

**IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

SONIX TECHNOLOGY CO., LTD.,)	
)	
Plaintiff,)	
)	
v.)	No. 13-cv-2082
)	
PUBLICATIONS INTERNATIONAL, LTD.,)	
SD-X INTERACTIVE, INC.,)	
ENCYCLOPAEDIA BRITANNICA, INC., and)	
HERFF JONES, INC. ,)	
)	
Defendants.)	

MEMORANDUM OPINION AND ORDER

AMY J. ST. EVE, District Court Judge:

The parties dispute four claim terms in U.S. Patent No. 7,328,845 (“the ‘845 Patent”). After reviewing the parties’ respective submissions, the extensive prosecution history, and reexamination proceedings, and conducting a *Markman* hearing on September 11, 2014, *see Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (*en banc*), *aff’d* 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996), the Court construes the disputed claim terms as set forth below.

BACKGROUND

I. Procedural History

On March 18, 2013, Plaintiff Sonix Technology Co., Ltd (“Sonix”), filed its Complaint against Publications International, Ltd. (“PIL”) and SD-X Interactive, Inc. (“SD-X”), alleging that PIL and SD-X infringed one or more claims of the ‘845 Patent. (R.1, Compl., ¶¶ 14-18.) On September 17, 2013, Sonix filed its First Amended Complaint naming two additional Defendants, Encyclopaedia Britannica, Inc., and Herff Jones, Inc. (collectively with PIL and

SD-X, “Defendants”), alleging that Defendants infringed one or more claims of the ‘845 Patent in violation of 35 U.S.C. § 271(a). (R.49, First Am. Compl., ¶¶ 16-20.) In addition, Sonix alleged that Defendants PIL and SD-X infringed one or multiple claims of the ‘845 Patent in violation of 35 U.S.C. § 271(b). (*Id.*, ¶¶ 21-29.) Sonix also alleged that Defendant PIL was liable as the alter ego of SD-X for the damages suffered by Sonix. (*Id.*, ¶¶ 30-34.) On October 11, 2013, Defendants individually filed their Answer, Counterclaims and Affirmative Defenses to Sonix’s Complaint. (R.57, PIL’s Answer; R.58, SD-X’s Answer; R.59, Encyclopaedia Britannica, Inc.’s Answer; R.60, Herff Jones, Inc.’s Answer.)

II. U.S. Patent No. 7,328,845

The ‘845 Patent, entitled “Method for Producing Indicators and Processing Apparatus and System Utilizing the Indicators,” issued on February 12, 2008. (R.91-1, ‘845 Patent, at JA19.) The ‘845 Patent is directed to the use of graphical indicators affixed to the surface of an object and negligible to the human eye that provide information, beyond the visual text and images on the object’s surface, that is retrievable through an electronic system. (*Id.*, at JA1, abstract.) The specification describes a method for producing visually negligible dot patterns – referred to as “graphical indicators” – affixed to a surface (e.g., the page of a book), that overlap and co-exist, but do not interfere, with the main information on the surface of the object (e.g., visual text and images). (*See id.*, at JA19, col.2:55 – JA20, col.3:3.) As issued, the ‘845 Patent contained 51 claims generally directed to a processing system (Claims 1-32), an electronic apparatus (Claims 33-41), an image processing circuit (Claim 42), and a coordinate positioning system (Claims 43-51). (*See id.*, at JA23-26.)

The ‘845 Patent was the subject of two ex parte reexamination procedures with the United States Patent and Trademark Office (“PTO”), resulting in the issuance of Ex Parte

Reexamination Certificates on December 27, 2011 and December 26, 2012. (R.91-1, at JA27-31; *see also* R.49, ¶ 13.) The first ex parte reexamination, submitted in January 2011, resulted in confirmation of original Claims 9, 15, 25, 35-39 and 46-49, and newly added Claims 52-90. (R.91-1, at JA27-28.) A second ex parte reexamination, submitted in January 2012, resulted in confirmation of patentability of Claims 9, 25, 35-38, 46-49, and 52-90. (*Id.*, at JA30-31.)

The surviving claims of the '845 Patent are directed to processing systems, electronic apparatuses, and coordinate positioning systems. (R.91-1, at JA23-29.) Claim 9 is representative of a processing systems claim and is a dependent claim, meaning that it incorporates the limitations of the claims from which it depends. *See Monsanto Co. v. Syngenta Seeds, Inc.*, 503 F.3d 1352, 1358 (Fed. Cir. 2007) (explaining that a claim “in dependent form [] incorporates the limits of the overarching independent claim.”). Specifically, Claim 9 depends on Claim 6, which depends on Claim 5, which depends on Claim 4, which depends on Claim 2, which depends on Claim 1, all recited below:

1. A processing system comprising:

an optical device for capturing an image from a selected zone on a surface of an object by a user, wherein the image includes a graphical indicator that is visually negligible and is affixed on the surface of the object;

a processing device coupled to the optical device for receiving the image, the processing device retrieving the graphical indicator from the image and acquiring an additional information corresponding to the graphical indicator by processing and/or transforming the graphical indicators; and

an output device coupled to the processing device for outputting the additional information.

2. The processing system of claim 1, wherein the graphical indicator comprises a plurality of graphical micro-units arranged in a layout, the layout corresponds to an indicator information, the processing device analyses the layout of the graphical micro-units to retrieve the indicator information and further to acquire the additional information from the indicator information by processing and/or transforming the graphical indicators.

4. The processing system of claim 2, wherein the surface of the object comprises a main information that overlaps and co-exists with the graphical micro-units on

the surface of the object, wherein the graphical micro-units are negligible when the user observes the main information.

5. The processing system of claim 4, wherein the graphical indicator comprises a plurality of state zones for selectively respectively storing the graphical micro-units, wherein each of the state zones displays a state from at least two candidate states.

6. The processing system of claim 5, wherein the candidate states comprise a first state and a second state, as in the first state, the state zone includes one graphical micro-unit, and as in the second state, the state zone does not include the graphical micro-unit.

9. The processing system of claim 6, wherein the state zones are arranged in a two-dimensional matrix form and the graphical indicator comprises a header information and a content information, each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.

(R.91-1, at JA23-24.)

Claim 35 is representative of an electronic apparatus claim. Claim 35 is also a dependent claim. Specifically, Claim 35 depends on Claim 34, which depends on Claim 33, all recited below:

33. An electronic apparatus comprising:

an optical-reading device for capturing an image from a selected zone on a surface of an object by a user, emitting infrared ray to the surface of the object, and then receiving a response image from the surface of the object as the image, the image comprising a graphical indicator that is visually negligible and is affixed onto the surface of the object, the graphical indicator comprising a plurality of state zones for selectively respectively storing a plurality of graphical micro-units, and each state zone displaying a state from at least two candidate states;

an image processing circuit coupled to the optical-reading device and used to retrieve the image from the graphical indicator and acquire an additional information corresponding to the graphical indicator; and

an output circuit being coupled to the image-processing circuit and outputting the additional information;

wherein the surface of the object comprises multiple index zones, each index zone corresponds to one index value, and multiple identical graphical indicators are arranged

in each index zone, the surface of the object further comprises a main information that overlaps and co-exists with the graphical micro-units on the surface of the object, and the graphical micro-units are negligible when the user observes the main information, and each graphical micro-unit is printed in an ink that substantially absorbs infrared ray, and the main information is printed in an ink that hardly absorbs infrared ray.

34. The electronic apparatus of claim 33, wherein the candidate states comprise a first state and a second state, as in the first state, the state zone includes one graphical micro-unit, and as in the second state, the state zone does not include the graphical micro-unit.

35. The electronic apparatus of claim 34, wherein the state zones are arranged in a two-dimensional matrix form and the graphical indicator comprises a header information and a content information, each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.

(*Id.* at JA25.)

III. Prosecution History and Reexamination of the ‘845 Patent

A. Prosecution History

Sonix filed its application for the ‘845 Patent on July 2, 2002. (R.91-1, at JA1.) The ‘845 Patent lists Yao Hung Tsai as the sole inventor and Sonix as the assignee.¹ (*Id.*; R.91-3, ‘845 Patent Prosecution History, at JA156; *see also* R.49, First Amended Complaint, ¶ 15.) The application contained 62 claims, with independent claims 1, 18, 29, 44, and 52-54. (R.91-2, ‘845 Patent Prosecution History, at JA63-77.) On December 30, 2002, Sonix filed a preliminary amendment, which included amendments to the specification and claims, and added new claims 63-78. (R.91-3, at JA160-201.) Sonix amended the specification of the application to address “a more comprehensive design” for a graphical indicator, that may employ “more than one set of header information ... as long as each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical

¹ As the Federal Circuit has noted, “[i]nventions are created by individuals, not corporations.” *MBO Labs., Inc. v. Becton, Dickinson, & Co.*, 474 F.3d 1323, 1326 n.1 (Fed. Cir. 2007). For simplicity, however, the Court refers to “Sonix” as shorthand for the applicants throughout this Order.

indicators and indicating the orientation of the corresponding graphical indicator to the optical device.” (R.91-3, at JA183.) Similarly, Sonix amended pending claims 9, 37, 46, and 57 referring to “header information” to include the limitation that “each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.” (R.91-3, at JA187.)

During prosecution, the ‘845 Patent never faced substantive rejections from the PTO. (*See generally* R.91-1, at JA32 through R.91-7, at JA540; *see also* R.97-3, ‘845 Patent Reexamination Proceedings, at JA2016.) In response to two separate restriction requirements issued by the PTO during prosecution, Sonix elected claims 1-17 and 29-62 “drawn to an apparatus and processing system which utilizes an optical device to discern information from a graphical indicator.” (R.91-6, ‘845 Patent Prosecution History, at JA417-70.) The PTO subsequently allowed claims 1-17 and 29-62, stating “the best prior art of record fails to specifically teach an optical device for capturing an image from a selected zone on a surface of an object by a user wherein the image is visually negligible and includes a graphical indicator.” (R.91-7, at JA512.) The ‘845 Patent issued with Claims 1-51 directed to a processing system, an electronic apparatus, and a coordinate positioning system. (R.91-1, at JA 24-26.)

B. First Ex Parte Reexamination

On January 19, 2011, Sunplus Technology Co., Ltd., (“Sunplus”) submitted a Request for Ex Parte Reexamination of Claims 1-51 of the ‘845 Patent to the PTO, alleging that a substantial new question of patentability existed. (R.92-1, at JA543 - R.92-2, at JA689.) In particular, Sunplus requested reexamination of the ‘845 Patent in view of the following prior art: Canadian Patent CA 2 374 808 (“Fahraeus”); U.S. Patent No. 5,416,312 (“Lamoure”); U.S. Patent No.

5,866,895 (“Fukuda ‘895”); U.S. Patent No. 5,905,250 (“Fukuda ‘250”); U.S. Patent No. 4,604,065 (“Frazer”); and U.S. Patent No. 4,869,532 (“Abe”). (R.92-1, at JA554.) The PTO granted Sunplus’s request for ex parte reexamination. (R.95-1, at JA1411-24.) The PTO stated “it appears from the record that the allowable features of the claims were that none of the art had an optical device to capture an image from a zone of a surface of an object, where the image is visually negligible and includes a graphical indicator.” (*Id.*, at JA1417.) The PTO identified four issues that raised substantial new questions of patentability with respect to the ‘845 Patent claims – two of the issues relied on the newly cited art of Frazer and Fukuda ‘250, and the remaining issues relied on previously identified, but unapplied, art, Lamoure and Abe. (*Id.*, at JA1419-21.)

In an Office Action mailed on April 14, 2011, the examiner rejected claims 1-5, 10, 14, 16-21, 26, 29, 31, 32, and 43-44 and confirmed the patentability of claims 15 and 39. (R.95-1, at JA1434.) Specifically, the PTO rejected claims 1-5, 10, 14, 16-21, 26, 29, 31, 32, and 43-44 under 35 U.S.C. §102(b) as being anticipated by Fahraeus. (*Id.*, at JA1436-41.) The PTO also rejected claims 11, 27, 34-38, and 42 under 35 U.S.C. § 103(a) as being unpatentable over either Fahraeus alone or in view of various combinations with Frazier, Abe, and/or Fukuda ‘895. (*Id.*, at JA1441-43.) The PTO interpreted Fahraeus as disclosing, among other things, a graphical indicator that is “visually negligible” and “a processing device that receives the image, processes the image and retrieves the graphical indicator from the image.” (*Id.*, at JA1436-37.)

Relying on Lamoure, the PTO rejected claims 1, 2, 4-8, 13, 14, 17-24, 30-32, 41, 43-45, 50 and 51 under 35 U.S.C. §102(b) as being anticipated by Lamoure. (*Id.*, at JA1444-46.) The PTO also rejected claims 7- 9, 12, 22-23, 25, 28, 33, 40, 42, and 46-51 under 35 U.S.C. § 103(a) as being unpatentable over either Lamoure alone or in view of various combinations with Fukuda

‘250, Fahraeus, and/or Abe. (*Id.*, at JA1447-51.) The PTO stated that Lamoure “teaches using [an] optical device, a wand reader with associated charge coupled sensors [] that read an image from a selected zone on a map, where the image includes a graphical indicator, shown in figures 1-4, which is not visible to the user [] and is affixed to the map.” (*Id.*, at JA1444 (citations omitted).)

In an interview with the examiner on May 24, 2011, Sonix discussed the cited prior art of Lamoure, Fahraeus, and Fukuda ‘250. The Ex Parte Interview Summary states that Sonix “noted that a graphical indicator is repeatable, includes a header/content information that allows the indicator to be read regardless of the orientation, and is not position dependent.” (*Id.*, at JA1460-61.) In pointing out the “differences of the graphical indicators in Fahraeus and Lamoure relative to the current patent,” the Interview Summary states Sonix “noted that in both cases, the codes are position dependent and unable to account for orientation.” (*Id.*)

Sonix’s Response filed on July 18, 2011, added claims 52-90. (R.95-2, at JA1531-38.) Sonix acknowledged that “[t]he term ‘graphical indicator’ has no commonly understood meaning among those skilled in the art.” (R.95-2, at JA1539.)² Sonix stated that “[h]ere, the ‘845 patent sets forth the meaning of the term ‘graphical indicator’ in terms that are unequivocal and deliberate, and which give clear notice to those of ordinary skill in the art of the scope of the definition.” (*Id.*, at JA1540.) Sonix then stated:

² Sonix submitted a Response to the Office Action of April 14, 2011 on June 14, 2011. (*See* R.95-1, at JA1462 to R.95-2, at JA1511). After receiving notice from the PTO that Sonix needed to correct the format of the newly added claims to show new material as underlined, Sonix submitted a Corrected Response to the Office Action mailed April 14, 2011 which the PTO stamped as received by fax on July 18, 2011. (*See* R.95-2, at JA1520-1567.) A second copy of the Corrected Response dated and signed on July 18, 2011 also exists in the reexamination proceedings, but bears a stamp from the PTO as received by fax on June 18, 2011. (*See* R.95-2, at JA1568 to R.95-3, at JA1614). Although the substantive comments made by Sonix in each version seem to be identical, the Court refers to the version of the Corrected Response dated on July 18, 2011 and stamped as received by the PTO on July 18, 2011. (*See* R.95-2, at JA1520-1567.) The PTO also acknowledged this version in the subsequent Office Action sent on August 11, 2011. (*See* R.95-3, at JA1617.)

As set forth in the '845 patent, a graphical indicator is made up of “a plurality of micro-units” that are arranged in a layout that can take any regular or irregular shape and can have any orientation on the surface. (3:13-25). A graphical indicator also includes header information which may serve a variety of functions. (3:57-4:12). The heading “Exemplary Design for the Graphical Indicators” above the section of the specification beginning at column 3, line 6 and extending through column 6, line 44 of the '845 patent reflects the fact that this section of the specification first establishes the meaning of the term “graphical indicators” as set forth above, then proceeds to discuss various designs [sic] alternatives that could be used to create such graphical indicators depending on the user’s needs and the specific application.

(*Id.*, at JA1540-41.) Regarding the combinations of Fukuda '895 with Fahreaus, Sonix argued that Fukuda '895 is not analogous art because it “is directed to the field of data storage and recovery/reproduction of that data by capturing it using an optical reader,” whereas “[t]he '845 patent does [sic] is not directed to data storage and reproduction, rather it is directed to the production of indicators and a system for associating those indicators with additional information stored *on a separate storage medium* for output to the user.” (*Id.*, at JA1549 (emphasis in original).) Sonix stated that “[e]ven if considered to be analogous art, Fukuda '895 fails to teach the use of header and content information within a graphical indicator wherein the header information is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.” (*Id.*, at JA1550.)

In distinguishing the Lamoure reference, Sonix acknowledged that “Lamoure clearly recognized the problem of differentiating between closely spaced indexes on a sheet,” but argued that “Lamoure teaches a single solution based on spacing.” (R.95-2, at JA1553.) Sonix further stated, “Lamoure failed to conceive using a header incorporated into an index to differentiate among multiple indexes in the field of view of the optical reader.” (*Id.*, at JA1553-54.) Further explaining the “graphical indicator” of the '845 Patent, Sonix stated:

[A] graphical indicator can take any regular or irregular shape and may have any orientation on the surface (3:13-25). A graphical indicator also includes header information which may serve a variety of functions, including differentiation among graphical indicators and establishment of orientation relative to the optical reader. (3:57-4:12). Lamoure's indexes are not graphical indicators because Lamoure does not teach the use of headers, and because Lamoure's indexes could only be used in a specific orientation relative to the surface or the optical reader.

(*Id.*, at JA1559-61.) Regarding the combinations of Fukuda '250 with Lamoure, Sonix again argued that Fukuda '250 is not analogous art, for the same reasons as presented for Fukuda '895.

(*Id.*, at JA1559-61.) In addition, Sonix explained:

This issue of orientation in a static environment is far different than in a scanning environment such as that of Fukuda '250. In a scanning environment, the basic orientation of the dot codes dictates the scan direction used by the system. So users must scan in a particular direction across the dot codes, and there is no significant issue in terms of the basic orientation of those codes relative to the optical reader as they are scanned across the page. The '845 patent uses header information to establish complete freedom with respect [to] the orientation of graphical indicators, which is important in educational applications where the user may hold the optical reader in any orientation relative to the surface. Thus, the use of headers in a static imaging system was a non-obvious concept that solved longstanding problems of differentiation among closely spaced dot codes and providing freedom to use any orientation for such dot codes relative to the optical reader.

(*Id.*, at JA1562.)

The PTO responded with an Office Action confirming the patentability of Claims 9, 15, 25, 35-39, 46-49 and 52-90 and maintaining its rejections for Claims 1-8, 10-14, 16-24, 26-34, 40-45, 50 and 51. (R.95-3, at JA1617.) In response to Sonix's definition for "graphical indicator," the examiner stated that he "does not agree that the specification so limits the term."

(*Id.*, at JA1633.) The examiner reasoned that "[o]ne of the requirements of a special definition is that it not be examples, but a requirement of the term," and the specification "merely show[s] an example of what a graphical indicator can be." (*Id.*, at JA1633-34.) The examiner stated he "will be using the following definition: a graphical indicator is an indicator that is visually

negligible, comprised of multiple micro-units arranged in a layout, having any regular or irregular shape.” (*Id.*, at JA1634.)

Sonix submitted the requested support for the newly added claims (Claims 52-90) and requested issuance of a Reexamination Certificate to confirm patentability of Claims 9, 15, 25, 35-39, 46-49, and allow Claims 52-90. (*Id.*, at JA1655.) The PTO then issued a Notice of Intent to Issue a Reexamination Certificate stating the confirmed and allowed claims “all recite that the graphical indicator has a header” in the Statement of Reasons for Patentability and/or Confirmation. (*Id.*, at JA1663.) The PTO further noted that “while both Fukuda ‘250 and Fukuda ‘895 teach headers for scanned or streaming data, neither reference provides motivation to use a header in a static environment like that of Fahraeus or Lamoure.” (R.95-3, at JA1663-64.) The Ex Parte Reexamination Certificate for the ‘845 Patent issued on December 27, 2011. (*Id.*, at JA1670-71.)

C. Second Ex Parte Reexamination

On January 26, 2012, Generalplus Technology Inc., (“Generalplus”) submitted a Request for Ex Parte Reexamination of Claims 9, 15, 25, 35-39, 46-49, and 52-90 of the ‘845 Patent to the PTO alleging that a substantial new question of patentability existed. (R.96-1, at JA1673.) In particular, Generalplus requested reexamination of the ‘845 Patent in view of the following prior art: U.S. Patent No. 5,329,107 (“Priddy”), Frazer, and Lamoure. (*Id.*, at JA1687.) The PTO granted Generalplus’s request for ex parte reexamination. (R.97-3, at JA2015.) The PTO found that the Priddy and Frazer references alone and the Lamoure reference in combination with either or both references, raised a substantial new question of patentability. (R.97-3, at JA2019; R.97-4, at JA2025.) The PTO noted that “Priddy teaches the presentation of machine readable binary code organized in a matrix with fixed perimeter defined by a horizontal and a

vertical line enclosing the binary code and providing a guide for interpreting the orientation and physical bounds of the grouped code.” (R.97-4, at JA2020.) The PTO cited the requestor’s allegation:

That the limitation of header information within each graphical indicator [being] capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators recited in claim 9, of Tsai is equivalent to the perimeter forming an L-shaped border around the code matrix, where the coder defines where one code matrix begins and where a previous one ends (thereby dividing code segments) (see column 3, lines 25-31 and figures 1b-1c) of Priddy.

(*Id.*, at JA2020-21 (edit in original).)

In an Office Action mailed on March 19, 2012, the PTO rejected Claims 9, 15, 25, 35-39, 46-49 and 52-90. (*Id.*, at JA2038.) Specifically, the PTO rejected Claims 9, 25, 46, 52-62, 65-67, 69-80, and 84-90 under 35 U.S.C. §103(a) as being unpatentable over Lamoure and Priddy. (*Id.*, at JA2040.) The PTO also rejected Claims 15 and 39 under 35 U.S.C. § 103(a) as being unpatentable over Lamoure and Frazer and Claims 35-38, 47-49, 63, 64, 68, and 81-83 under 35 U.S.C. § 103(a) as being unpatentable over Lamoure, Priddy and Frazer. (*Id.*, at JA2040-41.)

In an interview with the examiner on April 12, 2012, Sonix discussed the cited prior art of Lamoure, Priddy, and Frazer. The Ex Parte Interview Summary states that Sonix “presented the view that Priddy’s computer readable binary code cannot read on the claimed graphical indicators as it: (1) presents a higher density representation of the embedded code, (2) provides a depiction of two solid line segments to define the header, and (3) does not provide a repeating pattern of multiple embedded code segments.” (R.97-4, at JA2050.) Sonix further “argued against use of Frazer to teach outputting multimedia information arguing that Frazer only provides distinct sounds for a right or wrong answer, to which they provide support in the

specification for ‘audio information, such as pronunciation of horse in English or other visual information ...’” (*Id.*)

Sonix’s Response, filed on May 21, 2012, asserted that Priddy in combination with Lamoure, did not provide a “visually negligible” matrix, stating:

To be visually negligible, a dot pattern superimposed over text and/or graphics must co-exist with such text and graphics and must not interfere with the viewer’s perception of the text and graphics. *See* ‘845 patent, Col. 1, ll. 49-54; Col. 2, ll. 59-64; Col. 3, ll. 5-8. A person of ordinary skill in the art (such as Lamoure) would recognize that Priddy teaches a matrix that is by definition highly anisotropic with areas of very high density, and potentially of very high density. The predictable result of combining Lamoure and Priddy is a pattern that is not visually negligible, but rather which substantially interferes with the text and images on the surface.

(R.97-4, at JA2056.) In support of this position, Sonix submitted the Sejersen Affidavit, showing examples to illustrate the effect of the use of a Priddy perimeter. (*Id.*, at JA2064-71.)

Mr. Sejersen concluded:

[A] person of ordinary skill in the art would not use a Priddy matrix or any dot pattern containing the Priddy Perimeter to create a pattern that could be superimposed over text or graphics. A pattern made using a Priddy matrix or a dot pattern containing a Priddy Perimeter would be unsuitable for such a purpose because it would interfere with the viewer’s perception of the text and/or graphics and would not be visually negligible.

(*Id.*, at JA2071.) In addition, to distinguish over Priddy, Sonix stated “Priddy fails to teach the claim requirement that ‘each header information within the graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators.’” (*Id.*, at JA2058-59.) Sonix further stated Priddy “does not have any express disclosure of using the perimeter of the matrix to distinguish one matrix from an adjacent matrix.” (*Id.*, at JA2059.)

The PTO responded with an Office Action confirming the patentability of Claims 9, 25, 35-38, 46-49, and 52-90, and maintaining its rejections for Claims 15 and 39. (R.97-4, at JA2082.) In the Statement of Reasons for Patentability and/or Confirmation, the PTO stated:

The following is an examiner's statement of reasons for patentability and/or confirmation of the claims found patentable in this reexamination proceeding:

Claims 9, 25, 35, 46, 52, and 71 each recite the feature of:

*“capturing an image from a selected zone on a surface of an object by a user, wherein the image includes a **graphical indicator that is visually negligible**”*

*“wherein the state zones are arranged in a two-dimensional matrix form and the **graphical indicator comprises a header information** and a content information, each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.*

The ‘845 Patent Specification defines the header information as (from column 4, lines 30-39):

Shown in FIG. 1(B), which has scale of 100: 1, the graphical indicator 11 includes a header information 111 and a content information 112 arranged in a layout that corresponds to different indicator information. In one embodiment, all header information 111 are identical among different graphical indicators 11. However, for a more comprehensive design, more than one set of header information may be employed as long as each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device. On the other hand, different value of content information 112 represents different indicator information. Thus, one graphical indicator 11 is read through capturing one header information 111, and the graphical indicator 11 does not interfere with each adjacent graphical indicator 11. However, in another embodiment, the header information 111 in one graphical indicator may be different from that of other graphical indicator 11 as long as the system can use the header information to retrieve the corresponding content information.

Where the **critical element** of: *a graphical indicator that is visually negligible wherein the graphical indicator comprises a header information* is found not to be obvious over the Lamoure, Priddy, and Frazer references.

(*Id.*, at JA2090-91; *see also id.*, at JA2108-10 (emphasis in original).)

Sonix requested issuance of a Reexamination Certificate confirming patentability of or allowing Claims 9, 25, 35-38, 46-49, and 52-90. (*Id.*, at JA2099.) The PTO then issued a Notice of Intent to Issue a Reexamination Certificate providing an Examiner's Amendment cancelling

Claims 15 and 39 and providing a Statement of Reasons for Patentability and/or Confirmation repeating the above excerpt. (*Id.*, at JA2108-11.) The PTO also concluded that “Claims 9, 25, 35-38, 46-49, and 52-90 are confirmed, as there are no prior art disclosures of the ‘visually negligible graphical indicator that comprise header information’ limitation.” (*Id.*, at JA2108-11.) The second Ex Parte Reexamination Certificate for the ‘845 Patent issued on December 26, 2012. (*Id.*, at JA2127-28.)

IV. The *Markman* Hearing

On September 11, 2014, the Court conducted a *Markman* hearing. During the hearing, Sonix indicated that its infringement contentions assert Claims 9, 25, 35-38, 46-48, 52-55, 57-60, 62-64, 66-68, 70-77, 79-82, and 85-90 of the ‘845 Patent against Defendants. The parties also presented their respective arguments regarding the proposed constructions for the disputed claim terms. The Court addressed the disputed terms submitted by Defendants in supplemental briefing. Namely, the Court discussed Defendants’ requested construction for the terms: “content information,” “information (not content information),” and “capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators.” (*See* R.114, Agreed Status Report, at 2-3.) The Court granted supplemental briefing on each of the three terms. (R.115.) Because Defendants conceded during the *Markman* hearing that one of the three supplemental terms (“information (not content information)”) was not a claim term but rather a term in the parties’ proposed constructions, that term does not necessitate a construction. (*See Markman Hr’g Tr.* at 26:16-28:3.) This holding is especially true because a derivative construction of “information (not content information)” is not necessary to elucidate the claim’s meaning for “header information” or “content information.” *See Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 339, 81 S.Ct. 599, 5 L.Ed.2d 592 (1961) (“[T]he claims

made in the patent are the sole measure of the grant.”); *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1334 (Fed. Cir. 2009) (explaining that the Federal Circuit “do[es] not ordinarily construe words that are not in claims.”); cf. *Advanced Fiber Techs. Trust v. J & L Fiber Servs.*, 674 F.3d 1365, 1373–74 (Fed. Cir. 2012) (noting that “in those cases in which the correct construction of a claim term necessitates a derivative construction of a non-claim term, a court may perform the derivative construction in order to elucidate the claim's meaning.”).

Defendants also noted that their supplemental proposed construction for “capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators” is not only a proposed construction for that claim term as recited in Claims 53 and 72,³ but should also replace that same language in Defendants’ original proposed construction for the term “header information.” Defendants further noted that their proposed construction for the “capable of distinguishing ...” term should include the term adjacent, which they omitted. Accordingly, Defendants’ revised proposed construction for “header information” reads: “information found in an L-shape at the outermost state zones of the graphical indicator (1) marking and discriminating the graphical indicator as separate from one or more adjacent graphical indicators without the use of mandatory spacing between and within the graphical indicator, and (2) indicating the orientation of the corresponding graphical indicator relative to the optical device reading the graphical indicator.”

Sonix’s proposed constructions for the two remaining supplemental terms “content information” and “capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators” advocate for the plain and ordinary meanings, in lieu of the fact that it did not previously propose constructions in the supplemental briefing. (*See* R.118.) Sonix also

³ Claims 53 and 72 contain the limitation “can be used to distinguish the corresponding graphical indicator from adjacent graphical indicators.” (R.91-1, at JA28:39-42; *id.*, at JA29:4-7.)

proposed an alternate construction for “header information” as “the information in the graphical indicator that is used to retrieve the graphical indicator and the content information that it contains.” According to Sonix this construction is consistent with the meaning of “header information” as understood by the person of ordinary skill in the art and consistent with the language of the ‘845 Patent specification.

V. The Disputed Terms

The parties disagree on the construction of four claim terms of the ‘845 Patent.⁴ The parties’ respective proposals as to each term are set forth in the following chart:

Disputed Claim Term	Claims-at-Issue	Sonix’s Proposed Construction	Defendants’ Proposed Construction
“header information”	Claims 9, 25, 35, 46, 52-54, 71-73, and 90	information in a graphical indicator that is not content information OR information in the graphical indicator that is used to retrieve the graphical indicator and the content information contained in the graphical indicator	information found in an L-shape at the outermost state zones of the graphical indicator (1) marking and discriminating the graphical indicator as separate from one or more adjacent graphical indicators without the use of mandatory spacing between and within the graphical indicator, and (2) indicating the orientation of the corresponding graphical indicator relative to the optical device reading the graphical indicator

⁴ The parties originally submitted five disputed claim terms, but later agreed that three of the terms did not require construction and should be given their ordinary meaning: “visually negligible,” “wherein the state zones are arranged in a two-dimensional matrix form,” and “by processing and/or transforming the graphical indicators.” (See R.89, Defs. Op. Claim Construction Br., at 4; R.119, at 5.) Accordingly, the Court need not construe those three terms. The parties submitted three additional terms in supplemental briefing, one of which does not require a construction. (See *supra*, Background, IV.)

Disputed Claim Term	Claims-at-Issue	Sonix’s Proposed Construction	Defendants’ Proposed Construction
“capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators” ⁵	Claims 9, 25, 35, 46, 53, and 72 ⁶	plain and ordinary meaning	marking and discriminating the graphical indicator as separate from one or more adjacent graphical indicators
“main information that overlaps and co-exists with the graphical micro-units on the surface of the object”	Claims 9, ⁷ 25, ⁸ 35, ⁹ 57 and 75	main information and graphical micro-units overlap and co-exist with each other on the surface of the object	the main information is printed on the surface of the object on top of the graphical micro-units on the surface of the object
“content information”	Claims 9, 25, 35, 46, 52 and 71	plain and ordinary meaning	the portion of the graphical indicator that determines its substantive output

⁵ The Court addresses the disputed claim term “capable of distinguishing ...” in the discussion of “header information.” (*See infra*, Discussion, I.D.)

⁶ The disputed claim term “capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators” was also part of Defendants’ original proposed construction for “header information” and is now subsumed in Defendants’ modified proposed construction. As such, the construction of the disputed claim term “capable of distinguishing ...” is relevant to the construction of the disputed claim term “header information” and is addressed herein. (*See infra*, Discussion, I.D).

⁷ Claim 9 is dependent on Claim 6, which depends on Claim 5, which depends on Claim 4, which depends on Claim 2, which depends on Claim 1. *See* R.91-1, at JA23-24. All of Claims 1, 2, 4, 5, and 6 were cancelled during the First Reexamination of the ‘845 Patent. The disputed term appears in Claim 4.

⁸ Claim 25 is dependent on Claim 21, which depends on Claim 20, which depends on Claim 19, which depends on Claim 18. *See* R.91-1, at JA23-24. All of Claims 18, 19, 20 and 21 were cancelled during the First Reexamination of the ‘845 Patent. The disputed term appears in Claim 20.

⁹ Claim 35 is dependent on Claim 34, which depends on Claim 33. Claims 33 and 34 were cancelled during the First Reexamination of the ‘845 Patent. The disputed term appears in Claim 33. *See* R.91-1, at JA 25.

LEGAL STANDARD

Because the claims of a patent define the invention, claim construction—the process of giving meaning to the claim language—defines the scope of the invention. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’”) (citation omitted). Claim construction is a matter of law for the court to determine. *Markman*, 517 U.S. at 391; *Marine Polymer Techs., Inc. v. HemCon, Inc.*, 672 F.3d 1350, 1357-58 (Fed. Cir. 2012). The claim construction analysis begins with the words of the claims themselves, giving those words 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.” *Phillips*, 415 F.3d at 1312-13; *see also InterDigital Commc’ns, LLC v. Int’l Trade Commc’n*, 690 F.3d 1318, 1324 (Fed. Cir. 2012).

The Federal Circuit teaches that courts should focus on the intrinsic record in construing claims, stating “[i]mportantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1315; *see also HTC Corp. v. IPCom GmbH & Co., KG*, 667 F.3d 1270, 1275 (Fed. Cir. 2012) (stating that the district court “should have referred to the specification to understand the claims”) (citing *Phillips*, 415 F.3d at 1315). In construing a disputed claim term, courts also look to the prosecution history of the patent-in-suit. *HTC*, 667 F.3d at 1276 (“A court should . . . look to the prosecution history when construing a claim.”) (citing *Phillips*, 415 F.3d at 1317). The prosecution history includes reexamination proceedings, as they may clarify the scope of a patent. *See St. Clair Intellectual Prop. Consultants, Inc. v. Canon Inc.*, 424 F. App’x 270, 275-

76 (Fed. Cir. 2011) (quoting *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1439 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1317 (prosecution history is the “complete record of the proceedings before the PTO”).

Although “less significant than the intrinsic record,” extrinsic evidence, which consists of “all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises,” may “shed useful light on the relevant art.” *See Phillips*, 415 F.3d at 1317 (citations omitted); *see also HTC*, 667 F.3d at 1277 (“A court may also look to extrinsic evidence, such as dictionaries and expert opinions.”) (citing *Phillips*, 415 F.3d at 1317). Before considering extrinsic evidence to construe a disputed claim, however, courts must first examine the intrinsic evidence. *Phillips*, 415 F.3d at 1317-19; *see also O1 Communique Lab., Inc. v. LogMeIn, Inc.*, 687 F.3d 1292, 1295-96 (Fed. Cir. 2012) (“To ascertain the scope and meaning of the asserted claims, we look to the words of the claims themselves, the specification, the prosecution history, and, *if necessary*, any relevant extrinsic evidence.”) (quoting *Chicago Bd. Options Exch., Inc. v. Int’l Sec. Exch., LLC*, 677 F.3d 1361, 1366 (Fed. Cir. 2012) (emphasis added)); *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1348 (Fed. Cir. 2009) (“extrinsic sources like expert testimony cannot overcome more persuasive intrinsic evidence”).

As discussed in further detail below, the parties’ proposed constructions for the disputed terms of the ‘845 Patent include numerous proposals for incorporating limitations. As such, it is particularly relevant to address the Federal Circuit’s guidance in this regard. As a general premise, claim terms are given their plain and ordinary meanings to one of ordinary skill in the art when read in the context of the specification and prosecution history, with only two exceptions to this general rule: lexicography and disavowal. *See Phillips*, 415 F.3d at 1313;

Thorner v. Sony Computer Entm't Am. LLC, 669 F.3d 1362, 1365 (Fed. Cir. 2012). “The standards for lexicography and disavowal are exacting.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014).

In order to find lexicography, “a patentee must clearly set forth a definition of the disputed claim term other than its plain and ordinary meaning and must clearly express an intent to redefine the term.” *Thorner*, 669 F.3d at 1365. In order to find disavowal, the specification or prosecution history must “make[] clear that the invention does not include a particular feature,” *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001), or that the invention “is clearly limited to a particular form” (*Edwards Lifesciences*, 582 F.3d at 1330). The Federal Circuit has “expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004). “Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using ‘words or expressions of manifest exclusion or restriction.’” *Id.* (citing *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002)).

The doctrine of prosecution disclaimer is a basic principle of claim construction that “promotes the public notice function of the intrinsic evidence and protects the public’s reliance on definitive statements made during prosecution.” *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003) (citations omitted); see *Schwing GmbH v. Putzmeister Aktiengesellschaft*, 305 F.3d 1318, 1324-25 (Fed. Cir. 2002) (“[P]rosecution history ... cannot be used to limit the scope of a claim unless the applicant took a position before the PTO that would lead a competitor to believe that the applicant had disavowed coverage of the relevant subject

matter”); *cf. Graham v. John Deere Co.*, 383 U.S. 1, 33, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966) (ruling, in addressing the invalidity of the patents in suit, that “claims that have been narrowed in order to obtain the issuance of a patent by distinguishing the prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent.”). A patentee making a “clear and unmistakable disavowal of scope during prosecution,” narrows a claim’s scope under the doctrine of prosecution disclaimer. *See Grober v. Mako Products, Inc.*, 686 F.3d 1335, 1341 (Fed. Cir. 2012). The prosecution history informs whether the inventor limited the claim scope in the course of prosecution, however, “it often produces ambiguities created by the ongoing negotiations between the inventor and the PTO.” *Id.* (citing *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1289 (Fed. Cir. 2009)). For this reason, the doctrine of prosecution disclaimer only applies to unambiguous disavowals. *Id.*

The Federal Circuit has attached disclaimer and narrowed the ordinary meaning of a claim to be congruent with the scope of surrender when the patentee has unequivocally disavowed a certain meaning to obtain his patent. *See Omega Eng’g*, 334 F.3d at 1324; *see also Regents of Univ. of Minn. v. AGA Med. Corp.*, 717 F.3d 929, 938-39 (Fed. Cir. 2013) (finding the claimed product’s structure as requiring two separate disks based on the use of the terms “affixed” and “conjoint” in the claims, the specification’s description that the disks were separate, and the prosecution history’s description of the innovative aspect of the claimed device as an improved way of connecting two disks); *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1374 (Fed. Cir. 2007) (finding disclaimer on a particular ground based on applicant’s argument that a prior art reference was distinguishable on that ground, despite the fact that the applicant distinguished the reference on other grounds as well); *Inpro II Licensing S.A.R.L. v. T-Mobile USA Inc.*, 450 F.3d 1350, 1354-55 (Fed. Cir. 2006) (finding disclaimer limiting a claim

element to a feature of the preferred embodiment when the specification described that feature as a “very important feature ... in an aspect of the present invention” and disparaged alternatives to that feature); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1273-75 (Fed. Cir. 2001) (relying on prosecution history to limit claimed “transceiver” to the three stated modes, because of clearly limiting statements made by the patentee to the examiner to overcome a prior art rejection).

The Federal Circuit has declined, however, to apply the prosecution disclaimer doctrine in situations where the alleged disavowal was ambiguous. *See Grober*, 686 F.3d at 1341-42 (finding no disclaimer where the statements during reexamination did not unambiguously focus on the characteristics of the disputed “payload platform” term, let alone distinguish it from the prior art); *see also Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1347 (Fed. Cir. 2001) (refusing to limit the ordinary meaning of the claim because the alleged disclaimer in the file wrapper was at best “inconclusive”); *DeMarini Sports, Inc. v. Worth, Inc.*, 239 F.3d 1314, 1326-27 (Fed. Cir. 2001) (refusing to rely on ambiguity surrounding examiner’s silence or patentee’s lack of argument during prosecution to construe claim term); *Northern Telecom Ltd. v. Samsung Elecs. Co.*, 215 F.3d 1281, 1293-95 (Fed. Cir. 2000) (finding no disavowal where the alleged inventors’ statements were “amenable to multiple reasonable interpretations”).

Keeping the above legal framework in mind, the Court turns to the disputed claim terms.

DISCUSSION

I. “Header Information”

Sonix’s Proposed Construction	Defendants’ Proposed Construction	Court’s Construction
information in a graphical indicator that is not content information OR information in the graphical indicator that is used to retrieve the graphical indicator and the content information contained in the graphical indicator	information found in an L-shape at the outermost state zones of the graphical indicator (1) marking and discriminating the graphical indicator as separate from one or more adjacent graphical indicators without the use of mandatory spacing between and within the graphical indicator, and (2) indicating the orientation of the corresponding graphical indicator relative to the optical device reading the graphical indicator	information in the graphical indicator that is used to retrieve the graphical indicator and corresponding content information and is capable of (1) distinguishing the corresponding graphical indicator from an adjacent graphical indicator, and (2) indicating the orientation of the corresponding graphical indicator to the optical device

The disputed term “header information” appears in Claims 9, 25, 35, 46, 52-54, 71-73 and 90. (*See* R.119, Joint Claim Construction Chart, at 2; *see also* R.91-1, at JA29, col.4:39-41.) Defendants’ proposed construction, taken as a whole, improperly proposes incorporation of multiple limitations from the specification and prosecution history and does not comport with the intrinsic evidence. Together, the parties’ proposed constructions proffer six separate elements that address both the location and configuration of the header information as well as the functional attributes of the header information. The Court addresses each of the proposed elements individually:

- A. “information in an L-shape at the outermost state zones of the graphical indicator”;
- B. “... used to retrieve the graphical indicator and the content information contained in the graphical indicator”;
- C. “capable of (1) distinguishing the corresponding graphical indicator from an adjacent graphical indicator . . . , and (2) indicating the orientation of the corresponding graphical indicator relative to the optical device reading the graphical indicator”;

- D. “(1) marking and discriminating the graphical indicator as separate from one or more adjacent graphical indicators . . .”; and
- E. “. . . without the use of mandatory spacing between and within the graphical indicator . . .”

Based on the record, the Court adopts a construction for “header information” that represents a hybrid of Sonix’s alternative proposed construction and Defendants’ original proposed construction. The Court’s construction comports with the intrinsic evidence and Sonix’s clear intent expressed during prosecution and reexamination and provides a construction that discretely defines the term to “better ascertain[] the boundaries of the claim”. *See Trading Techs. Int’l, Inc. v. Open E Cry, LLC*, 728 F.3d 1309, 1319 (Fed. Cir. 2013).

A. “Information Found In an L-shape at The Outermost State Zones of The Graphical Indicator”

First, the header information is located within the graphical indicator. The parties do not dispute this point. (R.100, Sonix’s Resp. Claim Construction Br., at 5 (“There is no dispute that header information is information found in a portion of the graphical indicator that is distinct from the content information”).) Indeed, both parties’ proposed constructions place the “header information” in the graphical indicator. (*See* R.89, Defs. Op. Claim Construction Br., at 6; R.100, at 4.) The words of the claims, the specification, and the prosecution history all support this premise and further establish that the “header information” is contained in the graphical indicator and is separate from the content information. (*See* R.91-1 at JA24, col.11:5-7, col.12:30-33; JA25, col.13:40-43, col.14:62-64; JA28, col.1:30-33, col.2:62-63 (Claims 9, 25, 35, 46, 52, and 71 all use the term “header information” as one of the components in the graphical indicator); (R.91-1 at JA20, col.3:58-60) (specification stating “the graphical indicator 11 includes a header information 111 and a content information . . .”); (R.91-1 at JA20, col.4:9-

12) (stating “one graphical indicator 11 is read through capturing one header information 111 ...”); (R.95-3 at JA1663) (Statement of Reasons for Patentability and/or Confirmation relying on the fact that “Claims 9, 25, 35-38, 46-49, and 52-90 all recite that the graphical indicator has a header.”).

Defendants further contend that the ‘845 Patent specification limits the configuration of the header information to an L-shape at the outermost state zones of the graphical indicator. Specifically, Defendants assert that the ‘845 Patent discloses the “present invention” and specifically points to Figure 1(B), shown below:

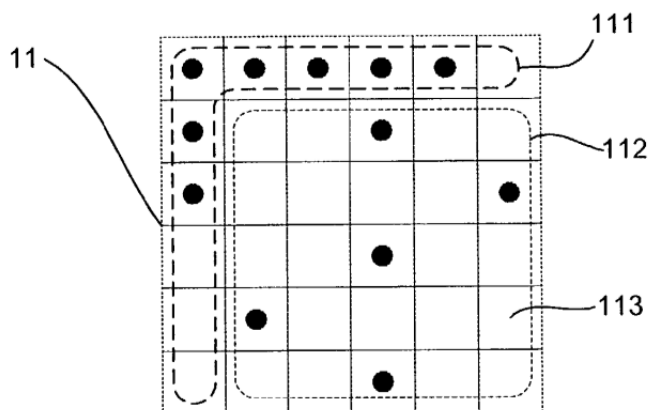


Fig.1(B)

(R.89, at 7; R.91-1, at JA7.) Defendants further assert that this is the only definition of header information in the ‘845 Patent and that this definition should control. (R.89, at 7-8.) The Court disagrees.

1. The Claims

The ‘845 Patent claims recite “header information” with no reference to a particular shape. Claim 90 references “header information” with the only limitation being that it “comprises *a portion* of the graphical micro-units.” (R.91-1, JA29, col.4:39-41 (emphasis

added.) The other claims reciting “header information” with additional limitations (e.g., Claims 9, 25, 35, 46) refer to the functional features of the header information, not its configuration. (*See e.g.*, R.91-1 at JA24, col.11:4-11.) Therefore, the claims support a broader scope beyond an L-shape configuration for the term “header information.”

2. The Specification

Turning to the specification, Defendants contend that “Figure 1(B) demonstrates the *only* physical location of “header information” (111) disclosed, taught, or otherwise suggested in the ‘845 Patent.” (R.89, at 6 (emphasis in original).) Looking at the specification of the ‘845 Patent, the Court disagrees. The specification discusses “header information” under the heading “Detailed Description of the Preferred Embodiment,” without limiting its discussion to any particular shape or configuration. (R.91-1, at JA19, col.2:54-55.) Moreover, the specification discloses an “Exemplary Design for the Graphical Indicators” and does not express a need for the graphical indicator to be only a square unit. (*Id.* at JA20, col.3:4.) Further, the disclosure of Figure 1(B) states “[f]or example, shown in FIG. 1(B).” (R.91-1 at JA20, col.3:38-39.) Indeed, in supplemental claim construction briefing, Defendants refer to Figure 1(B) as an “example.” (*See* R.117, Defs. Suppl. Claim Construction Br., at 3 (“An example is shown in Fig. 1(B)”)). This exemplary discussion demonstrates that the “header information” as presented in Figure 1(B)¹⁰—even if it is the only depiction—is an example, and there is no clear indication otherwise. As such, the Court will not read it into the claims. *See Liebel-Flarsheim*, 358 F.3d at 913 (Fed. Cir. 2004) (“[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication

¹⁰ Defendants’ reference to Figures 1(C) and 1(D) is equally unconvincing as these figures simply show the bit matrix form of Figure 1(B) or the use of Figure 1(B) matrix in a larger format, respectively. (R.89, at 7.)

in the intrinsic record that the patentee intended the claims to be so limited”); *see also Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 973 (Fed. Cir. 1999) (“The general rule, of course, is that the claims of a patent are not limited to the preferred embodiment unless by their own language”); *Kara Tech.*, 582 F.3d at 1345 (*citing Phillips*, 415 F.3d at 1323) (“[W]e have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.”).

The specification introduces Figure 1(B) as “a method for retrieving the individual graphical indicator from the matrix form of the graphical indicators.” (R.91-1, at JA20, col.3:55-57.) The specification explicitly discloses that “[o]ther embodiment[s] for the graphical indicators is [sic] possible . . . FIGS. 2(A)-2(C) are the diagrams illustrating other embodiments for the graphical indicators in accordance with the present invention.” (R.91-1, at JA20, col.4:42-45.) To impose an “L-shape” configuration on all header information of the ‘845 Patent claims would be improper in light of the clear representation of various shapes and layouts for the graphical indicators of the “present invention,” represented at least by the specification’s contemplation of alternate embodiments of graphical indicators, of which the header information is part. The disclosure of varied shapes for the graphical indicators in the drawings, accompanied by a broad written description that expressly contemplates various configurations and makes no mention of the limitations proposed by Defendants, does not establish a definition that warrants limitation to a particular configuration. Although these discussions in the specification reside under the header for the “preferred embodiment,” the Federal Circuit has “expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” *See Kara Tech.*, 582 F.3d at 1345 (*citing Phillips*, 415 F.3d at 1323).

Moreover, as discussed above, the specification’s disclosure under the header “preferred embodiment” includes discussion of various embodiments with various designs for the graphical indicator and the interactive systems as a whole. *Teleflex*, 299 F.3d at 1326-27 (“That claims are interpreted in light of the specification does not mean that everything expressed in the specification must be read into all the claims.”); *see also Phillips*, 415 F.3d at 1313 (“Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.”). Neither the claims nor the specification warrant importation of an L-shaped limitation to the “header information” claim element.

Defendants also argue that the specification’s use of “present invention” limits the claim to an L-shape “because it specifically points to Figure 1(B).” (R.89, at 7.) The Court notes that the use of the “present invention” language is not automatically a cause for limiting the claim term in all circumstances, as “such language must be read in the context of the entire specification and prosecution history.” *See Netcraft Corp v. eBay Inc.*, 549 F.3d 1394, 1398 (Fed. Cir. 2008) (*citing Rambus Inc. v. Infineon Techs. AG*, 318 F.3d 1081, 1094 (Fed. Cir. 2003)). In addition, Defendants misrepresent the specification’s references to “present invention” and the Court finds its use to be non-limiting.

The specification’s use of “present invention” does not clearly limit the header information to an “L-shape” because it is used with only one of many disclosed embodiments. *Compare Hill-Rom*, 755 F.3d at 1377 (finding that the use of “present invention” with one of many disclosed embodiments, does not mean the proposed limitation has to be present in all embodiments of the invention), *with Honeywell Int’l., Inc. v. ITT Indus., Inc.*, 452 F.3d 1312 (Fed. Cir. 2006) (reading a limitation into the claim term based on the specification’s multiple

disclosures of the “present invention” used in direct relation to the limitation). Absent language in the specification suggesting that the L-shape limitation, itself, is “important, essential, necessary or the ‘present invention,’ there is no basis to narrow the plain and ordinary meaning of the term” header information to a specific configuration of header information. *See Hill-Rom*, 755 F.3d at 1373 (explaining “there are no magic words that must be used but to deviate from the plain and ordinary meaning of a claim term to one of skill in the art, the patentee must, with some language, indicate a clear intent to do so in the patent.”).

In addition, contrary to Defendants’ position, the ‘845 Patent’s reference to Figure 1(B) is not referred to as the “present invention,” rather it is explicitly described as being an illustration of *one of the graphical indicators* from Figure 1(A) (*see* R.91-1, at JA19, col.5-7). Figure 1(A) depicts a bird’s eye view (the reader’s perspective) of numerous graphical indicators on a surface with main information (the text “APPLE”) clearly visible. (R.91-1, at JA3.) Figure 1(A), not Figure 1(B), is described as “a schematic diagram illustrating the graphical indicators on the surface of object *in accordance with the present invention*.” (R.91-1, at JA19, col.3-5 (emphasis added).) The graphical indicators in Figure 1(A), however, are not visually decipherable and a reasonable interpretation of the figure based on the specification’s discussion of the various embodiments for graphical indicators means that the graphical indicators in Figure 1(A) could very well contain various designs. (*See* R.91-1, at JA20, col.3:15-21.) In addition, although the ‘845 Patent does not use “present invention” in relation to Figure 1(B), it does use “present invention” language in reference to Figures 2(A)-2(D). These figures, however, do not depict square matrices with an L-shaped header, but rather include “cellular arrangement[s].” (*See* R.91-1, at JA7-8; *id.*, at JA20, col.4:42-52.) The specification’s description of the ‘845 Patent’s invention, therefore, includes configurations for graphical indicators beyond a square shape and

the presence of these alternative configurations strongly counsels against incorporation of an L-shape limitation into the claim term.

3. The Prosecution History and Reexamination Proceedings

Because the claims and specification are not limiting, in order for this Court to find that Sonix disavowed all claim scope beyond an L-shaped header, Sonix must have made a disavowing statement during prosecution or reexamination that is “both so clear as to show reasonable clarity and deliberateness . . . and so unmistakable as to be unambiguous evidence of disclaimer.” *Omega Eng’g*, 334 F.3d at 1325. The Court finds no such disavowal here.

Defendants assert that the prosecution history and reexamination proceedings confirm that the Court should limit the “header information” to an L-shaped configuration, based on the examiner’s adoption of the requestor’s claim charts which stated that the prior art Priddy patent disclosed “not only the claimed header (referred to as “perimeter 11”) but also the L-shaped ‘header 111’ described in the ‘845 patent . . .” (R.89, at 8-9.) The examiner’s reference to a distinct “L-shaped” header in conjunction with a “claimed header,” however, demands recognition of a difference between the two. The Court, therefore, agrees with Sonix, and finds that the examiner’s reference to a distinct “claimed header” and “L-shaped header 111” shows that the L-shaped header is but one embodiment of the header information claimed in the ‘845 Patent. (R.100, at 13-14.) Sonix’s statements in response to the Priddy reference are also equally unconvincing as Sonix did not direct them to the configuration of the header information and therefore the Court cannot take them as disavowal of claim scope for that aspect. (R.89, at 8-9; R.96-3, at JA1831-34 (distinguishing Priddy reference on the basis of the highly anisotropic matrix and its failure “to teach the claim requirements that each header information within the

graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators”); *see also* R.97-2, at JA1901-4.)

Defendants further assert that Sonix acquiesced in the examiner’s view of physical location of the header information when it was “completely silent as to whether Priddy disclosed ‘the L-shaped ‘header 111’ described in the ‘845 patent.’ and provided no response.” (R.89, at 10.) Defendants rely on *Elkay Mfg. Bo. v. Ebco Mfg. Co.* for the proposition that Sonix acquiesced in the examiner’s interpretation. 192 F.3d 973, 978-79 (Fed. Cir. 1999) (*See* R.89, at 10.) Defendants’ reliance, however, is misplaced. In *Elkay*, the Federal Circuit found disavowal relying on an examiner’s statement made explicitly in the Statement of Reasons for Allowance after issuing rejections and reviewing the patentee’s arguments. *Elkay*, 192 F.3d at 979. The patentee in *Elkay* did not respond to the examiner’s interpretation of the claim upon allowance. *Id.*

Here, Sonix’s alleged silence was in response to the examiner’s general statement that “the following claim mappings in the Request are incorporated by reference.” (R.97-4, at JA2039-2041.) The referenced claim mappings contained a myriad of arguments from the Requestor for each claim in a ninety-seven page claim chart, one paragraph of which Defendants refer to as a basis for disavowal. (R.96-3, at JA1831-34; *see also* R.97-2, at JA1901-4.) Sonix’s silence does not rise to the level of disavowal of claim scope in this case, as it is not “clear as to show reasonable clarity and deliberateness ... and so unmistakable as to be unambiguous evidence of disclaimer.” *See Omega Eng’g*, 334 F.3d at 1325; *see also DeMarini Sports*, 239 F.3d at 1326-27 (refusing to rely on ambiguity surrounding examiner’s silence or patentee’s lack of argument during prosecution to construe claim term). The Court’s construction, therefore,

does not include the unsupported limitation of “an L-shape at the outermost state zones of the graphical indicator” for the term “header information.”

B. “Information ... Used to Retrieve the Graphical Indicator and the Content Information Contained in the Graphical Indicator”

Second, the “header information,” as understood by the person of ordinary skill in the art as it relates to the ‘845 Patent,¹¹ is used to retrieve the graphical indicator and the corresponding content information. The parties and the Court agree that the ordinary meaning of header information to the person of ordinary skill in the art at the relevant time is that header information retrieves the individual graphical indicator and reads the corresponding content information.¹² *See Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004) (“A court construing a patent claim seeks to accord a claim the meaning it would have to a person of ordinary skill in the art at the time of the invention.”) The claims and the specification support this portion of the construction.

The claims of the ‘845 Patent consistently use the term “header information” alongside “content information” as two different types of information in the graphical indicator. (*See* R.91-1, at JA24-25, JA28-29.) The specification of the ‘845 Patent refers to “the present

¹¹ During the *Markman* hearing, the parties agreed that the person of ordinary skill as it relates to the ‘845 Patent has, at least, a Bachelor Degree in Computer Science, Electrical Engineering or a related scientific field or has an equivalent level of experience in encoding industry (e.g., visual coding, decoding, encoding information, and printing technology).

¹² Sonix stated: “‘Header information’ is very clearly defined in the patent as having a function of retrieving -- being used to retrieve the graphical indicator.” (*See Markman Hr’g Tr.*); “Because essentially, ‘header information’ is clearly described here and consistent with its ordinary meaning, it’s the information in the graphical indicator that is used to retrieve the graphical indicator and the content information that it contains.” (*Id.*). Defendants stated: “And the header of a data file provides information on how to read that data file.” (*Id.*); “[W]hat this patent says, the system uses the header information to retrieve.” (*Id.*); “[H]eader’ is a term that refers to a portion of a data file that is then used to provide information about the remainder of the data file. And here how the graphical indicator is -- how the header information is used to retrieve the graphical indicator is defined by the functions of the header information.” (*Id.*).

invention” as providing “a method for retrieving the individual graphical indicator from the matrix form of the graphical indicators.” (R.91-1, at JA20, col.3:55-57.) The specification then references the graphical indicator shown in Figure 1(B), stating it “includes a header information 111 and a content information 112 arranged in a layout that corresponds to different indicator information.” (R.91-1, at JA20, col.3:58-63). The specification proceeds to describe various embodiments with identical or differing header information. (*See* JA20, col.3:55-61-63; col.3:63-col.4:2; col.4:8-12; .) The specification describes “another embodiment” in which the “header information 111 in one graphical indicator 11 may be different from that of other graphical indicator 11 as long as the system can use the header information to retrieve the corresponding content information.” (*Id.*, at JA20, col.4:8-12.) Immediately following this discussion, the specification illustrates “the two-dimensional matrix form in accordance with the present invention,” stating the “the user first searches the header information 111 and further retrieves the graphical indicator 11 and the corresponding content information 112.” (*Id.* at JA20, col.4:13-18.)

As made clear by the use of “header information” in the claims and specification, the header information is found in the graphical indicator and serves the purpose of retrieving the additional information which is found in the content information corresponding to the header information within each individual graphical indicator. The prosecution history and reexamination proceedings also support this construction. During the first reexamination, the Examiner’s Interview Summary noted that “a graphical indicator is repeatable, includes a header/content information that *allows the indicator to be read* regardless of the orientation, and is not position dependent.” (R.95-1, at JA1461 (emphasis added).)

Based on the intrinsic evidence, the “header information” of the ‘845 Patent is construed, in part, as “information in the graphical indicator that is used to retrieve the graphical indicator and the corresponding content information.” *See Phillips*, 415 F.3d at 1315, 1317 (explaining that the claim construction process looks to a patent’s intrinsic evidence—claims, specification and prosecution history—to determine how “the person of ordinary skill in the art is deemed to read the claim term.”).

C. “Header Information” Requires the Capability of (1) Distinguishing the Corresponding Graphical Indicator from an Adjacent Graphical Indicator, and (2) Indicating the Orientation of the Corresponding Graphical Indicator to the Optical Device

Defendants originally proposed a construction for “header information” that included the limitations: “capable of (1) distinguishing the corresponding graphical indicator from an adjacent graphical indicator ..., and (2) indicating the orientation of the corresponding graphical indicator relative to the optical device reading the graphical indicator.” (R.89, at 10-15.) Without addressing the language of the claims themselves, Defendants contend that the specification and Sonix’s statements made during both reexaminations to distinguish the cited prior art references establish that this limitation is warranted. (*Id.*) Specifically, Defendants refer to exchanges during the first and second reexamination of the ‘845 Patent in which Sonix stated that the term “graphical indicator” (which includes the header information) had an “unequivocal and deliberate” meaning as set forth in the ‘845 Patent. (R.89, at 11; *see also* R.95-3, at JA1590-91.) Defendants also reference at least six statements Sonix made during reexamination describing the distinguishing and orienting features of the header information when distinguishing the invention over the cited prior art. (*See* R.89, at 12-14.)

Sonix posits that importing the proposed functional capability limitations is improper for several reasons. First, Sonix looks to the claims, arguing that because there are some claims that

recite “header information” that do not include any functional feature limitations for “header information,” it would be improper to read these limitations into the claim, especially since the precise functional feature limitations are found in the claims which depend on them. (R.100, at 4-11.) Second, Sonix looks to the specification, emphasizing that Defendants’ reliance on the specification is misplaced as it references nothing more than an alternative embodiment where the header information can differ between graphical indicators. (R.100, at 6-8.) Lastly, Sonix refutes that it surrendered any claim scope for “header information” during reexamination. (R.100, at 10.)¹³

The Court agrees with Defendants and finds that incorporation of functional capabilities into the construction of the claim term “header information” is warranted here based on Sonix unambiguously disavowing and disclaiming claim scope.

1. The Claims

In order to determine whether the person of ordinary skill would understand the term “header information” to include the functional capability limitations advanced by Defendants, the Court must first look to the claims of the ‘845 Patent, read in light of the specification. *See Phillips*, 415 F.3d at 1313 (stating “[i]mportantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.”).

In looking at the claims containing the term “header information,” Claims 9, 25, 35, and 46 reference the term along with a *separate* limitation in each of those claims, stating that “each

¹³ Sonix also asserts that Defendants’ proposed limitations are “really an effort to convert the term ‘header information’ into a means plus function limitation.” (R.100, at 6.) The incorporation of the functional capabilities, however, does not convert the claim. As the Federal Circuit has stated, “defining a particular claims term by its function is not improper and ‘is not sufficient to convert a claim element containing that term into a ‘means for performing a specified function’ within the meaning of 35 U.S.C. § 112(6).” *Hill-Rom*, 755 F.3d at 1374-75.

header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.” (R.91-1, at JA24-25.) This separate limitation recites the functional capability limitations that Defendants try to incorporate in their proposed construction. Independent Claims 52, 71, and 90 recite “header information” without any functional feature language. (R.91-1, at JA28-29.) Claims 53 and 72 (dependent on Claims 52 and 71, respectively), however, add limitations that the header information “can be used to distinguish the corresponding graphical indicator from adjacent graphical indicators,” and Claims 54 and 73 (dependent on Claim 52 and 71, respectively), further limit the use of header information “to determine the orientation of the corresponding graphical indicator with respect to the optical device.” (R.91-1, at JA28, col.1:25-46; *id.*, at col.2:58 – JA29, col.3:10.)

The parties’ arguments dance around the doctrine of claim differentiation. The doctrine of claim differentiation refers to the presumption that the construction of an independent claim should not include a limitation added by a dependent claim. *See Nazomi Commc’ns, Inc. v. Arm Holdings, PLC.*, 403 F.3d 1364, 1370 (Fed. Cir. 2005) (quoting *Karlin*, 177 F.3d at 971–72) (“[C]laim differentiation ‘normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.’”); *see also Phillips*, 415 F.3d at 1314–15.¹⁴ While “the doctrine of claim differentiation is not a hard and fast rule of construction” it “does create a presumption that each claim in a patent has a different scope.” *SunRace Roots Enter.Co., Ltd. v. SRAM Corp.*, 336 F.3d 1298, 1302-03 (Fed. Cir. 2003). That presumption “is especially strong when the limitation in dispute is the only meaningful

¹⁴ This requirement also comports with the statutory requirement for a dependent claim in that it must add a limitation to those recited in the independent claim. *See* 35 U.S.C. § 112, ¶ 4 (2000) (“[A] claim in dependent form shall contain a reference to a claim previously set forth and then specify a *further limitation of the subject matter claimed.*”) (emphasis added).

difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim.” *Id.* at 1303 (citing *Ecolab Inc. v. Paraclipse, Inc.*, 285 F.3d 1362, 1375 (Fed. Cir. 2002).) Presumptions are, however, rebuttable:

[W]hile it is true that dependent claims can aid in interpreting the scope of claims from which they depend, they are only an aid to interpretation and are not conclusive. Indeed, the presumption created by the doctrine of claim differentiation is not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history.

Kruse Tech. P’ship v. Volkswagen AG, 544 Fed. Appx. 943, 951 (Fed. Cir. 2013) (citing *Regents of Univ. of Cal. v. Dakocytomation Cal.*, 517 F.3d 1364, 1375 (Fed. Cir. 2008)).

Sonix argues that the presence of these dependent claims “leaves no question that independent claims 52 and 71 do *not* require the particular functional features specified in dependent claims 53, 54 and 72, 73.” (R.100, at 6.) Relying on *Regents*, Defendants respond that “claim differentiation is not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history.” (R.101, Defs. Reply Claim Construction Br., at 5 (citing *Regents*, 517 F.3d at 1375).)

The Court realizes that adopting Defendants’ proposed limitations of functional capabilities renders the scope of Claim 52 equivalent to Claim 54, and the scope of Claim 71 equivalent to Claim 73. *See SunRace*, 336 F.3d at 1302-03. Where, as here, the sole difference between the independent claim and the dependent claims is the exact limitation that Defendants attempt to read into the term used in the independent claim, “the doctrine of claim differentiation is at its strongest.” *See Liebel-Flarsheim*, 358 F.3d at 910; *see also Phillips*, 415 F.3d at 1315 (“[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not in the independent claim.”) Even when at its

strongest, however, the presumption afforded by the doctrine of claim differentiation is rebuttable. *See Marine Polymer*, 672 F.3d at 1368 (citing *Seachange Int’l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1373-74 (Fed. Cir. 2005) (holding that the presumption established by claim differentiation was rebutted because the written description “consistently” referred to the claim term in a specific manner and arguments made during prosecution amounted to a clear and unambiguous disclaimer of claim scope.”)).

In order to determine if the presumption afforded by the presence of dependent Claims 53, 54 and 72, 73 is rebutted, the Court now looks to the specification and prosecution history and reexamination proceedings for evidence of a disclaimer. *See Seachange*, 413 F.3d at 1369.

2. The Specification

As discussed above, the “header information” is contained in the graphical indicators of the ‘845 Patent. (*See supra*, Discussion, I.B.) The specification introduces its only discussion of “header information” with the statement: “[n]ext, the present invention provides a method for retrieving the individual graphical indicator from the matrix form of the graphical indicators.” (R.91-1, at JA20, col.3:55-57.) The specification’s discussion of header information states:

Shown in FIG. 1(B), which has scale of 100: 1, the graphical indicator 11 includes a header information 111 and a content information 112 arranged in a layout that corresponds to different indicator information. In one embodiment, all header information 111 are identical among different graphical indicators 11. However, for a more comprehensive design, more than one set of header information may be employed **as long as each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.** On the other hand, different value of content information 112 represents different indicator information. Thus, one graphical indicator 11 is read through capturing one header information 111, and the graphical indicator 11 does not interfere with each adjacent graphical indicator 11. However, in another embodiment, the header information 111 in one graphical indicator may be different from that of other graphical indicator 11 **as long as the system can use the header information to retrieve the corresponding content information.**

FIG. 1(D), which has scale of 120:1, is a schematic diagram illustrating the two-dimensional matrix form in accordance with the present invention. The user first searches the header information 111 and further retrieves the graphical indicator and the corresponding content information 112.

(R.91-1, at JA20, col.3:58-col.4:18 (emphasis added).)

The discussion first references an illustration of a graphical indicator: Figure 1(B), which includes both header information and content information. (*Id.*, col.3:58-61.) In describing the method for retrieving the individual graphical indicator, the specification discloses various embodiments of graphical indicators, some having identical header information among the different graphical indicators and some with different header information. (*Id.*, col.3:58-col.4:12.) In particular, the specification teaches that different header information among the different graphical indicators can be used “as long as each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.” (*Id.*, col.3:65-col.4:2.) The specification also teaches that different header information can be used along with different content information “as long as the system can use the header information to retrieve the corresponding content information.” (*Id.*, col.4:10-12.) In other words, the specification teaches the person of ordinary skill in the art that the processing systems of the ‘845 Patent can use different header information among the different graphical indicators with either identical or different content information, as long as each header information (identical or different) within each graphical indicator is capable of the recited functional attributes. The specification does not, however, explicitly state whether these same functional attributes are present when only identical header information is used.

The specification introduces three functional attributes when different header information is used: retrieval, capable of distinguishing between graphical indicators, and capable of indicating the orientation of the corresponding graphical indicator. The ability of the header information to “retrieve” the content information is not disputed by either party. Indeed, Sonix proposed an alternative construction for “header information” that reads the retrieving function into the claim term, arguing that “header information” would be understood by the person of ordinary skill in the art to include retrieving the content information. The other abilities of the header information, as being capable of distinguishing between graphical indicators and capable of indicating the orientation of graphical indicator, are disputed as claim limitations. The parties’ collective recognition that the retrieving function exists in all header information, regardless of whether that header information is identical or differs among the different graphical indicators, implies that the “as long as” discussion of the retrieval function in the specification applies to all header information (identical or different). By implication, the same “as long as” discussion introducing the functional attributes of distinguishing and orienting could also apply to all header information, (identical or different). A reasonable interpretation of the specification’s discussion of “header information,” therefore, imparts the distinguishing and orienting functional attributes to the general use of all header information, regardless of whether it is identical or differs among different graphical indicators. Another reasonable interpretation, however, could be that while all header information retrieves (as indicated by the introductory phrase for the discussion of header information in the specification), all header information is not necessarily required to be “capable of distinguishing ... and indicating the orientation ...”

After careful review and consideration of the ‘845 Patent’s specification, the Court finds that the discussion of “header information” is ambiguous and subject to multiple reasonable

interpretations, one of which could support a disavowal requiring the functional capabilities of distinguishing and orienting to be read into the claim. Because, however, this passage is subject to multiple reasonable interpretations, the Court finds that an inference as to what the patentee meant is not sufficient to support a finding of “clear disclaimer in the specification such that the scope of “header information” is narrowed based on this statement. *See Cordis Corp. v. Medtronic AVE, Inc.*, 339 F.3d 1352, 1359 (Fed. Cir. 2003) (concluding that a statement made during prosecution that is “amenable to multiple reasonable interpretations ... does not constitute a clear and unmistakable surrender”). The specification alone, therefore, does not provide “words or expressions of manifest exclusion or restriction” such that a “clear intention to limit the claim scope” is demonstrated, the Court now looks to the prosecution history and reexamination proceedings for further clarification. *See Liebel-Flarsheim*, 358 F.3d at 906 (citing *Teleflex*, 299 F.3d at 1327).

3. The Prosecution History and Reexamination Proceedings

The prosecution history of a patent “can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Phillips*, 415 F.3d at 1318 (citing *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582-83 (Fed. Cir. 1996). The doctrine of prosecution disclaimer “is well established in Supreme Court precedent, precluding patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.” *Omega Eng’g*, 334 F.3d at 1324 (citing *Schriber-Schroth Co. v. Cleveland Trust Co.*, 311 U.S. 211, 220-21, 60 S.Ct.235, 85 L.Ed. 132 (1940)); *cf. Graham*, 383 U.S. at 33 (ruling, in addressing the invalidity of the patents in suit, that “claims that have been narrowed in order to obtain the issuance of a patent by distinguishing

the prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent.”).

Defendants assert that because of Sonix’s statements to the PTO during reexamination of the ‘845 Patent, the Court should limit the claim scope for header information to its functional attributes of distinguishing between graphical indicators and indicating the orientation of the graphical indicator. (*See* R.89, at 10-15; R.101, at 2, 4-6.) Sonix responds that the prosecution history and reexamination proceedings do not support incorporation of the limitations Defendants propose. Rather, Sonix asserts that these functional capabilities are optional functions of the header information and that the only concession Sonix made during reexamination was that graphical indicators of the ‘845 Patent all contained header information (*see* R.100, at 9-11), but, that header information was not required to be capable of performing *all* of the functional features described in the specification. (*See* R.100, at 10.) The Court agrees with Defendants and finds that the prosecution history represents a clear and unambiguous disavowal of the claim scope for header information.

Defendants highlight various statements Sonix made to distinguish its invention from the prior art, namely, over Fahraeus, Fukuda and Lamoure during the first reexamination and over Priddy during the second reexamination, arguing that these statements establish that the header information in the ‘845 Patent must include the two functional capabilities of distinguishing between graphical indicators and indicating the orientation of the corresponding graphical indicator. In order for the Court to find these statements warrant a disclaimer, however, they must be “clear and unmistakable,” and “unambiguous” disavowals of the claim scope. *See Grober*, 686 F.3d at 1341. The Court addresses each of these statements made during the prosecution and reexamination proceedings.

a. The Original Prosecution

During prosecution of the '845 Patent, Sonix amended the specification of the application to address “a more comprehensive design” for a graphical indicator, that may employ “more than one set of header information ... as long as each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.” (R.91-3, at JA183.) Similarly, Sonix amended pending Claims 9, 37, 46, and 57, the only claims which referred to “header information,” to include the limitation that “each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.” (R.91-3, at JA187.) The amendments made during prosecution demonstrate that Sonix’s understanding of the header information as taught in the '845 Patent coexisted with an understanding of its functional capabilities. In fact, when the '845 Patent issued, all the claims (Claims 1-51) that recited “header information” (Claims 9, 25, 35, 46) also explicitly recited the additional limitation of both functional capabilities in the claim language. These claims, therefore, were (and still are) already limited to both of the functional capabilities for which Defendants advocate.

b. The First Ex Parte Reexamination

During the first reexamination of the '845 Patent, Sonix added Claims 52-90 which contain claims that recite “header information” without both of the additional functional capabilities recited in the claim language (*see e.g.*, Claims 52, 53, 71, 72, and 90). (R.91-1, at JA28-29.)¹⁵ The Examiner’s Interview Summary noted that “a graphical indicator is repeatable,

¹⁵ In its Corrected Response to the Office Action of April 14, 2011 (R.95-2, at JA1520-1569), Sonix indicated in the “Remarks/Arguments” section that Claims 52-90 were newly added, recited the

includes a header/content information that allows the indicator to be read *regardless of the orientation, and is not position dependent.*” (R.95-1, at JA1461 (emphasis added).) Sonix referred to “header information” during reexamination, in reference to the “graphical indicator.” Specifically, Sonix argued that the term “graphical indicator” had “no commonly understood meaning among those skilled in the art,” (R.95-2, at JA1539), stating:

Here, the ‘845 patent sets forth the meaning of the term “graphical indicator” in terms that are unequivocal and deliberate, and which give clear notice to those of ordinary skill in the art of the scope of the definition. As set forth in the ‘845 patent, a graphical indicator is made up of “a plurality of micro-units” that are arranged in a layout that can take any regular or irregular shape and can have any orientation on the surface. (3:13-25). **A graphical indicator also includes header information which may serve a variety of functions.** (3:57-4:12). The heading “Exemplary Design for the Graphical Indicators” above the section of the specification beginning at column 3, line 6 and extending through column 6, line 44 of the ‘845 patent reflects the fact that this section of the specification first establishes the meaning of the term “graphical indicators” as set forth above, **then proceeds to discuss various designs alternatives that could be used to create such graphical indicators depending on the user’s needs and the specific application.**

(R.95-2, at JA1540-41(emphasis added).)

In distinguishing over the prior art (namely, Fahreaus), Sonix characterized the header information of the ‘845 Patent as reflecting a “fundamental difference” between the ‘845 Patent and the position-based system disclosed in Fahreaus. (*Id.*, at JA1544-45.) Sonix stated:

This again reflects a **fundamental difference** between the ‘845 patent and the position-based system disclosed in Fahraeus, which discloses the encoding of only unique positions on the surface, **assumes the correct orientation** of the optical reader relative to the position code in the assigned coordinate system, **and does not discuss differentiation** of graphical indicators since it uses unique partial surfaces that can overlap one another.

statement of reasons for allowance from the original prosecution, and stated “[f]or the reasons discussed below with specific reference to the relevant prior art reference this statement of reasons for allowance was correct, and the pending original claims should be confirmed *and the newly presented claims should be incorporated.*” (R.95-2, at JA1538 (emphasis added).) As such, the Court treats Sonix’s comments in its Corrected Response as applicable to all the ‘845 Patent claims (Claims 1-90).

(*Id.* (emphasis added).) In further distinguishing over both the prior art Fukuda ‘895 and Fukuda ‘250 references, Sonix stated:

[E]ven if considered analogous art, Fukuda ‘895 fails to teach the use [of] header and content information within a graphical indicator wherein the header information is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.

(*Id.*, at JA1548, JA1550, JA1560, JA1561-62.) In addition, Sonix noted in reference to Fukuda ‘895:

The ‘845 patent is addressed to **a static environment that presents fundamentally different problems** than a packetized data stream [of Fukuda ‘895]. As disclosed in the ‘845 patent, **in a static environment header information can be used to determine the orientation of a graphical indicator relative to the optical reader and it can be used to differentiate among adjacent graphical indicators.**

...

The ‘845 patent uses header information to establish complete freedom with respect [to] the orientation of graphical indicators, which is important in educational applications where the user may hold the optical reader in any orientation relative to the surface. **Thus, the use of headers in a static imaging system was a non-obvious concept that solved longstanding problems of differentiation among closely spaced dot codes and providing freedom to use any orientation for such dot codes relative to the optical reader.**

(R.95-2, at JA1551-52 (emphasis added).) In distinguishing over the prior art Lamoure reference, Sonix stated:

The indexes of Lamoure were dots arranged in block patterns that could be ready by an optical wand, but they **lacked key features** of the graphical indicators of the ‘845 patent. In particular, Lamoure **clearly recognized the problem of differentiating** between closely spaced indexes on a sheet. To address this problem, Lamoure teaches a single solution based on spacing. ... Recognizing the limitations of such a system, Lamoure speculates that one could index the ‘blocks’ using another indexing scheme that is also based on spacing such as ‘‘Hilbert’s curve,’’ but Lamoure does not develop such an approach.

(*Id.*, at JA1553 (emphasis added).)

Lamoure **failed to conceive using a header incorporated into an index to differentiate** among multiple indexes in the field of view of the optical reader.

(*Id.*, at JA1553-54 (emphasis added).)

Lamoure **similarly recognizes the problem of determining the orientation** of an index relative to the optical reader, and he again turns to spacing and the use of a coordinate arrangement of indexes to solve this problem.

...

Again, while recognizing issues relating to differentiation and orientation, the only solution contemplated by Lamoure is the use of mandatory spacing between encoding spaces. Lamoure failed to conceive of using **headers incorporated into an index to determine the orientation of the indexes in the field of view of the optical reader**. As a result, Lamoure's concept was limited to an orthogonal arrangement of indexes on the surface of a map.

(*Id.*, at JA1554 (emphasis added).)

Lamoure's indexes are not graphical indicators because **Lamoure does not teach the use of headers, and because Lamoure's indexes could only be used in a specific orientation relative to the surface or [sic] the optical reader**.

(*Id.* (emphasis added).)

Sonix submitted a summary of the May 24, 2011 examiner interview, stating:

Lamoure's indexes are not graphical indicators. No specific additional information is associated with an index in Lamoure, **and while Lamoure recognizes the problem of differentiating among its 'indexes,' Lamoure fails to identify any way to address this problem other than by mandatory spacing between and within the 'indexes.'** Like Fahraeus, there is also no way to **determine the orientation of an index relative to the optical reader**.

(R.95-2, at JA1510-11 (emphasis added).) During the first reexamination, the PTO found Claims 9, 15, 25, 35-39, 46-49 and 52-90 patentable and/or confirmed. (R.95-3, at JA1617.)

The PTO stated:

Claims 9, 25, 35-38, 46-49, and 52-90 **all recite that the graphical indicator has a header**. As discussed in PO's response, while both Fukuda '250 and Fukuda '895 teach headers for scanned or streaming data, **neither reference provides motivation to use a header in a static environment like that of Fahraeus or Lamoure**. No other art teaches this feature. As such, claims 9, 25, 35-38, and 46-49 are confirmed and claims 52-90 are allowable.

(*Id.*, at JA1632 (emphasis added).)

c. The Second Ex Parte Reexamination

During the second reexamination, Sonix again distinguished the prior art by directly referencing the functional capabilities of the header information. In particular, when addressing the Priddy reference, which the PTO found to disclose a matrix perimeter that distinguished the matrix from other nearby text or images, Sonix stated:

Priddy fails to teach the claim requirement that ‘each header information within the graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators.’ Claim 9; *see also*, Claims 25, 46, 53, and 72.

...

Priddy does contemplate the use of a matrix on a surface that includes other text, images, or graphics, and it teaches that the perimeter of the Priddy matrix can be used to distinguish the matrix from such other text, images, or graphics nearby on the surface. ... **Priddy, however, does not have any express disclosure of using the perimeter of the matrix to distinguish one matrix from an adjacent matrix. ... Distinguishing a matrix code with a perimeter that strictly follows a specified design rule from other objects on the surface that do not adhere to the same design rule is fundamentally different from distinguishing among adjacent matrices that follow the same design rule and may even be identical to each other.**

(R.97-4, at JA2059 (emphasis added).)

4. Sonix’s Unambiguous Disavowal

These statements, taken as a whole, represent an unambiguous disavowal of claim scope for “header information.” The prosecution history and reexamination proceedings make clear that the invention is limited to use of header information that has the capabilities of distinguishing between graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device. Sonix described these functional capabilities as providing *fundamental differences* between the ‘845 Patent and the prior art. Sonix also emphasized *the advantages* of these functional capabilities as compared to the prior art methods, for example, the spacing of Lamoure and its limitations.

Sonix's arguments to the PTO further emphasized *the importance* of these functional capabilities in comparison to the prior art methods, even describing them as “*key features*.” (R.95-2, at JA1553 (describing Lamoure as lacking the “key features of the graphical indicators of the ‘845 patent” and discussing the use of header information to address the problems of differentiation and determining orientation).) Sonix also described the orientation capability of the ‘845 Patent as “important in educational applications” to “establish complete freedom.” (*See id.*, at JA 1551-52.) While “[t]here are no magic words that must be used ... the patentee must, with some language, indicate a clear intent” to narrow the plain and ordinary meaning of the disputed term.” *Hill-Rom*, 755 F.3d at 1372.

The Court finds that, here, Sonix's statements constitute a disclaimer as they express a clear intent to narrow the meaning of “header information” to that which requires the functional capabilities. *See Hill-Rom*, 755 F.3d at 1372 (citing *SafeTCare Mfg., Inc. v. TeleMade, Inc.*, 497 F.3d 1262, 1269-70 (Fed. Cir. 2007) (finding disclaimer when the specification both indicated that the invention operated by “pushing (as opposed to pulling) forces,” and characterized the “pushing forces” as “an important feature of the present invention”); *see also Hill-Rom*, 755 F.3d at 1372 (citing *Inpro II*, 450 F.3d at 1354-55 (finding disclaimer limiting a claim element to a feature of the preferred embodiment when the specification described that feature as a “very important feature ... in an aspect of the present invention” and disparaged alternatives to that feature); *Bell Atl. Network*, 262 F.3d at 1273-75 (relying on prosecution history to limit claimed “transceiver” to the three stated modes because of clearly limiting statement made by the patentee to the examiner to overcome a prior art rejection).

Additionally, during the second reexamination, the examiner stated in his “Statement of Reasons for Patentability and/or Confirmation”:

Claims 9, 25, 35, 46, 52, and 71 each recite the feature of:

*“capturing an image from a selected zone on a surface of an object by a user, wherein the image includes a **graphical indicator that is visually negligible**”*

*“wherein the state zones are arranged in a two-dimensional matrix form and the **graphical indicator comprises a header information** and a content information, each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device.*

The ‘845 Patent Specification defines the header information as (from column 4, lines 30-39):

Shown in FIG. 1(B), which has scale of 100: 1, the graphical indicator 11 includes a header information 111 and a content information 112 arranged in a layout that corresponds to different indicator information. In one embodiment, all header information 111 are identical among different graphical indicators 11. However, for a more comprehensive design, more than one set of header information may be employed as long as each header information within each graphical indicator is capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators and indicating the orientation of the corresponding graphical indicator to the optical device. On the other hand, different value of content information 112 represents different indicator information. Thus, one graphical indicator 11 is read through capturing one header information 111, and the graphical indicator 11 does not interfere with each adjacent graphical indicator 11. However, in another embodiment, the header information 111 in one graphical indicator may be different from that of other graphical indicator 11 as long as the system can use the header information to retrieve the corresponding content information.

Where the **critical element** of: *a graphical indicator that is visually negligible wherein the graphical indicator comprises a header information* is found not to be obvious over the Lamoure, Priddy, and Frazer references.

(R.97-4, at JA2090 (emphasis in original).) The examiner’s statements reflect an understanding that the claims cited contain the functional limitations. Specifically, the examiner references the claim’s use of “header information” and the specification’s “definition” of header information both of which explicitly include the functional capabilities of distinguishing between graphical indicators and indicating the orientation of the corresponding graphical indicators. (See R.97-4,

at JA2090.) Although the statements of an examiner will not necessarily serve to limit a claim, the Federal Circuit has recognized that these statements can represent the examiner's understanding during prosecution, which can be relevant to the analysis. *See Bell Atl. Network*, 262 F.3d at 1273 (referencing the examiner's statements that treated the claims as separate and distinct concepts, as reflective of the same understanding as the adopted construction of the Federal Circuit.)

In light of Sonix's statements clearly characterizing the '845 Patent's use of header information in distinguishing the prior art, it is not simply the presence of the header information but also the presence of its functional capabilities that operate in a static environment. Sonix relied on these same capabilities during prosecution to differentiate the '845 Patent from the prior art. The claim scope referring to "header information," therefore, should likewise reflect the presence of the functional capabilities. In addition, this finding comports with prosecution disclaimer as a basic principle of claim interpretation that "promotes the public notice function of the intrinsic evidence and protects the public's reliance on definitive statements during prosecution." *See Omega Eng'g*, 334 F.3d at 1324 (citations omitted).

Incorporation of these functional capabilities effectively limits the claims reciting "header information" to disclosure of a particular embodiment from the specification. Sonix's description of its particular embodiment of "header information," however, echoes Sonix's description of the claimed invention itself during prosecution and reexamination. *See SciMed Life Systems*, 242 F.3d at 1341. Limiting a claim to a "specific embodiment presented in the specification, depends in each case on the specificity of the description of the invention and on the prosecution history ... [c]laims are not correctly construed to cover what was expressly disclaimed." *Liebel-Flarsheim*, 358 F.3d at 907 (citing *Cultor Corp. v. A.E. Staley Mfg. Co.*, 224

F.3d 1328, 1330 (Fed. Cir. 2000)). In *Cultor*, the Federal Circuit affirmed the district court's construction that limited "water-soluble dextrose" to that prepared with a citric acid catalyst, effectively disclaiming other prior art acids. *Cultor*, 224 F.3d at 1331. In reviewing the specification and prosecution histories of the patents in suit, the district court found that the inventors repeated statements distinguishing the patents from the prior art by characterizing their invention narrowly, resulting in a disclaimer of the claim scope beyond that narrow characterization. *See id.*, at 1330.

Similarly, here, Sonix made repeated statements to the PTO during its first and second reexaminations regarding the '845 Patent's use of header information, statements that characterized the invention narrowly and emphasized the functional attributes of distinguishing and orienting to overcome the rejections. These statements demonstrate that Sonix understood the functional capabilities of the header information, namely distinguishing between graphical indicators and indicating orientation of the graphical indicator, to be "key features" of "header information", that provide "fundamental differences" from the cited prior art. (*See e.g.*, R.95-2, at 1551-53; R.97-4, at JA2059.) These statements constitute "a deliberate surrender of claim scope, unmistakable in its effect because they are not suitable to multiple interpretations." *See Omega Eng'g*, 334 F.3d at 1327 (finding a deliberate surrender of claim scope based on patentee's repeated insistence that its invention differed from the prior art by precluding appreciable heat from entering the energy zone and affecting the temperature of the energy zone).

Sonix attempts to dismiss the statements made during reexamination, noting that the "discussions throughout the reexamination proceedings regarding the two optional functions of the header information were made *only* in distinguishing specific aspects of the prior art analysis

raised by the third-party applicants.” (R.100, at 10 (emphasis original).) For example, during the second reexamination, Sonix distinguished the Priddy reference not only on the basis of the functional attributes of the header information but also on the inability of Priddy and Lamoure (in combination as a basis for a rejection under §103) to be combined to create a “visually negligible” graphical indicator, an element which is required by each of the ‘845 Patent claims. (See R.97-4, at JA2051-2071.) Sonix nonetheless admits that it “effectively distinguished its invention over the Lamoure reference based on several arguments, one of which was that Lamoure fails to disclose the use of header information and instead relies on spacing to distinguish among graphical indicators.” (R.100, at 16.)

While it is true that Sonix may have invoked several grounds for distinguishing the prior art references addressed above, that does not undercut the force of its statements emphasizing the importance of the header information’s functional capabilities of distinguishing between graphical indicators and indicating the orientation of the corresponding graphical indicator. In other words, Sonix’s arguments relating to the “visually negligible” attributes of the graphical indicators of the ‘845 Patent do not immunize the effect of Sonix’s arguments narrowing the construction of “header information.” See *Andersen*, 474 F.3d at 1374 (“An applicant’s invocation of multiple grounds for distinguishing a prior art reference does not immunize each of them from being used to construe the claim language”); see also *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1347 (Fed. Cir. 1998) (“While it is true that the applicants went on to specifically distinguish each claim, or group of claims ... from [the prior art reference] on more narrow grounds, that does not eliminate global comments made to distinguish the applicants’ ‘claimed invention’ from the prior art.”). The Federal Circuit has “made clear, an applicant’s argument that a prior art reference is distinguishable on a particular ground can serve

as a disclaimer of claim scope even if the applicant distinguishes the reference on other grounds a well.” *Id.*; *see also Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1477 n. 1 (Fed. Cir. 1998) (when applicant distinguishes a reference on multiple grounds, “any of those grounds may indicate the proper construction of particular claim terms.”).

The Court, therefore, finds that in light of the amendments to the claims and specification, as well as the repeated statements made during the first and second reexamination regarding “header information,” Sonix specifically limited the claim scope for “header information” to one is capable of (1) distinguishing the corresponding graphical indicator from an adjacent graphical indicator, and (2) indicating the orientation of the corresponding graphical indicator to the optical device.

As such, the Court adopts a construction for “header information” of “information in the graphical indicator that retrieves the graphical indicator and corresponding content information and is capable of (1) distinguishing the corresponding graphical indicator from an adjacent graphical indicator, and (2) indicating the orientation of the corresponding graphical indicator to the optical device.”

D. “Marking and Discriminating the Graphical Indicator as Separate from One or More Adjacent Graphical Indicators”

Defendants modified proposed construction of the term “header information” replaces the prior reference to “capable of distinguishing the corresponding graphical indicator from adjacent indicators” found in Claims 9, 25, 35, and 46 with “marking and discriminating the graphical indicator as separate from one or more adjacent graphical indicators.” (*See* R.117, at 9.) The Court’s construction of “header information” also contains the “capable of distinguishing ...” limitation, as Sonix’s clear statements during reexamination demonstrated a disavowal of claim scope for header information, limiting it to that which is capable of distinguishing the

corresponding graphical indicator from adjacent indicators. (*See supra*, Discussion, I.D.) This effectively introduces the term “capable of distinguishing the corresponding graphical indicator from adjacent indicators” into every claim that recites “header information” (i.e., Claims 9, 25, 35, 46, 52, and 71).

Defendants argue that the meaning of the “capable of distinguishing ...” phrase is not explained in the specification, nor is it a term of art and therefore requires construction. (*See* R.117, at 9.) Citing to one of numerous definitions presented in Webster’s Dictionary for “distinguish”, Defendants contend that “distinguish is a normal, English term that means “to mark as separate or different; DISCRIMINATE.” (*See* WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY, Def’n of “Distinguish” (Def’n 2a), page 659 (2002); *see also* R.117, at 9-10; R.117-5.) Defendants further argue that Sonix confirmed this meaning during prosecution when it distinguished (no pun intended), the prior art Priddy and Lamoure references. The Court disagrees.

First, although Defendants rely on language in the intrinsic evidence that references the “capable of distinguishing ...” phrase in alleged support of their position, their modified construction is improper as it reads the “capable of” requirement out of the claim language. Moreover, the statements on which Defendants rely were made in the Claim Charts submitted by Generalplus to institute reexamination proceedings for the ‘845 Patent. (*See* R.117, at 10-11 (relying on discussion of Priddy at R.96-3, at JA1831-34 and R.97-2, at JA1901-04).) These are not statements made by Sonix. Even if Sonix had made these statements, however, they would be insufficient to support a finding that the “marking ...” provides a meaningful construction for the “capable of distinguishing ...” claim term in the ‘845 Patent. As discussed extensively above, the reexamination proceedings contain clear statements of disavowal regarding the

“capable of distinguishing ...” phrase, many derived from distinguishing the ‘845 Patent’s “header information” over the prior art. (*See supra*, Discussion, I.D.) These statements and the surrounding discussions, however, never address the concept of “marking.”

Second, Defendants’ selection of the term “marking” is improper because it is derived from selective extrinsic evidence and “does not make sense in the context of an optical system” of the ‘845 Patent. (*See* R.118, at 12.) The claims and specification provide no medium for the header information to “mark” the graphical indicator, so the concept of “marking” in the context of the ‘845 Patent is nonsensical. (*See id.*)

Lastly, Defendants’ reliance on Sonix’s statements regarding the Lamoure reference are equally unconvincing. The discussion of Lamoure, like the claims and specification, referenced the term “capable of distinguishing ...” phrase in accordance with its ordinary meaning of differentiation. (*See* R.95-2, at JA1553-54 (“Lamoure clearly recognized the problem of differentiation between closely spaced indexes on a sheet. To address this problem, Lamoure teaches a single solution based on spacing ...”))

The Court, therefore, finds the claims’ and specification’s repeated use of “distinguish” to be in accordance with its ordinary meaning to differentiate, discriminate or discern something – in the case of the ‘845 Patent, to differentiate, discriminate or discern an individual graphical indicator – and does not require further construction to elucidate its meaning in accordance with the ‘845 Patent claims.¹⁶ *See Edwards Lifesciences*, 582 F.3d at 1334 (explaining that the Federal Circuit “do[es] not ordinarily construe words that are not in claims.”); *cf. Advanced*

¹⁶ Defendants’ additional proposal of “discriminating the graphical indicators as separate from one or more adjacent graphical indicators” provides little to no assistance to elucidate the claim terms meaning beyond the claim language itself. Indeed, like the “marking” term, the “discriminating” term is also improper because it reads out the “capable of ...” nature of the functional limitation and ignores the requirement for the header information to distinguish the corresponding graphical indicator, as opposed to any graphical indicator.

Fiber Techs. Trust, 674 F.3d at 1373–74 (noting that “in those cases in which the correct construction of a claim term necessitates a derivative construction of a non-claim term, a court may perform the derivative construction in order to elucidate the claim's meaning.”). As such, the Court’s construes the “capable of distinguishing ...” claim phrase, recited in Claims 9, 25, 35, 46, 53, and 72, and as incorporated in the Court’s construction of “header information,” to have its plain and ordinary meaning.

E. “Without the Use of Mandatory Spacing to Distinguish Between Graphical Indicators”

As with their previous proposed limitation, Defendants argue that the “mandatory spacing” element of their proposed construction for “header information” is warranted based on the ‘845 patent specification and prosecution history and reexamination proceedings.¹⁷

Defendants contend that Sonix distinguished its invention over the prior art systems, in particular over the Lamoure reference, which included mandatory spacing for distinguishing between graphical indicators. (R.89, at 15-16.)

Sonix responds that Defendants point to Sonix’s arguments during reexamination, but skip over the claim language and specification “because neither offers any support whatsoever for this additional limitation.” (R.100, at 14-15.) Sonix asserts that it “effectively distinguished its invention over the Lamoure reference based on several arguments, one of which was that Lamoure fails to disclose the use of header information and instead relies on spacing to distinguish among graphical indicators.” (R.100, at 16.) Sonix points out that it also argued for

¹⁷ Defendants’ proposed limitation of mandatory spacing is not related to the claim term “header information,” rather it is related to the term “distinguishing the corresponding graphical indicator from an adjacent graphical indicator,” which is not an explicit claim term in all the ‘845 Patent claims. Because, however, the Court has found the claim term “header information” as limited to the capability to distinguish between graphical indicators, the Court treats Defendants’ proposed limitation as a request to further limit the “header information” term as construed.

example, that Lamoure teaches away from the concept of state zones, as claimed in the '845 Patent. (*Id.*)

The Court agrees with Sonix. Neither the claims nor specification provide support for Defendants' proposed limitation. In fact, they do not mention "spacing" anywhere. Further, the discussion in the prosecution history and reexamination proceedings of the Lamoure reference and its use of spacing does not rise to the level necessary for finding disavowal of scope for the term "header information" relating to the use of mandatory spacing between and within the graphical indicators.

Sonix made multiple statements regarding the use of spacing in Lamoure to differentiate among its indexes, which Sonix argued differ from graphical indicators. Specifically, Defendants rely on Sonix's statement in the Patent Owner's Interview Summary that "while Lamore recognizes the problem of differentiating among its 'indexes,' Lamoure fails to identify any way to address this problem other than by mandatory spacing between and within the 'indexes.'" (R.89, at 16; R.95-2, at JA1510-11.) Sonix, however, made additional statements regarding spacing of Lamoure that did not use the same language or express the same limited concept. In its Corrected Response, Sonix stated that "Lamoure clearly recognized the problem of differentiating between closely spaced indexes on a sheet. To address this problem, Lamoure teaches a single solution based on spacing" (R.95-2, at JA1553.) Sonix further argued that "Lamoure similarly recognizes the problem of determining the orientation of an index relative to the optical reader, and he again turns to spacing and the use of a coordinate arrangement of indexes to solve this problem." (*Id.*, at JA1554.)

Sonix's arguments in response to Lamoure focused on additional aspects that differed from the claimed invention, including that "Lamoure fails to teach or suggest the use of a state

zone that contains a dot that occupies less than 80 percent of the area of the state zone” and “Lamoure does not disclose a system for retrieving additional information corresponding to a graphical indicator.” (R.95-2, at JA1558.) In the Statement of Reasons for Patentability And/Or Confirmation, the examiner stated that the set of allowed claims “all recite that the graphical indicator has a header.”¹⁸ (R.95-3, at JA1663.) The very limited discussion of Lamoure in the examiner’s reasoning recognizes that the Fukuda ‘895 and Fukuda ‘250 references teach headers for scanned or streaming data, but “neither reference provides motivation to use a header in a static environment like that of Fahreaus and Lamoure.” (*Id.*, at JA1663-64.) The discussions of Lamoure during the second reexamination of the ‘845 Patent centered around the density of the anisotropic distribution of the Lamoure indexes and how that dense matrix would not provide a “visually negligible” graphical indicator as in the ‘845 Patent’s invention. (R.97-4, at JA2054-52062.) The second reexamination made no reference to the mandatory spacing aspects of Lamoure or of the ‘845 Patent’s claimed invention. (*Id.*)

The statements made during reexamination regarding the Lamoure reference and the spacing presented by Lamoure are not a sufficient disclaimer of the scope of mandatory spacing, when the scope of the claims already requires the use of “header information,” a feature understood by the PTO and this Court to be a critical requirement. (*See e.g.*, R.95-1, at JA2091). Sonix’s reexamination statements about Lamoure recognize the problems associated with differentiation and orientation when using indexes, but simply observe that Lamoure proposed spacing as the solution, as opposed to the ‘845 Patent’s discovery of the use of headers to solve these problems. (*See* R.95-2, at JA1553-54.) Sonix’s statements do not amount to a

¹⁸ The claims allowed during the first reexamination were all claims containing the requirement for a graphical indicator with header information (Claims 9, 25, 35-38, 46-9, and 52-90). (*See* R.95-3, at JA1663.) The remaining claims that did not specify a graphical indicator with header information (Claims 1-8, 10-14, 16-24, 26-34, 40-45, 50 and 51) were cancelled. (*Id.*)

disparagement of the prior art or alternatives such that the Court should disclaim the alternatives discussed from the ‘845 Patent’s claim scope. *Cf.*, *Chicago Bd. Options Exch.*, 677 F.3d at 1372 (finding disclaimer in the specification when the patentee made repeated derogatory statements about a particular embodiment).

These statements, taken together, do not provide a sufficient basis to find that Sonix’s statements regarding the spacing of Lamoure were “both so clear as to show reasonable clarity and deliberateness . . . and so unmistakable as to be unambiguous evidence of disclaimer.”

Omega Eng’g, 334 F.3d at 1325. Accordingly, the Court declines to read Defendants’ proposed “mandatory spacing” limitation into the construction for “header information.”

II. “Main Information that Overlaps and Co-exists with the Graphical Micro-units on the Surface of the Object”

Sonix’s Proposed Construction	Defendants’ Proposed Construction	Court’s Construction
main information and graphical micro-units overlap and co-exist with each other on the surface of the object	the main information is printed on the surface of the object on top of the graphical micro-units on the surface of the object	plain and ordinary meaning

This term appears in Claims 9, 25, 35, 57 and 75. (*See* R.119, at 2.) The intrinsic evidence supports Sonix’s proposed construction, and because Defendants’ proposed construction does not comport with the intrinsic evidence, the Court rejects it. After reviewing the parties’ positions, the Court construes this claim term to have its plain and ordinary meaning, which does not incorporate a limitation of a placement priority between the main information and the graphical micro-units resulting in one always being “on top,” nor does it require them to be “printed.”

The plain and ordinary meaning of the term “overlap” is unambiguous. *See Phillips*, 415 F.3d at 1314 (“In some cases, the ordinary meaning of claim language as understood by a person

of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.”). The term “overlap” has a commonly accepted meaning that does not dictate a primary position of which component is on top or on bottom. The ordinary meaning of the term “overlap” is simply that the two referenced terms share common space, extend over or past and cover a part of one another. *See* THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 1254 (4th ed. 2000) (Overlap: 1. To lie or extend over and cover part of. 2. To have an area or range in common with.”); *see also Phillips*, 415 F.3d at 1314 (“In [cases in which the ordinary meaning of claim language may be readily apparent even to lay judges], general purpose dictionaries may be helpful.”). Ultimately, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

In this case, the ordinary meaning of the term “overlap” naturally aligns with the patent’s description of the ‘845 invention, and is the correct construction.

The complete claim element as it appears in exemplary Claim 9 provides as follows:¹⁹

wherein the surface of the object comprises a ***main information that overlaps and co-exists with the graphical micro-units on the surface of the object***, wherein the graphical micro-units are negligible when the user observes the main information.

(R.100, at 19; R.91-1, at JA23, col.10:46-50 (emphasis added).) The proposed claim term generally refers to including main information and graphical micro-units on the surface of the object of a processing system. (R.91-1, at JA23, col.10:20-50.) The specification is also

¹⁹ Claim 9 is dependent on Claim 6, which depends on Claim 5, which depends on Claim 4, which depends on Claim 2, which depends on Claim 1. *See* R.91-1, at JA23-24. All of Claims 1, 2, 4, 5, and 6 were cancelled during the First Reexamination of the ‘845 Patent. The disputed term actually appears in cancelled Claim 4.

consistent with the ordinary meaning of the term. Figure 1(A) illustrates “the graphical indicators on the surface of object in accordance with the present invention,” (R.91-1, at JA3; JA19, col.2:3-5). As shown in Figure 1(A), the main information “APPLE” is on the surface of the object that contains the matrix of graphical indicators. (R.91-1, at JA20, col.3:26-30). Those graphical indicators positioned closely to the main information may presumably occupy the same space at the same time or “overlap” the main information. In contrast, the graphical indicators located further from the main information (APPLE) will not touch, but will “co-exist,” as they are still on the same page at the same time, but will not overlap. (R.91-1, at JA20, col.3:5-21; *id.* at JA21, col.6:13-15 (“[s]ince there are many graphical indicators that are not overlapped with the main information, ...”). The “Summary of the Invention” states “the graphical indicators co-exist with main information, such as a text or picture, on the surface of object, and do not interfere with the perception of human eyes to the main information.” (R.91-1, at JA19, col.1:51-54; *id.*, at JA19, col.2:60-62.) The “Exemplary Design for the Graphical Indicators” states that “one aspect of the graphical indicators is that the graphical indicators are so visually negligible that [they] do not interfere with the main information on the surface of the object.” (R.91-1, at JA20, col.3:5-9.)

The specification teaches that the graphical indicator is not to interfere with the main information, but that it can co-exist and overlap with the main information. There is no language, however, in the claims or the specification dictating that the main information must always be below the graphical indicators or that the graphical indicators must always be on top of the main information on the surface of the object. Therefore, the incorporation of this limitation would improperly limit the otherwise understandable plain and ordinary meaning of the claim term.

Defendants assert that the placement of “main information” before “overlaps,” and the placement of “graphical micro-units” after “overlaps,” means that the main information must be on top. (R.101, at 9-10.) While the Court recognizes the placement of the terms in the claims, the Court also recognizes that the placement of the terms in the specification is reversed, placing “graphical indicators” in front of “overlapped with”, followed by “main information”. (R.91-1, at JA21, col.6:13-17.) In addition to the intrinsic record’s silence as to which component is on top or on bottom, the use of the terms both before and after the word “over” undermines Defendants’ argument and further demonstrates that Sonix did not intend to dictate a printing order for the graphical indicators and the main information.

In addition, neither the claims nor the specification provide a basis for the Court to construe the term to dictate that the main information or graphical indicators be “printed” on the surface of the object. The claims make no mention of “printing” in reference to graphical indicators or the main information. (*See generally*, R.91-1 at JA23-29.) The specification discusses printing for the graphical indicators (e.g., R.91-1, at JA21, col.5:60; col.6:6-8) and for printing of the main information (e.g., *id.* at JA21, col.5:67; col.6:6-8) in particular embodiments, but this does not require importation of a printing limitation to the claims. *Teleflex*, 299 F.3d at 1326-27 (“That claims are interpreted in light of the specification does not mean that everything expressed in the specification must be read into all the claims.”); *Electro Med Sys. v. Cooper Life Scis. Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994) (“Although specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than such embodiments.”) The prosecution history is also unavailing as no discussion exists to provide support for a “printing” limitation, as Defendants propose. In fact, Defendants offer no

support in the specification or file history for their proposed construction. (R.89, at 21; R.101, at 9-10.)

As such, the Court refuses to construe the claim terms in a manner that dictates a placement for main information on top of graphical micro-units when the claims, specification, prosecution history, and reexamination proceedings do not dictate a placement priority or printing order for the information. The Court construes the term “main information that overlaps and co-exists with the graphical micro-units on the surface of the object” to have its plain and ordinary meaning as the terms would be readily understood by the person of ordinary skill in the art reading the ‘845 Patent.

III. “Content Information”

Sonix’s Proposed Construction	Defendants’ Proposed Construction	Court’s Construction
plain and ordinary meaning	the portion of the graphical indicator that determines the substantive output	plain and ordinary meaning

The term “content information” appears in Claims 9, 25, 35, and 46. The intrinsic evidence supports the ordinary meaning of this term. Because Defendants’ proposed construction does not comport with the intrinsic evidence, the Court rejects it.

The claims of the ‘845 Patent simply refer to “content information” contained within the graphical indicator, along with the “header information.” (R.91-1, at JA24, col.11:5-8; *id.*, col.12:31-33; JA25, col.13:40-42.) The claims place no additional limitations on the term “content information.”

The specification addresses “content information” in the same portion that describes “header information.” (R.91-1, at JA20, col.3:58 – col.4:18.) The content information is shown in Figure 1(B) and is included in the graphical indicator along with the header information, “arranged in a layout that corresponds to different indicator information.” (R.91-1, at JA20,

col.3:58-61.) The discussion further identifies “content information” as corresponding to “header information” within each graphical indicator, described in Figure 1(D), shown below, which illustrates the header information (111) with the content information (112) in “a two-dimensional matrix form in accordance with the present invention”:

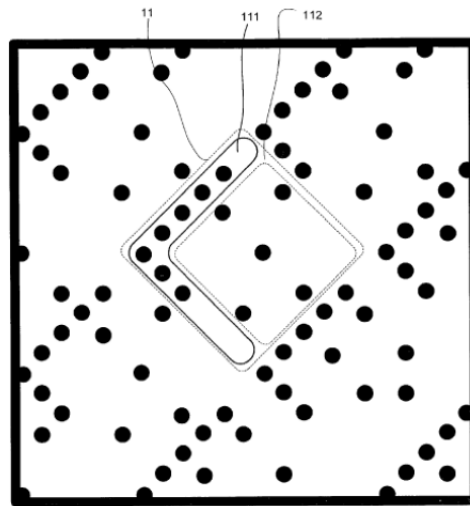


Fig.1(D)

After the user searches the header information (shown above as 111), the graphical indicator and the corresponding content information (shown above as 112) are retrieved. (R.91-1, at JA20, col.4:10-18.)

Defendants assert “the specification makes clear that the substance of the indicator information is altered *solely* by changing the content information in the graphical indicator.” (See R.117, at 5 (emphasis in original).) Sonix responds that the substantive output can be determined by both the header information and the content information, especially when the graphical indicators at issue have different header information. (See R.118, at 7.) The Court agrees with Sonix.

The specification’s discussion of indicator information begins with the general statement “[s]hown in FIG. 1(B), which has scale of 100:1, the graphical indicator 11 includes a header

information 111 and a content information 112 arranged in a layout that corresponds to *different indicator information.*” (R.91-1, at JA20, col.3:58-61 (emphasis added).) Defendants ignore this statement and instead, focus on the second statement that follows shortly thereafter and begins “On the other hand, different value of content information 112 represents different indicator information.” (*Id.*, at JA20, col.4:2-4.) These statements do not dictate that only the content information generates substantive output, as Defendants suggest. The specification’s illustration of Figure 1(D) and 1(F) are instructive in this regard:

FIG. 1(D), . . . is a schematic diagram illustrating two-dimensional matrix form in accordance with the present invention. The user first searches the header information 111 and further retrieves the graphical indicator 11 and the corresponding content information 112.

Furthermore, in order to rapidly retrieve the indicator information, the image corresponding to the matrix form of the graphical indicators is rotated and converted into bit matrix form, shown in FIG. 1(F) during the process.

(R.91-1 at JA20, col.4:13-23.) This discussion does not support the argument that “content information” is solely responsible for the substantive output, rather it is the “indicator information,” as a whole – both header information and content information, that provides the necessary information for establishing the index zones as referred to in the ‘845 Patent, which in turn relate to the signal output. (*See e.g.*, R.91-1 at JA20, col.4:23-34.) As Sonix explains, the “indicator information” is used to retrieve the actual material to be output to the user – the latter of which is referred to as “additional information.” (*See* R.118, at 6.) The “indicator information” may actually be the “additional information,” which can be encoded directly into the “indicator information.” (*See* R.91-1, at JA21, col.6:18-44) Alternatively, the system may use the “indicator information” together with a mapping or lookup table to identify the “additional information” stored in memory. (*Id.*) Thus, the term “content information” is used in the specification and claims to emphasize the difference between the “header information” and

the “content information” that is involved in the generation or retrieval of the “additional information” – such as sound – that is output to the user.

The flow-chart in Figure 7 also supports this understanding. Specifically, the last box states “[o]utput circuit outputting the additional information.” (R.91-1, at JA13.) This flow-chart provides a clear statement of where the output of the ‘845 graphical indicators comes from – it is not from the content information only.

Defendants’ proposed limitation is unsupported and does not comport with the use of the term “content information” in the ‘845 Patent claims or specification. Defendants have not shown any reliance on the prosecution history or reexamination proceedings that contradicts the otherwise clear meaning of “content information” available in the ‘845 Patent. The Court, therefore, rejects Defendants’ proposed construction and construes “content information” to have its plain and ordinary meaning readily understood by the person of ordinary skill in the art, of information that relates to the content of the graphical indicator.

As such, the disputed term “content information” is construed to have its plain and ordinary meaning of information that relates to the content of the graphical indicator as the term would be readily understood by the person of ordinary skill in the art reading the ‘845 Patent.

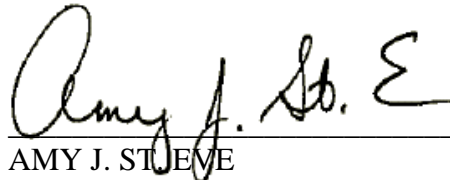
CONCLUSION

For the reasons set forth above, the Court construes the disputed claim terms as follows:

Claim Term or Phrase	Court's Construction
"header information"	information in the graphical indicator that is used to retrieve the graphical indicator and corresponding content information and is capable of (1) distinguishing the corresponding graphical indicator from an adjacent graphical indicator, and (2) indicating the orientation of the corresponding graphical indicator to the optical device
"capable of distinguishing the corresponding graphical indicator from adjacent graphical indicators"	plain and ordinary meaning
"main information that overlaps and co-exists with the graphical micro-units on the surface of the object"	plain and ordinary meaning
"content information"	plain and ordinary meaning

DATED: October 30, 2014

ENTERED



AMY J. STIEVE
United States District Court Judge