

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,
Petitioner

v.

AX WIRELESS,
Patent Owner.

IPR2023-01139

U.S. Patent No. 10,917,272

**PETITIONER'S REPLY TO PATENT OWNER'S
PRELIMINARY RESPONSE**

EXHIBIT LIST

Exhibit	Reference
1001	U.S. Patent 10,554,272
1002	File History of the '272 patent
1003	Declaration of Thomas LaPorta, Ph.D. in Support of <i>Inter Partes</i> Review of U.S. Patent 10,079,272
1004	Curriculum Vitae of Dr. Thomas LaPorta
1005	U.S. Patent Publication 2006/0182017 to Hansen, et al (“Hansen”)
1006	IEEE 802.11-05/0149r5, “WWiSE Proposal: High Throughput Extension to the 802.11 Standard” to Kose, et al, uploaded and publicly available on July 9, 2005 (“July 2005 WWiSE”)
1007	Declaration of James L. Lansford, Ph.D.
1008	U.S. Patent Publication 2005/0243774 to Choi, et al (“Choi”)
1009	U.S. Provisional Application 61/235,909 (“the '272 Provisional”)
1010	U.S. Patent 8,737,189 to Hansen, et al (“Hansen Patent”)
1011	U.S. Provisional Application 60/653,429 (“Hansen Provisional”)
1012	IEEE 802.11-04/0889r3, “TGn Sync Proposal Technical Specification” to Mujtaba, uploaded and publicly available on January 20, 2005
1013	IEEE 802.11-04/0886r6, “WWiSE Proposal: High Throughput Extension to the 802.11 Standard” to Hansen, et al, uploaded and publicly available on January 6, 2005 (“January 2005 WWiSE”)
1014	U.S. Patent Publication 2007/0115802 to Yu (“Yu”)
1015	IEEE Std. 802.11a-1999, “Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications: High-Speed Physical Layer in the 5 GHz Band”, approved September 16, 1999 (“802.11a”)
1016	Declaration of David Ringle for 802.11a-1999 - IEEE Standard for Telecommunications and Information Exchange Between Systems – LAN/MAN Specific Requirements - Part 11: Wireless Medium Access Control (MAC) and physical layer (PHY) specifications: High-

Exhibit	Reference
	Speed Physical Layer in the 5 GHz Band, date of publication December 30, 1999
1017	IEEE Std. 802.11n-2009, “Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications: Amendment 5: Enhancements for Higher Throughput” (“802.11n”)
1018	Editor for G.9960, “ITU-T Recommendation G.9960 Next Generation Wire-line Based Home Networking Transceivers-Foundation”, ITU-T SG15/Q4, January 2009, as filed in file wrapper of the ’272 patent
1019	Intellon Corporation, “G.hn: Extended PHY frame header,” ITU-T SG15/Q4, 09XC-119, Xian, China, July 2009, as filed in file wrapper of the ’272 patent
1020	CopperGate Communication, “G.hn: Using Two Symbols for the Header of a PHY frame on Coax,” ITU-T SG15/Q4, 09XC-100, Xian, China July 2009, as filed in file wrapper of the ’272 patent
1021	Lörincz, et al, “Physical Layer Analysis of Emerging IEEE 802.11n WLAN Standard”, 8th International Conference Advanced Communication Technology (February 20-22, 2006); added to IEEE <i>Xplore</i> May 8, 2006
1022	Van Nee, et al., “OFDM for Wireless Multimedia Communications”, Artech House Publishers (2000)
1023	Bahai, et al., “Multi-Carrier Digital Communications Theory and Applications of OFDM”, Springer (2004)
1024	Tse, et al., “Fundamentals of Wireless Communication”, Cambridge University (2005)
1025	Heiskala, et al., “OFDM Wireless LANs: A Theoretical and Practical Guide”, Sams Publishing (2002)
1026	RESERVED
1027	Cox, “Stage Set for Compromise on IEEE High-Speed Wireless”, Network World (March 21, 2005)
1028	Reardon, “New Wi-Fi Standard Takes the Slow Road”, CNET (May 20, 2005)

Exhibit	Reference
1029	Mujtaba, et al., IEEE 802.11-05/786r0, “TGn Sync, WWiSE, and Mitmot Closing Report”, presentation submission, submitted and publicly available on July 21, 2005.
1030	Coffey, IEEE 802.11-05/0737r0, “WWiSE IEEE 802.11n Proposal”, presentation submission, submitted and publicly available on July 9, 2005
1031	Gast, “802.11 Wireless Networks: The Definitive Guide”, O’Reilly (2002)
1032	Infringement Contents with Appendices served in <i>AX Wireless LLC v. Dell Inc. et al.</i> , and <i>AX Wireless LLC v. HP Inc.</i> , U.S. District Court Eastern District of Texas, Case Numbers 2:22-cv-00277 and 2:22-cv-00279, November 3, 2022
1033	U.S. Patent 7,415,074 (Appendix C to INTEL-1007)
1034	Stephens, “802.11 ‘Decrypted’”, ACM SIGCOMM Computer Communication Review, Vol. 35, No. 2 (April 2005) (Appendix D to Lansford Declaration, INTEL-1007).
1035	Kay, “Sidebar: The Battle for 11n”, ComputerWorld (March 13, 2006)
1036	“‘WWiSE’ Consortium, Motorola Team on Proposal for IEEE 802.11n”, Wireless Design Online (February 24, 2005)
1037	WWiSE Industry Organization Press Release, “‘WWiSE’ Consortium and Motorola Team to Offer Enhanced Proposal for IEEE 802.11n” (February 24, 2005); <i>archived</i> on April 6, 2005 at https://web.archive.org/web/20050406073808/http://www.wwise.org/pressrelease-feb23.htm .
1038	IEEE 802.11-04/422r4, “New Participant Orientation”, presentation submission (July 2004) (Appendix A to Lansford Declaration, INTEL-1007)
1039	IEEE 802.11-04/736r1, “Approved Minutes of the IEEE P802.11 Full Working Group”, Minutes (July 2004) (Appendix B to Lansford Declaration, INTEL-1007)
1040	O’Hara, The IEEE 802.11 Handbook, Standards Information Network, IEEE Press, 1999

Exhibit	Reference
1041	Strom, “An overview of the IEEE 802.11 standard's evolution,” EE Times (Oct. 31, 2006)
1042	Jan. 11, 2024 Letter from Sarah Piepmeier letter to Kevin Wheeler regarding Dell Stipulation
1043	Jan. 11, 2024 Letter from Sarah Piepmeier letter to Kevin Wheeler regarding Lenovo Stipulation
1044	Fourth Amended Docket Control Order, <i>AX Wireless LLC v. Dell Inc.</i> , No. 2:22-cv-00277-RWS-RSP (E.D. Tex. Jan. 2, 2024), ECF No. 161
1045	Third Amended Docket Control Order, <i>AX Wireless LLC v. Lenovo Grp. Ltd.</i> , No. 2:22-cv-00280-RWS-RSP (E.D. Tex. Oct. 31, 2023), ECF No. 130
1046	Docket Control Order, <i>LightGuide, Inc. v. Amazon.com, Inc., et al</i> , No. 2:22-cv-00433-RWS-RSP (E.D. Tex. May 15, 2023)
1047	Docket Control Order, <i>Textron Innovations Inc., v. SZ DJI Tech. Co., Ltd, et al</i> , No. 2:22-cv-0351-RWS-RSP (E.D. Tex. May 11, 2023)

The *Fintiv* factors weigh heavily against discretionary denial. Patent Owner (“PO”) brought four separate litigations asserting U.S. Patent No. 10,917,272 (“the ’272 patent”) against Dell Technologies and Dell Inc. (collectively, “Dell”), against Lenovo Group Ltd. (“Lenovo”), against HP Inc. (“HP”), and against Acer Inc. (“Acer”)¹. Pet., 79-80. Petitioner, who is not a party to any litigation brought by PO, named Dell and Lenovo as real parties-in-interest in this IPR. Both Dell and Lenovo have offered separate stipulations in their respective litigations, consistent with *Sotera Wireless*. See INTEL-1042; INTEL-1043.

The *Sotera* stipulations made by Dell and Lenovo remove any overlap between the present IPR and the Dell and Lenovo litigations. “Consistent with *Sotera Wireless, Inc.*, the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.” See *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation* (June 21, 2022) (“*Fintiv Memo*”), 3. Given the *Sotera* stipulations by Dell and Lenovo, and

¹ PO does not dispute that discretionary denial is inappropriate based on either the HP or Acer litigations. See *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, at 13-14 (PTAB Mar. 20, 2020) (precedential).

the *Fintiv* Memo guidance, the Board should decline to exercise its discretion to deny institution.

Should the Board consider the remaining *Fintiv* factors, no stay has been requested, rendering *Fintiv* factor 1 neutral. As acknowledged by PO, the median time to trial for Judge Schroeder is “just over thirty months.” POPR, 59, *citing* AXW-2020. The final written decision in this proceeding will issue within a month of that. Although the trials in the Dell and Lenovo litigations are both currently scheduled for July 15, 2024, this date remains speculative because the district court has at least two other patent trials scheduled for the same date. INTEL-1044; INTEL-1045; INTEL-1046; INTEL-1047. Therefore, *Fintiv* factor 2 is neutral. Due to multiple adjustments to the litigation schedules, much substantive work remains including expert discovery and dispositive motions, rendering *Fintiv* factor 3 at a minimum neutral. *See* INTEL-1044; INTEL-1045.

Regardless, discretionary denial is inappropriate here because the Petition presents a “compelling, meritorious challenge.” *Fintiv* Memo, 4. The challenged claims merely recite repeating two portions of an extended header in a specific order. Extending a header and repeating header portions were known, as demonstrated by Hansen and WWiSE and acknowledged by PO as publicly discussed in submissions to ITU-T Ghn. *See* Pet., 8-9. And the specific order for generating the 2 repeated portions of the extended header would have been obvious to a POSITA

because only a very limited number of options exist for generating and repeating 2 pieces of information, WWiSE suggests the ordering, and the specific ordering improves efficiency in both the reception and transmission chains. *See* Pet., 52-57, 9.

PO alleges that the “merits of the Petition are weak.” POPR, 63. But PO does not argue Petitioner’s combination is missing any limitations. PO only contends that a POSITA would not have been motivated to combine Hansen and WWiSE because, for example, “numerous techniques to improve the range of a wireless system existed” other than the Extended Range mode of WWiSE. *See, e.g.*, POPR, 12. However, the existence of other capabilities that extend range does not preclude use of an ER mode. PO also contends the receiver in Intel’s combination would be unable to properly receive PPDU because it “would not know which greenfield PPDU it is receiving—NR or ER.” *See* POPR, 40. But the ’272 patent refutes PO’s argument, acknowledging that existing receivers decoded packets without the need to first decode the header to discover the packet’s format. *See* INTEL-1001, 2:32-3:11. *See In re Morsa*, 803 F. 3d 1374, 1378 (Fed. Cir. 2015) (affirming use of specification to show knowledge of a POSITA).

Accordingly, Petitioner’s arguments and evidence, if unrebutted in trial, “would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence.” *Fintiv* Memo, 4.

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** and **EXHIBITS 1042-1047** were served electronically via e-mail on January 11, 2024, in its entirety on the following counsel of record for Patent Owner:

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