

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EARLY WARNING SERVICES, LLC,

Petitioner,

v.

INTELLECTUAL VENTURES II, LLC,

Patent Owner.

Case No. IPR2024-01221

U.S. Patent No. 7,314,167

PATENT OWNER'S RESPONSE

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PATENT OWNER'S EXHIBIT LIST

Ex. 2001	Declaration of Kai Johnson
Ex. 2002	Resume of Kai Johnson
Ex. 2003	<i>“Embedding Of Any Type Of Data In Images Based On A Human Visual Model And Multiple-Based Number Conversion,”</i> Da-Chun Wu and Wen-Hsiang Tsai, Pattern Recognition Letter, Volume 20, Issue 14, December 1999, Pages 1511-1517
Ex. 2004	<i>“Lossless Generalized-LSB Data Embedding,”</i> Celik, Mehmet Utku, et al., <i>IEEE transactions on image processing</i> 14.2 (2005): 253-266
Ex. 2005	<i>“Lossless Data Embedding For All Image Formats,”</i> Fridrich, Jessica, Miroslav Goljan, and Rui Du. In <i>Security and watermarking of multimedia contents IV</i> (Vol. 4675, pp. 572-583). SPIE, 2002
Ex. 2006	<i>Embedding Data in 3D Models</i> , R. Ohbuchi et al., IBM Japan Tokyo Research Laboratory, Interactive Distributed Multimedia Systems and Telecommunication Services: 4th International Workshop, IDMS'97 Darmstadt, Germany, September 10–12, 1997 Proceedings 4, Springer Berlin Heidelberg, 1997
Ex. 2007	<i>Embedding Biometric Identifiers In 2D Barcodes For Improved Security</i> , Noore, Afzel, Nikhil Tungala, and Max M. Houck. <i>Computers & Security</i> 23.8 (2004): 679-686
Ex. 2008	Data hiding in image and video. II. Designs and applications,” Wu, Min, Heather Yu, and Bede Liu. <i>IEEE Transactions on Image Processing</i> 12.6 (2003): 696-705
Ex. 2009	Symbol SPT 1800 Series Product Reference Guide
Ex. 2010	Symbol SPT 1700 Series Product Reference Guide
Ex. 2011	Introduction to Bar Codes for the Automated Laboratory
Ex. 2012	Image Definition - Merriam Webster
Ex. 2013	FDIC Bulletin
Ex. 2014	Supplemental Declaration of Kai Johnson

Ex. 2015	ISO/IEC 15420-2000 standard
Ex. 2016	Ralston, A., & Reilly, E. D. (Eds.). (1993). <i>Encyclopedia of computer science</i> (3rd ed.). Van Nostrand Reinhold. p. 369
Ex. 2017	Advanced Encryption Standard (AES), 2001
Ex. 2018	Reading QR Codes Without a Computer
Ex. 2019	<i>American National Standard Code for Information Interchange</i> , American National Standards Institute, Inc.
Ex. 2020	T. Pavlidis, J. Swartz and Y. Wang (Symbol Technologies), “Fundamentals of Bar Code Information Theory,” <i>Computer</i> 23.4 (1990): 74-86
Ex. 2021	U.S. Patent No. 5,140,146, entitled “Bar Code Symbol Reader With Modulation Enhancement”
Ex. 2022	U.S. Patent 5,418,862, entitled “Method and Apparatus for Detecting Artifact Corners in Two-Dimensional Images”
Ex. 2023	Ohbuchi, Eisaku, Hiroshi Hanaizumi, and Lim Ah Hock. “Barcode readers using the camera device in mobile phones.” <i>2004 International Conference on Cyberworlds</i> . IEEE, 2004
Ex. 2024	U.S. Patent No. 7,137,555
Ex. 2025	U.S. Patent No. 7,490,774
Ex. 2026	U.S. Patent No. 7,637,430
Ex. 2027	“Embedded” definition and meaning from Dictionary.com, https://www.dictionary.com/browse/embedded
Ex. 2028	“Embedded” definition and meaning from Merriam-Webster, https://www.merriam-webster.com/dictionary/embedded
Ex. 2029	Declaration of Dr. Kevin Berisso
Ex. 2030	CV of Dr. Kevin Berisso

I. INTRODUCTION

The Petition (Paper #1) challenges claims 1-2, 4-5, 7-8, 12-13, 17, 19-21, 23-24, 26-27, 29-30, 34, 39-41 and 43 (“Challenged Claims”) of U.S. Patent No. 7,314,167 (“‘167 Patent,” Ex. 1001) under six grounds. Petition, at 29-30.

Independent claim 1 of the ‘167 Patent recites an “an image capture device configured to capture an image,” and a processor configured to “generate an output based on the information embedded in the image.” The other challenged independent claims have similar limitations. At the time of the ‘167 Patent, it was well accepted by practitioners in the field of automatic identification that there were two different types of barcode scanners -- namely, bar code laser scanners and imaging (or image-based) barcode readers. Practitioners understood that laser scanning based barcode readers and imaging-based bar code readers were fundamentally different classes of devices, and referred to a “captured image” solely in connection with image-based readers. There is overwhelming evidence (set forth below) that a person of ordinary skill at the time would have understood the claim recitation of an “image capture device configured to capture an image” in combination with a processor configured to “generate an output based on the information embedded in the image,” to be referring to an imaging-based bar code reader and not a laser-based barcode scanner. The references relied on in the

Petition for this claim language fail to disclose an imaging-based bar code reader, either expressly or inherently.

This response is supported by the expert declaration of Dr. Kevin Berisso, an expert in the field at the time of the ‘167 Patent. Dr. Berisso explains in detail how laser scanning based barcode readers (on the one hand) and imaging-based bar code readers (on the other hand) functioned at the time, making clear that these two classes of devices employed fundamentally different approaches for reading barcodes. Dr. Berisso next walks through a myriad of documents authored by practitioners at the time of the ‘167 Patent, which demonstrate what Dr. Berisso personally understood long before he began work on this IPR -- namely, that practitioners at the time understood that laser based scanning barcode readers and imaging-based bar code readers were fundamentally different, and referred to a “captured image” solely in connection with image-based readers and not laser-based barcode scanners. Dr. Berisso also explains how the understanding of those in the art aligns with the specification of the ‘167 Patent. Finally, Dr. Berisso explains why the references relied on in the Petition for the subject claim language fail to disclose an imaging-based bar code reader, either expressly or inherently.

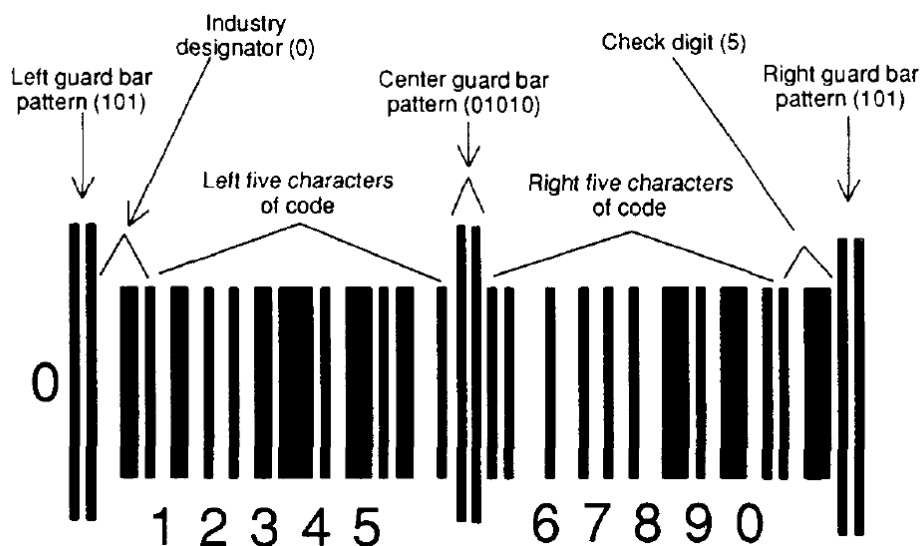
For these reasons, and as explained more fully below, the Petition fails to carry its burden of demonstrating by a preponderance of the evidence that the references meet all of the elements of the Challenged Claims.

II. TECHNOLOGY FOR SCANNING BAR CODES AND CAPTURING IMAGES OF BAR CODES

A. One-Dimensional Bar Code Formats

The '167 Patent identified two bar code formats including a “one-dimensional barcode, such as a linear barcode, or a multi-dimensional barcode, such as a 2D barcode.” Ex. 1001, 5:25-27. The most well-known one-dimensional (or linear) barcode symbology at the time the '167 Patent was filed (March, 2005) was the Universal Product Code (UPC), which was originally developed in the 1970s to identify retail items, such as items in a supermarket. “The bar code of a supermarket item consists of 11 digits and a check digit, which represent an identifying number but not a description of the product. For example, the price look-up must be accessed in a database keyed to the number in the bar code.” Ex. 2020, 1; Ex. 2029, ¶37.

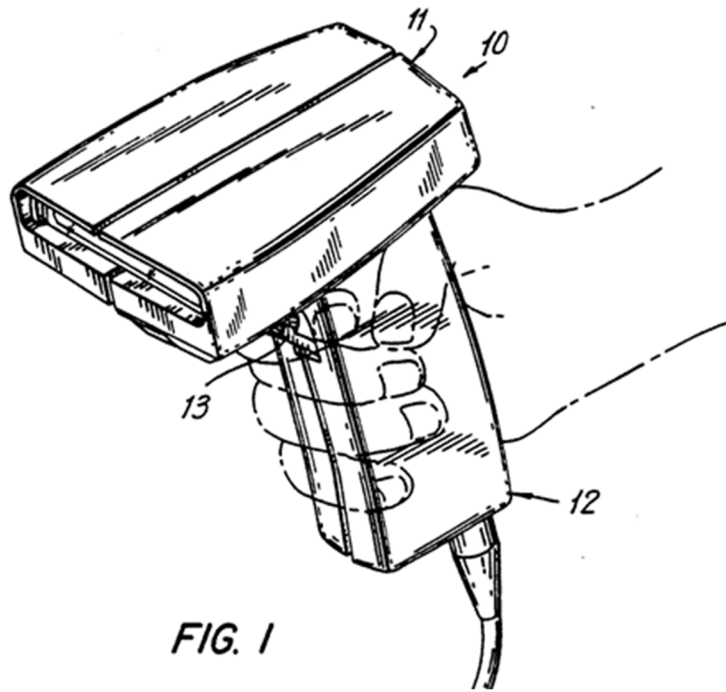
A one-dimensional barcode (like the UPC) stores “information along one dimension with intervals of alternating diffuse reflectivity, usually black and white color. The intervals are actually stored as rectangles The term bars denotes the rectangles with the foreground color while the term spaces denotes the intervals with the background color between the bars.” Ex. 2020, 2. In a one-dimensional barcode such as the UPC, the interval occupied by the barcode is subdivided into modules and each module is assigned a 1 or a 0. Modules assigned a 1 are “painted” (typically in black) and form the bars, while modules assigned a 0 correspond to spaces. Ex. 2020, 2; Ex. 2029, ¶38. An exemplary UPC barcode is shown below:



Ex. 2020, 4. The UPC barcode includes a left guard pattern 101, six digits of odd parity (including one digit denoting the industry type such as 0 for grocery or 3 for pharmaceutical), a center guard pattern, and six digits of even parity (including five digits with the item code and one check digit), and a right guard pattern 101. Ex. 2020, 3; Ex. 2029, ¶39.

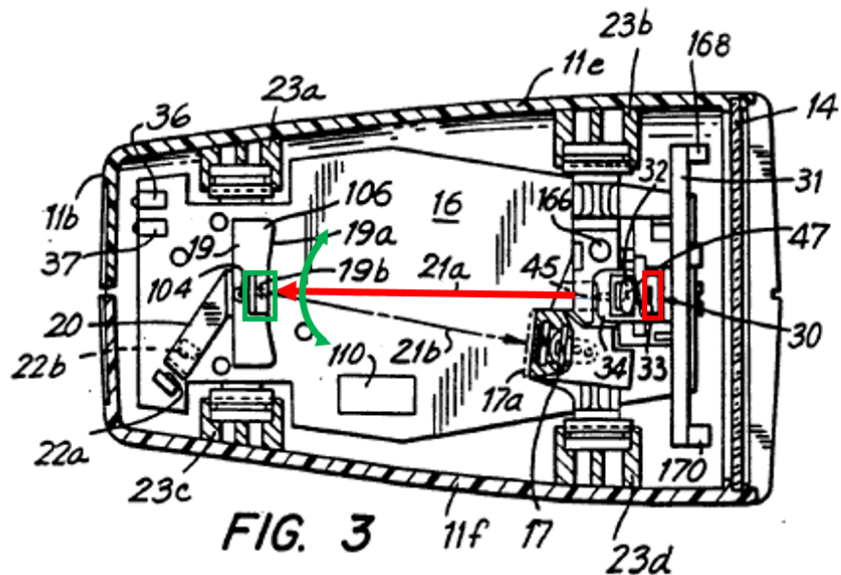
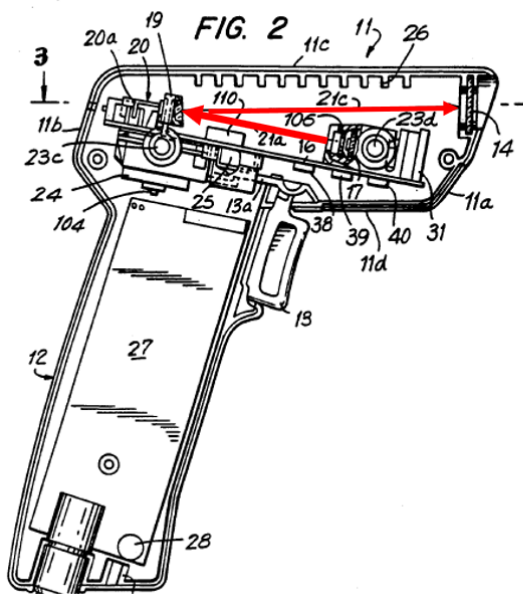
B. Bar Code Laser Scanners

At the time of the ‘167 Patent (March 8, 2005), bar code laser scanners were ubiquitous in supermarkets and other retail stores, where they were used, *inter alia*, for scanning UPC codes on products as part of the store checkout process. Ex. 2029, ¶40. Below is an example of a classic hand-held barcode laser scanner from the time:



Ex. 2021, Figure 1. In order to use the device, an operator points the hand-held scanner at a barcode and depresses the manual trigger 13 to actuate the device. *Id.*, 7:16-17; Ex. 2023, ¶41.

As shown in the cross-sectional diagrams of the hand-held scanner reproduced below, the laser scanner includes a laser light source 33 (red box below) that is actuated by the trigger. *Id.*, 7:40-43. The laser beam emitted by the source has “a beam cross-section resembling an oval.” *Id.*, 7:46-51. Light emitted from the laser diode follows the optical path represented by the red arrows, and exits the front of the hand-held scanner through window 14. *Id.*, 7:61-63; Ex. 2029, ¶42.

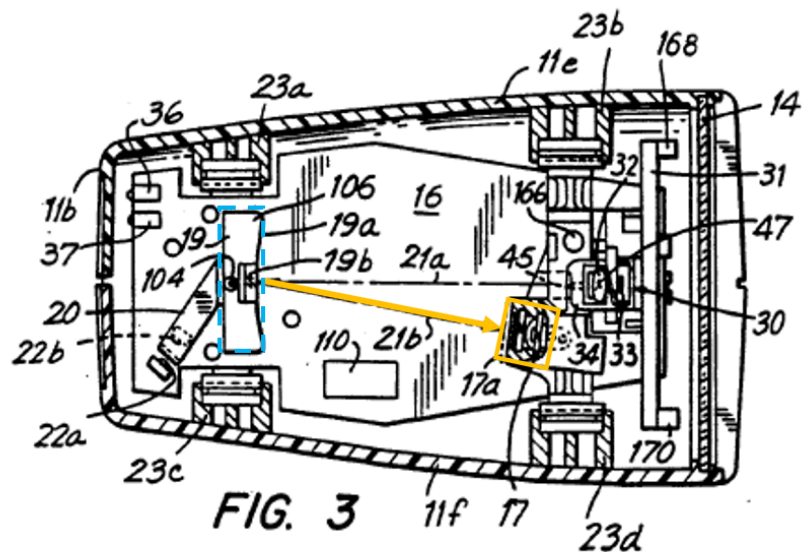
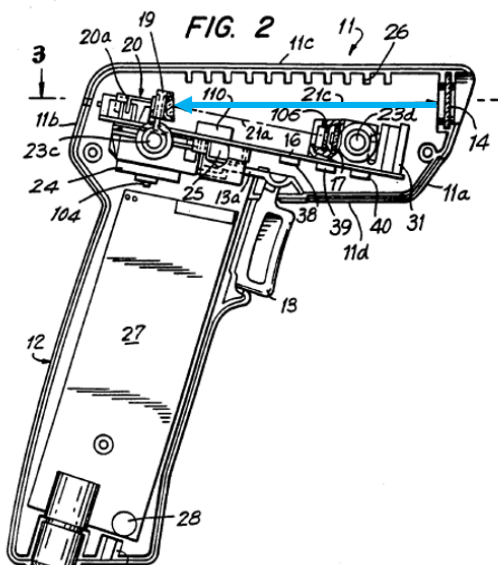


Ex. 2021, Figures 2 and 3 (annotations added). The laser beam emanating from the laser light source 33 (red box above) is initially directed toward a scanning mirror (green box above). A high-speed motor causes the mirror to oscillate about an arc such that that the scanning mirror sweeps the laser beam reflected by the mirror through (and exiting window 14) an angular arc of about 30° (corresponding to the green arc above) at a rate of about 20 scans or 40 oscillations per second. *Id.*, 8:63-9:14. Ex. 2029, ¶42. The swept laser beam exits the laser scanner through the window 14, and is visible on the barcode being scanned, as shown below:

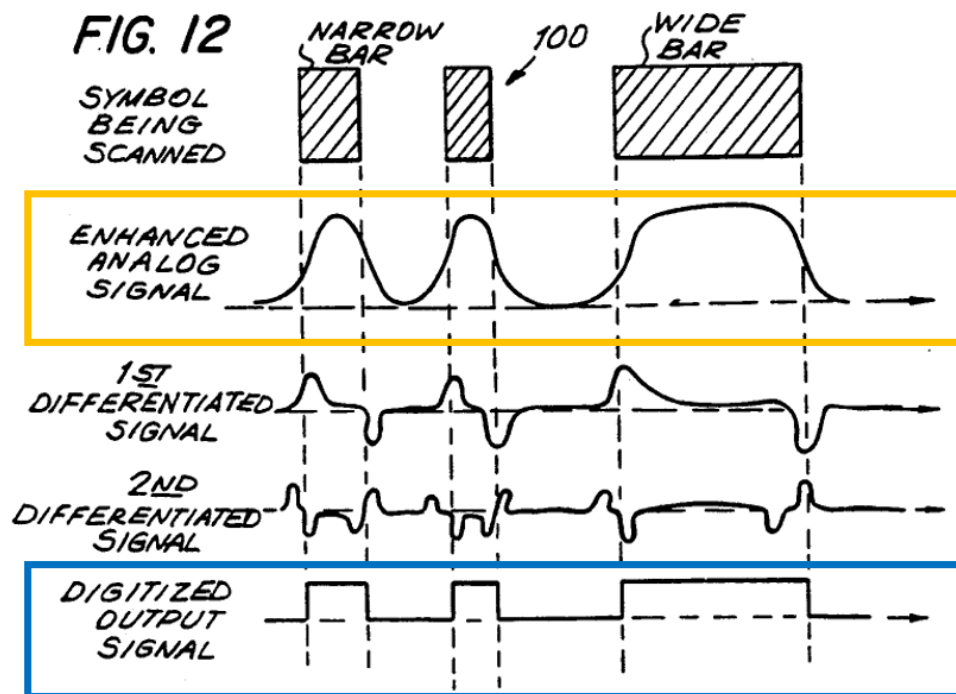


Although the laser beam corresponds to a singular oval-shaped spot on the barcode, the sweeping of laser beam back and forth across the barcode as a rate of 40 oscillations per second results in the appearance of a solid red line across the barcode during scanning. Ex. 2029, ¶42.

Laser light hitting the barcode symbol reflects off the symbol as a specular component in one direction and as a scattered component in many directions. Ex. 2021, 8:6-10. The portion of the scattered laser light which returns along the optical path corresponding to the blue arrow (below) impinges upon a spherical collecting mirror (blue box below), which directs the returning light along the path corresponding to the orange arrow to a photosensor (orange box below). *Id.*, 9:15-27; Ex. 2029, ¶43.



The photosensor (orange box above) detects the intensity of the collected laser light (which varies depending upon whether the laser light is reflecting off of a bar or a space in the bar code) and generates an electrical analog signal indicative of the detected variable light intensity, as illustrated in the orange box below. Ex. 2021, 9:27-32.

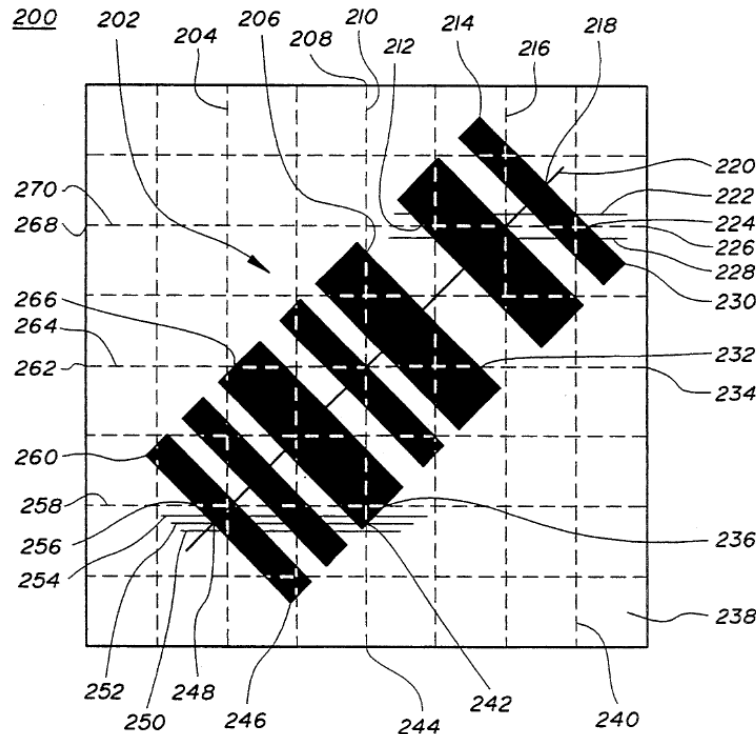


Id., Figure 12. The analog signal is processed and digitized to generate an electrical signal that corresponds to the bars and spaces in the barcode being scanned. *Id.*, 14:18-21; Ex. 2029, ¶43.

C. Image Capture Devices For Scanning One-Dimensional Barcodes

In contrast to barcode laser scanners, image capture devices for scanning barcodes use a 2D CCD (or other sensor technology such as CMOS) camera system

to capture a pixel image that includes an image of a barcode. Ex. 2022, 1:23-25; Ex. 2029, ¶44. An example of such a pixel image is reproduced below:



Ex. 2022, Figure 2. In a typical example, the pixel image shown above represents an imaged area that is 5.12 inches wide and 5.12 inches high, with each pixel representing an area that is 0.01 inch by 0.01 inch in size. *Id.*, 4:12-15. After the pixel image is captured by the CCD camera, an image processing system locates the corners of the bar code within the pixel image. *Id.*, 10:11-15. The four corners indicate the angular orientation of the barcode within the pixel image. The image processing system then decodes the bar code by stepping along the pixels forming the image in a reference line crossing through the bars and spaces in the barcode

represented in the image, and determining the alphanumeric characters represented by the bars and spaces. *Id.*, 8:23-33; Ex. 2029, ¶44.

In contrast to a barcode laser scanner which simply sweeps a laser beam across the barcode itself and analyzes the intensity of the returned light, bar code image capture devices use a camera to first capture a pixel image containing the barcode and subsequently apply image processing to identify the location of barcode within the image. Image-based devices then step along pixels in the image representing the bars and spaces of the barcode to determine the information stored in the barcode. Ex. 2029, ¶45.

Significantly, at the time of the ‘167 Patent, bar code image capture devices were used to read one-dimensional bar codes. Ex. 2022, Figure 2. As discussed more fully below, bar code image capture devices were also used at the time of the ‘167 Patent to read two-dimensional barcodes. Ex. 2029, ¶46.

D. It Was Well Accepted That Barcode Laser Scanners And Barcode Image Capture Devices Were Different

At the time of the ‘167 Patent, it was well accepted by those in the field of automatic identification that bar code laser scanners (on the one hand) and imaging (or image-based) barcode readers (on the other hand) operated differently and represented fundamentally different types of barcode readers. Ex. 2029, ¶47. For example, one group of inventors practicing in the area at the time of the ‘167 Patent characterized the state of the art as follows:

Most, if not all, conventional barcode readers use one of two general approaches to gathering data: either by using a flying-spot laser scanning technique, or by using an imaging technique. In flying-spot laser scanning systems, a beam of light is swept across a target barcode, and the reflected and/or refracted light from the target is detected and processed to decode the barcode. In imaging barcode readers, an image of the barcode is typically captured using an array of pixels (CCD or CMOS, for example), and the captured image is processed to decode the barcode. ...

Because both flying-spot and imaging readers have drawbacks, neither type is optimum for all situations. For example, imaging readers are best suited for situations in which the imaging head can be positioned very close to the target bar code. ...

On the other hand, a drawback of handheld flying-spot laser readers is that the scan line (i.e., the path traveled by the scanning spot across the target) must usually be aimed manually at the target barcode, with a relatively high degree of accuracy, for each scan.

A further drawback of flying-spot laser scanners is that it can be very difficult or even impossible to read two-dimensional barcodes. ... Reading a two-dimensional code with a flying-spot laser scanner is difficult or impossible. ... Ex. 2024, 1:19-2:9 (emphasis added).

The authors of the above, who were practitioners in the field, clearly understood that there were significant differences between barcode laser (flying- spot) scanners and imaging readers (based on image capture), referring to them as different types of barcode readers. Ex. 2029, ¶48. Moreover, as set forth above, such practitioners referred to the “captured image” as the image captured by imaging bar code readers.

Id.

Others in the field at the time of the ‘167 Patent likewise identified the significant differences between “laser scanning based” barcode readers and “imaging-based” barcode readers:

Imaging-based bar code symbol readers have a number advantages over laser scanning based bar code symbol readers, namely: they are more capable of reading stacked 2D symbologies, such as the PDF 417 symbology; more capable of reading matrix 2D symbologies, such as the Data Matrix symbology; more capable of reading bar codes regardless of their orientation; have lower manufacturing costs; and have the potential for use in other applications, which may or may not be related to bar code scanning, such as OCR, security systems, etc. ...

Prior art imaging-based bar code symbol readers generally require capturing multiple frames of image data of a bar code symbol, and special apparatus for synchronizing the decoding process with the image capture process within such readers ...

Prior art imaging-based bar code symbol readers generally require large arrays of LEDs in order to flood the field of view within which a bar code symbol might reside during image capture operations, ...

Prior art imaging-based bar code symbol readers generally require processing the entire pixel data set of capture images to find and decode bar code symbols represented therein. ... Ex. 2019, 3:4-49 (emphasis added).

Again, the authors of the above, who were practitioners in the field, clearly understood that laser based scanning barcode readers and imaging-based bar code readers were different types of devices, and referred to “image capture” (or “capturing ... image data” or “image capture operations”) solely in connection with imaging-based bar code readers. Ex. 2029, ¶50.

Still others in the field at the time of the ‘167 Patent referred to “laser scan engine” based readers and “image sensor based” barcode readers as different classes of barcode readers:

Optical readers tend to fall into one of three *classes*: wand readers, laser scan engine optical readers and image sensor based optical readers. ...

Laser scan engine based optical readers comprise a laser diode assembly generating a laser light beam, a moving mirror for sweeping the laser light beam across a decodable symbol and a signal is generated corresponding to the decodable symbol.

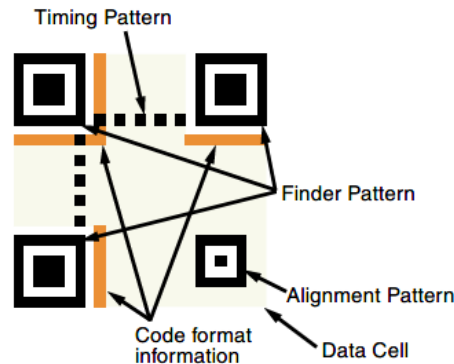
Image sensor based optical readers comprise multielement image sensors such as CID, CCD, and CMOS image sensors and an imaging optic for focusing an image onto the image sensor. ... Image sensor based optical readers are more durable and offer additional features relative to laser scan engine based bar code readers. One function which has been incorporated into image sensor based optical readers is a picture taking function. Optical readers have been developed which can both take pictures and decode decodable symbols represented in captured image data. Ex. 2026, 1:19-47.

Again, it is clear that practitioners in the field at the time of the ‘167 Patent understood that laser based scanning barcode readers and imaging-based bar code readers were different classes of devices, and referred to a “captured image” solely in connection with image-based readers. Ex. 2029, ¶52.

E. Two-Dimensional Bar Code Formats

In addition to one-dimensional barcodes like the UPC code described above, the ‘167 Patent identified “a multi-dimensional barcode, such as a 2D barcode.” Ex. 1001, 5:26-27. The most ubiquitous 2D barcode format at the time of the ‘167 Patent

was the QR code, examples of which were depicted in, e.g., Figures 3-6 of the ‘167 Patent. Ex. 2029, ¶53. An example of a QR code is reproduced below:

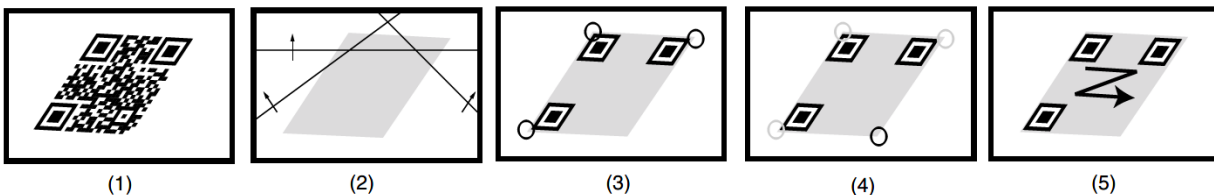


Ex. 2023, 3. A QR code typically includes a finder pattern for locating the QR code within a two-dimensional pixel image, a timing pattern, format information and an alignment pattern. Ex. 2023, 2-3; Ex. 2029, ¶53.

Bar code laser scanners “are ill-suited for reading two dimensional codes” such as a QR code. Ex. 2022, 1:16-18; Ex. 2024, 2:8-9 (“Reading a two-dimensional code with a flying-spot *laser scanner* is *difficult or impossible....*”) In fact, to the knowledge of Patent Owner’s expert, at the time of the ‘167 Patent, there was no commercially available laser scanner with the capability of reading two-dimensional codes such as the QR codes illustrated in Figures 3-6 of the ‘167 Patent. Ex. 2029, ¶54. Rather, an image capture device is required to read a two-dimensional code such as a QR code. *Id.* Such devices first capture a two-dimensional pixel image containing the QR code and subsequently apply image processing to identify the

location and orientation of the QR code within the image and scan pixels in the image representing the code. *Id.*

A typical image capture device for reading QR codes begins by using a camera to capture a two-dimensional pixel image (which may be skewed) that includes an image of the QR code. Ex. 2023, 3. The input image (leftmost image, below) is then processed in the five steps illustrated below so that the decoder can correctly process the potentially skewed image:



Ex. 2023, Figure 4; Ex. 2029, ¶55. In step (1), preprocessing is applied to the input image. Next, an image processing algorithm performs rough corner detection (step (2)) and the three marked corners of the QR code as shown in step (3) are defined. In step (4), the fourth corner is detected. Finally, in step (5), the area that the QR Code occupies is scanned and a normalized version of the QR Code is generated for decoding. After step (5) the QR Code is decoded in accordance with the ISO/IEC standard. Ex. 2023 (discussion of Figure 4).; Ex. 2029, ¶55.

Again, in contrast to a barcode laser scanner which simply sweeps a laser beam across a one-dimensional barcode and analyzes the intensity of the returned light, image capture devices use a camera to first capture a pixel image containing

the code (e.g., a QR code) and subsequently apply image processing to identify the location of QR code within the image and step along pixels in the image representing the cells of the code to determine the information stored in the code. Ex. 2029, ¶56.

III. SPECIFICATION OF ‘167 PATENT

The first paragraph of the Summary of the ‘167 Patent recites an image capture device:

An apparatus for providing a secure transaction is disclosed. In one embodiment, the apparatus includes an image capture device configured to capture an image having information embedded therein, a memory configured to store predetermined information, an input unit configured to receive input information provided by a user, a processor configured to: verify the user based on the input information to ensure that the user is authorized to use the apparatus, and generate an output based on the information embedded in the image and the predetermined information, and an output unit configured to forward the output generated by the processor. Ex. 1001, 3:17-28.

The general embodiment depicted in Figure 1 of the ‘167 Patent (shown below) illustrates the basic components of the secure device 100 disclosed in the specification. “The secure device 100 may include a processor 100, an image capture device or circuit 120, an input unit 130, an output unit 140 and a memory 150.” Ex. 1001, 5:8-11 (emphasis added).

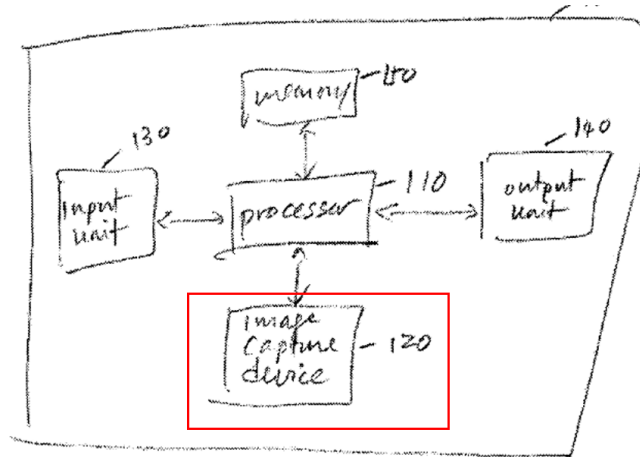


FIG. 1

Ex. 1001, Figure 1 (red annotation added). The ‘167 Patent went on to describe the image capture device (or circuit) 120 as follows:

The image capture circuit 120 may include a digital camera or other types of image capturing devices. The image capture circuit 120 is used to capture image and/or video information. The captured image and/or video information may include a barcode including an one-dimensional bar code, such as a linear barcode, or a multi-dimensional barcode, such as a 2D barcode, multiple barcodes in a single image or multiple barcodes in multiple images where multiple images form a stream of images or a video. As will be further described below, the captured image and/or video information is used and processed for a number of different purposes. Ex. 1001, 5:21-32 (emphasis added).

Next, in describing the general embodiment of the invention, the ‘167 Patent explains that the image capture circuit 120 captures either a still image or a moving stream of images.

The secure device 100 generally operates in the following manner, as shown in FIG. 2. At block 200, the secure device 100 via the image capture circuit 120 captures information on a still or moving image or a stream of images. ...

At block 220, the secure device 100 via the processor 110 decodes the captured image or video and extracts the relevant embedded information. Ex. 1001, 5:47-50 and 6:8-10.

Every barcode illustrated in the figures of the ‘167 Patent is a two-dimensional barcode in the format of a QR code:

<u>Figure of ‘167 Patent</u>	<u>Illustrated code(s)</u>	<u>Figure of ‘167 Patent</u>	<u>Illustrated code(s)</u>
3		9	
4		10	
5		11	
6		12	
7			

Ex. 2029, ¶61. As explained above, it was understood by those of skill in the art at the time of the ‘167 Patent that it was impossible to read two-dimensional codes like the QR codes illustrated in the ‘167 with laser-based barcode scanners. Ex. 2022, 1:16-18 (Bar code laser scanners “are ill-suited for reading two dimensional codes”); Ex. 2024, 2:8-9 (“Reading a two-dimensional code with a flying-spot laser scanner is difficult or impossible....”) Unsurprisingly, the ‘167 Patent never mentions laser-based barcode scanners. Ex. 2029, ¶62. In fact, the term “laser” is completely absent from the entirety of the ‘167 Patent.

A person of ordinary skill in the art at the time would have understood the disclosure in the ‘167 Patent of an “image capture device” for capturing “a still or moving image” and a processor that “decodes the captured image” corresponded to an imaging-based bar code reader, which was different from a laser-based barcode scanner. Ex. 1001, 3:17-19; 5:47-50; 6:8-10; Ex. 2029, ¶63. As noted above, practitioners in the field at the time of the ‘167 Patent understood that imaging-based bar code readers and laser-based scanning barcode readers were different classes of devices, and referred to a “captured image” solely in connection with image-based readers. Ex. 2024, 1:19-2:9; Ex. 2025, 3:4-49; Ex. 2026, 1:19-47; Ex. 2029, ¶63.

IV. CLAIMS OF ‘167 PATENT

Claim 1 of the ‘167 Patent recites as follows:

1. An apparatus for providing a secure transaction, the apparatus comprising:
an image capture device configured to capture an image, the image having information embedded therein including information relating to a transaction;
a memory configured to store predetermined information;
an input unit configured to receive input information provided by a user;
a processor configured to:
verify the user based on the input information to ensure that the user is authorized to use the apparatus; and
generate an output based on the information embedded in the image and the predetermined information; and
an output unit configured to forward the output generated by the processor, wherein
the output includes a digital signature to be used to signify authorization by the user with respect to the transaction.

Independent claim 1 recites an “an image capture device configured to capture an image,” and a processor configured to “generate an output based on the information embedded in the image.” Like the image-based bar code readers discussed above, claim 1 contemplates a process where an image capture device initially captures an image containing the code after which image processing is applied to the captured image in order to generate an output. Ex. 2029, ¶65.

A person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood the recitation in claim 1 of an “image capture device configured to capture an image” in combination with a processor configured to “generate an output based on the information embedded in the image,” to be referring to an imaging-based bar code reader and not a laser-based barcode scanner. Ex. 2029, ¶66. Practitioners in the field at the time of the ‘167 Patent used the terms “image capture” and “captured image” as recited in claim 1 only in connection with image-based readers. Ex. 2024, 1:19-2:9; Ex. 2025, 3:4-49; Ex. 2026, 1:19-47; Ex. 2029, ¶66.

Like claim 1, independent claim 19 similarly recites “an image capture device configured to capture an image” and a processor configured to “generate an output based on the information embedded in the image.” Independent claims 23, 39 and 43 recite comparable limitations in method format, namely, “configuring a portable

device to ... capture an image” and “generate an output based on the information embedded in the image.” Ex. 2029, ¶67.

V. PERSON OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) pertinent to the ‘167 Patent would have had at least a bachelor’s degree in the field of computer science and/or electrical engineering, engineering technology/industrial engineering, together with at least 2-3 years of experience in the use of Automatic Identification (Auto ID) technology and, in particular barcode technology, in connection with financial transactions. Ex. 2029, ¶68.

VI. PETITIONER’S BURDEN IN THIS TRIAL

In the Institution Decision (Paper #10), the Board instituted a Trial on the following six Grounds:

Ground I: Claims 1, 4, 5, 7, 12, 17, 23, 26, 27, 29, 34, and 43 are anticipated by Wang and obvious over Wang in view of Drummond;

Ground II: Wang anticipates Claims 1, 2, 4, 7, 12, and 17;

Ground III: Claims 19-21 and 39-41 are obvious over Wang in view of Drummond;

Ground IV: Claims 8 and 30 are obvious over Wang and Denso;

Ground V: Claim 13 is obvious over Wang and Raines; and

Ground VI: Claims 1, 4, 5, 7, 23, 26, 27, 29, and 43 are obvious over TAO in view of PTM and Wang.

Institution Decision, 46 (instituting a trial “on the unpatentability grounds asserted in the Petition.”)

The question presented in this Trial is limited to whether the specific prior art relied on each Ground meets all of the limitations of the Challenged Claims. If at least one element of each of the claims challenged in not met by the prior art identified in a given Ground, the Board must find that Petitioner failed to carry its burden with respect to such Ground.

It bears emphasis that the present Trial is not a reexamination of the ‘167 Patent. As the United States Supreme Court explained in *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, (2018), a reexamination is an “inquisitorial” process “led by the Patent Office.” By contrast, an *inter partes* review Trial is limited to the specific Grounds set forth in the Petition, where each Ground is limited to the specific prior art reference(s) identified in the Ground:

... Congress has supplemented litigation with various administrative remedies. The first of these was *ex parte* reexamination. Anyone, including the Director of the Patent Office, can seek *ex parte* reexamination of a patent claim. §§302, 303(a). Once instituted, though, an ex parte reexamination follows essentially the same inquisitorial process between patent owner and examiner as the initial Patent Office examination. §305. Later, Congress supplemented *ex parte* reexamination with *inter partes* reexamination. *Inter partes* reexamination (since repealed) provided a slightly more adversarial process, allowing a third party challenger to submit comments throughout the proceeding. §314(b)(2) (2006 ed.) (repealed). But otherwise it too followed a more or less inquisitorial course led by the Patent Office. §314(a). Apparently unsatisfied with this approach, in

2011 Congress repealed inter partes reexamination and replaced it with inter partes review. See 35 U. S. C. §§311–319 (2012 ed.).

The new *inter partes* review regime looks a good deal more like civil litigation. At its outset, a party must file “a petition to institute an inter partes review of [a] patent.” §311(a). The petition “may request to cancel as unpatentable 1 or more claims of [the] patent” on the ground that the claims are obvious or not novel. §311(b); see §§102 and 103. In doing so, the petition must identify “each claim challenged,” the grounds for the challenge, and the evidence supporting the challenge. §312(a)(3). (*id.*, 138 S. Ct. at 1353-1354 (emphasis added)).

In contrast to the “inquisitorial process” used in reexaminations, the Supreme Court explained that the contours of an *inter partes* review must be guided by the Petition rather than being defined by the Director:

... In its very first provision, the statute says that a party may seek inter partes review by filing “a petition to institute an inter partes review.” §311(a). This language doesn’t authorize the Director to start proceedings on his own initiative. Nor does it contemplate a petition that asks the Director to initiate whatever kind of inter partes review he might choose. Instead, the statute envisions that a petitioner will seek an inter partes review of a particular kind—one guided by a petition describing “each claim challenged” and “the grounds on which the challenge to each claim is based.” §312(a)(3). From the outset, we see that Congress chose to structure a process in which it’s the petitioner, not the Director, who gets to define the contours of the proceeding. ...

It’s telling, too, to compare this structure with what came before. In the *ex parte* reexamination statute, Congress embraced an inquisitorial approach, authorizing the Director to investigate a question of patentability “[o]n his own initiative, and at any time.” §303(a). If Congress had wanted to give the Director similar authority over the institution of inter partes review, it knew exactly how to do so—it could have simply borrowed from the statute next door. But rather than create (another) agency-led, inquisitorial process for reconsidering patents, Congress opted for a party-directed, adversarial process. Congress’s choice to depart from the model of a closely related statute is a choice neither we nor the agency may disregard. See *Nassar, supra*, at 353–354.

* * *

... The statutory provisions before us deliver unmistakable commands. The statute hinges *inter partes* review on the filing of a petition challenging specific patent claims; it makes the petition the centerpiece of the proceeding both before and after institution; and it requires the Board's final written decision to address every claim the petitioner presents for review. (*id.*, 138 S. Ct. at 1358 (emphasis added)).

Thus, the question presented in this Trial is limited to the contours of the Petition and specifically whether the specific prior art relied on each Ground meets all of the limitations of the Challenged Claims. The question of whether one or more references not included in a given Ground could be applied by themselves or in combination with the references asserted the Ground to render the claims challenged in the Ground unpatentable is not before the Board. Rather, the only question before the Board in this Trial is whether the specific prior art relied on a given Ground -- and only that prior art -- meets all of the limitations of the claims challenged in the Ground. If at least one element of each of the claims challenged in a given Ground is not met by the prior art identified in that Ground, the Board must find that Petitioner failed to carry its burden of demonstrating that such Ground renders the claims unpatentable.

As explained more fully below, the Petition has failed to carry its burden with respect to each of the Grounds, because the references relied on in each of the Grounds for the "image capture device configured to capture an image" and a

processor configured to “generate an output based on the information embedded in the image” as recited in claims 1 and 19, and “configuring a portable device to ... capture an image” and “generate an output based on the information embedded in the image” as recited in claims 23, 39 and 43, fail to expressly or inherently disclose these limitations.

VII. CLAIM CONSTRUCTION

In an *inter partes* review, claims are construed using the standard articulated by the Federal Circuit in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). As the Court explained in *Phillips*, the words of a claim “are generally given their ordinary and customary meaning” which “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.” *Id.*, 415 F.3d 1303, 1326.

In many cases, “determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art.” *Phillips*, 415 F.3d at 1314. It is “well-settled” that “that inventors are typically persons skilled in the field of the invention and that patents are addressed to and intended to be read by others of skill in the pertinent art.” *Id.*, 415 F. 3d at 1313 (citations omitted). “It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the

field, and to have knowledge of any special meaning and usage in the field.” *Id.* (emphasis added), citing, *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998).

Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to ‘those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean.’” *Phillips*, 415 F.3d 1314, citing, *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004). Those sources include “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Phillips*, 415 F.3d 1314 (citations omitted).

A. “*image capture device configured to capture an image*” (claims 1 and 19) and “*configuring a portable device to ... capture an image*” (claims 23, 29 and 43)

A person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood the recitation in claims 1 and 19 of an “*image¹ capture device configured to capture an image*” in combination with a

¹ An image is “a visual representation of something: such as (1) a likeness of an object produced on a photographic material [or] (2) a picture produced on an

processor configured to “generate an output based on the information embedded in the image,” to be referring to an imaging-based bar code reader and not a laser-based barcode scanner. Ex. 2029, ¶69. Similarly, a person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood the recitation in claims 23, 29 and 43 of “configuring a portable device to ... capture an image” and “generate an output based on the information embedded in the [captured] image” to be referring to an imaging-based bar code reader and not a laser-based barcode scanner. *Id.*

At the time of the ‘167 Patent, it was well accepted by those in the field of automatic identification that bar code laser scanners (on the one hand) and imaging (or image-based) barcode readers (on the other hand) operated differently and represented fundamentally different types of barcode readers. Ex. 2029, ¶70. One group of practitioners at the time of the ‘167 Patent characterized the state of the art as follows:

Most, if not all, conventional barcode readers use one of two general approaches to gathering data: either by using a flying-spot laser scanning technique, or by using an imaging technique. In flying-spot laser scanning systems, a beam of light is swept across a target barcode,

electronic display (such as a television or computer screen).” Ex. 2012, Merriam Webster. The dictionary definition of image is consistent with the usage of the term in the ‘167 Patent which states that “the image capture circuit 120 captures information on a still or moving image or a stream of images.” Ex. 1001, 5:49-50 (emphasis added); Ex. 2029, ¶69, note 4.

and the reflected and/or refracted light from the target is detected and processed to decode the barcode. In imaging barcode readers, an image of the barcode is typically captured using an array of pixels (CCD or CMOS, for example), and the captured image is processed to decode the barcode. ...

Because both flying-spot and imaging readers have drawbacks, neither type is optimum for all situations. For example, imaging readers are best suited for situations in which the imaging head can be positioned very close to the target bar code. Ex. 2024, 1:19-39 (emphasis added).

These practitioners clearly understood that were significant differences between barcode laser (flying- spot) scanners and imaging readers (based on image capture). In fact, the authors referred to barcode laser scanners and imaging readers as different types of barcode readers, and referred to the “captured image” as the image captured by imaging bar code readers. Ex. 2029, ¶71.

Others practitioners at the time likewise discussed that “laser scanning based” barcode readers were different from “imaging-based” barcode readers:

Imaging-based bar code symbol readers have a number advantages over laser scanning based bar code symbol readers, ...

Prior art imaging-based bar code symbol readers generally require capturing multiple frames of image data of a bar code symbol, and special apparatus for synchronizing the decoding process with the image capture process within such readers ...

Prior art imaging-based bar code symbol readers generally require large arrays of LEDs in order to flood the field of view within which a bar code symbol might reside during image capture operations, ...

Prior art imaging-based bar code symbol readers generally require processing the entire pixel data set of capture images to find and decode bar code symbols represented therein. ... Ex. 2025, 3:4-49 (emphasis added).

Again, these practitioners understood that laser based scanning barcode readers and imaging-based bar code readers were different types of devices, and referred to “image capture” (or “capturing ... image data” or “image capture operations”) solely in connection with imaging-based bar code readers. Ex. 2029, ¶73.

Still other practitioners referred to “laser scan engine” based readers and “image sensor based” barcode readers as different classes of barcode readers:

Optical readers tend to fall into one of three classes: wand readers, laser scan engine optical readers and image sensor based optical readers. ...

Laser scan engine based optical readers comprise a laser diode assembly generating a laser light beam, a moving mirror for sweeping the laser light beam across a decodable symbol and a signal is generated corresponding to the decodable symbol.

Image sensor based optical readers comprise multielement image sensors such as CID, CCD, and CMOS image sensors and an imaging optic for focusing an image onto the image sensor. ... Image sensor based optical readers are more durable and offer additional features relative to laser scan engine based bar code readers. ... Ex. 2026, 1:19-47.

Thus, it is clear that practitioners in the field at the time of the ‘167 Patent understood that laser based scanning barcode readers and imaging-based bar code readers were different classes of devices, and referred to a “captured image” solely in connection with image-based readers. Ex. 2029, ¶75.

Accordingly, a person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood the recitation in claims 1 and 19 of an “image capture device configured to capture an image” in combination with a processor configured to “generate an output based on the information embedded in the image,” to be referring to an imaging-based bar code reader and not a laser-based barcode scanner. Ex. 2029, ¶76. Similarly, a person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood the recitation in claims 23, 29 and 43 of “configuring a portable device to ... capture an image” and “generate an output based on the information embedded in the [captured] image” to be referring to an imaging-based bar code reader and not a laser-based barcode scanner. *Id.*

B. “the image having information embedded therein” (claims 1, 19, 23, 39 and 43)

In the Institution Decision, the Board determined that the term “embedded” should be given its “plain and ordinary meaning,” but did not articulate the specifics of what constitutes the plain and ordinary meaning of “embedded” to a person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification. Institution Decision, at 17. However, the Board credited Mr. Purves testimony that “the transaction information derived from the barcode” constitutes “embedded information.” *Id.*, at 15 (emphasis added). In this regard, Mr. Purves testified that “it is my opinion that the plain and ordinary meaning of “embedded”

includes information contained in any barcode.” Ex. 1036, ¶8 (emphasis added). For purposes of this Patent Owner Response, Patent Owner accepts Mr. Purvis’s opinion that “embedded” information includes information contained in any barcode.” However, a person of ordinary skill in the art at the time of the ‘167 Patent would have understood that human readable text information in the form of unencrypted human-readable alphanumeric characters is outside the scope of “embedded” information. Ex. 2029, ¶77.

The understanding of a person of ordinary skill in the art at the time of the ‘167 Patent that human readable text is not “embedded” information is consistent with the specification of the ‘167 Patent, which never uses the term “embedded” to refer to human readable text. Patent Owner’s position is also consistent with the dictionary definition of “embedded,” which defines something as being “embedded” when it is “incorporated into something else as an essential characteristic.” Ex. 2027, 1 and *see also* Ex. 2028, 1 (defining “embedded” as functioning as part of a larger device rather than as an independent unit or system”); Ex. 2029, ¶78. In this respect, Mr. Purvis’s opinion that “embedded” information includes information contained in any barcode is in keeping with dictionary definition which defines something (e.g., information) as being “embedded” when it is “incorporated into something else” (e.g., a barcode). Ex. 1036, ¶8 (emphasis added); Ex. 2029, ¶78.

Unlike a barcode where information is embedded into the bars and spaces of a barcode, human readable text in the form of unencrypted human readable alphanumeric characters is not embedded into (or incorporated into) something else. Ex. 2029, ¶79. Accordingly, a person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood that human readable text in the form of unencrypted human readable alphanumeric characters is not “embedded” information. *Id.*

VIII. THE PRIOR ART RELIED ON IN THE PETITION

A. Wang

Grounds I-V rely on Wang (Ex. 1004) as either the sole or primary reference. Wang discloses “a portable electronic authorization device (PEAD) carried by a user.” Ex. 1004, Abstract. In one embodiment (the one relied on in the Petition), the PEAD is used as a “self-checkout terminal.” Ex. 1004, [0115]; Pet., 33-34. In this embodiment, the PEAD includes a barcode scanner for scanning UPC barcodes:

Another implementation of Point-of-Sale Transaction is to use PEAD as self checkout terminal. By entering the UPC code or barcode using keypad on the PEAD or scanning in the UPC code or barcode using the input device built into the PEAD such as a barcode scanner or OCR reader, the PEAD can generate the receipt with the list of item prices through the wireless network and Internet by querying the item price using the barcode as the index for price lookup table which is stored in a server system. The PEAD user can sign the receipt electronically using PEAD Ex. 1004, [0115] (emphasis added).

In the emphasized language from the paragraph above, Wang distinguishes “the UPC code” and “a barcode,” stating that the user could either enter the “UPC code” or a “barcode.” Below is an example of a “UPC code or barcode” as described in paragraph [0115] of Wang:



As shown above, a standard UPC barcode typically include bars and spaces (green box above), as well as numeric characters in human readable text form (red box) positioned below the bars and spaces. A POSITA reading [0115] of Wang would have understood that it discloses that the “UPC code” (human readable text) can be entered by (i) entering the UPC code (human readable text) using a keypad, or (ii) scanning the UPC code (human readable text) with an OCR (optical character recognition) reader. Ex. 2029, ¶81. A POSITA reading [0115] of Wang would not only have also understood that the only method disclosed in [0115] for reading the “barcode” (bars and spaces) was to scan the barcode with a barcode scanner, but would instinctively have used a linear barcode scanner. To the POSITA, the explicit

discussion of “point of sale” and UPC would drive them to the use of a linear barcode scanner, and the intentional avoidance of a barcode imager due to the cost differences between the two devices. The POSITA would read the Wang patent and would instinctively look to include a linear barcode scanner due to their knowledge of the types of barcodes being used on retail items - UPC/EAN barcodes, which are linear, one dimensional barcodes. With respect to the barcode scanner, Wang does not disclose the type or class of barcode scanner used for scanning the barcode. Ex. 2029, ¶81.

B. Take An Order (TAO)

Ground VI relies on Take An Order (Ex. 1005) as the primary reference. TAO describes point-of-sale software for the Palm devices whereby a vendor can take orders from customers at, for example, a trade show. Ex. 1005, 1-2. Certain PalmOS devices compatible with the TAO software included a barcode scanner that the vendor could use to scan items to generate an order. *Id.* The software includes a popup which lets the vendor key in the customer’s name, credit card number and expiration date. *Id.*, at 2. The software includes the capability to print receipts, quotations, invoices and delivery reports by connecting to a variety of printers. *Id.*, at 3.

The Petition (at 65) relies on TAO’s barcode scanning capability, which TAO describes as follows:

Point-of-sale Software for the Palm Computing Platform

Are you selling products at trade shows or expos? Taking orders from customers in their home or office? Submitting bids or issuing quotations in a field situation? Delivering product and need to issue a receipt? For all these situations and more, **Take An Order!** is the handheld tool you need. Combined with any Palm Computing platform handheld device including barcode scanning SPT units from Symbol Technologies and a portable printer like the Canon BJC-55 or Brother MPrint, **Take An Order!** gives you an office that travels with you.

* * *

If you're equipped with a Symbol SPT PalmOS handheld with its built-in barcode scanner, it's even easier! Just point the scanner at the product, press the scan button, and the item is added to the order!

Ex. 1005, at 1-2 (red underlining added). The SPT units from Symbol Technologies identified in TAO are barcode laser scanners. See, e.g., Ex. 2009, Symbol SPT 1800 Series Product Reference Guide, at 109 (“The SPT 1800 has an integrated bar code laser scanner”); Ex. 2010, Symbol SPT 1700 Series Product Reference Guide, at 108 (“The SPT 1800 has an integrated bar code laser scanner”); Ex. 2029, ¶83.

C. Drummond

The Petition relies on Drummond as disclosing that, in addition or alternatively to receiving paper receipts, electronic receipts may be sent to one or more devices via e-mail and/or text message. Pet., 28; *citing* Ex. 1008, [0246]-[0251], [0301] and [0307].

D. Palm Treo Manual (PTM)

The Petition relies on the Palm Treo Manual (PTM) to show that Palm Treo devices included an internal memory, a processor, a keyboard and system locks that required a password to be entered on the device prior to accessing data stored on the device. Pet., 27, *citing*, Ex. 1006 at 24, 97, 109, 112, 129 and 173.

IX. GROUND I FAILS TO DEMONSTRATE THAT ALL OF THE ELEMENTS OF THE CHALLENGED CLAIMS ARE MET BY THE RELIED ON REFERENCES

Ground I alleges that claims 1, 4, 5, 7, 12, 17, 23, 26, 27, 29, 34 and 43 are anticipated by Wang and obvious over Wang in view of Drummond. In order to meet its burden, the Petition was required to demonstrate by a preponderance of the evidence that each and every limitation of the Challenged Claims is disclosed either expressly or inherently in the relied on references. As explained more fully below, the Petition failed to meet this burden.

As the Federal Circuit explains, the use of inherency, “a doctrine originally rooted in anticipation, must be carefully circumscribed in the context of obviousness” and “[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient to establish inherency.” *Par Pharm., Inc. v. TWi Pharm., Inc.*, 773 F.3d 1186, 1194-95 (Fed. Cir. 2014) (internal markings and citations omitted). The Court has “emphasized that the limitation at issue necessarily must be present in order to be inherently disclosed by the reference.” *Southwire Co. v. Cerro Wire LLC*,

870 F.3d 1306, 1310-11 (Fed. Cir. 2017) (internal citation omitted). Accordingly,”[a] party must...meet a high standard in order to rely on inherency to establish the existence of a claim limitation in the prior art in an obviousness analysis.” *Millennium Pharms., Inc. v. Sandoz, Inc.*, 862 F.3d 1356, 1367 (Fed. Cir. 2017). Therefore, obviousness cannot be established by the mere fact that something may happen. Instead, to teach the high standard of inherency, the alleged feature must necessarily be present in the cited reference.

In Ground I, the Petition relies on paragraph [0115] of Wang with respect to the claim limitations reciting an “image capture device configured to capture an image” and a processor configured to “generate an output based on the information embedded in the image” as recited in independent claim 1, and “configuring a portable device to ... capture an image” and “generate an output based on the information embedded in the image” as recited in independent claims 23 and 43. Pet., 33 and 35 (claim 1 mapping); 38 and 40 (claim 23) and 43 (claim 43).

As explained above, a person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood the recitation in claim 1 of an “image capture device configured to capture an image” in combination with a processor configured to “generate an output based on the information embedded in the image,” to be referring to an imaging-based bar code reader and not a laser-based barcode scanner. Ex. 2029, ¶88. Similarly, a person

of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood the recitation in claims 23 and 43 of “configuring a portable device to ... capture an image” and “generate an output based on the information embedded in the [captured] image” to be referring to an imaging-based bar code reader and not a laser-based barcode scanner. *Id.* Practitioners in the field at the time of the ‘167 Patent used the terms “image capture” and “captured image” and “capture an image” as recited in such claims only in connection with image-based readers. Ex. 2024, 1:19-2:9; Ex. 2025, 3:4-49; Ex. 2026, 1:19-47; Ex. 2029, ¶88.

Wang at [0115] fails to expressly or inherently disclose an imaging-based barcode reader. While Wang at [0115] discloses a barcode scanner, Wang is wholly silent as to the type or class of barcode scanner used for scanning the barcode. Ex. 2029, ¶89. Thus, Wang does not expressly disclose an imaging-based barcode reader. Nor is an imaging-based barcode reader inherent in Wang, as Wang’s barcode scanner could have been implemented with a barcode laser scanner (which is not an imaging-based barcode reader.) *Id.* Simply put, since there is no requirement in Wang that its barcode reader must be an imaging-based barcode reader, an imaging-based barcode reader is not inherently disclosed in Wang. *Id.*

The OCR reader disclosed in Wang also fails to meet the claim language. As explained above, Wang discloses the use of an OCR (optical character recognition)

reader for scanning the UPC code human readable text positioned below the bars and spaces in the barcode. Also as set forth above, such human readable text does not constitute embedded information. Ex. 2029, ¶90. By contrast, independent claims 1, 23 and 43 all require generation of “an output based on the information embedded in the image.” Therefore, even if Wang’s OCR device functioned to capture an image of the human readable text under the bars and spaces, the captured image would still fail to meet the claim limitation requiring that there be “information embedded in the image.” *Id.*

Each of the remaining claims challenged in Ground I depends from either independent claim 1 or 23. Under Ground I, the Petition has failed to meet its burden respect to any these dependent claims because the Petition has failed to meet its burden with respect to the independent claim from which each such dependent claim depends.

X. GROUND II FAILS TO DEMONSTRATE THAT ALL OF THE ELEMENTS OF THE CHALLENGED CLAIMS ARE MET BY THE RELIED ON REFERENCES

In Ground II, the Petition alleges Wang anticipates Claims 1, 2, 4, 7, 12, and 17. In Ground II, the Petition again relies on paragraph [0115] of Wang with respect to the claim limitations reciting an “image capture device configured to capture an image” and a processor configured to “generate an output based on the information embedded in the image” as recited in independent claim 1. Pet., 45-46. For the

reasons discussed in connection with Ground I above, Wang at [0115] fails meet the claim language because Wang at [0115] fails to expressly or inherently disclose an imaging-based barcode reader that captures an image with information embedded in the image.

Each of the remaining claims challenged in Ground II depends from independent claim 1. Under Ground II, the Petition has failed to meet its burden with respect to any these dependent claims because the Petition has failed to meet its burden with respect to the independent claim from which each such dependent claim depends.

XI. GROUND III FAILS TO DEMONSTRATE THAT ALL OF THE ELEMENTS OF THE CHALLENGED CLAIMS ARE MET BY THE RELIED ON REFERENCES

In Ground III, the Petition alleges that claims 19-21 and 39-41 are obvious over Wang in view of Drummond. In Ground III, the Petition again relies on paragraph [0115] of Wang with respect to the claim limitations reciting an “image capture device configured to capture an image” and a processor configured to “generate an output based on the information embedded in the image” as recited in independent claim 19, and “configuring a portable device to ... capture an image” and “generate an output based on the information embedded in the image” as recited in independent claim 39. Pet., 52-53. For the reasons discussed in connection with Ground I above, Wang at [0115] fails meet the claim language because Wang at

[0115] fails to expressly or inherently disclose an *imaging-based* barcode reader that captures an image with *information embedded in the image*.

Each of the remaining claims challenged in Ground 3 depends from either independent claim 19 or 39. Under Ground III, the Petition has failed to meet its burden of proof with respect to any these dependent claims because the Petition has failed to meet its burden of proof with respect to the independent claim from which each such dependent claim depends.

XII. GROUND IV FAILS TO DEMONSTRATE THAT ALL OF THE ELEMENTS OF THE CHALLENGED CLAIMS ARE MET BY THE RELIED ON REFERENCES

In Ground IV, the Petition alleges that Claims 8 and 30 are obvious over Wang and Denso. Ground IV is deficient because it fails to explain how the elements in the base claims (i.e., claim 1 is the base claim for claim 8, and claim 23 is the base claim for claim 30) are being mapped to the cited references. For example, it is not apparent whether the Petition is relying on its mapping of claim 1 as set forth Ground I or its mapping of claim 1 as set forth in Ground II in connection with the mapping of claim 8 in Ground IV. To the extent the Petition intended to rely on the analysis of claims 1 and 23 set forth in Ground I for the limitations in the base claim for claims 8 and 30, respectively, in Ground IV, the confusion is further complicated by the fact that the analysis of claims 1 and 23 in Ground 1 relies in part on *Drummond*,

which is absent from Ground 4. Simply put, Ground IV is deficient because it fails to set forth with sufficient clarity how it is mapping the claims to the prior art.

To the extent that the Petition is using only its citations to Wang (and not Drummond) for claims 1 and 23 from Ground I for the limitations in the base claim for claims 8 and 30, respectively, the Petition fails to satisfy its burden of proof in Ground IV because, as explained above, Wang at [0115] fails to expressly or inherently disclose an imaging-based barcode reader that captures an image with information embedded in the image.

Claim 23 is not the subject of Ground II, so there are no mappings to Wang in Ground II for the limitations in the base claim (claim 23) for dependent claim 30. To the extent the Petition is using its citations to Wang from claim 1 from Ground II for the limitations in the base claim (claim 1) for claim 8, the Petition again fails to satisfy its burden of proof in Ground IV because, as explained above, Wang at [0115] fails to expressly or inherently disclose an imaging-based barcode reader that captures an image with information embedded in the image.

XIII. GROUND V FAILS TO DEMONSTRATE THAT ALL OF THE ELEMENTS OF THE CHALLENGED CLAIMS ARE MET BY THE RELIED ON REFERENCES

In Ground V, the Petition alleges that claim 13 is obvious over Wang and Raines. In Ground V, the Petition relies solely on its mapping to Wang from Ground II for the limitations of the base claim (claim 1) from which claim 13 depends. Pet.,

at 57 (“As discussed in Ground 2, Wang discloses all of the features of Claim 1.”) Here again, the Petition fails to satisfy its burden of proof in Ground V because, as explained above, Wang at [0115] fails to expressly or inherently disclose an imaging-based barcode reader that captures an image with information embedded in the image.

XIV. GROUND VI FAILS TO DEMONSTRATE THAT ALL OF THE ELEMENTS OF THE CHALLENGED CLAIMS ARE MET BY THE RELIED ON REFERENCES

In Ground VI, the Petition alleges that claims 1, 4, 5, 7, 23, 26, 27, 29, and 43 are obvious over TAO in view of PTM and Wang. In Ground VI, the Petition relies on TAO’s barcode scanning capability with respect to the claim limitations reciting an “image capture device configured to capture an image” and a processor configured to “generate an output based on the information embedded in the image as recited in independent claim 1, and “configuring a portable device to ... capture an image” and “generate an output based on the information embedded in the image” as recited in independent claim 23. Pet., 65 and 68.

As explained above, a person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood the recitation in claim 1 of an “image capture device configured to capture an image” in combination with a processor configured to “generate an output based on the information embedded in the image,” to be referring to an imaging-based bar code

reader and not a laser-based barcode scanner. Ex. 2029, ¶101. Similarly, a person of ordinary skill at the time of the ‘167 Patent reading the claims in light of the specification would have understood the recitation in claim 23 of “configuring a portable device to ... capture an image” and “generate an output based on the information embedded in the [captured] image” to be referring to an imaging-based bar code reader and not a laser-based barcode scanner. *Id.* Practitioners in the field at the time of the ‘167 Patent used the terms “image capture” and “captured image” and “capture an image” as recited in such claims only in connection with image-based readers. Ex. 2024, 1:19-2:9; Ex. 2025, 3:4-49; Ex. 2026, 1:19-47; Ex. 2029, 101.

As explained above, the barcode readers disclosed in TAO were SPT units from Symbol Technologies, which are barcode laser scanners. *See*, e.g., Ex. 2009, Symbol SPT 1800 Series Product Reference Guide, at 109 (“The SPT 1800 has an integrated bar code laser scanner”); Ex. 2010, Symbol SPT 1700 Series Product Reference Guide, at 108 (“The SPT 1800 has an integrated bar code laser scanner.”) Thus, TAO fails to disclose an imaging-based barcode reader. Ex. 2023, ¶102.

Each of the remaining claims challenged in Ground VI depends from either independent claim 1 or 23. Under Ground VI, the Petition has failed to meet its burden of proof with respect to any these dependent claims because the Petition has

failed to meet its burden of proof with respect to the independent claim from which each such dependent claim depends.

XV. THE INSTITUTION DECISION SHOULD BE VACATED BECAUSE THE BOARD EXCEEDED ITS AUTHORITY UNDER THE STATUTE BY BASING THE INSTITUTION DECISION ON EVIDENCE NOT SET FORTH IN THE PETITION

Under 35 U.S.C. §314(a), “[t]he Director may not authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition ... shows that there is a reasonable likelihood that the petitioner would prevail.” Here, after Patent Owner filed its Preliminary Response (Paper 6), Petitioner requested leave to file a Pre-Institution Reply and subsequently requested leave to submit supplemental evidence. Over Patent Owner’s objections, and without following the rules that would have afforded Patent Owner an opportunity to be heard, the Board granted Petitioner’s requests. Petitioner then filed its Pre-Institution Reply together with over 300 pages of new exhibits and an 11 page Supplemental Declaration from Petitioner’s expert. In the Institution Decision (Paper 10), the Board relied on Petitioner’s post-petition evidence in making its findings that the Petition had presented a reasonable likelihood that the Petitioner would prevail. This aspect of the Institution Decision cannot be reconciled with the statutory requirement that an institution decision be based only on “the information presented in the petition” 35 U.S.C. 314(a).

A. Statutory Threshold For Institution

The statute sets forth the requirements of a petition, including the requirement that *the petition itself* identify with particularity *the evidence* that supports the grounds for each challenge:

(a) **REQUIREMENTS OF PETITION.**—A petition filed under section 311 may be considered *only* if— ...

(3) the petition identifies, *in writing and with particularity*, each claim challenged, the grounds on which the challenge to each claim is based, and *the evidence that supports the grounds* for the challenge to each claim, including—

(A) copies of patents and printed publications that the Petitioner relies upon in support of the petition; and

(B) affidavits or declarations of supporting evidence and opinions, if the Petitioner relies on expert opinions ... 35 U.S.C. §311(a) (emphasis added).

Having set forth the requirement that the petition itself identify the evidence that supports the grounds, the statute provided that the *threshold for institution* must be met *by the evidence presented in the petition*:

(a) **Threshold.** The Director may not authorize an inter partes review to be instituted *unless* the Director determines that *the information presented in the petition* filed under section 311 and any response filed under section 313 *shows* that there is a reasonable likelihood that the Petitioner would prevail with respect to at least 1 of the claims challenged in the petition. (emphasis added).

The rules restate the same statutory threshold for institution:

37 C.F.R. § 42.108 - Institution of inter partes review.

...

(c) Inter partes review shall not be instituted *unless* the Board decides that *the information presented in the petition demonstrates* that there is a reasonable likelihood that at least one of the claims challenged in the

petition is unpatentable. (emphasis added).

The statute and rules could not be more clear: institution cannot be granted unless the information in the petition itself demonstrates a reasonable likelihood that the Petitioner would prevail.

In *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, (2018), the United States Supreme Court reiterated the statutory requirement that a decision to institute be grounded in the evidence presented in the petition itself:

The new *inter partes* review regime looks a good deal more like civil litigation. At its outset, a party must file “a petition to institute an inter partes review of [a] patent.” §311(a). The petition “may request to cancel as unpatentable 1 or more claims of [the] patent” on the ground that the claims are obvious or not novel. §311(b); see §§102 and 103. In doing so, the petition must identify “each claim challenged,” the grounds for the challenge, and the evidence supporting the challenge. §312(a)(3). Patent Owner, in turn, may respond with “a preliminary response to the petition” explaining “why no inter partes review should be instituted.” §313. With the parties’ submissions before him, the Director then decides “whether to institute an inter partes review . . . pursuant to [the] petition.” §314(b). (In practice, the agency’s Patent Trial and Appeal Board exercises this authority on behalf of the Director, see 37 CFR §42.4(a) (2017).) 35 U. S. C. §314(a). (*id.*, 138 S. Ct. at 1353-1354 (emphasis added)).

The statute, rules, and the Supreme Court’s opinion in *SAS Institute*, all make plain that, from an evidentiary perspective, the Board can only consider evidence submitted with the petition itself (as well as evidence submitted in a Patent Owner Preliminary Response) in evaluating whether the threshold for institution has been met. The Institution Decision, in this case, strayed from that requirement.

B. The Rules Do Not Authorize A Petitioner To Submit Supplemental Evidence With A Pre-Institution Reply

The statute is silent with respect to pre-institution replies. The rules governing Trial Practice And Procedure specifically address pre-institution replies once -- in the same provision that prohibits institution unless the information presented in the petition itself demonstrates a reasonable likelihood of success:

37 C.F.R. § 42.108 - Institution of inter partes review.

...

(c) Inter partes review shall not be instituted unless the Board decides that the information presented in the petition demonstrates that there is a reasonable likelihood that at least one of the claims challenged in the petition is unpatentable. ... A petitioner may seek leave to file a reply to the preliminary response in accordance with §§ 42.23 and 42.24(c). Any such request must make a showing of good cause. (emphasis added).

Clearly, if the intent of this rule was to permit supplemental evidence to be submitted with a pre-institution reply and considered in rendering an institution decision, the rule would have been written to include the italicized language: “Inter partes review shall not be instituted unless the Board decides that the information presented in the petition and any pre-institution reply demonstrates” Of course, the statute itself forecloses such an approach by unequivocally stating that “[t]he Director may not authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail ...” 35 U.S.C. §314(a)(emphasis added).

The only plausible reading of 37 C.F.R. § 42.108(c) that aligns with the statute is one that permits a Petitioner to seek leave to file a pre-institution reply limited to attorney argument explaining what the information in the petition demonstrates. Nothing in the statute or the rules permits a petitioner to supplement the evidentiary record through a pre-institution reply as was done in the present case. While the rules permit the filing of supplemental information by a petitioner, the rules make clear that such supplemental information can only be submitted “[o]nce a trial has been instituted.” In this regard, 37 C.F.R. § 42.123(a) provides:

§ 42.123 Filing of supplemental information.

(a) *Motion to submit supplemental information.* Once a trial has been instituted, a party may file a motion to submit supplemental information in accordance with the following requirements:

- (1) A request for the authorization to file a motion to submit supplemental information is made within one month of the date the trial is instituted. ... (emphasis added).

Again, if the intent of the rule was to permit consideration of supplemental evidence prior to the institution of a trial, the rule would have stated so.

C. The Rules Require A Party Seeking Leave To File A Pre-Institution Reply To Proceed By Way Of A Motion That Demonstrates Good Cause

The Board’s Trial Practice and Procedure rules specify that a request for relief -- such as leave to file a pre-institution reply -- must be submitted in the form of a motion that was pre-authorized by the Board:

A. § 42.20 Generally.

(a) **Relief.** Relief, other than a petition requesting the institution of a trial, must be requested in the form of a motion.

(b) **Prior authorization.** A motion will not be entered without Board authorization. ...

Separately, 37 C.F.R. §42.108(c) specifies that a request to file a pre-institution reply must be supported by a showing of “good cause” and made “in accordance with §42.23” which requires that the request be made in the form of a motion:

B. § 42.23 Oppositions, replies, and sur-replies.

...

(b) All arguments for the relief requested in a motion must be made in the motion. ... (emphasis added)

As required by the basic tenets of due process, the rules afford a party opposing a motion an opportunity to be heard by filing an opposition to the motion. See, 37 C.F.R. §42.25 (setting default filing deadlines for opposition to a motion). Had Patent Owner been afforded an opportunity to be heard, Patent Owner would have explained that “good cause” was lacking in the present case, because none of this supplemental evidence was unavailable at the time of filing of the petition. In fact, Petitioner has alleged that these new exhibits were readily available to a POSITA as of the 2005 priority date of the current patent. Therefore, unlike in the Director Review Decision in *Vector Flow Inc. v. HID Global Corporation*, IPR2023-00353 (Paper 11), “good cause” is lacking because none of Petitioner’s supplemental

evidence first came to light subsequent to the filing of the Petition.

D. Patent Owner Was Denied An Opportunity To Be Heard In Connection With Petitioner's Request To File A Pre-Institution Reply

After reviewing the POPR, Petitioner emailed² the Board requesting authorization to file a pre-institution reply. The email did not request leave to file additional evidence.

From: Kennedy, Nicki <NKennedy@ktslaw.com>
Sent: Tuesday, November 26, 2024 2:29 PM
To: Trials <Trials@USPTO.GOV>
Cc: Krieger, Justin <JKrieger@ktslaw.com>; Gibby, Darin <dgibby@ktslaw.com>; Spink, Torrey <TSpink@ktslaw.com>; bttheiss@vklaw.com; rodonnell@vklaw.com; Robert D. Leonard <RLeonard@vklaw.com>; rrigby@intven.com
Subject: IPR2024-01221 Petitioner's Request to File Reply to Patent Owner's Preliminary Response

CAUTION: This email has originated from a source outside of USPTO. PLEASE CONSIDER THE SOURCE before responding, clicking on links, or opening attachments.

**Petitioner's Request to File Reply to Patent Owner's Preliminary Response
IPR2024-01221**

Honorable Board,

Petitioner respectfully requests permission to file a Reply to Patent Owner's Preliminary Response in the above-referenced IPR. Good cause exists in accordance with 37 C.F.R. § 42.108(c) at least based on Patent Owner's unforeseeable claim construction of "embedded" and arguments concerning citations to Ex. 1006.

Petitioner requests a 7-page reply due 7 days from the order granting our request. Petitioner does not oppose a sur-reply of equal length for Patent Owner due 7 days after Petitioner's reply.

Petitioner has conferred with Patent Owner and Patent Owner opposes Petitioner's request.

Should the panel wish to convene a telephone conference, the parties are available on December 2 and 3 from 9 am to 5 pm (eastern).

Best,



Nicki Kennedy

Petitioner's email alerted the Board that Patent Owner opposed the request for additional briefing. Under the circumstances, the Board should have adhered to 37

² The Board did not follow the practice of making emails part of the record by filing them as exhibits (numbered starting at Ex. 3001).

C.F.R. § 42.20, which specifies that a request for relief such as leave to file a pre-institution reply, must be submitted in the form of a motion that has been pre-authorized by the Board. Instead, the Board entirely skipped over the requirements and procedures set forth in 37 C.F.R. § 42.20. Before Patent Owner even had an opportunity to respond to Petitioner's request, and without convening a conference call or providing Patent Owner any other opportunity to be heard, the Board granted Petitioner's request to file a pre-institution reply:

From: Trials <Trials@USPTO.GOV>
Sent: Wednesday, November 27, 2024 9:00 AM
To: Kennedy, Nicki <NKennedy@ktslaw.com>; Trials <Trials@USPTO.GOV>
Cc: Krieger, Justin <JKrieger@ktslaw.com>; Gibby, Darin <dgibby@ktslaw.com>; Spink, Torrey <TSpink@ktslaw.com>; btheiss@vklaw.com; rodonnell@vklaw.com; Robert D. Leonard <RLeonard@vklaw.com>; rrigby@intven.com
Subject: RE: IPR2024-01221 Petitioner's Request to File Reply to Patent Owner's Preliminary Response

****CAUTION: External Email****

Counsel,

From the Board –

Petitioner is authorized to file a five-page Reply to Patent Owner's Preliminary Response, no later than December 5th, limited to responding to Patent Owner's arguments relating to (1) claim construction of the term "embedded," and (2) the Petition's citations to Ex. 1006. Patent Owner is authorized to file a five-page Sur-reply, limited to responding to arguments made by Petitioner in its Reply, no later than December 12th.

Regards,

Esther Goldschlager
Supervisory Paralegal Specialist
Patent Trial & Appeal Board

E. Patent Owner Was Denied A Fair Opportunity To Be Heard In Connection With Petitioner's Follow-On Request For Leave To Submit Additional Evidence With Its Pre-Institution Reply

The Board's actions in this case circumvented the established procedural safeguards designed to ensure fairness and due process in *inter partes* review proceedings. By granting Petitioner's request without following the motion

procedures outlined in 37 C.F.R. § 42.20 and without affording Patent Owner a meaningful opportunity to respond, the Board effectively denied Patent Owner its right to be heard. This departure from fundamental procedural fairness not only contravenes the statutory requirement that institution decisions be based on the information presented in the petition but also undermines the integrity of the adversarial process.

From: Krieger, Justin <JKrieger@ktslaw.com>
Sent: Tuesday, December 3, 2024 5:06 PM
To: Trials USPTO <trials@uspto.gov>
Cc: Gibby, Darin <dgibby@ktslaw.com>; Spink, Torrey <TSpink@ktslaw.com>; Brandon R. Theiss <BTheiss@vklaw.com>; Ryan O'Donnell <RODonnell@vklaw.com>; Robert D. Leonard <RLeonard@vklaw.com>; rrigby@intven.com; Kennedy, Nicki <NKennedy@ktslaw.com>
Subject: RE: IPR2024-01221 Petitioner's Request to File Reply to Patent Owner's Preliminary Response

**Petitioner's Request for Clarification of Prior Board Authorization
IPR2024-01221**

Honorable Board,

Petitioner respectfully seeks clarification of the Board's below email authorization to file a reply brief in the above-reference proceeding.

Specifically, Petitioner would like to confirm or alternatively request that it is authorized to submit exhibits with its reply brief responsive to the exhibits Patent Owner submitted with its POPR, limited to the construction of the term "embedded" as previously authorized. Good cause exists in that it was unforeseeable that Patent Owner would submit exhibits 2003-2007 and 2001 (citing same) with its POPR on the claim construction issue, and it is fair for Petitioner to be afforded a similar opportunity to present exhibits on this issue. Since Patent Owner is free to respond to such exhibits in its sur-reply, no prejudice would result in granting this request.

Patent Owner opposes this request. The parties are available for a telephone call with the Board, if necessary, any time tomorrow (Dec. 4).

Sincerely,

Justin Krieger
Counsel for Petitioner Early Warning Services, LLC

Two days before the due date for Petitioner's pre-institution reply, Petitioner again reached out again to the Board (above), seeking "to confirm or alternatively request that it is authorized to submit exhibits with its reply brief." (emphasis added). Since Petitioner had not previously requested authorization to file additional exhibits, this was, in fact, a new request for relief. Patent Owner promptly sent a response to the

Board, objecting to Petitioner's request to submit supplemental evidence, and pointing out that, under 35 U.S.C. 314(a), the Board is required to base its institution decision on "the information presented in the petition," and that neither the statute nor the rules provide for the submission of additional evidence by way of a pre-institution reply:

From: Brandon R. Theiss
Sent: Wednesday, December 4, 2024 9:41 AM
To: 'Krieger, Justin'; Trials USPTO
Cc: Gibby, Darin; Spink, Torrey; Ryan O'Donnell; Robert D. Leonard; rrigby@intven.com; Kennedy, Nicki; Daniel H. Golub
Subject: RE: IPR2024-01221 Petitioner's Request to File Reply to Patent Owner's Preliminary Response

Honorable Board,

There was nothing unforeseeable about Patent Owner's proposed construction of embedding. As used in the patent, "embedding" is a term of art (which was plainly knowable by Petitioner), and Patent Owner has construed the term as such. Moreover, Petitioner cites no rule or decision authorizing Petitioner to submit additional evidence with a Pre-institution Reply. According to 35 U.S.C. 314(a), the Board is required to base its institution decision on "the information presented in the petition filed under section 311 and any response filed under section 313." Neither the statute nor the rules provide for the submission of additional information (evidence) at this point in the proceedings.

Regards,

Again, the Board skipped over the motion procedures set forth in 37 C.F.R. § 42.20. Instead, without giving Patent Owner a fair opportunity to respond to Petitioner's request, and without convening a conference call or providing Patent Owner any other opportunity to be heard, the Board granted Petitioner's request.

From: Trials <Trials@USPTO.GOV>
Sent: Wednesday, December 4, 2024 11:33 AM
To: Brandon R. Theiss; 'Krieger, Justin'; Trials USPTO
Cc: Gibby, Darin; Spink, Torrey; Ryan O'Donnell; Robert D. Leonard; rrigby@intven.com; Kennedy, Nicki; Daniel H. Golub
Subject: RE: IPR2024-01221 Petitioner's Request to File Reply to Patent Owner's Preliminary Response

Counsel,

Both parties are authorized to submit additional evidence in support of the supplemental briefing as to the claim construction of the term "embedded."

The parties are cautioned to refrain from submitting email correspondence to the Board that includes legal or factual arguments. Emails to the Board need only mention generally the relief requested and times when all parties are available for a conference call with the Board. The parties are also reminded of the Board's meet and confer requirement and are directed to confer in good faith to resolve disputes prior to contacting the Board.

Best regards,
Eric W. Hawthorne
Supervisory Paralegal Specialist
Patent Trial and Appeal Board

In its Order (above), the Board admonished Patent Owner for making an argument in its email to the Board. This admonishment demonstrates that the basic elements of due process - including the requirement that the party opposing the requested relief be given a fair opportunity to be heard -- were foreclosed by the framework adopted by the Board in this case.

The fundamental principles of due process require that each party be given a fair opportunity to present its arguments, yet the framework employed by the Board in this case deprived Patent Owner of any meaningful chance to be heard. If (i) the Board is not going to require that relief be requested in the form of a written motion to which the opposing party can respond in writing, (ii) the Board does not convene a conference call where the party opposing the request can be heard orally, and (iii) the party opposing the relief is forbidden by the PTAB from submitting its position in writing to the Board by email or otherwise -- what opportunity does the part

opposing relief have to be heard? The answer is plain: the process followed by the Board here provided the party opposing the requested relief (Patent Owner) no opportunity to be heard.

F. The Petitioner's Voluminous Supplemental Evidence And The Institution Decision

In connection with its pre-institution reply, and over Patent Owner's objection, Petitioner filed over 300 pages of new exhibits (see, Exhibits 1037-1042) and a supplemental expert declaration (Ex. 1036). After considering this post-petition evidence, the Board issued a decision instituting a trial. The decision explains that the Board's determination was based not only on "the information presented in the Petition" but also on what the Board referred to as "supporting evidence," which corresponded to the supplemental evidence submitted with the pre-institution reply discussed later in the institution decision. While the decision acknowledged the statutory requirement to determine if the information presented in the petition itself shows a reasonable likelihood of success, in the very next sentence, the Board explained that its decision was based a combination of the information in the petition and the "supporting evidence" which corresponded to the supplemental evidence submitted with the pre-institution reply discussed in the institution decision:

... To institute an inter partes review, we must determine that the information presented in the Petition shows “a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Based on the information presented in the Petition and the supporting evidence, we are persuaded that there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the challenged claims. Institution Decision, Paper 10, at 2 (emphasis added).

The Institution Decision is littered with references to the supplemental evidence submitted with the pre-institution reply. For example, on page 15 of the Institution Decision, the Board acknowledges that it rejected Patent Owner’s claim construction argument based on the supplemental declaration (Ex. 1036) of Petitioner’s expert, Mr. Purves, submitted as part of the pre-institution reply:

... Mr. Purves testifies, that as shown in blocks 1010 and 1110, “the transaction information derived from the barcode involves only information that [a person of ordinary skill in the art] would recognize as being readily known by both parties of the transaction: a merchant name, the sender’s identifier, and a transaction amount.” Ex. 1036 ¶ 10. At this stage, we find Mr. Purves’s testimony consistent with the disclosure of the ‘167 patent. Thus, we are not persuaded that an ordinarily skilled artisan would have understood the Specification as supporting Patent Owner’s limiting construction. *Id.*, 15 (emphasis added).

The Board’s consideration of the supplemental evidence submitted as part of the pre-institution reply further appear on pages 12, 14, and 16 of the decision.

As explained above, from an evidentiary perspective, the statute and rules constrain the Board to consider only evidence submitted with the petition itself (as well as evidence submitted in a Patent Owner Preliminary Response) in evaluating whether the threshold for institution has been must be met. Simply put, the

Institution Decision in this case violated the statute and the rules by basing its decision to institute on extensive evidence submitted by Petitioner subsequent to the petition.

Accordingly, the Board's reliance on extensive supplemental evidence submitted after the Petition not only contravenes the statutory requirement that institution decisions be based solely on "the information presented in the petition" under 35 U.S.C. § 314(a), but also undermines the procedural safeguards designed to ensure fairness in inter partes review. By incorporating and relying upon Petitioner's post-petition submissions, including a supplemental expert declaration and over 300 pages of new exhibits, the Board exceeded its authority and improperly expanded the evidentiary record beyond what is permitted at the institution stage. Patent Owner therefore requests that the Board vacate the Institution Decision.

XVI. CONCLUSION

For the above reasons, Patent Owner respectfully requests that the Board vacate the Institution Decision and issue an order denying institution, or issue a Final Written Decision finding that the Petition failed to meet its burden of proof with respect to any of the Challenged Claims.

Respectfully submitted,

Dated: May 9, 2025

By: /Daniel H. Golub/
Daniel H. Golub
Registration No. 33,701
Counsel for Patent Owner
Intellectual Ventures II LLC

CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this Patent Owner Response complies with the type-volume limits of 37 C.F.R. § 42.24(b)(1) because it contains 12,978 words, excluding the parts of this Patent Owner's Response that are exempted by 37 C.F.R. § 42.24(a), according to the word processing system used to prepare this Patent Owner's Response.

Respectfully submitted,

Dated: May 9, 2025

By: /Daniel H. Golub/
Daniel H. Golub
Registration No. 33,701
Counsel for Patent Owner
Intellectual Ventures II LLC

CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing **PATENT OWNER'S RESPONSE** was served via email (as consented to by counsel) on May 9, 2025 to lead and backup counsel of record for Petitioners as follows:

Justin L. Krieger
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Dated: May 9, 2025

By: /Daniel H. Golub/
Daniel H. Golub
Registration No. 33,701
Counsel for Patent Owner
Intellectual Ventures II LLC