

The systems and methods of the '345 patent employ a number of video cameras that correspond to particular transaction machines, such as bank receipt printers. A controller connected to each transaction machine captures a data file produced by the machine as a result of each transaction completed by that machine. The controller also causes the video camera corresponding to that machine to capture a video image of the transaction. That image is then digitized and stored in digital storage. The stored video images are linked to the data file for each transaction, so that an image and data record of the transaction can be retrieved if needed.

The methods of the '346 patent provide for the operation of a security system by digitizing time-spaced images from a surveillance video camera. The method entails comparing the two successive images from the camera to measure the extent of the change from the first image to the second, and then storing the second image in digital storage if the change is greater than a selected reference value. If the extent of the change from the first image to the second is less than the selected reference value, the second image is not stored. That process is repeated, and those images that reflect changes greater than the reference value are accumulated in a digital storage device and retrieved for examination when needed.

Prior to the claim construction hearing, the parties agreed on the claim construction of several terms in the two patents. See Dkt. No. 138-1 (claim construction chart). The Court accepts those agreed-upon constructions and will not address them here. In addition, at the hearing the parties informed the Court that they had reached agreement as to the proper construction of the claim term “transaction machines,” which they agree means “devices that produce selected data upon the occurrence of a particular transaction.” The Court accepts that

agreed-upon construction as well. The remaining claim terms that are in dispute are addressed below:

A. Disputed Terms from the '345 Patent

1. “corresponding respectively to”

The phrase “corresponding respectively to” appears in the portion of claim 1 of the '345 patent that recites “a plurality of video cameras corresponding respectively to said transaction machines.” '345 patent, col. 12, ll. 22-23. The plaintiffs argue that the phrase needs no construction or, alternatively, that the construction should be “associated with a particular thing.” The defendants argue that the proper construction is “each associated with only one of.”

The issue pertains to whether the video cameras can be generally associated with the transaction machines, without each video camera being assigned to a particular transaction machine (as the plaintiffs' construction would provide), or whether each video camera must be assigned to only a single transaction machine (as the defendants' construction would provide). The problem with the plaintiffs' proposed construction is that it does not assign any significance to the word “respectively.” If the claim language simply provided for a plurality of video cameras “corresponding to said transaction machines,” the plaintiffs' proposed construction would be appropriate, as no more would be required than that each video camera be associated with at least one transaction machine and each transaction machine be associated with at least one video camera. In that setting it would not matter if each transaction machine had multiple video cameras assigned to it or if each video camera was assigned to multiple transaction machines. The defendants' construction does not require that each transaction machine have only one video camera assigned to it, but it does require that each video camera be assigned to

only one transaction machine. It is that restriction, the defendants argue, that the word “respectively” adds to the limitation.

The specification of the '345 patent supports the defendants' proposed construction. The abstract describes the system for recording events at the transaction stations by stating that a “video camera is provided at each teller station,” and Figure 1 of the patent shows one video camera assigned to each transaction machine. Describing Figure 1, the specification states that each teller station “is provided with a corresponding camera tower”; the camera towers “include respective television cameras,” with each teller station being assigned one camera tower and each camera tower being assigned one camera. '345 patent, col. 3, ll. 46-50. Likewise, the specification describes the manner in which the system “relates the video camera at each teller station to the identification of that teller station,” *id.*, col. 6, ll. 36-37, and identifies “the video camera related to the teller station which generated the receipt printer report,” *id.*, col. 9, ll. 19-21. Those descriptions support the defendants' proposed construction in which each of the plurality of video cameras is associated with only one of the transaction machines.

That construction is also consistent with the commonly understood meaning of the word “respectively.” In the context in which it is used in the '345 patent, that word is defined to mean “each to each, each in the order given.” Webster's Third New International Dictionary 1934 (Philip Babcock Gove ed. 1993); 13 Oxford English Dictionary 736 (2d ed. 1989) (“each to each”). While the word is often used to indicate an order of correspondence, as in “the first, second, and third prizes went to John, Mary, and George, respectively,” Webster's New World Dictionary of the American Language 1240 (World Publishing Co. 1960), what “respectively”

clearly denotes is that there is more than a loose association of two sets of two or more persons or things. The plaintiffs' construction therefore is not correct.

Notably, the defendants have not asked for a construction in which there is a strict one-to-one correspondence between cameras and transaction machines; their construction requires that each camera be associated with only one transaction machine, but it does not require that each transaction machine have only one camera associated with it. Given that the defendants have not requested a more restrictive construction, the Court will not adopt such a construction. The Court thus construes the term "corresponding respectively to" to mean "**each associated with only one of.**"

2. "video switch"

The term "video switch" is used several times in claim 1 of the '345 patent. The most pertinent portion of the claim recites "a video switch having a plurality of inputs connected to said video cameras and having a video output, said video switch coupled to receive a command from said controller to connect a selected one of said video cameras to said video output of said video switch." '345 patent, col. 12, ll. 26-30. The plaintiffs argue that the term needs no construction or, alternatively, that the construction should be "a device that functions to connect any one or more multiple inputs to a video output." The defendants argue that the term should be construed to mean "a device that connects only one of several video inputs at a time to a single video output."

Although the role of the video switch in the patented device, as described in the specification and the claim, is to connect multiple inputs to a single video output, that role is not inherent in the general definition of the term "video switch." Rather, a video switch is simply a

switch that allows the user to select a signal from among one or more input channels and/or to direct the signal to one or more output channels.

The '345 patent does not adopt any special meaning for the term “video switch.” While the video switch plays a particular role in the systems and methods claimed in the patent, that role is not determined by the definition of the term “video switch.” Rather, the role played by the video switch is determined by the portion of the claim that describes how the video switch fits into the operation of the claimed system and method. Thus, claim 1 recites “a video switch having a plurality of inputs connected to said video cameras and having a video output, said video switch coupled to receive a command from said controller to connect a selected one of said video cameras to said video output of said video switch.” Those recited features and functions are not part of the intrinsic definition of a video switch, which is why the features and functions are separately called out in the claim. It is therefore incorrect for the defendants to argue that the term “video switch,” standing alone, should be defined as if it inherently contained those features and performed those functions. In short, a switch is simply a switch. It may be configured in a certain way and used for a particular purpose, as it is in claim 1 of the '345 patent. But that does not mean that the manner in which the video switch is used in the claim is part of the definition of the term itself.

Because defining the term may be of some marginal use to the jury, the Court will adopt the following general definition of the term: **“A video switch is a device that functions to connect any of one or more video inputs to any of one or more video outputs.”**

Although the parties have characterized their dispute as focusing on the proper definition of the term “video switch,” the dispute relating to the use of the term “video switch” appears to

be directed mainly to whether there is only a single video output from the video switch (rather than multiple outputs), and whether the video switch connects only one video input at a time to the video output. The Court now turns to those issues:

Pointing to claim language that recites “a video switch . . . having a video output,” the plaintiffs rely on the patent law principle that the term “a” generally means “one or more” in open-ended claims using the term “comprising.” See KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000). Accordingly, the plaintiffs argue, the claim should not be limited to a system or method in which there is only a single video output from the video switch.

The specification, however, describes the invention as having a video switch “which has a plurality of inputs connected respectively to the video cameras and having a single video output.” ’345 patent, col. 2, ll. 16-17 (emphasis added). At another point, the specification refers to the video switch as functioning “to connect any one of the twelve inputs to the single video output line.” Id., col. 5, ll. 1-2. In a detailed description of the way in which the computer directs and processes the video images from the system, the specification provides that the computer directs the processor “to activate the video switch **130** to connect one of the multiple inputs to the single video output line.” Id., col. 6, ll. 38-40. The specification further provides that, in transaction recording mode, the computer directs the video switch “to selectively connect one of the multiple inputs to this switch to the single video output.” Id., col. 9, ll. 17-19. In emergency mode, the computer “activates the video switch **130** to connect the appropriate video camera to the video output line.” Id., col. 9, ll. 59-60. And finally, the specification provides that, in surveillance mode, a command is sent to activate the video switch “to connect the designated one of the video cameras to the single video line **106** that is in turn connected to the

video board.” *Id.*, col. 10, ll. 49-51. The Court concludes that the specification describes the claimed system as having only a single video output from the video switch.

Similarly, the intrinsic evidence indicates that in the claimed invention the video switch connects only one video input to the video output at a time. The claim language itself makes that point clear. The claim refers to connecting “a selected one of said video cameras to said video output of said video switch,” which explicitly limits the number of cameras that are connected to the video switch output to one at a time. Accordingly, the Court construes the phrase “having a plurality of inputs connected to said video cameras and having a video output, said video switch coupled to receive a command from said controller to connect a selected one of said video cameras to said video output of said video switch” to refer to **“a system in which only one video input is connected at any one time to a single video output, although the video input that is connected to the video output can be changed. The single video output is the only video output of the video switch at any one time.”**

3. **“digital video frame image”**

The term “digital video frame image” appears in the portion of claim 1 that recites “an image digitizer connected to said controller and to said output of said video switch for producing a digital video frame image in response to a command from said controller.” The plaintiffs argue that the term needs no construction or, alternatively, that it should be construed to mean “a digitized still shot.” The defendants argue that it should be construed to mean “an array of pixels that represents a complete still picture, like a snapshot taken at a particular moment,” or “a still picture that contains the entire field of view of the camera.”

The plaintiffs argue that whenever a continuous-tone analog image is digitized, some percentage of the analog image is lost, and not all of the details present in the analog image are preserved in the digital image. Therefore, according to the plaintiffs, no digital representation of an analog image is ever “complete.”

The defendants respond that the term “complete” in their proposed claim construction does not mean that the digital image must be equally as detailed as the analog source for the image, but instead means that the digital image must be of the entire field of view of the camera that recorded the analog image, not merely a portion of the field of view. Thus, a “digital frame image,” according to the defendants, must be of the complete field of view of the camera.

The term “frame” is used only once in the joint specification of the two patents. It appears in a passage that describes the process of digitizing the analog video signal received from the video cameras. After the video board receives the analog video signal, it “captures a frame which comprises a video image, digitizes that image and provides it as digital data to the computer.” ’345 patent, col. 4, ll. 45-47; ’346 patent, col. 4, ll. 45-47. Thus, the “frame” that is captured is the digitized version of the analog image produced by one of the cameras.

In the prosecution history, the applicants defined the term “digitized video frame” to mean “essentially . . . a snap-shot taken at a particular moment.” Dkt. No. 135-3, at 69. It would read too much into the term “frame,” however, to hold that it requires that the image be a “complete” image, as the defendants argue, in the sense that it “contains the entire field of view of the camera.” Nothing in the specification supports the notion that a “frame” must contain the entire field of view of the camera that generated the corresponding analog image. Nor is such a requirement implicit in the definition of the term “frame,” as used in the context of video: “one

of the still images that, when played at a rapid speed . . . produces the illusion of continuous movement.” Webster’s New World Dictionary of Computer Terms 208 (6th ed. 1997); see also A Dictionary of Computing 209 (6th ed. 2008) (“The total amount of information presented on a display at any one time.”); Jerry M. Rosenberg, Dictionary of Computers, Data Processing, and Telecommunications 209 (1984) (“a segment of a signal, analog, or digital, that has a repetitive characteristic in that corresponding elements of successive frames represent the same things.”). Thus, a frame simply represents a single image taken from the series of images that together make up video. There is no requirement that a video show the entire field of view of the video camera that captured the video, and there is therefore no requirement that the individual “frames” that constitute the video show that entire field of view.

In support of their definition of the term “digital video frame image,” the defendants argue that the sequential, digitized images produced by the claimed method are quite different from the “residual frames” used in MPEG temporal compression of the sort used in the accused systems. While that may be true, the difference is one reflected in the details of the operation of the two systems, not in the definition of the term “digital video frame image.” The Court therefore construes the term “digital video frame image” in the context of the ’345 patent as **“a digitized still image captured from the analog video signal produced by one of the video cameras.”**

4. **“a respective digital image file for each of said digital video frame images”**

This phrase constitutes one of the limitations of claim 1 of the ’345 patent. See ’345 patent, col. 12, ll. 39-40. The plaintiffs argue that the phrase needs no construction or, alternatively, that it should be construed to mean “a storage location corresponding to each

digitized still shot.” The defendants argue that the phrase should be construed to require that “for every digital video frame image there is one digital image file.”

The clear meaning of the phrase, based on its language and context, is that each digital video frame image is assigned to a corresponding digital image file. The defendants’ proposed construction captures that concept better than the plaintiffs’. The Court therefore defines “a respective digital image file for each of said digital video frame images” to mean that **“for every digital video frame image there is one digital image file.”**

5. **“digital image file” and “image file”**

The terms “digital image file” and “image file” are used a number of times in claims 1, 2, 3, 6, and 8 of the ’345 patent. The parties appear to agree that the two terms mean the same thing, i.e., that “image file,” as used in context, is simply a shorthand way of saying “digital image file.” The Court agrees.

The plaintiffs argue that the terms need no construction or, alternatively, that they should be construed to mean “a computer file for storing pictures.” The defendants argue that the terms should be construed to mean “a uniquely named unit of data containing a picture stored separately on computer-readable memory.”

The Court is persuaded that the defendants’ proposed construction, although somewhat more technical than the plaintiffs’, more accurately describes what an image file is. The defendants, however do not adequately explain why the word “separately” should be part of the construction. That term is potentially confusing and unnecessary to the definition of “digital image file” or “image file.” Accordingly, the Court construes the terms “image file” and “digital

image file” to mean “**a uniquely named unit of data containing a picture stored on computer-readable memory.**”

6. “**unique identifier**”

The term “unique identifier” is used in claims 1 and 6 of the ’345 patent. In claim 1, it appears in a phrase that reads “wherein each associated pair of one of said data records and one of said image files has a respective unique identifier that is stored in both the data record and the image file of an associated pair.” ’345 patent, col. 12, ll. 45-48. In claim 6, it appears in a phrase that reads “wherein said identification is a unique identifier for associating said digital image file with its corresponding digital data record.” *Id.*, col. 14, ll. 11-13.

The plaintiffs argue that the term should be construed to mean “a one of a kind name for an image file that provides a link with the associated data record.” The defendants argue that the term should be construed to mean a “one-of-a-kind name for an image file that provides a hard link with the associated data record on a one-to-one basis.” As an alternative, the defendants propose the following construction: “one-of-a-kind name for an image file that provides a hard link with the associated data record.”

The defendants have failed to persuade the Court that the use of the term “hard link” would be helpful to the jury in understanding the meaning of the term “unique identifier.”¹ The claims do not describe the particular type of link between the video image and the associated data record. What claim 1 requires is that each associated pair of one data record and one digital

¹ Although the applicants used the term “hard link” in the prosecution history, *see* Dkt. No. 135-3, at 69, the use of that term is not necessary to an understanding of the meaning of the term “unique linkage” and would require additional definitions of terminology for the jury, likely adding to the prospect of confusion without increasing the accuracy of the definition of the term. The construction adopted by the Court reflects the meaning that the applicants assigned to the term “hard link” in the prosecution history. *See* Dkt. No. 135-3, at 68-69.

image file have a unique identifier that is stored in both the data record and the digital image file. What claim 6 requires is that the stored digital data record include a unique identifier for associating the digital image file with its corresponding digital data record. The specification describes how that is done: Each image file is stored on the computer's disk drive, and each such image file has a unique file name. The file name for each image file "is recorded in the corresponding data file for the receipt printer transaction. Thus, for each transaction data file, there is included a reference to the image that was taken at the teller station for that transaction." '345 patent, col. 6, ll. 49-56; see also id., col. 9, ll. 31-35 ("the computer **16** stores the compressed image as a particular file and identifies that file in the corresponding data file for the teller station transaction.").

The claims and the specification describe a system in which the corresponding data transaction file and image file for each transaction share a stored unique identifier, which enables a user of the system to retrieve the corresponding image file and data record for each transaction. Based on that description of the operation of the claimed system and method, the Court construes "unique identifier" to mean **"a one-of-a-kind name for a stored image file that is stored in the digital data file that is associated with that stored image file and provides a link between the stored data file and the stored image file."**

7. **"digital storage"**

The term "digital storage" is used in claims 1 and 6 of the '345 patent. In claim 1, the term is used in the limitation that recites, in part, "a digital storage connected to said controller for storing in said digital storage a plurality of said digital image files together with a plurality of said digital data files each of which is associated with a respective one of said stored digital

image files” ’345 patent, col. 12, ll. 41-45. In claim 6, the term is used in the limitation that recites, in part, “storing said digital image file and said digital data record on a digital storage, wherein said digital data record references said digital image file by said identification.” *Id.*, col. 14, ll. 14-16.

The plaintiffs argue that the term needs no construction or, alternatively, that it should be construed to mean “a device that records digitized information.” The defendants argue that the term should be construed to mean “long term memory that stores digital data.” It is clear from the context in which the term “digital storage” is used in the patent that the term refers to storage in long-term memory, not transient or temporary storage. Accordingly, the Court construes the term “digital storage” to mean “**long-term memory that stores digital data.**”

B. Disputed Terms from the ’346 Patent

1. “image”

The term “image” is used in claims 4, 5, and 7 of the ’346 patent. An example of its usage, in claim 4, is the following: “capturing a first image from a video camera at a first time and digitizing said first image to produce a first digitized image which comprises an array of pixels.” ’346 patent, col. 12, ll. 52-54.

The plaintiffs argue that the term “image” means “a still picture, like a snap-shot taken at a particular time.” The defendants argue that the term means “a still picture like a snap-shot taken at a particular moment.” Thus, the only difference between the two proposed constructions is that the plaintiffs’ version uses the word “time,” where the defendants’ version uses the word “moment.” While the Court does not regard the difference in the positions of the parties to be one of substance, the word “moment” is less likely to be confusing to the jury. Accordingly, the

Court will construe the term “image” to mean “**a still picture like a snap-shot taken at a particular moment.**”

In their supplemental Markman brief, Dkt. No. 144, the defendants argued that the term “image” should be construed to refer to a “complete” image. As in the case of “digital video frame image” in the ’345 patent and “digitized image” in the ’346 patent, discussed below, the Court concludes that the word “complete” is not an inherent part of the definition of the term. It therefore will not be incorporated in the construction of that term.

2. “digitized image”

The term “digitized image” is used in claims 4 and 5 of the ’346 patent in the expressions “first digitized image,” “digitized second image,” and “new digitized image.” See, e.g., ’346 patent, col. 12, ll. 53-54, 57-58, 60, 61, 63; col. 13, ll. 1, 3, 7-8. The plaintiffs argue that the term needs no construction or, alternatively, that it should be construed to mean “a digital version of a visual representation.” The defendants argue that the term should be construed to mean “a complete image that has been converted into pixels.”

The Court does not agree with the defendants that the term “complete” is necessary to the definition of a digitized image.² Nor, in the Court’s view, is the reference to pixels helpful to an understanding of the term “digitized image,” since the specification makes clear that the term digitized image, as used in the patent, can refer simply to digital data. See ’346 patent, col. 6, ll.

² As in the case of the term “digital video frame image,” in the ’345 patent and “image” in the ’346 patent, the defendants argue that the claimed method requires the use of “complete” images, unlike the MPEG system, in which residual frame images record less than the complete scene within the field of view of the camera. As previously noted, that is an argument that the defendants can raise to distinguish their system from the claimed systems and methods, but the viability of that argument does not turn on the definition of “digitized image,” “image,” or “digitized video frame image.”

43-51. Because the parties will be free to educate the jury as to the meaning of the terms “digital” and “pixel,” and because adding a reference to pixels in the definition of “digitized image” would not be likely to make the term more understandable to a lay jury, the Court adopts the plaintiff’s definition and will construe the term “digitized image” to mean “**a digital version of a visual representation.**”

3. “array of pixels”

The phrase “array of pixels” is used in claims 4 and 5 of the ’346 patent. ’346 patent, col. 12, l. 59; col. 13, ll. 14-15. The plaintiffs argue that the phrase needs no construction or, alternatively, that it should be construed to mean “an arrangement of pixels.” The defendants argue that the phrase should be construed to mean “pixels arranged in columns and rows to form a grid.”

Although it is certainly true that arrays of pixels are typically arranged in columns and rows to form a grid, that is not to say that the term “array” is necessarily limited to a rows-and-columns grid structure. The defendants point to no intrinsic or extrinsic evidence indicating that an “array” of pixels, either generally or as used in the ’346 patent, must be limited to an arrangement of pixels that is structured in rows and columns. Nor is there any reason to believe that if a putative infringer used a differently structured array of pixels, it would escape infringement by arguing that the patent is limited to a rows-and-columns array. The Court therefore will construe the term “array of pixels” to mean “**an arrangement of pixels that viewed together to create a visible image.**”

4. **“on a pixel basis”**

The phrase “on a pixel basis” is used in claims 4 and 5 of the ’346 patent. ’346 patent, col. 12, line 61; col. 13, line 24. The plaintiffs argue that the term needs no construction or, alternatively, that it should be construed to mean “pixel by pixel.” The defendants argue that the phrase as used in claim 4 should be construed to mean “by comparing each pixel in the first digitized image to the pixel in the same location in the second digitized image,” and that the phrase as used in claim 5 should be construed to mean “by comparing each pixel in the temporary image to the pixel in the same location in the new digitized image.”

The specification provides what amounts to a definition of the phrase “on a pixel basis.” It states: “When the next image is captured by that camera, the present and previous images are compared on a pixel by pixel basis.” ’346 patent, col. 7, ll. 18-20. At another point, it states: “The present image is compared on a pixel-by-pixel basis to the temporarily stored image for the same camera to determine the number of pixel differences.” *Id.*, col. 10, ll. 54-56. The defendants’ additional requirement that the pixels that are being compared be in the same “location” is potentially confusing and adds a requirement not reflected in the claim language or the specification. It is enough that the respective pixels are in corresponding locations in the two images, a concept captured by the construction of the next term. The Court therefore construes the phrase “on a pixel basis” to mean **“pixel by pixel.”**

5. **“determine the number of pixels in corresponding locations in the two digitized images which have amplitudes that differ by more than a preset amplitude”**

This phrase is used in claims 4 and 5. In claim 4, it is used in the limitation that recites “comparing said first digitized image with said second digitized image on a pixel basis to

determine the number of pixels in corresponding locations in the two digitized images which have amplitudes that differ by more than a preset amplitude.” ’346 patent, col. 12, ll. 60-64. It is used in claim 5 in a similar manner. Id., col. 13, ll. 23-26.

The plaintiffs argue that the phrase needs no construction. Alternatively, focusing on the first part of the phrase (“determine the number of pixels in corresponding locations in the two digitized images”), they argue that it should be construed to mean “quantify the differences between the respective locations in the two digitized images.” The defendants argue that the first part of the phrase should be construed to mean “count the number of pixels located at the same column and row.”

The specification refers to comparing “corresponding pixels in the two images.” ’346 patent, col. 10, ll. 54-56, 58-59. Neither the claim language nor the similar language in the specification requires the specificity found in the defendants’ proposed construction. On the other hand, the claim language requires a comparison based on the number of pixels in corresponding locations having the required characteristics, which is more specific than the plaintiffs’ proposed instruction. The Court concludes that the phrase is sufficiently clear, particularly in the context of the claims as a whole, that it is not necessary to construe the phrase.

With respect to the second half of the phrase, the parties focus their attention on the term “amplitude,” which is separately addressed below.

6. “**amplitude**”

The term “amplitude” is used in claims 4 and 5 of the ’346 patent. In claim 4, it is used in the limitation that recites “comparing said first digitized image with said second digitized image on a pixel basis to determine the number of pixels in corresponding locations in the two

digitized images which have amplitudes that differ by more than a preset amplitude.” ’346 patent, col. 12, ll. 60-64. It is used in claim 5 in a similar manner. Id., col. 13, ll. 23-26.

The plaintiffs argue that the phrase needs no construction or, alternatively, that it should be construed to mean “magnitude.” The defendants argue that the term is indefinite or, in the alternative, that it should be construed to mean “the height of the carrier wave in analog transmission, which indicates the strength of the signal.”

Although the term “amplitude” is used only in the claims and is not defined or discussed in the specification, the Court does not find it to be indefinite. To the contrary, the context makes the meaning of the term sufficiently clear to ensure that the term is not so indefinite as to invalidate the claims in which it appears. See Nautilus, Inc. v. Biosig Instruments, Inc., 134 S. Ct. 2120, 2129 (2014) (requiring that a patent’s claim “viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty”).

The method recited in claims 4 and 5 of the ’346 patent determines whether to store images based on comparisons between a first image and a second image taken at a later time to determine the degree of change between the two images. The comparison process, performed on a pixel-by-pixel basis, determines the number of pixels that have changed and the amount by which each has changed. If the number of pixels that have changed by more than a preset amount is greater than a predetermined number, the second image is saved. That process ultimately results in a storage system that disregards images in which there has been no change from one image to the next and saves only those images in which some degree of change is observed. In light of that process, which is described in detail in the specification, the meaning

of the term “amplitude” is reasonably clear. The change from a particular pixel in the first video image to the corresponding pixel in the second video image must be greater than a preset amount in order for that pixel to be counted in determining whether to trigger the storage of the second image. Because the pixels vary by grayscale or brightness, the term “amplitude” is understood, in context, as meaning a change in the grayscale or brightness in the corresponding pixels. The Court therefore construes the term “amplitude” to mean: **“brightness value, or magnitude, as measured, for example, by different levels on the grayscale.”**

7. **“digital storage”**

“Digital storage,” which is used in claims 4, 5, and 7 of the ’346 patent, see ’346 patent, col. 13, ll. 4, 6, 32, 36; col. 14, ll. 43, 46, 48, 49, 52, is the same term that the Court construed in connection with the ’345 patent. The defendants urge the same construction for which they argued in connection with the ’345 patent. The plaintiffs argue that the phrase needs no construction or, alternatively, that it should be construed to mean “a device that keeps digitized information.” That proposed instruction differs from their proposed construction for the same term in the ’345 patent, but only by virtue of the substitution of the word “keeps” for “records.” That difference does not appear to be one of substance. The Court construes the term “digitized storage,” consistently with its construction in connection with the ’345 patent, to mean **“long term memory that stores digital data.”**

8. **“storing . . . as . . . a temporary image”**

This phrase is used in claim 5 of the ’346 patent, in the limitations that recites “storing said first digitized image as a temporary image,” ’346 patent, col. 13, line 16, and “storing said new digitized image as said temporary image,” id., col 13, ll. 30-31. The plaintiffs argue that the

phrase needs no construction or, alternatively, that it should be construed to mean “recording the first digitized image in nonpermanent memory.” The defendants argue that the phrase should be construed to mean “storing in temporary, nonworking memory.”

The defendants’ proposed construction unnecessarily introduces the term “nonworking memory,” which would in turn require further definition for the jury. The plaintiffs’ proposed construction, on the other hand, adequately and accurately conveys the meaning of storage as a temporary image, which is retained in nonpermanent, or short-term, memory as opposed to the long-term memory referred to in the definition of “digital storage.” The Court therefore adopts the plaintiffs’ proposed construction and construes the phrase “storing . . . as . . . a temporary image” to mean: **“recording the first digitized image in nonpermanent, or short-term, memory.”**

9. **“measure the extent of change”**

This phrase is used in claim 7 of the ’346 patent, in the limitation that recites “comparing said first and second images to measure the extent of change from said first image to said second image.” ’346 patent, col. 14, ll. 36-38. The plaintiffs argue that the phrase needs no construction or, alternatively, that it should be construed to mean “determine the difference.” The defendants argue that the phrase should be construed to mean “count the number of pixels in the same location that have changed.”

From context, it is clear that the “extent of change” as that term is used in claim 7, refers to the degree of difference between the first image and the second image, which according to the claim is then compared “to a reference value to determine if [the] extent of change [or degree of difference] is greater than [a designated] reference value.” *Id.*, col. 14, ll. 40-42. Because claim

7 is not expressly limited to determining the extent of change by the means recited in claims 4 and 5, the defendants' proposed construction of the term "extent of change" is unduly restrictive. In addition, the Court has already determined that reference to the "location" of a pixel in this context is potentially confusing for a jury. The Court therefore construes the term "measure the extent of change" to mean "**determine the difference.**"

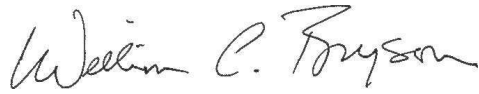
* * * * *

The parties should understand that the Court's constructions of the various claim terms are necessarily tentative, based on the Court's present understanding of the invention and the evidence that sheds light on the meaning of the terms. The Court will consider any possible refinement in the claim construction as the case proceeds if it appears that the refinement would more accurately reflect the meaning of the claims or assist the jury in understanding them. The Federal Circuit has made clear that a district court may adopt an "evolving" or "rolling" claim construction, in which the court's construction of claims evolves as the court better understands the technology and the patents at issue. See Pressure Prods. Med. Supplies, Inc. v. Greatbatch Ltd., 599 F.3d 1308, 1316 (Fed. Cir. 2010) (quoting Pfizer, Inc. v. Teva Pharm., USA, Inc., 429 F.3d 1364, 1377 (Fed. Cir. 2005)) ("[D]istrict courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves."); Utah Med. Prods., Inc. v. Graphic Controls Corp., 350 F.3d 1376, 1381-82 (Fed. Cir. 2003); Jack Guttman, Inc. v. Kopykake Enters., Inc., 302 F.3d 1352, 1361 (Fed. Cir. 2002); see also In re Acacia Media Techs. Corp., 2010 WL 2179875, at *4 (N.D. Cal. May 25, 2010) ("The Court finds that it would hinder litigation and the claim construction process to find a change in claim construction position to be vexatious or improper, since the

Court's role is to determine the proper construction, which may entail an evolving understanding of the claim terms.”).

IT IS SO ORDERED.

SIGNED this 28th day of July, 2014.

Handwritten signature of William C. Bryson in black ink.

WILLIAM C. BRYSON
UNITED STATES CIRCUIT JUDGE