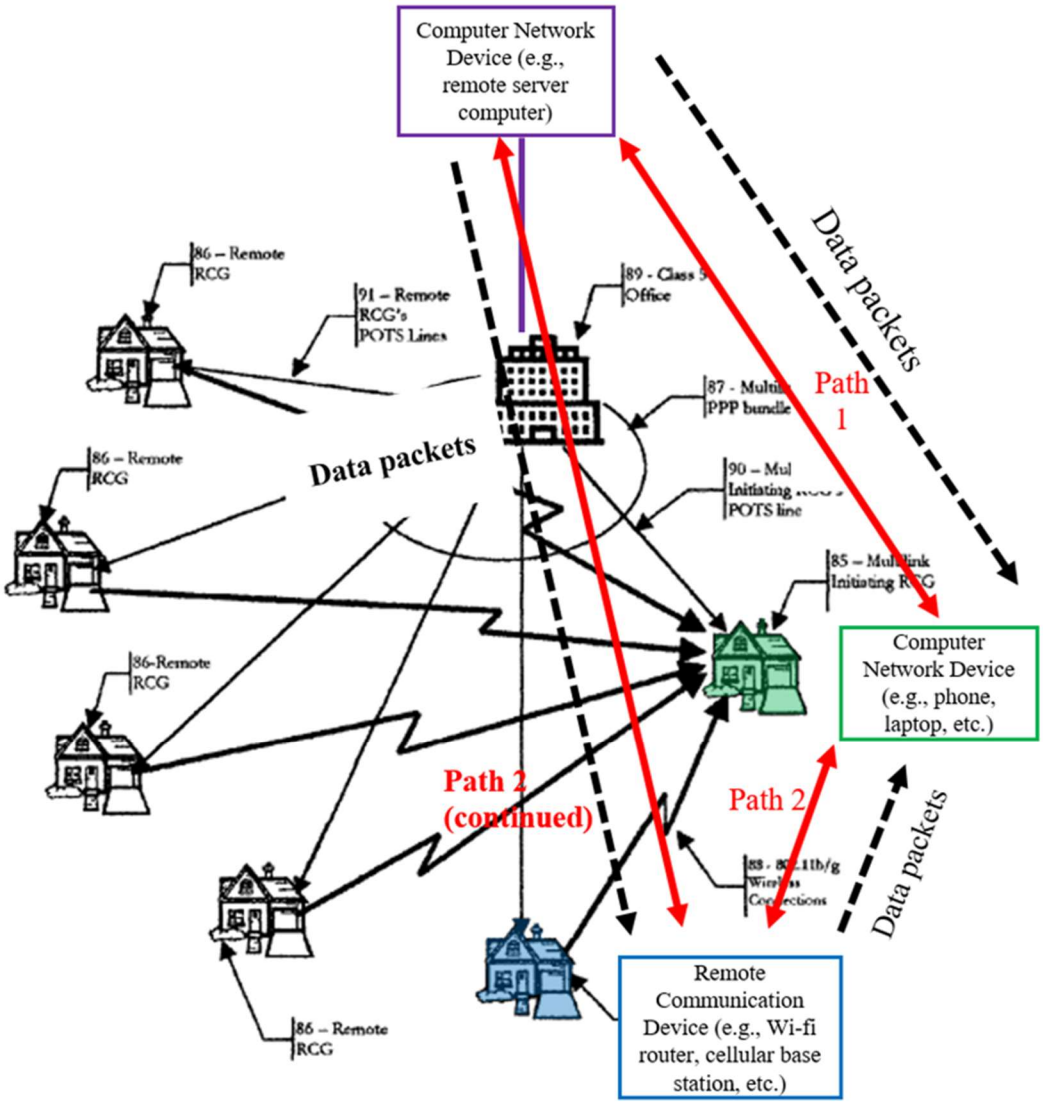
The remote server computer accepts the request and begins sending data packets to each of the remote communications devices over their respective paths or links. EX2015 at ¶ 33. For example, the specification states: "The destination URL

accepts the request of each of the remote RCGs—86 and begins sending data packets to each over their respective POTS lines—91." EX1007 at 12:63–66; EX2015 at ¶ 33.



The remote communications device relays the data packets to the computer network device (*e.g.*, phone, laptop, etc.). EX2015 at ¶ 34. For example, the specification states: "When the remote RCGs—86 receive data packets sent over

their respective POTS lines—91, that are destined for the multilink PPP bundle—87, they simply relay the data packets over their 802.11b/g interface-88 to the initiating RCG—85." EX1007 at 12:66–13:3; *see also* EX2015 at ¶ 34.



The use of the additional links thus results in increased bandwidth, data throughput, quality of service, and/or connection reliability. *See, e.g.*, EX1007 at 11:47–56 ("An RCG that is transferring a very large file can request the services of

31 (in this embodiment) other RCGs to assist in the file transfer using their respective POTS lines. A single RCG can therefore gain the combined bandwidth of up to 32 POTS lines transferring data at as much as 56 Kbps each to transfer information. This is roughly equivalent to a transfer rate of 1.79 Mpbs in the inbound direction (towards the RCG) and approximately 1.075 Mbps in the outbound direction (towards the PSTN).”). EX2015 at ¶ 35.

The inventions recited in the claims of the ’908 Patent and its family members improve upon the prior art. EX2015 at ¶¶ 36, 43. Exemplary prior art configurations and operations of computer network devices involved in the exchange of data included the following: a Plain Old Telephone Service (“POTS”) line, cable lines, or DSL lines to connect two computer network devices. EX2015 at ¶ 43

Problems with prior art configurations and methods included low bandwidth, data throughput, quality of service, and reliability and substantial costs. EX2015 at ¶ 44. For example, DSL and cable lines require tremendous infrastructure costs, suffer from high costs associated with purchase, installation, and maintenance, required expensive modems at the customer’s end, were difficult to deploy, were too complicated for the average user, and was not available to many customers. For example, POTS lines had very limited bandwidth. EX1007 at 11:5–15 (“. . . standard POTS lines can only guarantee a maximum of 56 Kbps transfer rate under the best conditions. . . . DSL, however, suffers from the very high costs associated with the

purchase, installation, maintenance, floor lease costs, etc.") *see also* EX2015 at ¶¶ 45–46. Also, DSL and cable lines required tremendous infrastructure costs, suffered from high costs associated with purchase, installation, and maintenance, and required expensive modems at the customer's end, are difficult to deploy, are too complicated for the average user, and are not available to many customers. EX1007 at 1:65–67 ("DSL or Cable services [] require tremendous infrastructure costs on behalf of the CLEC."); *id*. at 2:9–14 ("The high-speed services require expensive infrastructure enhancements to the local telephone companies' facilities and cable plants, as well as expensive modems at the customer's end. . . ."); *see also* EX2015 at ¶¶ 45–46. Prior art configurations and methods also suffered from poor quality of service. EX1007 at 2:16–18 ("Internet based VoIP services suffer from Internet delays caused by a lack of true Quality of Service (QOS) capabilities across the Internet."); *see also* EX2015 at ¶ 47.

B. The Claimed Invention

The claims of the '908 Patent are limited to particular configuration and/or operation of computer network devices involved in an exchange of data designed to enable technological improvements such as increasing bandwidth, data throughput, quality of service, and/or connection reliability. EX2015 at ¶¶ 36-40.

Claim 1 of the '908 Patent (from which Claim 7 depends) recites the following:

1. A client device for multilink data packet communication with a server, the client device comprising:

a first network interface having a first data transfer rate associated with a first path from the server to the first network interface of the client device;

a second network interface having a second data transfer rate associated with a second path from the server to the second network interface of the client device; and

at least one processor configured to:

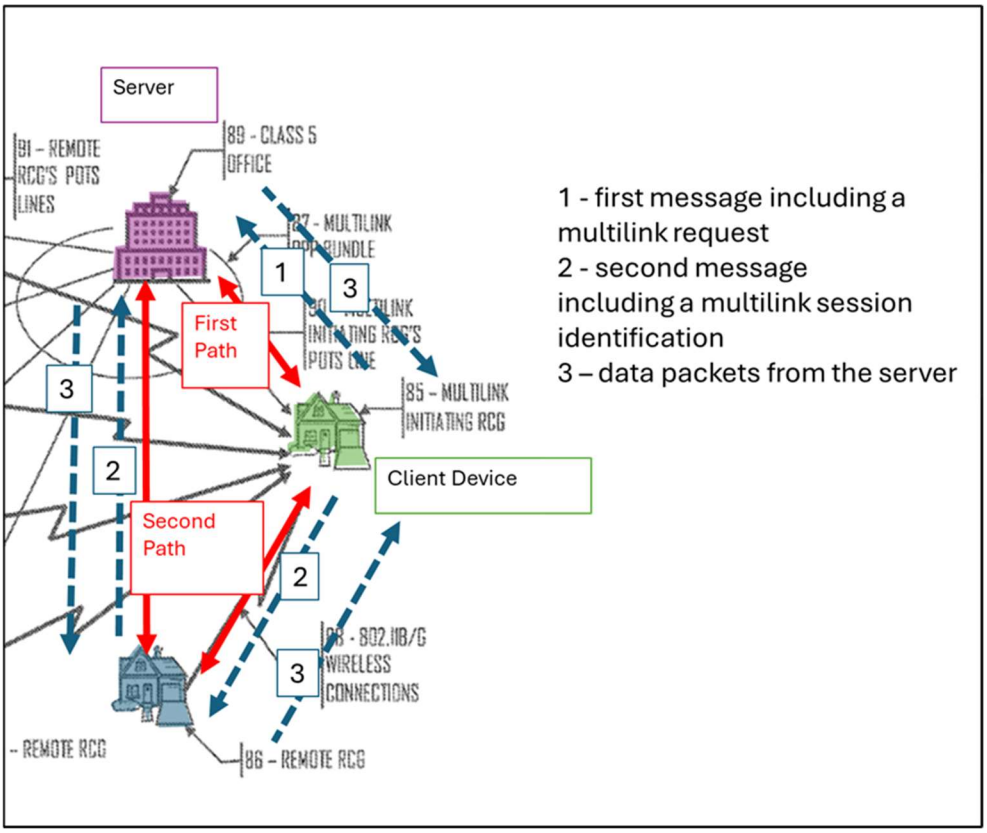
transmit a first message through the first network interface to the server, wherein the first message includes a multilink request a destination URL;

transmit a second message through the second network interface to the server, wherein the second message includes a multilink session identification the destination URL; and

receive data packets from the server through the first and second network interfaces of the client device during the multilink session wherein the first data transfer rate and the second data transfer rate provide an increased data transfer rate of the first path and the second path from the server to the client device.

EX1007 at 16:60–17:14; *see also* EX2015 at ¶ 37..

Using Figure 7 as an exemplary, non-exclusive example, this claimed configuration can be depicted as shown below:



EX2015 at ¶ 38.

Claim 8 of the ’908 Patent recites the following:

8. A server for multilink communication with a device, the server comprising:

at least one server network interface; and

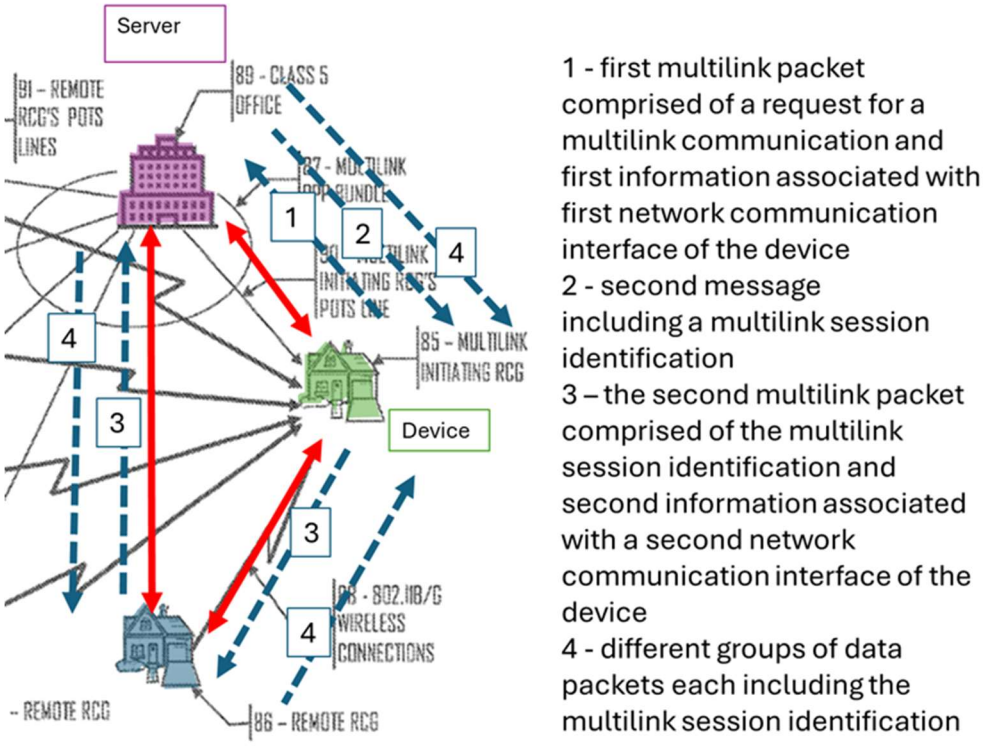
one or more processors coupled to the at least one server network interface and configured to:

receive a first multilink packet over the at least one server network interface, the first multilink packet comprised of a request for a multilink communication and first information associated with first network communication interface of the device that is capable of being used by the device to receive data packets;

> sending a data packet including the multilink session identification to the first network communication interface of the device;
>
> receive a second multilink packet over the at least one server network interface, the second multilink packet comprised of the multilink session identification and second information associated with a second network communication interface of the device that is capable of being used by the device to receive data packets; and
>
> send different groups of data packets over the at least one server network interface to the first network communication interface of the device and to the second network communication interface of the device, wherein each of the different groups of data packets includes the multilink session identification.

EX1007 at 17:44–18:4; *see also* EX2015 at ¶ 39.

Using Figure 7 as an exemplary, non-exclusive example, this claimed configuration can be depicted as shown below:



EX2015 at ¶ 40.

Claim 17 of the '908 Patent recites the following:

17. A client device for multilink communication, the client device comprising:

a first network interface having a first data transfer rate associated therewith;

a second network interface having a second data transfer rate associated therewith; and

at least one processor and configured to:

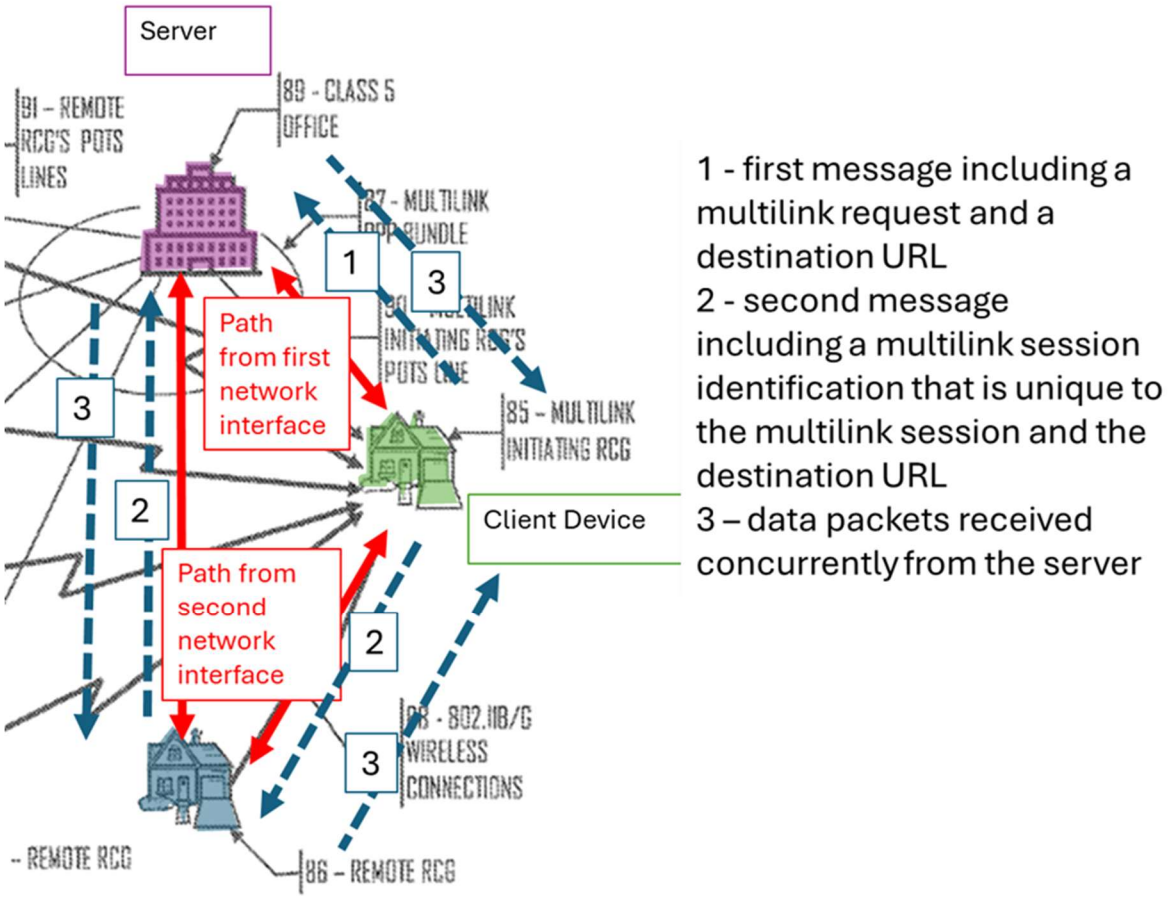
transmit a first message through the first network interface to at least one server, wherein the first message includes a multilink request and a destination URL;

transmit a second message through the second network interface to the at least one server, wherein the second

> message includes a multilink session identification that is unique to the multilink session and the destination URL; and
>
> receive concurrently the different data packets from the server through the first network interface and the second network interface of the client device during the multilink session, wherein the first data transfer rate and the second data transfer rate provide an increase in the data transfer rate of the client device.

EX1007 at 19:16–20:18; *see also* EX2015 at ¶ 41.

Using Figure 7 as an exemplary, non-exclusive example, this claimed configuration can be depicted as shown below:



EX2015 at ¶ 42.

III. ASSERTED PRIOR ART REFERENCES

A. Kotzin

U.S. Patent Application Publication No. 2003/0026221 ("Kotzin") (EX1018) discloses "[a] method and apparatus splits information into subsets of information to be communicated for a wireless apparatus." EX1018 at Abstract.

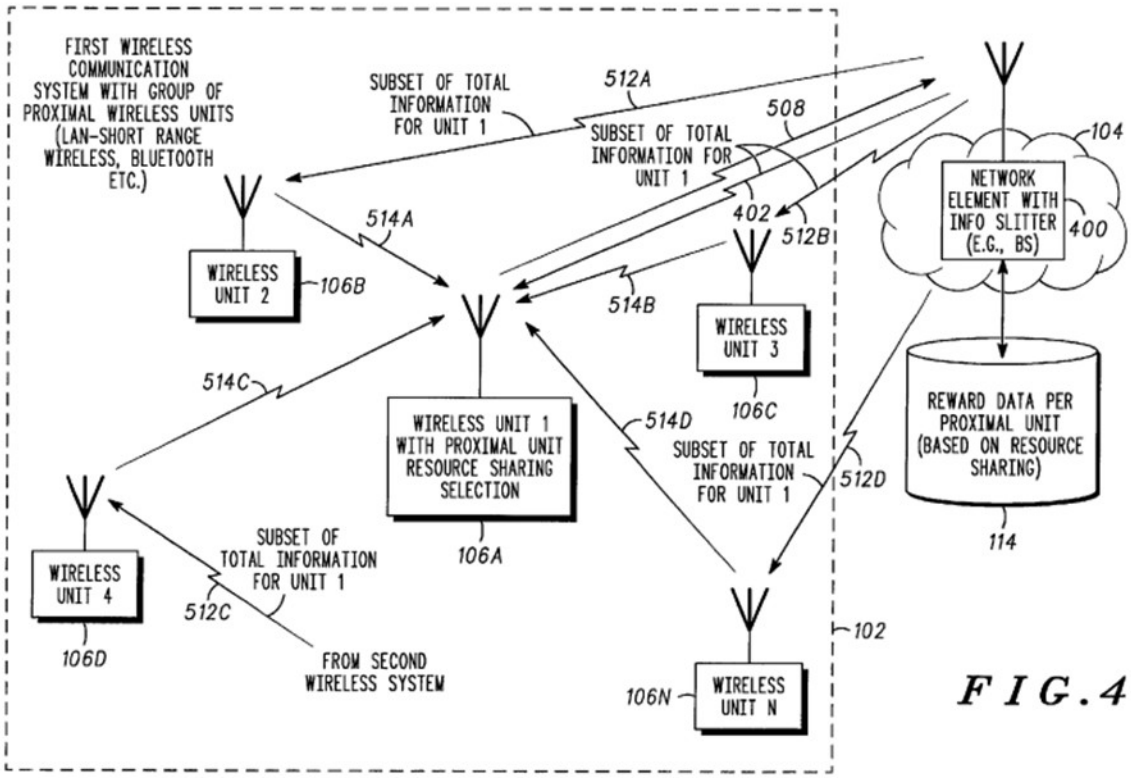


FIG. 4

EX2015 at ¶ 48.

Kotzin also discloses in its Figure 5 the following sequence by which participation of wireless units are requested and the data is sent from the network communication system through the multiple wireless units to the recipient wireless unit. EX1018 at FIG. 5; *see also* EX2015 at ¶ 49.

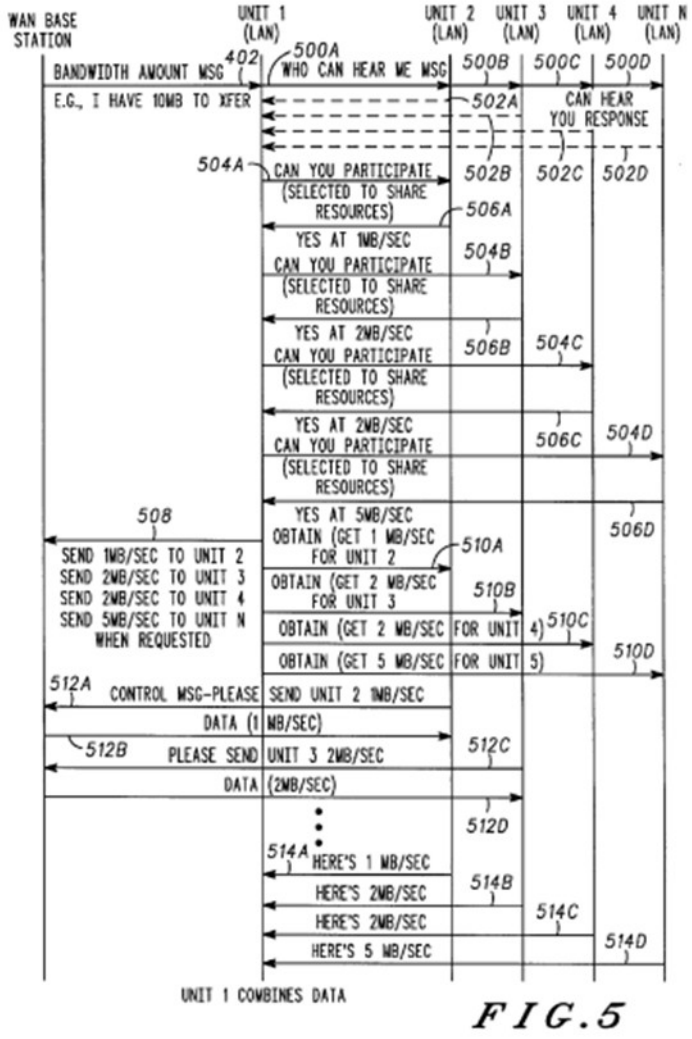


FIG. 5

B. Phatak

"A Novel Mechanism for Data Streaming Across Multiple IP Links for Improving Throughput and Reliability in Mobile Environments," IEEE INFOCOM 2002 ("Phatak") (EX1045) proposed a "mechanism to aggregate the bandwidth of multiple IP links by splitting a data flow across multiple network interfaces at the IP level." EX1045 at 773; *see also* EX2015 at ¶ 50.



Fig. 1
COMMUNICATING HOSTS WITH MULTIPLE NETWORK CONNECTIONS (MULTI-HOMED).

Id. at 773, FIG. 1.

HOST A is described as potentially being "a laptop at an airport with access to the Internet via an 802.11 LAN (say interface A_1), a Bluetooth scatternet (A_2), and a cellular phone modem (A_3)." EX1045 at 773; *see also* EX2015 at ¶ 51. Phatak suggest the use of where packets the packets source and destination addresses are encapsulated by an outer header. EX1045 at 775 ("Our solution to these problems is to employ *tunneling*. At the sender side, *A*, the transport layer assembles all packets as if they were going through A_1 and addressed to B_1. The packets going out on interface A_2 then get encapsulated in a new IP packet with an extra header having destination address B_1 and source address A_2.") (emphasis in original); *see also* EX2015 at ¶ 52.

IV. CLAIM CONSTRUCTION

A. "Multilink Communication"

In the context of the '908 Patent that claim term "multilink communication" should be construed to mean a "transfer of data during a data transfer session using at least two network interfaces to form links between two devices, where each link is associated with the same session identification for assisting in the data transfer, and at least one of the links connects the two devices through a remote communications device having available bandwidth to assist with the data transfer." EX2015 at ¶¶ 53, 63..

The claim language supports that "multilink communication" comprises the "transfer of data during a data transfer session" portion of the proposed construction. For example, in Claim 8 once the multilink communication is established it is described as "send[ing] different groups of data packets [i.e., a transfer of data] over the at least one server network interface to the first network communication interface of the device and to the second network communication interface of the device, wherein each of the different groups of data packets includes the multilink session identification [i.e., the transfer of data was within a single data transfer session]." EX1007 at 17:66-18:4; *see also* EX2015 at ¶ 54.

The specification also supports the "transfer of data during a data transfer session" portion of the proposed construction. EX1007 at 11:57-67 ("The multilink PPP connection-87 is initiated by an RCG when it determines that the file (or streaming service) that it is to download (receive) is of sufficient size or requires a

minimum amount of bandwidth to justify the use of a multilink PPP connection. This determination can be made on many different criteria such as the file size, type of data being transmitted, the type of compression if any, a Quality-of-Service requirement or any other pertinent information. (Since a certain amount of overhead is required to set up a Multilink PPP connection, it doesn't make sense to use it for small or low data rate transfers.)"); 12:2-5 ("Referring to FIG. 7, an RCG-85 that decides to initiate a multilink PPP session with a remote computer i.e. internet URL, requests a multilink PPP session with that URL resource"). EX2015 at ¶ 55.

The claim language likewise supports that "multilink communication" comprises "using at least two network interfaces to form links between two devices" portion of the proposed construction. EX2015 at ¶ 56. For example, in Claim 8 once the multilink communication is established it is described as "send[ing] different groups of data packets over the at least one server network interface to the first network communication interface of the device and to the second network communication interface of the device, wherein each of the different groups of data packets includes the multilink session identification." EX1007 at 17:66-18:4; *see also* EX2015 at ¶ 507.

The specification also supports this construction. EX1007 at 3:44-50 ("Broadband networking for home computers and appliances as well as wide area networking using a combination of a plurality POTS lines connected to a plurality

of RCGS and/or a direct wireless connection to a wireless access point. (These interfaces allow smart devices to communicate to other devices within the home, or over the Internet through the RCG.)"); 2:65-3:1 ("The 802.11b/g interface is for wireless communications between the RCG and PCs, other RCGs as well as any other types of compatible wireless devices."); 11:31-36 ("An 802.11b/g interface-87 is shown as the preferred embodiment, since its 11/54 Mbps interface is considered sufficient 10 bandwidth at this time also. its transmission distances are sufficient for implementation of this device, as opposed to other shorter ranged wireless transmission schemes"); 12:66-13:3 ("When the remote RCGs-86 receive data packets sent over their respective POTS lines 91, that are destined for the multilink PPP bundle-87, they 45 simply relay the data packets over their 802.11b/g interface88 to the initiating RCG—85."); 11:25-28 ("Referring to FIG. 7, the RCG implements broadband over POTS by employing an 802.11 b/g wireless interface to configure a multilink PPP bundle87 (per RFC 1990) comprised of the POTS lines connected to up to 32 RCGs."); 12:14-19 ("Once the multilink bundle is setup, the initiating RCG-85 begins data transfer across its POTS interface 90 with the far end computer system. The initiating RCG—85 then looks up the addresses of up to 31 (in this embodiment) other RCGs in its router tables to use for the multilink PPP transfer."); 12:66-13:3 ("When the remote RCGs-86 receive data packets sent over their respective POTS lines 91, that are destined for the multilink PPP bundle-87,

they 45 simply relay the data packets over their 802.11b/g interface88 to the initiating RCG—85."); 11:47-56 ("An RCG that is transferring a very large file can request the services of 31 (in 25 this embodiment) other RCGs to assist in the file transfer using their respective POTS lines. A single RCG can therefore gain the combined bandwidth of up to 32 POTS lines transferring data at as much as 56 Kbps each to transfer information. This is roughly equivalent to a transfer rate of 30 1.79 Mpbs in the inbound direction (towards the RCG) and approximately 1.075 Mbps in the outbound direction (towards the PSTN)."); 12:57-60 ("Each remote RCG POTS interface 91 participating in a multilink PPP bundle, represents a logical "link" in the initiating RCG's multilink PPP bundle-87."); *see also* EX2015 at ¶ 58.

The specification supports that "multilink communication" comprises "where each link is associated with the same session identification for assisting in the data transfer and at least one of the links connects the two devices through a remote communications device having available bandwidth to assist with the data transfer" portion of the proposed claim construction. '908 Patent, Fig. 7; 11:47-56 ("An RCG that is transferring a very large file can request the services of 31 (in 25 this embodiment) other RCGs to assist in the file transfer using their respective POTS lines. A single RCG can therefore gain the combined bandwidth of up to 32 POTS lines transferring data at as much as 56 Kbps each to transfer information. This is roughly equivalent to a transfer rate of 30 1.79 Mpbs in the inbound direction

(towards the RCG) and approximately 1.075 Mbps in the outbound direction (towards the PSTN)."); 12:57-60 ("Each remote RCG POTS interface 91 participating in a multilink PPP bundle, represents a logical "link" in the initiating RCG's multilink PPP bundle-87."); 12:2-4 ("Referring to FIG. 7, an RCG-85 that decides to initiate a multilink PPP session with a remote computer i.e. internet URL,"); 12:9-14 ("As part of a successful multilink PPP session setup, the initiating RCG-85 receives a multilink PPP session ID, or "magic number", which is used to identify this particular multilink PPP session and is also used for adding or removing links from the multilink bundle 87"); 12:51-57 ("The initiating RCG then selects which of the responding remote RCGs-86 it will use for the multilink PPP bundle 87 and sends them a multilink initialization packet containing the URL of the destination as well as the multilink PPP session ID (magic number) and any other pertinent information required for the remote RCG to join in the existing multilink PPP bundle-87."); *see also* EX2015 at ¶ 59.

V. PRIORITY

A reference is prior art under Section 102(e) only if filed before the date of "the invention by the [Patent Owner]." 35 U.S.C. § 102(e) (Pre-AIA); *see, e.g.*, *Sequenom v. Leland Stanford Junior Univ.*, IPR2013-00390, Paper 45 at 8 (PTAB Nov. 25, 2014); *Dynamic Drinkware LLC v. Nat'l Graphics, Inc.*, IPR2013-00131,

Paper 42 at 7 (PTAB Sept. 12, 2014), *aff'd* 800 F.3d 1375 (Fed. Cir. 2015). As such, CAS may antedate and thereby remove both Challener and Kotzin as prior art.

CAS may antedate Kotzin and/or Challener by showing that Mr. Delangis either: (1) reduced the claimed invention before the prior art references' 35 U.S.C. 102(e) priority dates or (2) conceived the claimed invention prior to the references' respective 35 U.S.C. 102(e) priority dates "followed by a diligent reduction to practice." *Purdue Pharma LP v. Boehringer Ingelheim GmbH*, 237 F.3d 1359, 1365 (Fed. Cir. 2001).

Conception—the "touchstone of inventorship"—occurs when the inventor formed in his mind "a definite and permanent idea of the complete and operative invention" such that "the idea is so clearly defined in the inventor's mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation." *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1228 (Fed. Cir. 1994) (internal quotation marks omitted). "Where a party seeks to show conception though oral testimony of an inventor, it must produce independent evidence corroborating that testimony," and "[s]uch evidence is to be evaluated under a rule of reason." *Purdue Pharma*, 237 F. 3d at 1365 (internal citations omitted).

Reduction to practice may be actual reduction to practice (*i.e.*, actually performing the claimed invention) or constructive reduction to practice (*i.e.*, filing a

patent application). *Goeddel v. Sugano*, 617 F.3d 1350, 1353 (Fed. Cir. 2010). Like conception, to establish an actual reduction to practice, "an inventor's testimony must be corroborated by independent evidence," with the evidence evaluated under a "rule of reason." *Cooper v. Goldfarb*, 154 F.3d 1321, 1330 (Fed. Cir. 1998) (internal citation omitted).

"A patent owner need not prove the inventor *continuously* exercised reasonable diligence throughout the critical period; it must show there was *reasonably continuous* diligence." *Perfect Surgical Techniques, Inc. v. Olympus Am., Inc.*, 841 F.3d 1004, 1009 (Fed. Cir. 2016) (emphasis in original). An inventor need "not record [his] progress on a daily, weekly, or even monthly basis" to demonstrate he did not abandon or unreasonably delayed his invention." *Id*. "The same logic applies to the preparation of a patent application: the absence of evidence that an inventor and his attorney revised or discussed the application on a daily basis, standing alone is insufficient to determine that the invention was abandoned or unreasonably delayed." *Id*. Instead, [o]ne must weigh the collection of evidence over the entire critical period to make such a determination." *Id.*

As described in Eric Delangis's declaration, he began developing an all-in-one communications device that would provide voice and data services in the late 1990s that CAS labeled the CopperJet™ systems. EX2023 at ¶¶ 5-19. Mr. Delangis conceived the idea which ultimately led to the invention claimed in the '156 Patent

in January 2001, when he came to the realization that while each of his neighbors had their own dial-up internet connection, that he could speed up his internet connection if he could wirelessly connect to and simultaneously use his neighbor's dial-up internet connections. EX2023 at ¶ 12.

Upon conceiving of the idea of a remote communications gateway that sent broadband data using simultaneous multiple connections (*e.g.*, POTS and Wi-Fi) to increase bandwidth, he set about developing the protocols, software, and hardware to implement his idea, as well as attempting to raise capital for CAS to develop his concept into a commercial product. EX2023 at ¶ 13; EX2017 (Executive Summary corroborating some of the features of the invention that he conceived and his attempts to raise funding). Ultimately, he created a demo system. EX2023 at ¶¶ 16-31; EEX2018 (photograph of the demo). By approximately January 2022, Mr. Delangis had completed the initial programing of the code for the demo to support the invention. EX2023 at ¶¶ 9-21.

Further, on April 23, 2002, Mr. Delangis transmitted a draft patent application and precursor to the provisional application that was ultimately filed to a patent attorney seeking assistance to file a patent application. EX2023 at ¶ 32. Within this draft are references to Broadband-Over-POTS. The draft is believed to have further included a number of drawings that ultimately became figures in the '343 Patent which are reproduced below:

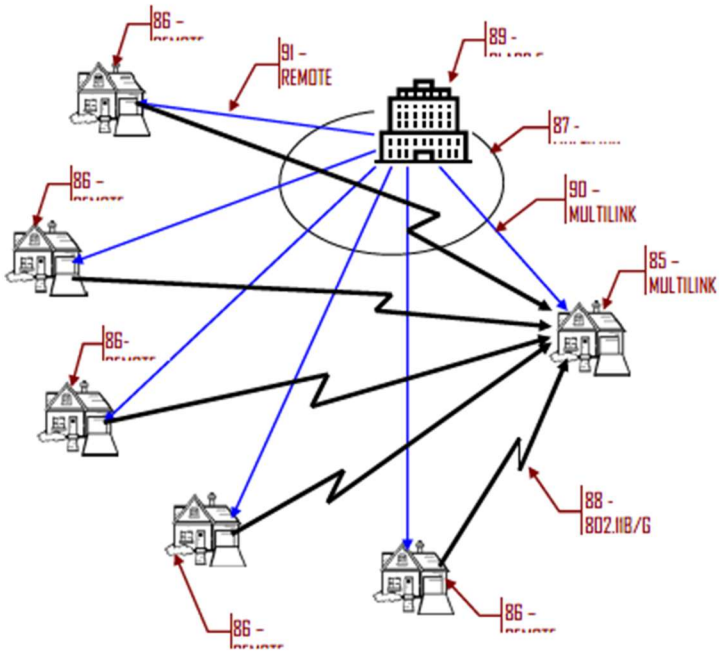


Figure 7 – Ad-hoc wireless LAN with broadband over POTS using 802.11b/g 11/54 Mbps wireless connections

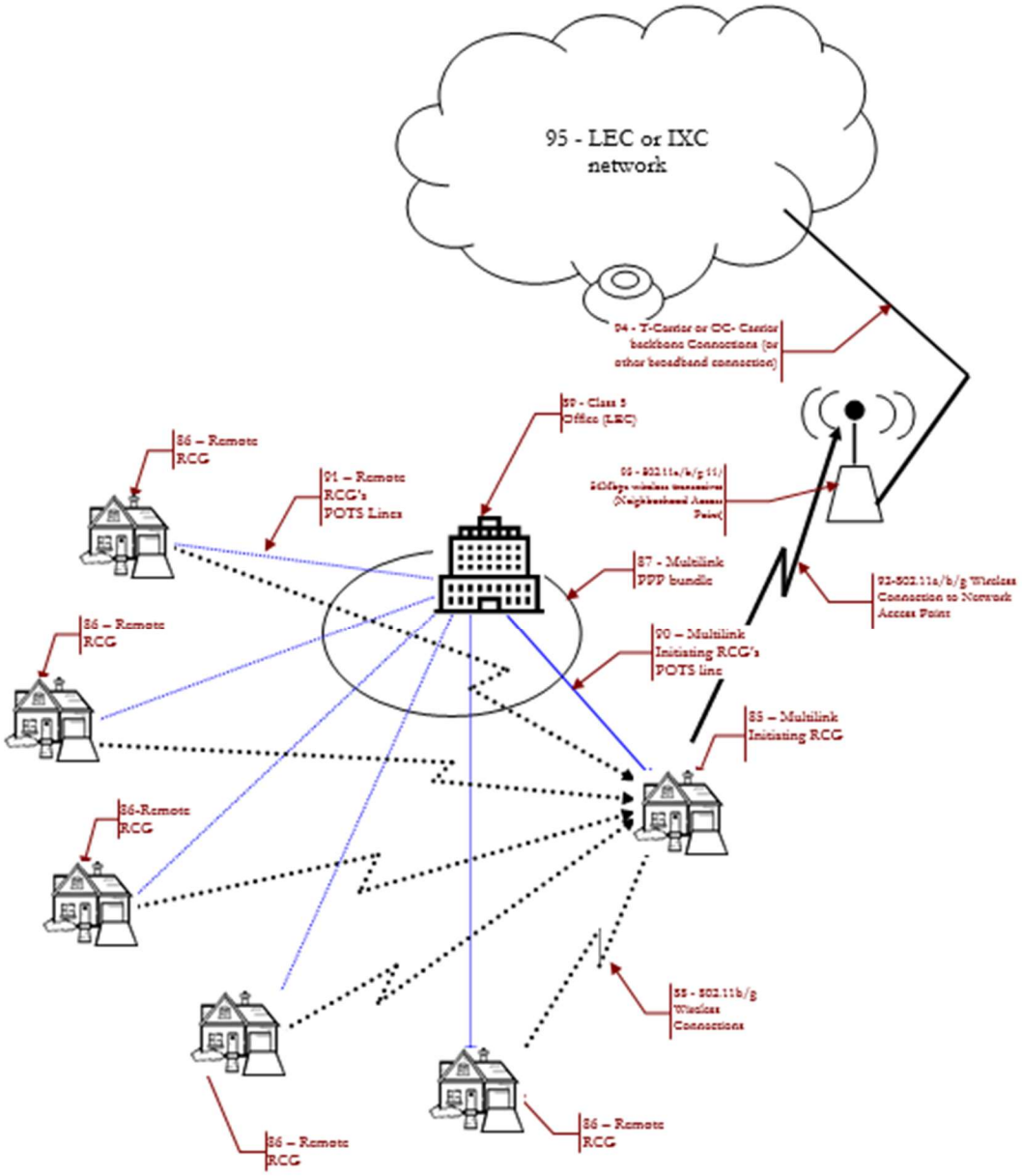


Figure 8 - Broadband over POTS w/ 802.11a/b/g 11/54Mbps wireless connections w/ broadband backbone connection to LEC or IXC

EX2023 at ¶¶ 33-34. Unfortunately, the actual filing of the application was complicated in that the attorney he reached out to was winding down his practice and failed to respond. EX2023 at ¶ 35. But upon learning of this complication, Mr.

Delangis proceeded to complete his draft application and filed it as a provisional application on October 15, 2002. EX2023 at ¶ 36.

Accordingly, there is evidence corroborating conception as of at least April 23, 2002, and diligent reduction to practice. Notably, Mr. Delangis continues to search decades-old files and hard drives, and Competitive Access Systems, Inc. ("CAS") continues to identify and locate third parties looking for additional corroborating evidence.

VI. RED HAT HAS FAILED TO CARRY ITS BURDEN TO PROVE THAT CLAIMS 4, 7-12, AND 17 OF THE '908 PATENT ARE INVALID

A. Red Hat Fails to Demonstrate that Claims 4 and 7 Are Obvious

Dependent Claims 4 and 7 depend from independent Claim 1, which is not separately challenged by the petition.

As dependent claims, Claims 4 and 7 include all of the limitations of Claim 1. Rather than addressing the limitations of Claim 1, Red Hat attempts to short circuit its analysis with the conclusory assertion that "Claim 1 is essentially identical to claim 17" and "[t]he only substantive difference is claim 17's use of 'concurrently,' rendering claim 17 narrower than claim 1." Nowhere does Red Hat actually compare the Claim 1 and Claim 17 on a limitation by limitation basis.

Not only is Red Hat's assertion that "Claim 1 is essentially identical to claim 17" conclusory, it is incorrect. Claim 1 includes within its preamble that the client

device is for multilink "data packet communication with a server." While Claim 17 later includes limitations in which messages are sent to "at least one server," it allows configurations using more than one server—"at least one server" compared to "a server." For example, under Claim 17 the "first message" could go to one server and the "second message" can go to an entirely different server.

Because Red Hat has not separately addressed the limitations with respect to Claim 1, it has failed to meet its burden with respect to Claims 4 and 7.

B. Red Hat's Argument Under Ground 1 Fails to Demonstrate each Claim Limitation of Claim 8 is Disclosed or Rendered Obvious by Kotzin Alone or in Combination with Held, Peirce, and Decasper

1. "request for a multilink communication"/"multilink request"

[8.c] receive a first multilink packet over the at least one server network interface, the first multilink packet comprised of a request for a multilink communication and first information associated with first network communication interface of the device that is capable of being used by the device to receive data packets;

[17.d] transmit a first message through the first network interface to at least one server, wherein the first message includes a multilink request and a destination URL;

Both Claims 8 and 17 require "a first multilink packet"/"a first message" to be sent from the device to the server that includes a "multilink request"/"request for multilink communication." EX2015 at ¶ 60. As addressed above, "multilink communication" (as used in bother Claims 8 and 17) should be construed to a mean "transfer of data during a data transfer session using at least two network interfaces

to form links between two devices, where each link is associated with the same session identification for assisting in the data transfer, and at least one of the links connects the two devices through a remote communications device having available bandwidth to assist with the data transfer." EX2015 at ¶¶ 53–55, 62–63

Red Hat alleges that Kotzin's bandwidth distribution message 508 (artificially broken down to messages 508a to 508d) qualifies as a "request for a multilink communication" in that it "request that Internet Web server send data for the same communication session to each of Units 2, 3, 4, and D when requested." *See* Petition at 30. EX2015 at ¶ 64.

As seen in Figure 5 below, the distribution message 508, is a single message, not four separate messages (508a to 508d) as asserted by Red Hat. EX2015 at ¶¶ 65-66.

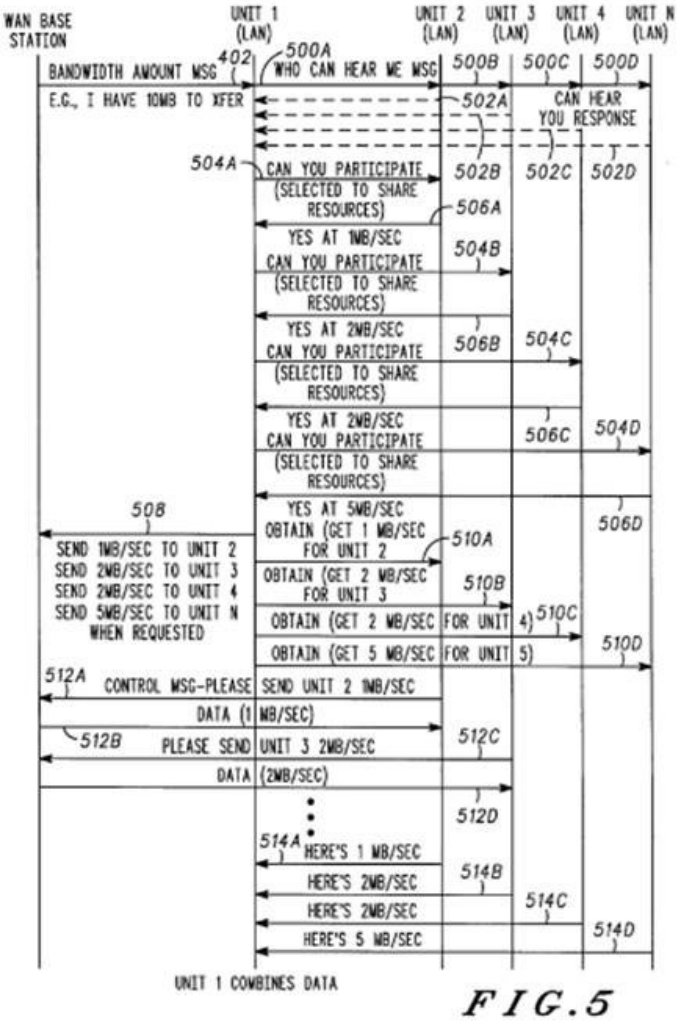


FIG. 5

Red Hat likewise argues that "Messages 512 are also 'multilink requests messages,' because they request that Internet Web server 400 send a specific amount of data to each of the participating wireless units" and such that if Unit 1—which Red Hat refers to as 106a—were itself participating in receiving data directly from Internet Web Server 400—rather than through another wireless unit—the massage 512 from unit 106a would meet the limitation. EX2015 at ¶ 67.

According to Red Hat, a POSITA would have understood that messages 508 and 512 would include first information associated with first network communication interface of the device such as the IP address assuming that TCP/IP was being used. EX2015 at ¶ 69. Red Hat likewise argues that it would have been obvious to use packet-based communications based on TCP/IP protocols and Kotzin's disclosures that the wireless units could communicate with GSM or CDMA networks. EX2015 at ¶ 69.

Red Hat's arguments fail to show that messages 508 and 512 are requesting a "multilink communication" as properly construed. The configuration in Kotzin is not a "multilink" connection. It is a collection of individual, point-to-point, single connections. EX2015 at ¶¶ 66, 69-70.

More specifically, distribution message 508 is single point-to-point message informing the WAN system of "recruits" who have volunteered to host independent, separate connections from the WAN system. EX2015 at ¶¶ 70-71. Notably, the distribution message 508 is not requesting the server's capability to participate in a multilink communication. EX2015 at ¶¶ 70-71. Nor is the distribution message 508 requesting or identifying a session identification to use. EX2015 at ¶¶ 70-71.

The 512 messages are likewise, point-to-point connections between the "server" (WAN) and the "client volunteers" (Units 2-N) which happens to transport one or more "tranches" of data from the server to each of the "client volunteers."

EX2015 at ¶ 72. The independent pieces of this "tranche" of data may be further forwarded or relayed to a different, single "client" device by the initial "client volunteers" using some other network connection, but the WAN system is uninvolved in this secondary part of the process. EX2015 at ¶ 72.

The sets of connections between WAN and Units 2-N are not a "multilink connection" because they are separate, independent, point-to-point connections between WAN and Units 2-N whereas a "multilink connection" is a set of related, interdependent higher-layer logical connections (paths, not point-to-point) between endpoints which are bundled into a single, logical connection between the same endpoints. EX2015 at ¶¶ 72-73.

2. "multilink session identification"

> *[8.d] sending a data packet including the multilink session identification to the first network communication interface of the device*
>
> *[8.f] send different groups of data packets over the at least one server network interface to the first network communication interface of the device and to the second network communication interface of the device, wherein each of the different groups of data packets includes the multilink session identification.*
>
> *[17.e] transmit a second message through the second network interface to the at least one server, wherein the second message includes a multilink session identification that is unique to the multilink session and the destination URL*

Both claims 8 and 17 require the use of a "multilink session identification." As explained in the specification and Claim 17, the "multilink session identification" is an identifier for the multilink session. EX2015 at ¶ 74.

A "multilink connection" is a single, virtualized end-to-end, logical connection between two endpoints. EX2015 at ¶ 75. This single virtual connection is composed of multiple, end-to-end logical connections which are bundled together (thus "virtualized" into a single connection). EX2015 at ¶ 76. Data transmitted via the virtual connection may traverse the separate, parallel paths represented by each of the constituent connections in the bundle. EX2015 at ¶ 76. A "session identifier" of some form is necessary to create a common identity which is shared by the constituent connections/paths and used to bind them together as the single virtualized connection. EX2015 at ¶ 78.

Red Hat makes a number of arguments why session identifications were known or obvious. Red Hat argues that Kotzin explicitly shares bandwidth "for a given communication session," thus recognizing that use of sessions. Citing Kotzin ¶[0021]. Red Hat argues that use of arbitrary or randomly generated numbers for tracking sessions was well known in the art as of 2002: including in Real Time Streaming Protocol (RTSP, RFC2326), Session Initiation Protocol (SIP, EX1046 (RFC 2543)), Dynamic Host Configuration Protocol from 1997 (DHCP, EX1047 (RFC 2131), §2.[1] EX2015 at ¶ 77.

[1] Red Hat is not asserting Real Time Streaming Protocol (RTSP, RFC2326), Session Initiation Protocol (SIP, EX1046 (RFC 2543)), Dynamic Host Configuration

Red Hat further argues that TCP/IP would most likely be used as the communication protocol—and that if wasn't used, it would have been obvious as taught by Held—such that it would make use of "a tuple comprised of source IP address/port number and destination IP address/port." EX2015 at ¶ 79.

Notably, Real Time Streaming Protocol (RTSP, RFC2326), Session Initiation Protocol (SIP, EX1046 (RFC 2543)), Dynamic Host Configuration Protocol from 1997 (DHCP, EX1047 (RFC 2131), §2 are protocols for tracking packets in a single end-to-end session, not a multi-link or multi-path session. EX2015 at ¶ 80.

Further, the TCP/IP tuple is not a multilink session identification. TCP/IP is specifically not a multilink protocol. Instead, the TCP/IP is a combination of the TCP and IP protocols. EX2015 at ¶ 78.

TCP establishes a single, reliable, end-to-end connection between communicating endpoints using a three-way handshake process (SYN, SYN-ACK, ACK) and terminates connections with a four-step handshake (FIN, ACK, FIN,

---

Protocol from 1997 (DHCP, EX1047 (RFC 2131), §2, but instead as examples of general knowledge. *See* 37 C.F.R. § 42.104(b)(4) ("[t]he petition must specify where each element of the claim is found in the prior art patents or printed publications relied upon").

ACK). TCP packets consist of a header which contains multiple elements of metadata. EX2015 at ¶ 81.

IP delivers packets of higher-layer protocol data units that consist of a header, containing source and destination addresses, packet length, and other metadata. The headers of IP packets are used to route data which transits systems on the Internet. EX2015 at ¶ 82.

Once IP packets are delivered to endpoint systems, the headers of TCP packets are used to deliver data between corresponding processes on the endpoint systems. EX2015 at ¶ 83. A "tuple" is a set of parameters from the packet's metadata which is generally used to identify a network connection or a network flow. EX2015 at ¶ 84. For example, a TCP "4-tuple" combines the source and destination TCP port numbers with the source and destination IP addresses of a packet flow. EX2015 at ¶ 8 4. The "4 tuple" is used by the operating systems at each end of the connection to direct data to the correct corresponding application. EX2015 at ¶ 84.

This collection of metadata may be unique to a particular TCP session or end-to-end connection, but each corresponding node has a limited number of non-reserved TCP port numbers which must be re-used between TCP sessions. EX2015 at ¶ 85. In a "multilink" or virtualized connection between two corresponding endpoints, each constituent TCP connection within the virtualized connection will use different source/destination TCP port identifiers for each endpoint and each

connection, and will have the same source/destination IP addresses for the endpoints. EX2015 at ¶ 85. As a result, the "session identifier" would be an additional piece of metadata for creating a relationship between the separate TCP/IP connections and produce a single virtualized connection. Kotzin does not disclose the use of such a "session identifier." EX2015 at ¶ 86.

C. Red Hat's Argument Under Ground 2 Fails to Demonstrate each Claim Limitation of Claim 8 is Disclosed or Rendered Obvious by Phatak Alone or in Combination with Held

1. "request for a multilink communication"/"multilink request"

[8.c] receive a first multilink packet over the at least one server network interface, the first multilink packet comprised of a request for a multilink communication and first information associated with first network communication interface of the device that is capable of being used by the device to receive data packets;

[17.d] transmit a first message through the first network interface to at least one server, wherein the first message includes a multilink request and a destination URL;

As addressed above with respect to Red Hat's Ground 1, claims 8 and 17 both require "a first multilink packet"/"a first message" to be sent from the device to the server that includes a "multilink request"/"request for multilink communication." EX2015 at ¶ 87.

Red Hat relies on Phatak's identification of TCP/IP to attempt to establish a "multilink request"/"request for multilink communication." Specifically, Red Hat argues that in the context of Figure 1, "when HOST B wishes to stream video from

HOST A over multiple interfaces at HOST B, it can send an initial request to HOST A for streaming using TCP/IP, such as an SYN packet" and that the "HOST B will notify HOST A of other IP addresses/interfaces where it can receive streaming data by using unused TCP/IP header fields." EX2015 at ¶ 88.

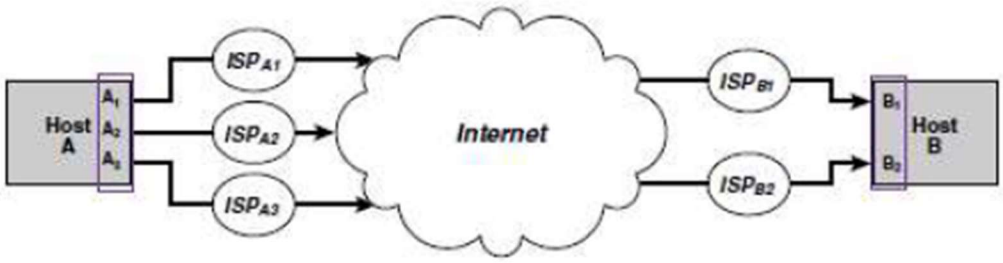


Fig. 1
COMMUNICATING HOSTS WITH MULTIPLE NETWORK CONNECTIONS (MULTI-HOMED).

As explained above, TCP/IP is specifically not a multilink protocol. TCP portion of the protocol establishes a single, reliable, end-to-end connection between communicating endpoints using a three-way handshake process (SYN, SYN-ACK, ACK) and terminates connections with a four-step handshake (FIN, ACK, FIN, ACK). EX2015 at ¶ 89. IP delivers packets of higher-layer protocol data units that consist of a header for use to route data which transits systems on the Internet. EX2015 at ¶ 90.

When a user requests data (e.g., a web page), the data may be divided into smaller groupings by both the TCP and IP layers of the protocol stack. EX2015 at ¶ 91. These groupings of data, which become “packets” as header and other data is

appended to them, generally take different routes to the destination as they transit the Internet. EX2015 at ¶ 91. If they are delivered out of order, TCP packets can be reassembled in the correct order via a sequence number embedded in the TCP header. EX2015 at ¶ 91. The receiver in a TCP connection acknowledges the successful receipt of segments of transmitted data, and any missing or corrupted data is retransmitted. EX2015 at ¶ 91.

As TCP/IP connections were end-to-end, singly-specified relationships between communicating applications or processes, they did not comprise or implement a multilink protocol. EX2015 at ¶ 92.

Likewise, while Figure 1 demonstrates six different potential links by which the data could be sent (ISP_{A1}- ISP_{B1}, ISP_{A1}- ISP_{B2}, ISP_{A2}- ISP_{B1}, ISP_{A2}- ISP_{B2}, ISP_{A3}- ISP_{B1}, ISP_{A3}- ISP_{B2}). The separate links would not constitute a multilink connection as Phatak employs tunneling instead. EX2015 at ¶ 93. Tunneling essentially acts as an envelope within an envelope such that the constituent links would not recognize that they were part of a single end-to-end session. EX2015 at ¶¶ 94-95

In Phatak's configuration, several of the tunnels may have an endpoint on a single host with multiple network interfaces, and which is "multi-homed." EX2015 at ¶ 96. For example, for Host A, interface A_1 is connected to ISP_{A1} and interface A_2 is connected to ISP_{A2}, and similarly for Host B. EX2015 at ¶ 96. However, Phatak's configuration cannot function when all tunnels have a common endpoint

on a single host with a single network interface connected to a single ISP. EX2015 at ¶ 96.

The claimed invention of the '908 Patent does not require a "multi-homed" configuration, where TCP endpoints are identified by differing IP addresses as well as port numbers. EX2015 at ¶ 97. Instead, 908 Patent employ a "session identifier" to relate multiple simultaneous connections between endpoints which are not multi-homed. EX2015 at ¶ 97. Thus in the claimed invention, the "session identifier" is required to create the relationship or "virtual logical connection" involving multiple, independent TCP/IP connections established between communicating endpoints. EX2015 at ¶ 97.

Phatak's identification of TCP/IP was did not disclose or suggest a "multilink request"/"request for multilink communication." EX2015 at ¶ 98.

2. "multilink session identification"

[8.d] sending a data packet including the multilink session identification to the first network communication interface of the device

[8.f] send different groups of data packets over the at least one server network interface to the first network communication interface of the device and to the second network communication interface of the device, wherein each of the different groups of data packets includes the multilink session identification.

[17.e] transmit a second message through the second network interface to the at least one server, wherein the second message includes a multilink session identification that is unique to the multilink session and the destination URL

Both claims 8 and 17 require the use of a "multilink session identification." Similar to its Kotzin ground, Red Hat is relying on the TCP/IP tuple as the multilink session identification. EX2015 at ¶ 99.

Contrary to Red Hat's description of the TCP/IP tuple source ("IP address, source port, destination IP address, destination port") is not a multilink session identification. EX2015 at ¶ 100. As explained above, the "tuple" is a set of parameters from the packet's metadata which is generally used to identify a network connection or a network flow. EX2015 at ¶ 101. This collection of metadata may be unique to a particular TCP session or end-to-end connection, but each corresponding node has a limited number of non-reserved TCP port numbers which must be re-used between TCP sessions. EX2015 at ¶ 101.

In a "multilink" or virtualized connection between two corresponding endpoints, each constituent TCP connection within the virtualized connection will use different source/destination TCP port identifiers for each endpoint and each connection, and will have the same source/destination IP addresses for the endpoints. EX2015 at ¶ 102. As a result, the "session identifier" would be an additional piece of metadata for creating a relationship between the separate TCP/IP connections and produce a single virtualized connection. EX2015 at ¶ 103. Phatak does not disclose the use of such a "session identifier." EX2015 at ¶¶ 104-105.

VII. CONCLUSION

For the reasons stated above and in CAS's Motion for Discretionary Denial, Red Hat's Petition for *Inter Partes* Review should be denied.

Dated: November 6, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

Under 37 C.F.R. § 42.6(e), the undersigned certifies that on November 6, 2025, a copy of the foregoing PATENT OWNER'S PRELIMINARY RESPONSE, along with Exhibits 2016–2023, were served via email on the following:

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME REQUIREMENTS UNDER 37 C.F.R. § 42.24

Under 37 C.F.R. § 42.24(d), the undersigned certifies that this Patent Owner's Preliminary Response complies with the type-volume limitation of § 42.24(b)(1) because it contains 7,859 words, excluding the parts exempted by § 42.24(a).

This paper also complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and the type style requirements of 37 C.F.R. § 42.6(a)(2)(iii) and (iv).

Dated: November 6, 2025

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