

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KRISP TECHNOLOGIES, INC.,
Petitioner

v.

Sanas.ai Inc.,
Patent Owner

Inter Partes Review Case No. IPR2026-00273
U.S. Patent No. 12,125,496

PETITION'S UPDATED EXHIBIT LIST

APPENDIX OF EXHIBITS

Exhibit 1001	U.S. Patent No. 12,125,496 (“’496 Patent”)
Exhibit 1002	Prosecution History of the 12,125,496 Patent
Exhibit 1003	Declaration of Christopher Schmandt
Exhibit 1004	U.S. Patent No. 12,412,590 to Dantrey et al. (“Dantrey”)
Exhibit 1005	WIPO Publication No. 2020/199990 to Strake et al. (“Strake”)
Exhibit 1006	U.S. Patent No. 10,867,616 to Chen et al. (“Chen”)
Exhibit 1007	U.S. Patent Application Publication No. 2021/0241780 to Quillen (“Quillen”)
Exhibit 1008	Martin Ernst Heckmann, et al., <i>A Hierarchical Framework for Spectro-Temporal Feature Extraction</i> , Speech Communication, vol. 53, no. 5, pp. 736 - 752, 2011. (“Heckmann”)
Exhibit 1009	R. E. Crochiere, <i>A Weighted Overlap-Add Method of Short-Time Fourier Analysis/Synthesis</i> , IEEE Transactions on Acoustics, Speech, and Signal Processing, Vol. ASSP-28, No. 1, February 1980 (“Crochiere”)
Exhibit 1010	Christopher Schmandt, <i>Voice Communication with Computers Conversational Systems</i> , Van Nostrand Reinhold, (1994) (“Schmandt”)
Exhibit 1011	U.S. Patent Application Publication No. 2024/0098218 to Nguyen et al. (“Nguyen”)
Exhibit 1012	Martinek, R.; Ladrova, M.; Sidikova, M.; Jaros, R.; Behbehani, K.; Kahankova, R.; Kawala-Sterniuk, A. <i>Advanced Bioelectrical Signal Processing Methods: Past, Present and Future Approach—Part II: Brain Signals</i> , Sensors 2021, 21, 6343. https://doi.org/10.3390/s21196343 (“Martinek”)
Exhibit 1013	Casey O’Callaghan, <i>Pitch</i> , http://caseyocallaghan.com/research/papers/Pitch.pdf (“O’Callaghan”)
Exhibit 1014	W. Q. Zheng, J. S. Yu, Y. X. Zou, <i>An Experimental Study of Speech Emotion Recognition Based on Deep Convolutional Neural Networks</i> , International Conference on Affective Computing and Intelligent Interaction (ACII) (2015) (“Zheng”)
Exhibit 1015	Xuechuan Wang, Douglas O’Shaughnessy, <i>Improving the Efficiency of Automatic Speech Recognition by Feature Transformation And Dimensionality Reduction</i> , 10.21437/Eurospeech.2003-204 (2003) (“Wang”)

Exhibit 1016	Shuhua Gao, Xiaoling Wu, Cheng Xiang, and Dongyan Huang, Development of a Computationally Efficient Voice Conversion System on Mobile Phones, https://doi.org/10.1017/ATSIP.2018.23 (2018) (“ <i>Wu</i> ”)
Exhibit 1017	U.S. Patent Application Publication No. 2020/0066296 to Sargsyan et al. (“ <i>Sargsyan</i> ”)
Exhibit 1018	Su-Hyun Han , Ko Woon Kim, SangYun Kim , Young Chul Youn, <i>Artificial Neural Network: Understanding the Basic Concepts without Mathematics</i> , Dement Neurocognitive Disord. 2018 Sep;17(3):83-89 (“ <i>Han</i> ”)
Exhibit 1019	Maurya Vijayaramachandran, and Siddique Afraaz N, <i>Impact of Hidden Layer in Artificial Neural Networks</i> , IOSR Journal of Engineering, Vol. 10, Issue 11, November 2020, Series -I, 33-38 (“ <i>Siddique</i> ”)
Exhibit 1020	Maad M. Mijwel, Adam Esen and Aysar Shamil, <i>Overview of Neural Networks</i> , Babylonian Journal of Machine Learning, 1:2, April 2019 (“ <i>Mijwel</i> ”)
Exhibit 1021	Antonia Creswell, Tom White, Vincent Dumoulin, Kai Arulkumaran, Biswa Sengupta, and Anil A Bharath, <i>Generative Adversarial Networks: An Overview</i> , 1710.07035v1 [cs.CV] 19 Oct 2017 (“ <i>Creswell</i> ”)
Exhibit 1022	Weikuan Jia, Meili Sun, Jian Lian, and Sujuan Hou, <i>Feature Dimensionality Reduction: A Review</i> , Complex & Intelligent Systems (2022) 8:2663–2693 (“ <i>Jia</i> ”)
Exhibit 1023	Hyun Ah Song and Soo-Young Lee, <i>Hierarchical Data Representation Model - Multi-layer NMF</i> , arXiv:1301.6316v3 [cs.LG] 18 Mar 2013 (“ <i>Song</i> ”)
Exhibit 1024	Premananda B S and Dr. Uma B V, <i>Speech Enhancement Algorithm to Reduce the Effect of Background Noise in Mobile Phones</i> , International Journal of Wireless & Mobile Networks (IJWMN) Vol. 5, No. 1, February 2013 (“ <i>Premananda</i> ”)
Exhibit 1025	Yi Xu, <i>Prosody, Tone, and Intonation</i> , Routledge Handbook of Phonetics. W. F. Katz and P. F. Assmann: Routledge, New York. pp. 314-356 (2019) (“ <i>Xu</i> ”)
Exhibit 1026	PCT Publication No. 2022/168102 to Keshet et al. (“ <i>Keshet</i> ”)
Exhibit 1027	Tal Peer and Timo Gerkmann, <i>Phase-Aware Deep Speech Enhancement: It’s All About The Frame Length</i> , arXiv:2203.16222v2 [eess.AS] 4 Oct 2022 (“ <i>Peer</i> ”)
Exhibit 1028	U.S. Patent No. 12,106,749 to Prabhavalkar et al. (“ <i>Prabhavalkar</i> ”)

Exhibit 1029	Qifeng Zhu and Abeer Alwan, <i>On the Use of Variable Frame Rate Analysis in Speech Recognition</i> , 2000 IEEE International Conference on Acoustics, Speech, and Signal Processing, 3, 1783-1786 (2000) (“ <i>Zhu</i> ”)
Exhibit 1030	Qi Li, <i>An Auditory-Based Transform for Audio Signal Processing</i> , 2009 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (“ <i>Li</i> ”)
Exhibit 1031	U.S. Patent No. 7,328,153 to Wells et al. (“ <i>Wells</i> ”)
Exhibit 1032	U.S. Patent No. 10,796,686 to Arik et al. (“ <i>Arik</i> ”)
Exhibit 1033	U.S. Patent Application Publication No. 2003/0088408 to Thyssen et al. (“ <i>Thyssen</i> ”)
Exhibit 1034	U.S. Patent Application Publication No. 2005/0066209 to Kee et al. (“ <i>Kee</i> ”)
Exhibit 1035	Abdullah Zaini Alsheibi, <i>Unsupervised Learning Algorithm for Noise Suppression and Speech Enhancement Applications</i> , Electronic Theses and Dissertations. 2168. https://digitalcommons.du.edu/etd/2168 (2023) (“ <i>Alsheibi</i> ”)
Exhibit 1036	U.S. Patent Application Publication No. 2015/0371655 to Gao (“ <i>Gao</i> ”)
Exhibit 1037	U.S. Patent No. 10,561,361 to Quatieri et al. (“ <i>Quatieri</i> ”)
Exhibit 1038	U.S. Patent No. 9,195,649 to Neuhauser et al. (“ <i>Neuhauser</i> ”)
Exhibit 1039	European Patent Application Publication No. 0756172 to Demmin et al. (“ <i>Demmin</i> ”)
Exhibit 1040	U.S. Patent No. 6,269,351 to Black (“ <i>Black</i> ”)
Exhibit 1041	U.S. Patent Application Publication No. 2017/0193066 to Zhu et al. (“ <i>Guo</i> ”)
Exhibit 1042	Takuma Okamoto, Tomoki Toda, Yoshinori Shiga, and Hisashi Kawai, <i>Real-Time Neural Text-To-Speech with Sequence-To-Sequence Acoustic Model and WaveGlow or Single Gaussian WaveRNN Vocoders</i> , Interspeech 2019 (“ <i>Okamoto</i> ”)
Exhibit 1043	Haohe Liu et al., <i>VoiceFixer: A Unified Framework for High-Fidelity Speech Restoration</i> , Interspeech 2022 (“ <i>Liu</i> ”)
Exhibit 1044	Leyuan Sheng et al., <i>Reducing sover-smoothness in speech synthesis using Generative Adversarial Networks</i> , IEEE 2018 (“ <i>Sheng</i> ”)
Exhibit 1045	Declaration of Mina Ching, Records Request Processor at the Internet Archive (“ <i>Ching</i> ”)
Exhibit 1046	Francois Waldner et al., <i>Deep learning on edge: extracting field boundaries from satellite images with a convolutional neural network</i> , February 4, 2020 (“ <i>Waldner</i> ”)

Exhibit 1047	Patrik O. Hoyer, <i>Non-Negative Sparse Coding</i> , Neural Networks Research Centre Helsinki University of Technology (“ <i>Hoyer</i> ”)
Exhibit 1048	Haohe Liu et al., <i>VoiceFixer: Toward General Speech Restoration with Neural Vocoder</i> , October 5, 2021 (“ <i>VoiceFixer</i> ”)
Exhibit 1049	Declaration of June Munford dated March 18, 2026 regarding public availability of <i>Heckmann</i> (“ <i>Munford-Heckmann</i> ”)
Exhibit 1050	Declaration of June Munford dated March 24, 2026 regarding public availability of <i>Liu</i> (“ <i>Munford-Liu</i> ”)
Exhibit 1051	Petitioner’s Stipulation

Dated: April 24, 2026

ERISE IP, P.A.

BY: /s/ Eric A. Buresh
Eric A. Buresh, Reg. No. 50,394
eric.buresh@eriseip.com
7015 College Blvd., Suite 700
Overland Park, KS 66211
P: (913) 777-5600
F: (913) 777-5601

COUNSEL FOR PETITIONER

**CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.105**

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on April 24, 2026, the foregoing *Petitioner's Updated Exhibit List with Exhibit* was served via electronic filing with the Board and via Electronic Mail on Patent Owner:

Charles R. Macedo (cmacedo@arelaw.com)
Gary J. Gershik (ggershik@arelaw.com)
Lewis Derenzis III (lderenzis@arelaw.com)
Sanas-PTAB@arelaw.com

Respectfully submitted,

ERISE IP, P.A.

BY: /s/ Eric A. Buresh
Eric A. Buresh, Reg. No. 50,394
eric.buresh@eriseip.com
7015 College Blvd., Suite 700
Overland Park, KS 66211
P: (913) 777-5600
F: (913) 777-5601

COUNSEL FOR PETITIONER