UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Google LLC,
Petitioner

v.

Withrow Networks Inc.
Patent Owner

IPR2025-00775
U.S. Patent No. 10,771,849 B2

PETITIONER'S UPDATED EXHIBIT LIST

Exhibit No.	Description of Document
1001	U.S. Patent No. 10,771,849 B2 to Mark Sinclair Krebs (filed Nov. 5, 2018, issued Sept. 8, 2020) ("'849 patent")
1002	Declaration of Dr. Nathaniel Polish ("Polish")
1003	U.S. Patent No. 6,389,473 to Sharon Carmel et al. (filed Mar. 24, 1999, issued May 14, 2002) ("Carmel")
1004	Marco Mattavelli, Sylvain Brunetton, *Computational Graceful Degradation for Video Decoding*, Signal Processing IX Theories and Applications, Proceedings of Eusipco-98 Ninth European Signal Processing Conference (1998) ("Mattavelli")
1005	Excerpts from John Watkinson, The MPEG Handbook, MPEG-1, MPEG-2, MPEG-4 (2001) ("Watkinson")
1006	Excerpts from David Gourley et al., HTTP: The Definitive Guide (2002) ("Gourley et al.")
1007	Shih-Hao Wang et al., *A Platform-Based MPEG-4 Advanced Video Coding (AVC) Decoder with Block Level Pipelining*, Proc. of the 2003 Joint Conference of the Fourth International Conference on Information, Communications & Signal Processing and Fourth Pacific-Rim Conference on Multimedia Vol. 1, (ICICS-PCM 2003) ("Wang")
1008	Prosecution History for U.S. Patent No. 10,771,849
1009	U.S. Patent No. 5,841,432 to Sharon Carmel et al. (filed Feb. 9, 1996, issued Nov. 24, 1998) ("Carmel '432")
1010	U.S. Patent No. 6,397,230 to Sharon Carmel et al. (filed Aug. 27, 1997, issued May 28, 2002) ("Carmel '230")
1011	Microsoft Computer Dictionary (5th Ed. 2002) (excerpted)

Exhibit No.	Description of Document
1012	U.S. Patent No. 7,359,004 to Keman Yu et al. (filed May 23, 2003, published as U.S. Patent Publication No. 2004/0233844 on Nov. 25, 2004, issued Apr. 15, 2008) ("Yu '004")
1013	U.S. Patent Application Publication No. US 2002/0131768 to Robert S. Gammenthaler (filed Mar. 19, 2001, published Sept. 19, 2002) ("Gammenthaler")
1014	A Guide to MPEG Fundamentals and Protocol Analysis (Including DVB and ATSC), Tektronix (2000)
1015	Archived Webpage (Internet Archive Wayback Machine) of A Guide to MPEG Fundamentals and Protocol Analysis (Including DVB and ATSC), Tektronix (June 16, 2002)
1016	U.S. Patent No. 7,096,481 to John Forecast et al. (filed Mar. 31, 2000, issued Aug. 22, 2006) ("Forecast")
1017	U.S. Patent No. 6,631,163 to Shaomin Peng (filed Nov. 14, 2000, issued Oct. 7, 2003) ("Peng")
1018	Stephan Mietens et al., *New Complexity Scalable MPEG Encoding Techniques for Mobile Applications*, EURASIP Journal on Applied Signal Processing 2004(2):236-252 (2004) ("Mietens")
1019	Joseph Y. Hui et al., *Client-Server Synchronization and Buffering for Variable Rate Multimedia Retrievals*, 14 IEEE Journal on Selected Areas in Communications 226 (Jan. 1996) ("Hui et al.")
1020	Excerpts from Peter Symes, Digital Video Compression (2004) ("Symes")
1021	Excerpts from Fernando Pereira, Touradj Ebrahimi, The MPEG-4 book (2002) ("Pereira et al.")
1022	Excerpts from Craig Hunt and Robert Bruce Thompson, Windows NT TCP/IP Network Administration (1998) ("Hunt et al.")

Exhibit No.	Description of Document
1023	Excerpts from Douglas E. Comer, Internetworking with TCP/IP Vol. 1: Principles, Protocols, and Architectures (4th ed. 2000)
1024	U.S. Patent No. 6,408,096 to Thiow Keng Tan (filed Oct. 21, 1998, issued June 18, 2002) ("Tan")
1025	U.S. Patent Application Publication No. 2005/0102371 to Emre Aksu (filed Nov. 7, 2003, published May 12, 2005) ("Aksu")
1026	U.S. Patent No. 6,707,944 to Young Kwon Lim et al. (filed Apr. 14, 1998, issued Mar. 16, 2004) ("Lim")
1027	Thomas Stockhammer et al., *H.264/AVC in Wireless Environments*, 13 IEEE Transactions on Circuits and Systems for Video Technology 657 (July 2003) ("Stockhammer")
1028	Excerpts from Iain E. G. Richardson, H.264 and MPEG-4 Video Compression: Video Coding for Next-generation Multimedia (2003) ("Richardson")
1029	Arnaud Bourge and Joel Jung, *Low-power H.264 video decoder with graceful degradation*, Visual Communications and Image Processing 2004, 5308 Proceedings of SPIE-IS&T Electronic Imaging 372 (2004) ("Bourge")
1030	U.S. Patent No. 5,867,230 to Feng Chi Wang et al. (filed June 30, 1997, issued Feb. 2, 1999) ("Wang et al.")
1031	U.S. Patent No. 6,637,031 to Philip A. Chou (filed Dec. 4, 1998, issued Oct. 21, 2003) ("Chou")
1032	Shanwei Cen et al., *Flow and Congestion Control for Internet Media Streaming Applications*, Proc. SPIE 3310, Multimedia Computing and Networking 1998, 250 (Dec. 29, 1997) ("Cen et al.")

Exhibit No.	Description of Document
1033	Jian Lu, *Signal Processing for Internet Video Streaming: A Review*, Proc. SPIE Image and Video Communications and Processing (Jan. 2000) ("Lu")
1034	H. Schulzrinne et al., Real Time Streaming Protocol (RTSP), Internet Engineering Task Force, Internet Society (April 1998)
1035	U.S. Patent No. 7,529,806 to Yevgeniy Eugene Shteyn (filed Nov. 4, 1999, issued May 5, 2009) ("Shteyn")
1036	U.S. Patent No. 5,721,878 to Hal Hjalmar Ottesen et al. (filed June 7, 1995, issued Feb. 24, 1998) ("Ottesen et al.")
1037	*DV Format, Digital Video*, Canon U.S.A., Inc. (Oct. 13, 1999) https://web.archive.org/web/19991013131445/http://canondv.com:80/shared/dvinfo/dvinfo2.html
1038	Alan T. Wetzel, Michael R. Schell, *Consumer Applications of the IEEE 1394 Serial Bus, and a 1394/DV Video Editing System*, IEEE (1996) ("Wetzel et al.")
1039	Won-Kyu Paik and Sun-Young Hwang, *Design of a novel synthesis filter for real-time MPEG-2 audio decoder implementation on a DSP chip*, 45 IEEE Transactions on Consumer Electronics 1119 (1999) ("Paik")
1040	Keun-Sup Lee et al., *Software Optimization of the MPEG-Audio Decoder Using a 32-Bit MCU RISC Processor*, 48 IEEE Transactions on Consumer Electronics 671 (Aug. 2002) ("Lee")
1041	Martin Wolters et al., *A closer look into MPEG-4 High Efficiency AAC*, Audio Engineering Society (AES), 115th AES Convention (Oct. 10-13, 2003) ("Wolters")
1042	Patrick De Smet et al., *Do Not Zero-Pute: An Efficient Homespun MPEG-Audio Layer II Decoding and Optimization Strategy*, Proc. of ACM Multimedia 2004 conference, pp. 376-379 (2004) ("De Smet")

Exhibit No.	Description of Document
1043	Patrick De Smet and Ignace Bruyland, *Optimized Recursive Subband Synthesis Windowing for Implementing Efficient MPEG Audio Decoders*, 10 IEEE Signal Processing Letters 303 (Oct. 2003) ("De Smet & Bruyland")
1044	MPEG-4 Overview – (V.21 – Jeju Version), International Organisation for Standardisation Organisation International De Normalisation ISO/IEC JTC1/SC29/WG11 Coding of Moving Pictures and Audio (Mar. 2002)
1045	U.S. Patent No. 5,754,241 to Shigeyuki Okada et al. (filed Nov. 14, 1995, issued May 19, 1998) ("Okada")
1046	U.S. Patent No. 7,006,755 to Takeo Morinaga (filed Feb. 8, 2001, issued Feb. 28, 2006) ("Morinaga")
1047	Vladimir Z. Mesarovic et al., *Optimized Huffman Decoding for AAC*, Silicon for Audio – AES 16th UK Conference, pp. 117-122 (2001) ("Mesarovic")
1048	U.S. Patent No. 6,963,972 to Yuan-Chi Chang et al. (filed Sept. 26, 2000, issued Nov. 8, 2005) ("Chang")
1049	U.S. Patent No. 6,490,320 to Anthony Vetro et al. (filed Apr. 11, 2000, issued Dec. 3, 2002) ("Vetro")
1050	U.S. Patent No. 6,005,600 to Ralph D. Hill (filed Oct. 18, 1996, issued Dec. 21, 1999) ("Hill")
1051	U.S. Patent No. 7,398,312 to Katherine H. Guo et al. (filed Mar. 29, 2000, issued July 8, 2008) ("Guo")
1052	U.S. Patent No. 8,868,772 to R. Drew Major and Mark B. Hurst (filed Apr. 28, 2005, issued Oct. 21, 2014) ("Major")
1053	U.S. Patent Provisional Application No. 60/566,831 to Robert D. Major and Mark B. Hurst (filed Apr. 30, 2004)

Exhibit No.	Description of Document
1054	115th AES Convention (Oct. 10-13, 2003) program and related webpages and links
1055	Complaint filed in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. May 28, 2024), ECF No. 1
1056	Returned Summons in a Civil Action filed in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. June 11, 2024), ECF No. 19
1057	List of Claims of U.S. Patent No. 10,771,849
1058	U.S. Patent No. 7,535,485 to Moshe Elbaz et al. (filed Aug. 14, 2001, issued May 19, 2009) ("Elbaz")
1059	U.S. Patent No. 7,502,514 to Yaakov Gringeler et al. (filed Jan. 4, 2005, issued Mar. 10, 2009) ("Gringeler")
1060	U.S. Patent No. 6,766,373 to Bruce A. Beadle et al. (filed May 31, 2000, issued July 20, 2004) ("Beadle")
1061	U.S. Patent No. 7,099,389 to Guoyao Yu et al. (filed Dec. 10, 2002, issued Aug. 29, 2006) ("Yu")
1062	U.S. Patent No. 7,751,628 to Richard Reisman (filed Dec. 23, 2002, issued July 6, 2010) ("Reisman")
1063	Expert Declaration of Dr. Ingrid Hsieh-Yee
1064	*Curriculum Vitae* of Dr. Nathaniel Polish
1065	Joint Case Management Statement filed in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. Feb. 7, 2024), ECF No. 48
1066	Transcript of Hearing before Judge P. Casey Pitts on Motion to Stay in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. May 1, 2025), ECF No. 77 (Minute Entry for hearing)

Exhibit No.	Description of Document
1067	DocketNavigator Statistics for Motion Success for Stay Pending IPR (Post-Institution) for Northern District of California (June 12, 2025)
1068	Case Management Order in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. May 1, 2025), ECF No. 78
1069	DocketNavigator Statistics on Time to Milestones for Northern District of California (June 12, 2025)
1070	Joint Claim Construction and Prehearing Statement filed in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. June 23, 2025), ECF No. 92
1071	*Ex parte Krebs*, Decision on Appeal, Appeal No. 2016-002538, Application No. 11/107,952 (P.T.A.B. Nov. 15, 2016)
1072	Notice of Abandonment for Application No. 11/106,952 (Jan. 26, 2017)
1073	Defendants Google LLC and YouTube, LLC's Notice of Motion and Motion to Strike Plaintiff's Infringement Contentions filed in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. May 13, 2025), ECF No. 80
1074	Plaintiff Withrow Networks, Inc.'s Opposition to Defendants' Motion to Strike Plaintiff's Infringement Contentions filed in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. May 27, 2025), ECF No. 85
1075	Time Between Trial Setting Conference Date and Scheduled Trial Start Date in Identified Civil Cases before Judge P. Casey Pitts
1076	Notice of Sotera Stipulation of Defendants Google LLC and YouTube, LLC filed in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. Jul. 16, 2025), ECF No. 93
1077	Declaration of Reuben Chen Pursuant to 37 CFR § 42.10(c)(2)

Exhibit No.	Description of Document
1078-1079	*Reserved*
1080	Deposition Transcript for the Deposition of Matthew S. Goldman, Monday, July 21, 2025, in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal.)
1081	Declaration of Matthew Goldman, Reexamination No. 90/019,622 (U.S. Patent No. 6,389,473), May 27, 2025.
1082	Declaration of Matthew Goldman, Reexamination No. 90/019,622, Ex. E, "Implementing Adaptive HTTP Streaming Using the Web," Toast UI, Medium, May 31, 2019, available at https://toastui.medium.com/implementing-adaptive-http-streaming-using-the-web-e2c12d46a38f
1083	Plaintiff Withrow Networks, Inc.'s Opposition to Defendants' Motion to Dismiss Complaint filed in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. August 23, 2024), ECF No. 36
1084	Plaintiff Withrow Networks, Inc.'s Slide Presentation Regarding Defendants Motion to Dismiss presented in *Withrow Networks, Inc. v. Google, LLC*, No. 5:24-CV-3203 (N.D. Cal. October 1, 2024)
1085	Deposition Transcript for the Deposition of Matthew Goldman, *Google LLC v. Withrow Networks, Inc.*, IPR2025-00775 (PTAB)

Dated: April 17, 2026

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CERTIFICATE OF SERVICE

I hereby certify, pursuant to 37 C.F.R. § 42.6 that a true and correct copy of **PETITIONER'S UPDATED EXHIBIT LIST**, is being served electronically on April 17, 2026 on Patent Owner by serving the Patent Owner's counsel of record in this proceeding:

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