UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC.,

Petitioner

v.

CALIFORNIA INSTITUTE OF TECHNOLOGY,

Patent Owner.

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Case IPR2017-00297[1]
U.S. Patent No. 7,916,781

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PETITIONER'S UPDATED EXHIBIT LIST

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[1] Case IPR2017-00423 has been consolidated with this proceeding.

Pursuant to the Board's authorization in Paper 45, dated February 28, 2018,

Petitioners hereby submits the Declaration of James A. Davis, Ph.D. and this

updated Exhibit List. The Declaration of James A. Davis, Ph.D. is Exhibit 1056.

Respectfully submitted,

Date: March 1, 2018   /Michael Smith /

                                                    Michael H. Smith
                                                    Registration No. 71,190

LIST OF EXHIBITS

Exhibit	Description
1001	U.S. Patent No. 7,916,781
1002	D. J. C. MacKay, S. T. Wilson, and M. C. Davey, "Comparison of constructions of irregular Gallager codes," *IEEE Trans. Commun.*, Vol. 47, No. 10, pp. 1449-54, 1999
1003	L. Ping, W. K. Leung, N. Phamdo, "Low Density Parity Check Codes with Semi-random Parity Check Matrix." *Electron. Letters*, Vol. 35, No. 1, pp. 38-39, 1999
1004	Declaration of Professor James Davis, Ph.D. ("Davis Declaration")
1005	Gallager, R., *Low-Density Parity-Check Codes*, Monograph, M.I.T. Press, 1963
1006	Berrou *et al.*, "Near Shannon Limit Error-Correcting Coding and Decoding: Turbo Codes," *ICC '93*, Technical Program, Conference Record 1064, Geneva 1993
1007	Benedetto, S. et al., *Serial Concatenation of Block and Convolutional Codes*, 32.10 Electronics Letters 887-8, 1996
1008	Luby, M. *et al.*, "Practical Loss-Resilient Codes," *STOC '97*, 1997
1009	Luby, M. *et al.*, "Analysis of Low Density Codes and Improved Designs Using Irregular Graphs," *STOC '98*, pp. 249-59, published in 1998
1010	Replacement copy of Frey, B. J. and MacKay, D. J. C., "Irregular Turbocodes," *Proc. 37th Allerton Conf. on Comm., Control and Computing*, Monticello, Illinois, published on or before March 20, 2000
1011	Final Written Decision, *Hughes Network Systems, LLC et al. v. Cal. Institute of Tech.*, IPR2015-00059, Paper 42 (PTAB Apr. 21, 2016)
1012	Prosecution History of the '781 Patent, Response Dated Jan. 27, 2011

1013	Claim Construction Order, *California Institute of Technology v. Hughes Communications Inc.*, No. 13-cv-7245 (C.D. Cal.)
1014	Decision on Institution, *Hughes Network Systems, LLC et al. v. Cal. Institute of Tech.*, IPR2015-00059, Paper 18 (PTAB Apr. 27, 2015)
1015	Expert Report of Dr. Brendan Frey (Case No. 2:13-cv-07245)
1016	MacKay, D. J. C, and Neal, R. M. "Near Shannon Limit Performance of Low Density Parity Check Codes," *Electronics Letters*, vol. 32, pp. 1645-46, 1996
1017	Replacement copy of D. Divsalar, H. Jin, and R. J. McEliece, "Coding theorems for "turbo-like" codes," *Proc. 36th Allerton Conf. on Comm., Control and Computing*, Allerton, Illinois, pp. 201-09, September, 1998
1018	U.S. Patent No. 4,271,520 (1981)
1019	Declaration of Robin Fradenburgh Concerning the "Proceedings, 36th Allerton Conference on Communications, Control, and Computing" Reference
1020	Chris Heegard and Stephen B. Wicker, *Turbo Coding*, pp. 12-14, 1999
1021	George C. Clark, Jr. and J. Bibb Cain, *Error-Correction Coding for Digital Communications*, pp. 6, 229, 1938
1022	Declaration Of Richard Goldenberg In Support Of Unopposed Motions To Submit Replacement Exhibits Pursuant To 37 C.F.R. § 42.104(c)
1023	Declaration Of Jonathan Barbee In Support Of Unopposed Motions To Submit Replacement Exhibits Pursuant To 37 C.F.R. § 42.104(c)
1024	Declaration of Professor James Davis, Ph.D. Regarding U.S. Patent No. 7,916,781 Claims 13-22 (Originally Filed in IPR2017-00423 as Exhibit 1104)
1025	Declaration of James M. Dowd in Support of Motion for Admission Pro Hac Vice

1026	Declaration of Mark D. Selwyn in Support of Motion for Admission Pro Hac Vice
1027	Tanner Graph for Code Described by Fig. 2 of U.S. Patent No. 7,116,710
1028	Block Diagram of Accumulator
1029	Tanner Graph for Code Described by Divsalar
1030	Tanner Graph for Code Described by Luby98 Code 14
1031	Tanner Graph for Code Described by Ping
1032	Tanner Graph for Code Described by MacKay Profile 93y
1033	Intentionally Left Blank
1034	Intentionally Left Blank
1035	Intentionally Left Blank
1036	Intentionally Left Blank
1037	Intentionally Left Blank
1038	Intentionally Left Blank
1039	Intentionally Left Blank
1040	Tanner Graph for Code Described by Divsalar (q=5)
1041	Tanner Graph for IRA Code
1042	Intentionally Left Blank
1043	Intentionally Left Blank
1044	Intentionally Left Blank
1045	Transcript of the Deposition of Dr. Michael Mitzenmacher
1046	Excerpt from Transcript of the Deposition of Dr. Hui Jin (IPR2017-210, 219, 700, 701, and 728)
1047	Intentionally Left Blank
1048	Block Diagram of Implementation of Code Described in Ping
1049	Declaration of Dr. Brendan Frey
1050	Curriculum Vitae of Dr. Brendan Frey

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