

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RED HAT, INC.
Petitioner,

v.

COMPETITIVE ACCESS SYSTEMS INC.
Patent Owner

U.S. Patent No. 11,418,641
Issued: August 16, 2022
Filed: December 14, 2020
Inventor: Eric M DeLangis
Title: Devices and Methods for Multipath Communications

**PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. § 312 AND 37 C.F.R. § 42.104**

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1001	Declaration of Bill Lin, Ph.D. in support of <i>Inter Partes</i> Review
1002	<i>Curriculum Vitae</i> of Bill Lin
1003	Certified Copy of U.S. Patent No. 11,582,343
1004	Certified File History of U.S. Patent No. 11,582,343
1005	Certified Copy of U.S. Patent No. 11,418,641
1006	Certified File History of U.S. Patent No. 11,418,641
1007	Certified Copy of U.S. Patent No. 10,868,908
1008	Certified File History of U.S. Patent No. 10,868,908
1009	Certified Copy of U.S. Patent No. 9,350,649
1010	Certified File History of U.S. Patent No. 9,350,649
1011	Certified Copy of U.S. Patent No. 8,861,349
1012	Certified File History of U.S. Patent No. 8,861,349
1013	Certified Copy of U.S. Patent No. 8,228,801
1014	Certified File History of U.S. Patent No. 8,228,801
1015	Certified Copy of U.S. Patent No. 7,606,156
1016	Certified File History of U.S. Patent No. 7,606,156
1017	U.S. Patent Application Publication No. 2004/0001512 A1 (“Challener”)
1018	U.S. Patent Application Publication No. 2003/0026221 A1 (“Kotzin”)
1019	James Carlson, <i>PPP Design, Implementation, and Debugging</i> (2d ed. 2000) (“Carlson”)
1020	Gilbert Held, <i>Network Design Principles and Applications</i> , 2000 (“Held”)
1021	U.S. Patent No. 6,917,960 (“Decasper”)
1022	Johnny Chen, <i>New Approaches to Routing for Large-Scale</i>

¹ Unless otherwise specified, citations are to the original page, column, and line numbers in exhibits rather than the PDF page. Citations corresponding to the PDF pagination are indicated in [[brackets]]. Unless otherwise noted, all emphases and annotations are added.

Exhibit No.	Description
	<i>Data Networks</i> (Rice University, 1999) (“Chen”)
1023	Declaration of Sylvia Hall-Ellis
1024	Webster's Ninth New Collegiate Dictionary, 1990
1025	Xin, W., Ishihara, S., and Mizuno, T., <i>A QoS-ensured Transmission Scheme with Content-based Priority for Mobile Cluster Users</i> , 2000 (“Xin”)
1026	U.S. Patent Application Publication No. 2002/0042274 A1 (“Ades”)
1027	U.S. Patent No. 7,003,580 (“Cook”)
1028	U.S. Patent No. 5,625,877 (“Dunn”)
1029	U.S. Patent Application Publication No. 2002/010866 A1 (“McCullough”)
1030	Candace Leiden & Marshall Wilensky, <i>TCP-IP for Dummies</i> (3d ed. 1999) (“Dummies”)
1031	U.S. Patent Application Publication No. 2003/0223450 A1 (“Bender”)
1032	U.S. Patent Application Publication No. 2004/0022224 A1 (“Billhartz”)
1033	Hung-Yun Hsieh & Raghupathy Sivakumar, <i>A Transport Layer Approach for Achieving Aggregate Bandwidths on Multi-homed Mobile Hosts</i> (2002) (“Hsieh”)
1034	U.S. Patent No. 6,778,495 (“Blair”)
1035	Cisco Systems, Inc., <i>Troubleshooting Async Multilink PPP Operations</i> (2001) (“Cisco”)
1036	U.S. Patent Application Publication No. 60/377,631 (“Tucker”)
1037	Konishi et al., <i>Web SHAKE: A fast WWW access method for mobile terminals on temporary cluster networks</i> , IEEE Proceedings April 28-May 2, 2002 (“Konishi”)
1038	RFC 1990: The PPP Multilink Protocol (MP), August 1996
1039	<i>Competitive Access Systems, Inc. v. Oracle Corporation, and Oracle America, Inc.</i> , 1:23-ca-00286-ADA, Dkt. 82 (W.D.TX. Aug. 10, 2023)
1040	<i>Red Hat, Inc. v. Competitive Access Systems, Inc.</i> , 4:24-cv-00130-D, Dkt. 1 (E.D.N.C. Sep. 3, 2024)
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1043	RFC 2663: IP Network Address Translator (NAT) Terminology and Considerations, August 1999
1044	U.S. Patent No. 5,878,040 (“Peirce”)
1045	“A Novel Mechanism for Data Streaming Across Multiple IP Links for Improving Throughput and Reliability in Mobile Environments,” IEEE INFOCOM 2002 (“Phatak”)
1046	RFC 2543: SIP: Session Initiation Protocol, March 1999
1047	RFC 2131: Dynamic Host Configuration Protocol, March 1997
1048	RFC 1945: Hypertext Transfer Protocol – HTTP/1.0, May 1996
1049	Endler, David, <i>Brute-Force Exploitation of Web Application Session IDs</i> , iALERT White Paper, Nov. 1, 2001 (“Endler”)
1050	Rappaport, Theodore S., et al., <i>Wireless Communications and Application Above 100 GHz: Opportunities and Challenges for 6G and Beyond</i> , IEEE Access, Vol. 7, 2019 (“Rappaport”)
1051	Reex. Control No. 90/019,265
1052	Gast, Matthew S., <i>802.11 Wireless Networks – The Definitive Guide</i> , 2002
1053	Shoemake, Matthew B., <i>Wi-Fi (IEEE 802.11b) and Bluetooth CoExistence Issues and Solutions for the 2.4 GHz ISM Band</i> , Texas Instruments, Feb. 2001, Ver. 1.1
1054	Furuskär, Anders, et al., <i>EDGE: Enhanced Data Rates for GSM and TDMA/136 Evolution</i> , IEEE Personal Communications, June 1990
1055	RFC 2326: Real Time Streaming Protocol (RTSP), April 1998
1056	Random House Webster’s Computer & Internet Dictionary, 3 rd ed., December 1998
1057	Andrew S. Tanenbaum, <i>Computer Networks</i> , Chps. 1 & 5 (3d ed. 1996)
1058	Adolfo Rodriguez <i>et al.</i> , <i>TCP/IP Tutorial and Technical Overview</i> , Chps. 1 & 14 (Prentice Hall PTR 2002)
1059	Richard O. LaMaire, et al., <i>Wireless LANs and Mobile Networking: Standards and Future Directions</i> , IBM, May 31, 1996

Petitioner Red Hat, Inc. (“Red Hat”) respectfully requests *inter partes* review of claims 1-3 (“Challenged Claims”) of U.S. Patent No. 11,418,641 (“the ’641 patent”). EX1005.

I. INTRODUCTION

The Challenged Claims of the ’641 patent are unpatentable in view of two references that were not substantively considered during its prosecution, the Challenger and Kotzin references.

The ’641 patent is directed to a device referred to by the ’641 patent as a residential communications gateway (“RCG”). The RCG connects a residence (*e.g.*, an Internet user) to a communications network (*e.g.*, the Internet via an Internet service provider or “ISP”) “over a customer's existing POTS line, and it doesn’t require any network infrastructure build out like DSL and Cable services.” EX1005, 3:25-28. The RCG was intended “to enhance, not replace, the existing telephone line” by aggregating bandwidth over the “last mile” of copper over which almost all residential customers received their communication services in the 2002 timeframe. *Id.*, 3:25-33, 1:25-31.

Yet, as discussed below, aggregating bandwidth among devices to resolve the “last mile” or similar bandwidth issues was known in the prior art. For example, the ’641 patent acknowledges that it is merely applying RFC 1990, the PPP Multilink Protocol that was published in August 1996, to achieve a multilink

broadband connection. *Id.*, 11:28-30 (“[T]he RCG implements broadband over POTS by employing an 802.11 b/g wireless interface to configure a multilink PPP bundle-87 (per RFC 1990)[.]”). The PPP Multilink Protocol teaches the use of link aggregation to increase bandwidth. EX1038.

Against this backdrop, this Petition, supported by the Declaration of Dr. Bill Lin, Ph.D., presents two grounds based on the Challenger and Kotzin references, which render the Challenged Claims obvious as discussed in detail below.

II. OVERVIEW OF CHALLENGE AND RELIEF REQUESTED

Petitioner requests cancellation of the Challenged Claims as unpatentable under 35 U.S.C. § 103.

A. Prior Art Patents and Printed Publications

Petitioner’s challenge is based on the following prior art references, which predate the earliest claimed priority date of the ’641 Patent:

1. U.S. Patent Application Publication No. 2004/0001512 A1 (“Challenger”) (EX1017) was filed on June 28, 2002, published on January 1, 2004, and is prior art under at least pre-AIA 35 U.S.C. § 102(e).

2. U.S. Patent Application Publication No. 2003/0026221 (“Kotzin”) (EX1018) was filed on August 2, 2001, published on February 6, 2003, and is prior art under at least pre-AIA 35 U.S.C. § 102(e).

B. Relief Requested

Petitioner requests cancellation of the Challenged Claims as unpatentable under 35 U.S.C. §103. The grounds are set forth below and supported by the declaration of Dr. Bill Lin, Ph.D.

Ground	Claims	Proposed Statutory Rejection
I	1-3	Obvious in view of Challenger under §103
II	1-3	Obvious in view of Kotzin under §103

III. TECHNOLOGY OVERVIEW

A. Bandwidth Aggregation

Before the alleged invention of the '641 patent, it was well-known that devices like gateways could aggregate bandwidth. It was well-know that gateways extend the connectivity of a network and help achieve greater bandwidth without additional remote hardware or changes to the existing physical infrastructure. EX1017, ¶¶[0014], [0016], Fig. 3; EX1028, 6:35-40, EX1029, Abstract, ¶¶[0002], [0085]; EX1020, 256. Algorithms were also developed to effectively aggregate, or “bundle,” multiple connections between source and destination. For example, the Multipath TCP protocol was well known prior to the '641 patent's earliest priority date. The TCP/IP protocol on which Multipath TCP is based was created in the 1980s. *See* EX1030, 100-12; EX1020, 142, 281-82; EX1022, 8, 119, 124, 143-44; EX1033. And Multipath TCP was proposed as early as 1999. EX1022, 8.

Multipath TCP uses two or more paths between a server and client to transmit packets between them, instead of the single path used in traditional TCP. *Id.*, Chapter 7. Additionally, TCP was recognized as helpful to provide flow control and congestion control. EX1020, 243–44. TCP was also known to employ a tuple (including source address/port and destination address/port) in order to uniquely identify a particular communication session. EX1043 at §2.3.

B. Bandwidth Aggregation as a Solution to the Last Mile Problem

In the late 1990s and early 2000s, the “last mile” problem—referring to the final segment of the telecommunications network connecting homes to service providers, typically via low-bandwidth copper wires—was widely recognized as a major bottleneck in residential networking, as most users were limited to Plain Old Telephone Service (POTS) lines despite the availability of high-capacity core infrastructure like fiber optics. *See* EX1017, ¶[0004]. To address this, solutions emerged that leveraged existing infrastructure with low-cost enhancements rather than costly upgrades. For example, Challenger describes a bandwidth sharing device that allows an end user to aggregate bandwidth from multiple other devices, increasing effective bandwidth without modifying the physical network. *See id.*, ¶[0040]. Similarly, Cook acknowledged the limitations of single communication paths to the client’s interface and proposed supplementing wireline connections with wireless links, enabling parallel data transmission and higher aggregate

bandwidth without the need for additional wireline installations. *See* EX1027, 1:29-33, 1:50-57.

IV. THE '641 PATENT

The '641 patent is entitled “Devices and Methods for Multipath Communications” and issued from U.S. Patent Application No. 17/120,549 (“’549 Application”) on August 16, 2022. The '641 patent claims priority through a series of continuation applications to Provisional Application No. 60/418,521 (“’521 Application”), filed on October 15, 2002. October 15, 2002 is the earliest possible priority date for the '641 patent. Petitioner does not admit that the '641 Patent is entitled to this or any priority and reserves the right to challenge the priority in this or other proceedings. Even if the '641 patent is entitled to an October 15, 2002 priority date, Challenger and Kotzin are prior art.

A. Claims

The '641 patent has 3 claims, of which claim 1 is independent. All claims are challenged herein.

B. Specification

The alleged problem in the art that the '641 patent set out to solve was that high-speed data services required expensive infrastructure enhancements to local telephone service lines to resolve “last mile” bandwidth issues. EX1005, 1:29, 2:12-18. The purported solution provided is sharing and aggregating bandwidth from multiple RCGs, or broadband communications devices such as gateways or

routers, which was already known in the art using prior-art protocols such as MPPP. *Id.*, 3:31-42, Fig. 7. As discussed below, however, this solution for sharing and aggregating bandwidth among multiple broadband communication devices was already proposed by Challener and Kotzin.

C. Prosecution History

The application which issued as the '641 was filed on December 14, 2020 with three apparatus claims that were all directed to a communications device capable of providing broadband communications. EX1006. On April 13, 2022, the Examiner issued a notice of allowance. EX1002, [[57]].

The Notice of Allowance stated that “the prior art of record shows receiving data blocks from a plurality of links according to a multi-link protocol.” *Id.*, [[63]]. However, the Notice of Allowance explained that the reason for allowance was that the prior art did not teach the claimed “*requesting one remote communications device to assist in transferring data, sending a request to the remote communications device for availability for participating in a multilink communication, if available, sending control information through [the at least one] remote communications device for participating in a multilink connection.*” *Id.*, [[62]]-[[63]]. As shown below in Sections VII.A and VII.B, both Challener and Kotzin disclose or render these handshake features obvious.

D. Person of Ordinary Skill in the Art

As Dr. Lin explains in his declaration, a POSITA at the time of the '641 patent would have had at least a bachelor's degree in electrical engineering, computer science, or a related field, and at least one year of experience with network design. Individuals with different education and additional experience could still be of ordinary skill in the art if that additional experience compensates for a deficit in their education and experience. EX1001, ¶¶39-42.

V. CLAIM CONSTRUCTION

Claims in an IPR are interpreted and construed under *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). For purposes of this proceeding only, terms in the Challenged Claims need not be construed to apply the prior art forming the Grounds. If PO raises claim construction arguments, however, Petitioner reserves the right to respond. Petitioner notes that in a prior district court litigation (now settled), PO contended that “multilink connection” means “[a] connection including multiple physical links,” and that “multilink group transfer” means “transferring data over a multilink connection.” EX1039, 8-9. Further, in a demand letter to Petitioner, PO asserted that the “Claims from the DeLangis Patent Portfolio cover MPTCP as described in RFC 6824 as well as many non-standardized proprietary multipath routing techniques.” EX 1041.

Petitioner disagrees with PO,² but notes that the Challenged Claims are rendered obvious by Challener and Kotzin even under Petitioner's broad constructions.³ To the extent that any claim construction positions taken by Petitioner in the related DJ proceeding are inconsistent with an implicit position taken in this petition, that inconsistency is warranted. PO should be required to defend the patentability of the Asserted Patents' claims in light of the broad constructions they pursued in the prior district court proceeding and asserted in their demand letter to Petitioner.

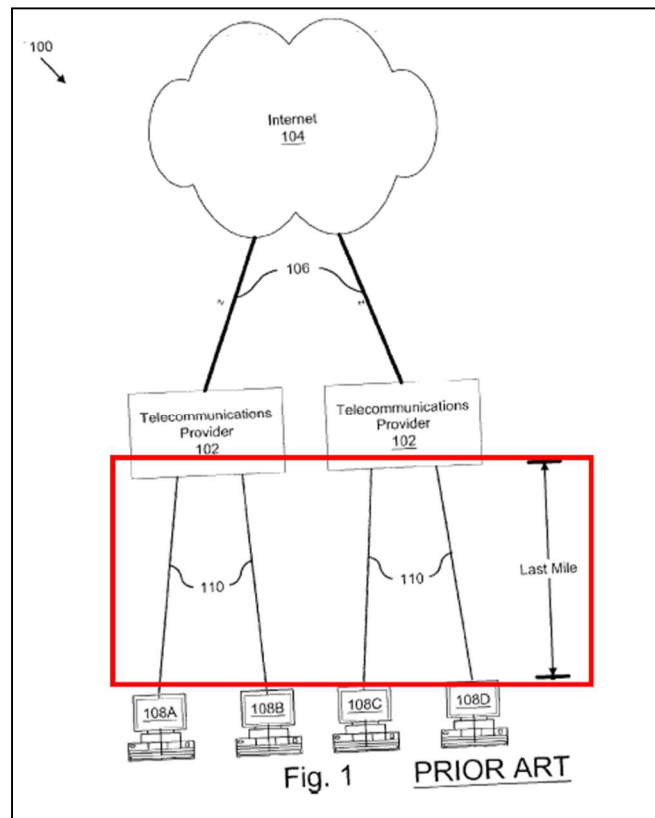
² In its complaint for Declaratory Judgment of Non-Infringement, Petitioner disputes PO's assertion that that Asserted Patents are directed to MPTCP. Petitioner's position is that the Asserted Patents "are (at best) limited to a very different transmission protocol called Multilink PPP (Point-to-Point Protocol)." EX 1040, ¶60.

³ Petitioner does not present any § 101 or § 112 challenges herein but reserves the right to challenge the patentability under §§ 101 and 112 in litigation or any other appropriate forum. Nothing contained in this Petition or supporting papers is an admission or acknowledgement that the specification of the '641 Patent satisfies §§ 101 and 112.

VI. OVERVIEW OF THE PRIOR ART

A. Challenger

Challenger discloses a method and apparatus for bandwidth sharing to increase the bandwidth available to a user connected to the Internet. EX1017, Abstract. Challenger explains that in the prior art, a user's access (such as the user of computer 108B in Figure 1 below) to bandwidth was limited by "last mile" communication infrastructure, as shown in Figure 1 reproduced below:



Id., Fig-1; *see also id.* ¶¶[0034]–[0036]. Challenger explains that “[d]ue to low bandwidth capability, the last mile telecommunications lines 110 prove to be a

significant bottleneck precluding broadband connectivity between the Internet 104 and the end user terminals 108.” *Id.* ¶[0036].

To address this shortcoming, Challenger discloses “a wireless and automatic aggregation process among separate sharing entities.” EX1017, ¶[0012]; *see also id.* ¶[0014]. Challenger discloses a “bandwidth sharing device” (“BSD”) connected to the Internet that can wirelessly connect to other bandwidth sharing devices also connected to the Internet, so that unused bandwidth can be aggregated to increase the effective bandwidth for a user. *Id.* ¶¶[0040]–[0056]. Figure 2, reproduced below, depicts how bandwidth sharing devices can be used to improve a prior art system:

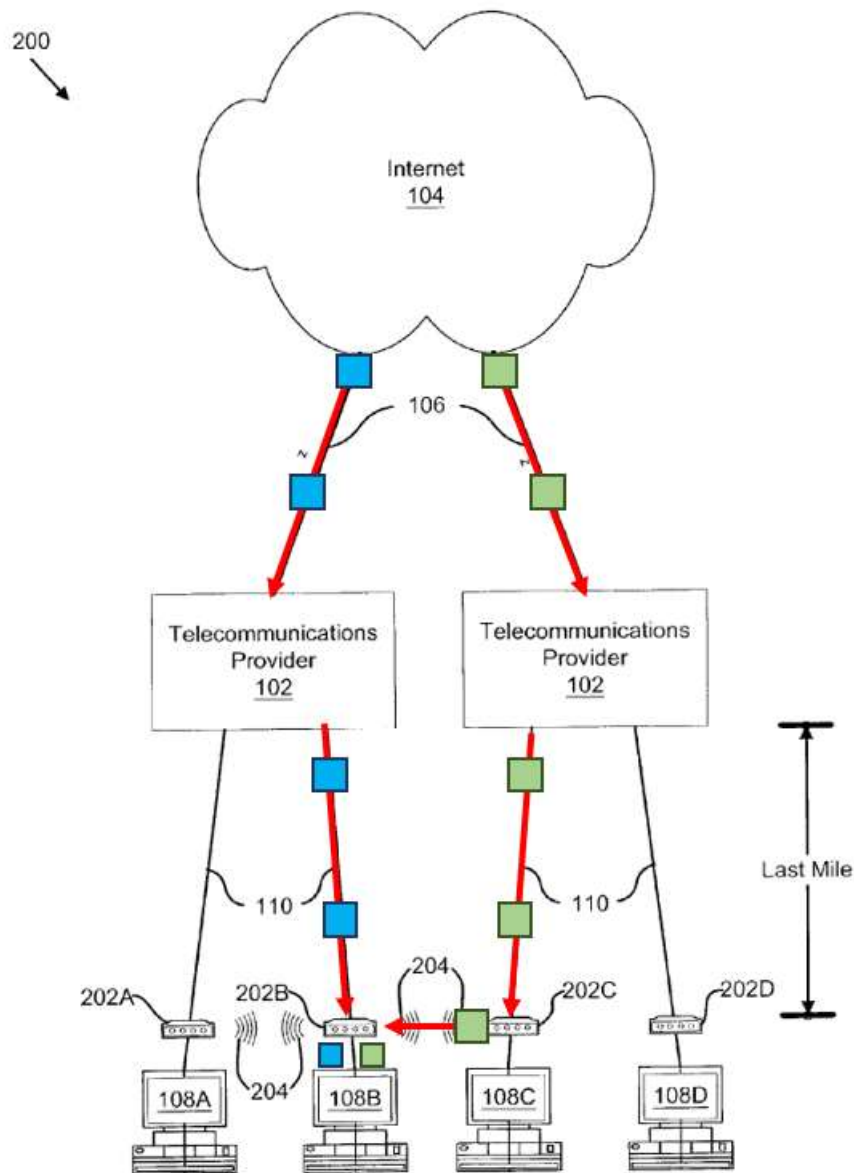


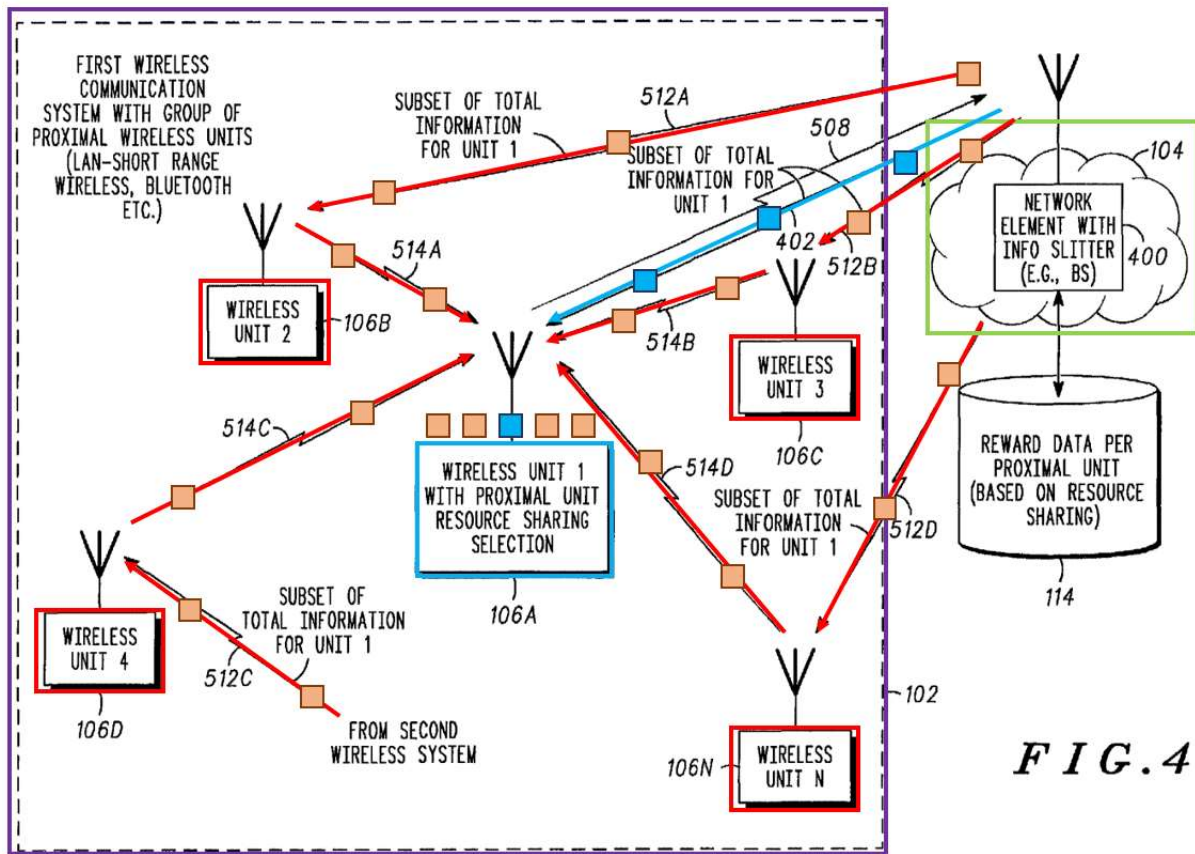
Fig. 2

Id., Fig-2. As shown in the above example, data packets from the Internet 104 destined for computer 108B are split along two paths, one directly to 108B over 202B's last mile connection, and a second path comprised of 202C's last mile connection and its wireless connection 204 with 202B. The data packets, shown above in blue for one path and green for another, are then aggregated together at

202B, thereby increasing the total bandwidth available to computer 108B. *Id.* ¶¶[0018], [0046]. In the above example, Challenger refers to BSD 202B as a “master” BSD, and BSD 202C as a “slave” BSD. In Challenger’s system, the master BSD is in charge of automatically setting up and managing bandwidth sharing with one or more slave BSDs. *Id.* ¶¶[0017], [0020]-[0023].

B. Kotzin

Kotzin discloses a bandwidth aggregation system where the bandwidth available to a plurality of wireless units can be shared with a single wireless unit, thereby increasing the wireless bandwidth available to the single wireless unit. EX1018, Abstract, ¶[0024]. Kotzin explains that wireless units connect with each other so units “receive portions of the communication on behalf of the destination wireless apparatus,” resulting in higher effective bandwidth. *Id.* ¶[0035]; *see also id.* ¶¶[0028], [0031]. Kotzin’s system is illustrated below:



With reference to Kotzin's exemplary Figure 4 shown above, Kotzin discloses that wireless unit 106A (blue) can make use of bandwidth from wireless units 106B, 106C, 106D, and 106N (red) to receive data from external network 104 (e.g., the Internet) (green). Thus, Internet data packets destined for wireless unit 106A can be split among multiple links to each of the wireless units 106A, 106B, 106C, 106D, and 106N, and then relayed from each of these wireless units to be aggregated by 106A. In this manner the bandwidth available to 106A is increased by using, in addition to its own bandwidth, additional bandwidth allocated to wireless units 106B, 106C, 106D, and 106N. *Id.* ¶¶[0035], [0036].

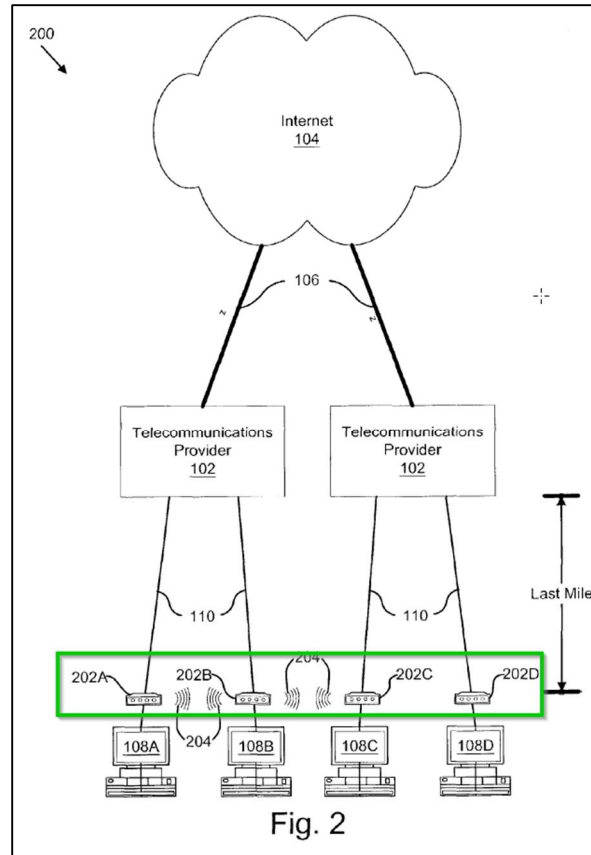
VII. SPECIFIC GROUNDS FOR PETITION UNDER 37 C.F.R. § 42.104(B)

A. Ground I: Claims 1-3 Are Obvious In View of Challenger

1. Independent Claim 1

- a. [1.pre] A communications device that is capable of providing broadband communications services, comprising:*

Challenger's BSDs, including those that act as "master" BSDs, are each a *communications device that provid[es] broadband communication services* to computers and other devices that are connected to it. EX1017, ¶¶[0014], [0018]. Challenger's BSDs, which allow users to aggregate bandwidth over last mile transmission lines and broadband transmission lines, are illustrated below in Figure 2; they are labeled 202A, 202B, 202C, and 202D. *Id.*, Fig. 2, ¶[0037].



Id., Fig. 2. Challenger explains that end users are typically connected to the Internet via “low bandwidth copper lines [110], frequently referred to as the ‘last mile,’ [which] do not provide adequate bandwidth to allow for broadband telecommunication over the Internet, despite the availability of high bandwidth on the fiber backbone.” *Id.* ¶¶[0006], [0034]-[0036], Fig. 1. “Without a solution to this ‘last mile’ bottleneck, much of the broadband fiber backbone may remain unused indefinitely.” *Id.* ¶[0006]. To solve this problem, a BSD (green) is installed “[a]t each interface between an end user terminal and a last mile transmission line” and “configured to aggregate the available bandwidth of a plurality of last mile transmission lines for use by a single end user subscriber,” thereby providing

broadband communication service. *Id.*, ¶[0018]; *see also id.*, ¶¶[0036]–[0037] (to avoid the “significant bottleneck precluding broadband connectivity” the “bandwidth sharing devices . . . aggregat[e] the available bandwidth of the last mile transmission lines”).

For example, when BSD 202B acts as what Challenger refers to as a “master” BSD, it “communicates with other nearby [BSDs] 202A and 202C using wireless communications 204 to increase the bandwidth” available to the end user. *Id.*, ¶[0038], Fig. 2. By sharing the transfer of data over more than one low bandwidth “last mile” telecommunications line, Challenger’s BSDs “allow[] for multiple end user subscribers to take advantage of broadband communications on the Internet.” *Id.*, ¶[0024].

b. [1.1] at least one connection for connecting to a communications network;

As shown in Figure 2 below, each of Challenger’s BSDs 202 is connected to the Internet 104 (claimed *communications network*) via telecommunications line 110 (red), telecommunications provider 102, and link 106 (purple). EX1017, Fig. 2. Each of these links is *at least one connection for connecting to a communications network*, as is the aggregation of these links.

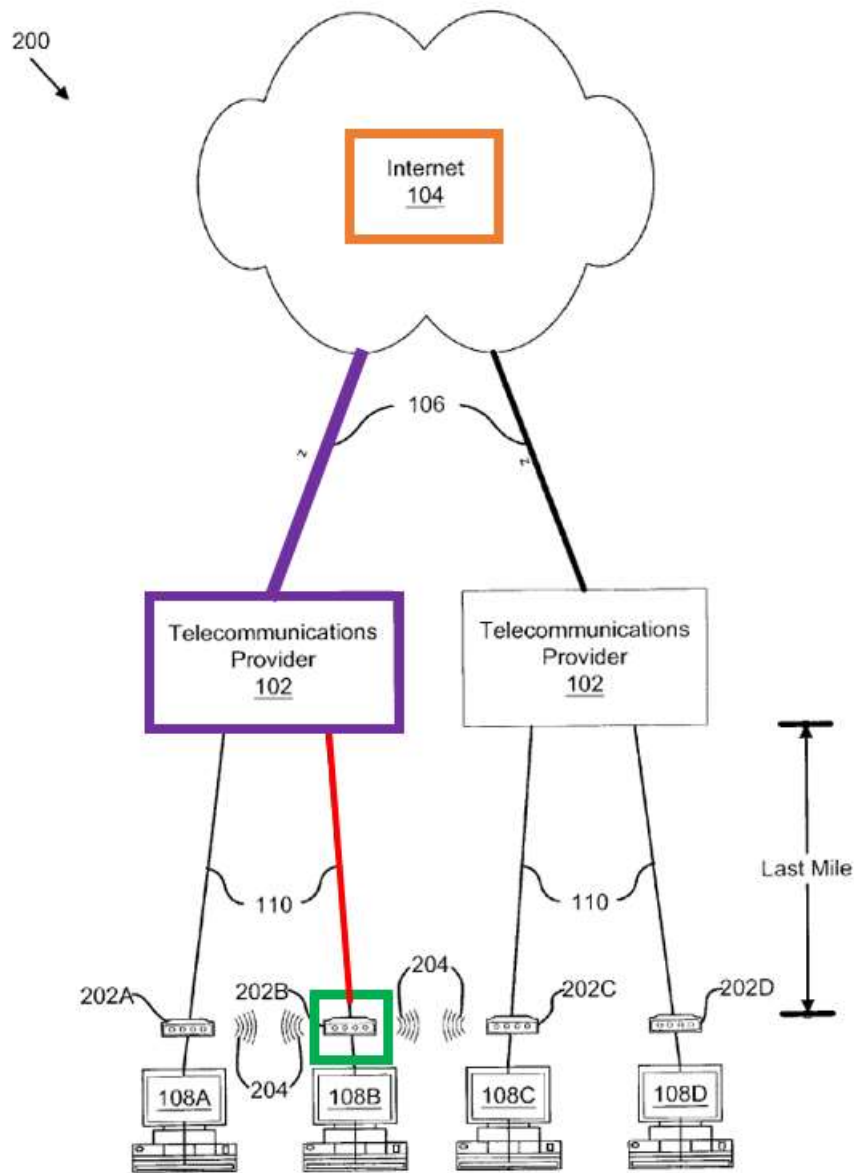


Fig. 2

Id. Fig. 2. Thus, each of Challenger's BSDs has *at least one connection for connecting to a communications network*. EX1017, Figs. 2–3, ¶¶[0034]–[0040].

- c. [1.2] at least one wireless interface for connecting wirelessly to at least one remote communications device; and

Each of Challenger's BSDs comprises a wireless transceiver, as shown in Figure 3.

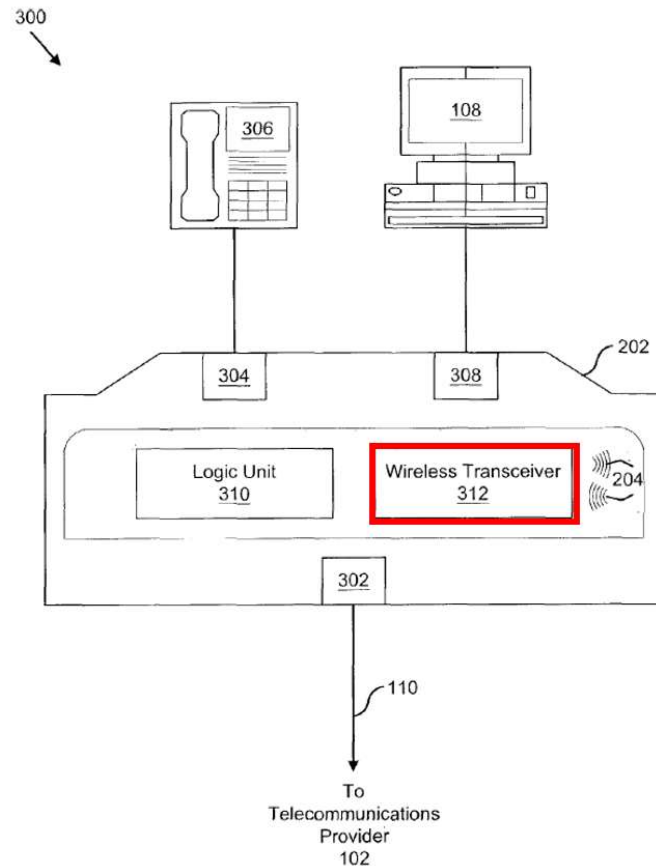


Fig. 3

EX1017, Fig. 3. Each BSD is capable of “operat[ing] in either a master or a slave mode ... in conjunction with a plurality of [BSDs] and associated telecommunications connections.” *Id.* ¶[0017]. Each of Challenger's BSDs is a *remote communications device* when it is acting as a “slave” to a “master” BSD,

because it is typically located remotely from the master BSD and also the Internet server from which it is downloading data. For example, Challenger discloses that the BSDs can be located in different households that have their own last mile telecommunications line, which is the same degree of remoteness shown in Figures 7-9 of the '641 patent. EX1017, ¶[0040] (“The [BSD] 202 includes a telecommunications line connection terminal 302 that allows for physical connection to a telecommunications provider 102 over a last mile telecommunications line 110. *An existing telephone line into a house* or office is representative of the type of last mile telecommunications line 110 that would be connected to the telecommunications line connection terminal 302”); EX1013, 15:6-9 (“When an RCG is first powered up, it monitors its 802.11 interface for a period of time to identify *other RCGs or Neighborhood Access Point devices*, or other Wi-Fi devices *within its transmission area.*”); *id.*, Figs. 7-9.

Challenger also discloses that the BSD operating in master mode “wirelessly communicates with slave bandwidth sharing devices[.]” EX1017, Abstract; ¶[0014] (“[Master BSD] automatically and wirelessly aggregate[s] and arbitrate[s] available bandwidth with a second BSD[.]”); ¶[0017] (“[BSD] operates in master mode”). “The wireless communications 204 are transmitted and received by a wireless transceiver 312.” *Id.*, ¶[0042]; *see also id.*, ¶¶[0020], [0038]-[0041]. This

wireless transmission is identified below in Figure 2 as wireless communication 204 (blue).

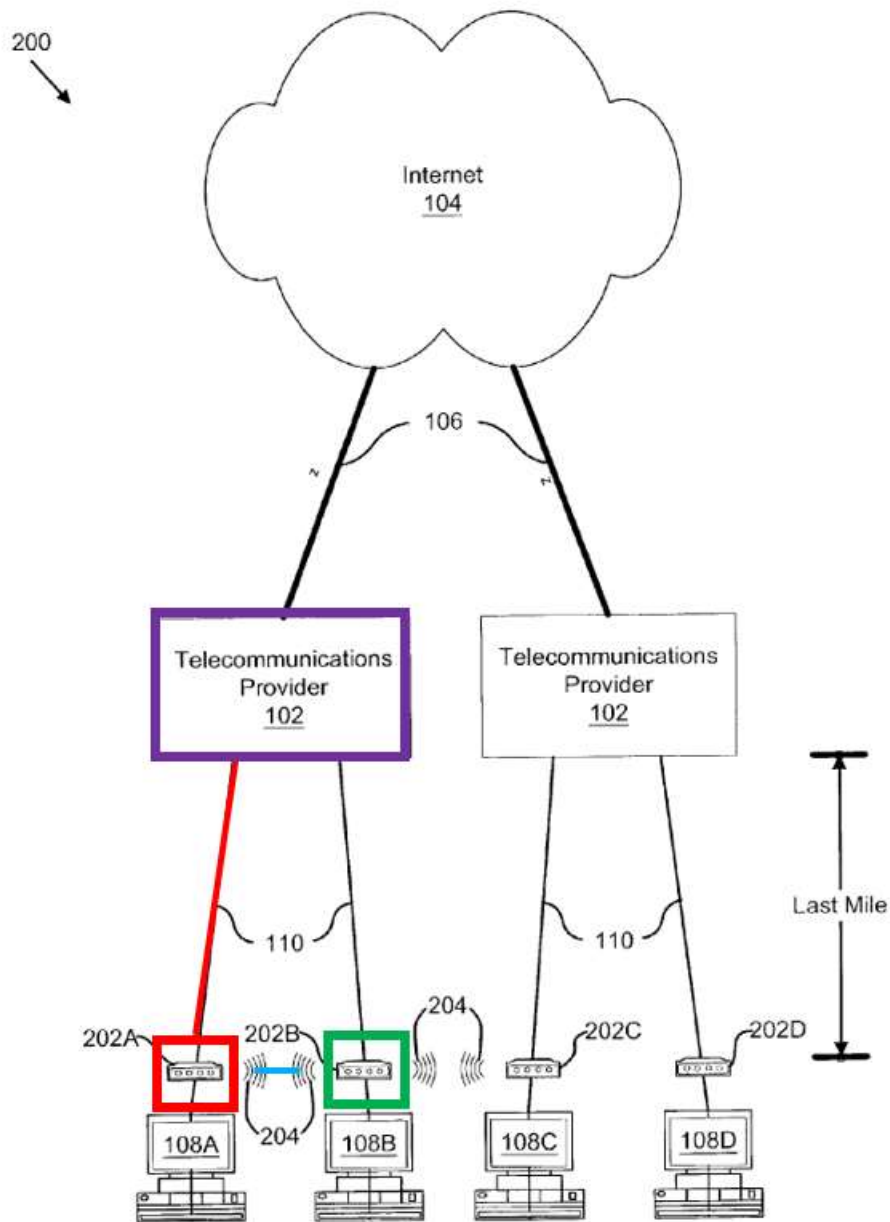
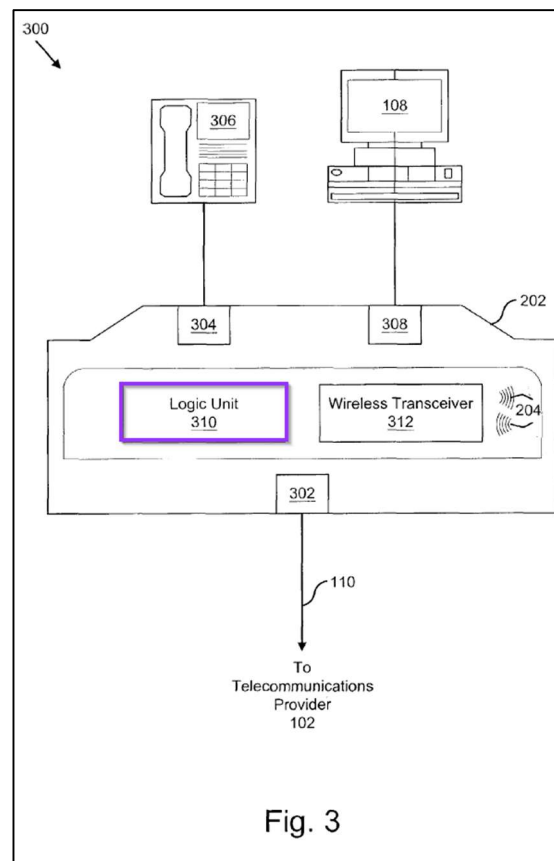


Fig. 2

Id. Fig. 2. The wireless transceiver in the master BSD that facilitates communication 204 satisfies the claimed *at least one wireless interface for connecting wirelessly*.

- d. [1.3.i] a processor that requests the at least one remote communications device to assist in transferring data,

Challener discloses this limitation or renders it obvious. Challener discloses a logic unit (purple) that comprises the claimed *processor* as shown in Figure 3 below.



EX1017, Fig. 3. Challener explains that a BSD is “controlled by a logic unit within the device.” *Id.* ¶[0015]. The logic unit can be “programmed, hardwired, or

otherwise provided within a plurality of modules,” including “a master module 402, a slave module 404, a detection module 406, a bandwidth definition module 408, an arbitration module, a sharing module 410, a pro rata sharing module 412, and a release module 514,” as seen in Figure 4. *Id.* ¶[0043]. Challenger further states that these modules may be “implemented in software for execution by various types of *processors*.” *Id.* ¶[0068].

Challenger also explains that the detection module 406 in logic unit 310 (claimed *processor*) of a master BSD requests other BSDs to assist in transferring data to the master BSD. *Id.* ¶[0047]. It does so when Challenger’s master BSD sends a request to one or more slave BSDs requesting use of a portion of their unused bandwidth. Logic unit 310 (*processor*) has “a plurality of modules,” including a detection module 406. EX1017, ¶[0043], Fig. 3. The master BSD uses the detection module to “detect[] other [BSDs]” that “are not currently in use” and can participate in the multilink connection. *Id.* ¶[0020]. “The detection module 406 is configured to detect the availability of any and all other last mile telecommunications lines 110” such that when a BSD has available bandwidth, in response to a request from the master BSD the slave BSD “employs the slave module 404 *and affirmatively makes known the availability of bandwidth to the requesting bandwidth sharing device 202.*” *Id.* ¶[0047] (emphasis added). Accordingly, Challenger discloses that the master BSD requests other BSDs to

operate in slave mode and return a message with “the amount of bandwidth on the line *that is available* for use by communications with the master [BSD].” *Id.*, ¶[0020] (emphasis added); *see also id.* ¶¶[0017], [0020], [0044]-[0045] (describing configuring a BSD to operate in slave mode). Challenger further explains that when sufficient bandwidth is available at a slave BSD, the master BSD is free to use that bandwidth to receive and transmit packets, *i.e.*, to assist in the transfer of data. *Id.*, Figs. 6 (transmit packets) and 7 (receive packets), ¶¶[0063], [0066]. Thus, the detection module requests assistance from the slave BSDs in transferring data.

- i. *[1.3.ii] sends a request to the at least one remote communications device for availability for participating in a multilink communication,*

Challenger’s master BSD *sends a request to one or more slave BSDs for availability for participating in a multilink communication.* Logic unit 310 (*processor*) has “a plurality of modules,” including a detection module 406. EX1017, ¶[0043], Fig. 3. The master BSD uses the detection module to “detect[] other [BSDs]” that “are not currently in use” and can participate in the multilink communication. *Id.* ¶[0020]. “The detection module 406 is configured to detect the availability of any and all other last mile telecommunications lines 110” such that when a BSD has available bandwidth, in response to a request from the master BSD, the slave BSD “employs the slave module 404 and affirmatively makes known the availability of bandwidth to the *requesting* bandwidth sharing device

202.” *Id.* ¶[0047]. Accordingly, Challenger discloses that the master BSD requests other BSDs to operate in slave mode and return a message with “the amount of bandwidth on the line *that is available*” for the multilink communication. *Id.*, ¶[0020] (emphasis added); *see also id.* ¶¶[0017], [0020], [0044]-[0045] (describing configuring a BSD to operate in slave mode).

Challenger further discloses this limitation through the arbitration process, by which the master BSD requests assistance from slave BSDs and releases them when their assistance is no longer needed. *Id.*, Abstract (describing “frequent and regular arbitration of the bandwidth sharing process.”). Through this process, the master BSDs evaluate the continued availability of slave telecommunications lines. *Id.*, ¶[0056]. They reconfigure the bandwidth sharing depending on availability. *Id.*, ¶[0061]. They then terminate the wireless connection upon receipt of a release signal. *Id.*, ¶[0053]. As such, Challenger discloses this element through the arbitration process.

- ii. *[1.3.iii] if available, sends control information through the at least one remote communications device for participating in a multilink connection,*

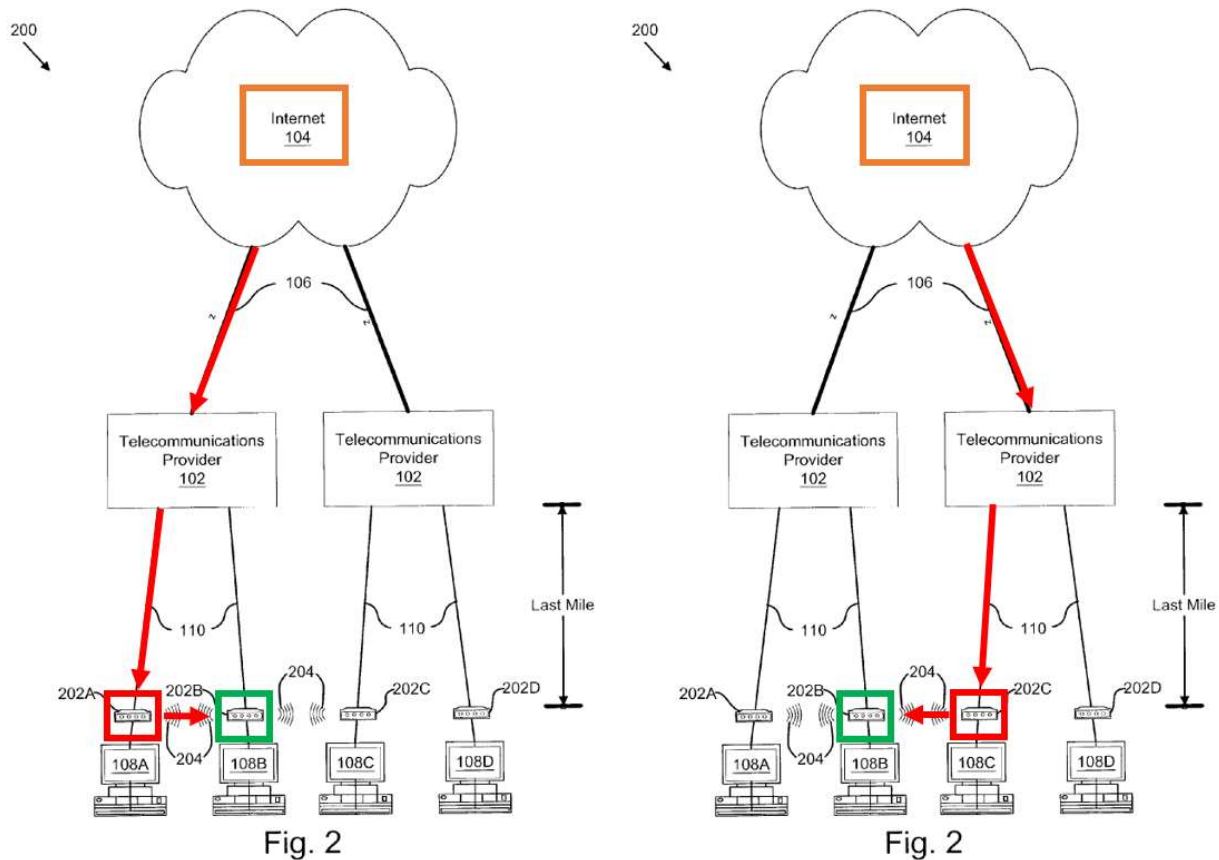
Challenger discloses that the logic unit of the master BSD *if available, sends control information for participating in a multilink connection, e.g., commands and instructions, to the slave BSD to control its operations so that it shares bandwidth with the master BSD where the master BSD is receiving data over a*

connection including multiple physical links. EX1017, ¶[0017] (“The operations of the slave devices are determined by *the commands from the master device*, which is connected to the end user terminal initiating the bandwidth sharing process.”). Challenger notes that if there is no remote communications device available for participating in a multilink communication, no multilink communication occurs. EX1017, Abstract (“Frequent and regular arbitration of the bandwidth sharing process evaluates the continued availability of slave telecommunications lines and either reconfigures the bandwidth sharing depending on bandwidth availability or terminates the wireless connection upon receipt of a release signal.”); Fig. 5 (arbitration occurs *before* sharing of bandwidth); [0061] (“Any changes to the availability of devices and/or bandwidth may require dynamic reconfiguration of the bandwidth sharing system. This is handled through bandwidth sharing arbitration 514.”). As such, Challenger discloses *if available*. Further, as Challenger explains, “the logic unit [is] capable of controlling a sharing of available bandwidth” between the master device and the selected slave device. EX1017, cls. 21, 14–29, ¶¶[0017], ¶¶[0044]–[0045]. The slave devices are “controlled by *instructions from the master device*.” EX1017, ¶[0020]. For example, after a slave BSD receives the control information from the master BSD and employs its slave mode, the master BSD’s sharing module or the pro rata sharing module connects the master and slave devices so that the slave device

shares its available bandwidth with the master device, and thereby participates in a multilink connection with the master BSD where the connection is at least a physical link between the master BSD and the slave BSD and also the master BSD and the Internet. EX1017, ¶¶[0050], [0051], cl. 21.

- iii. *[1.3.iv] receives packets from the at least one remote communications device, and*

Challener discloses that when a master BSD receives information from the Internet—for example, a streaming video from a website—the website generates packets and sends some of the packets to the master BSD and the remaining packets to one or more slave BSDs. EX1017, ¶¶[0065], [0066] (“some of the packets are received 706 by the Master [BSD]s 202 and some are received 708 by the one or more slave [BSD]s 202”), Fig. 7. The slave BSD(s) (“*at least one remote communications device*”) then transmit(s) those remaining packets to the master device, which receives them. *Id.*, ¶[0066] (“The packets received by the slave bandwidth sharing devices 202 are then transmitted 710, preferably wirelessly, to the master[.]”). “The master [BSD] 202 then *receives* 712 and assembles 714 the packets.” *Id.*; *see also id.*, Fig. 7. Figure 2, below, shows exemplary paths in red arrow the packets can take from the internet to slave BSD (remote communications device) (**red**) to the master BSD (communications device) (**green**).



EX1017, Fig. 2.

- iv. *[1.3.v] aggregates the data from the at least one remote communications device with data transfers from the at least one connection to increase data bandwidth for the communications device.*

As shown in Figure 7 reproduced below, the master BSD receives packets from a remote Internet site over its own Internet connection (*at least one connection*) in step 706, receives packets from a slave BSD (*remote communications device*) in step 712, and then *aggregates* those packets in step 714. EX1017, Fig. 7; ¶[0066] (the master BSD “assembles 714 the packets”).

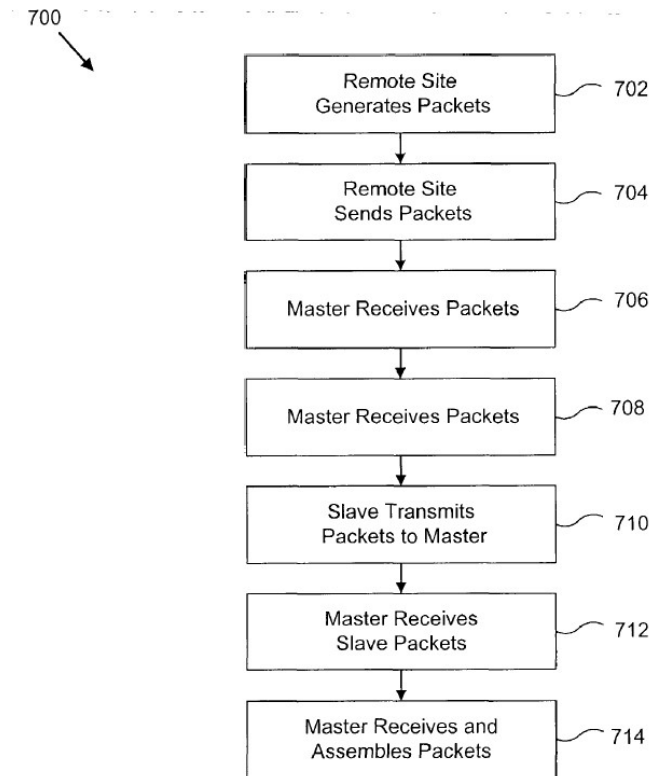


Fig. 7

EX1017, Fig. 7.⁴

Challener also discloses the *to increase data bandwidth for the communications device* portion of this limitation. Challener discloses a “method and apparatus for sharing bandwidth among a plurality of end users” to “increase[] the bandwidth available to each user.” EX1017, Abstract; *see also id.* ¶¶[0024], [0038], [0046]. Challener discloses that sharing bandwidth by two devices operates

⁴ Figure 7 contains a typographical error. Based on paragraph [0066] of Challener, step 708 in Figure 7 should read “Slave Receives Packets.”

to “increase the bandwidth” to the end user because packets are sent over more than one “last mile” communications lines. *Id.*, ¶¶[0038], [0046]. This is illustrated in Figure 2 below with orange, blue, and green packets being transmitted over various connections and aggregated at 202B:

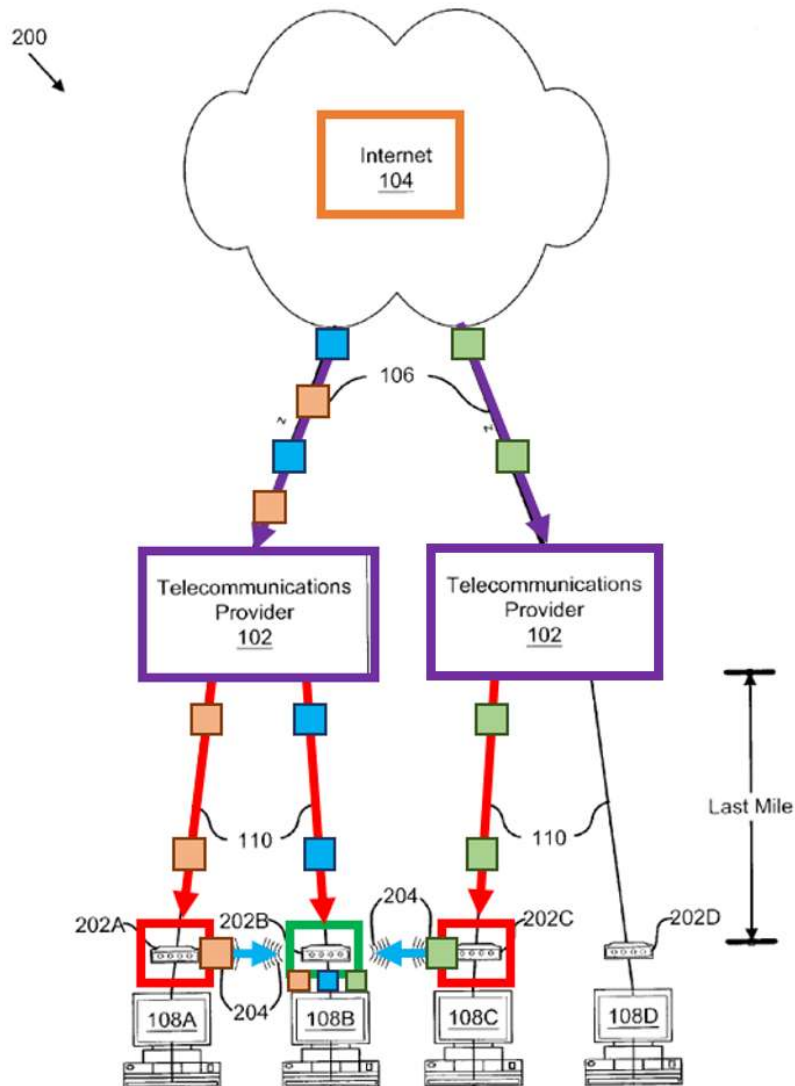


Fig. 2

Id. Fig 2. Challenger’s aggregation “increase[s] the bandwidth available at end user terminal 108B.” *Id.*, ¶[0038]; *see also id.*, ¶[0046] (“[T]he Internet 104 communications originating from the end user terminal 108B benefits from increased bandwidth available through the aggregation of last mile telecommunications lines 110 connected to the [BSDs].”), cl. 13 (“[BSD] for aggregating available bandwidth”), cls. 18, 19, 21 (“first [BSD] operating in a master mode and capable of aggregating available bandwidth . . . via wireless communications”), cls. 22-23 (“means for sharing the available bandwidth . . . via wireless communications”).

2. Dependent Claim 2

[2] The communications device of claim 1, wherein the at least one remote communications device is at least one of a residential communications gateway, a cable modem, a digital subscriber line, a wireless device, a neighborhood access point device, a Wi-Fi device and a cellular phone

Challenger discloses that its BSDs, including its slave BSDs, are *wireless devices*. EX1017, Abstract, ¶¶[0014], [0020]-[0021]. Challenger also discloses that its BSDs can operate in accordance with the 802.11 WiFi standards, and therefore they are also *WiFi devices*. *Id.*, ¶[0039]. EX1001, ¶47. Additionally, each of the additional enumerated devices were well known in the art and it would have been obvious to use any of the claimed devices as the communications device of claim 1. EX1001, ¶47.

3. Dependent Claim 3

[3] The communications device of claim 1, wherein the communications network is at least one of a public wired network, a private wired network, a public wireless network, and a private wireless network.

Challener discloses last mile telecommunications lines 110 connected to telecommunications providers 102 that connect to the Internet 104 via broadband telecommunications lines 106. EX1017, ¶[0034], Fig. 2. The Internet is the amalgamation of multiple interconnected networks and includes public wired networks, private wired networks, a public wireless network, and private wireless networks. *Id.*, ¶[0046]; Ex. 1057 at 9-16, 52; EX1001, ¶48. Accordingly, by connecting to the internet, Challener's BSD connects to each of the claimed communications networks. *Id.*

Further, telecommunications providers provide private network connections to their users. A POSITA would have known that telecommunication providers frequently assigned private addresses to end user terminals and would operate a private network despite being connected to the Internet. EX1001, ¶49. Challener's communications network through telecommunications providers is through last mile connections 110, which are part of a telecommunications provider's private wired network and only accessible to subscribers (*i.e., private*). EX1017, ¶¶[0012], [0024]. Thus, Challener renders obvious the claimed communications network through the telecommunications provider being a private network. EX1001, ¶49.

Challener discloses that end users were commonly connected to telecommunications providers via copper transmission lines. EX1017, ¶¶[0006], [0035]. Accordingly, Challener renders obvious the first network being at least a private wired network. EX1001, ¶49.

Finally, Challener discloses a wireless network between end user terminal 108 and BSD 202. EX1017, ¶[0039]. Accordingly, Challener also renders obvious the first network being at least private wireless network or a private wired network. EX1001, ¶50.

B. Ground II: Claims 1-3 Are Obvious in View of Kotzin

1. Independent Claim 1

- a. [1.pre] a communications device that is capable of providing broadband communications services, comprising:*

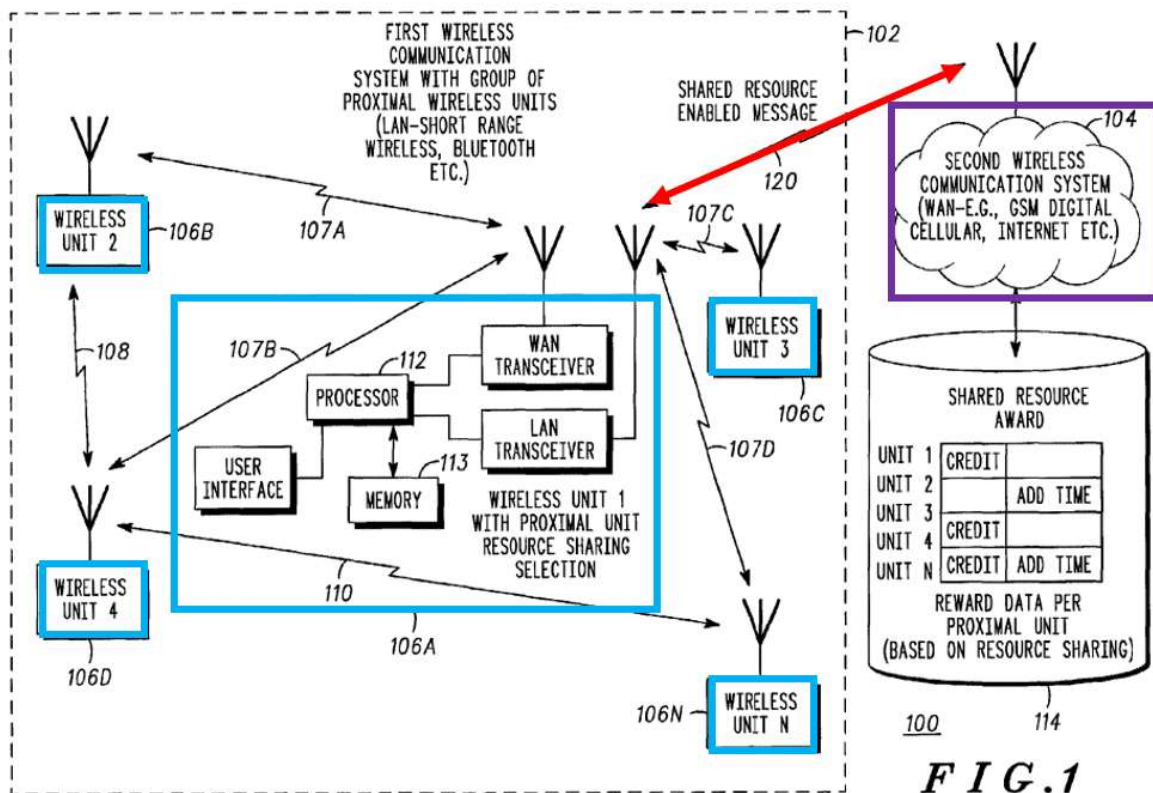
Kotzin discloses *a communications device that is capable of providing broadband communications service*, namely any of Kotzin’s wireless units 106.

Kotzin discloses a plurality of wireless units that use short-range wireless system 102 (e.g., an 802.11 WiFi network) for sharing (*i.e.*, aggregating) their bandwidth for use by one of the wireless units, for example Unit 106A, when communicating with external network 104, such as the Internet. EX1018, Abstract, ¶[0024]. Kotzin’s wireless units connect with each other wirelessly so units “receive portions of the communication on behalf of the destination wireless apparatus 106 *a*” from the external network, resulting in higher effective

bandwidth for Unit 106A. *Id.* ¶[0035]; *see also id.* ¶¶[0028], [0031], Fig. 4. The external network is described by Kotzin as “a wireless wide area network (WAN) communication system 104 such as a digital cellular communication system, the Internet, or any other suitable communication system.” *Id.* ¶[0022].

b. [1.1] at least one connection for connection to a communications network;

Kotzin discloses or renders obvious this limitation in multiple ways. For example, the claimed *connection* is met by wireless link 120 (red) shown in Kotzin’s Figure 1 below, which connects Kotzin’s wireless units (blue) to a wide area network 104 (purple) such as the Internet.

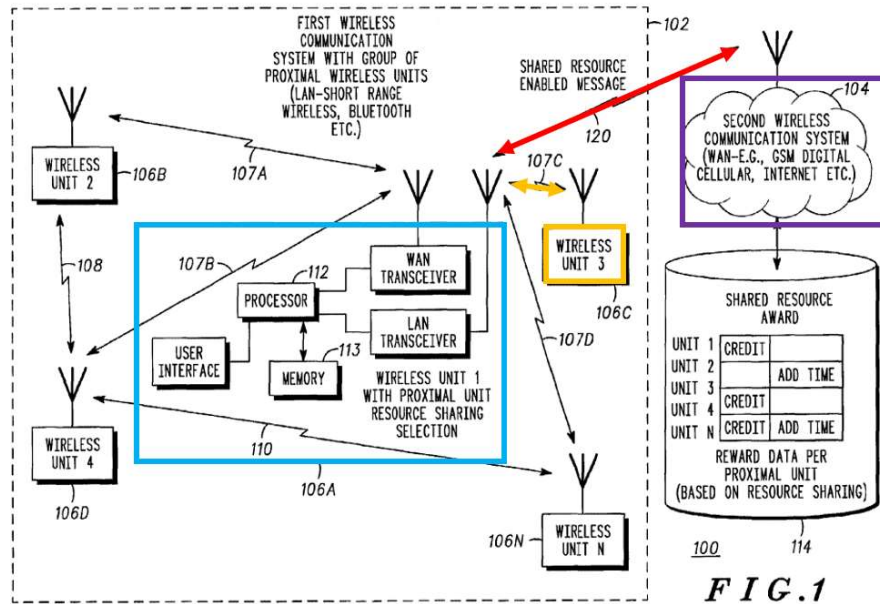


EX1018, Fig. 1. Kotzin teaches that:

the wireless unit 106a, if it has available bandwidth, may communicate information destined for wireless unit 106c as communicated over link 120 by the wide area network 104 to the wireless unit 106a. In a reverse direction, if the wireless unit 106c does not have enough available bandwidth to communicate all of its information directly with the wide area network 104, the wireless unit 106c may communicate information destined for the wireless wide area network 104 to the wireless unit 106a which may then transmit the information to the wide area network 104 [over link 120] on behalf of the wireless unit 106c.

EX1018, ¶[0023]. Kotzin discloses that wide area network 104 is a *communications network* such as the Internet or a cellular network. *Id.*, ¶[0022].

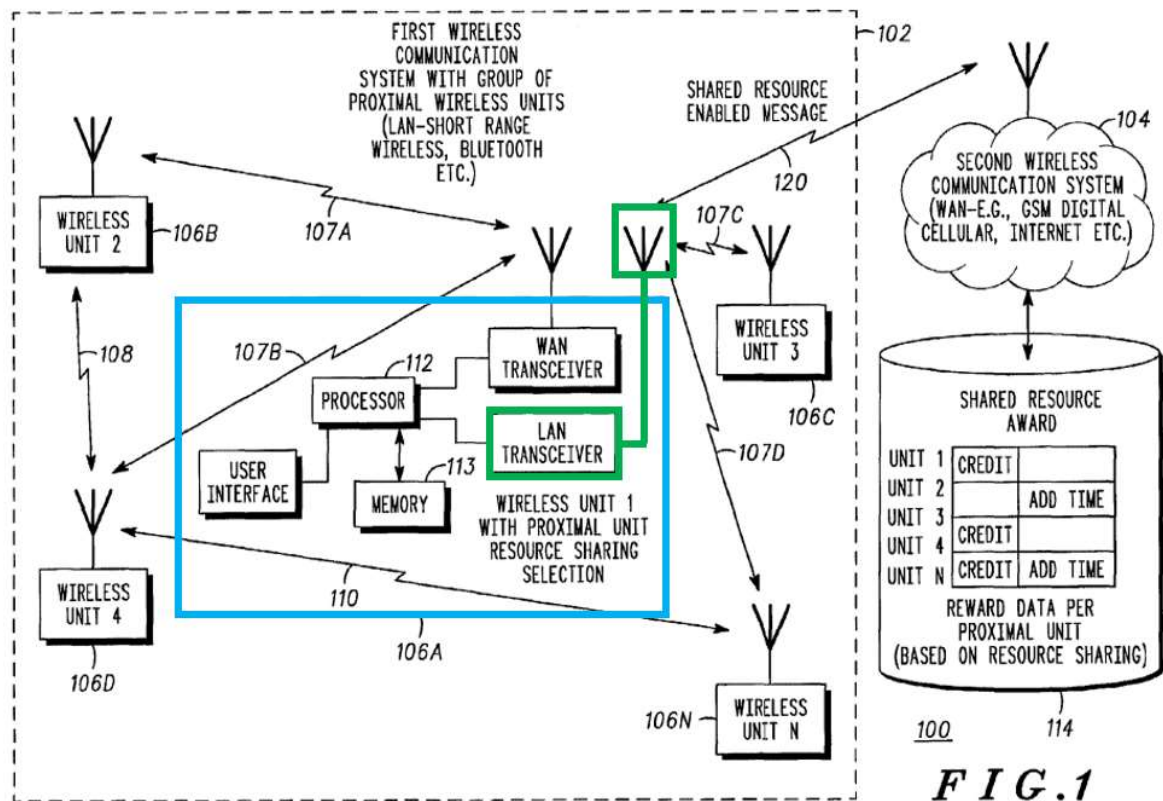
The claimed *at least one connection for connection to a communications network* is also met by the wireless connection between two wireless units when one wireless unit is connecting to the Internet through the other. For example, in the above excerpt from paragraph 23 of Kotzin and as shown below, Kotzin teaches that wireless unit 106C (orange) may connect to the Internet or other external network 104 (purple) through another wireless unit, for example 106A (blue), which is connected to the Internet over link 120 (red).



EX1018, Fig. 1. 106C's connection to 106A is therefore a *connection to the Internet (i.e., a communications system)*.

- c. [1.2] *at least one wireless interface for connecting wirelessly to at least one remote communications device; and*

Kotzin's wireless units have wireless interfaces for communicating with other devices. For example, and focusing hereinafter on wireless unit 106A as an example of the preamble's "communication device," Kotzin's wireless unit 106A (blue) has a wireless LAN transceiver depicted in Figure 1 (green) for connecting wirelessly with wireless units 106B, 106C, ... 106N, which each have their own transceivers.

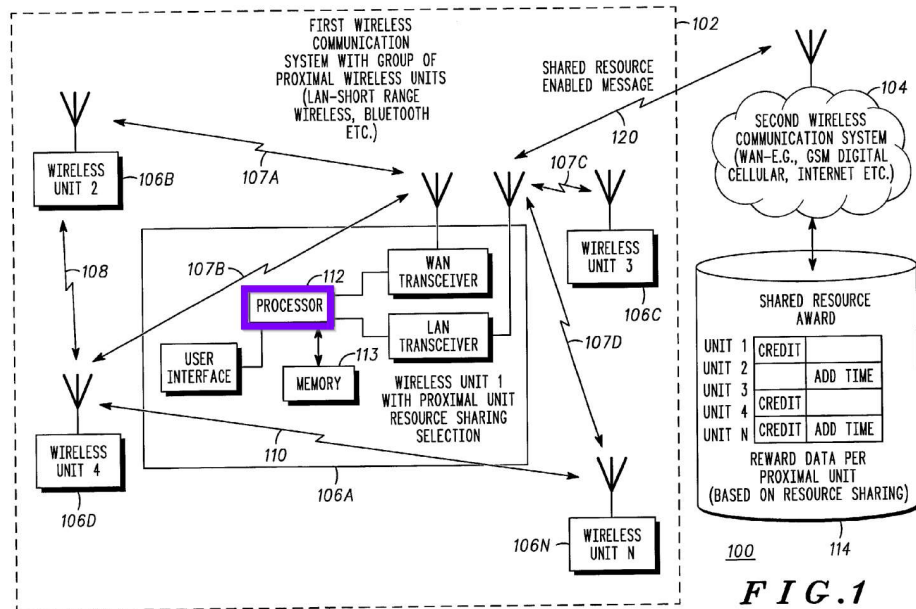


EX1018, ¶[0022], Fig. 1. These other wireless units are *remote communications devices* because they can communicate with remote computers and other devices on external network, including the Internet. The '641 patent explains that the term “remote” refers to a computer located on the Internet, not the distance between the communication devices that share bandwidth with each other. EX1005, 12:5-9. Further, the '641 patent does not impose any distance requirement as to the term “remote.” See EX1005. A reading of the '641 specification indicates that bandwidth-sharing communication devices can be spaced apart—for example, in different households—as long as the devices are within wireless communication

range of each other. *See, e.g., id.*, 11:28-59, Figs. 7-9. Similarly, Kotzin teaches that its wireless units can be physically spaced apart from each other, as long as they are within wireless communications range for whichever wireless technology is used to connect them, for example 802.11 or Bluetooth. EX1018, ¶¶[0003], [0022]. “Each of the wireless units 106a-106n ... includes both a wireless local area network communication transceiver, such as a Bluetooth™-based transceiver, and a wireless wide area network transceiver, such as a CDMA cellular transceiver.” EX1018, ¶[0022]; *see also id.* Fig. 1. Accordingly, Kotzin’s devices disclose an interface for connecting wirelessly to at least one remote communications device, *i.e.*, the other units in the LAN.

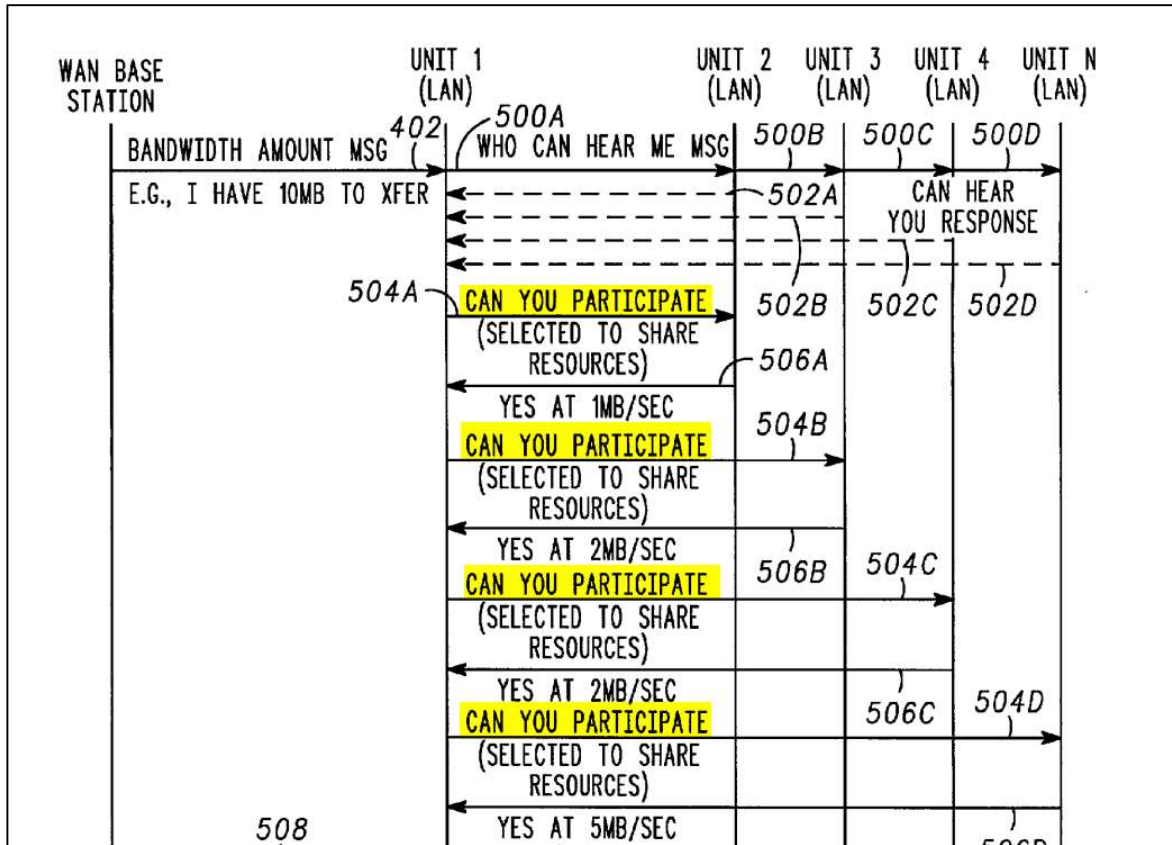
d. [1.3.i] a processor that requests the at least one remote communications device to assist in transferring data,

Kotzin’s wireless unit 106A has a *processor* 112 (purple) “such as a digital signal processor, microprocessor, discrete logic or any other suitable circuitry that provides the proximal unit resource sharing selection.”



EX1018, ¶[0023], Fig. 1. Kotzin’s *processor* is responsible for the bandwidth sharing functionality of its wireless units, including requesting that wireless units 106B...N *assist in transferring data*. EX1018, ¶[0023]. It does so by *requesting use of a portion of unused bandwidth* of wireless units. EX1018, ¶[0037]-[0038].

For example, Kotzin teaches procedures for setting up resource sharing on behalf of unit 106A. See EX1018, Figs. 4-6, ¶[0037], [0038]. Kotzin teaches that Unit 106A—depicted as UNIT 1 in Figure 5 below—sends a “shared resource participation query” (message 504A) to UNIT 2 asking whether UNIT 2 can participate in a multilink communication by sharing its unused bandwidth. Kotzin’s UNIT 1 sends similar request to UNITS 3, 4, and N (messages 504B, 504D, and 505C).



Id., Fig. 5 (yellow), ¶[0037]. These shared resource participation queries request assistance in transferring data on behalf of UNIT 1. *Id.*, ¶¶[0037]-[0038].

Thus, a POSITA would have understood that Kotzin's processor 112 is a processor that, among other things, requests that other wireless units provide assistance in transferring data to wireless unit 106A. EX1001, ¶51.

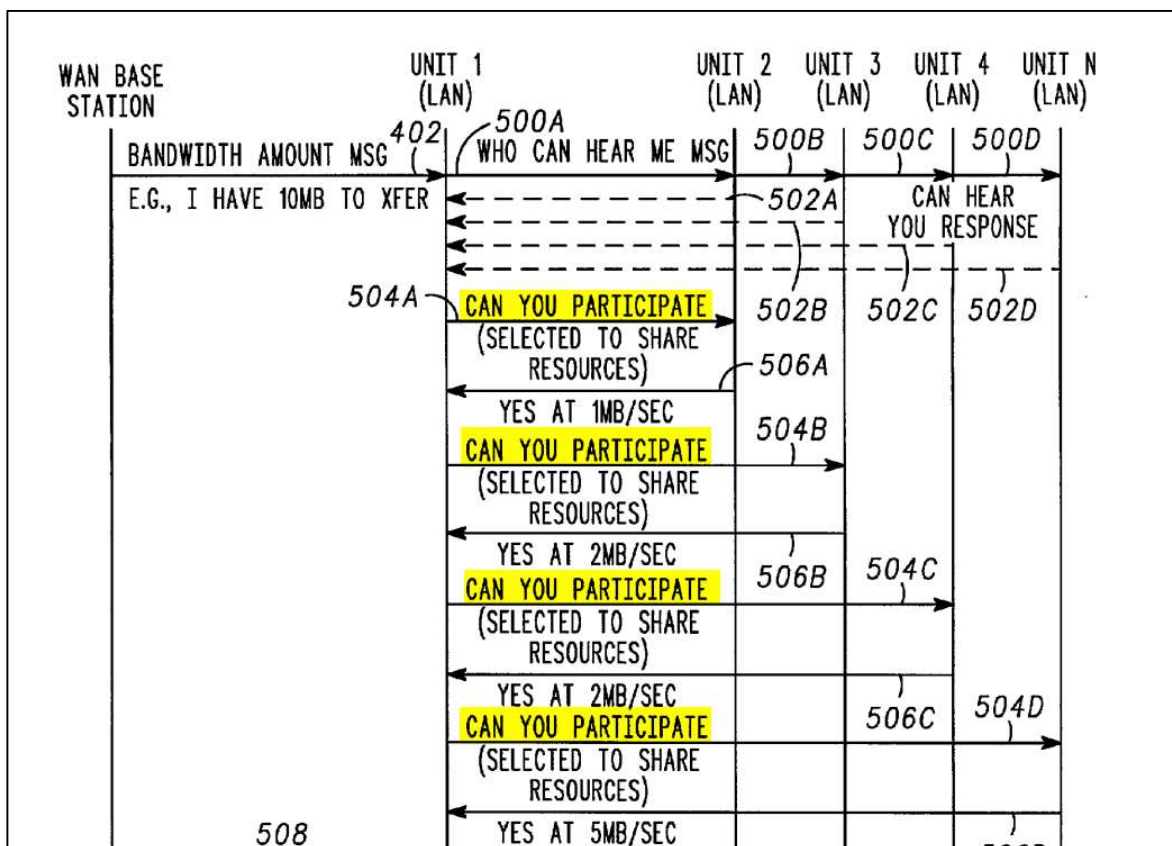
- i. [1.3.ii] sends a request to the least one remote communications device for availability for participating in a multilink communication,

Kotzin discloses that a wireless unit, for example wireless unit 106A, seeking to use the available bandwidth from other wireless units *sends a request* to the other wireless units that requests assistance in transferring data to wireless unit

106A, and does so *for availability for participating in a multilink communication*.

EX1011, ¶¶[0037]-[0038].

For example, Kotzin teaches procedures for setting up resource sharing on behalf of unit 106A. *See* EX1018, Figs. 4-6, ¶¶[0037], [0038]. Kotzin teaches that unit 106A—depicted as unit 1 in Figure 5 below—sends a “shared resource participation query” (message 504A) to unit 2 asking whether unit 2 can participate in a multilink communication by sharing its unused bandwidth. Kotzin’s unit 1 sends similar request to units 3, 4, and N (messages 504B, 504D, and 505C).



Id., Fig. 5 (yellow), ¶[0037]. These shared resource participation queries request other units' *availability for participating in a multilink communication*. *Id.*, ¶¶[0037]-[0038].

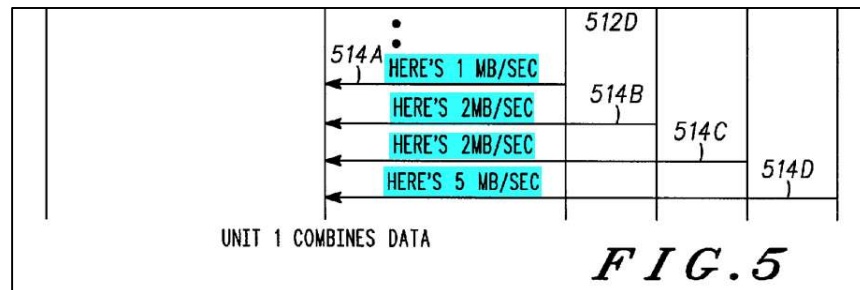
- ii. *[1.3.iii] if available, sends control information through the at least one remote communications device for participating in a multilink connection,*

Kotzin discusses only engaging in a multilink communication if at least one device is available, and as such, Kotzin discloses *if available*. [0037] (Only “[o]nce the wireless apparatus 106a has located other proximal wireless units” does “the wireless apparatus 106a send[] additional shared resource participation queries 504a-504d”); Fig. 5 (illustrating multilink connection continues only after voluntary participation by remote communications devices). Further, messages 510A, B, C, and D depicted in Figure 5 are control messages sent by UNIT 1 that tell the UNITS 2, 3, 4, and N the amount of bandwidth they are to share with UNIT 1. EX 1018, Fig. 5, ¶[0040]; EX1001, ¶52. A POSITA would have understood and found obvious that messages 510 are control messages because they do not carry data, but rather information that tells the other units how much bandwidth they are to share with UNIT 1. EX1001, ¶52. A POSITA would have understood and found obvious that a message carrying information that merely directs other devices but that does not in itself transmit data constitutes a control message. *Id.* Further, messages 510A, B, C, and D set up a multilink transfer, because the multiple links

to external network 104 will be used to transfer data to and from UNIT 1. EX1018, Fig. 5, ¶[0040]; EX1001, ¶52.

- iii. *[1.3.iv] receives packets from the at least one remote communications device, and*

UNIT 1 receives data packets from each of the other units, which are *remote communications devices* for the reasons discussed above. For example, in step 512B of Figure 5, an Internet server on external network 104 sends 1MB/SEC of data to UNIT 2. EX1018, Fig. 5 (blue). And, in step 514A, UNIT 2 forwards 1MB/SEC of data to UNIT 1. *Id.* In steps 514C-D, UNITS 3, 4, and N also forward data to UNIT1 if they were selected to share bandwidth.



Id. Fig. 5 (message 514). This is further depicted in Figure 4 which shows wireless unit 1 (blue) receiving data directly from network 104 (green) as well as receiving data via wireless connections 514 with a plurality of remote devices Units 2-n (orange) within the local area network 102 (purple).

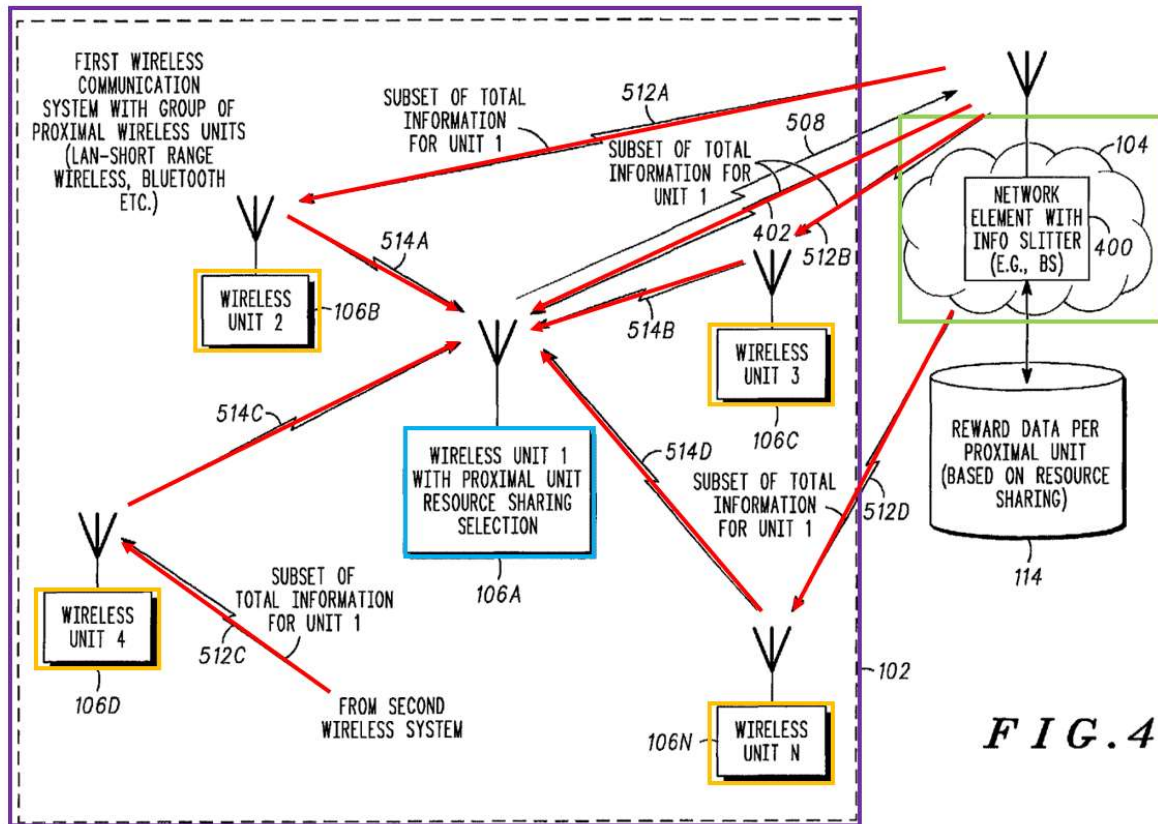


FIG. 4

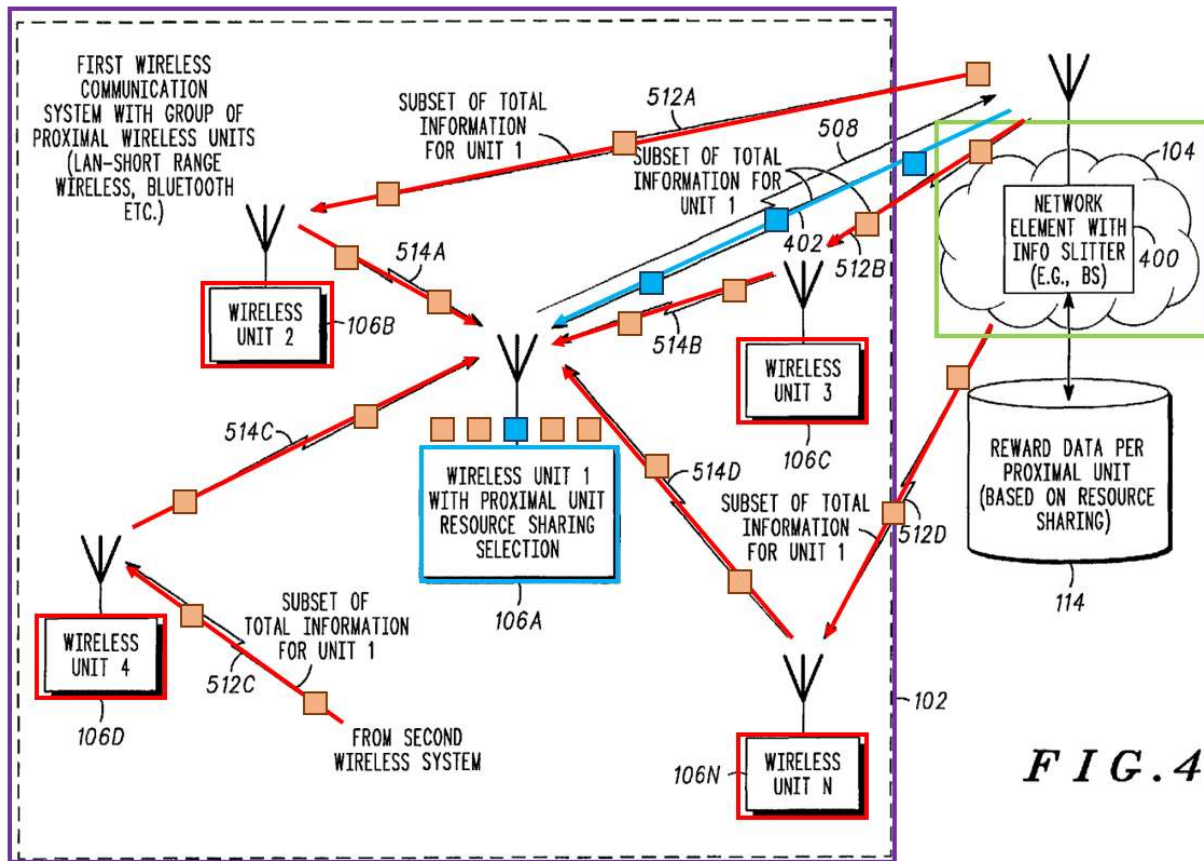
Id. Fig. 4, ¶¶[0035]–[0041].

Kotzin further discloses or renders obvious communications between wireless units that are packet-based. EX1001, ¶54. Kotzin discloses digital data communications, which a POSITA would recognize are packet-based. *Id.* Kotzin also discloses that its wireless units can communicate using the IEEE 802.11 and Bluetooth protocols, which use packet-based communications. EX1018, ¶[0022]; EX1001, ¶54. Kotzin also discloses that its wireless units communicate with Internet Web servers, which a POSITA would have known use data packets based on the TCP/IP protocol, which uses packets. EX1018, ¶[0035]; EX1001, ¶54. Kotzin further discloses that its wireless units can communicate with a GSM or

CDMA network, which a POSITA would have known also use packet-based communication. EX1018, ¶[0034]; EX1001, ¶54.

- iv. *[1.3.v] aggregates the data from the at least one remote communications device with data transfers from the at least one connection to increase data bandwidth for the communications device.*

Kotzin discloses this limitation or renders it obvious, both in the scenario where the claimed network connection element is UNIT 1's connection to the Internet (network 104) over wireless link 402, and where the claimed network connection is UNIT 1's connection to the Internet through another wireless unit, such as UNIT 2, over connection 514 in LAN 102. Kotzin repeatedly discloses that UNIT 1 *aggregates the data* received from Units 2, 3, 4, and N with the data it receives directly from the Internet 104. EX1018, Figs. 4–5, ¶[0035]. Kotzin explains that “the wireless apparatus *106a itself may also participate in receiv[ing] a portion of the message destined for it*” and depicts this aggregation in Figure 4. *Id.* ¶[0039]. Figure 4, reproduced below, shows the aggregation of data received from the connection (blue) with data from remote communications devices (red).



Id., Fig. 4, ¶[0039]. Kotzin explains that the UNIT 1 (106a) can direct the base station or Internet server as to how “to split the portions of message so that apparatus 106a knows how to combine the message 514a-d” received from the other remote units. *Id.* ¶¶[0039]–[0041]. Thus, in situations where UNIT 1 is receiving packets directly from the Internet in addition to packets from the other wireless units, UNIT 1 aggregates those packets to retrieve the overall communication. Because multiple parallel links are being used by UNIT 1, the total overall bandwidth increases.

This element is also met when UNIT 1 is itself not receiving packets directly from the Internet 104. In that scenario, the claimed *at least one connection* is UNIT 1's Internet connection through UNIT 2, for example, and the *at least one remote communications device* is any of UNITS 3, 4, or N that may also be participating in the multilink data transfer.

2. Dependent Claim 2

- a. [2] *The communications device of claim 1, wherein the at least one remote communications device is at least one of a residential communications gateway, a cable modem, a digital subscriber line, a wireless device, a neighborhood access point device, a Wi - Fi device and a cellular phone.*

Kotzin's wireless units (the claimed *at least one remote communications device*) are *wireless devices*. EX1018, ¶[0022] ("The wireless local area network communication system 102 includes a plurality of wireless units 106a-106n, such as an Internet appliance, radiotelephone appliance, including, but not limited to, hand held apparatus, laptop computers, desk top computers, or any other suitable wireless communication apparatus"). Further, each of the devices comprises a transceiver to communicate with a second wireless communication system, including a cellular system. EX1018, Fig. 1, ¶[0022] (using a CDMA cellular transceiver). Accordingly, the communications device may also be a cellular phone, which Kotzin calls a "radiotelephone appliance." *Id.* Additionally, each of the devices comprises a Wi-Fi device as each can wirelessly connect to the Internet

using the 802.11 protocol. *Id.* ¶[0022]. Finally, each of the additional enumerated devices were well known in the art and it would have been obvious to use any of the claimed devices as the communications device of claim 1. *See* EX1001, ¶47.

3. Dependent Claim 3

- a. [3] The communications device of claim 1, wherein the communications network is at least one of a public wired network, a private wired network, a public wireless network, and a private wireless network.*

Kotzin discloses the additional limitation of claim 3. Kotzin discloses that each UNIT may communicate with the Internet, for example. EX1018, ¶[0022]. The Internet comprises each of the claimed network types. *See* §VII.A.3; EX1001, ¶55. Kotzin also discloses external network 104 can be a CDMA or GSM network, which is a typically a *private wireless network* maintained by a cellular service provider. EX1011, ¶[0034]; EX1001, ¶55. Further, a POSITA would have known that the LAN between the wireless devices would have been either a private or a public wireless network. EX1001, ¶55.

VIII. SECONDARY CONSIDERATIONS

Petitioner is unaware of any evidence of alleged secondary indicia that would support non-obviousness of the '641 patent. To the extent Patent Owner subsequently presents such evidence, Petitioner respectfully requests the right to respond.

IX. MANDATORY NOTICES

As set forth below and pursuant to 37 C.F.R. § 42.8(a)(1), the following mandatory notices are provided as part of this Petition.

A. Real Party in Interest Under 37 C.F.R. § 42.8(b)(1)

Red Hat, Inc. is the real party in interest for Petitioner.

B. Related Matters

Red Hat has filed a complaint for declaratory judgment in *Red Hat, Inc. v. Competitive Access Systems, Inc.*, 5-24-cv-00505-D-BM. This case may affect, or be affected by, decisions in these proceedings.

C. Lead and Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Pursuant to 37 C.F.R. § 42.8(b)(3), Petitioner provides the following designation of counsel:

Lead Counsel	Back-Up Counsel
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Lead Counsel	Back-Up Counsel
	<p>vice admission) bhbrown@kirkland.com 555 California Street, Suite 2700 San Francisco, CA 94104 Phone: (415) 439-1400 Fax: (415) 439-1500</p> <p>W. Todd Baker (Reg. No. 45,265) todd.baker@kirkland.com 1301 Pennsylvania Ave., N.W. Washington, D.C. 20004 Phone: (202) 389-3135 Fax: (202) 389-5200</p>

A. Service Information Under 37 C.F.R. § 42.8(b)(4)

Red Hat concurrently submits a Power of Attorney, 37 C.F.R. § 42.10(b), and consents to electronic service by email at Red_Hat_III@kirkland.com.

X. PAYMENT OF FEES UNDER 37 C.F.R. § 42.103

The undersigned authorizes the Office to charge the fee set forth in 37 C.F.R. § 42.15(a)(1) for this Petition to Deposit Account No. 506092, consistent with the requested review of three claims, and any additional fees that may be due in connection with this Petition to be charged to the above-referenced deposit account.

XI. GROUNDS FOR STANDING UNDER 37 C.F.R. § 42.104(A)

Petitioner hereby certifies that the '641 patent is available for IPR and that the Petitioner is not barred or estopped from requesting IPR challenging the

Challenged Claims on the grounds identified herein. Neither Petitioner, nor any party in privity with Petitioner: (i) has filed a civil action challenging the validity of the Challenged Claims; (ii) has been served a complaint alleging infringement of the '641 patent more than one year prior to the present date; or (iii) is estopped from challenging the claims on the grounds identified in the petition. The Challenged Claims also have not been the subject of a prior IPR or a finally concluded district court litigation.

XII. DISCRETIONARY DENIAL IS NOT APPROPRIATE

Petitioner respectfully submits that discretionary denial is unwarranted in this case. The '641 patent has not been subject to any prior IPR or PGR petitions. Accordingly, this is not a “follow-on” petition, and there is no basis for the Board to exercise its discretion under 35 U.S.C. §314(a) and 37 C.F.R. §42.108(a). *Gen. Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 (P.T.A.B. Sept. 6, 2017). Petitioner has filed only this single petition challenging the claims of the '641 patent and, therefore, has not imposed a substantial or unnecessary burden on the Board. *See* Trial Practice Guide Update (July 2019).

Furthermore, Petitioner's declaratory judgment complaint does not seek a judgment of invalidity and the declaratory judgment proceeding is in its early stages. As a result, there are no concerns of system inefficiencies or fairness due to

parallel invalidity proceedings. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 6 (P.T.A.B. Mar. 20, 2020) (precedential).

To the extent Patent Owner contends that discretionary denial is appropriate for any reason, Petitioner intends to oppose such arguments pursuant to the bifurcated briefing process set forth in the March 26, 2025 Stewart Memorandum.

XIII. CONCLUSION

Petitioner requests *inter partes* review of the Challenged Claims; there is a reasonable likelihood that Petitioner will show that they are obvious.

Dated: August 5, 2025

Respectfully submitted,

/Todd M. Friedman/

Todd M. Friedman (Reg. No. 42,559)

Attorneys for Petitioner Red Hat, Inc.

CERTIFICATE OF COMPLIANCE

This Petition complies with the type-volume limitations as mandated in 37 C.F.R. § 42.24, totaling 7,622 words. Counsel has relied upon the word count feature provided by Microsoft Word.

/Todd M. Friedman/

Todd M. Friedman (Reg. No. 42,559)

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing document with accompanying exhibits, as listed in Petitioner's Exhibit List, will be served on August 6, 2025, via overnight delivery directed to the attorney/agent of record for the patent as identified on USPTO Patent Center at the following address:

The Law Office of Clay McGurk
P.O. Box 1488
Orange, CA 92856

A courtesy copy is also being served via electronic mail and FTP on August 5, 2025 on the attorneys of record listed below for the following related matter:

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