IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

ADVANCED CODING TECHNOLOGIES LLC,)	Case No. 2:24-cv-00353-JRG
)	
Plaintiff,)	**<u>JURY TRIAL DEMANDED</u>**
)	
v.)	
)	
GOOGLE LLC,)	
)	
Defendant.)	
)	
)	
)	

PLAINTIFF ADVANCED CODING TECHNOLOGIES, LLC'S
PRELIMINARY CLAIM CONSTRUCTIONS AND PRELIMINARY
<u>IDENTIFICATION OF EXTRINSIC EVIDENCE PURSUANT TO P.R. 4-2</u>

Pursuant to Patent Rule 4-2, Plaintiff Advanced Coding Technologies, LLC ("ACT") provides its preliminary proposed claim constructions and preliminary identification of extrinsic evidence, attached hereto as Appendix A, for United States Patent No. 8,090,025, United States Patent No. 9,986,303, United States Patent No. 10,218,995, United States Patent No. 9,042,448, United States Patent No. 8,230,101, and United States Patent No. 7,804,891 (collectively "the Asserted Patents") to Defendant Google LLC ("Google" or "Defendant"). Terms construed include those identified in each party's P.R. 4-1 disclosures.

ACT reserves the right to offer further extrinsic evidence to rebut preliminary claim constructions, testimony, or extrinsic evidence Defendant offers in support of its claim construction positions. In accordance with United States Court of Appeals for the Federal Circuit precedent, ACT contends that the following information is part of the intrinsic record of the Asserted Patents, and therefore does not fall within P.R. 4-2's requirement for identification in this paper: (1) the Asserted Patents; and (2) statements in the file histories of the Asserted Patents.

In addition, ACT may provide declarations and/or testimony of one or more of its experts including, but not limited to, Dr. Eli Saber and Dr. Stan McClellan, as evidence of how one having ordinary skill in the art would interpret the foregoing terms. Such declarations and/or testimony may address both the general understanding of the relevant terms and phrases in the field of the Asserted Patents, as well as the understanding of terms and phrases in the context of the Asserted Patents' specifications and claims. ACT's experts may also provide testimony concerning the appropriate level of skill in the art at the time of the inventions and the background of the technology at issue at the time of the inventions. ACT reserves the right to introduce expert declarations or testimony to rebut Defendant's claim construction positions and any expert declarations or testimony introduced by Defendant.

Dated: June 3, 2025

Respectfully submitted,

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ATTORNEYS FOR PLAINTIFF,
ADVANCED CODING TECHNOLOGIES, LLC

CERTIFICATE OF SERVICE

I hereby certify that, on June 3, 2025, a true and correct copy of the above and foregoing

document has been served by email on all counsel of record.

/s/ Peter Lambrianakos
Peter Lambrianakos

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
"border motion-vector data"	'025 Patent Claim 1, 3, 4, 6-10	data representing the difference in spatial position between a border of the block to be predicted in the picture to be coded and the best-matched border in the reference picture	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term. Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937 Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at https://aomediacodec.github.io/av1-spec/av1-spec.pdf Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/ Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design,"

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			available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at https://ieeexplore.ieee.org/document/8296419
			Mark Hasegawa-Johnson, "ECE 417: Multimedia Signal Processing, Lecture 23: Motion Vectors," available at https://courses.engr.illinois.edu/ece417/fa2017/ece417fa2017lecture23.pdf
			Dkt. 87, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, (E.D. Tex. March 5, 2024)
			Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024)

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"boundary condition"	'025 Patent Claims 1, 3, 4, 6-10	gradient data pertaining to the pixels at the boundary of a block	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term. Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937 Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at https://aomediacodec.github.io/av1-spec/av1-spec.pdf Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/ Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design,"

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			available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at https://ieeexplore.ieee.org/document/8296419
			Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024)
"[an estimated video signal…] satisfies Poisson's equation"	'025 Patent Claims 1, 3, 4, 6-10	"[an estimated video signal] for which Poisson's Equation is true"	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term. Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at

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			https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937
			Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at https://aomediacodec.github.io/av1-spec/av1-spec.pdf
			Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/
			Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at

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			https://ieeexplore.ieee.org/document/8296419
			Prof. R. E. Hunt, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, "Lecture Notes for Mathematical Methods II, Chapter 2: Poisson's Equation," available at https://www.damtp.cam.ac.uk/user/reh10/lectures/nst-mmii-chapter2.pdf
			Prof. David Tong, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, "Some Vector Calculus Equations," available at https://www.damtp.cam.ac.uk/user/tong/vc/vc5.pdf
			Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024)
"an estimated video signal"	'025 Patent Claims 1, 3, 4, 6-10	Plain and ordinary meaning	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term. Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins,

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			Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937
			Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at https://aomediacodec.github.io/av1-spec/av1-spec.pdf
			Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/
			Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next

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			Generation Open Source Video Codec," available at https://ieeexplore.ieee.org/document/8296419
			Prof. R. E. Hunt, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, "Lecture Notes for Mathematical Methods II, Chapter 2: Poisson's Equation," available at https://www.damtp.cam.ac.uk/user/reh10/lectures/nst-mmii-chapter2.pdf
			Prof. David Tong, Department of Applied Mathematics and Theoretical Physics, University of Cambridge, "Some Vector Calculus Equations," available at https://www.damtp.cam.ac.uk/user/tong/vc/vc5.pdf
			Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024)
"the input signal being obtained by multiplexing a coded bitstream obtained by predictive coding, border motion-vector data and post-quantization data obtained by	'025 Patent Claims 6-8, 10	the input signal being obtained by multiplexing a coded bitstream, obtained by predictive coding, comprising (1) border motion-vector data and (2)	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term. Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah

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quantization in the predictive coding"		post-quantization data obtained by quantization in the predictive coding	Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937
			Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at https://aomediacodec.github.io/av1-spec/av1-spec.pdf
			Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/
			Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=

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			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at https://ieeexplore.ieee.org/document/8296419
			Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024)
basic video image coding data	'303 Patent, Claims 1-2	Plain and ordinary meaning	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term.
			Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937
			Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at

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			https://aomediacodec.github.io/av1-spec/av1-spec.pdf
			Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/
			Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at https://ieeexplore.ieee.org/document/8296419
			Russell Trafford-Jones, Video: S-Frame in AV1: Enabling better compression for low latency live streaming," available at https://thebroadcastknowledge.com/2020

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			/04/15/video-s-frame-in-av1-enabling-better-compression-for-low-latency-live-streaming/
			Tarek Amara, "S-Frame in AV1: Enabling better compression for low latency live streaming," available at https://www.youtube.com/watch?v=o5sJX6VA34o
			Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024)
supplementary video image coding data	'303 Patent, Claims 1-2	Plain and ordinary meaning	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term.
			Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937
			Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at

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			https://aomediacodec.github.io/av1-spec/av1-spec.pdf
			Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/
			Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at https://ieeexplore.ieee.org/document/8296419
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			Tarek Amara, "S-Frame in AV1: Enabling better compression for low latency live streaming," available at https://www.youtube.com/watch?v=o5sJX6VA34o
			Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024)
"coding order and display order are earlier by a factor of a group of pictures"	'303 Patent, Claims 1-2	coding order and display order are earlier by one or more groups of pictures	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term.
			Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937
			Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at

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			https://aomediacodec.github.io/av1-spec/av1-spec.pdf
			Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/
			Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at https://ieeexplore.ieee.org/document/8296419
			Russell Trafford-Jones, Video: S-Frame in AV1: Enabling better compression for low latency live streaming," available at https://thebroadcastknowledge.com/2020

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			Tarek Amara, "S-Frame in AV1: Enabling better compression for low latency live streaming," available at https://www.youtube.com/watch?v=o5sJX6VA34o
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"reconstructing video image coding data from the basic video image coding data and the supplementary video image coding data"	'303 Patent, Claims 1-2	rearranging basic video image coding data with supplementary video image coding data	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term. Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at

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			https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937
			Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at https://aomediacodec.github.io/av1-spec/av1-spec.pdf
			Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/
			Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at

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			https://ieeexplore.ieee.org/document/8296419
			Russell Trafford-Jones, Video: S-Frame in AV1: Enabling better compression for low latency live streaming," available at https://thebroadcastknowledge.com/2020/04/15/video-s-frame-in-av1-enabling-better-compression-for-low-latency-live-streaming/
			Tarek Amara, "S-Frame in AV1: Enabling better compression for low latency live streaming," available at https://www.youtube.com/watch?v=o5sJX6VA34o
			Dkt. 87, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, (E.D. Tex. March 5, 2024)
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"standard resolution"	'995 Patent, Claims 1-4, 8-11 '448 Patent, Claims 1-3	the spatial resolution of a picture input into an encoding system as an encoding target	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term. Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah

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			Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937 Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at https://aomediacodec.github.io/av1-spec/av1-spec.pdf Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/ Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at https://ieeexplore.ieee.org/document/8296419

Urvang Joshi, Debargha Mukherjee, Yue Chen, Sarah Parker, and Adrian Grange, "In-loop Frame Super-resolution in AV1," available at https://ieeexplore.ieee.org/document/8954553

Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024) |
| "decoding with an extension of the standard resolution" | '995 Patent, Claims 2-4, 11 | decoding with an enhancement layer based on standard resolution reference picture(s) | Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term.

Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at |

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			Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at https://aomediacodec.github.io/av1-spec/av1-spec.pdf
			Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/
			Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
			https://ieeexplore.ieee.org/document/8296419 Urvang Joshi, Debargha Mukherjee, Yue Chen, Sarah Parker, and Adrian Grange, "In-loop Frame Super-resolution in AV1," available at https://ieeexplore.ieee.org/document/8954553 Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024)
"A moving picture encoding system that makes an encoding of a sequence of moving pictures with a resolution higher than a standard resolution using moving pictures contents which include a sequence of moving pictures with the standard resolution and do not include a sequence of moving pictures with a resolution higher than the standard resolution, the moving picture encoding system comprising"	'448 Patent, Claims 1-3	Limiting preamble, plain and ordinary meaning	Plaintiff may rely on the expert testimony of Dr. Eli Saber regarding the proper construction of this term. Jingning Han, Bohan Li, Debargha Mukherjee, Ching-han Chiang, Adrian Grange, Cheng Chen, Hui Su, Sarah Parker, Sai Deng, Urvang Joshi, Yue Chen, Yunqing Wang, Paul Wilkins, Yaowu Xu, and James Bankoski, "A Technical Overview of AV1," available at https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9363937 Peter de Rivaz and Jack Haughton, "AV1 Bitstream & Decoding Process Specification," available at

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			https://aomediacodec.github.io/av1-spec/av1-spec.pdf
			Kevin Wen, "The Overview of AV1 Coding," available at https://wenxiaoming.github.io/2019/03/02/The-overview-of-AV1-coding/
			Marcel Correa, Mario Saldanha, Alex Borges, Guilherme Correa, Daniel Palomino, Marcelo Porto, Bruno Zatt, and Luciano Agostini, "AV1 and VVC Video Codecs: Overview on Complexity Reduction and Hardware Design," available at https://ieeexplore.ieee.org/ielx7/8784029/9314963/09536216.pdf?tp=&arnumber=9536216&isnumber=9314963&ref=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8=
			Yue Chen and Debargha Mukherjee, "Variable Block-Size Overlapped Block Motion Compensation in the Next Generation Open Source Video Codec," available at https://ieeexplore.ieee.org/document/8296419
			Urvang Joshi, Debargha Mukherjee, Yue Chen, Sarah Parker, and Adrian Grange, "In-loop Frame Super-resolution in AV1," available at

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			https://ieeexplore.ieee.org/document/8954553 Dkt. 155, *Advanced Coding Techs. LLC v. LG Elecs. Inc.*, No. 2:22-CV-00501-JRG, 2024 WL 3794780 (E.D. Tex. July 21, 2024)
"transfer" / "transferring"	'101 Patent, Claims 1, 4, 6, 7, 10, 12	Plain and ordinary meaning	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.
"a transfer control unit adapted to transfer and store part of held digital contents in the internal storage device to a network storage device, wherein the network storage device is connected to the network and is capable of storing data, and wherein said transfer control unit does not transfer, from the internal storage device to the network storage device, the digital contents that cannot be recovered if a network failure occurs during the transferring of the digital contents from the internal storage device to the network storage device"	'101 Patent, Claim 1	Subject to 112 p. 6 Structure: Software algorithm that performs the steps of: • Selecting the digital contents from the held digital contents in the internal storage device according to any criteria • Transferring part of the held digital contents from the internal storage device to the	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		network storage device for any reason '101 Patent, 6:57-7:12. Function: transfer and store part of held digital contents in the internal storage device to a network storage device, wherein the network storage device is connected to the network and is capable of storing data, and does not transfer, from the internal storage device to the network storage device, the digital contents that cannot be recovered if a network failure occurs during the transferring of the digital contents from the internal storage device to the network storage device	
"a transfer control unit adapted to transfer and store part of held digital contents in the internal storage device to a network storage device, wherein the network storage device is connected to the network and is capable of storing	'101 Patent, Claim 6	Subject to 112 p. 6 Structure: Software algorithm, program, or routine that performs the steps of:	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
data, and wherein the digital contents that cannot be recovered if a network failure occurs during the transferring of the digital contents from the internal storage device to the network storage device is transferred after obtaining permission from a user"		• Selecting the digital contents from the held digital contents in the internal storage device according to any criteria • Transferring part of the held digital contents from the internal storage device to the network storage device for any reason '101 Patent, 6:57-7:12. Function: transfer and store part of held digital contents in the internal storage device to a network storage device, wherein the network storage device is connected to the network and is capable of storing data, and wherein the digital contents that cannot be recovered if a network failure occurs during the transferring of the digital contents from the internal storage device to the	

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		network storage device is transferred after obtaining permission from a user	
"a list information transmission unit adapted to respond to a list presentation request for the held digital contents of the server device for media from the network player by transmitting list information to the network player, wherein the list information lists the digital contents left in the internal storage device and the digital contents transferred from the internal storage device to the network storage device and stored in the network storage device, and wherein the list information maintains a tree structure of the digital contents in the internal storage device before transferring the digital contents to the network storage device"	'101 Patent, Claims 1, 6	Subject to 112 p. 6 Structure: Software algorithm, program, or routine that performs the steps of: • transmitting list information to the network player; • if the network storage device is not connected to the network, making the list information for the network player include predetermined information for allowing the network player to perform a process for expressing the non-connection on its display list; and • excluding the digital contents that cannot be played in	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		response to an instruction to play issued from the network player from the list information to be transmitted from the server device for media to the network player so that the digital contents are not shown on the display list of the network player. '101 Patent, 8:25-9:25 Function: respond to a list presentation request for the held digital contents of the server device for media from the network player by transmitting list information to the network player, wherein the list information lists the digital contents left in the internal storage device and the digital contents transferred from the internal storage device to the network storage device and stored in	

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		the network storage device, and wherein the list information maintains a tree structure of the digital contents in the internal storage device before transferring the digital contents to the network storage device	
"said list information transmission unit makes the list information to be transmitted to the network player include information for identifying whether each digital content is currently stored in the internal storage device or the network storage device in the display list of the network player"	'101 Patent, Claims 5, 11	Subject to 112 p. 6 Structure: Software algorithm, program, or routine that performs the steps of: • transmitting the list information to the network player; • if the network storage device is not connected to the network, making the list information for the network player include predetermined information for allowing the network player to perform a process	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		for expressing the non-connection on its display list; and • excluding the digital contents that cannot be played in response to an instruction to play issued from the network player from the list information to be transmitted from the server device for media to the network player so that the digital contents are not shown on the display list of the network player. '101 Patent, 8:25-9:25 Function: makes the list information to be transmitted to the network player include information for identifying whether each digital content is currently stored in the internal storage device or the network storage device	

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		in the display list of the network player	
"a search unit adapted to respond to a data transmission request for the held digital contents from the network player by searching for a location where the held digital contents are currently stored"	'101 Patent, Claims 1, 6	Subject to 112 p. 6 Structure: Software algorithm, program, or routine that performs the steps of: • receiving a data transmission request for held digital contents from the network player • responding to a data transmission request by searching for the location of requested digital contents • transmitting the result of the search to the contents data transmission processing means if the result of the search shows the network storage device '101 Patent, 6:41-48	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		Function: respond to a data transmission request for the held digital contents from the network player by searching for a location where the held digital contents are currently stored	
"a digital contents data transmission processing unit adapted to allow the corresponding data in held digital contents to be stream-delivered from the network storage device to the network player, if the result of search shows the network storage device"	'101 Patent, Claims 1-3, 6	Subject to 112 p. 6 Structure: Software algorithm, program, or routine that performs the steps of: • determining whether digital contents should be transmitted from the network storage device to the network player directly or indirectly • transmitting digital contents to the network player according to the determination of direct or indirect transmission.	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		'101 Patent, 7:24-65. Function: allow the corresponding data in held digital contents to be stream-delivered from the network storage device to the network player, if the result of search shows the network storage device	
"said digital contents data transmission processing unit causes the network storage device to transmit the corresponding data to the server device for media, and then transmits the corresponding data received from the network storage device from the server device for media to the network player"	'101 Patent, Claims 2, 8	Subject to 112 p. 6 Structure: Software algorithm, program, or routine that performs the steps of: • determining whether digital contents should be transmitted from the network storage device to the network player directly or indirectly • transmitting digital contents to the network player according to the determination of	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		direct or indirect transmission. '101 Patent, 7:24-65. Function: allow the corresponding data in held digital contents to be stream-delivered from the network storage device to the network player, if the result of search shows the network storage device; and causes the network storage device to transmit the corresponding data to the server device for media, and then transmits the corresponding data received from the network storage device from the server device for media to the network player	
"said digital contents data transmission processing unit transmits the corresponding data and information for identifying the network storage device to the network player, and causes the	'101 Patent, Claims 3, 9	Subject to 112 p. 6 Structure: Software algorithm, program, or routine that performs the steps of:	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
network storage device to directly transmit the corresponding data to the network player."		• determining whether digital contents should be transmitted from the network storage device to the network player directly or indirectly • transmitting digital contents to the network player according to the determination of direct or indirect transmission. '101 Patent, 7:24-65. Function: allow the corresponding data in held digital contents to be stream-delivered from the network storage device to the network player, if the result of search shows the network storage device; transmits the corresponding data and information for identifying the network storage device to the network player, and causes	

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		the network storage device to directly transmit the corresponding data to the network player	
"a return control unit adapted to cause the digital contents corresponding to a predetermined condition among the digital contents which have been transferred to the network storage device to be returned from the network storage device to the internal storage device"	'101 Patent, Claims 4, 10	Subject to 112 p. 6 Structure: Software algorithm, program, or routine that performs the steps of: • determining a predetermined condition whether digital contents have recently been subjected to self-playback among the digital contents which have been transferred to the network storage device; or • determining a predetermined condition whether the digital contents have recently been played, whether by self-playback or network-playback;	Plaintiff may rely on the expert testimony of Dr. Eli Saber and/or Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
		• returning digital contents from the network storage device to the internal storage device based on the determined predetermined condition '101 Patent, 7:66-8:24 Function: cause the digital contents corresponding to a predetermined condition among the digital contents which have been transferred to the network storage device to be returned from the network storage device to the internal storage device	
"a symbol judging means for obtaining a baseband signal representative of a sequence of multilevel symbols and judging the symbol represented by the baseband signal"	'891 Patent, Claims 1, 4	Plain and ordinary meaning, not subject to 112 p. 6	Plaintiff may rely on the expert testimony of Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
"a communication quality judging means for judging communication quality of a transmission channel over which the baseband signal has been transmitted, based on content of the symbol judged by the symbol judging means; . . . wherein the communication quality judging means identifies the number of redundant bits having the predetermined value or the number of redundant bits missing the predetermined value among the redundant bits contained in the symbol that contains a bit belonging to the protected portion, and judges the communication quality of the transmission channel based on the identified result"	'891 Patent, Claim 1	Plain and ordinary meaning, not subject to 112 p. 6	Plaintiff may rely on the expert testimony of Dr. Stan McClellan regarding the proper construction of this term.
"a data changing means for, if the communication quality judged by the communication quality judging means does not satisfy a predetermined condition, making a predetermined change to the data to be transmitted represented by the symbol used in the judgment"	'891 Patent, Claim 1	Plain and ordinary meaning, not subject to 112 p. 6	Plaintiff may rely on the expert testimony of Dr. Stan McClellan regarding the proper construction of this term.

Term	Patent/Claim(s)	ACT's Preliminary Construction	Extrinsic Support
"the data changing means comprises means for externally obtaining a parameter that defines at least a portion of the condition"	'891 Patent, Claim 2	Plain and ordinary meaning, not subject to 112 p. 6	Plaintiff may rely on the expert testimony of Dr. Stan McClellan regarding the proper construction of this term.