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

ONLY THE FIRST, LTD., et al.)	
)	
Plaintiffs,)	
)	Case No. 07-cv-1333
)	(Consolidated with 09-cv-4655)
V.)	
)	Judge Robert M. Dow, Jr.
SEIKO EPSON CORPORATION, et al.)	
)	
Defendants.)	

MEMORANDUM OPINION AND ORDER

Plaintiff SOC-USA, LLC ("SOC-USA") has sued Defendants Office Depot, Inc. ("Office Depot") and Epson America, Inc. ("EAI") for infringement of United States Patent No. 7,456,018 B2 ("the '018 patent"). The matter is before the Court on claim construction of the '018 patent and Defendants' related motion for summary judgment of invalidity for indefiniteness [132]. The Court's construction of the disputed claim terms is set forth below. For the reasons stated below, Defendants' motion for summary judgment is granted in part and denied in part.

I. Background

A. Procedural Background

On April 7, 2009, SOC-USA filed the instant patent infringement action in the Southern District of Florida. Shortly thereafter, on July 30, 2009, the action was transferred to this Court, where it was assigned case number 09-cv-4655. On August 26, 2009, this Court granted the parties' agreed motion to consolidate SOC-USA's action against Office Depot and EAI (no. 09-cv-4655) with case number 07-cv-1333 on relatedness grounds. Case number 07-cv-1333 is a

patent infringement action initiated by Only The First, Ltd. ("OTF") against Seiko Epson Corporation ("SEC") for infringement of United States Patent No. 7,058,339 (the "339 patent").

The two cases are closely related in terms of both the patents in suit and the parties. The '018 patent is a continuation of the '339 patent, and the two share the same specification. The two principals of OTF created SOC-USA. OTF then transferred the '018 patent to SOC-USA. Defendant EAI is the U.S. subsidiary of Defendant SEC. In both actions, the accused products are the R800/1800 Epson printers and/or the ink cartridges used in those printers.

B. The Court's Construction of the '339 Patent

This Court previously construed certain disputed claim terms in the '339 patent. The abstract for the '339 patent describes the invention as:

A color printing system comprising a combination of at least four, and preferably six coloring materials, each of a different color, wherein these colors are selected from (1) an orange-red; (2) a violet-red; (3) a violet-blue; (4) a green-blue; (5) a green-yellow; and (6) an orange-yellow; as well as white and black. This system may be incorporated into a wide range of printing devices and provides a means of achieving a wide range of colors.

'339 Patent, Abstract. With respect to the '339 patent, OTF and SEC disputed the construction of six color terms that appear in claim 2 of the '339 patent – orange-red, violet-red, violet-blue, green-blue, green-yellow, and orange-yellow. On July 8, 2009, this Court issued a claim construction opinion [122] construing those disputed claims. The Court construed the term "orange-red" as follows:

A color which, when analyzed spectroscopically, reflects in order of quantity or intensity, red followed by orange and then violet, wherein red and orange have the two highest quantities or intensities, respectively. The relative quantities or intensities of each color are determined by comparing the areas under the spectroscopic graph of reflectance (percent) versus wavelength occupied by the specified color. The wavelength occupied by each specified color is as follows: violet: 400-440 nm; blue: 420-490 nm; green: 490-550 nm; yellow: 550-590 nm; orange: 590-620 nm; red: 610-700 nm.

The Court construed each of the other six claimed colors according to the same pattern.

C. The '018 Patent

As noted above, the '339 and '018 patents have the same specification. Therefore, like the '339 patent, the '018 patent relates to a color printing system comprising a combination of orange-red, violet-red, violet-blue, green-blue, green-yellow, and orange-yellow, as well as white and black.

Plaintiff has asserted claims 7, 9, 11, 13, 15, 17, 19, 21, 27 and 29 of the '018 patent against Defendants' R800/1800 printers. Claims 7, 11, 15, 19, and 27 each follow the following format:

"A colour printing system comprising a combination of at least four coloured materials, each of a different colour, wherein at least three of the four colours are selected from:

- (1) a violet-red * * *
- (2) an orange-red * * *
- (3) a violet-blue * * *
- (4) a green-blue * * *
- (5) a green-yellow * * * and
- (6) an orange-yellow * * *

provided the combination is other than cyan, magenta, a yellow and black."

Claims 7, 11, 15, 19, and 27 differ from one another only in the way in which they describe the claimed colors. Claim 7 defines the colors in terms of "peak reflectance percentage." Claim 11 defines the colors in terms of "intensity." Claim 15 defines the colors in terms of "peak intensity." Claim 19 defines the colors in terms of "dominant intensity." Finally, claim 27

¹ Claim 7 defines all 6 claimed colors according to the following pattern: "a violet-red, wherein red has a higher *peak reflectance percentage* than violet, and violet has a higher peak reflectance percentage than orange."

² Claim 11 defines all 6 claimed colors according to the following pattern: "a violet-red, wherein red has a higher *intensity* than violet, and violet has a higher intensity than orange."

³ Claim 15 defines all 6 claimed colors according to the following pattern: "a violet-red, wherein red has a higher *peak intensity* than violet, and violet has a higher peak intensity than orange."

defines the colors in terms of the "area under a graph of reflectance (percent) versus wavelength." The remaining asserted claims of the '018 patent – claims 9, 13, 17, 21, and 29 – are dependent claims which add the limitation, "wherein each colouring material is an ink, dye, toner or pigment," a term that is not in dispute.

Thus, the asserted claims of the '018 patent are similar to the previously-construed claims of the '339 patent in that they recite the same six claimed colors. However, the claims of the '018 patent differ in the way in which they describe those claimed colors. The claims of the '339 patent only referred to the color names (*e.g.*, "orange-red"), while the claims in the '018 patent recite the six claimed colors according to the respective order of the six basic colors (red, orange, yellow, green, blue, and violet) based on their "peak reflectance percentage," "intensity," "peak intensity," "dominant intensity," or "area under a graph of reflectance (percent) versus wavelength."

In the motion for summary judgment that is currently before the Court, Defendants assert that a number of claim terms are indefinite, and seek summary judgment of invalidity on that basis. In particular, Defendants contend that the terms "cyan," "magenta," "yellow," and "each of a different colour," which appear in each of the independent asserted claims, are indefinite. Defendants also argue that the terms "peak intensity" (as used in claim 15) and "dominant intensity" (as used in claim 19) are indefinite. Finally, Defendants submit that the phrase "peak reflectance percentage," which appears in claims 7 and 9, constitutes improper new matter, such that those claims are invalid.

⁴ Claim 19 defines all 6 claimed colors according to the following pattern: "a violet-red, wherein red has a higher *dominant intensity* than violet, and violet has a higher dominant intensity than orange."

⁵ Claim 27 defines all 6 claimed colors according to the following pattern: "a violet-red, wherein red has a greater *area under a graph of reflectance (percent) versus wavelength* than violet, and violet has a greater area under a graph of reflectance (percent) versus wavelength than orange."

II. Legal Standards

A. Claim Construction

In a patent infringement case, the court must engage in a two step analysis. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). First, the court determines the meaning and scope of the asserted patent claims. *Id.* Second, the court concludes whether the accused product or device infringes on the properly construed claims. *Id.* The first step – claim construction – is a legal determination to be made by the court. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996). The Federal Circuit has explained that "[t]he construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims." *Terlep v. Brinkmann Corp.*, 418 F.3d 1379, 1382 (Fed. Cir. 2005).

Claims must be construed through the eyes of "the person of ordinary skill in the field of the invention." *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998); see also *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) ("The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation."). With that mindset, courts "look to the intrinsic evidence, including the claim language, written description, and prosecution history, as well as to extrinsic evidence" in construing claims. *TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1369 (Fed. Cir. 2008).

The Federal Circuit has directed courts to "look first to the intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification and, if in evidence, the prosecution history." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). The analysis begins with the words of the claims themselves, which are generally given their ordinary

and customary meaning. *Id.* "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips*, 415 F.3d at 1313.

The "heavy presumption' in favor of the ordinary meaning of claim language * * * is overcome * * * where the patentee has chosen to be his own lexicographer." Bell Atlantic Network Servs., Inc. v. Covad Commc'ns Group, Inc., 262 F.3d 1258, 1286 (Fed. Cir. 2001). A patentee acts as his own lexicographer where he "has clearly set forth an explicit definition of [a claim] term different from its ordinary meaning." Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002). The presumption in favor of the ordinary meaning is overcome only where the "special definition of the term is clearly stated in the patent specification or file history." Vitronics, 90 F.3d at 1582; Phillips, 415 F.3d at 1316 ("inventor's lexicography governs * * * [where] the specification * * * reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess"); In re Paulsen, 30 F.3d 1475, 1480-81 (Fed. Cir. 1994) (where inventor seeks to "define the specific terms used to describe his or her invention, this must be done with reasonable clarity, deliberateness, and precision"). Even where the patentee acts as his own lexicographer, the court's focus remains on determining how a person of ordinary skill in the art would understand the claim terms. Thus, "the inventor's lexicography * * * must be understood and interpreted by the court as they would be understood and interpreted by a person in that field of technology." Multiform Desiccants, Inc., 133 F.3d at 1477.

The second place to which a court looks in construing claims is the specification, in part to determine whether the inventor has redefined any claim terms. *Vitronics*, 90 F.3d at 1582. The Federal Circuit has explained that, because claims "are part of 'a fully integrated written

instrument," * * * [they] 'must be read in view of the specification[] of which they are a part." *Phillips*, 415 F.3d at 1315 (quoting *Markman*, 52 F.3d at 978-79). Therefore, "the specification is always highly relevant to the claim construction analysis." *Vitronics*, 90 F.3d at 1582. Indeed, the Federal Circuit has advised that the specification "is the single best guide to the meaning of a disputed term," and, therefore, "[u]sually, it is dispositive." *Id*.

Nevertheless, while "the claim language must be examined in light of the written description," the Federal Circuit repeatedly has admonished courts not to read "limitations * * * into the claims from the written description." *Prima Tek II, L.L.C. v. Polypap, S.A.R.L.*, 318 F.3d 1143, 1148 (Fed. Cir. 2003). In the same vein, the Federal Circuit "has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." *Texas Instruments, Inc. v. United States Int'l Trade Comm'n,* 805 F.2d 1558, 1563 (Fed. Cir. 1986). The line between reading a claim in light of the specification, and reading limitations into the claim from the specification is a fine one. *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). To "discern [that line] with reasonable certainty and predictability[,] * * * the court's focus [must] remain[] on understanding how a person of ordinary skill in the art would understand the claim terms." *Phillips*, 415 F.3d at 1323.

The third type of intrinsic evidence the court may consider is the prosecution history. *Phillips*, 415 F.3d at 1323. If, after reviewing the intrinsic evidence, ambiguity remains regarding the meaning of disputed claim terms, the court may consider extrinsic evidence, including dictionaries, treatises, and expert testimony. *Phillips*, 415 F.3d at 1317; see also *Vitronics*, 90 F.3d at 1584 ("[o]nly if there [is] still some genuine ambiguity in the claims, after consideration of all available intrinsic evidence, should the trial court * * * resort[] to extrinsic evidence"). However, extrinsic evidence generally is considered to be "less reliable" than

intrinsic evidence and "unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." *Phillips*, 415 F.3d at 1318-19.

B. Summary Judgment and Indefiniteness Standards

Summary judgment is proper where "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." FED. R. CIV. P. 56(c). In determining whether there is a genuine issue of fact, the Court "must construe the facts and draw all reasonable inferences in the light most favorable to the nonmoving party." *Foley v. City of Lafayette*, 359 F.3d 925, 928 (7th Cir. 2004).

To avoid summary judgment, the opposing party must go beyond the pleadings and "set forth specific facts showing that there is a genuine issue for trial." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 250 (1986). A genuine issue of material fact exists if "the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Id.* at 248. The party seeking summary judgment has the burden of establishing the lack of any genuine issue of material fact. See *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986). Summary judgment is proper against "a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial." *Id.* at 322. The non-moving party "must do more than simply show that there is some metaphysical doubt as to the material facts." *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986). In other words, the "mere existence of a scintilla of evidence in support of the [non-movant's] position will be insufficient; there must be evidence on which the jury could reasonably find for the [non-movant]." *Anderson*, 477 U.S. at 252.

The definiteness requirement is set forth in § 112, ¶ 2 of the Patent Act, which provides: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112. Claims are considered indefinite when they are "not amenable to construction" or are "insolubly ambiguous." *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005). A claim is not indefinite if it can be given "any reasonable meaning." *Id*.

"A determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims." *Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n,* 161 F.3d 696, 705 (Fed. Cir. 1998). Thus, indefiniteness is a matter of claim construction, and the principles that govern claim construction generally are applicable to the determination of whether an allegedly indefinite claim is subject to construction. See *Datamize*, 417 F.3d at 1348; *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1319 (Fed. Cir. 2008). Moreover, as a question of law, claim indefiniteness is appropriate for disposition on a motion for summary judgment motion. See *Lisle Corp. v. A.J. Mfg. Co.*, 289 F. Supp. 2d 1048, 1050 (N.D. Ill. 2003).

III. Discussion

As noted above, each of the independent asserted claims follows the following format:

"A colour printing system comprising a combination of at least four coloured materials, each of a different colour, wherein at least three of the four colours are selected from:

- (1) a violet-red * * *
- (2) an orange-red * * *
- (3) a violet-blue * * *
- (4) a green-blue * * *
- (5) a green-yellow * * * and
- (6) an orange-yellow * * *

provided the combination is other than cyan, magenta, a yellow and black."

The claims describe the claimed colors in terms of "peak reflectance percentage," "intensity," "peak intensity," "dominant intensity," or "area under a graph of reflectance (percent) versus wavelength." The parties ask the Court to construe eight claim terms. Three of the disputed claim terms appear in all of the asserted claims: (1) "provided the combination is other than cyan, magenta, a yellow and black"; (2) "cyan, magenta, a yellow and black"; and (3) "each of a different colour." The other disputed claim terms are relevant to only certain asserted claims: (1) "an orange-red, wherein red has a higher peak reflectance percentage than orange, and orange has a higher peak reflectance percentage than violet" (claims 7 and 9); (2) "an orange-red, wherein red has a higher intensity than orange, and orange has a higher intensity than violet" (claims 11 and 13); (3) "an orange-red, wherein red has a higher peak intensity than orange, and orange has a higher peak intensity than violet" (claims 15 and 17); (4) "an orange-red, wherein red has a higher dominant intensity than orange, and orange has a higher dominant intensity than violet" (claims 19 and 21); (5) "an orange-red, wherein for such colour, red has a greater area under a graph of reflectance (percent) versus wavelength than orange, and orange has a greater area under a graph of reflectance (percent) than violet" (claims 27 and 29).

A. The Same Wavelength Ranges

Each of the six claimed colors is defined in terms of the six basic colors – red, orange, yellow, green, blue, and violet. The parties agree – as to the asserted claims – that the wavelength ranges for the six basic colors that appear in the Court's construction of the '339 patent should be adopted here. Therefore, with respect to claims 7, 9, 11, 13, 15, 17, 19, 21, 27 and 29, the wavelength ranges occupied by the component colors are construed as follows: violet

(400-440 nm), blue (420-490 nm), green (490-550 nm), yellow (550-590 nm), orange (590-620 nm) and red (610-700 nm).

B. The Two Highest or Greatest Colors

The parties agree that each claimed color is defined by the order (measured in terms of "peak reflectance percentage," "intensity," "peak intensity," "dominant intensity," or "area under a graph of reflectance (percent) versus wavelength") in which it reflects three specific component colors. For an orange-red, for example, the order is red followed by orange followed by violet. The parties dispute, however, whether the first two component colors – in the case of orange-red, the colors red and orange – must have the two highest "peak reflectance percentages," "intensities," "peak intensities," "dominant intensities," and/or greatest "areas under a graph of reflectance (percent) versus wavelength" out of all six basic colors. Defendants contend that – consistent with the Court's construction of the claimed colors in the context of the '339 patent – the first two basic colors comprising any claimed color must be the highest. Plaintiff contends that the component colors simply must appear in the order specified in the claims.

Under Plaintiff's construction, a single color can properly be characterized as two different claimed colors. For example, a color that reflects mostly red, then orange, then blue, then violet, then yellow, and then green would be both an "orange-red" and a "violet-blue." In light of that nonsensical result, the Court rejected the very same position now asserted by Plaintiff – that the component colors merely must appear in the specified order – in construing the '339 patent. Somewhat tellingly, Plaintiff fails to address the illogical implications of its proposed construction. Rather, Plaintiff contends that the Court's construction of the '339 patent is not applicable here because the claims of the '018 patent specify the proper order of the

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⁶ The specified wavelength ranges apply only to the asserted claims.

component colors, while the claims of the '339 patent were silent as to the order of the component colors. But the common specification also specifies the proper order, and thus there was no dispute as to the order of the component colors with respect to the '339 patent either. Rather, the dispute there – as here – was whether the claimed colors must reflect mostly the first two component colors. The claims of the '018 patent offer no additional guidance in that regard.

Plaintiff also notes that claim 1 of the '018 patent specifies that a "green-yellow" is a color "wherein yellow has a *highest* peak reflectance percentage, followed by green as the *next highest* peak reflectance percentage and then orange as the *third highest* peak reflectance." By contrast, claim 7 describes a "green-yellow" as a color "wherein yellow has a higher peak reflectance percentage than green, and green has a higher peak reflectance percentage than orange." According to Plaintiff, Defendants' proposed construction violates the doctrine of claim differentiation, under which each claim is presumed to have a different scope. See *Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed. Cir. 2006)

Plaintiff reasons that because claim 1 requires that the component colors be the three highest, claim 7 cannot be construed to require the same thing. But Defendants' construction, which tracks the Court's construction of the '339 patent, only requires that the first two colors be the highest, not all three. Therefore, under Defendants' proposed construction, claims 1 and 7 do not have exactly the same scope, and thus claim differentiation is maintained. For the reasons stated above and in its previous claim construction opinion, the Court construes the claims of the '018 patent as requiring that the first two component colors of each claimed color have the two highest "peak reflectance percentages," "intensities," "peak intensities," "dominant intensities," and/or greatest "areas under a graph of reflectance (percent) versus wavelength" out of all six basic colors.

C. "Area Under Graph" as Used in Claim 27

The parties agree that the claim limitation "area under a graph," as it is used in claim 27 of the '018 patent, should be construed consistent with the Court's prior construction as "the area under the spectrographic graph of reflectance (percent) versus wavelength occupied by the specified color." That construction is consistent with the plain and ordinary meaning of the claim terms and therefore the Court construes claim 27 as the parties propose.

D. "Intensity" as Used in Claim 11

Defendants contend that the term "intensity" in claim 11 should be construed as the Court construed that term in the context of the '339 patent - namely, as "the area under the spectrographic graph of reflectance (percent) versus wavelength occupied by the specified color." In the context of the '339 patent, the Court assumed, arguendo, that the term "intensity" has an ordinary and accepted meaning among persons of ordinary skill in the field of color science, as Plaintiff now contends. However, the Court concluded, based on the specification, that the patentee had given the term "intensity" an unconventional meaning, employing it as a synonym for the term "quantity," meaning the areas under the spectroscopic graph. [122] at 14-15. See also Bell Atlantic, 262 F.3d at 1269-70 (courts "must look at the intrinsic evidence to determine whether the patentee has given [a] term an unconventional meaning"); ResQNet.com, Inc. v. Lansa, Inc., 346 F.3d 1374, 1378 (Fed. Cir. 2003) ("a patent applicant may consistently and clearly use a term in a manner either more or less expansive than its general usage in the relevant community, and thus expand or limit the scope of the term in the context of the patent claims"). The Court's construction of the term "intensity" with respect to the '339 patent was based on the statement in the specification that "[t]he relative quantities or intensities of each colour can be determined by comparing the areas under the spectroscopic graph of reflectance

(percent) versus wavelength occupied by the specified colour." '399 patent, col. 3, ll. 8-11. The Court reasoned that the patentee's inclusion of the term "intensities" in that definitional sentence indicated that the patentee intended to redefine that term to mean the area under the spectroscopic graph.

The '018 patent has the same specification as the '339 patent. And the claims of the '018 patent offer no other definition of the term intensity. Therefore, the Court's prior analysis applies with equal force here. Moreover, Defendants' position that the claim term "intensity" should be construed to carry the same meaning in both the '339 patent and the '018 patent finds support in Federal Circuit precedent, which teaches that courts should "presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning." Omega Eng'g, Inc, v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003) (finding that disavowal of claim scope made in parent application carried over to a first continuation-in-part application that used the same disputed term for which the disavowal applied); see also NTP, Inc. v. Research In Motion, Ltd., 418 F.3d 1282, 1293 (Fed. Cir. 2005) ("[b]ecause NTP's patents all derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents"); Jonsson v. Stanley Works, 903 F.2d 812, 818 (Fed. Cir. 1990) ("the construction of the term 'diffuse light' contained in [the parent patent], is relevant to an understanding of 'diffuse light' as that term is used in [the continuation-in-part patent]"); but see IP Innovation L.L.C. v. Sony Electronics, Inc., 2005 WL 2035578, at *7 (N.D. III. Aug. 18, 2005) (noting that the presumption that a claim term in related patents carries the same meaning may be overcome by evidence that the patentee clearly assigned different meanings to a term that appears in two related patents).

Plaintiff objects to Defendants' proposed construction, noting that it is identical to the parties' agreed upon construction of the claim limitation "area under a graph," as it is used in claim 27. According to Plaintiff, the doctrine of claim differentiation precludes the Court from construing the two claims to cover identical subject matter. The Court disagrees; as explained below, under the present circumstances, the doctrine of claim differentiation is not sufficient to overcome the presumption that the claim term "intensity" should be given the same construed meaning in the two related patents.

Claim differentiation is a claim construction tool that "takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous." *Curtiss-Wright*, 438 F.3d at 1381. Here, Plaintiff correctly notes that Defendants' proposed construction of claim 11 would render claim 27 superfluous. But the Federal Circuit "has acknowledged that two claims with different terminology can define the exact same subject matter." *Id.* at 1380. In view of that possibility, the court "has cautioned that '[c]laim differentiation is a guide, not a rigid rule." *Id.* at 1381. See also *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991) ("If a claim will bear only one interpretation, similarity will have to be tolerated.") (quoting *Autogiro Co. of America v. United States*, 384 F.2d 391, 404 (Ct. Cl. 1967)). Moreover, claim differentiation "can not broaden claims beyond their correct scope." *Fantasy Sports Props. v. Sportsline.com*, 287 F.3d 1108, 1115-16 (Fed. Cir. 2002) (quoting *Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362 (Fed. Cir. 2000)).

Here, the specification – combined with the presumption in favor of giving claim terms the same meaning in related patents – persuades the Court to construe the term "intensity" to mean "the area under the spectroscopic graph of reflectance (percent) versus wavelength

occupied by the specified color." The Court finds no support for Plaintiff's proposed construction of "intensity" – namely, "the amplitude or height of reflected light for a given wavelength on a spectral curve" – in the specification. Because the specification supports only one interpretation, the similarity between claims 11 and 27 must be tolerated. *Laitram Corp.*, 939 F.2d at 1538.⁷

E. "Peak Reflectance Percentage" as Used in Claims 7 and 9

Plaintiff contends that the Court should construe the term "peak reflectance percentage" as "the highest reflectance of light within the wavelength range occupied by a given color measured as a percentage on a spectral curve." Defendants offer a similar construction – "the highest value for the spectroscopic reflectance percentage of the specified color." The real dispute here concerns whether "peak reflectance percentage" constitutes improper new matter, thereby rendering claims 7 and 9 invalid.

"When [a patent] applicant adds a claim or otherwise amends his specification after the original filing date * * * the new claims or other added material must find support in the original specification" in order to "satisfy the written description requirement of section 112, paragraph 1." *TurboCare Div. of Demag Delaval Turbomachinery Corp. v. General Elec. Co.*, 264 F.3d 1111, 1118 (Fed. Cir. 2001). To the extent that any new claims do not find support in the original specification, they constitute new matter in violation of 35 U.S.C. § 132. "The [§ 112] written description requirement and its corollary, the new matter prohibition of 35 U.S.C. § 132, both serve to ensure that the patent applicant was in full possession of the claimed subject matter

⁷ As Defendants note, Plaintiff's claim differentiation argument is somewhat undermined by its own proposed constructions, which construe certain independent claims to have identical – or nearly identical – meanings. In particular, according to Plaintiff, both "dominant intensity" (claim 19) and "area under a graph of reflectance (percent) versus wavelength" (claim 27) are measured by calculating the area under the spectroscopic curve. See Pl. SOF at ¶ 14. Plaintiff also proposes construing "intensity" (claim 11), "peak reflectance percentage" (claim 7), and "peak intensity" (claim 15) to mean essentially the same thing – the height of the spectroscopic curve.

on the application filing date." Id. In determining whether new claims constitute prohibited new matter, "[t]he fundamental inquiry is whether the material added by amendment was inherently contained in the original application." Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1352 (Fed. Cir. 2000). Defendants note that the term "peak reflectance percentage" does not appear in the specification. But that "is not important." In re Wright, 866 F.2d 422, 425 (Fed. Cir. 1989) ("the claimed subject matter need not be described in haec verba in the specification in order for that specification to satisfy the description requirement") (citation omitted). Rather, the proper "test * * * is whether a person of ordinary skill in the art would recognize that the applicant possessed what is claimed in the later filed application as of the filing date of the earlier filed application." Noelle v. Lederman, 355 F.3d 1343, 1348 (Fed. Cir. 2004); see also Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563 (Fed. Cir. 1991) ("test for sufficiency of support * * * is whether the disclosure of the application relied upon 'reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter") (quoting Ralston Purina Co. v. Far-Mar-Co, Inc., 772 F.2d 1570, 1575 (Fed. Cir. 1985)).

Whether an amendment violates the written description requirement of § 112 and the new matter prohibition of § 132 are questions of fact. *Vas-Cath Inc.*, 935 F.2d at 1563; *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1574-75 (Fed. Cir. 1992). However, the inquiry is "amenable to summary judgment in cases where no reasonable

⁸ Plaintiff contends that § 112, not § 132, applies here. In fact, the two sections are closely related, and consequently both are applicable. See *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1319 (Fed. Cir. 2003) (explaining that "a rejection of an amended claim under § 132 is equivalent to a rejection under § 112, first paragraph"); *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247, 1255 (Fed. Cir. 2004) (noting that the § 112 written description requirement prevents applicants adding new matter to their disclosures (either by amending the specification or adding new claims) in violation of § 132); *In re Lew*, 257 Fed.Appx. 281, 284 (Fed. Cir. 2007) (unpublished) (noting that while the requirement that "new claims or other added material must find support in the original specification * * * most directly stems from the prohibition in 35 U.S.C. § 132 against introducing new matter into the disclosure, we have also policed this requirement under the written description requirement of 35 U.S.C. § 112, first paragraph").

fact finder could return a verdict for the non-moving party." *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1307 (Fed. Cir. 2008). Defendants must overcome the presumption that the '018 patent is valid. See 35 U.S.C. § 282; *Brooktree*, 977 F.2d at 1574. That presumption of validity "is based in part on the expertise of patent examiners presumed to have done their job." *Brooktree*, 977 F.2d at 1574. Thus, where "the Patent Office allows * * * an amendment without objection thereto as new matter (within the meaning of Title 35 U.S.C. § 132) [that finding] is entitled to an especially weighty presumption of correctness." *Id.* at 1574-75 (citation omitted).

Here, no reasonable juror could find that the original disclosure – the shared specification - reasonably conveyed to a person of ordinary skill in the art that the patentee understood his invention to include defining the claimed colors using the "peak reflectance percentage" method claimed in claims 7 and 9. The only method for ordering colors described in the specification is by their "relative quantities or intensities," which the specification states "can be determined by comparing the areas under the spectroscopic graph of reflectance (percent) versus wavelength occupied by the specified colour." '018 patent, col. 3, ll. 8-11. Nothing in the specification discloses the ordering of colors by "peak reflectance percentage" - meaning, the highest point on the curve for each color. While Figure 1 depicts graphs of reflectance (measured as a percentage) vs. wavelengths, the drawings do not support the use of the "peak reflectance percentage" method. When the "peak reflectance percentage" method is used to analyze the graphs in Figure 1, at least three of the graphs identify a different color than they are supposed to, according to the specification. In particular, the patent specification identifies Figure 1B as representing a "violet-red." '018 patent, col. 3, l. 16. However, according to the "peak reflectance percentage" method, Figure 1B is an "orange-red" because red has the highest peak reflectance percentage and orange (not violet) is the second highest. Hunt Decl. ¶¶ 53-54.

Similarly, the patent identifies Figure 1F as a "green-yellow." '018 patent, col. 3, ll. 18-19. But using the "peak reflectance percentage" method, Figure 1F cannot be a "green-yellow" because orange has a higher peak reflectance than does green. Likewise, Figure 1E is an "orange-yellow" according to the specification. *Id.*, col. 3, l. 18. But Figure 1E shows that orange has a higher "peak reflectance percentage" than does yellow. ⁹

There is simply no disclosure in the specification of the "peak reflectance percentage" method. Contrary to Plaintiff's claim, the fact that the specification includes graphs that display reflectance (measured as a percentage) on the y-axis is not sufficient to raise a genuine issue of material fact regarding whether the specification discloses classifying the claimed colors according to the "peak reflectance percentage" of their component colors to one skilled in the art. Consequently, the "peak reflectance percentage" method constitutes new matter, and claims 7 and 9 are invalid for an inadequate written description.

F. "Peak Intensity" as Used in Claim 15 and "Dominant Intensity" as Used in Claim 19

Defendants contend that if the Court construes the claim term "intensity" to mean "spectroscopic graph of reflectance (percent) versus wavelength occupied by the specified color" – as it has – then the terms "peak intensity" (claim 15) and "dominant intensity" (claim 19) are indefinite. The Court agrees.

It is well established that, in general, claim terms should be interpreted "consistently throughout various claims of the same patent." *Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d

"green-blue." '018 patent, col. 3, ll. 16-17. But red, not green, has the highest "peak reflectance percentage" in Figure 1C.

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⁹ Thus, under Plaintiff's own construction – where the component colors only need to appear in the proper order – the peak reflectance percentage method does not result in the color identified in the patent for Figures 1B, 1F and 1E. Moreover, under the Court's construction, where the first two component colors must be highest, Figure 1C also defines a different color using the "peak reflectance percentage" than it are supposed to identify according to the specification. According to the specification, Figure 1C as a

1361, 1371 (Fed. Cir. 2005); see also *Phonometrics, Inc. v. Northern Telecom Inc.*, 133 F.3d 1459, 1465 (Fed. Cir. 1998) ("A word or phrase used consistently throughout a claim should be interpreted consistently."); *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1159 (Fed. Cir. 1997) ("[W]e are obliged to construe the term 'elasticity' consistently throughout the claims."); *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1579 (Fed. Cir. 1995) (holding that claim terms found in different claims should be interpreted consistently). Here, the Court has concluded that the patentee, acting as his own lexicographer, defined the term "intensity" to mean "the area under the spectroscopic graph of reflectance (percent) versus wavelength occupied by the specified color." The specification supports no other interpretation of that term, and therefore the Court sees no reason to depart from the general rule stated above. Consequently, the term "intensity" as it is used in claims 15 and 19 is construed to mean "the area under the spectroscopic graph of reflectance (percent) versus wavelength occupied by the specified color."

For any particular spectroscopic curve, there can be only one area under the curve for each component color (*i.e.*, red, orange, yellow, green, blue and violet). In other words, each color will have only a single intensity with a single value. Consequently, modifying the claim term "intensity" with the word "peak" or "dominant" makes no sense. Because the terms "peak intensity" and "dominant intensity" cannot be "given any reasonable meaning," claims 15 and 19 (and claims 17 and 21, which are dependent on claims 15 and 19) are invalid for indefiniteness. *Young v. Lumenis, Inc.*, 492 F.3d 1336, 1346 (Fed. Cir. 2007).

Moreover, even if the Court were to adopt Plaintiff's construction of the term "peak intensity," claim 15 nevertheless would invalid because the claimed "peak intensity" method constitutes new matter. According to Plaintiff, "peak intensity" and "peak reflectance

percentage" carry substantially the same meaning. 10 As described above, no reasonable juror could find that the specification disclosed defining the claimed colors by measuring the highest point on the spectral curve for each component color. Thus, like claims 7 and 9, claims 15 and 17 are invalid as not supported by the original specification.

G. "Cyan, Magenta, Yellow and Black" as Used in the Asserted Claims

Defendants contend that the claim terms "cyan," "magenta," and "yellow" are indefinite, and thereby render each of the asserted claims invalid for indefiniteness. To the extent that the terms "cyan," "magenta," and "yellow" are not indefinite, Defendants argue that all of the asserted claims should be construed to exclude any printing system that uses cyan, magenta, yellow, and black colored materials. The Court begins by addressing Defendants' indefiniteness argument.

In response to that argument, Plaintiff contends that the terms "cyan," "magenta," and "yellow" are amenable to construction. According to Plaintiff, "cyan" should be construed as "a green-blue," "magenta" should be construed as "a violet-red," and "yellow" should be construed as "either a green-yellow, or an orange-yellow." In support of its position, Plaintiff points to numerous statements in the '018 patent specification referring to cyan as a green-blue, magenta as a violet-red, and yellow as either a green-yellow or an orange yellow. See '018 patent, col. 7, ll. 65-67 ("Magenta, a violet-red, is a good contributor of violet but the Cyan, a green-blue is not, being a poor carrier of violet"); id., col. 4, ll. 51-53 ("For some jobs the present arrangement using Cyan (a green-blue), magenta (a violet-red), a yellow and black might be the most appropriate"); id., col. 7, ll. 28-30 ("Magenta 'leans' or is 'biased' towards violet (a violet-red)");

highest reflectance of light within the wavelength range occupied by a given color measured as a percentage on a spectral curve."

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¹⁰ According to Plaintiff, "peak intensity" means "the highest amplitude of light reflected within the wavelength range for a given color on a spectral curve," and "peak reflectance percentage" means "the

id., col. 7, l. 45 ("the violet-red magenta"); id., col. 4, ll. 60-64 ("where bright oranges are required the orange-red would be used in place of the magenta (violet-red) and the yellow used would be the orange-yellow"); id., col. 7, ll. 32-35 ("The yellow employed varies between a yellow which is slightly 'biased' towards orange (an orange-yellow) and a yellow which is slightly 'biased' towards green, a (green-yellow)."). These statements indicate that the patentee intended to define the claim term "cyan" as "a green-blue," to define "magenta" as "a violet-red," and to define "yellow" as an "orange-yellow" or a "green-yellow." Indeed, Defendants acknowledge that the specification teaches that "cyan" falls within the broader category of a "green-blue," that "magenta" falls within the broader category of a "violet-red," and that "yellow" can be an "orange-yellow" or a "green-yellow." Defs. Br. at p. 21. But, Defendants contend, those definitions are not sufficiently specific because it is impossible to know whether a particular green-blue is cyan, and so forth.

As noted above, a claim is considered to be indefinite only when it is "not amenable to construction or [is] insolubly ambiguous," such that it cannot be "given any reasonable meaning." *Young*, 492 F.3d at 1346. "By finding claims indefinite only if reasonable efforts at claim construction prove futile, [courts] accord respect to the statutory presumption of patent validity." *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

Here, there is no question that the definition of the disputed claim terms – cyan, magenta, and yellow – can be reduced to words (namely, "a green-blue," "a violet-red," and "an orange-yellow or a green-yellow"). But the mere fact that the meaning of a claim term can be reduced into words does not establish that the term is definite. *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1371 (Fed Cir. 2008). The resultant construction must "provide sufficient particularity and clarity to inform skilled artisans of the bounds of the claim." *Id.* See

also *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1340-41 (Fed. Cir. 2005) ("test for indefiniteness does not depend on a potential infringer's ability to ascertain the nature of its own accused product to determine infringement, but instead on whether the claim delineates to a skilled artisan the bounds of the invention"). The question here is whether the definitions – which define the terms as some subset of a range of colors but do not specify the exact bounds of that range – are sufficiently specific. The Federal Circuit has said that a "patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement." *Invitrogen Corp. v. Biocrest Mfg., L.P.,* 424 F.3d 1374, 1384 (Fed. Cir. 2005) (quotation marks omitted). The question is "whether the patent's specification supplies some standard for measuring the scope of the phrase." *Datamize*, 417 F.3d at 1351.

To the extent that cyan is defined to mean some undefined subset of all green-blues, the Court agrees with Defendant that the term is not sufficiently precise to apprise a POSA of the scope of the claims. However, the claims also are amenable to another construction. In particular, "cyan" can be construed as "green-blue," "magenta" as "violet-red," and "yellow" as "green-yellow or orange-yellow." Under that construction, the full claim limitation at issue is interpreted as: "provided the combination is other than green-blue, violet-red, black and green-yellow or orange-yellow." The Federal Circuit has expressed a preference for adopting the narrower of two equally plausible claim constructions in order to avoid invalidating a claim. See *Exxon*, 265 F.3d at 1375 (claim is indefinite only if "no narrowing construction can properly be adopted"); *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996) (Where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning, we consider the notice function of the claim to be best served by adopting the

narrower meaning.). Construing "cyan" as "green-blue," as opposed to "a green blue," narrows the scope of the claims by expanding the limitation. Therefore, the Court construes the limitation as follows: "provided the combination is other than green-blue, violet-red, black and green-yellow or orange-yellow."

The parties also debate the meaning of that limitation as a whole. To reiterate, the pertinent claim language is as follows:

"A colour printing system comprising a combination of at least four coloured materials, each of a different colour, wherein at least three of the four colours are selected from:

- (1) a violet-red * * *
- (2) an orange-red * * *
- (3) a violet-blue * * *
- (4) a green-blue * * *
- (5) a green-yellow * * * and
- (6) an orange-yellow * * *

provided the combination is other than cyan, magenta, a yellow and black." (emphasis added).

Defendants propose construing the asserted claims as excluding *all* printing systems that include cyan, magenta, yellow, and black colored materials. Plaintiff responds that the asserted claims should be construed as excluding only printing systems that use only cyan, magenta, yellow, and black colored materials.

The following example illustrates the parties' disagreement. Consider a printing system with five colored materials: green-blue, violet-red, orange-yellow, violet-blue, and black. According to Defendants, that system falls outside the scope of the asserted claims because it

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¹¹ Defendants also note that, in the course of this litigation, Plaintiff previously has denied that each cyan referenced in the prior art was a "green-blue," that each magenta was a "violet-red," and that each "yellow" was a "green-yellow" or an "orange-yellow." However, Plaintiff's Response to Defendants' Initial Invalidity Contentions Pursuant to Local Rule 2.5 is not evidence that the Court can consider in construing the claims. Therefore, the Court cannot consider Plaintiff's alleged gamesmanship in construing the claims.

includes the cyan/green-blue, magenta/violet-red, yellow, and black combination. By contrast, Plaintiff contends that such a five color printing system is within the scope of the asserted claims because it includes numerous combinations of four different colored materials that are not cyan/green-blue, magenta/violet-red, yellow, and black, three of which are selected from the six claimed colors (for example, green-blue, orange-yellow, violet-blue, and black, or green-blue, violet-red, orange-yellow, and violet-blue).

The Court finds Plaintiff's proposed construction to be consistent with the most natural and ordinary reading of the claim language. The claims require (1) a combination of at least four colored materials; (2) that at least three of the colored materials be selected from the six claimed colors; and (3) that the combination not be cyan, magenta, a yellow and black. It is clear from the claim language and the specification that the patentee merely sought to exclude printing systems using *only* the traditional "Four Colour Process" – *i.e.*, cyan, magenta, yellow, and black. Systems that also include another of the claimed colors are within the scope of the claims. In other words, so long as a printing system contains a combination of four colored materials other than cyan, magenta, yellow, and black (where three are chosen from the six claimed colors), it falls within the scope of the asserted claims, even if the system also contains the combination of cyan, magenta, yellow, and black.

That proposed construction finds additional support in the use of the word "comprising" in the asserted claims. The word "comprising" is a term of art in patent law, meaning that "the named elements are essential, but other elements may be added and still form a construct within the scope of the claim." *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501 (Fed. Cir. 1997). Thus, the term "comprising" indicates "an open-ended construction," and is used to mean "I

claim at least what follows and potentially more." *Vehicular Technologies Corp. v. Titan Wheel Intern.*, *Inc.*, 212 F.3d 1377, 1383 (Fed. Cir. 2000).

Defendants also contend that the prior art disclosed printing systems that included the combination of cyan, magenta, yellow, and black plus two or three additional colors. Consequently, Defendants argue, Plaintiff's proposed construction allows the scope of the claims to encompass those prior art printing systems, thereby rendering the asserted claims invalid over the prior art. According to Defendants, the Court should adopt their proposed construction in order to avoid ensnaring the prior art and to sustain the validity of the claims. See *Apple Computer, Inc. v. Articulate Sys., Inc.*, 234 F.3d 14, 24 (Fed. Cir. 2000) ("claims should be read in a way that avoids ensnaring prior art if it is possible to do so"). Plaintiff responds that it is the claim language concerning the order of the component colors that distinguishes the prior art, not the limitation regarding the cyan, magenta, yellow, and black combination.

Both the scope and content of the prior art and the differences between the prior art and the claims at issue are questions of fact. See *Source Search Technologies, LLC v. LendingTree, LLC*, 588 F.3d 1063, 1069 (Fed. Cir. 2009); *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). Here, on the current state of the record, it is unclear whether Plaintiff's proposed construction – which the Court is inclined to adopt – would render the asserted claims invalid over the prior art. Because the parties – perhaps feeling constrained by space – only devoted a few pages of the briefing to this issue, the Court concludes that supplemental claim construction briefing may be warranted. See *Jack Guttman, Inc. v. Kopykake Enterprises, Inc.*, 302 F.3d 1352, 1361 ("[d]istrict courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology

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¹² The Court will set a status date by separate minute order, at which time it will take up the issue with the parties.

evolves"). To the extent that further development of the issue by the parties reveals that construing the claims in a certain fashion would in fact render the claims invalid, the Court would need to take that into account in its construction of the cyan, magenta, yellow, and black claim limitations. See *Whittaker Corp. v. UNR Indus.*, *Inc.*, 911 F.2d 709, 712 (Fed. Cir. 1990) ("claims are generally construed so as to sustain their validity, if possible").

.H. "Each of a Different Color"

Finally, Defendants contend that the claim term "each of a different color" – which appears in each of the independent asserted claims – is indefinite because it is not clear what constitutes a "different color" for purposes of that limitation. For example, according to Defendants, it is not clear whether different shades of a particular color (*e.g.*, magenta and light magenta) would be considered sufficiently different. Plaintiff responds that the different colors are the six claimed colors. According to Plaintiff, "each of a different color" should be construed as requiring at least four colors to be different.

The Court concludes that the phrase "each of a different color" is not indefinite. Rather, it means that each colored material in a particular color printing system must be of a different color. The claim term "color" in that phrase refers to the six claimed colors plus black and white. See '018 patent, abstract (describing the claim invention as "[a] color printing system *** wherein these colors are selected from (1) an orange-red; (2) a violet-red; (3) a violet-blue; (4) a green-blue; (5) a green-yellow; and (6) an orange-yellow; as well as white and black"). Both magenta and light magenta are violet-reds, and therefore are not "different colors" for purposes of the asserted claims.

IV. Conclusion

The Court construes the disputed patent claims as set forth above. For the foregoing reasons, Defendants' motion for summary judgment of the '018 patent [132] is granted in part and denied in part. Specifically, the Court grants Defendants' motion for summary judgment of invalidity as to claims 7, 9, 15, 17, 19, and 21, and denies it as to claims 11, 13, 27, and 29.

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Dated: September 29, 2010

Robert M. Dow, Jr.

United States District Judge