Paper No. 7

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CISCO SYSTEMS, INC.
Petitioner,

v.

SCALE VIDEO CODING LLC,
Patent Owner.

IPR2024-01371
U.S. Patent No. 11,019,372

PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE

TABLE OF CONTENTS

Page

TABLE OF NEWLY PRESENTED EXHIBIT III

I. PO ADOPTS AN IMPLICIT CLAIM CONSTRUCTION FOR THE "IDENTIFYING BANDWIDTH-LIMITED CONDITIONS" CONTRADICTED BY ITS POSITIONS IN DISTRICT COURT 1

II. PO'S IMPLICIT CONSTRUCTIONS OF "BASE LAYER" AND "ENHANCEMENT LAYERS" ARE NOT SUPPORTED BY THE INTRINSIC EVIDENCE 2

TABLE OF AUTHORITIES

Page(s)

Cases

Samsung Elec. v. Manufacturing Resources Int.,
IPR2023-00221, Paper 54, (PTAB Jun. 18, 2024).....3

TABLE OF NEWLY PRESENTED EXHIBIT

No.	Exhibit Description
1001	U.S. Patent No. 11,019,372 ("the 372 Patent")
1002	File History of U.S. Patent No. 11,019,372
1003	Declaration of Dr. Sandeep Chatterjee
1004	CV of Dr. Sandeep Chatterjee
1005	U.S. Patent 7,093,028 ("Shao-028")
1006	U.S. Pub No. 2001/0047423 ("Shao-423")
1007	Preliminary Infringement Contentions ("PIC")
1008	RFC2507 entitled "IP Header Compression" (published February 1999)
1009	U.S. Pub No. 2004/0125797 ("Raisanen")
1010	Patent Owner's Reply Claim Construction Brief
1011	U.S. Patent No. 7,478,139 ("Garafolo")
1012	RFC2460 entitled "Internet Protocol, Version 6 (IPv6) Specification" (published December 1998)
1013	*Video Multicast over the Internet*, Li, Xue et al., IEEE NETWORK, VOL. 13, NO. 2 (published 1999)
1014	Prov. App. 60/647,601
1015	"H.264 and MPEG-4 Video Compression, Video Coding for Next-generation Multimedia," Iain E. G. Richardson, John Wiley & Sons Ltd. (published 2003)
1016	"Multimedia Communications, Directions and Innovations," Jerry D. Gibson, Academic Press (published 2001)
1017	"TCP/IP Network Administration," Craig Hunt, 3rd edition, O'Reilly (published 2002)
1018	Excerpts from "Microsoft Computer Dictionary," 5th edition, Microsoft Press (published 2002)

1019	"Overview of the Scalable Video Coding Extension of the H.264/AVC Standard," H. Schwarz et al, IEEE TRANSACTIONS
1020	Declaration of Mr. Michael Adams in support of Patent Owner's Reply Claim Construction Brief
1021	U.S. Pub. No 2005/0141610 ("Isu")
1022	ISO/IEC 14496-2 International Standard, Information technology — Coding of audio-visual objects— Part 2: Visual (published June 2004)
1023	October 16, 2024, Rule 12 and Claim Construction Transcript

Pursuant to the Board's authorization, Petitioner Cisco submits this reply addressing PO's implicit claim construction arguments for the terms "*identifying bandwidth limited conditions*," "*base layer*," and "*enhancement layers.*"

I. PO ADOPTS AN IMPLICIT CLAIM CONSTRUCTION FOR THE "IDENTIFYING BANDWIDTH-LIMITED CONDITIONS" CONTRADICTED BY ITS POSITIONS IN DISTRICT COURT

PO asserts that Shao-028 does not disclose the "*identify[ing] bandwidth-limited conditions*" limitations of the challenged claims based on an implicit claim construction that excludes the video router receiving an indication or assessment of bandwidth conditions in the form of feedback from receivers (*i.e.,* clients or end systems). For example, PO argues that because Shao-028 is directed to a "differential services architecture," its Video Transmission Agents ("VTA") routers "are not capable of detecting packet loss or increased latency on links with specific client devices; that functionality, should it exist, resides in **end systems**." POPR, 20-21; Ex.2001, ¶78. Similarly, PO argues that Shao-028's description of the "VTA receiv[ing] 'feedback' or 'control' information from a downstream client" does not meet the "*identifying bandwidth-limited conditions*" limitations. POPR, 30; Ex.2001, ¶¶103-104.

PO's attorney argued the opposite to the District Court. For example, at the October 16, 2024 Markman Hearing, PO repeatedly asserted that the receipt of feedback information by the video router from the receiver in the form of a

"retransmission request" meets the "*identifying bandwidth-limited conditions*" limitations. Ex.1023, 32:10-14 ("[T]he specification teaches . . . several different methods **by which the router identifies bandwidth-limited conditions** and selectively forwards based on the identified bandwidth-limited conditions. **Retransmission requests are simply one way of doing it** . . . ."); 33:6-9 ("[C]laim 1 encompasses that scenario that Your Honor described, which is the router may have its own way of identifying bandwidth-limited conditions. **It may also rely on feedback from the receiver** . . . ."); *see also* Ex.1023, 30:25-31:4; 31:12-15; 32:10-22; 33:6-14; 33:18-20. Accordingly, apart from mischaracterizing the Petition and Shao-028's disclosure[1], PO's assertions are contradicted by the position it repeatedly took before the District Court and should, therefore, be rejected.

II. PO'S IMPLICIT CONSTRUCTIONS OF "BASE LAYER" AND "ENHANCEMENT LAYERS" ARE NOT SUPPORTED BY THE INTRINSIC EVIDENCE

PO makes implicit claim construction arguments regarding the meaning of the terms "*base layer*" and "*enhancement layer*" that are not supported by the intrinsic record. PO relies on its expert's *ipse dixit* testimony—which should be rejected for

[1] Cisco demonstrated that Shao-28 discloses this limitation under any reasonable construction of that term, including PO's contradictory construction. *See e.g.,* Petition, 28; Ex.1003, ¶118 (each citing Ex.1005, 13:39-47).

that reason alone[2]—to ascribe special meaning to these terms based on what they purportedly mean in the context of "scalable video coding."[3] *See e.g.,* POPR, 3-5 (citing Ex.2001, ¶¶28, 30-35); *see also,* POPR, 56 (referring to the "**SVC methodology** of selectively forwarding base and enhancement layers.") (citing Ex.2001, ¶¶106, 175). For example, PO asserts that "a base layer in **SVC** provides only a minimal acceptable quality of the video stream" and "[e]nhancement layers improve the video quality in terms of resolution, frame rate, or signal-to-noise ratio." POPR, 37 (citing Ex.2001, ¶¶123-124). PO adds that "**Scalable video coding (SVC)** focuses on content-level adaptability for video streams by encoding video into layers (e.g., a base layer and several enhancement layers) that can be independently transmitted or dropped." POPR, 21.

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[2] *See, e.g., Samsung Elec. v. Manufacturing Resources Int.,* IPR2023-00221, Paper 54, 54 n.12 (PTAB Jun. 18, 2024) ("We are not persuaded by this rationale because it appears to be based on the *ipse dixit* of [the expert], who provides no supporting explanation or evidence.")

[3] Scalable Video Coding, or SVC, refers to Annex G to the H.264 standard, which was standardized in November, 2007—more than a year after the earliest effective filing date of the '372 Patent. *See* https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=15935 (Annex G was added in Ed.3 of H.264).

PO uses this improper implicit construction of "*enhancement layers*" and "*base layer*" based on SVC to draw a distinction with Shao-028 that is unsupported by the specification. For example, PO argues that Shao-028's selective filtering of packets based on their transmission priority values is not the same as handling video on a "per-layer" or "layer-by-layer" basis. POPR, 37-38 ("Shao-028 relies on a differential services-based architecture, wherein traffic is handled **in aggregate classes based on priority**…rather than on a per-flow or **per-layer basis.** Unlike with SVC, a differential services-based network does not implement content-level adaptability for video streams by encoding video into layers that can be independently transmitted or dropped.... Shao-028 does not teach forwarding video on a **layer-by-layer basis**."); *see also id.* POPR, 35, 43-44.

But PO's implicit claim construction positions are incorrect—the specification confirms that the terms "*base layer*" and "*enhancement layers*" are simply groups of packets assigned to a specific priority. Ex.1001, 21:25-67 ("The **priority numbers represent a logical layer** inside a data stream . . .. When packets in a data stream are labeled with **priorities in the range 0 to 3**, the stream is said to have **4 layers**."), *see also, id.,* 30:41-44. The specification also confirms that the router forwarding one such layer—such as the "*base layer*"—and removing other layers—such as "*enhancement layers*"—is little more than the router selectively filtering packets based on priority. Ex.1001, 21:42-45 ("[W]hen an outgoing link of

a router has insufficient bandwidth to transmit all pending packets, it forwards only those packets with a **designated priority** or the **highest priority**."), 21:53-56 ("[K]nowing that routers will use the **packet priority numbers** when making **forwarding selections** on congested parts of the network, a source carefully divides its data packets over **different layers or priorities**).

PO's argument that Shao-028 does not disclose "forwarding video on a layer-by-layer basis" thus improperly ascribes a special meaning to the terms "*base layer*" and "*enhancement layer*" that is not supported by the specification.[4] Nothing in specification supports that the "*base layer,"* or "*enhancement layers,"* are anything other than groupings of packets based on priority, nor that the selectively forwarding of these layers is any different than filtering of the packets based on priority. *See e.g.,* Ex.1003, ¶100. Accordingly, Cisco respectfully requests that the Board reject PO's erroneous and unsupported implicit claim constructions regarding the terms "*enhancement layers*" and "*base layer*."

[4]PO also argues that Shao-028 "does not teach that any base layer is itself 'forwarded'" (POPR, 31-32) by applying an unsupported implicit claim construction of the term "*base layer*" as being something other than a mere grouping of packets with an assigned priority number.

Dated: January 24, 2025

Respectfully Submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing **PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE** was served electronically via e-mail on January 24, 2025, in its entirety on the following counsel of record for Patent Owner:

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