

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

REOLINK INNOVATION INC.
and
SHENZHEN REOLINK TECHNOLOGY CO., LTD.,
Petitioner,

v.

THROUGHTTEK CO., LTD.,
Patent Owner.

IPR2024-01192
Patent 9,774,916

Before MICHAEL J. STRAUSS, DAVID C. McKONE, and
SHEILA F. McSHANE, *Administrative Patent Judges*.

STRAUSS, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Reolink Innovation Inc. and Shenzhen Reolink Technology Co., Ltd. (collectively, “Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–10 and 16 (the “challenged claims”) of U.S. Patent No. 9,774,916 (Ex. 1002, “the ’916 patent”). Throughtek Co., Ltd. (“Patent Owner”) did not file a preliminary response to the Petition. *See* Paper 3, 1.

Institution of an *inter partes* review is authorized by statute when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). Upon consideration of the Petition and the evidence of record, we determine that Petitioner has established a reasonable likelihood of prevailing with respect to the unpatentability of at least one claim of the ’916 patent. Accordingly, for the reasons that follow, we institute an *inter partes* review of claims 1–10 and 16 of the ’916 patent.

A. Real Parties-in-Interest

Petitioner identifies itself, Reolink Innovation Inc., and Shenzhen Reolink Technology Co., Ltd., as the real parties-in-interest. Pet. 80. Patent Owner identifies itself, Throughtek Co., Ltd., as the real party-in-interest. Paper 5, 2.

B. Related Matters

Petitioner states “[t]he ’916 patent is the subject of [a] civil action [in the United States District Court of Delaware] captioned *ThroughTEK Co. Ltd. v. Reolink Innovation Inc.*, Case No. 1-24-cv-00169 (D. Del.).” Pet. 80.

Patent Owner identifies the same district court action as a related matter.
Paper 5, 2.

C. The '916 Patent

1. Effective Filing Date of the '916 Patent

The '916 patent is titled “Information Concentrating Center Capable of Making P2P Connections with Remote Client Devices” and issued on September 26, 2017, from patent application No. 14/591,008 filed January 7, 2015. Ex. 1001, codes (10), (21), (22), (45), (54). The '008 application became the '916 patent which claims the benefit of provisional application No. 61/924,240, filed on Jan. 7, 2014. *Id.*, code (60).

Petitioner contends the challenged claims of the '916 patent “recite multiple limitations that were disclosed no earlier than the January 7, 2014 filing of the provisional application, and are therefore entitled to a priority date no earlier than January 7, 2014.” Pet. 7 (“Effective Filing Date of the Challenged Claims”). In particular, Petitioner asserts that claim 1’s elements [1a]–[1c] were not disclosed in “the earlier continuations-in-part patent cases, and instead the first (arguable) mention of any electronic device ‘for concentrating information’ that also has an ‘interface of connecting to a television for viewing said information’ was not until FIGS. 1–3 of the provisional application were filed on January 7, 2014.” *Id.* at 7–8 (citing Ex. 1001, 15:7–13, Ex. 1003 ¶ 34).

Patent Owner does not yet dispute any of Petitioner’s contentions as to the effective filing date.

Given that Patent Owner does not dispute Petitioner’s use of the asserted January 7, 2014, effective filing date, for purposes of this Decision,

we use Petitioner’s asserted effective filing date of the ’916 patent, namely, January 14, 2014.

2. Subject Matter of the ’916 Patent

The ’916 patent is directed to establishing a point-to-point (P2P)¹ Internet bidirectional connection between an information concentrating device (e.g., a television set top box 1730) and a remote client device (1706, e.g., cell phone). Ex. 1001, 1:40–47. Figure 19 of the ’916 patent is reproduced below.

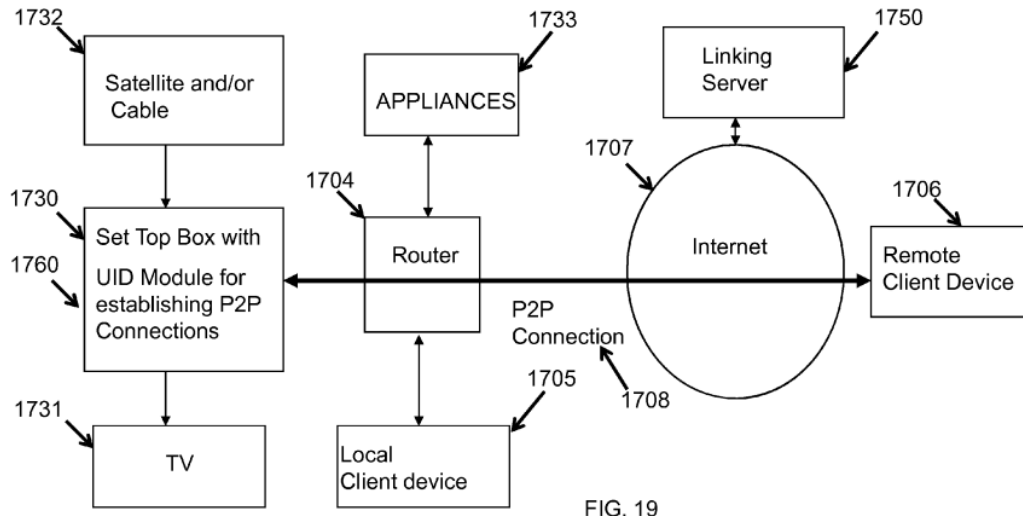


Figure 19 reproduced above is “a schematic of a system for establishing a P2P connection by using a Unique Identification associated with the set top box and a linking server.” Ex. 1001, 3:12–14.

¹ Although the ’916 Patent defines the abbreviation “P2P” to mean “point-to-point” (Ex. 1001, 1: 20–21), other publications use the abbreviation to mean “peer-to-peer.” See, e.g., Ex. 1007, 62; Ex. 1008 ¶ 5. Petitioner asserts that “[p]oint-to-point” is often used interchangeably in the art with “peer-to-peer,” and both are represented by the “P2P” shorthand. The evidence here confirms that the ’916 Patent’s “point-to-point” connections established over the Internet plainly include conventional “peer-to-peer” connections.” Pet. 3, n.4. For purposes of this Decision, we accept Petitioner’s assertion.

Figure 19 illustrates an example embodiment with a set top box configured as an information concentrating device. “[T]he information concentrating [device (e.g., set top box 1730)] has a unique identification (UID, *see* UID Module 1760) for allowing the remote client device (1706) to establish the P2P connection, wherein the unique identification is registered in a linking server (1750) and the P2P connection is established through the linking server.” *Id.* at 1:63–67. The remote client device (1706) provides the UID of the information concentrating device (e.g., set top box 1730) to the linking server (1750) to request and establish a P2P connection with the identified information concentrating device (e.g., set top box 1730). *Id.* at 2:1–6. “In one embodiment, the remote client does not have a . . . UID[] to register to the linking server when the remote client device sends the first message to the linking server for establishing a P2P connection with the information concentrating center.” *Id.* at 2:7–11.

D. Illustrative Claim

Petitioner challenges claims 1–10 and 16 of the ’916 patent. Pet. 1. Apparatus claim 1 is the sole independent claim. Ex. 1001, 15:5–40. Claims 2–5, 7, and 16 depend directly from independent claim 1 and claims 8–10 depend from dependent claim 7. *Id.* at 15:41–16:27, 45–48. Claim 1, which is illustrative, is reproduced below, with bracketed designations added to claim limitations (also referred to as claim elements) for reference purposes. *See* Pet. v.

- [1pre] An electronic device for concentrating information,
comprising:
- [1a] at least one first interface for receiving information from at
least one information source;

- [1b] a second interface coupling to the Internet, for establishing a connection with a remote client device through the Internet;
- [1c] a third interface for connecting to a television for viewing said information; and
- [1d] a unique identification (UID) embedded in the electronic device for concentrating information,
- [1e] wherein the electronic device for concentrating information contacts at least one linking server through the Internet to register said embedded unique identification (UID) into the at least one linking server for identifying network addressing information of the electronic device for concentrating information so as to enable the remote client device to establish a P2P connection with the electronic device for concentrating information for viewing said information received by the electronic device for concentrating information;
- [1f] wherein the remote client device contacts the at least one linking server through the Internet according to said unique identification (UID) of the electronic device for concentrating information for establishing a P2P connection between the remote client device and the electronic device for concentrating information via the Internet,
- [1g] wherein at least one portion of the information received by the electronic device for concentrating information is delivered to the remote client device on the P2P connection,
- [1h] wherein the remote client device does not have a unique identification (UID) to register in the at least one linking server for associating connecting information of the remote client device when the remote client device contacts the at least one linking server for establishing the P2P connection.

Ex. 1001, 36:24–42.

E. Evidence and Asserted Grounds of Unpatentability

Petitioner asserts that claims 1–10 and 16 of the '916 patent are unpatentable based on the following grounds:

Claim(s) Challenged	35 U.S.C §	Reference(s)/Basis
1–8, 10, 16	103 ²	Lorex Manual, ³ Kim ’941 ⁴
9	103	Lorex Manual, Kim ’941, Kim ’517 ⁵
1–8, 10, 16	103	Lorex Manual, Kuo ^{6,7}
9	103	Lorex Manual, Kuo, Kim ’517
1–8, 10, 16	103	Lorex Video, ⁸ Galvin, ⁹ Kuo
9	103	Lorex Manual, Galvin, Kuo, Kim ’517

Pet. 1. Petitioner also relies on the Declaration of Vlad Kardashov. Ex. 1003.

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, and was effective on March 16, 2013. Because, as discussed above, we use Petitioner’s asserted effective filing date for the ’916 patent of January 7, 2014 for the purposes of this decision, which is after the effective date of the applicable AIA amendments, we refer to the post-AIA version of 35 U.S.C. § 103. *See* Ex. 1001, code (60).

³ Lorex LH150 ECO4 Series Instruction Manual English Version 1.0 (2013), *available at* https://www.lorextechnology.com/downloads/securitydvr/LH150-Series/LH150_SERIES_MANUAL_EN_R1_web.pdf (Ex. 1007, “Lorex Manual”).

⁴ US 2011/0082941 A1, published April 7, 2011 (Ex. 1008, “Kim ’941” or “Kim941”).

⁵ US 2014/0218517 A1, published August 7, 2014 (Ex. 1009, “Kim ’517” or “Kim517”).

⁶ US 2012/0198040 A1, published August 2, 2014 (Ex. 1011, “Kuo”).

⁷ The subject ’916 claims priority to Kuo as a continuation-in-part of that earlier filed application. Ex. 1001, code (63).

⁸ Lorex Technology Inc., “How to set up remote access for DVR using - Lorex Stratus Connectivity” (June 18, 2013), *available at* <https://www.youtube.com/watch?v=fMPRi9WFuTM> (Ex. 1012, “Lorex Video”).

⁹ US 2012/0113265 A1, published May 10, 2012 (Ex. 1013, “Galvin”).

At this stage of the proceeding, Patent Owner does not introduce testimonial evidence concerning the patentability issues.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Relying on the testimony of Vlad Kardashov, Petitioner proposes that a person of ordinary skill in the art at the time of the '916 patent “would have had a bachelor’s degree in electrical engineering and two years of work experience with network and communication technologies.” Pet. 8 (citing Ex. 1003 ¶¶ 12–14). Patent Owner has not provided any proposed qualifications for a person of ordinary skill in the art.

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). The level of ordinary skill in the art is also reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). We adopt the assessment offered by Petitioner for the purposes of this Decision because it is consistent with the '916 patent and the asserted prior art.

B. Claim Construction

In this *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b). Under the principles set forth by our reviewing court, the “words of a claim ‘are generally given

their ordinary and customary meaning,” as would be understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner asserts that “no claim elements need a formal construction for purposes of resolving the controversy in this proceeding.” Pet. 9 (citing Ex. 1003, ¶¶ 43–44; *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011), *Google Inc. v. Intellectual Ventures II LLC*, 701 Fed. Appx. 946, 956 (Fed. Cir. 2017)). Petitioner states “[a]ll claim terms should be construed according to the *Phillips* standard.” *Id.* (citing *Phillips*, 415 F.3d at 1303; 37 C.F.R. § 42.100). Patent Owner presents no proposed claim constructions at this time.

We determine that we need not expressly construe any claim terms to resolve the parties’ disputes on the current record. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103 if “the differences between the claimed invention and the prior art are such that the

claimed invention as a whole would have been obvious before the effective date of the claimed invention to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103 (2011); *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective indicia of nonobviousness.¹⁰ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

D. Asserted Obviousness of Claims 1–8, 10, and 16 Over the Lorex Manual and Kim ’941

Petitioner contends that claims 1–8, 10, and 16 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of the Lorex Manual and Kim. Pet. 16–36. In support, Petitioner also relies upon the Kardashov Declaration. Ex. 1003. At this time, Patent Owner does not present any arguments on the merits of Petitioner’s showing of obviousness under this ground.

We begin our discussion with brief summaries of the Lorex Manual and Kim ’941, and then address the evidence and arguments presented.

1. The Lorex Manual (Ex. 1007)

The Lorex Manual is an instruction manual for guiding users of the Lorex LH150 EC04 series security camera systems through setup, operation, and troubleshooting of those systems and, in particular, the LH158 8-

¹⁰ Neither party has submitted any objective evidence of nonobviousness at this juncture.

channel and LH156 16-channel models of EC04 Series Digital Video Recorders (DVRs). *See generally* Ex. 1007. The Manual describes the DVRs as connecting to and supporting inputs from up to 8 or 16 security cameras, depending on model, to an HDMI-compatible television or monitor for viewing a system interface and video feeds from connected security cameras, and a CAT 5 RJ45 Ethernet connection for local and remote connectivity. *Id.* at 5, 8, 17, 19–20, 27, 31.¹¹ The Manual further includes sections describing “Connecting to Your DVR Over the Internet on PC or Mac” and “Mobile Apps: Accessing your DVR Using a Mobile Device.” *Id.* at 57–62, 84–86, 92–95. Remote DVR access is provided using the DVR’s Device ID and Client Port number to establish an Internet connection between the DVR and a remote computer using Lorex Client Software for PC or for MAC or to a remote mobile device such as an iPhone or Android phone running the Lorex ECO Straus application. *Id.* at 58–60, 84–85.

2. Kim ’941 (Ex. 1008)

Kim ’941 describes establishing a peer-to-peer (P2P) connection between network devices or nodes, such as a smart phone and a video camera, using Transmission Control Protocol (TCP) or User Datagram Protocol (UDP) hole punching to establish a direct tunnel between peer nodes. Ex. 1008 ¶¶ 18, 52, 55, 66, 69. Kim ’941 further describes a network server that stores a node’s “virtual address, a network address, a NAT

¹¹ Page numbers are those printed in the original document as they appear in the lower left of each page rather than page numbers added to the Exhibit as submitted.

address, and a network connection type on an ID basis” as shown in Figure 5 reproduced below. *Id.* ¶ 75.

FIG. 5

120

ID	Virtual address			Network address		NAT address		Network connection type
	Virtual IP	Network prefix	prefix length	IP	Port	IP	Port	
Abc@xyz.com	x.x.x.x	-	-	192.168.1.2	1000	100.1.1.2	1024	NAT-Full Cone
.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.
def@zyx.com	y.y.y.y	1.1.2.0	24	192.168.2.2	2000	200.1.1.2	2024	NAT-Restricted Cone

Figure 5 above is a table depicting server “mapping to an ID (abc@xyz.com, def@zyx.com) of a peer node, a virtual address, a network address, a NAT [Network Address Translation] address, and a network connection type.” Ex. 1008 ¶ 75.

3. Discussion

a. Claim 1

The Petition asserts that the combination of the Lorex Manual and Kim ’941 teaches all the limitations of claim 1, and that there is a rationale to combine the references. Pet. 14–49. Below we consider the claim 1 limitations and rationale to combine in turn.

i. Limitation 1pre: “An electronic device for concentrating information, comprising”

Although not conceding that it is limiting, Petitioner argues that the preamble 1pre of claim 1 would have been obvious over the Lorex Manual-Kim ’941 combination’s teaching of an electronic device for concentrating information. Pet. 17–18 (citing Ex. 1003 ¶¶ 79–82; Ex. 1007, 5–7). In

particular, Petitioner contends that the Lorex Manual’s description of “an 8-channel DVR having eight video input ports and a 16-channel DVR having sixteen video inputs ports for receiving respective video streams from up to eight or sixteen connected cameras” teaches the subject matter of the preamble, i.e., “an ***electronic device*** (e.g., a DVR) that ***concentrates information*** (e.g., video streams) from one or more cameras of a security system.” *Id.* (citing Ex. 1003 ¶¶ 79–82; Ex. 1007, 5–6).

On the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing with respect to the preamble of claim 1, i.e., claim element 1 pre.¹²

ii. *Limitation 1a: “at least one first interface for receiving information from at least one information source”*

Petitioner contends that claim limitation 1a is taught by the combination of the Lorex Manual and Kim ’941. Pet. 18–19 (citing Ex. 1007, 5–6). In particular, Petitioner argues that the Lorex Manual’s description of connectors labeled on the rear panel of the 8-channel DVR including eight BNC-type connectors for connecting respective cameras to the DVR and eight RCA-type connectors for connecting audio from audio-enabled cameras teach limitation 1a. *Id.* That is, according to Petitioner, “the DVR described in [the] Lorex Manual includes video input ***ports (at least one first interface)*** configured to connect to up to eight or

¹² We need not determine whether the preamble of claim 1 is limiting because Petitioner has shown on a preliminary basis that Lorex Manual teaches the preamble.

sixteen video cameras as information sources for video data (*at least one information source*).” *Id.* (citing Ex. 1007, 5).

On the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing with respect to claim limitation 1a.

iii. *Limitation 1b: “a second interface coupling to the Internet, for establishing a connection with a remote client device through the Internet”*

Petitioner contends that the combined teachings of the Lorex Manual and Kim ’941 teach or suggest claim limitation 1b. Pet. 19–20 (citing Ex. 1003 ¶¶ 84, 86–89; Ex. 1007, 5–7, 58, 84). In particular, Petitioner argues that limitation 1b is taught by the Lorex Manual’s description of the 8-channel DVR including a local area network (LAN) port connected by an Ethernet cable to a network router and onto the Internet for streaming video from the DVR to a remote client device such as a smartphone, tablet, or PC. *Id.* (citing Ex. 1003 ¶¶ 84, 86; Ex. 1007, 5–7, 84 (“You can remotely view camera streams from your DVR on compatible mobile phones and tablets.”)). Thus, according to Petitioner, the Lorex Manual’s LAN port teaches the second interface of limitation 1b. *Id.* at 20.

On the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing with respect to claim limitation 1b.

- iv. *Limitation 1c: “a third interface for connecting to a television for viewing said information; and”*

Petitioner contends that the combined teachings of the Lorex Manual and Kim ’941 teach or suggest claim limitation 1c. Pet. 20–22 (citing Ex. 1003 ¶¶ 90–92; Ex. 1007, 5, 8, 15). Petitioner argues that the Lorex Manual’s description of the 8-channel DVR having a High-Definition Multimedia Interface (HDMI) port displaying an interface operating in a Playback Mode to display video on a connected monitor “discloses that the DVR includes a third interface (i.e., HDMI port) for connecting to a television for viewing information (i.e., video) concentrated by the DVR” as recited by limitation 1c. *Id.* at 21–22 (citing Ex. 1003 ¶ 91; Ex. 1007, 5, 8, 15).

On the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing with respect to claim limitation 1c.

- v. *Limitation 1d: “a unique identification (UID) embedded in the electronic device for concentrating information,”*

According to Petitioner, the combined teachings of the Lorex Manual and Kim teach or suggest claim limitation 1d, asserting that each publication describes peer nodes with embedded IDs. Pet. 22–23 (citing Ex. 1003 ¶¶ 93–96; Ex. 1007, 58–60, 85, 93; Ex. 1008 ¶ 58). In particular, Petitioner argues that the Lorex Manual’s disclosures of a “label attached to a housing of the DVR [that] contains the device ID printed in standard characters and encoded in a quick-response (QR) code” teaches a device ID of the DVR that is physically embedded in the DVR. *Id.* at 22 (citing Ex. 1003 ¶ 94; Ex.

1007, 58, 85). Petitioner further argues the Lorex Manual’s description of a device ID that is used to distinguish peer nodes teaches a digitally embedded device ID. *Id.* (citing Ex. 1003 ¶ 95; Ex. 1007, 58). Petitioner further contends Kim ’941’s disclosure of a server registering an ID of a peer node also teaches the UID of limitation 1d. *Id.* at 22 (citing Ex. 1003 ¶ 95; Ex. 1008 ¶ 56). Petitioner argues “in the predictable Lorex Manual-Kim941 combination, the device ID is embedded in the peer node to permit the peer node to register with a conventional hole-punching server using the device ID.” *Id.* at 22–23 (citing Pet. § V.A.3; Ex. 1003 ¶ 95).

On the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing with respect to claim limitation 1d.

- vi. *Limitation 1e “wherein the electronic device for concentrating information contacts at least one linking server through the Internet to register said embedded unique identification (UID) into the at least one linking server for identifying network addressing information of the electronic device for concentrating information so as to enable the remote client device to establish a P2P connection with the electronic device for concentrating information for viewing said information received by the electronic device for concentrating information;”*

Petitioner contends that the combined teachings of the Lorex Manual and Kim teach or suggest claim limitation 1e. Pet. 23–25 (citing Ex. 1003 ¶¶ 97–101; Ex. 1007, 10, 57–59, 62, 85, 87–90; Ex. 1008 ¶¶ 55–60, 78–89, Fig. 6; Pet. § V.A.3). In particular, Petitioner argues that the Lorex Manual’s description of a cloud connectivity service (i.e., “Lorex Stratus Connectivity”) that connects a PC or mobile device (i.e., remote client) to a DVR (i.e., an “electronic device for concentrating information”) over the

Internet via Lorex’s Stratus (i.e., “linking”) servers teaches or suggests limitation 1e (i.e., a linking server that facilitates a link between the electronic device for concentrating information and the remote client device). *Id.* Petitioner further argues that the Lorex Manual teaches that the connection can be peer-to-peer (P2P). *Id.* at 23–24 (citing Ex. 1003 ¶ 98; Ex. 1007, 62 (“Connection Status: Shows the type of connection used. • P2P (peer-to-peer) indicates that the video is streaming directly from the DVR to the computer running the Client Software.”); 87–90).

Petitioner further argues that the Lorex Manual’s description of a “remote client device perform[ing a] secure handshake with the Stratus servers using a message that includes the device ID of the DVR” to establish a connection with the DVR teaches limitation 1e’s unique identification. *Id.* at 24 (citing Ex. 1003 ¶ 99; Ex. 1007, 57–59, 85, 93). In the alternative, “[t]o the extent [the] Lorex Manual does not expressly disclose that the DVR contacts the Stratus servers to register the device ID,” Petitioner argues, “these operations would have been predictably provided by the Lorex Manual-Kim941 combination.” *Id.* (citing Ex. 1003 ¶ 100; Pet. § V.A.3). In particular, Petitioner asserts that Kim ’941 “describes a peer node that contacts a linking server 100 to register a unique ID with [and allowing] the server . . . to facilitate hole punching and the establishment of a P2P connection between the peer node and another peer node based on the unique ID.” *Id.* at 24–25 (citing Ex. 1003 ¶ 100; Ex. 1008 ¶¶ 55–60, 78–89; Figs. 2, 6). According to Petitioner “[i]n the combination, [the] Lorex Manual’s DVR would predictably contact the Stratus servers (at least one linking server) to register its embedded ‘device ID’ consistent with Kim941’s teachings.” *Id.* at 25 (citing Ex. 1003 ¶ 100; Pet. § V.A.3).

On the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing with respect to claim limitation 1e.

- vii. *Limitation 1f: “wherein the remote client device contacts the at least one linking server through the Internet according to said unique identification (UID) of the electronic device for concentrating information for establishing a P2P connection between the remote client device and the electronic device for concentrating information via the Internet,”*

Petitioner contends that “Element [1f]—as well as [1h], [3], [4], [5], [6], [8] and [10]—are recitations of intended use that do not further define the structure of the ‘electronic device for concentrating information’ as recited in the preamble[,] are not entitled to patentable weight[,] and do not contribute to the patentability of any Challenged Claim.” Pet. 25 n.5.

Petitioner nonetheless argues these features are taught by the Lorex Manual-Kim ’941 combination. *Id.* In particular, Petitioner argues “[t]he teachings of [the] Lorex Manual in view of Kim941 would have rendered Element [1f] obvious.” *Id.* (citing Ex. 1003 ¶¶ 102–104). In particular, Petitioner argues that the “Lorex Manual discloses that a remote client device (e.g., smartphone, tablet, or PC) can use the unique identification (e.g., the ‘device ID’) of the DVR to identify a particular DVR as the target for a P2P connection.” *Id.* (citing Ex. 1003 ¶ 102; Ex. 1007, 58–59, 61, 62, 85) (emphasis omitted). Petitioner further asserts that Kim ’941 also “describes conventional techniques for a remote client device to contact at least one linking server through the Internet according to a unique identification of another device to establish a P2P connection between the remote client device and the other device via the Internet.” *Id.* at 26 (citing Pet. § V.A.2;

Ex. 1003 ¶ 103). In particular, Petitioner argues limitation 1f is taught or suggested by Kim '941's description of peer node P1 establishing a direct communication tunnel with peer node P2 by transmitting a tunnel query request message to sever 100 including an ID of peer node P2. *Id.* at 26–27 (citing Ex. 1008 ¶¶ 80–89, Fig. 6). According to Petitioner “[i]n the Lorex Manual-Kim '971 combination, the remote client device (e.g., smartphone, tablet, or PC) would predictably contact the Lorex Servers (e.g., at least one linking server) to initiate a P2P connection with the DVR by sending a tunnel query request message that includes the DVR's unique device ID consistent with the teachings of Kim941.” *Id.* at 25 (citing Ex. 1003 ¶ 103).

On the preliminary record before us and in the absence of any counterargument by Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing that the combination of the Lorex Manual in view of Kim '941 teaches or suggests claim limitation 1f.

viii. *Limitation 1g: “wherein at least one portion of the information received by the electronic device for concentrating information is delivered to the remote client device on the P2P connection,”*

Petitioner contends that the combined teachings of the Lorex Manual and Kim teach or suggest claim limitation 1g. Pet. 27–28 (citing Ex. 1003 ¶¶ 105–107; Ex. 1007, 84, 86–87). In particular, Petitioner argues that the “Lorex Manual shows how a user of the remote client device can navigate a user interface of a mobile device to view live video from each of eight video channels” by receiving “data from the DVR over the P2P connection established between the remote client device and the DVR.” *Id.*

On the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this

Decision that Petitioner makes a sufficient showing with respect to claim limitation 1g.

- ix. *Limitation 1h: “wherein the remote client device does not have a unique identification (UID) to register in the at least one linking server for associating connecting information of the remote client device when the remote client device contacts the at least one linking server for establishing the P2P connection.”*

Petitioner contends that the combined teachings of the Lorex Manual and Kim teach or suggest claim limitation 1h. Pet. 28–31 (citing Ex. 1003 ¶¶ 108–113; Ex. 1007, 61, 62, 84–85; Ex. 1008 ¶¶ 55–60). Petitioner argues that the Lorex Manual discloses that a “mobile device initiates a request to connect with the DVR by entering the device ID of the DVR, the client port of the DVR, and a username and password associated with the DVR.” *Id.* at 29 (citing Ex. 1003 ¶ 109; Ex. 1007, 85). Petitioner further argues “[t]o the extent that the Lorex Manual does not expressly disclose that the mobile device does not have a UID to register with the Lorex servers when the remote client device contacts the servers to connect, such conventional features would have been obvious to a [person of ordinary skill in the art] when considering the teachings of Kim ’941.” *Id.* at 29–30 (citing Ex. 1003 ¶ 110). Petitioner argues that, although Kim ’941 discloses that both peer nodes P1 and P2 “pre-register their IDs [and passwords] with a server before one of the peer nodes contacts the server for establishing a P2P connection,” later, when P1 contacts the server to actually establish a connection with P2, “[P1] **does not** have a unique ID to register in the server.” *Id.* at 30 (citing Ex. 1003 ¶¶ 110, 111; Ex. 1008 ¶¶ 55–60). According to Petitioner:

a [person of ordinary skill in the art] would have understood and it would have been obvious that there is no need for the first peer to register with the server merely to request a P2P

connection with the second peer since the server need only look-up registered information (e.g., the ID and network address(es)) of the second peer—not the first peer—to perform hole-punching and follow the process shown in FIG. 6 [of Kim '941]. Moreover, Kim941 expressly contemplates that peers register with the server in advance such that the first peer does not provide its unique ID for registration again when it later contacts the server 100 to establish the P2P connection. . . . Indeed, Kim941 expressly discloses that the first peer's "tunnel query request message" includes the unique ID of the second peer rather than that of the first peer to identify the second peer as the device to which the first peer requests to connect.

Id. at 30–31 (citations omitted). Thus, Petitioner argues, according to the combined teachings of the Lorex Manual and Kim '941, that "Lorex's remote client device would predictably not include its own device ID for registration when contacting the Lorex Stratus servers to establish a P2P connection with the DVR." *Id.* at 31 (citing Ex. 1003 ¶ 112).

On the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing with respect to claim limitation 1h.

x. Reasons to Combine the Lorex Manual and Kim '941

Petitioner asserts multiple reasons for combining the teachings of the Lorex Manual with the teachings of Kim '941. Pet.13–17. Petitioner contends, further citing to the Kardashov Declaration for supporting testimony, that a person of ordinary skill in the art would have incorporated Kim 941's use of a network server for device registration and hole-punching techniques into the Lorex Manual's DVR "so that a remote client device (e.g., the user's smartphone, tablet, or PC) can then identify the DVR as the

target of a requested P2P connection using the unique ID that has been registered with the server.” Pet. 14 (citing Ex. 1003 ¶ 71).

First, Petitioner contends, with the Kardashov Declaration providing supporting testimony, that

a [person of ordinary skill in the art] would have understood that implementing [the] Lorex Manual’s system to include a conventional “network server” that facilitates hole-punching (as suggested by Kim’941) would provide an improved and advantageous approach for establishing a P2P connection between the DVR and remote client device when the DVR is located behind a firewall and/or network address translator (NAT) that would otherwise prevent the remote client device from initiating a P2P connection with the DVR (e.g., due to common security policies of firewalls/NATs that block unsolicited inbound communications from devices outside of the DVR’s local network).

Id. at 15 (citing Ex. 1003 ¶ 74; Ex. 1008 ¶ 18–19, 121).

Second, Petitioner contends a reason to have implemented the system of the Lorex Manual using a network server and hole punching as taught by Kim ’941 was to “advantageously ‘construct[] a direct communication environment for . . . a video camera.’” *Id.* (quoting Ex. 1008 ¶ 123).

Third, Petitioner argues that incorporating a network server that implements hole-punching advantageously “renders it ‘unnecessary for each application service to form a special session,’ thereby improving ‘flexibility’ in ‘operating each service.’” *Id.* at 16 (quoting Ex. 1008 ¶ 122; citing Ex. 1003 ¶ 76). Fourth, Petitioner further argues that the combination “would beneficially allow the server to confirm whether a direct tunnel can be formed between the IP camera and user’s/terminal device.” *Id.* (citing Ex. 1008 ¶¶ 78–83, 94–99, 14–18, Figs. 6, 8; Ex. 1003 ¶ 77).

In addition. Petitioner asserts several teachings and motivations in the prior art that would have led a person of ordinary skill in the art to modify the Lorex Manual to incorporate the teachings of Kim '941. Petitioner argues, with the Kardashov Declaration providing supporting testimony, that both the Lorex Manual and Kim '941 “are directed to establishing P2P connections between network endpoints (e.g., [the] Lorex Manual’s DVR and remote client device)” and “a [person of ordinary skill in the art] would have possessed ample skill to successfully implement the combination [given] the predictable electrical/network and software components involved in the combination and the relatively advanced state of the art at the time.” *Id.* at 17 (citing Ex. 1003 ¶ 78). Thus, according to Petitioner, “a [person of ordinary skill in the art] would have had a reasonable expectation of success in achieving the [Lorex Manual-Kim '941] combination.” *Id.*

At this stage of the proceeding, we credit the testimony presented in the Kardashov Declaration that a skilled artisan would have had reasons to combine the teachings of the Lorex Manual and Kim '941. Thus, on the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing that a skilled artisan would have had reasons, with rational underpinning, to combine the teachings of the Lorex Manual and Kim '941, with a reasonable expectation of success.

xi. Conclusion as to Claim 1

We are persuaded that Petitioner has preliminarily demonstrated a rationale to combine the Lorex Manual and Kim '941 and that there is sufficient evidence provided that the combination of the references teaches all the limitations of claim 1. Accordingly, we determine that Petitioner has demonstrated that there is a reasonable likelihood that it would prevail in showing that the subject matter of claim 1 would have been obvious over the combination of the Lorex Manual and Kim '941.

b. Dependent Claims 2–8, 10, and 16

For dependent claims 2–8, 10, and 16, Petitioner argues, with citations to the Lorex Manual, Kim '941, and the Kardashov Declaration, that the Lorex Manual (claims 2–5, 7, 8, 10, and 16) and Kim '941 (claim 6) teach each of the claims' additional limitations. Pet. 31–38. We have considered the preliminary record before us and, in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing with respect to claims 2–8, 10, and 16.

E. Asserted Obviousness of Claim 9 Over the Lorex Manual, Kim '941 and Kim '517 (Ex. 1009)

Dependent claim 9 reads as follows:

The electronic device for concentrating information according to claim 7, wherein the electronic device for concentrating information is connected to an appliance through the routing device and the remote client device controls the appliance through the electronic device for concentrating information.

Petitioner argues that the combined teachings of the Lorex Manual and Kim '941 as further modified to incorporate the teachings of Kim '517 would have rendered claim 9 obvious. Pet. 38–43. Petitioner relies on Kim

'517 as “describ [ing] ‘a home network system, [including a] home monitoring method and apparatus using electrical appliances and cameras.’” *Id.* at 38 (quoting Ex. 1009 ¶ 3; citing Ex. 1003 ¶¶ 63–64). Although arguing that the “Lorex Manual describes how a user can remotely control pan-tilt-zoom (PTZ) cameras connected to the DVR through an interface of a remote client device (e.g., the smartphone, tablet, or PC),” Petitioner acknowledges that the “PTZ cameras must be physically connected to the DVR through an RS485 port on the rear of the DVR.” *Id.* at 39–40 (citing Ex. 1007, 66, 77–78, 88–89, 96, 106–08). Petitioner asserts that the teaching of Kim '517 cures the noted deficiency. *Id.* at 38.

As depicted in Figure 5, Kim '517 describes a home network including a home gateway 510 wired or wirelessly connected to home devices 512a, 512b, 514, and 516 such that a user can remotely control the devices over the Internet via the home gateway using a mobile terminal. Pet. 38 (citing Ex. 1009 ¶¶ 18, 38–47, 56, 59–68, Figs. 1–5 and associated text). Petitioner relies on Kim '517's “suggestion for remotely controlling a PTZ camera or other appliance wirelessly connected to a home gateway like [the] Lorex Manual's DVR” for curing the failure of the Lorex Manual to “expressly disclose a remote client device configured to control through the DVR an appliance that is wirelessly connected to the DVR.” *Id.* Petitioner provides reasoning why “a [person of ordinary skill in the art] would have implemented the Lorex Manual's DVR according to Kim '517's suggestion for wirelessly connecting remotely controllable appliances (e.g., PTZ cameras)” including

- (1) to expand the capabilities of the DVR and to increase the number and types of devices to which the DVR could connect,
- . . . (2) to simplify the ability to connect certain cameras and

other appliances to the DVR, . . . (3) to allow the DVR to connect to such appliances over longer distances, . . . and (4) to advantageously permit a user to issue commands to and control the appliances through a remote client device.

Pet. 40 (citing Ex. 1003 ¶¶ 144–149).

We have considered the preliminary record before us and, in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing with respect to claim 9.

F. Additional Grounds

1. The Lorex Manual and Kuo (Ex. 1011)

Kuo is identified by the '916 patent under the heading “Related U.S. Application Data,” the '916 patent indicating that it is a continuation-part of the Kuo application. Ex. 1001, code (63). Petitioner asserts Kuo is prior art to the '916 patent under 35 U.S.C. § 102(a)(1). Pet. 2. As explained by Petitioner, “Kuo is a publication of an earlier-filed patent application by a subset of coinventors named on the '916 Patent” and which “[t]he '916 Patent specification expressly refers to . . . multiple times for additional detail on aspects of the subject matter described and claimed in the '916 Patent.” *Id.* at 43 (citing Ex. 1011 13:42–52, 14:10–16, 18–22). “Indeed, FIGS. 1–11 of Kuo are identical to those same figures in the '916 Patent.” *Id.* (citing Ex. 1003 ¶¶ 65–69).

Petitioner’s mapping of the Lorex Manual-Kuo combination is very similar to its mapping of the Lorex Manual-Kim '941 combination, with Kuo cited for features of both claim 1 and claim 6 for which Petitioner relies on and cites to Kim '941. Pet. 47–53. In connection with dependent claims

2, 3, 4, 7, 8, 10, and 16, Petitioner’s mapping of the Lorex Manual-Kuo combination relies on the Lorex Manual for the same reasons as argued in the Lorex Manual-Kim ’941 combination. *Id.* at 53. Finally, in arguing that Claim 9 is rendered obvious over the combined teachings of the Lorex Manual in view of Kuo and Kim ’517, Petitioner relies on the same mapping of Kim ’517 to cure the deficiency of the Lorex Manual-Kuo combination as in the Lorex Manual-Kim ’941 combination of teachings discussed above. *Id.* at 53–54. Therefore, for similar reasons and on the preliminary record before us, and further in the absence of any counterargument from Patent Owner, we are likewise persuaded for purposes of this Decision that Petitioner makes a sufficient showing that claims 1–8, 10, and 16 would have been obvious over the Lorex Manual-Kuo combination for the same reasons as given for the Lorex Manual-Kim ’916 combination, discussed above. Likewise, on the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient showing that claim 9 would have been obvious over the Lorex Manual-Kuo-Kim ’517 combination for the same reasons as given for the Lorex Manual-Kim ’941-Kim ’517 combination, discussed above.

2. Lorex Video (Ex. 1012), Galvin (Ex. 1013), and Kuo

Petitioner states the “Lorex Video is a video published on YouTube that illustrates a process for connecting a mobile device (i.e., an Android smartphone) to a DVR using Lorex’s connectivity solutions similar to those described in [the] Lorex Manual.” Pet. 54–55. Galvin discloses a network video recorder system in which a network video recorder includes Ethernet ports connected to receive camera video and an uplink port connected to a

client station displaying video information received by the network video recorder. Ex. 1013 ¶¶ 57, 67, Fig. 4.

According to Petitioner, the disclosure the Lorex Video is substantially the same as that of and is applied for the same reasons as the Lorex Manual in the Lorex Manual-Kim '941 and the Lorex Manual-Kuo combinations discussed above. Petitioner additionally relies on Galvin for teaching a third interface for connecting to a television as recited by Limitation 1c. Pet. 58 (citing Ex. 1001 ¶¶ 154–155). As in the Lorex Manual-Kuo combination, the Lorex Video-Galvin-Kuo combination relies on Kuo for teaching the linking server of Limitation 1e (*id.* at 48–49 (application of Kuo in Lorex Manual-Kuo combination), 67 (application of Kuo in Lorex Video-Galvin-Kuo combination)). Thus, Petitioner argues that the Lorex Video-Galvin-Kuo combination renders obvious claims 1–8, 10, and 16. *Id.* at 54–76. Petitioner further argues the Lorex Video-Galvin-Kuo combination, further in view of Kim '517, renders claim 9 obvious, arguing that Kim '517 cures the deficiency of the Lorex Video-Galvin-Kuo combination for the same reasons it cures the deficiency of the Lorex Manual-Kim '941 combination of teachings. *Id.* at 77. Therefore, on the preliminary record before us and in the absence of any counterargument from Patent Owner, we are likewise persuaded for purposes of this Decision that Petitioner makes a sufficient showing that claims 1–8, 10, and 16 would have been obvious over the Lorex Video-Galvin-Kuo combination for substantially the same reasons as given for the Lorex Manual-Kuo combination, discussed above. Likewise, on the preliminary record before us and in the absence of any counterargument from Patent Owner, we are persuaded for purposes of this Decision that Petitioner makes a sufficient

showing that claim 9 would have been obvious over the Lorex Video-Galvin-Kuo-Kim '517 combination for the same reasons as given for the Lorex Manual-Kuo-Kim '517 combination, discussed above.

III. CONCLUSION

For the foregoing reasons, we determine that the information presented in the Petition establishes a reasonable likelihood that Petitioner would prevail in showing that at least one of claims 1–10 and 16 of the '916 patent is unpatentable under 35 U.S.C. § 103.

IV. ORDER

Accordingly, it is:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted as to claims 1–10 and 16 of the '916 patent on the grounds set forth in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this decision.

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Patent 9,774,916

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