IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

U.S. PHILIPS CORPORATION, Plaintiff, v. EASTMAN KODAK COMPANY, Defendant.	)	Civil Action No. 06-251 (GMS)

ORDER CONSTRUING THE TERMS OF U.S. PATENT NO. 4,901,075

On November 20, 2007, the court held a *Markman* hearing in this patent infringement action concerning U.S. Patent No. 4,901,075 (the "'075 patent" or the "patent-in-suit"), which Philips owns. After having considered the submissions of the parties and hearing oral argument on the matter, IT IS HEREBY ORDERED, ADJUDGED, and DECREED that, as used in the asserted claims of the '075 patent:

1. The term "coefficient" is construed to mean "a multiplication factor that results from transform coding."[1]

2. The term "zero coefficient" is construed to mean "a coefficient whose value is zero or approximately zero."[2]

[1] The '075 patent's specification, the primary basis for claim construction, makes this clear. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (*en banc*), *cert. denied*, 546 U.S. 1170 (2006); *e.g.*, '075 patent at 01:20-26 ("By the transform, a new block of values (coefficients) is obtained from the original block."). Eastman Kodak's proposed construction, "a whole number," (D.I. 94 at 4), is inconsistent with the specification because it omits the term's relationship to the transform and excludes the possibility of non-integer coefficients. The court thus rejects that construction. *Merck & Co. v. Teva Pharms.*, 347 F.3d 1367, 1371 (Fed. Cir. 2003) (claims to be construed consistent with specification).

[2] The specification defines this term. '075 patent at 2:30-33. Accordingly, the court adopts this construction. *Phillips*, 415 F.3d at 1315-16.

3. The term "non-zero coefficient" is construed to mean "a coefficient whose possible magnitudes proceed through the natural numbers without the zero."[3]

4. The term "code word" is construed to mean "a sequence of bits assigned to represent a particular event or events in accordance with a predefined set of rules."[4]

5. The term "assigning a code word to represent said run length and said non-zero coefficient" is construed to have its plain and ordinary meaning.[5]

6. The term "Huffman codeword" is construed to mean "a sequence of bits assigned to represent a particular event or events in accordance with a predefined set of rules with the following characteristics: (i) the code words may be of different lengths; (ii) no code word is a prefix of another code word; and (iii) the predefined set of rules strives to minimize the average code word length by exploiting the distribution of event probabilities."[6]

7. The term "Huffman codeword is independent of the sign of that nonzero coefficient" is construed to have its plain and ordinary meaning.[7]

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[3] The court rejects Eastman Kodak's proposed construction, "a whole number whose value is not zero," for the reasons stated in footnotes 1. *See* '075 patent at 02:33-35, 02:55-56.

[4] Eastman Kodak's proposed construction, "a unique representation for an event in a single code table," conflicts with the language of the claims, which provide for a code word representing more than one event. '075 patent at 08:19-32. The court further declines to import the "single code table" limitation found in embodiments of the '075 patent onto claims lacking that limitation. *Comark Commc'ns v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998).

[5] Given the court's construction of the terms "code word," "run length," and "non-zero coefficient," the court believes the plain reading of the claim's text conveys this term's meaning. Accordingly, the term "do[es] not require elaborate construction." *Brown v. 3M*, 265 F.3d 1349, 1352 (Fed. Cir. 2001).

[6] While the parties' proposals differ only slightly, Philips's construction is more consistent with the court's construction of the term "code word" and the specification's description of Huffman coding. '075 patent at 01:35-45 (describing Huffman coding), 01:29-30 (prior art also using Huffman coding to improve code efficiency); *see* footnote 4. The court therefore rejects Eastman Kodak's proposed construction.

[7] *See* footnote 5.

8. The term "the sign is coded by a separate bit" is construed to have its plain and ordinary meaning.[8]

9. The term "event" is construed to mean "a run of zero coefficients and the value of the non-zero coefficient which immediately precedes or follows that run."[9]

10. The term "run" is construed to mean "a sequence, of zero or more length, of successive identical particular values."[10]

11. The term "run length" is construed to mean "the number, which can be zero, of identical particular values in a run."[11]

12. The term "transform" is construed to mean "a mathematical operation which yields an alternative representation of a sequence or array of values."[12]

13. The term "transforming" is construed to mean "performing a mathematical operation which yields an alternative representation of a sequence or array of values."[13]

14. The term "a blockwise transform of pixels" is construed to mean "a mathematical operation which yields an alternative representation of a block of pixels."[14]

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[8] *See* footnote 5.

[9] When the inventor defines a term in the specification, "the inventor's lexicography governs." *Phillips*, 415 F.3d at 1315; '075 patent at 02:36-42; (*see also* D.I. 127, Ex. E at 133-34 (applicant's likewise defining "event," during prosecution, as run of zero coefficients and the subsequent or preceding non-zero coefficient).)

[10] While the parties' constructions are similar, Philips's proposed construction better tracks the specification, which describes various "runs": of signals, '075 patent at 01:67; of signal values, *id.* at 01:09-10; and of coefficients, *id.* at 07:15. Further, Eastman Kodak does not dispute that runs may be of zero length. (D.I. 124 at 15.)

[11] *See* footnote 10.

[12] As both parties note, their proposed constructions are very similar. (D.I. 107 at 40; D.I. 124 at 19-20.) But Philips's proposed construction more closely reflects the term's use in the claims and specification, which describe performing a transform on a signal to obtain a corresponding sequence of coefficients. *E.g.*, '075 patent at 07:41-44 (in claim 3, transform applied to a signal results in corresponding sequence of coefficients); *id.* at 01:18-24 (performing a transform on a block of pixels to obtain a corresponding block of values).

[13] *See* footnote 12.

15. The term "a sequence of coefficients which results after a blockwise transform of pixels of a video signal with subsequent quantization" is construed to have its plain and ordinary meaning.

16. The term "signal comprising a sequence of coefficients which results after a blockwise transform of pixels of a video signal" limits the claim in which it appears[15] and is construed to have its plain and ordinary meaning.[16]

17. The term "transforming said signal" is construed to mean "performing a mathematical operation which yields an alternative representation of a sequence or array of values."

18. The term "transforming said signal into a sequence comprising zero coefficients occurring in runs and non-zero coefficients" is construed to mean "performing a mathematical operation on a sequence or array of values that yields an alternative representation comprising zero coefficients occurring in runs and non-zero coefficients."

19. The term "signal" is construed to mean "a sequence or array of values that represents information."[17]

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[14] The term "transform" is construed in paragraph 12, *supra*. Additionally, the specification reveals that "blockwise . . . of pixels" refers to a block of pixels. *See* '075 patent at 01:17-19 (blocks of pixels are the subject of transform); *id.* at 02:25 (describing transform coding of blocks of pixels); *see also* footnote 5.

[15] In Claim 3, the claimed method's first step ("deriving from said signal, . . .") expressly incorporates by reference this preamble term. *See Bell Commc'ns Research, Inc. v. Vitalink Commc'ns Corp.*, 55 F.3d 615, 620-21 (Fed. Cir. 1995). This incorporated term is thus "intimately enmeshed with the ensuing language in the claim," *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1306 (Fed. Cir. 1999), and accordingly limits the claim's scope. *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1305-06 (Fed. Cir. 2005) (holding that limitations in claim preamble provided antecedent basis for limitations in claim body and therefore constituted limitations on claim). For point of comparison within the '075 patent, Claim 8 contains no such preamble limitation. '075 patent at 08:08-09.

[16] *See* footnote 5.

[17] The court rejects Eastman Kodak's argument, (D.I. 105 at 13-16), that "signal" and "video signal" must be construed identically. *Cf. Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362, 1368 (Fed. Cir. 2000) (holding claim differentiation doctrine not to apply where different claims contained the same limitation stated with different words) *with Phillips*, 415 F.3d at 1314 (using the term "steel baffles" strongly implies that term "baffles" does not necessarily mean objects made of steel). Claim 3, for example, refers to a "signal" comprising a sequence of coded

20. The term "video signal" is construed to mean "a sequence of values that represents sequential and interdependent image frames that when rapidly displayed are capable of depicting movement."[18]

21. The term "for transmission at a reduced bit rate" is not a claim limitation[19] and is construed to mean "for transmission with fewer bits per pixel."[20]

22. The term "for transmission at a reduced bandwidth" is not a claim limitation[21] and is construed to mean "for transmission at fewer bits per second."[22]

23. The term "determining whether the run length of each event exceeds a predetermined run length" is construed to have its plain and ordinary meaning.[23]

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values that is distinct from a "video signal" comprising pixels. '075 patent at 07:41-48; *Phillips*, 415 F.3d at 1314 (claims themselves provide guidance to term's meaning). The specification, which also describes various types of "signals," supports this construction. *E.g.*, '075 patent at 01:05-55 (describing variously a "signal," "digital signal values," "video signals," and an "intermediate signal").

[18] While it does not define this term, the '075 patent does cite in its specification the prior art described in a March 1984 article by Wen-Hsiung Chen and William Pratt (the "Chen and Pratt article"). '075 patent at 01:11-65 (citing article and explaining invention in relation to that prior art's coding process). The Chen and Pratt article, as part of the intrinsic evidence, provides context for the court to ascertain the meaning of disputed claim terms. *Phillips*, 415 F.3d at 1313-17 (intrinsic evidence, comprising specification and prosecution history, including prior art cited therein, provides context of claims' ordinary meaning); (Nov. 20, 2007, Tr. at 40:05-17 (undisputed that Chen and Pratt article is intrinsic evidence heavily relied on by both parties).) Contradicting Philips's proposed construction of "video signal," this article equates the term "video" with "moving images." (D.I. 127 at JA70 (method's purported usefulness for "coding of *moving images*" confirmed in practice by method's use for "cod[ing] *NTSC color video* at a channel rate of 1.5 Mbits/s.") (emphasis added).); *cf.* '075 patent at 01:10-18 (summarizing Chen and Pratt article as describing coding of "video signals" for purpose of transmitting "video pictures").

[19] This term merely states a purpose of the claimed method. *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1375 (Fed. Cir. 2001) (finding to be non-limiting certain claim preamble language that expressed purpose of process set forth fully in claim body).

[20] The Chen and Pratt article describes the bit rate or pixel coding rate in terms of bits per pixel. (D.I. 127 at JA66, JA70.)

[21] *See* footnote 19.

[22] The court rejects Philips's argument, (D.I. 107 at 34), that "bandwidth" and "bit rate" are equivalent terms as used in the Chen and Pratt article, and therefore in the '075 patent. (*See* D.I. 127 at JA70 (in Chen and Pratt article, "bandwidth" measured in bits per second, while "bit rate" measured in bits per pixel).)

[23] *See* footnote 5.

24. The term "splitting said respective event into a plurality of sections" is construed to have its plain and ordinary meaning.[24]

25. The term "assigning a code word to each section" is construed to have its plain and ordinary meaning.[25]

26. The term "coding" is construed to have its plain and ordinary meaning.[26]

Dated: January 25, 2008

/s/ Gregory M. Sleet
CHIEF, UNITED STATES DISTRICT JUDGE

[24] *See* footnote 5.

[25] *See* footnote 5.

[26] *See* footnote 5.