IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

HAND HELD PRODUCTS, INC.,	:	
	:	
Plaintiff,	:	
	:	
v.	:	C.A. No.: 12-768-RGA-MPT
	:	
AMAZON.COM, INC., AMZN MOBILE LLC, AMAZONFRESH LLC, A9.COM, INC., A9 INNOVATIONS LLC, AND QUIDSI, INC.	:	
	:	
Defendants.	:	

REPORT AND RECOMMENDATION

I. INTRODUCTION

This is a patent case. On June 18, 2012, Hand Held Products, Inc. ("HHP") filed suit alleging Amazon.com, Inc., AMZN Mobile LLC, AmazonFresh LLC, A9.com Inc., A9 Innovations LLC, and Quidsi, Inc. (collectively, "Amazon") of infringing U.S. Patent No. 6,015,088 ("the '088 patent").[1] On March 24, 2014, the parties submitted a Joint Claim Construction Chart.[2] The parties' Joint Claim Construction Brief[3] and Joint Claim Construction Appendices[4] were filed on May 1, 2014 and a *Markman* hearing was held on May 7, 2014.

II. BACKGROUND OF THE INVENTION

The '088 patent is titled "Decoding of Real Time Video Imaging." "This invention

[1] D.I. 1. On September 21, 2012, the parties submitted a Stipulated Order that HHP be permitted to file a Supplemental Complaint. D.I. 11 (Stipulated Order); *id.*, Ex. A (Supplemental Complaint). The court granted that order on September 25, 2012.

[2] D.I. 152.

[3] D.I. 186.

[4] D.I. 187, 188.

relates to image capturing apparatus, and more particularly to a method of capturing and decoding bar code information in real time from a continuously displayed video signal of a particular target."[5] The abstract recites:

> A process allows an image capturing apparatus to be integrated with a personal computer to continuously display a video image of the imaging apparatus. Upon proper input by a user, or automatically after a timed interval, a snapshot of the video image is captured. An autodiscimination process of the captured video image automatically decodes any bar-coded information present in the captured image and outputs the information.[6]

III. CLAIMS AT ISSUE

HHP asserts Amazon infringes claims 1, 8, 10, 12, 22, and 23 of the '088 patent. Of those, only claims 1 and 22 are independent claims.

Claim 1 recites:

> 1. A process for capturing and decoding bar-code information in real time from a continuously displayed image video signal, comprising the steps of:
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> aiming an imaging apparatus at a target of interest, said target having at least one of optically readable and bar coded information contained thereupon;
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> continually displaying a real time image of said target from said imaging apparatus;
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> selectively capturing and storing an instantaneous image of said target into the memory of a computer;
>
> determining if bar-coded information is present in said stored image;
>
> decoding bar-code information if bar-code readable information is contained on said instantaneous stored image while maintaining the display of said real-time image; and

[5] '088 patent, 1:8-11.
[6] '088 patent, Abstract.

outputting the decoded bar-coded information.

Claim 22 recites:

> 22. Apparatus for capturing and decoding bar-coded information from a target of interest comprising:
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> imaging means for imaging a target of interest, said target having at least one of optically readable and bar-coded information contained therein;
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> processing means for processing an imaged target;
>
> display means for continually displaying a real-time image of said target from said imaging and processing means;
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> image capture means for selectively capturing at least one image displayed by said display means;
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> scanning means for scanning said at least one captured image and for determining the presence of bar-coded information in the field of view of said at least one captured image;
>
> decoding means for decoding any bar-coded information detected by said scanning means; and
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> output means for outputting the decoded bar-coded information to said display means.

IV. LEGAL STANDARD

"The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history."[7] The Federal Circuit has stated "[t]here are only

[7] *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc)); *see also Phillips*, 415 F.3d at 1313 ("We have made clear . . . that the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." (citing *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)).

two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution."[8]

"To act as its own lexicographer, a patentee must 'clearly set forth a definition of the disputed claim term' other than its plain and ordinary meaning."[9] "It is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must 'clearly express an intent' to redefine the term."[10]

> The standard for disavowal of claim scope is similarly exacting. "Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001). "The patentee may demonstrate intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002).[11]

As with its explanation of a patentee acting as its own lexicographer, the Federal Circuit stated "[i]t is likewise not enough that the only embodiments, or all of the embodiments contain a particular limitation."[12] The court concluded: "[w]e do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.

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[8] *Thorner*, 669 F.3d at 1365 (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1580 (Fed. Cir. 1996)).

[9] *Id.* (quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002)).

[10] *Id.* (quoting *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1381 (Fed. Cir. 2008)).

[11] *Id.* at 1366.

[12] *Id.*

To constitute disclaimer, there must be a clear and unmistakable disclaimer."[13]

When construing claim terms, a court considers the intrinsic record, i.e., the claim language, the patent specification, and the prosecution history.[14] In particular, the patent specification "'is highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'"[15] In addition to considering the intrinsic record, the Federal Circuit has "also authorized district courts to rely on extrinsic evidence, which 'consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.'"[16] For instance:

> extrinsic evidence in the form of expert testimony can be useful to a court . . . to provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.[17]

Extrinsic evidence, however, is viewed "as less reliable than the patent and its prosecution history in determining how to read claim terms . . . ."[18]

When construing mean-plus-function terms, additional principles are implicated. "A claim element that contains the word 'means' and recites a function is presumed to be drafted in means-plus-function format under 35 U.S.C. § 112 ¶ 6[, now § 112(f)]."[19] "The presumption is rebutted, however, 'if the claim itself recites sufficient structure to

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[13] *Id.* at 1366-67.

[14] *Marman v. Westview Instruments, Inc.*, 52 F.3d 967, 977-80 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996).

[15] *Phillips*, 415 F.3d at 1315 (quoting *Vitronics*, 90 F.3d at 1582).

[16] *Id.* at 1317 (quoting *Markman*, 52 F.3d at 980).

[17] *Id.* at 1318.

[18] *Id.*

[19] *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1366 (Fed. Cir. 2008).

perform the claimed function.'"[20]

To construe a means-plus-function term, courts employ a two-part test. First, the court determines the claimed function.[21] Next, the court "identif[ies] the corresponding structure in the written description of the patent that performs that function."[22] The identified structure "must permit one of ordinary skill in the art to 'know and understand what structure corresponds to the means limitation.'"[23]

When the corresponding structure is a computer, the specification must disclose an algorithm to perform the claimed function.[24]

> Because general purpose computers can be programmed to perform very different tasks in very different ways, simply disclosing a computer as the structure designated to perform a particular function does not limit the scope of the claim to "the corresponding structure, material, or acts" that perform the function as required by section 112 paragraph 6.[25]

"[A] general purpose computer programmed to carry out a particular algorithm creates a 'new machine' because a general purpose computer 'in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software.'"[26] "The instructions of the software program in effect 'create a special purpose machine for carrying out the particular algorithm.'"[27]

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[20] *Id.* (quoting *Envirco Corp. v. Clestra Cleanroom, Inc.*, 209 F.3d 1360, 1364 (Fed. Cir. 2000)); *see also Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427-28 (Fed. Cir. 1997) ("[W]here a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited functions, the claim is not in mean-plus-function format.").

[21] *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed. Cir. 2006).

[22] *Id.*

[23] *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008) (quoting *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 949-50 (Fed. Cir. 2007)).

[24] *Net MoneyIN*, 545 F.3d at 1367 ("[A] means-plus-function claim element for which the only disclosed structure is a general purpose computer is invalid if the specification fails to disclose an algorithm for performing the claimed function.").

[25] *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

[26] *Id.* (quoting *WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1348 (Fed. Cir. 1999)).

[27] *Id.* (quoting *WMS Gaming*, 184 F.3d at 1348).

"Thus, in a means-plus-function claim 'in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.'"[28]

There is an exception to the rule that the specification must disclose an algorithm. Where the claimed "functions can be achieved by *any* general purpose computer *without* special programming . . . it [is] not necessary to disclose more structure than the general purpose processor that performs those functions."[29] The Federal Circuit explained the exception identified in *In re Katz* is a "narrow" one:

> If special programming is required for a general-purpose computer to perform the corresponding claimed function, then the default rule requiring disclosure of an algorithm applies. It is only in the *rare circumstances* where any general-purpose computer without any special programming can perform the function that an algorithm need not be disclosed.[30]

The court in *In re Katz* listed "processing," "receiving," and "storing" as examples of functions that a general-purpose computer may be able to achieve without special programing.[31] This court has determined the function of displaying an icon could likewise be accomplished by a general-purpose computer without special programming.[32]

When disclosure of an algorithm is required, it may be expressed "in any

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[28] *Id.* (quoting *WMS Gaming*, 184 F.3d at 1349).

[29] *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) (emphasis added).

[30] *Ergo Licensing, LLC v. CareFusion 3030, Inc.*, 673 F.3d 1361, 1364-65 (Fed. Cir. 2012) (emphasis added).

[31] *In re Katz*, 639 F.3d at 1316.

[32] *United Video Props., Inc. v. Amazon.com, Inc.*, C.A. No. 11-003-RGA, 2012 WL 2370318, at *11 (D. Del. June 22, 2012).

understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure."[33]

Amazon contends several of the disputed terms are invalid as indefinite pursuant to 35 U.S.C. § 112, ¶ 2 which requires the specification to "conclude with one or more claims *particularly pointing out and distinctly claiming* the subject matter which the applicant regards as [the] invention."[34] The Federal Circuit had long held "[o]nly claims 'not amenable to construction' or 'insolubly ambiguous' are indefinite."[35] The Federal Circuit determined:

> the definiteness of claim terms depends on whether those terms can be given any reasonable meaning. . . . "If the meaning of the claim term is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds."[36]

The Supreme Court recently changed the definiteness standard concluding:

> [T]he Federal Circuit's formulation, which tolerates some ambiguous claims but not others, does not satisfy the statute's definiteness requirement. In place of the 'insolubly ambiguous' standard, we hold a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.[37]

The Court stated the Federal Circuit's "amenable to construction" or "insolubly ambiguous" formulations:

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[33] *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008) (internal citation omitted).

[34] 35 U.S.C. § 112, ¶ 2 (emphasis added).

[35] *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005), *abrogated by Nautilus, Inc. v. Biosig Instruments, Inc.*, No. 13-369, 2014 WL 2440536 (U.S. June 2, 2014).

[36] *Id.* (quoting *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001), *abrogated by Nautilus*, 2014 WL 2440536).

[37] *Nautilus*, 2014 WL 2440536, at *2.

> can breed lower court confusion, for they lack the precision § 112, ¶ 2 demands. It cannot be sufficient that a court can ascribe *some* meaning to a patent's claims; the definiteness inquiry trains on the understanding of a skilled artisan at the time of the patent application, not that of a court viewing matters *post hoc*. To tolerate imprecision just short of that rendering a claim 'insolubly ambiguous' would diminish the definiteness requirement's public-notice function and foster the innovation-discouraging "zone of uncertainty", against which this Court has warned.[38]

The Court explained it "read[s] § 122, ¶ 2 to require that a patent's claims, 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 definiteness requirement, so understood, mandates clarity, while recognizing that absolute precision is unattainable."[39]

Despite the Court's newly enunciated standard for determining indefiniteness, it remains the case that "[t]he party alleging that the specification fails to disclose sufficient corresponding structure must make that showing by clear and convincing evidence."[40] The Federal Circuit has "'noted that typically expert testimony will be necessary in cases involving complex technology.'"[41] Although the *Elcommerce.com* court stated "[w]e do not of course hold that expert testimony will always be needed for every situation," it observed "[w]ithout evidence, ordinarily neither the district court nor this court can decided whether, for a specific function, the description in the specification is adequate from the viewpoint of a person of ordinary skill in the field of

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[38] *Id.* at *8 (emphasis in original) (internal citation omitted).

[39] *Id.* at *7.

[40] *TecSec, Inc. v. Int'l Bus. Machs. Corp.*, 731 F.3d 1336, 1349 (Fed. Cir. 2013); *see also Datamize*, 417 F.3d at 1348 (noting "the requirement that clear and convincing evidence be shown to invalidate a patent ").

[41] *Elcommerce.com, Inc. v. SAP AG*, 745 F.3d 490, 503 (Fed. Cir. 2014) (internal quotation marks omitted) (quoting *Centricut, LLC v. Esab Grp., Inc.*, 390 F.3d 1361, 1370 (Fed. Cir. 2004)).

the invention."[42]

V. CLAIM CONSTRUCTION

A. Order of Steps

The parties first dispute whether the steps of the method claims must be occur in the recited order. Amazon argues those steps must occur in the recited order; HHP disagrees.

"Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one."[43] To determine "if the steps of a method claim that do not recite an order, must nonetheless be performed in the order in which they are written" the court first looks "to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written" and, if not, it looks "to the rest of the specification to determine whether *it* 'directly or implicitly requires such a narrow construction.'"[44] Examples of when, as a matter of logic or grammar, the claims must be performed in the order written are where something referenced in a step does not exist until a previous step has been completed.[45]

Claim 1 includes the requirements of "aiming an imaging apparatus at a target of

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[42] *Id.* at 506.

[43] *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1342 (Fed. Cir. 2001) (citing *Loral Fairchild Corp. v. Sony Corp.*, 181 F.3d 1313, 1322 (Fed. Cir. 1999) (stating that "not every process claim is limited to the performance of its steps in the order written")).

[44] *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369-70 (Fed. Cir. 2003) (emphasis in original) (quoting *Interactive Gift*, 256 F.3d at 1343); *see also Baldwin Graphic Sys. Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1345 (Fed. Cir. 2008) ("[A]lthough a method claim necessarily recites the steps of the method in a particular order, as a general rule the claim is not limited to performance of the steps in the order recited, unless the claim explicitly or implicitly requires a specific order.") (citing *Interactive Gift*, 256 F.3d at 1342-43).

[45] *See, e.g., Loral Fairchild*, 181 F.3d at 1321 (finding a step order where the second step involved the alignment of a structure created in the first step); *Mantech Evntl. Corp. v. Hudson Envtl. Servs., Inc.*, 152 F.3d 1368, 1375-76 (Fed. Cir. 1998) (holding the claim must be performed in the order written where subsequent steps utilized the result of prior steps).

interest," "continually displaying a real time image of said target from said imaging apparatus," "selectively capturing and storing an instantaneous image of said target into the memory of a computer," "determining if bar-coded information is present in said stored image," and "decoding bar-code information if bar-code readable information is contained on said instantaneous stored image." According to Amazon, logic dictates that: aiming the camera at the target must occur before the image of the target is displayed; selective capture and storage is based on the displayed image; and any decoding of the barcodes within the stored image can only occur after the image has already been captured and stored."[46]

HHP disagrees, arguing the system could turn on the camera with the barcode in the field of view prior to the camera being "aimed" at the barcode. It also maintains the determining limitation and the decoding limitation occur concurrently.[47]

The court agrees with Amazon that the "aiming" step must occur before the "displaying" step. HHP argues the system could turn on the camera with the barcode in the field of view prior to the camera being "aimed" at the barcode. That argument is not persuasive. For the barcode to be in the field of view, the camera would have to have already been aimed at the barcode, whether the camera was previously turned on or not. Moreover, the claim requires "displaying a real time image of *said target*," referring to the target that was aimed at and demonstrating aiming must occur first. Logic also dictates that "selectively capturing and storing an instantaneous image of said target into the memory of a computer" must occur before "determining if bar-coded information

[46] D.I. 186 at 9-10.
[47] *Id.* at 10.

is present in *said stored image*." Determination of whether certain information is present on a stored image cannot occur until that image has been selectively captured and stored.

The parties' primary dispute on the order of steps issue is whether the "determining" and "decoding" steps can occur concurrently or must happen sequentially. Here, the claim does not explicitly preclude the "determining" and "decoding" steps from occurring concurrently. Likewise, the specification does not clearly preclude such concurrence. The specification states "[w]hether or not there are any barcode symbols is determined on the basis of whether they are decodable."[48] That statement suggests "determining" and "decoding" could be intertwined, or occur concurrently. The invention is determining whether barcode symbols are present by determining whether any symbols present are able to be decoded. Discussing Figure 4, the specification recites:

> On exiting block 350, the processor 22 will be in possession of a potentially decodable two-state 1D representation of the CSR [candidate symbol region]. It then *attempts to decode* this representation, as called for by block 355. This attempted decoding will comprise the trial application to the representation of one 1D decoding program after another until the latter is either *decoded or determined* to be undecodable.[49]

Again, the barcode information is determined to be present or absent based on whether that information is decodable. The "determining" and "decoding," therefore, appear to be occurring concurrently. The above quotation is followed by the statement: "[b]ecause decoding procedures of the latter type are known to those skilled in the art,

[48] '088 patent, 6:29-31.
[49] '088 patent, 7:28-34 (emphasis added).

they will not be discussed in any further detail."[50] Because Amazon has not submitted evidence from one of skill in the art explaining why the "determining" and "decoding" steps can not take place concurrently, the court declines to deviate from the "general rule the claim is not limited to performance of the steps in the order recited" with regard to those two steps.[51]

B. Disputed Claim Terms

1. *target* (claims 1, 22)

HHP contends no construction is necessary and this term be given its plain and ordinary meaning. It maintains the plain and ordinary meaning is "a target is anything that is aimed at, in other words, what is in the field of view."

Amazon's proposed construction is: "an object."

HHP argues the terms "target" and "target . . . therein," discussed below, can be readily understood and do not need to be construed. HHP contends a "target" is anything that is aimed at, i.e., what is in the field of view, and Amazon's proposed construction, an object, is too narrow as there could be multiple items or objects in the field of view each having a barcode symbol.

Amazon maintains the specification is clear that a "target" is an object on which barcodes may be present. It argues its construction is also correct because the specification purportedly uses the terms "target" and "object" interchangeably.[52] Amazon acknowledges the specification discloses taking a picture of one object

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[50] '088 patent, 7:34-36.

[51] *Baldwin Graphic*, 512 F.3d at 1345.

[52] D.I. 186 at 12 (citing '088 patent, 4:62-64 (referring to "target T" in Fig. 2); '088 patent, 3:55-62 and 5:9-22 (referring to "object T" in Figs. 1 and 2)).

containing multiple symbols, but maintains there is no disclosure of taking one picture of two objects and decoding the barcodes contained on both objects. It points to the specification's description of "a target having multiple symbols"[53] and "a target of interest [that] includes widely scattered symbols"[54] as supporting its construction of target as being a single object.

The claims recite "aiming an imaging apparatus at *a target* of interest"[55] and "imaging means for imaging *a target* of interest."[56] The Federal Circuit "'has repeatedly emphasized that an indefinite article 'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phase 'comprising.'"[57] "That 'a' or 'an' can mean 'one or more' is best described as *a rule*, rather than merely as a presumption or even a convention. The exceptions to this rule are *extremely limited*: a patentee must 'evince[ ] a clear intent' to limit 'a' or 'an' to 'one.'"[58] "An exception to the general rule that 'a' or 'an' means more than one *only arises* where the language of the claims themselves, the specification, or the prosecution history *necessitate* a departure from the rule."[59]

Here, each of the claims-at-issue contain the open-ended transitional phrase "comprising"; therefore implicating the general rule that "a target" is not limited to being

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[53] '088 patent, 1:58-62.
[54] '088 patent, 2:16-19.
[55] '088 patent, claim 1 (emphasis added).
[56] '088 patent, claim 22 (emphasis added).
[57] *Baldwin Graphic*, 512 F.3d at 1342 (quoting *KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000)).
[58] *Id.* at 1342 (emphasis added) (alteration in original) (quoting *KCJ Corp.*, 512 F.3d at 1356).
[59] *Id.* at 1342-43 (emphasis added); *see also TiVo, Inc. v. EchoStar Comm'ns Corp.*, 516 F.3d 1290, 1303 (Fed. Cir. 2008) ("[T]he question whether 'a' or 'an' is treated as singular or plural depends heavily on the context of its use. The general rule does not apply when the context clearly evidences that the usage is limited to the singular.") (citations omitted).

"one." There is no evidence that the patentee clearly intended to so limit the term. Nothing in the claims, specification, or prosecution history necessitate a departure from the rule. The claims recites "a target of interest." Nothing in the remainder of the claims' language requires construction of "a target" in the singular.

Also, neither the specification nor prosecution history requires the singular construction Amazon advances. The specification discloses reading multiple barcode symbols.[60] The specification does not disclose a requirement those multiple barcode symbols be on a single object. Moreover, that conclusion is not rebutted by, for example, Figure 1 illustrating target "T" as a single box. "[T]he fact that [the disputed term] is represented by a single box in some of the figures does not 'necessitate' a departure from the general rule that 'a' . . . may mean 'one or more' . . . ."[61]

During prosecution, the applicant noted the decoding of multiple barcodes, explaining:

> Applicants have developed a method for displaying a real-time video signal of a target of interest and for selectively decoding *any bar-coded information* which may be present within the field of view thereof. . . . The determining and decoding process allows the entire field of view of the

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[60] *See, e.g.*, '088 patent, 2:37-43 ("It is another primary object of the present invention to provide a physician, or other practitioner with an opportunity to alter the presentation of the video image or more preferably to aim the device in order to properly place a bar-code readable *symbol or symbols* into *the field of view* of the imaging device and without having to separately upload and download the scanning and decoding program.") (emphasis added); '088 patent, 4:54-58 ("Similarly, the initial startup mode provides for outputting of any decoded messages to the monitor 30 after *all of the symbols* found have been decoded, such as the video image in a Windows message box.") (emphasis added); '088 patent, 5:9-15 ("Referring to the flow chart of FIG.2, and after the video image of the target has been supplied by the image sensor to the monitor 30 per block 120, the user per block 125 is ready to capture an instantaneous image (hereinafter a 'snapshot') for storage into RAM 24 per block 130 and for attempting to decode *any symbols* present *in the field of view* per block 135.") (emphasis added); '088 patent, 6:25-29 ("In embodiments which are adapted to find and decode all of the symbols that occur in *fields of view* that include *a plurality of bar code symbols*, the result is the identification of a plurality of candidate symbol regions (CSRs), any one or more of which may be a bar code symbol.") (emphasis added).

[61] *01 Communique Lab., Inc. V. LogMein, Inc.*, 687 F.3d 1292, 1297 (Fed. Cir. 2012).

> image to be scanned for *ALL bar-coded information* . . . which may be indiscriminately located in *the image* to be output.[62]

The court notes applicants described barcode information located in the image, i.e., information present within the field of view.

Even if there were some ambiguity in the intrinsic record with regard to "a target," that also would not change the analysis. The Federal Circuit has stated, "[e]ven if we were to conclude that the specification is ambiguous on this point, such ambiguity hardly is evidence of the clear intent necessary to overcome the effect of the general rule of claim construction [that 'a' and 'an' mean 'one or more']."[63]

Because the claims, specification, and prosecution history do not necessitate deviation from the general rule, the court rejects Amazon's proposed construction as requiring the target be a single object and construes "target" to mean: "object or objects."[64]

2. *"having at least one of optically readable and bar coded information contained thereupon"* (claim 1); *"having at least one of optically readable and bar coded information contained therein"* (claim 22)

HHP's states "bar-coded information" is separately defined and the remainder of the phrase be given its plain and ordinary meaning. Alternatively, HHP suggests construing the terms as: "the target must have at least one set of information that is barcoded and optically readable."

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[62] D.I. 152, Ex. D (Mar. 2, 1999 Amendment) at 6-7 (emphasis added).

[63] *01 Communique Lab., Inc.*, 687 F.3d at 1297.

[64] The court also rejects Amazon's argument that target should be limited to a single object because "although the specification discloses taking a picture of one object containing multiple symbols, it does not disclose taking one picture of two objects and decoding the barcodes contained on both objects." D.I. 186 at 12. The Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." *Phillips*, 415 F.3d at 1323.

Amazon contends these terms are indefinite.

Amazon's indefiniteness argument is based on its assertion that because the claims require the "target of interest" to have "at least one *of* optically readable and barcoded information contained thereupon [/therein]" the phrase must reference at least two different things, i.e., "optically readable" information and "bar coded" information.

As support, Amazon cites the prosecution history in which, as originally filed, claim 1 required the target have "either optically readable and bar coded information contained thereupon." That claim was later amended by replacing "either" with "at least one."[65] Because "either" references two different things, Amazon reasons "at least one of" also references two different things, thus purportedly maintaining the distinction between "optically readable" information and "bar coded" information and requiring the target to have at least one "optically readable" information and at least one "bar coded information" on it.

As a result of that requirement, Amazon insists the claim is indefinite because there is no way to know what "bar coded" information is, or how it is distinguishable from "optically readable" information. Amazon argues, even if "bar coded" information merely means "bar codes," the limitation is still indefinite because bar codes are, by definition, one type of optically readable information. Because those two types of information are purportedly overlapping sets, Amazon concludes the term is invalid as there is no way to tell how many things must be selected. The court notes Amazon presented no expert

[65] D.I. 152, Ex. D (Mar. 2, 1999 Amendment) at 4.

testimony to support its invalidity position.[66]

HHP disputes the contention that the term includes two distinct kinds of information. It contends "optically readable" and "bar coded" are adjectives modifying a single noun–information. Therefore, HHP understands the term to require the information on the target to be both optically readable and barcoded.

The court determines Amazon has not met its burden of establishing by clear and convincing evidence this term is indefinite. Moreover, the intrinsic evidence supports HHP's proposed construction. Claim 1 was filed with the limitation reciting "said target having *either* optically readable *and* bar coded information contained thereupon." "Either" references two different things but the claim read "optically readable *and* bar coded information." The applicant did not remedy that grammatical problem by retaining "either" and changing "and" to "or," which would have been consistent with an intent to require two different kinds of information. Instead, "and" was retained and "either" replaced with "at least one of," which is consistent with HHP's assertion that "optically readable" and "bar coded" are two adjectives modifying the single noun "information."

That the claim requires "at least one of" "optically readable and bar coded" "information" is consistent with the specification's recognition that some targets contain more than one set of information that is optically readable and bar coded, i.e., where "a

[66] On pages 19 and 20 of the parties' joint claim construction brief, Amazon cited the report of its expert, Chandrajit L. Bajaj, D.I. 187, Ex. 2 (Declaration of Chandrajit L. Bajaj, Ph.D) at ¶¶ 47-50, as support but those paragraphs do not appear therein. Bajaj's report ends at ¶ 43 followed by Bajaj's signature line. HHP raised this issue in briefing, D.I. 186 at 20, but Amazon did not respond or clarify its citation.

target of interest includes widely scattered symbols."[67]

It is also not true that optically readable and bar coded necessarily overlap. Contrary to Amazon's contention, not all barcodes are optically readable. U.S. Pat. No. 5,304,786 ("Pavlidis") is disclosed in the specification of the '088 patent[68] and states "*[m]any bar codes are optically detectable* and are read by devices such as scanning laser beams or handheld wands. *Other bar codes are implemented in magnetic media*."[69] Even when a barcode is meant to be optically readable it may not be. U.S. Pat. No. 4,794,239 ("Allais"), also disclosed in the '088 patent specification,[70] describes practical limitations to optically reading barcodes, including "the desired depth of field of the reading equipment, the limitations of a given printing process, and the robustness of the printed image to be correctly read despite dust, dirt, and minor physical damage."[71]

Finally, both parties cite *SuperGuide Corp. v. DirecTV Enters., Inc.*[72] There, the claim at issue had a limitation requiring "storing at least one of a desired program start time, a desired program end time, a desired program service, and a desired program type."[73] The issue was what does "at least one of" modify? Applying a particular grammatical principle, the court determined:

> the phrase "at least one of" modifies each member of the list, i.e., each category in the list. Therefore, the district court correctly interpreted this phrase as requiring that the user select at least one value for each

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[67] '088 patent, 2:16-17.
[68] '088 patent, 1:34.
[69] D.I. 152, Ex. G (Pavlidis, 1:20-23) (emphasis added). In the '088 patent, the specification incorrectly identifies the inventor as Paviudus. The inventor's name is Pavlidis. The Pavlidis patent is listed as U.S. Pat. No. 5,340,786, the correct patent number is 5,304,786.
[70] '088 patent, 1:33.
[71] D.I. 152, Ex. F (Allais, 1:31-35).
[72] 358 F.3d 870, 886 (Fed. Cir. 2004).
[73] *Id.* at 884.

> category; that is, at least one of a desired program start time, a desired program end time, a desired program service, and a desired program type.[74]

Because the court agrees with HHP's interpretation that "optically readable" and "bar coded" are not separate types of information, that case is of no help to Amazon's position; there is only one category in the list here, "target having at least one of optically readable and bar-coded *information*."

Consequently, the court construes "having at least one of optically readable and barcoded information contained thereupon [/therein]" to mean: "the target must have at least one set of information that is barcoded and optically readable."

3. *"continuously displayed image video signal"* (claim 1)

HHP contends no construction is necessary and this term should be given its plain and ordinary meaning. It argues the preamble is not a limitation. Alternatively, HHP suggests the term be construed consistently with the term 3(a).

Amazon's proposed construction is: "displayed analog video signal."

The term "continuously displayed image video signal" appears in the preamble of claim 1. "[A] preamble is not limiting 'where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.'"[75] The court agrees with HHP that the preamble is not limiting as it provides the context in which the claim operates. Although Amazon disagrees, it essentially concedes the point by stating whether the preamble is limiting "has no

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[74] *Id.* at 886.

[75] *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997)).

practical importance . . . as the claims require 'continually displaying a real time image' in their bodies."[76] As a result, the court determines the preamble is not limiting and, therefore, this phrase need not be construed.

3(a). *"continually displaying a real time image of said target"* (claims 1, 22)

HHP's contends no construction is necessary and this term should be given its plain and ordinary meaning.

Amazon's proposed construction is: "live display of an analog video image of the target."

This term is the first of several which Amazon construes as requiring display of an analog video image. HHP contends, in each case, that such requirement is improper as the claims do not specify whether the display of a video image is analog or digital. It further argues nothing in the specification indicates a requirement that the video image be analog and there is no disavowal of a digital display. HHP suggests "continually displaying" merely means the display is uninterrupted.

Discussing Figure 1, the specification recites:

> The imagining assembly 10, using the imaging optics 16 focuses an image of the target T onto the image sensor 14 as is commonly known. The image of the target is then converted into analog electrical signals which are transmitted to the frame grabber 18 having circuitry to perform the analog to digital conversion to provide an array of pixels as defined by default parameters which is displayed as a continuous video signal in the monitor 30 per block 120. Details relating to the above are generally known to those of skill in the field, and require no further elaboration herein.[77]

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[76] D.I. 186 at 24-25 n.22. At the *Markman* hearing Amazon reiterated that "continuously" in the preamble and "continually" in the body have the same meaning and the court need not address the issue. *Markman* Tr. at 38:11-39:8 (May 7, 2014). HHP agreed there is no difference between "continuously displayed" or "continually displaying." *Id.* at 39:18-24.

[77] '088 patent, 4:62-5:4.

Seizing on the final sentence of that passage, Amazon submits extrinsic evidence in the form of dictionaries, an expert declaration, and inventor testimony to support its position that "continually displaying" would mean "analog display" to one of skill in the art.

The court first notes that passage appears to support HHP's position that the specification discloses digital display. The frame grabber converts signals from analog to digital "to provide an array of pixels . . . *which is displayed as a continuous video signal in the monitor 30* . . . ."[78] Next, HHP's expert, Andrew Wolfe, submits that digital connections were known at the time of the '088 patent application.[79] As Wolfe points out, Amazon's expert, Bajaj, does not claim digital connections were unknown at that time; rather, Bajaj merely asserts analog monitors were more commonly used at that time.[80]

As Wolfe and Bajaj disagree as to whether "continuously displaying" requires analog display, Amazon's extrinsic evidence to support its position is not persuasive. The above specification passage appears to disclose digital display. Even absent that disclosure, the Federal Circuit has stated, "[o]ur case law is clear that an applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention."[81] As there is no disavowal of digital display in the patent, the court declines to construe this term as requiring analog display. HHP's suggestion that "continually" means uninterrupted also finds support in the specification: "it should

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[78] '088 patent, 4:66-5:2 (emphasis added).

[79] D.I. 187, Ex. 13 (Declaration of Andrew Wolfe) at ¶¶ 16-18.

[80] *Id.*, Ex. 2 at ¶ 14 ("[I]n the 1990s the *typical* monitors used for display with computers . . . were analog . . . .") (emphasis added); *id.*, Ex. 2 at ¶ 42 ("*[A]nalog* displays were *principally* used in the mid 1990s") (second emphasis added).

[81] *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1344 (Fed. Cir. 2004).

be noted that the acquisition of the snapshot of the video image *does not impact the video image* which *remains displayed* on the monitor, as a real time image."[82]

Consequently, the court construes "continually displaying a real time image of said target" to mean: "uninterrupted display of a real time image of the target."

4. *"selectively capturing and storing an instantaneous image of said target into the memory of a computer"* (claim 1); *"selectively capturing . . . an instantaneous image"* (claim 1); *"selectively capturing at least one image displayed by said display means"* (claim 22)

HHP's proposed construction for "selectively capturing and storing an instantaneous image of said target into the memory of a computer" is: "designating a real-time image for attempted decoding, based on one or more conditions and placing it in memory."

Amazon proposes construing "selectively capturing . . . an instantaneous image" and "selectively capturing at least one image displayed by said display means" to mean: "at an instant in time selected by the user based on the displayed image, converting the live analog video signal into a single digital frame that is output for storage into computer memory." It proposes separately construing "storage" from the full phrase in claim one, discussed below. HHP argues these phrases be construed as part of the limitation as a whole within the context of the claim, rather than separately.

HHP's primary concern with Amazon's proposed construction is that Amazon arrives at that construction by separately defining the words "selectively," "capturing," and "an instantaneous image." By doing so, Amazon purportedly ignores the context of the claim term as a whole. Amazon responds that by insisting the claim be construed

[82] '088 patent, 5:27-30 (emphasis added).

as a whole, HHP's proposed construction effectively vitiates the meaning of the constituent terms of the disputed phrase. The court agrees the entire phrase "selectively capturing and storing an instantaneous image of said target into the memory of a computer" is more appropriately given meaning by construing the words within that phrase.

Amazon states "selectively" indicates discriminating between things that are of good quality and those that are not. Thus, "*selectively* capturing . . . an instantaneous image" requires the "instantaneous" image be chosen based on the quality of the image. The specification supports this understanding: "*[r]egardless of the mode selected*, the user aims the image sensor 16 at the object T *until a resolved image is displayed in the monitor*" after which the user may initiate a capture. [83] Amazon's construction defines "selectively" as "selected by the user based on the displayed image." HHP even acknowledges "[w]hat is important and how the patent defines this limitation is based on the quality/condition of the image for potential decoding."[84]

HHP takes issue with Amazon's proposal because it requires the user make the "selection." According to HHP, that requirement conflicts with the specification's statement that a primary object of the invention is to "provide a system which can *automatically and without human intervention* capture and decode a video input . . . ."[85] HHP's criticism is misplaced.

The specification states "[i]t is a primary object of the present invention to

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[83] '088 patent, 5:20-27 (emphasis added).
[84] D.I. 186 at 31-32.
[85] '088 patent, 2:53-53-56 (emphasis added).

overcome the shortcomings of the prior art"[86] in which "the image is captured into a named file saved by the computer, converted to disk or otherwise. The user then must separately load a bar code decoding program . . . into the system and load the disk separately as a file for execution by the bar decoding program."[87] That prior art was criticized because:

> If the image is not properly resolved by the digital camera, or other imaging device, then the stored image can not be decoded properly. This means that the user must separately reaim the imaging device, download a new stored image, rename the file, reload the bar code decoding program, and reload the newly stored image as input into the decoding program. Several such iterations might be needed, with each iteration taking a considerable amount of time, and producing frustration and inconvenience for the user.[88]

The automation described addresses the shortcomings of the prior art, however the specification makes clear the "automatically and without human intervention" HHP points to refers to the capturing and decoding of a video input which occurs *after* the user initiates capture in order to decode the barcodes. "Referring to the flow chart of FIG. 2, and after the video image of the target has been supplied by the image sensor to monitor 30 per block 120, *the user per block 125 is ready to capture an instantaneous image* (hereinafter referred to as a "snapshot") . . . ."[89]

> Regardless of the mode selected, the user aims the image sensor 16 at the object T until a resolved image is displayed in the monitor 30. Upon depression of the "hotkey", the processor 22 proceeds *automatically* to blocks 130 and 135, which call for the capture and attempt to decode an instantaneous image of the signal . . . .[90]

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[86] '088 patent, 2:27-28.
[87] '088 patent, 1:67-2:5.
[88] '088 patent, 2:6-15.
[89] '088 patent, 5:9-13 (emphasis added).
[90] '088 patent, 5:20-25 (emphasis added).

Moreover, the specification explicitly states "regardless of the mode selected," e.g., keyboard, mouse, or timer, "the user aims the image sensor 16 at the object T until a resolved image is displayed." Thus, in all instances determination of image quality is made by the user prior to initiation of capture. Although HHP argues use of a timer is an example of automatic capture, a user must set that timer, and determine image quality. There is no disclosure of an automatic method of determining the quality of the image, which HHP insists is "[w]hat is important and how the patent defines this limitation."[91] Therefore, the court accepts the portion of Amazon's construction relating to "selectively."

The construction Amazon proposes for "capturing" is "at an instant in time selected by the user based on the displayed image, *converting the live analog video signal into a single digital frame* that is output for storage into computer memory." HHP first attacks Amazon's construction for requiring a live analog video for the reasons discussed with the "continually" term, above. That term, however, dealt with the signal to the monitor sent from the video capture card. Here, Amazon's construction concerns the analog video received by the capture card and the digital image captured in response to a user's capture request.

Amazon states "capture" has a plain meaning in the art, conversion of analog signal into digital format.[92] That meaning, and its proposed definition of "capturing," is supported by the specification which recites: "[t]he imaging assembly 10, using the imaging optics 16 focuses an image of the target T onto the image sensor 14 . . . . The

[91] D.I. 186 at 31-32.
[92] *Id.* at 38 (citing D.I. 187, Ex. 2 at ¶¶ 11-13, 29-32).

image of the target is then converted into *analog electrical signals* which are transmitted to the frame grabber 18 . . . ."[93] According to Amazon, when a user, per block 125 of Figure 2, selects the instantaneous image to be captured, via the hotkey or otherwise, "a 'snapshot', referring to an *instantaneous digital signal*" generated by the capture card from the analog video input is output for storage into RAM.[94]

HHP does not dispute either that "capture," in this context, is analog to digital conversion and output for storage into a computer or that the disclosed video capture card performs analog to digital conversion. HHP argues the video capture card/frame grabber 18 captures every frame and converts it into digital form. That, HHP argues, is not the selective capturing described in the patent. HHP asserts at blocks 115 and 120 of Figure 2, the continuous video image is displayed on the screen and in doing so, the video capture card converts every image into digital form and then sends it to the monitor 30.[95] HHP states that is not the "selectively capturing" which is performed at block 125, after the video capture card has "captured" all of the images and digitized them.

HHP's arguments are not persuasive. Although the video capture card can digitize the analog video signal and send the digitized signal to the monitor at block 120, it is the video capture card, or *frame grabber*, that also "capture[s] an instantaneous image . . . for storage into RAM" at box 130 in response to the user's initiation of capture a snapshot per block 125.[96] There is simply no structure other than the frame grabber

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[93] '088 patent, 4:62-66 (emphasis added).
[94] '088 patent, 5:15-27 (emphasis added).
[95] '088 patent, 6:64-5:2.
[96] '088 patent, 5:9-15.

18 disclosed in the specification that could otherwise "capture" an "instantaneous image." Indeed, Figure 1 illustrates it is frame grabber 18 that sends signals from the image sensor 14 to the bus 28. From bus 28, the signals can flow to the monitor or RAM.

As explained below with regard to construing "an instantaneous image," the court modified Amazon's construction of "a single digital frame" to "a single digital image." With that modification, the court accepts Amazon's proposed construction of "capturing" to mean: "at an instant in time selected by the user based on the displayed image, *converting the live analog video signal into a single digital image*."

The construction Amazon proposes for "instantaneous image" is "*at an instant in time* selected by the user based on the displayed image, converting the live analog video signal into *a single digital frame* that is output for storage into computer memory."

The parties agree the specification describes "an instantaneous image" as a "snapshot."[97] HHP argues since the snapshot is taken from a real-time video, a snapshot is simply "a real-time image." HHP's proposed construction, however, is at odds with other language of claim 1 which recites "continually displaying *a real time image* of said target from said imaging apparatus . . . decoding bar-code information if bar-code readable information is contained on said *instantaneous stored image* while maintaining the display of said *real-time image*."[98] The "real time image" recited in claim 1 refers to video. HHP's proposed construction would either mean "an instantaneous

[97] *See, e.g.*, '088 patent, 5:9-19 ("Referring to the flow chart of FIG. 2, and after the video image of the target has been supplied by the image sensor to the monitor 30 per block 120, the user per block 125 is ready to capture an *instantaneous image* (hereinafter referred to as a *'snapshot'*) for storage into RAM 24 per block 130 . . . .") (emphasis added).

[98] '088 patent, claim 1 (emphasis added).

image" covered video, or the same language, "real time image" would cover a single, snapshot, image *and* video in the "decoding" limitation of claim 1. Therefore, HHP's proposal must be rejected.

HHP does not contest the "instantaneous image" is digital, but objects to Amazon's definition as including "frame." The specification states a "snapshot" is "an instantaneous *image* of the signal, referred to hereafter as a 'snapshot', referring to an instantaneous digital signal which is stored into RAM."[99] The court agrees with Amazon that a "snapshot" has a plain meaning as a single image. The court, however, also determines that inclusion of "image" in the construction is more appropriate than "frame" as the user is identifying an image to select, not a particular frame. Therefore, the court modifies Amazon's construction and construes "an instantaneous image" to mean: "*an instant in time* selected by the user based on the displayed image, converting the live analog video signal into *a single digital image* that is output for storage into computer memory."

Consequently, the court construes the phrases "selectively capturing . . . an instantaneous image" and "selectively capturing at least one image displayed by said display means" to mean: "at an instant in time selected by the user based on the displayed image, converting the live analog video signal into a single digital image that is output for storage into computer memory."

5. *"storing"* (claim 1)

HHP contends this term should be construed as part of the limitation as a whole

[99] '088 patent, 5:24-27 (emphasis added).

within the context of the claim, rather than separately.

Amazon's proposed construction is: "retaining data at a location from which it can be copied at a later time."

Because the court determined it was appropriate to give meaning to the constituent words of the "selectively capturing" phrase, it necessarily rejects HHP's request to construe "storing" as part of that entire phrase.

Amazon supports its proposed construction by pointing to Figure 2 illustrating that at block 130 the captured digital frame is stored in RAM and in block 150 the user copies that file onto a hard disk. The specification does not require the court to limit the claim as Amazon's proposed construction suggests. In reference to block 150, the specification states: "[t]he user *may alternately elect* to store the captured image per block 150, into the hard disk 26."[100] That the captured image *may* be stored on the hard disk does not support including that option as a requirement.

At the *Markman* hearing, HHP suggested storing is simply "placing into memory." The court agrees as HHP's suggestion has support in the specification:

> Referring to the flow chart of FIG. 2, and after the video image of the target has been supplied by the image sensor to the monitor 30 per block 120, the user per block 125 is ready to capture an instantaneous image (hereinafter referred to as a "snapshot") *for storage into RAM 24 per block 130* . . . .[101]

Consequently, the court construes "storing" to mean: "placing into memory."

6. *"bar-coded information"* (claims 1, 22, 23); *"bar-code readable information"* (claim 1)

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[100] '088 patent, 5:41-42 (emphasis added).
[101] '088 patent, 5:9-13 (emphasis added).

HHP's proposed construction for "bar-coded information" is: "information reflected in symbologies/codes according to one or several known and/or published standards, including but not limited to UPC, EAN, Code 49, PDF 417, Code 93, Vericode, Aztec, Code One, Data Matrix, Maxicode, Codabar, Interleaved 2 of 5, etc."

HHP contends "bar-code readable information" should be construed as part of the limitation as a whole within the context of the claim, rather than separately. Nevertheless, in briefing, HHP states "bar-code readable information" is definite and should be given its plain and ordinary meaning, "readable bar-code information."[102]

Amazon contends both terms are indefinite.

Amazon provides no expert testimony in support of its indefiniteness argument, relying instead on attorney argument. The court determines Amazon's arguments fail to establish by clear and convincing evidence these terms are indefinite. Amazon questions the difference between "bar-code information" and "bar-code readable information" based on its assertion that bar codes are by definition readable. As explained above, however, the Pavlidis patent referenced in the '088 specification discloses barcodes that are not optically readable, e.g., barcodes implemented in magnetic media, and Allais, also referenced in the '088 specification notes, even barcodes intended to be optically readable may not be due to practical limitations such as the limitations of a given printing process and the robustness of the printed image. HHP's expert, Wolfe, also discusses physical, and other, considerations to be taken into account for there to be a successful decoding of the information encoded in barcode

[102] D.I. 186 at 53.

symbology, as well as noting barcodes from the relevant time could be created by creating grooves in a magnetically resisting plate.[103]

Amazon further argues HHP provides no basis to assume "bar-coded information" means a bar code symbol. The specification provides support for HHP's assumption: "bar code readers are also known for reading 1D and 2D *bar code symbols*, such as *bar coded information* in supermarkets, etc."[104] In further support of HHP's proposed construction of "bar-coded information," the specification provides examples of specific symbologies / codes and incorporates a discussion of those codes.[105] Because the intrinsic record supports HHP's position, the court construes "bar-coded information" to mean: "information reflected in symbologies/codes according to one or several known and/or published standards, including but not limited to UPC, EAN, Code 49, PDF 417, Code 93, Vericode, Aztec, Code One, Data Matrix, Maxicode, Codabar, Interleaved 2 of 5, etc."

Because the court determined, above, that the target is required to have information that is both "optically readable" and "barcoded," the court accepts HHP's

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[103] D.I. 187, Ex. 13 at ¶ 31.

[104] '088 patent, 1:26-28 (emphasis added). The "determining" step was added during prosecution and the prosecution history makes similar reference to bar-coded information and barcode symbologies. D.I. 152, Ex. D at 4, 6-7 ("The determining and decoding process allows the entire field of view of the image to be scanned and ALL *bar-coded information* (which may include several different *symbologies* 1D, 2D etc.) which may be indiscriminately located in the image to be output.") (emphasis added). In the Notice of Allowability, the examiner's statement for reasons of allowance recites: "[t]he best prior art of record . . . fails to show or fairly suggest an apparatus for capturing and decoding *bar-code information* wherein the display of the apparatus continuously displays a real time image of the target obtained whereby the apparatus includes a means for selectively capturing an instantaneous displayed image including a bar code of the target and storing the image into computer memory to be processed and decoded thereafter, as set forth in the claims." D.I. 152, Ex. E at 2.

[105] *See* '088 patent, Figs. 6-9, 1:26-62 (citing, *inter alia*, the Allais and Pavlidis patents, U.S. Ser. Nos. 08/504,643 (now U.S. Pat. No. 5,773,806), 08/516,185, and 08/697,914 (now U.S. Pat. No. 5,932,862)); 8:66-9:41 (citing, *inter alia*, U.S. Ser. Nos. 08/504,643 (now U.S. Pat. No. 5,773,806) and 08/441,446 (now U.S. Pat. No. 5,591,956)).

suggestion and construes "bar-code readable information" to mean: "readable bar-code information."

7. *"decoding bar-code information if bar-code readable information is contained on said instantaneous stored image"* (claim 1)

HHP contends no construction is necessary and this term be given its plain and ordinary meaning. Alternatively, HHP suggests construing this term as: "if barcode information that can be read is contained on the instantaneous stored image, then it will be decoded."

Amazon contends this term is indefinite.

In support of its indefiniteness position for this term, Amazon incorporates its indefiniteness arguments with respect to "bar-coded information" and "bar-code readable information." Because the court rejected those indefiniteness arguments, Amazon's indefiniteness assertion as to this term likewise fails. As Amazon presents no additional arguments for rejecting HHP's alternative construction for this term, the court construes "decoding bar-code information if bar-code readable information is contained on said instantaneous stored image" to mean: "if barcode information that can be read is contained on the instantaneous stored image, then it will be decoded."

8. *"imaging means for imaging a target of interest, said target having at least one of optically readable and bar-coded information contained therein"* (claim 22)

Function

HHP's proposed function is: "imaging a target of interest."

Amazon's proposed function is: "imaging a target of interest, said target having at least one of optically readable and barcoded information therein."

HHP contends the function is "imaging a target of interest" and the remainder of

the element, “said target having . . .” is not a function to be performed by the imaging means but rather a characteristic of the target. The court agrees with HHP and determines the function of this term is: “imaging a target of interest.”

Structure

HHP’s proposed structure is: “Imaging Optics 16, Image Sensor 14, and equivalents thereof.”

Amazon contends the term is indefinite for failure to disclose adequate structure. In the alternative, Amazon’s proposed structure is: “the corresponding structure would have to include at least imaging optics, an image sensor such as a CCD or CMOS and an electronic interface providing analog electrical signals to a video capture card.”

Amazon’s indefiniteness argument is based on its rejected assertion that the function of this term includes “said target having at least one of optically readable and bar-coded information contained therein.” It maintains “at least one of optically readable and bar-coded information” is indefinite. The court previously rejected that position. It also maintains there is no structure disclosing imaging bar-coded information inside a target, based on its proposed construction of “target . . . therein.” The court has determined that is not part of the function of the “imaging means” and addresses the construction of “target . . . therein” below.[106]

The parties agree that the disclosed structure of the imaging means includes imaging optics and an image sensor. HHP argues Amazon’s proposed structure adds

[106] Because the court determined “at least one of optically readable and bar-coded information” is definite and disagrees with Amazon’s proposed construction of “target . . . therein,” the conclusion that this term is definite would remain unchanged even if the court adopted Amazon’s proposed function.

an electrical interface that is not necessary to perform the claimed function. The court agrees.

> Referring to Figure 1, the specification recites:
>
> An *imaging assembly 10* is provided for receiving an image of an object T and generating an electrical output signal indicative of the data optically encoded thereon, if any. The *imaging assembly 10 may include an image sensor 14, such as a 1D or 2D CCD or CMOS solid state image sensor together with an imaging optics assembly 16 for receiving and focusing an image of the object T onto a substrate of the image sensor 14*.[107]

Thus, the function of "imaging a target of interest" is accomplished by optics assembly 16 which receives and focuses the image of the target onto a substrate of image sensor 14. "The imaging device 14 *also includes* electronics *which allow interfacing with a video capture card* . . . ."[108] Because "imaging a target of interest" has been completed by the optics assembly and image sensor, electronics allowing subsequent interface with a video capture card are not necessary to that function. The specification explains "[t]he imaging assembly 10, using imaging optics 16 focuses an image of the target T onto the image sensor 14 as is commonly known."[109] At that point, the target has been imaged. "The image of the target is *then converted into analog electrical signals* which are *transmitted to the frame grabber 18* . . . ."[110] Because "a court may not import . . . structural limitations from the written description that are unnecessary to perform the claimed function,"[111] the court rejects Amazon's proposed structure and construes the "imaging means" structure to be: "Imaging Optics 16, Image Sensor 14, and

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[107] '088 patent, 3:55-62 (emphasis added).
[108] '088 patent, 4:3-5 (emphasis added).
[109] '088 patent, 4:62-64.
[110] '088 patent, 4:64-66 (emphasis added).
[111] *Wenger Mfg., Inc. v. Coating Mach. Sys. Inc.*, 239 F.3d 1225, 1233 (Fed. Cir. 2001) (citing *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999)).

equivalents thereof."

9. *"target . . . therein"* (claim 22)

HHP contends no construction is necessary and that this term be given its plain and ordinary meaning.

Amazon's proposed construction is: "inside the target."

The parties dispute the meaning of "therein" in the phrase "imaging a target . . . having at least one of optically readable and bar-coded information contained *therein*." Amazon argues this means the "information" is "inside the target" in contrast to claim 1 where the information is on the target; "target having at least one of optically readable and barcoded information contained *thereupon*." In Amazon's view, therefore, "target . . . therein" would mean, for instance, a can of corn having barcode information would have the target, or barcode information, on the inside of the can rather than on the outside of the can, an illogical scenario.

"Therein" is a common word, not a term of art. Contrary to Amazon's position "therein" does not necessarily mean "inside." HHP cites a definition of "therein" as "in that place, time or thing; In that circumstance or respect."[112] Two standard dictionaries consulted by the court similarly do not define "therein" to mean "inside," but rather, "In that place or context";[113] "1. In that place. 2. In that circumstance or respect."[114] Contrast those meanings of "therein" with the ordinary definition of "thereupon," as recited in claim 1: "Upon this, that, or it."[115] Therefore, according to the ordinary

[112] The American Heritage College Dictionary at 1406 (3rd Ed. 1993).
[113] The American Heritage Dictionary of the English Language at 1335 (1976).
[114] Webster's II New Riverside University Dictionary at 1200 (1988).
[115] The American Heritage Dictionary of the English Language at 1335 (1976); Webster's II New Riverside University Dictionary at 1201 (1988) (same).

definitions of those words, the recitation of "thereupon" in claim 1 is consistent with information being "on" the target but the recitation of "therein" in claim 22 does not mean the information is "inside" the target. Construing "therein" to mean "in that place" would not mean the information is in*side* the target, that construction means the information is on, in that place, the target.

Consequently, the court construes "therein" to mean: "in that place."

10. *"processing means for processing an imaged target"* (claim 22)

HHP contends this claim term contains sufficient structure to overcome any presumption of the applicability of 35 U.S.C. § 112(f), but proposes constructions for the function and structures of this term if the court determines otherwise.

HHP states "processing means" is sufficient structure in that it need only be a microprocessor, well known in the art and to lay people. It argues a microprocessor is sufficient structure to perform the function in its entirety. The court disagrees and determines the presumption that § 112(f) is not overcome; there is no evidence that the knowledge of one of skill in the art of a microprocessor would let one understand how a microprocessor processes an imaged target.

Function

HHP's proposed function is: "processing an imaged target."

Amazon's proposed function is: "processing an imaged target."

Because the parties agree as to the function of this term, the court adopts their proposed function: "processing an imaged target."

Structure

HHP's proposed structure is: "Microprocessor 22 capable of receiving, outputting

and processing image data in accordance with a stored program and equivalents thereof."

Amazon contends the term is indefinite for failure to disclose adequate structure.

The court agrees with Amazon. HHP's proposed structure, "Microprocessor 22 capable of receiving, outputting and processing image data in accordance with a stored program and equivalents thereof," is insufficient because HHP does not provide an algorithm for the "stored program" permitting the microprocessor to "receiv[e], output[ ] and process[ ] image data." As noted above, the narrow exception to the rule that when the corresponding structure in a means-plus-function term is a computer requires disclosure of an algorithm, is where the claimed "functions can be achieved by any general purpose computer without special programming."[116] For instance, where a claim recited "processing means" without "further limitations or elaboration," this court determined no algorithm was needed to be disclosed because "the processing means merely execute[s] instructions," and a general purpose computer could perform that function without any special programming.[117] HHP's proposed construction, in essence, acknowledges special programming is required for the microprocessor to perform the claimed "processing" function.

Moreover, HHP does not explain what "processing" of an image refers to. Amazon speculates it could refer to: the type of processing performed by the frame grabber (e.g., analog to digital conversion); storing in RAM; displaying on a monitor; or barcode decoding. If the "processing" referred to any, or all, of those tasks, the

[116] *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011).
[117] *SoftView LLC v. Apple Inc.*, C.A. No. 10-389, 2013 WL 4758195, at *11 (D. Del. Sept. 2013).

corresponding structures associated with those tasks would have to be included in the claimed structure.

Nevertheless, the claimed "processing means" requires special programming of a general purpose computer to perform the claimed function. Because HHP has not pointed to a disclosure of an algorithm to perform that processing, whatever the processing may be, this term is indefinite under 35 U.S.C. § 112, ¶ 2.

11. *"display means for continually displaying a real-time image of said target from said imaging and processing means"* (claim 22)

Function

HHP's proposed function is: "displaying a real-time image of said target."

Amazon's proposed function is: "continually displaying a real-time image of said target from said imaging and processing means."

HHP's construction removes "continually" and "from said imaging and processing means" from the claim language. HHP does not explain its position for doing so and the court sees no reason to truncate the claim language in that way. Consequently, the court determines the function of the "display means" is: "continually displaying a real-time image of said target from said imaging and processing means."

Structure

HHP's proposed structure is: "Output/Display 30 and equivalents thereof."

Amazon contends the term is indefinite for failure to disclose adequate structure. In the alternative, its proposed structure is: "the corresponding structure would have to include at least an analog PC video monitor. (4:24-27; 4:62-5:8)." It argues, however, this is not sufficient structure to perform the corresponding function.

The court agrees with HHP that the claimed structure at least includes "Output/Display 30." That display is illustrated in Figure 1 of the '088 patent. The specification also supports including that display as part of the claimed structure. "This invention relates to image capturing apparatus, and more particularly to a method of capturing and decoding bar code information in real time from a continuously displayed video signal of a particular target."[118] The specification discloses "[i]ncluded along the common bus 28 are user inputs, such as a keyboard/mouse arrangement 34 as well as a *video monitor 30* used to output the video signal . . . ."[119] After imaging of the target, that image "is then converted into analog electrical signals which are transmitted to the frame grabber 18 having circuitry to perform the analog to digital conversion to provide an array of pixels as defined by default parameters which is *displayed as a continuous video signal in the monitor 30* . . . ."[120] For the reasons discussed, above, with regard to the "continuously" limitation, that structure would not be limited to an analog video monitor as Amazon suggests.

Although the specification discloses the structure of a monitor required, in part, to perform the claimed function, the court has determined structure for the "processing means" term is not disclosed and it is, therefore, indefinite. Because the "processing means" is indefinite, the "display means" term is also indefinite as there is no disclosed structure to preform the function of "continually displaying a real-time image of said target *from* said imaging and *processing means*." Consequently, the court determines

[118] '088 patent, 1:8-11.
[119] '088 patent, 4:23-26 (emphasis added).
[120] '088 patent, 4:64-5:2 (emphasis added).

"display means" is indefinite under 35 U.S.C. § 112, ¶ 2.

12. *"image capture means for selectively capturing at least one image displayed by said display means"* (claim 22)

Function

HHP's proposed function is: "selectively capturing at least one image displayed by said display means."

Amazon's proposed function is: "selectively capturing at least one image displayed by said display means."

Because the parties agree as to the function of this term, the court adopts their proposed function: "selectively capturing at least one image displayed by said display means."

Structure

HHP's proposed structure is: "Keyboard, Mouse, Timer, Etc. 34 and Microprocessor 22 programmed and configured to perform the recited function; Figure 2, 'Assert Decode' Condition 125; and equivalents thereof."

Amazon contends the term is indefinite for failure to disclose adequate structure. In the alternative, its proposed structure is: "including at least (i) a Flashpoint Lite video capture card (4:6-9); (ii) imaging optics, an image sensor such as a CCD or CMOS and an electronic interface providing analog electrical signals to the Flashpoint Lite video capture card (3:55-62; 4:3-4; 4:62-67); (iii) a keyboard, mouse, and timer (4:24-27; 4:44-54; and 5:9-27); and (iv) a Compaq Pentium 120 mhz PC (4:6-9) with special programming that implements the functions described at 4:44-61, including the ability of a user to press a keyboard key, to press a mouse button, and to set a timer in order to

select the time when the image capture will occur."

The court construed "selectively capturing at least one image displayed by said display means" to mean: "at an instant in time selected by the user based on the displayed image, converting the live analog video signal into a single digital image that is output for storage into computer memory." Amazon argues this term is indefinite because a human being makes the selective determination of image quality and "a human being cannot constitute a 'means' . . . ."[121] Although the user initiates the image capture, the court concludes the user does not impermissibly constitute a "means." "[A] patent may include some level of human intervention as long as a human is not included in the patent as a claimed structure, but instead merely operates a claimed structure."[122] Here, the user initiates the image capture by operating a claimed structure, e.g., the hot key or mouse, or sets a timer. Therefore, the court rejects Amazon's indefiniteness argument on that point.

The parties each include a keyboard, mouse, and timer, i.e., the ways a user can initiate an image capture after determining the quality of the displayed image, as part of the claimed structure. The court agrees those items are part of the structure.[123] The court also agrees that a frame grabber/video capture card is part of the structure as that

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[121] *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1300 (Fed. Cir. 2005).

[122] *Test. Techs., Inc v. Jersey Shore Chicken*, C.A. Nos. 05-5356 (MLC), 05-5358 (MLC), 06-363 (MLC), 2007 WL 4081737, at *10 n.5 (D.N.J Nov. 15, 2007) (citing *Default Proof*, 412 F.3d at 1300).

[123] '088 patent, 4:44-54 ("In the initial start-up mode, a particular user input is selected as the trigger for the image capture and decode mechanism. According to this embodiment, a designated *keyboard key*, referred to as a "Hotkey", such as F10, is preset as the trigger. Alternatively, the user can be prompted . . . to utilize other keys on the keyboard or the *mouse button* as the trigger. Another alternate mode can be used in which a snapshot can be taken automatically by the processor 22 after a predetermined *time interval* has elapsed . . . .") (emphasis added); '088 patent, Fig. 1, "Keyboard, Mouse, Timer, Etc." 34.

is what converts the live analog video signal into a single digital image output for storage into computer memory.[124] The court disagrees with Amazon that the structure must include the specific brand of frame grabber/video capture card recited as part of a preferred embodiment. Amazon has not cited any precedent for so construing the claimed structure and the court declines to do so. The court also disagrees with Amazon that the structure must include imaging optics and an image sensor as those items are not required by the court's construction of the "selectively capturing" term which includes selection "based on the displayed image." The display is based on the image already provided by the imaging optics and image sensor and, therefore, is not required as part of the structure of the "image capture means."

Each party also includes a computer, or microprocessor, configured to perform the recited functions. The court agrees this is part of the structure but, as with the video capture card/frame grabber, the court declines Amazon's suggestion of construing that structure to require the specific brand of computer disclosed as part of a preferred embodiment. Finally, Amazon argues this term is indefinite for failure to disclose an algorithm by which the computer performs the claimed function. HHP, however, points to Figure 2, "Asset Decode" 125 as sufficient disclosure of an algorithm. An algorithm may be expressed "in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure."[125] Amazon has presented no expert testimony discrediting that disclosure as a sufficient

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[124] '088 patent, 4:64:67 ("The image of the target is . . . converted into analog electrical signals which are transmitted to the frame grabber 18 having circuitry to perform the analog to digital conversion . . . ."); '088 patent, 5:

[125] *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008) (internal citation omitted).

algorithm.

Despite, disclosing some of the required structure of the "image capture means," this term is nevertheless indefinite. The parties agree that the claimed function is "selectively capturing at least one image displayed *by said display means*." Because the "display means" is indefinite for lack of structural disclosure, the "image capture means" is likewise indefinite as there is insufficient structural disclosure to perform the claimed function for this term. Consequently, the court determines "image capture means" is indefinite under 35 U.S.C. § 112, ¶ 2.

13. *"scanning means for scanning said at least one captured image and for determining the presence of bar-coded information in the field of view of said at least one captured image"* (claim 22)

Function

HHP's proposed function is: "scanning at least one captured image and determining the presence of barcoded information in the field of view of said image."

Amazon's proposed function is: "scanning said at least one captured image and determining the presence of bar-coded information in the field of view of said at least one captured image."

At the *Markman* hearing, HHP stated that there was no dispute regarding the function of this term despite slight variations in the claim charts provided to the court.[126] Consequently, the court adopts Amazon's proposed version of the function: "scanning said at least one captured image and determining the presence of barcoded information in the field of view of said at least one captured image."

[126] *Markman* Tr. at 175:18-21. In briefing, HHP also stated the parties agreed on the function of this term. D.I. 186 at 78.

Structure

HHP's proposed structure is: "Microprocessor 22 programmed and configured to calculate the rate of change between portions of the captured image data, and equivalents thereof and to look for possible bar code symbols in the captured data by identifying regions of high activity, and equivalents thereof; Figure 2, 'Attempt Decode' 135; and equivalents thereof."

Amazon contends the term is indefinite for failure to disclose adequate structure. In the alternative, its proposed structure is: "including at least a Compaq Pentium 120 mhz PC (4:6-9) with special programming for identifying all candidate bar code symbol regions in the captured image as described in steps 305 and 315 of Figure 4 and at 5:53-6:24, and to scan at least one candidate bar code symbol region as described in steps 330, 335, 340, and 345 of Figure 4 and at 6:49-7:17."

Amazon notes the function of this term includes at least "determining the presence of barcoded information in" an image. Its primary argument that this term is indefinite is based on its assertion the specification does not teach the two step process of "determining" if there are barcode symbols and then decoding any symbols determined to be present.[127] The court rejected Amazon's position that the specification only discloses one step, decoding, which accomplishes both "determining" and "decoding," and agreed with HHP the "determining" and "decoding" steps can happen concurrently. Thus, the court rejects that indefiniteness argument with regard to this term. The specification discloses structure for this term; structure Amazon has not

[127] D.I. 186 at 79.

shown by clear and convincing evidence is insufficient to perform the claimed function. Also, for the reasons explained above, the court does not include the specific brand of computer suggested by Amazon in the construction.

The court agrees with HHP's proposed structure. According to HHP, Figure 2 "Attempt Decode" 135 is the beginning of the process flow for the scanning means. Microprocessor 22 attempts to decode any symbols present in the field of view. The specification states after an instantaneous image is stored in RAM there is an attempt "to decode any symbols present in the field of view per block 135"[128] and "[i]mage capture of the snapshot to RAM 24 automatically causes the processor 22 to attempt to decode the snapshot as shown in the blocks 130, 135 in FIG. 2."[129] In attempting to decode any symbols in the field of view, the image is first scanned and calculations are made of the rate of change between portions of the image. Referencing Figure 4, the specification states "[o]n encountering block 305, the processor 22 is directed to calculate the 'activities' of selected image data elements. The 'activity' of a point P as used herein comprises a measure of the rate of change of the image data over a small two dimensional portion of the region surrounding point P."[130] Microprocessor 22 is programmed to look for possible bar code symbols in the captured data by identifying regions of high activity:

> When processor 22 has determined the activities of the selected data points, it is directed to block 315, which causes it to look for candidate bar code symbols by identifying regions of high activity. This is conveniently done by determining those sets of image data points having activities

[128] '088 patent, 5:14-15.
[129] '088 patent, 5:31-33.
[130] '088 patent, 5:53-57.

which exceed a predetermined threshold value.[131]

The court agrees with HHP that the corresponding structure is Microprocessor 22, programmed and configured with those algorithmic steps. The court declines to incorporate additional structure from the specification suggested by Amazon as the structure identified by HHP is sufficient to perform the claimed function of the "scanning means."

Consequently, the court adopts HHP's proposed structure: "Microprocessor 22 programmed and configured to calculate the rate of change between portions of the captured image data, and equivalents thereof and to look for possible bar code symbols in the captured data by identifying regions of high activity, and equivalents thereof; Figure 2, 'Attempt Decode' 135; and equivalents thereof."

14. *"decoding means for decoding any barcoded information detected by said scanning means"* (claim 22)

HHP contends this claim term contains sufficient structure to overcome any presumption of the applicability of 35 U.S.C. § 112(f). If the court disagrees, it proposes constructions for the function and structure of this term.

HHP maintains sufficient structure exists for the decoding means. It notes the parties agree the function is decoding any bar-coded information detected by said scanning means. HHP contends a "decoding means" is a decoding algorithm/software and this is sufficient structure to perform the function in its entirety. The court disagrees that the presumption that § 112(f) applies to this term is overcome. The parties agree the claimed function is "decoding any bar-coded information *detected by said scanning*

[131] '088 patent, 6:14-19.

means." The function is not merely "decoding" and, therefore, "decoding means" is not merely a "decoding algorithm/software" as HHP suggests.

Function

HHP's proposed function is: "decoding any bar-coded information detected by the scanning means."

Amazon's proposed function is: "decoding any bar-coded information detected by said scanning means."

Because the parties agree as to the function of this term, the court adopts their proposed function: "decoding any bar-coded information detected by the scanning means."

Structure

HHP's proposed structure is: "Microprocessor 22 executing standard available decoding software for any desired barcode symbologies, and/or programmed and configured to binarize scan line data and then applying the rules of the desired symbolog(ies) to the spatial relationships reflected in that binarization; Figure 2, 'Attempt Decode' 135, Figure 2, 'Decode Data' Condition 140; Figure 4, 'Binarize Scan Line Values' 350; Figure 4, 'Attempt 1D Decode' 355; Figure 4, '1D Decode Successful?' 360, and equivalents thereof."

As with the previous term, Amazon bases its indefiniteness argument on its position that the specification only discloses one step, decoding, which accomplishes both "determining" and "decoding." For the reasons previously discussed, the court again rejects Amazon's position. Having proposed no alternative structure, the court adopts HHP's proposed structure.

Consistent with HHP's construction, the specification discloses Microprocessor 22 is programmed and configured to binarize the scan line and apply the rules of the desired symbolog(ies) to the spacial relationships reflected in that binarization. "Once the above-described scan line data has been calculated, the processor 22 is directed to block 350, which calls for it to binarize the scan line data, i.e., convert it to a two-state representation of the data which can be processed as a candidate for 1D decoding."[132]

> On exiting block 350, the processor 22 will be in possession of a potentially decodable two-state 1D representation of the CSR. It then attempts to decode this representation, as called for by block 355. This attempted decoding will comprise the trial application to the representation of one 1D decoding program after another until the latter is either decoded or determined to be undecodable. Because decoding procedures of the latter type are known to those skilled in the art, they will not be discussed in any further detail.[133]

HHP points to further structural support with the process flow of the decoding means at Figure 2 "Attempt Decode" 135; Figure 2 "Decode Data" Condition 140; Figure 4 "Binarize Scan Line Values" 350; Figure 4 "Attempt 1D Decode" 355; Figure 4 "1D Decode Successful?" 360.

Therefore, the court adopts HHP's proposed structure, with one alteration: "Microprocessor 22 executing standard available decoding software for any desired barcode symbologies, and programmed and configured to binarize scan line data and then applying the rules of the desired symbolog(ies) to the spatial relationships reflected in that binarization; Figure 2, 'Attempt Decode' 135, Figure 2, 'Decode Data' Condition

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[132] '088 patent, 7:18-22.

[133] '088 patent, 7:28-36. *Elcommerce.com, Inc. v. SAP AG*, 745 F.3d 490, 503 (Fed. Cir. 2014) ("[S]ection 112 does not require the drafter 'to encumber the specification' with information known to a person of skill in the field of the invention; nor does section 112 require that the specification reproduce information routinely possessed by persons in the field of the invention.").

140; Figure 4, 'Binarize Scan Line Values' 350; Figure 4, 'Attempt 1D Decode' 355; Figure 4, '1D Decode Successful?' 360, and equivalents thereof."[134]

15. *"output means for outputting the decoded bar-coded information to said display means"* (claim 22)

Function

HHP's proposed function is: "outputting the decoded bar-coded information to the display means."

Amazon's proposed function is: "outputting the decoded bar-coded information to said display means."

Because the parties agree as to the function of this term, the court adopts their proposed function: "outputting the decoded bar-coded information to the display means."

Structure

HHP's proposed structure is: "Microprocessor 22 programmed and configured to send a message; Figure 2, 'Output Message' 145; and equivalents thereof."

Amazon contends the term is indefinite for failure to disclose adequate structure and because the "display means" to which the bar-coded information must be outputted is indefinite. The court disagrees with Amazon that the term is indefinite for failure to disclose an algorithm to perform the claimed function. Amazon is correct, however, in its argument this term is indefinite because the "display means" to which the bar-coded

[134] The court's alteration of HHP's proposed construction is to remove "or" from "Microprocessor 22 executing standard available decoding software for any desired barcode symbologies, and/*or* programmed and configured to binarize scan line data . . . ." The alteration is to avoid the possibility of a party asserting that a "decoding means" is merely a "decoding algorithm/software."

information must be outputted is indefinite.

HHP contends Figure 2 of the patent discloses the algorithmic step of "Output Message" 145, if decoding is successful, messages are outputted: "[i]f the decoding is successful, per decision block 140, the messages are outputted per block 145."[135] HHP maintains this outputting can take the form of outputting to the display, saving to an ASCII file, sending messages (requests/responses) to a host processor, a keyboard buffer, or other convenient means. The specification explains, "[t]he computer includes a microprocessor 22 which is a programmable control device which is able to receive, output and process data in accordance with a stored program maintained within either or both of a read/write random access memory (RAM) 24 and a hard drive 26."[136] Further:

> [T]he initial startup mode provides for outputting of any decoded messages to the monitor 30 after all of the symbols found have been decoded, such as adjacent the video image in a Windows message box. Alternate outputting modes, however, are contemplated allowing for several options for the user, such as saving to a ASCII file, sending the messages to a host processor, a keyboard buffer, or other convenient means.[137]

The court determines Figure 2, "Output Message" 145 is a sufficiently disclosed algorithm for Microprocessor 22. Amazon has not provided evidence refuting the sufficiency of that structural disclosure. The court notes, however, the structure would only include outputting messages to the Monitor 30, as that is part of the structure determined to be associated with the "display means." HHP has not shown that saving

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[135] '088 patent, 5:37-38.
[136] '088 patent, 4:11-15.
[137] '088 patent, 4:54-61.

to an ASCII file, sending messages (requests/responses) to a host processor, a keyboard buffer, or other convenient means would be included in the claimed structure as there is no explanation as to how those actions would output the decoded bar-coded information "to the display means," e.g., Monitor 30, as the claimed function requires. Nevertheless, this term is indefinite under 35 U.S.C. § 112, ¶ 2 because the "display means" to which the decoded bar-coded information is to be output is indefinite.

16. *"discrimination means for discriminating the type of bar-coded information present in said at least one captured image"* (claim 23)

Function

HHP's proposed function is: "discriminating the type of barcoded information present in said at least one captured image."

Amazon's proposed function is: "discriminating the type of bar-coded information present in said at least one captured image."

Because the parties agree as to the function of this term, the court adopts their proposed function: "discriminating the type of bar-coded information present in said at least one captured image."

Structure

HHP's proposed structure is: "Microprocessor 22, programed and configured to perform any or all of the following programming loops reflected in Figures 4 and 5 (depending upon the types of barcode symbologies for which the apparatus is configured). Specifically: Discriminating means for a 1D barcode is the programming loop beginning with 'No' in Figure 4 '1D Decode Successful?' Condition 360, continuing with the repeating steps directed by 'Entire Region Scanned' Condition 365 or 'Any

Remaining Unexamined Regions' Condition 375. Discriminating means for 1D Stacked barcodes is the programming loop beginning with 'Yes' in Figure 4 '1D Decode Successful?' Condition 360, continuing with the repeated steps directed by '1D Stacked Symbol?' Condition 380, 'Entire Region Scanned?' Condition 395, and 'Any remaining Unexamined Regions?' Condition 390. Discriminating means for 2D barcodes is the programming loop beginning at 'Decode Successful' Condition 535 in Figure 5, continuing with the repeated steps directed by 'Any Unused Finders' Condition 545."

Amazon contends the term is indefinite for failure to disclose adequate structure. In the alternative, its proposed structure is: "including at least a Compaq Pentium 120 mhz PC (4:6-9) with special programming for determining the type of barcoded information as described in steps 305 through 397 in Figure 4, steps 505 through 550 in Figure 5 and at 5:36-10-10."

Relying on attorney argument, Amazon contends this term is indefinite for failing to disclose an algorithm capable of determining the type of barcoded information present in an image. The court disagrees and, as Amazon presents no expert evidence to support that contention, determines "discrimination means" is not indefinite.

HHP states Figures 4 and 5 reflect the "discrimination means" and that that means depends on what barcode symbologies the apparatus is configured to decode. According to HHP, the specification explains the discrimination is based on trial application of various bar code algorithms and that the programming loops depend upon a successful decode:

> [A]ttempted decoding will comprise the trial application to the representation of one 1D decoding program after another until the latter is either decoded or determined to be undecodable. Because decoding

> procedures of the latter type are known to those skilled in the art, they will not be discussed in any further detail.[138]

HHP notes Microprocessor 22 is programed and configured to perform any or all of the programming loops reflected in Figures 4 and 5: "decoding involves a discrimination process, depending on whether any 1D and or 2D symbols are present in the field of view."[139]

The court agrees HHP has identified sufficient structure to perform the claimed function of the "discrimination means" and adopts its proposed construction. Amazon has not presented evidence to support including the additional structure contained in its proposed construction or that HHP's proposed construction cannot perform the claimed function.

Consequently, the court determines the structure for the "discrimination means" is: "Microprocessor 22, programed and configured to perform any or all of the following programming loops reflected in Figures 4 and 5 (depending upon the types of barcode symbologies for which the apparatus is configured). Specifically: Discriminating means for a 1D barcode is the programming loop beginning with 'No' in Figure 4 '1D Decode Successful?' Condition 360, continuing with the repeating steps directed by 'Entire Region Scanned' Condition 365 or 'Any Remaining Unexamined Regions' Condition 375. Discriminating means for 1D Stacked barcodes is the programming loop beginning with 'Yes' in Figure 4 '1D Decode Successful?' Condition 360, continuing with the repeated steps directed by '1D Stacked Symbol?' Condition 380, 'Entire Region

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[138] '088 patent, 7:31-36.
[139] '088 patent, 5:33-36.

Scanned?' Condition 395, and 'Any remaining Unexamined Regions?' Condition 390. Discriminating means for 2D barcodes is the programming loop beginning at 'Decode Successful' Condition 535 in Figure 5, continuing with the repeated steps directed by 'Any Unused Finders' Condition 545."

Order: The Court's Claim Construction

At Wilmington, this 24th day of June, 2014, having heard oral argument, having reviewed the papers submitted with the parties' proposed claim constructions, and having considered all of the parties' arguments (whether or not explicitly discussed herein);

IT IS ORDERED that the disputed claim language in asserted claims of the patent-in-suit, as identified by the parties, shall be construed below consistent with the tenets of claim construction set forth by the United States Court of Appeals for the Federal Circuit in *Phillips v. AWH Corp.*,[140] as follows:

Claim Term	Construction
1. target (claims 1, 22)	object or objects
2. having at least one of optically readable and bar coded information contained thereupon (claim 1); having at least one of optically readable and bar coded information contained therein" (claim 22)	the target must have at least one set of information that is barcoded and optically readable
3. continuously displayed image video signal (claim 1)	the preamble is not limiting, no construction necessary
3(a). continually displaying a real time image of said target (claims 1, 22)	uninterrupted display of a real time image of the target

[140] 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Claim Term	Construction
4. selectively capturing and storing an instantaneous image of said target into the memory of a computer (claim 1)	the entire phrase is not construed, *see* 4(a), 5
4(a). selectively capturing . . . an instantaneous image (claim 1); selectively capturing at least one image displayed by said display means (claim 22)	at an instant in time selected by the user based on the displayed image, converting the live analog video signal into a single digital image that is output for storage into computer memory
5. storing (claim 1)	placing into memory
6. bar-coded information (claims 1, 22, 23)	information reflected in symbologies/codes according to one or several known and/or published standards, including but not limited to UPC, EAN, Code 49, PDF 417, Code 93, Vericode, Aztec, Code One, Data Matrix, Maxicode, Codabar, Interleaved 2 of 5, etc.
6(a). bar-code readable information (claim 1)	readable bar-code information
7. decoding bar-code information if bar-code readable information is contained on said instantaneous image	if barcode information that can be read is contained on the instantaneous stored image, then it will be decoded
8. imaging means for imaging a target of interest, said target having at least one of optically readable and bar-coded information contained therein (claim 22)	**Function:** imaging a target of interest **Structure:** Imaging Optics 16, Image Sensor 14, and equivalents thereof
9. target . . . therein (claim 22)	in that place
10. processing means for processing an imaged target (claim 22)	**Function**: processing an imaged target **Structure:** indefinite under 35 U.S.C. § 112, ¶ 2

Claim Term	Construction
11. display means for continually displaying a real-time image of said target from said imaging and processing means (claim 22)	**Function:** continually displaying a real-time image of said target from said imaging and processing means **Structure:** indefinite under 35 U.S.C. § 112, ¶ 2
12. image capture means for selectively capturing at least one image displayed by said display means (claim 22)	**Function:** selectively capturing at least one image displayed by said display means **Structure:** indefinite under 35 U.S.C. § 112, ¶ 2
13. scanning means for scanning said at least one captured image and for determining the presence of bar-coded information in the field of view of said at least one captured image (claim 22)	**Function:** scanning said at least one captured image and determining the presence of barcoded information in the field of view of said at least one captured image **Structure:** Microprocessor 22 programmed and configured to calculate the rate of change between portions of the captured image data, and equivalents thereof and to look for possible bar code symbols in the captured data by identifying regions of high activity, and equivalents thereof; Figure 2, “Attempt Decode” 135; and equivalents thereof

Claim Term	Construction
14. decoding means for decoding any barcoded information detected by said scanning means (claim 22)	**Function:** decoding any bar-coded information detected by the scanning means **Structure:** Microprocessor 22 executing standard available decoding software for any desired barcode symbologies, and programmed and configured to binarize scan line data and then applying the rules of the desired symbolog(ies) to the spatial relationships reflected in that binarization; Figure 2, "Attempt Decode" 135, Figure 2, "Decode Data" Condition 140; Figure 4, "Binarize Scan Line Values" 350; Figure 4, "Attempt 1D Decode" 355; Figure 4, "1D Decode Successful?" 360, and equivalents thereof
15. output means for outputting the decoded bar-coded information to said display means (claim 22)	**Function:** outputting the decoded bar-coded information to said display means **Structure:** indefinite under 35 U.S.C. § 112, ¶ 2

Claim Term	Construction
16. discrimination means for discriminating the type of barcoded information present in said at least one captured image (claim 23)	**Function:** discriminating the type of barcoded information present in said at least one captured image **Structure:** Microprocessor 22, programed and configured to perform any or all of the following programming loops reflected in Figures 4 and 5 (depending upon the types of barcode symbologies for which the apparatus is configured) Specifically: Discriminating means for a 1D barcode is the programming loop beginning with "No" in Figure 4 "1D Decode Successful?" Condition 360, continuing with the repeating steps directed by "Entire Region Scanned" Condition 365 or Any Remaining Unexamined Regions" Condition 375. Discriminating means for 1D Stacked barcodes is the programming loop beginning with "Yes" in Figure 4 "1D Decode Successful?" Condition 360, continuing with the repeated steps directed by "1D Stacked Symbol?" Condition 380, "Entire Region Scanned?" Condition 395, and "Any remaining Unexamined Regions?" Condition 390. Discriminating means for 2D barcodes is the programming loop beginning at "Decode Successful" Condition 535 in Figure 5, continuing with the repeated steps directed by "Any Unused Finders" Condition 545.

Pursuant to 28 U.S.C. § 636(b)(1)(A) and (B), FED. R. CIV. P. 72(b)(1), and D.

DEL. LR 72.1, any objections to the Report and Recommendation shall be filed within fourteen (14) days limited to twenty (20) pages after being served with the same. Any response shall be limited to twenty (20) pages.

The parties are directed to the Court's Standing Order in Non-Pro Se Matters for Objections Filed under FED. R. CIV. P. 72 dated October 9, 2013, a copy of which is found on the Court's website (www.ded.uscourts.gov).

Dated: June 24, 2014

/s/ Mary Pat Thynge
UNITED STATES MAGISTRATE JUDGE