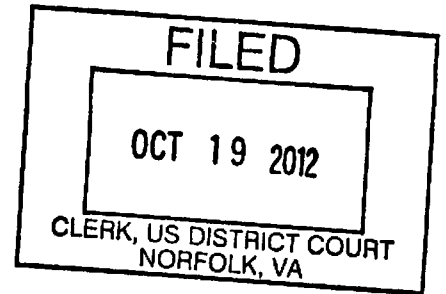


UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF VIRGINIA  
Norfolk Division



MORPHO DETECTION, INC.,

Plaintiff,

v.

Civil Action No. 2:11cv498

SMITHS DETECTION INC.,

Defendant.

OPINION AND ORDER

This matter is before the Court following a Markman hearing, conducted for the purpose of construing nine disputed claims in the patent at issue in this case. After careful consideration of the briefs submitted by the parties and the arguments advanced at the Markman hearing, the Court issues this Opinion and Order detailing the claim constructions in this case.

**I. FACTUAL AND PROCEDURAL BACKGROUND**

At issue in this case is a single patent titled "Materials and Apparatus for the Detection of Contraband," patent number 6,815,670 ("'670"). The claims of '670 patent are directed toward a detector apparatus, and method, that can be utilized to identify trace amounts of contraband. The patent, by its express terms, covers detector devices such as Ion Mobility Spectrometers ("IMS") and Ion Trap Mobility Spectrometers

("ITMS"),<sup>2</sup> which are found in the prior art. Such prior art detectors are used at airports and other security screening areas to detect trace amounts of contraband, such as explosives or narcotics residue. The purportedly unique advancement that appears in the claims of the '670 patent is the alternating use of (at least) two dryers to provide a flow of clean dry air to the detector to enable detection of the suspect materials. However, only a relatively small portion of the specification focuses on such dual/multiple dryer systems. The remainder of the specification focuses on "an improved sampling medium" for detectors that is able to more effectively trap trace amounts of contraband prior to being tested by a detector. '670 2:36-37. Such allegedly "improved sampling medium" is not covered by any of the '670 patent claims.<sup>3</sup>

In the instant patent infringement action, plaintiff Morpho Detection, Inc. ("Morpho") alleges that defendant Smiths Detection, Inc. ("Smiths") is currently selling detector devices that infringe on the '670 patent. Smiths asserts that the '670 patent is invalid because, among other things, the '670 patent

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<sup>2</sup> It is undisputed that ITMS detectors are a subset of IMS detectors.

<sup>3</sup> The sampling medium discussed in the specification typically takes the form of a "trap" or "wipe" that can be swiped across a suspect's clothing or bags before being fed into a detector apparatus. Although the specification plainly reveals that the original intent of the patentee was to patent multiple improvements over the prior art (new traps and a new multiple dryer system), the only claims that ultimately issued were the claims involving the multiple dryer system.

is obvious based on the existence of dual dryer systems in the prior art.

## II. CLAIM CONSTRUCTION PROCEDURE

In Markman v. Westview Instruments, the United States Supreme Court succinctly explained the basis for, and importance of, claim construction:

The Constitution empowers Congress "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." Art. I, § 8, cl. 8. Congress first exercised this authority in 1790, when it provided for the issuance of "letters patent," Act of Apr. 10, 1790, ch. 7, § 1, 1 Stat. 109, which, like their modern counterparts, granted inventors "the right to exclude others from making, using, offering for sale, selling, or importing the patented invention," in exchange for full disclosure of an invention, H. Schwartz, *Patent Law and Practice* 1, 33 (2d ed. 1995). It has long been understood that a patent must describe the exact scope of an invention and its manufacture to "secure to [the patentee] all to which he is entitled, [and] to apprise the public of what is still open to them." McClain v. Ortmyer, 141 U.S. 419, 424 (1891). Under the modern American system, these objectives are served by two distinct elements of a patent document. First, it contains a specification describing the invention "in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same." 35 U.S.C. § 112; see also 3 E. Lipscomb, *Walker on Patents* §10:1, pp. 183-184 (3d ed. 1985) (Lipscomb) (listing the requirements for a specification). Second, a patent includes one or more "claims," which "particularly poin[t] out and distinctly clai[m] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112. "A claim covers and secures a process, a machine, a manufacture, a composition of matter, or a design, but never the function or result of either, nor the scientific explanation of their operation." 6 Lipscomb § 21.17, at 315-316. The claim "define[s]

the scope of a patent grant," 3 id. § 11:1, at 280, and functions to forbid not only exact copies of an invention, but products that go to "the heart of an invention but avoids the literal language of the claim by making a noncritical change," Schwartz, supra, at 82. . . .

Characteristically, patent lawsuits charge what is known as infringement, Schwartz, supra, at 75, and rest on allegations that the defendant "without authority ma[de], use[d] or [sold the] patented invention, within the United States during the term of the patent therefor . . . ." 35 U.S.C. § 271(a). Victory in an infringement suit requires a finding that the patent claim "covers the alleged infringer's product or process," which in turn necessitates a determination of "what the words in the claim mean." Schwartz, supra, at 80; see also 3 Lipscomb § 11:2, at 288-290.

Markman v. Westview Instruments, 517 U.S. 370, 373-74 (1996).

It is well-settled that a determination of infringement requires a two-step analysis: "First, the court determines the scope and meaning of the patent claims asserted" and second, "the properly construed claims are compared to the allegedly infringing device." Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454 (Fed. Cir. 1998) (en banc) (citing Markman, 517 U.S. at 371-73). In conducting this analysis, it must be remembered that "[i]t 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.'" Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004)); see Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) ("First,

we look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention.”).

### A. Claim Construction Principles

The Federal Circuit has repeatedly stated that “the words of a claim ‘are generally given their ordinary and customary meaning,’” and that “the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” Phillips, 415 F.3d at 1312-13 (quoting Vitronics, 90 F.3d at 1582). This provides “an objective baseline from which to begin claim interpretation” and is based upon “the well-settled understanding that inventors are typically persons skilled in the field of the invention and that patents are addressed to and intended to be read by others of skill in the pertinent art.” Id. at 1313.<sup>4</sup> As noted by the Federal Circuit:

It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field. The inventor’s words that are used to describe the invention—the inventor’s lexicography—must be

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<sup>4</sup> Here, the parties agree that a person of “ordinary skill in the art” would have “at least a B.S. in mechanical engineering, chemical engineering, physics, or chemistry (or equivalent experience), and at least three years of work experience in designing pneumatics and gas purification systems for analytical [instruments].” Morpho Markman Reply Brief 2 n.1, ECF No. 48. The parties’ respective summary judgment briefs suggest that Morpho’s responsive Markman brief erroneously concluded the above statement with the word “information” as opposed to “instruments.” Smiths S.J. Brief at 6, ECF No. 59; Morpho Brief in Opp. to S.J. at 20, ECF No. 68.

understood and interpreted by the court as they would be understood and interpreted by a person in that field of technology. Thus the court starts the decisionmaking process by reviewing the same resources as would that person, viz., the patent specification and the prosecution history.

Id. (quoting Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998)). However, “[i]n 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.” Acumed LLC v. Stryker Corp., 483 F.3d 800, 805 (Fed. Cir. 2007) (quoting Phillips, 415 F.3d at 1314). Finally, when construing claim terms and phrases, the Court cannot add or subtract words from the claims or appeal to “abstract policy considerations” to broaden or narrow their scope. SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1339-40 (Fed. Cir. 2005); see Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1584 (Fed. Cir. 1995) (“[I]t is well settled that no matter how great the temptations of fairness or policy making, courts do not redraft claims.”).

#### **B. Types of Evidence to Be Considered**

In determining the meaning of disputed terms or phrases, the Court should first examine the claim and the specification. The Federal Circuit has stated that “the claims themselves provide substantial guidance as to the meaning of particular

claim terms," and "[b]ecause claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Phillips, 415 F.3d at 1314.

The claims, however, "do not stand alone" and "'must be read in view of the specification, of which they are a part.'" Id. at 1315 (quoting Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)); see also Vitronics, 90 F.3d at 1582 ("[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term."); Multiform Dessicants, 133 F.3d at 1478 ("The best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history."). The specification, as required by statute, describes the manner and process of making and using the patented invention, and "[t]hus claims must be construed so as to be consistent with the specification . . . ." Merck & Co. v. Teva Pharms. USA, Inc., 347 F.3d 1367, 1371 (Fed. Cir. 2003); see Markman, 517 U.S. at 389 (referencing the "standard construction rule that a term can be defined only in a way that comports with the instrument as a whole"); Phillips, 415 F.3d at 1316 ("[O]ur cases recognize that the specification may reveal a special definition given to a claim term by the patentee that

differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs.").

In addition to the claims and specification, the Court should consider the prosecution history, which consists of the complete record of the proceedings before the Patent and Trademark Office ("PTO"), including the prior art cited during the examination of the patent and any subsequent reexaminations. Phillips, 415 F.3d at 1317. The prosecution history "provides evidence of how the PTO and the inventor understood the patent" and "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 1317 (citing Vitronics, 90 F.3d at 1582-83); see Chimie v. PPG Indus., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005) (indicating that the purpose of consulting the prosecution history as part of claim construction is to exclude any disclaimed interpretation). "At the same time, because prosecution history represents an ongoing negotiation between the PTO and the inventor, 'it often lacks the clarity of the specification and thus is less useful for claim construction purposes.'" Trading Technologies Int'l, Inc. v. eSpeed, Inc., 595 F.3d 1340, 1352 (Fed. Cir. 2010) (quoting Netcraft Corp. v. eBay, Inc., 549 F.3d 1394, 1401 (Fed. Cir. 2008)).



The Court may also examine extrinsic evidence, which includes "all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Markman, 52 F.3d at 980. For example, technical dictionaries may provide the Court with a better understanding of the underlying technology and the way in which one of skill in the art might use the claim terms. Phillips, 415 F.3d at 1318; see also Vitronics, 90 F.3d at 1584 n.6. Expert testimony also can be useful:

to provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.

Phillips, 415 F.3d at 1318; see also Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1308-09 (Fed. Cir. 1999). "However, while extrinsic evidence 'can shed useful light on the relevant art,' [the Federal Circuit has] explained that it is 'less significant than the intrinsic record in determining "the legally operative meaning of claim language."' " Phillips, 415 F.3d at 1317 (citing C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 862 (Fed. Cir. 2004) (quoting Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n, 366 F.3d 1311, 1318 (Fed. Cir. 2004))).

Finally, with respect to general usage dictionaries, the Federal Circuit has noted that “[d]ictionaries or comparable sources are often useful to assist in understanding the commonly understood meaning of words and have been used . . . in claim interpretation,” and that “[a] dictionary definition has the value of being an unbiased source ‘accessible to the public in advance of litigation.’” Phillips, 415 F.3d at 1322 (quoting Vitronics, 90 F.3d at 1585).<sup>5</sup> However, the Federal Circuit cautions that “‘a general-usage dictionary cannot overcome art-specific evidence of the meaning’ of a claim term,” that “the use of the dictionary may extend patent protection beyond what should properly be afforded by the inventor’s patent,” and that “[t]here is no guarantee that a term is used in the same way in a treatise as it would be by the patentee.” Phillips, 415 F.3d at 1322 (quoting Vanderlande, 366 F.3d at 1321). Additionally, “different dictionaries may contain somewhat different sets of definitions for the same words. A claim should not rise or fall

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<sup>5</sup> In Phillips, the Federal Circuit expressly discounted the approach taken in Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193 (Fed. Cir. 2002), in which the court placed greater emphasis on dictionary definitions of claim terms. Phillips, 415 F.3d at 1319-24 (“Although the concern expressed by the court in Texas Digital was valid, the methodology it adopted placed too much reliance on extrinsic sources such as dictionaries, treatises, and encyclopedias and too little on intrinsic sources, in particular the specification and prosecution history.”). The Phillips opinion reaffirmed the approach used in Vitronics, Markman, and Innova as the proper approach for claim construction, but acknowledged that there was “no magic formula,” and that a district court is not “barred from considering any particular sources . . . as long as those sources are not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence.” Id. at 1324.

based upon the preferences of a particular dictionary editor, or the court's independent decision, uninformed by the specification, to rely on one dictionary rather than another." Id.

With the foregoing principles in mind, the Court will now examine the patents and the disputed claim terms.

### III. ANALYSIS OF THE DISPUTED CLAIM TERMS

In advance of the Markman hearing conducted by this Court, the parties submitted a joint claim construction chart that includes five agreed upon claim terms and nine disputed claim terms.<sup>6</sup> The Court adopts the parties' stipulated constructions of the agreed upon terms, and addresses each of the disputed claim terms herein.

#### 1. "detector"

##### a. Proposed Constructions

**Morpho:** An IMS or ITMS designed to detect vaporized trace amounts of organic compounds such as narcotics or explosives.

**Smiths:** a device that determines whether something is present

##### b. Discussion

Morpho's construction of this disputed term is dependent upon the premise that the '670 patent is narrowly restricted to

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<sup>6</sup> Consistent with the format of the parties' joint chart, the Court grouped together two sets of terms that were numbered differently in some of the briefs before the Court (2a & 2b; 4a & 4b).

only IMS and ITMS devices, the latter of which is a subset of the former. See Morpho Markman Brief, ECF No. 45 at 8. In contrast, Smiths' construction of the disputed term "detector" is substantially broader and is not limited to a specific type of detection device. As discussed below, neither the intrinsic nor extrinsic record supports the restrictive construction advanced by Morpho, and the Court therefore adopts Smiths' construction of the instant term.

Beginning with the claim language, the language of the claims argues against Morpho's narrow construction of "detector" and lends support for Smiths' broader construction. For example, Claim 1, which appears to be the broadest apparatus claim in the '670 patent, covers a "detector apparatus comprising: a detector for detecting trace amount of particles of interest carried on a stream of air . . . ." '670 Claim 1. Such unrestricted language suggests that the term "detector" has a broad meaning, and the remainder of the text of Claim 1 does not in any way limit the claimed "detector" to an IMS or ITMS device. See Phillips, 415 F.3d at 1314 (noting that "claim terms are normally used consistently throughout the patent").

In addition to the fact that Claim 1 does not even mention IMS or ITMS, the lack of descriptive language in Claim 1 as to how the claimed detector operates undercuts Morpho's assertion that Claim 1 should be read narrowly. Notably, it is undisputed

that both IMS and ITMS detectors operate by using a "desorber" to vaporize materials to be tested because the sensor in an IMS/ITMS is only capable of testing for vaporized materials. See Bell Decl. 3, ECF No. 49-1, Bell Depo. at 122-23.<sup>7</sup> However, Claim 1 fails to mention a "desorber" and fails to include any language indicating that the claimed detector only detects vaporized materials. Similarly, independent Claim 9 claims a "detector" but does not mention IMS, ITMS, or a desorber. Accordingly, consideration of the text of Claims 1 and 9, which both use the term "detector" several times, fails to support the restrictive interpretation sought by Morpho. See Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352, 1357 (Fed. Cir. 2004) (indicating that "[a] patentee may claim an invention broadly and expect enforcement of the full scope of that language absent a clear disavowal or contrary definition in the specification"); Merck & Co. v. Teva Pharmaceuticals USA, Inc., 395 F.3d 1364, 1370 (Fed. Cir. 2005) (quoting Elekta Instrument S.A. v. O.U.R. Sci. Int'l, Inc., 214 F.3d 1302, 1307 (Fed. Cir. 2000)) ("Absent an express intent to impart a novel meaning, claim terms take on their ordinary meaning.').

Comparing the interplay between the dependent and independent claims in the '670 patent further supports the

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<sup>7</sup> Dr. Bell is a technical expert retained by Morpho. The transcript of Dr. Bell's June 8, 2012, deposition was presented to the Court at the Markman hearing, and it has been designated as Court Ex. #1.

Court's finding that the restriction sought by Morpho is not appropriate. Notably, collectively considering independent Claim 12 and dependent Claims 14 and 15 suggests that the word "detector" has a broader meaning than that sought by Morpho even when such word is used in conjunction with describing a type of detector that utilizes a "desorber." Claim 12 is the first independent claim to expressly require a "desorber," and dependent Claim 14 adds the limitation that the detection device described in Claim 12 is an IMS, and dependent Claim 15 separately adds the limitation that such device is an ITMS. Adding such limitations in dependent claims, suggests that the detector claimed in Claim 12 is not strictly limited to an IMS or ITMS, particularly because an ITMS is a subset of IMS.<sup>8</sup> Accordingly, the familiar doctrine of claim differentiation supports the presumption that the detector in Claim 12 includes, but is not limited to, IMS and ITMS devices. See Phillips, 415 F.3d at 1315 (noting that "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim"); Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) (noting "[t]he juxtaposition of independent claims lacking any reference to [a proposed

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<sup>8</sup> If, as argued by Morpho, the "detector" in independent Claim 12 was limited to only IMS and ITMS detectors, and ITMS detectors are a type of IMS detector, then dependent Claim 14 would be superfluous because all detectors covered by Claim 12 would already be "IMS detectors."

limitation] with dependent claims that add [such] limitation provides strong support for [the] argument that the independent claims were not intended to require [such limitation]" and that although the resulting presumption can be overcome, "where the limitation that is sought to be 'read into' an independent claim already appears in a dependent claim, the doctrine of claim differentiation is at its strongest").

Notwithstanding the above, Morpho argues that the "detector" discussed in Claim 12 is limited to IMS and ITMS detectors, and that Claims 14 and 15 are merely specifying which of the two permissible types of detector is being claimed. Although such argument is not necessarily foreclosed by the interplay of Claims 12, and 14-15, when the claims of the '670 patent are considered as a whole, such argument has little force. First, if the only permissible type of "detector" is an IMS, of which an ITMS is a subset, Claim 14 appears largely redundant. See In re Tanaka, 640 F.3d 1246, 1250 (Fed. Cir. 2011) (indicating that "each claim of a patent has a purpose that is separate and distinct from the remaining claims"). If, as claimed by Morpho, it is apparent to one skilled in the art that the '670 patent is limited to only IMS devices, to include ITMS devices, there would appear to be little reason to separately include a dependent claim limiting Claim 12 to an IMS device. See Phillips, 415 F.3d at 1325 (quoting TurboCare Div.

of Demag Delaval Turbomachinery Corp. v. Gen. Elec. Co., 264 F.3d 1111, 1123 (Fed. Cir. 2001)) (indicating that "claim terms should not be read to contain a limitation 'where another claim restricts the invention in exactly the [same] manner'" (alteration in original); Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed. Cir. 2006) (indicating that because the controlling statute requires that "a dependent claim must add a limitation to those recited in the independent claim . . . reading an additional limitation from a dependent claim into an independent claim would not only make that additional limitation superfluous, it might render the dependent claim invalid"). To the extent that one may argue that adding both limitations (IMS and ITMS) in separate dependent claims was desirable, even if redundant, for the sake of clarity, it is curious that such "clarity" was not similarly included as to independent Claims 1 and 9. Notably, dependent Claim 3 limits Claim 1 to ITMS devices, but there is not a second dependent claim limiting Claim 1 to IMS devices. Furthermore, Claim 9 has no dependent claims expressly limiting it to either IMS or ITMS devices. Accordingly, it appears that the more natural reading of Claims 12, and 14-15, is that Claim 12 is not necessarily limited to IMS and ITMS devices. See Every Penny Counts, Inc. v. Am. Express Co., 563 F.3d 1378, 1381 (Fed. Cir. 2009) (quoting Phillips, 415 F.3d at 1316) ("The 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.'").

Second, comparing independent Claim 1 with independent Claims 9 and 12 plainly suggests that the '670 patent is not limited to only IMS and ITMS detectors as Claims 1 and 9 use the word "detector" yet use far less specific (i.e., limiting) language than Claim 12. As previously discussed, IMS and ITMS detectors utilize a "desorber" in order to vaporize materials prior to testing the resulting gases. Claims 1 and 9 do not even mention a desorber, and the requirement for a desorber in Claim 12, but not in Claims 1 and 9, offers strong support for the conclusion that each and every time the claims use the word "detector," such word is not necessarily limited to a detector with a desorber, much less an IMS or ITMS.<sup>9</sup> See Phillips, 415 F.3d at 1314 ("[T]he context in which a term is used in the asserted claim can be highly instructive."); Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1369 (Fed. Cir. 2007) (quoting Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d

<sup>9</sup> As is often the case, it appears that some claims in the '670 patent are written broadly, with limited restrictions, in order to ensure that the patent has broad application. In contrast, other claims include far more restrictive language that more clearly define preferred embodiments of the claimed invention. As it is the patentee that chooses such approach, most aptly demonstrated by broadly phrased Claim 1, it is improper to permit the patentee to re-write such claims in a restrictive manner during a Markman proceeding. Regardless of the patentee's subjective intent at the time the claims were written, the text of the claims simply does not support a finding that the '670 patent only reaches IMS and ITMS devices.

968, 971-72 (Fed. Cir. 1999)) (discussing the "doctrine of claim differentiation," which is based on "'the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope'"). Accordingly, the claim language, as chosen by the patentee, fails to suggest that each and every time the word "detector" is used, such word is strictly limited to IMS and ITMS detection devices.

Turning next to the specification, the language therein lends support for the construction suggested by the claim language itself and counsels against importing the limitation proposed by Morpho. In the portion of the specification discussing the "Background of the Invention" the specification indicates that the detector "may be an ion mobility spectrometer or an ion trap mobility spectrometer." '670 2:12-13 (emphasis added). Similarly, in describing the "Summary of the Invention," the specification notes that the "detector" used to detect the materials of interest "preferably is an ion mobility spectrometer or an ion trap mobility spectrometer." '670 3:42-43 (emphasis added). Use of the permissive words "may" and "preferably" clearly suggest that IMS and ITMS are at a minimum illustrative, and at a maximum preferred, but that the patentee did not limit the claimed invention, in all embodiments, to such specific types of "detector." See Cordis Corp. v. Medtronic

AVE, Inc., 339 F.3d 1352, 1357 (Fed. Cir. 2003) (noting that "the use of the term 'preferably' makes clear that the language describes a preferred embodiment, not the invention as a whole"); In re Johnston, 435 F.3d 1381, 1384 (Fed. Cir. 2006) ("As a matter of linguistic precision, optional elements do not narrow the claim because they can always be omitted.").

A review of the remainder of the specification reveals that although IMS and ITMS devices are referenced on multiple occasions, there is not a single provision in the patent supporting the inference that such type of detectors are universally required.<sup>10</sup> See Retractable Techs., Inc. v. Becton, 653 F.3d 1296, 1305 (Fed. Cir. 2011) (indicating that courts should "strive to capture the scope of the actual invention, rather than strictly limit[ing] the scope of the claims to disclosed embodiments"); Generation II Orthotics Inc. v. Medical Technology Inc., 263 F.3d 1356, 1367 (Fed. Cir. 2001) (finding that the district court erred by "importing a characteristic of a disclosed or preferred embodiment" into a claim term). Notably, the subject invention is described broadly as "an apparatus for detecting trace particles and condensed vapors of contraband." '670 1:12-13 (emphasis added). Nowhere is it

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<sup>10</sup> During its Markman presentation, Morpho cited to several provisions in the specification that describe how prior art IMS detectors operate. Reliance on such citations misses the mark as such illustrative provisions describing how certain previously patented detectors operate does not illuminate whether the claimed invention is limited to IMS/ITMS devices.

described as "an IMS or ITMS apparatus" that is utilized to detect trace amounts of contraband. If the patent was intended to apply only to IMS and ITMS devices, clearly stating such restriction would have been exceedingly simple. Nothing, however, in the specification suggests an effort to do so. See Home Diagnostics, Inc., 381 F.3d at 1358 ("Absent a clear disavowal or contrary definition in the specification or the prosecution history, the patentee is entitled to the full scope of its claim language."). Accordingly, controlling case law demonstrates that the specification of the '670 patent weighs heavily against the restrictive definition of "detector" proposed by Morpho.<sup>11</sup> See Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1301 (Fed. Cir. 2003) ("Absent a clear disclaimer of particular subject matter, the fact that the inventor anticipated that the invention may be used in a particular manner does not limit the scope to that narrow context."); Liebel-Flarsheim Co., 358 F.3d at 906 ("Even when

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<sup>11</sup> In its Markman brief, Morpho cites to a predecessor patent that Morpho contends is similarly restricted to only IMS and ITMS detectors. See US Pat. No. 5,491,337. Although this Court offers no opinion as to such predecessor patent, the Court notes that the "Field of the Invention" cited in the '337 predecessor patent is as follows: "The present invention relates generally to ion mobility spectrometers, and more particularly to ion trap mobility spectrometers and their method of operation for the improved detection of alkaloids, such as narcotics." Id. (emphasis added). Even assuming such statement is sufficient to support Morpho's premise regarding the breadth of the '337 patent, the "Field of the Invention" in the '670 patent is not similarly restricted, as it fails to mention either IMS or ITMS, and instead merely references "an apparatus for detecting trace particles and condensed vapors of contraband." '670 1:11-13 (emphasis added).

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 . . . ."); see also Ring Plus, Inc. v. Cingular Wireless Corp., 614 F.3d 1354, 1364-65 (Fed. Cir. 2010) (affirming the district court's broad construction of the claim term "sound presentation" and noting that the plaintiff failed to identify any support in the specification for limiting such "ordinary term with a plain meaning").

In line with both the claim language and the specification, Smiths provides a technical dictionary definition of the word "detector" as further support for Smiths' broader plain language proposal. See ECF No. 44-11 & 44-12 (defining a detector as an "[a]pparatus or system used to detect the presence of an object, radiation, chemical compound, or such"). Although such technical dictionary definition is not controlling, the Court agrees with Smiths that it provides additional support for the broad, but basic, definition of "detector" proposed by Smiths. See Phillips, 415 F.3d at 1322 (quoting Vitronics, 90 F.3d at 1585) (indicating that "[a] dictionary definition has the value of being an unbiased source 'accessible to the public in advance of litigation.'").

Having carefully considered the above, and relying primarily on the intrinsic record, the Court adopts the proposed construction of "detector" advanced by Smiths.

c. Construction

**a device that determines whether something is present**

2a. **"particles of interest"**

2b. **"materials of interest"**

a. Proposed Constructions

**"particles of interest"**

**Morpho:** Vaporized organic compounds such as narcotics or explosives

**Smiths:** solid materials of interest that are not vapors

**"materials of interest"**

**Morpho:** Vaporized organic compounds such as narcotics or explosives

**Smiths:** something of interest, such as particles or vapors

b. Discussion

Similar to the disputed term "detector," Morpho's proposed construction of the terms "particles of interest" and "materials of interest" are dependent on Morpho's asserted premise that the '670 patent is narrowly restricted to only IMS and ITMS devices. Morpho's position on disputed claims 2a and 2b, distilled to its essence, is that because IMS/ITMS detectors are capable only of

testing vapors,<sup>12</sup> the words "material" and "particle," as used in the claims, must necessarily be restricted to "vaporized" compounds, regardless of the ordinary meaning of such terms.

In contrast to Morpho's construction, Smiths asks the Court to apply the ordinary, but specific, meaning of the word "particle," and the ordinary, and broader, meaning of the word "material." For the same reasons discussed in the preceding section, this Court rejects Morpho's contention that the '670 patent is limited to IMS and ITMS devices. Such finding undermines Morpho's sole basis for interpreting the word "particle" to be a synonym for "material."<sup>13</sup> Furthermore, the language of the patent itself supports a separate interpretation for "particle" and "material." The Court therefore adopts Smiths' proposed constructions for disputed terms 2a and 2b. Such constructions are in line with the ordinary meaning in the art of the terms "particle" and "material."

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<sup>12</sup> To clarify, an IMS or ITMS device can determine if there are solid particles of a certain compound, such as narcotics, on a sample medium to be tested (such as a "trap" that is wiped across a backpack or suspect's clothes and then inserted into an IMS detector). However, the manner in which IMS/ITMS detectors operate requires that solid particles on the trap be vaporized to facilitate testing. Accordingly, the component part of the IMS/ITMS device that actually "detects" the presence of the narcotic or other contraband is only capable of testing and identifying vaporized (i.e., gas) molecules. See generally Morpho Markman Brief at 2-3; Bell Depo. at 122-23.

<sup>13</sup> Dr. Bell, Morpho's expert, concludes that notwithstanding its contrasting ordinary meaning, the word "particle," as used in the patent, should be construed to refer to matter in a vapor phase. Such conclusion appears to be based solely on Dr. Bell's interpretation of the '670 patent as being limited to only IMS/ITMS devices. Bell Depo. at 120-23.

Beginning with the claim language, it appears undisputed that, in the relevant art, the ordinary meaning of the word "particle" is a solid or liquid bit of matter that is not in a vapor/gas phase. See Bell Depo. at 118-20 (explaining that, in the field of analytical chemistry, a "particle" refers to a solid bit of matter, that can be suspended in air, but is not itself "vaporized" or in a gas phase—that is, "something can't both be a particle and a vapor at the exact same time"); Harrington Depo. at 148 (explaining that it is "widely accepted" in the field that a particle can "either be a solid or a liquid, but not a vapor").<sup>14</sup> Beginning with such accepted meaning, the question for the Court is whether the intrinsic record otherwise demonstrates that the word "particle" takes on a special meaning within the confines of the '670 patent. See Phillips, 415 F.3d at 1316 (indicating that the patent itself "may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess" and that "[i]n such cases, the inventor's lexicography governs").

Claim 1 discusses "a detector for detecting particles of interest carried on a stream of air." '670 Claim 1 (emphasis added). Such claim is not limited to IMS or ITMS detectors, does not mention a desorber, and does not mention vaporized

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<sup>14</sup> Dr. Harrington is Smiths' expert, and a copy of Dr. Harrington's June 7, 2012, deposition transcript was presented to the Court, without objection, at the Markman hearing. Such transcript has been designated as Court Ex. #2.



molecules being tested by the detector. Claim 9 likewise discusses "particles of interest" but does not mention IMS or ITMS, a desorber, or vaporized molecules being tested. In contrast, Claim 12 discusses a "detector for detecting trace amounts of materials of interest carried into the detector through a detector inlet on a stream of air." '670 Claim 12 (emphasis added). Such detailed claim requires a desorber, discusses evaporating materials to be tested, and expressly states that "materials" enter the detector part of the device through the "detector inlet." Claim 12 never once uses the word "particle." Claims 20 through 25, all method claims, return to using the phrase "particles of interest," and like Claims 1 and 9, again fail to mention an IMS or ITMS detector, a desorber, or vaporizing substances to permit them to be tested. Reading such claims together supports the following plain language analysis: (1) that the disputed phrase "materials of interest," is a non-specific term which is used in the claims in conjunction with the discussion of a desorber, and thus must be construed to have a broad enough meaning to include vaporized molecules; and (2) that the disputed phrase "particles of interest", is a more specific term, which is not used in the claims in conjunction with the discussion of a desorber, and thus, there is no reason to deviate from the more narrow, but ordinary, meaning of such term that does not include vaporized molecules. As the patentee

chose to only once describe a detector that utilized a desorber to vaporize molecules, and such lone reference is made in the only claim using the phrase "materials of interest," the contrasting terms—material vs. particle—should be interpreted to convey something different. See Aspex Eyewear, Inc. v. Marchon Eyewear, Inc., 672 F.3d 1335, 1349 (Fed. Cir. 2012) (indicating that the use of "different terms in parallel settings" within the claims supports a finding that "the two [differing] terms were not meant to have the same meaning"); Nystrom v. TREX Co., Inc., 424 F.3d 1136, 1143 (Fed. Cir. 2005) (citing Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987)) ("When different words or phrases are used in separate claims, a difference in meaning is presumed.").<sup>15</sup>

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<sup>15</sup> The Court notes that independent Claim 1 discusses a detector used to detect trace amounts of "particles of interest" carried on a stream of air, and dependent Claim 3 includes the requirement that the detector in Claim 1 is an ITMS detector, which means that the detector in the dependent claim must have a desorber and test for vaporized molecules. However, unlike Claim 12, Claim 1 does not include a detailed description of how the claimed "detector" operates, and Claim 1 never mentions "particles" or "materials" being carried into the detector itself through the detector inlet. Notably, the specification discusses a "walk-through" detector where air is passed over a subject's body and "vapors and particles carried on such air are later trapped "and subsequently are detected." '670 3:55-64. Accordingly, there does not appear to be a clear conflict between the use of the word "particle" in Claim 1 and the requirement in Claim 3 that the detector is an ITMS because after such solid particles are trapped, they could be desorbed and tested by the ITMS detector. Morpho's suggestion that it would be illogical to interpret the term "particle" to mean a "solid" within the context of the patent carries little weight as: (1) it appears quite logical to interpret particle in such manner if the patent covers more than just IMS/ITMS detectors; and (2) regardless of the sensibility of the result, this Court is required to construe the claims as written. See Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374 (Fed. Cir. 2004) (indicating

Morpho's hindsight efforts to redefine the term "particle" are therefore not supported by the claims themselves. See Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374 (Fed. Cir. 2004) (noting that it is a "settled practice" that claim language is construed "as written, not as the patentees wish they had written it.").

Although the claims themselves support Smiths' proposed construction, "simply noting the difference in the use of claim language does not end the matter" because "[d]ifferent terms or phrases in separate claims may be construed to cover the same subject matter where the written description and prosecution history indicate that such a reading of the terms or phrases is proper." Nystrom, 424 F.3d at 1143 (emphasis added). Here, a review of the specification supports, rather than undercuts, the Court's interpretation of the claims themselves because, rather than acting as its own lexicographer to redefine the word "particle" in a manner contrary to its ordinary meaning in the art, the patentee used such term consistently with its well-accepted meaning. The following provisions from the specification demonstrate such point: (1) indicating that a prior art detection device "tests for the presence of certain contraband particles or vapors," '670 1:36-38 (emphasis added);

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that when a claim is "susceptible to only one reasonable construction" the court must construe such claim as written even if doing so results in a "nonsensical construction of the claim as a whole" and invalidates the claim).

(2) noting that when using traps/wipes of a certain type "[t]he material retains both large and small particles, and also traps vapors" '670 3:15-18 (emphasis added); (3) discussing a "walk-through configuration" of a detector machine where air flows over a subject's body and "[a]ll vapors and particles entrained in the air sample are trapped in the trap and subsequently are detected," '670 3:55-64; and (4) noting in two different provisions that stainless steel "provides good trapping efficiency for vapors, as well as good trapping of particles," '670 4:1-4 and 5:63-65 (emphasis added). The above provisions all suggest that a "particle" refers to something other than a "vapor," and thus, consistent with its ordinary meaning, the claim language "particles of interest" should not be interpreted as "vaporized organic compounds."<sup>16</sup>

In addition to the excerpts highlighted above, a review of the remainder of the specification reveals that the patentee failed to use the word "particle" in any provision that would suggest that a "particle" is a vapor, gas, or a desorbed material. Similarly, there is a lack of any clear reference to a "particle" either exiting a desorber or a particle entering the detector inlet of an IMS/ITMS detector. To the contrary, like the claims themselves, the provisions in the specification

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<sup>16</sup> The Court notes that Morpho also fails to demonstrate why it is appropriate to insert the word "organic" into the construction of the instant terms. Such word does not appear anywhere in the '670 patent.

discussing a desorber and the "outlet" of such desorber "leading to the detector" use the word "materials" or "materials of interest," not "particles" or "particles of interest."<sup>17</sup> '670 5:28-35 and 3:39-44. Accordingly, the specification fails to support Morpho's proposed construction of the disputed term "particles of interest" and lends support for Smiths' proposed construction of such term.

In addition to the intrinsic record, Smiths cites a technical definition of the word "particle" that defines such word as "a small discrete mass of solid or liquid matter." See ECF No. 44-13 and 44-14. Although not controlling, such definition lends further support for Smiths' construction of "particles of interest." See Phillips, 415 F.3d at 1318 (describing dictionaries as one of "the many tools that can assist the court in determining the meaning of particular terminology to those of skill in the art of the invention"). Smiths' expert also testified in his deposition that the "widely accepted definition by people in the field" is that "a particle would either be a solid or a liquid, but not a vapor." Harrington Depo at 148; see Bell Depo. at 118-20 (indicating

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<sup>17</sup> Method Claim 25 appears to be the only claim that discusses "transporting" or "delivering" the "potential particles of interest into the detector." '670 Claim 25 (emphasis added). Such claim language is far from sufficient to demonstrate that the word "particle" should take on a meaning different from its ordinary meaning in the art, particularly when nothing in Claim 25 indicates that the "detector" being discussed therein is an IMS/ITMS detector.

that, in the field of analytical chemistry, a "particle" refers to a solid bit of matter that is not in a gas phase).

For the reasons discussed above, the Court rejects Morpho's contention that disputed claim terms "particles of interest" and "materials of interest" should be interpreted as synonyms. Furthermore, the Court rejects Morpho's contention that the proper definition for either term is "vaporized organic compounds." As discussed in detail above, the ordinary meaning of the word "particle" refers to material that is not in a vaporized form. Furthermore, the broader word "material" is used in the claims, and the specification, in a manner that appears to refer to both solids and vapors prior to entering a desorber, and the vapors that exit the desorber. See Claim 12 (referencing using a desorber "to evaporate any of the materials of interest on the trap" and indicating that "materials of interest" are carried into the detector itself); '670 5:28 (indicating that "[m]aterials picked up on the trap" are evaporated and carried to the detector itself). Accordingly, just as it is improper to expand the ordinary definition of the word "particle" to include vaporized materials, it is improper to import a restriction on the broad term "material" that would limit such term to only "vaporized organic compounds." The Court therefore adopts Smiths' proposed construction of the two disputed terms discussed above.

c. Construction

2a - "particles of interest": solid materials of interest that are not vapors<sup>18</sup>

2b - "materials of interest": something of interest, such as particles or vapors

3. "dryer"

a. Proposed Constructions

**Morpho:** A device that houses material capable of removing water from a stream of air.

**Smiths:** a device capable of removing water from a stream of air

b. Discussion

The parties' proposed constructions of the claim term "dryer" are very similar, the lone difference being whether a dryer must "house material" capable of removing water from the air, such as desiccant. The parties each provide a limited

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<sup>18</sup> The Court recognizes that both parties' experts testified that, in the relevant field, a "particle" refers to a solid or a liquid, but not a gas. Although it could be argued that the proper interpretation of the phrase "particles of interest" in the '670 patent is "solid or liquid materials of interest that are not vapors," neither party has proposed such construction. The Court, therefore, does not consider it appropriate to strike out on its own and construe the disputed term in such manner having not had the argument vetted by the adversary process. Notably, there is some intrinsic evidence that would arguably counsel against such construction as the specification mentions "condensed vapors," on three occasions and each time separately mentions "particles" or "particulate." See, e.g., '670 1:11-13 ("The subject invention is directed to materials that can be used to collect traces of contraband. The subject invention also is directed to an apparatus for detecting trace particles and condensed vapors of contraband."). Assuming that a "condensed vapor" refers to a liquid, such provisions could be interpreted to suggest that "particle," as used in the patent, refers only to solid materials.

argument on such term in their Markman briefs, and the Court finds that an extensive analysis is not necessary to resolve the instant dispute. See Acumed LLC, 483 F.3d at 805 (quoting Phillips, 415 F.3d at 1314) (indicating that "[t]he task of comprehending [claim] words is not always a difficult one," and in some cases claim construction "'involves little more than the application of the widely accepted meaning of commonly understood words.'").

Smiths' proposed construction of "dryer" recommends that the Court adopt an ordinary, and unrestricted, construction of such word, referring to a device capable of removing water from something—here, a stream of air. Morpho, on the other hand, seeks to read a specific limitation into such term which would restrict the term "dryer" to a specific type of dryer. Morpho, however, fails to cite any provision in the intrinsic record that would support the insertion of such limitation. Rather, Morpho relies on a single instance in the specification where "drying material" is referenced in the discussion of a specific embodiment of the claimed invention.<sup>19</sup> Few clearer claim construction rules exist than the rule indicating that a limitation found in the specification discussing a specific

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<sup>19</sup> As discussed at length herein, the Court rejects Morpho's contention that the '670 patent is limited to IMS or ITMS devices. Accordingly, even assuming that every commercialized IMS and ITMS device utilizes "material" capable of removing water from the air, such fact would not import a gloss onto the meaning of the word "dryer" as used within the '670 patent.



embodiment of the invention should not be imported into the claims. See Phillips, 415 F.3d at 1323 (indicating that "although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments"); SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340 (Fed. Cir. 2001) (discussing "one of the cardinal sins of patent law-reading a limitation from the written description into the claims"); Brookhill-Wilk, 334 F.3d at 1301 ("Absent a clear disclaimer of particular subject matter, the fact that the inventor anticipated that the invention may be used in a particular manner does not limit the scope to that narrow context.").

A careful review of the claim language also demonstrates why the limitation sought by Morpho is not appropriate. Notably, the "dryer" discussed in nearly all of the claims must either be "rechargeable" by a heater(s) or selectively "purged" of moisture by use of a heater(s). See, e.g., '670 Claim 1, 9, 20. Such requirement could lend support for Morpho's contention that there must be a "material" within such dryers that is capable of removing moisture from the air. However, Claim 12 discusses a multiple "dryer" system without mentioning recharging either dryer or purging either dryer of moisture. '670 Claim 12. Rather, Claim 12 only requires the selective use

of multiple dryers where the unused dryer is "substantially isolated" from the desorber. The use of the same word "dryer" in Claim 12 as in the claims that require the "dryer(s)" to be recharged or purged by a heater, undercuts Morpho's contention that the word "dryer" always requires a "material" capable of removing moisture from the air. See Digital-Vending Services Int'l, LLC v. Univ. of Phoenix, Inc., 672 F.3d 1270, 1274 (Fed. Cir. 2012) (indicating that even where a limitation appeared in nearly all of the claims across multiple patents, and also appeared in the shared specification, the fact that such limitation did not appear in certain method claims in one of the patents precluded a Markman construction of such limitation as universal).<sup>20</sup> Notably, even if the failure to include such language was an oversight by the patentee, it is this Court's responsibility to read the claims as written, and the Markman procedure is not an opportunity to rewrite poorly drafted claim language. See Chef America, Inc., 358 F.3d at 1374 (indicating that claim language must be construed "as written, not as the patentees wish they had written it."); K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1364 (Fed. Cir. 1999) ("Courts do not

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<sup>20</sup> Unlike in Digital-Vending Services Int'l, LLC, where a dissenting opinion concluded that the specification evidenced a clear disavowal of claim scope that rendered the limitation universal, here, nothing in the specification of the '670 patent suggests a clear disavowal of claim scope as to the claim term "dryer."

rewrite claims; instead, we give effect to the terms chosen by the patentee”).

As previously suggested, the specification likewise lacks any indication that a “dryer,” across all claims and in all embodiments must “house material” that is capable of removing water from the air. Although the only type of “dryer” discussed in the specification is a dryer that utilizes “drying material,” nothing therein suggests that the description of such preferred embodiment operated as a clear disavowal of claim scope across all embodiments. See Linear Technology Corp. v. International Trade Comm’n, 566 F.3d 1049, 1057-58 (Fed. Cir. 2009) (“We have repeatedly held that, even in situations when only one embodiment is disclosed, the claims generally should not be narrowed to cover only the disclosed embodiments or examples in the specification.”); Epistar Corp. v. Int’l Trade Comm’n, 566 F.3d 1321, 1334 (Fed. Cir. 2009) (requiring “expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope” in order to deviate from the ordinary meaning of the claim language based on statements contained in the specification).<sup>21</sup>

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<sup>21</sup> As further support for adopting an unrestricted ordinary meaning of the term “dryer,” Smiths notes that during the prosecution of the ‘670 patent, the examiner referred to “drying devices” to include “chillers” covered by prior art and such chillers do not appear to house a material that absorbs water. Smith’s Markman Brief, ECF No. 44 Ex. I at MDI693. Although “unilateral statements by an examiner do not give rise to a clear disavowal of claim scope by an applicant” such statements should not necessarily be dismissed as irrelevant

Based on the above, the Court adopts Smiths' proposed construction, which appears to comport with the ordinary meaning of the word "dryer." Not only is the '670 patent not limited to IMS and ITMS detectors, but neither the claims nor the specification suggest that the word "dryer," across all embodiments of all claims, is limited to a dryer "housing" desiccant or other material capable of removing water from the air. See Retractable Techs., 653 F.3d at 1305 (indicating that a Markman construction should "capture the scope of the actual invention, rather than strictly limit[ing] the scope of the claims to disclosed embodiments . . .").

c. Construction

**a device capable of removing water from a stream of air**

**4a. "two dryers in communication with the stream of air"**

a. Proposed Constructions

**Morpho:** Two dryers that can dry air passing through them and which are implemented in such a way that they do not reduce the concentration of particles of interest into the detector.

**Smiths:** The stream of air is directed through each of the two dryers. Both dryers do not need to be in communication with the stream of air simultaneously.

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because they "may be evidence of how one of skill in the art understood the term at the time the application was filed." Salazar v. Procter & Gamble Co., 414 F.3d 1342, 1347 (Fed. Cir. 2005).

b. Discussion

The analysis for this instant term, like several terms before it, is impacted by the Court's initial conclusion that the '670 patent is not limited to IMS/ITMS devices. Notably, Morpho seeks to incorporate a limitation, found nowhere in the claims themselves, specification, or any compelling extrinsic source, merely because such interpretation would be "consistent with the implementation of dryers in IMS detection systems." Morpho Markman Brief 11. Morpho's Markman brief goes on to describe the "closed systems" used in IMS devices and why it is important to utilize a detector apparatus set up only in such manner. Morpho's patent, however, fails to even highlight the importance of such structure, let alone expressly indicate that the claimed apparatus must only be arranged in such format. See Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1325 (Fed. Cir. 2003) (indicating that the "danger of improperly importing a limitation is even greater when the purported limitation" is based on something that doesn't even appear in the claims). As with prior terms, Morpho appears to be seeking a construction that adds language that Morpho now wishes was included in the claim terms or specification, rather than a construction based on language that actually appears in the claims or the limited portion of the specification that discusses a multiple dryer device. There being no valid

justification for importing a previously undisclosed requirement that "the concentration of particles of interest" is not reduced, the Court rejects Morpho's proposed construction. See K-2 Corp., 191 F.3d at 1364 (indicating that courts are precluded from rewriting claims and must "give effect to the terms chosen by the patentee").

Smith's construction, on the other hand, appears to appropriately define the disputed term according to its plain language. As indicated in Morpho's opening brief, Morpho "believes that the parties are in agreement" that the two dryers required by the claims do not need to be in operation at the same time. Morpho Markman Brief 11. This Court likewise agrees that the claims and specifications reveal that the two dryers in communication with the stream of air do not need to be in communication with the stream of air simultaneously—that is, one dryer can be regenerating, purging moisture, or be idle, while the other dryer is being used to dry the air. Accordingly, the Court adopts Smiths' straightforward construction indicating that the two dryers "in communication" with the stream of air means that the stream of air is directed through such dryers, but that the stream of air does not need to be directed through the two dryers simultaneously.

c. Construction

The stream of air is directed through each of the two dryers. Both dryers do not need to be in communication with the stream of air simultaneously.

4b. *"operating a first dryer for producing a first flow of dried air"*

*"operating the second dryer for producing a second flow of dried air"*

a. Proposed Constructions

**Morpho:** Operating a first/second dryer in such a way that it produces dry air without reducing the concentration of particles of interest that are carried into the detector.

**Smiths:** No construction necessary - plain and ordinary meaning

b. Discussion

The instant term, although discussed separately, is numbered "4b" because the relevant analysis tracks that of the previous disputed term. Specifically, Morpho seeks to add a limitation that is not evident from the claims, nor is it even discussed in the specification. Smiths, in contrast, seeks no construction of this term, arguing that the claim language has an obvious and easy to understand meaning. Smiths also, of course, seeks the express rejection of Morpho's attempt to rewrite the disputed claim language.

For the same reasons discussed previously regarding the impropriety of rewriting claims or inserting extraneous language

into claims as part of the Markman process, the Court rejects Morpho's proposed construction. See Amgen Inc., 314 F.3d at 1325 (quoting Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 950 (Fed. Cir. 1993)) (indicating that "[i]t is improper for a court to add extraneous limitations to a claim, that is limitations added wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim"). Having rejected Morpho's proposal, the Court agrees with Smiths that no other construction of the instant term is necessary, as such term is comprised of easy to comprehend language with a clear meaning, and claim construction "is not an obligatory exercise in redundancy." U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997). Notably, "[t]he task of comprehending [claim] words is not always a difficult one," and in some cases claim construction "involves little more than the application of the widely accepted meaning of commonly understood words.'" Acumed LLC, 483 F.3d at 805 (quoting Phillips, 415 F.3d at 1314). Because the disputed language includes commonly understood words with widely accepted meanings, the Court finds it unnecessary to adopt a construction that differs from the plain language of the disputed term.

c. Construction

**No construction necessary—plain meaning controls. Morpho's attempt to read an extraneous limitation into the claim language is expressly rejected.**



5. "at least one valve in communication with the dryers"

a. Proposed Constructions

**Morpho:** At least one valve (i.e. one or more valves) for controlling which of the dryers is active and which is regenerating.

**Smiths:** a valve in communication with both dryers  
**or alternatively,**  
one or more valves, each of which is in communication with both dryers

b. Discussion

The dispute as to the instant term appears to be a largely grammatical disagreement that is based on the phrasing of the claims. The parties do not dispute the fact that "at least one valve" means "one or more valves." The parties also appear to agree that in an apparatus that has only one valve, such valve must be in communication with both dryers. The core of the disagreement arises in a multiple valve system, with Smiths contending that at least one of the valves must be "in communication with" both dryers, and Morpho contending that collectively, the multiple valves must be in communication with both dryers.

There is little in the intrinsic record that either the parties cited or the Court located that is useful in resolving the instant dispute. The disputed language plainly covers "one or more valves," and the parties do not dispute such fact. Therefore, the Court will adopt a construction that includes

such language. Additionally, the Court agrees with Smiths that the use of the word "controlling" in Morpho's proposal is not supported by the extrinsic record as an appropriate construction for the phrase "in communication with," which is used repeatedly in the claims in other instances in a manner that does not suggest any element of "control."<sup>22</sup> See Omega Eng'g, Inc., v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003) ("[W]e presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning."); Phillips, 415 F.3d at 1314 (explaining that "terms are normally used consistently throughout the patent"). Accordingly, the only remaining dispute is whether the two claims that use the instant disputed term require, in all embodiments, that a single valve communicate with both dryers.

As discussed below, the Court finds that the proposed construction advanced by Smiths improperly seeks to read a limitation into the disputed claim language. The limitation sought by Smiths is not clear from the claim language, and if intended, it would have been easy to clearly state such requirement. Similarly, Smith's proposed limitation could have

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<sup>22</sup> The parties' proposed constructions of disputed terms 7a and 7b further demonstrate that it is not appropriate to incorporate the word "controlling" into the construction of the instant term, because it is the words that follow such term, and not the phrase "in communication with," that evidence control. Accordingly, there is no need to interpret the word "communication" as requiring control because the subsequent claim language plainly evidences such requirement. See '670 Claim 1, 9.

easily been conveyed in the specification, but it was not. See Home Diagnostics, Inc., 381 F.3d at 1357 (indicating that “[a] patentee may claim an invention broadly and expect enforcement of the full scope of that language . . .”). Rather, the lack of any clear requirement from the context of the claims or specification suggests that the disputed language permits the use of a single valve that communicates with both dryers (a preferred embodiment), but also permits using multiple valves to achieve the exact same result. See Phillips, 415 F.3d at 1314 (indicating that “the context in which a term is used in the asserted claim can be highly instructive.”).

Smiths’ proposed construction appears to be the equivalent of transforming the claim language “at least one valve in communication with the dryers” into “at least one valve in communication with both dryers.” Smiths’ explanation for inserting the word “both” is not compelling, contending that, grammatically, the words in the claim should be interpreted in such manner.<sup>23</sup> The Court disagrees that such narrow interpretation is the most natural reading of the disputed claim

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<sup>23</sup> Smiths argues that the claim language “at least one valve” modifies the remaining language “in communication with the dryers” and thus, there must always be one valve that communicates with both dryers. However, Smiths concedes that “at least one valve” is the equivalent of stating “one or more valves.” Grammatically, “one or more valves in communication with the dryers” does not appear to require that a single valve must alone communicate with both dryers. Rather, a more natural reading appears to be that one valve may alone communicate with both dryers, or alternatively, multiple valves may perform such same function.

language, and the Court therefore rejects Smiths' efforts to read a requirement into the claims that is not otherwise supported by the intrinsic record. See Every Penny Counts, Inc., 563 F.3d at 1381 (indicating that the correct construction both "stays true to the claim language and most naturally aligns with the patent's description of the invention"). Because nothing in the specification suggests that "one or more valves" performing the claimed function of "communicat[ing] with the dryers" is too narrow to encompass two valves performing the function of "communicating with the dryers," the Court finds Morpho's position on this matter to be consistent with the claim language. Morpho's proposal is also more naturally aligned with the specification, which provides an example of a single valve system, but in no way suggests that in another embodiment, two valves could not replace such valve and perform the same function. See Liebel-Flarsheim Co., 358 F.3d at 906 (indicating that discussion of a single embodiment is not sufficient to restrict the claims absent a clear intent to limit the claim's scope).

As set forth above, the Court rejects the portion of Morpho's proposed construction that uses the word "controlling" as Morpho fails to demonstrate why the claim term "communication" should be interpreted as the equivalent to "control." The parties agree that "at least one" means "one or

more," and the Court concurs with such construction. Finally, the Court rejects Smiths' attempt to insert the word "both" into the construction of the disputed term. Although the Court is not certain that any construction of the instant term is necessary, in order to incorporate the agreed upon construction of this disputed term, and in order to resolve the currently pending dispute, the Court adopts a construction for the disputed term that clarifies the meaning of "at least one" and expressly rejects the insertion of the word "both."

c. Construction

**one or more valves in communication with the dryers**

6. ***"at least one valve . . . for selectively placing a first of the dryers in communication with the detector"***

***"at least one valve for selectively placing one of the first and second dryers in communication with the desorber"***

a. Proposed Constructions

**Morpho:** At least one valve (i.e. one or more valves) for controlling which of the dryers provides the dry air that is directed into the detector/desorber.

**Smiths:** a valve for controlling which one of the dryers is in communication with the detector/desorber

***or alternatively***

one or more valves, each of which controls which one of the dryers is in communication with the detector/desorber

b. Discussion

The primary dispute as to the instant term closely mirrors that addressed immediately above in the Court's analysis of disputed term 5. That is, whether, as proposed by Smiths, the disputed claim language should be interpreted to require that "each valve" in a multi-valve system control which dryer is in communication with the detector or desorber. Smiths indicated at the Markman hearing that it believes that in a multiple valve system, each valve must control which dryer is in communication with the detector/desorber and thus, in a multiple valve system, a second valve would necessarily be redundant. Smiths, however argues that there is nothing wrong with redundancy when describing an essential component/system.

Smiths' contention that the patent should be read in a manner that only covers redundant valves appears to further support this Court's conclusion that Morpho's similar constructions of disputed terms 5 and 6 are the more natural reading of the claim language. That is, that "at least one valve" for controlling which dryer is communicating with the detector/desorber means that one valve, or more than one valve, may perform such function. The alternative, that each valve in a multi-valve system must alone be able to perform such function (i.e., the second valve is entirely redundant) appears to be placing form over substance and distorting the meaning of the

plain language of the claims. See Vitronics, 90 F.3d at 1582 indicating that "the claims themselves, both asserted and nonasserted . . . define the scope of the patented invention"); Every Penny Counts, Inc., 563 F.3d at 1381 (noting that the correct construction remains true to the claims and naturally aligns with the description of the invention). Accordingly, for the same reasons that Smiths fails to justify inserting a limitation into disputed term 5, Smiths fails to justify insertion of a similar limitation into disputed term 6.

Unlike the prior term, where the parties disagreed as to whether it was appropriate to include "control" in the Court's construction, here, there is no dispute that the disputed claim language requires that the valve(s) direct/control which dryer is communicating with the detector or desorber. Accordingly, Morpho's, and Smiths', proposed use of the word "controlling" is appropriate in construing the instant term.

The remaining difference between the parties' proposals is whether the construction adopted by the Court should expressly state that the dryer that is placed in communication with the detector/desorber is actually operating to dry the air. Although the parties proposed constructions differ, Morpho's addition of this added clarity, which appears to be supported by the claims and specification, was not directly challenged by Smiths. Accordingly, because other portions of Smith's proposed

construction are not appropriate, and nothing in Morpho's proposed construction appears inaccurate or inappropriate, the Court adopts Morpho's proposed construction with limited change, modifying only the first clause to promote consistency with the Court's interpretation of disputed term 5.

c. Construction

**one or more valves for controlling which of the dryers provides the dry air that is directed into the detector/desorber**

7. **"manifold . . . for directing air from the manifold and across the inlet to the desorber"**

a. Proposed Constructions

**Morpho:** Manifold for directing air perpendicular to the sample wipe or trap.

**Smiths:** manifold for directing air parallel to the sample wipe or trap

***or, alternatively, as stated on the record at the Markman hearing***

No construction necessary.

b. Discussion

The parties' dispute as to the instant claim term is based entirely on the direction that the "manifold," discussed in Claim 12, directs air. Claim 12 does not indicate which direction the manifold directs air, other than stating that the manifold communicates with the inlet to the desorber and that the manifold directs air "across the inlet to the desorber." Morpho seeks to add a limitation indicating that the manifold



directs air "perpendicular to the sample wipe or trap" and Smiths seeks to add a limitation that indicates that the manifold directs air "parallel to the sample wipe or trap." Alternatively, Smiths seeks no construction of the instant term. Both parties rely on Figures 6 and 7 of the '670 patent to support their proposed constructions.

Beginning with the claims, a manifold is discussed only in Claim 12. Claim 12 does not, however, include any guidance/limitation as to which direction the manifold directs air in relation to the trap/wipe.

Next, considering the specification, it is well established that reading limitations into claims that are not clearly supported by the intrinsic record is generally inappropriate. Here, both parties rely almost exclusively on drawings/figures in the '670 patent in an effort to support reading a directional requirement into the claims. However, the drawings each party relies upon do not even expressly depict the claimed invention. See '670 4:7-25 (describing Fig. 1 of the patent as a diagram of a prior art ITMS detector and describing Figs. 6 & 7 as cross-sectional/side views of desorbers for use in detection systems such as the prior art system depicted in Fig. 1). Even if such figures were intended to depict the claimed invention, the parties do not rely on the figures as shown in the patent, but instead rely on newly annotated versions of such figures. The

newly inserted annotations are arrows depicting air-flow, but because such arrows do not appear in the patent, they are of limited value in construing the disputed claims. Furthermore, even if such arrows were found in the figures contained in the '670 patent, nothing in the patent suggests that such figures are the exclusive manner in which a manifold can direct air across the inlet to the desorber. To the contrary, the specification itself suggests that such figures are merely illustrative of one way in which a detector may be designed. '670 5:9-35 (indicating that figures 6 and 7 were "example[s]" of detection systems that include a heated desorber).

In addition to the shortcomings in both parties' arguments noted above, the only two instances where a "manifold" is discussed in the specification are located in sections describing prior art devices capable of benefiting from the use of the "newly conceived" sample wipes/traps for which no claims actually issued in the '670 patent. Such sections are not describing the claimed "dual-dryer" detector actually covered by the claims. Accordingly, the specification's explanation as to how the manifold system directs air is not persuasive and certainly is not controlling as to all embodiments.

Alternatively, even if this Court viewed the discussion of the "manifold" in the specification as controlling or persuasive, such discussion fails to limit the direction that

the manifold directs air in relation to the trap/wipe. Notably, such discussion first states that “[d]ry air is fed from the manifold 32 above and below the sample trap through a series of small holes 34 along the mouth 36 of the desorber 30” and that such dry air “passes through the trap, 22, 24 and purges out the ambient air in the trap.” ‘670 5:18-22; see also ‘670 3:28-44. As argued by Morpho, such statement suggests that the air from the manifold is directed “perpendicular to the sample wipe or trap.” However, after such statement, the specification states that “[a] portion of the dry air flow fed through the manifold system 32 passes down the desorber 30.” 5:24-26. As argued by Smiths, such latter statement suggests that some air from the manifold is directed “parallel to the sample wipe or trap.” The specification therefore, does not effectively support either party’s proposed limitation.

Notwithstanding the above analysis of the specification, Morpho counters that the manifold directs dry air perpendicular to the trap, even though some dry air does in fact travel parallel to such trap. Such argument, however, suffers from two key infirmities. First, the manifold directs air perpendicular to the trap in the illustrative figure depicting prior art—nothing in the intrinsic record suggests that the claimed manifold is identical to that of the prior art. Second, nothing in the specification or claims suggests any “angle” necessary

for the manifold to achieve its claimed function. For example, a manifold directing air toward the trap at an angle of 75 degrees would not be directing air "perpendicular" to the trap, but may still direct air across the inlet to the desorber as required by Claim 12. Morpho fails to demonstrate either that a "perpendicular" angle is required, or that it is appropriate to even define the direction of the air flow vis-à-vis the location of the trap/wipe. Accordingly, regardless of the manifold's interaction with/angle of air direction as to the trap, Claim 12 requires that the desorber include a manifold for "directing air from the manifold and across the inlet to the desorber." Because the intrinsic record does not even broach the subject of permissible angle, importing either party's proposed limitation is not appropriate.

Based on the above, the Court rejects both parties' proposed constructions as they improperly import restrictions into the claim language at issue. Furthermore, the Court does not adopt a Court-drafted construction of this term as the parties have not demonstrated potential confusion that could result at trial based on the lack of a construction. The disputed term uses straightforward easy to understand language, and, as proposed by Smiths at the Markman hearing, the Court therefore opts not to add to, or subtract from, or otherwise

modify, the plain meaning of the disputed term.<sup>24</sup> See PPG Industries v. Guardian Industries Corp., 156 F.3d 1351, 1355 (Fed. Cir. 1998) (indicating that all ambiguity need not be resolved by the Court in an effort to "facilitate a comparison between the claim and the accused product"; rather, after a claim is defined "with whatever specificity and precision is warranted by the language of the claim and the evidence bearing

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<sup>24</sup> Morpho argued at the Markman hearing that this Court is required to resolve the instant dispute by adopting a construction of the disputed term. See O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1360 (Fed. Cir. 2008) ("When the parties raise an actual dispute regarding the proper scope of these claims, the court, not the jury, must resolve that dispute."). First, the Court questions whether there is an "actual dispute" regarding the proper scope of the disputed claim because the disputed claim language is "across the inlet to the desorber" and the parties' proposed constructions do not even reference the inlet to the desorber, thus failing to clarify the language in the claims. See Amgen Inc., 314 F.3d at 1325 (quoting Hoganas AB, 9 F.3d at 950 ("It is improper for a court to add extraneous limitations to a claim, that is limitations added wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim.")). Second, to the extent this Court is required to "resolve" the dispute, Morpho proposes adding a limitation unsupported by the intrinsic record and Smiths, at least initially, proposed adding the opposite, mutually exclusive, limitation that is also unsupported by the intrinsic record. In rejecting the propriety of both proposals, the Court has in fact "resolved" the dispute before it, and adopted a "plain meaning" construction of the disputed term conclusively establishing that the "scope" of such term is not restricted by either party's mutually exclusive proposed limitations. See Finjan, Inc. v. Secure Computing Corp., 626 F.3d 1197, 1206-077 (Fed. Cir. 2010) (finding "no O2 Micro problem" where the district court not only adopted a "plain and ordinary meaning" construction, but also rejected the defendant's attempt to import a limitation into the disputed claim language because, by rejecting such improper construction, the district court's ruling resolved the legal dispute and did not improperly reserve a legal question for resolution by the the jury); Sunbeam Products, Inc. v. Hamilton Beach Brands, Inc., No. 3:09cv791, 2010 WL 3291830, at \*5 (E.D. Va. Aug. 19, 2010) (declining to adopt either party's proposed constructions because doing so "would be to effectively rewrite the patent, which is not within the Court's province in claim construction").

on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact"). Accordingly, no construction of such term is adopted.

c. Construction

**No construction - plain meaning controls. Neither party's proposed limitation is appropriate.**

**IV. CONCLUSION**

For the reasons set forth above, the Court issues this Opinion and Order as the construction of the disputed claim terms in the '670 patent.

The Clerk is **REQUESTED** to send a copy of this Opinion and Order to counsel of record for the parties.

It is so **ORDERED**.

*/s/ msd*

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Mark S. Davis  
UNITED STATES DISTRICT JUDGE

Norfolk, Virginia  
October 19, 2012