

**United States Court of Appeals
for the Federal Circuit**

**HONEYWELL INTERNATIONAL, INC., and
HONEYWELL INTELLECTUAL PROPERTIES,
INC.,**

Plaintiffs-Appellants,

v.

**UNITED STATES,
*Defendant-Appellee,***

and

**LOCKHEED MARTIN CORPORATION,
*Defendant-Appellee,***

and

**L-3 COMMUNICATIONS CORPORATION,
*Defendant-Appellee.***

2008-5181

Appeal from the United States Court of Federal
Claims in 02-CV-1909, Judge Susan G. Braden.

Decided: May 25, 2010

LAWRENCE J. GOTTS, Paul, Hastings, Janofsky &
Walker LLP, of Washington, DC, argued for plaintiffs-

appellants. With him on the brief was ELIZABETH MILLER ROESEL. Of counsel on the brief was RICHARD G. TARANTO, Farr & Taranto, of Washington, DC.

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THOMAS J. MADDEN, Venable LLP, of Washington, DC, for defendant-appellee Lockheed Martin Corporation.

JOHN W. HARBIN, King & Spalding LLP, of Atlanta, Georgia, argued for defendant-appellee L-3 Communications Corporation. With him on the brief were CHARLES A. PANNELL, III and RICHARD W. MILLER. Of counsel on the brief was JOHN H. HORNE, Adorno & Yoss, LLC, of Atlanta, Georgia.

Before MAYER, PROST, and MOORE, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* MOORE.

Opinion dissenting-in-part filed by *Circuit Judge* MAYER.

MOORE, *Circuit Judge*.

Honeywell International, Inc. and Honeywell Intellectual Properties, Inc. (collectively, Honeywell) appeal from a final judgment of the U.S. Court of Federal Claims. The Court of Federal Claims held that the government infringed independent claim 2 of the patent-in-suit but that this claim is invalid. The Court of Federal Claims also held that Honeywell lacks standing on its claim for just

compensation under the Invention Secrecy Act and that the first sale doctrine precludes Honeywell from recovering damages for one particular infringing system. For the reasons set forth below, we reverse and remand for the trial court to resolve the government’s defense related to pre-issuance damages under the Invention Secrecy Act and to determine damages.

BACKGROUND

The patent-in-suit is U.S. Patent No. 6,467,914 B1 (the '914 patent), and it relates to passive night vision goggles (NVGs) that are compatible with a full color display when both are used in an aircraft cockpit. *See* '914 patent col.1 ll.19–21, col.2 ll.1–5. NVGs operate by amplifying available light, specifically light having a relatively long wavelength (e.g., red and infrared light). *See id.* col.1 ll.36–38. Thus cockpit displays that emit this light, specifically red warning lights, can overwhelm NVG sensor elements and lead to disruption of vision through the NVGs. *Id.* col.1 ll.38–41. Still, “[i]t is important that the display indicators remain illuminated, not only for the benefit of the crewmen who are not wearing [NVGs], but also because those using the goggles will typically view the instruments by looking under the goggles.” *Id.* col.1 ll.42–46.

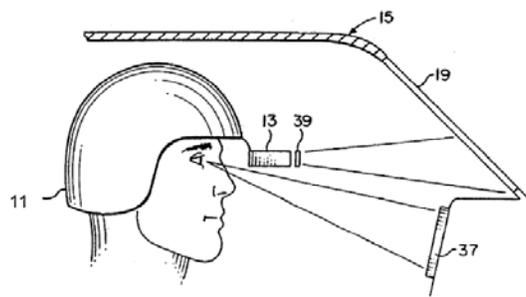


FIG. 2

Prior art solutions involved eliminating and/or dimming red and infrared light from cockpit displays. But filtration used to eliminate this light “must be very effi-

cient because small amounts of light within the active frequency range of the [NVGs] will overwhelm the [NVGs].” *Id.* col.1 ll.51–54. In addition, “[t]he selective filtration of light according to wavelength generally prevents the use of full color displays . . . because frequencies at the lower end of the visible spectrum overlap with those frequencies which are received by the [NVGs].” *Id.* col.1 ll.63–67. This second problem is particularly significant because it prevents the use of red warning lights, which are at the lower end of the visible spectrum, in cockpit displays. Furthermore, with respect to dimming light that is capable of overwhelming NVG sensor elements, the light must be dimmed to such a degree that it is no longer visible by crewman not wearing NVGs and by persons looking under the NVGs.

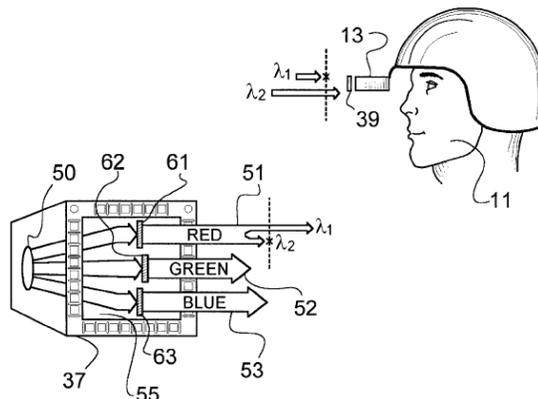
In the 1980s, the government developed a standard governing interior cockpit lighting that also addressed the problem of NVG compatibility in cockpits having full color displays. As witnesses testified at trial, it was important for the government to retain red light in cockpits, particularly for use as warning lights. For example, Dr. Harry Lee Task, a member of the committee developing the military’s corresponding specification, testified that because red indicates warning “if at all possible the MIL spec which was in consideration should be such that it would retain red and yellow in the cockpit.” J.A. 501730 (explaining that “warning is associated with red and amber is associated with caution”). And Col. William S. Lawrence, Honeywell’s expert, testified that “red has always been perceived as the color that denotes danger and we find, as pilots and test pilots, red to be extraordinarily valuable in that role. The immediate perception of danger is crucial to survival and we want red in the cockpit.” J.A. 622806. Nevertheless, in January 1986, the government issued a military specification (MIL-L-85762)

that prohibited the use of red light in NVG-compatible cockpits.

On October 10, 1985, Allied Corporation filed Patent Application No. 06/786,269 (the '269 application), which taught a way to continue to have red light in NVG-compatible cockpits. Pursuant to the Invention Secrecy Act, David McLure, a Naval Air Systems Command engineer, reviewed this application in March 1986 and concluded that a secrecy order should be imposed. Notably, Mr. McClure served on and eventually chaired the government committee charged with revising MIL-L-85762. After Mr. McClure reviewed the '269 application, the government revised its military specification to permit the use of red light in NVG-compatible cockpits. The PTO imposed secrecy orders on the '269 application, which prevented the patent from issuing, every year until 2000. By this time, Allied Corporation had become AlliedSignal Inc., which then merged with Honeywell Inc. to form Honeywell International, Inc. This latter entity amended the '269 application, which then issued as the '914 patent.

The invention claimed in the '914 patent permits the use of NVGs in cockpits having full color displays (including red light) without the aforementioned problems associated with the prior art. In the claimed invention, a local color display emits blue, red, and green light. A combination of filters prevents the red light from disrupting vision through the NVGs. Specifically, one filter *passes* only a narrowband (i.e., a narrow range of frequencies) of red light from the display; another filter at the NVG *blocks* that narrowband of red light and *passes* all other ambient red light. *See* '914 patent col.4 ll.54–57, col.5 ll.4–8, col.5 ll.13–15. Thus the narrowband of red light passed from the display does not reach (and overwhelm) the NVG sensor elements. Figure 3 of the '914 patent illustrates this combination of filters.

FIG. 3



Accordingly, red warning lights inside the cockpit do not disrupt vision through the NVGs, pilots can look under NVGs to view the warning lights, and crew members not wearing NVGs can see these lights as well.

In 2002, about two months after the '914 patent issued, Honeywell filed a complaint against the United States. Honeywell's Amended Complaint seeks compensation under the Invention Secrecy Act for pre-issuance use of the invention and under 28 U.S.C. § 1498(a) for post-issuance infringement of at least independent claims 1 and 2. Relevant to this appeal, the Court of Federal Claims construed disputed claim terms, *see Honeywell Int'l, Inc. v. United States*, 66 Fed. Cl. 400 (2005) (*Claim Construction Order*), and held a trial on the issue of infringement by three accused systems: (1) the Color Multifunction Display (CMFD) and NVGs in the F-16 aircraft, (2) the Radar Display Unit (RDU) and NVGs in the C-130H aircraft, and (3) the Color Multifunction Display Unit (CMDU) and NVGs in the C-130J aircraft.¹

¹ Lockheed Martin Corporation (Lockheed) intervened with respect to the § 1498 claim because it is the supplier and indemnitor to the government for the C-130J aircraft. L-3 Communications Corporation (L-3 Communications) later intervened as an indemnitor to Lockheed

The court determined that all three accused systems infringed claim 2—literally and under the doctrine of equivalents—but that claim 1 and claim 3, which depends from claim 2, were not infringed. See *Honeywell Int’l, Inc. v. United States*, 70 Fed. Cl. 424 (2006) (*Infringement Order*). The Court of Federal Claims then held separate trials on Honeywell’s claim under the Invention Secrecy Act, on the government’s infringement defenses, and on damages. Ultimately, the court concluded that claim 2 is invalid under 35 U.S.C. § 103(a) and, in the alternative, the written description requirement of 35 U.S.C. § 112, ¶ 1. See *Honeywell Int’l, Inc. v. United States*, 81 Fed. Cl. 514, 538–72 (2008) (*Invalidity/Defenses Order*). The Court of Federal Claims also determined that Honeywell lacks standing under the Invention Secrecy Act because, according to the court, the ’914 patent did not issue upon an application that was subject to a secrecy order pursuant to 35 U.S.C. § 181. See *Honeywell Int’l, Inc. v. United States*, 81 Fed. Cl. 224 (2008) (*Invention Secrecy Act Order*). Lastly, the Court of Federal Claims concluded that the first sale doctrine precludes Honeywell from recovering damages from the government for use of infringing CMFDs and NVGs in the F-16 aircraft because Honeywell Inc. manufactured and sold the CMFDs at issue. See *Invalidity/Defenses Order* at 576–77. The Court of Federal Claims entered judgment in favor of the government, and Honeywell appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(3).

DISCUSSION

This appeal raises issues relating to invalidity, standing under the Invention Secrecy Act, and the first sale doctrine. We address each issue in turn.

because it supplied displays for the C-130J aircraft. We will refer to defendants-appellees, collectively, as “the government.”

I. Invalidity

The Court of Federal Claims found that the government proved by clear and convincing evidence that claim 2 of the '914 patent is invalid. Claim 2 recites the following:

2. A display system for use in association with a light amplifying passive night vision aid and a local color display including a local source of light having blue, red, and green color bands, comprising:

(a) a plurality of filters at the local color display including

(1) a first filter for filtering the blue color band of the local source of light;

(2) a second filter for filtering the green color band of the local source of light; and

(3) a third filter for filtering the red color band of the local source of light and passing a narrowband of the red color band; and

(b) a fourth filter which filters light at the night vision aid, said fourth filter cooperating with said plurality of filters to substantially block at least said narrowband of the red color band from being admitted to the night vision aid.

The Court of Federal Claims based its invalidity determination on 35 U.S.C. § 103(a) and, in the alternative, the written description requirement of 35 U.S.C. § 112, ¶ 1.

A. Obviousness

A patent shall not issue “if the differences between the subject matter sought to be patented and the prior art are such that the subject matter would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103(a); see *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406–07 (2007) (“If a court . . . concludes the claimed subject matter was obvious, the claim is invalid under § 103.”). Obviousness is a question of law, which we review *de novo*, with underlying factual questions, which we review for clear error following a bench trial. See *Scanner Techs. Corp. v. ICOS Vision Sys. Corp. N.V.*, 528 F.3d 1365, 1379 (Fed. Cir. 2008). What a particular reference discloses is a question of fact. See *Par Ordnance Mfg., Inc. v. SGS Imps. Int’l, Inc.*, 73 F.3d 1085, 1088 (Fed. Cir. 1995).

The Court of Federal Claims held that claim 2 of the ’914 patent would have been obvious to a person of ordinary skill at the time of the invention. *Invalidity/Defenses Order* at 538–67. The court’s obviousness determination involved five prior art references. The first reference (Uchida) is an article authored by Tatsuo Uchida, titled “A Liquid Crystal Multicolor Display Using Color Filters,” and presented at the First European Display Research Conference held on September 16–18, 1981 in Munich, Germany. The second reference (Stolov) is U.S. Patent No. 4,368,963, titled “Multicolor Image or Picture Projecting System Using Electronically Controlled Slides” and naming Michael Stolov as the sole inventor. The third reference (Boehm) is a paper authored by Dr. H.D.V. Boehm, titled “The Night Vision Goggle Compatible Helicopter Cockpit,” and presented at the Tenth European Rotorcraft Forum held on August 28–31, 1984 in The Hague, The Netherlands. The fourth reference (Verney) is an article authored by Jay F. Verney, titled

“Aircraft Lighting Systems,” and presented at the American Helicopter Society’s 41st Annual Forum Proceedings held on May 15–17, 1985 in Fort Worth, Texas. The fifth reference (the German patent application) is German Patent Application No. DE 33 13 899 A1, published on October 18, 1984. The Court of Federal Claims found that Uchida and Stolov each disclose elements (a)(1) and (2) of claim 2. The court found that Boehm discloses elements (a)(3) and (b). The court also found that Verney discloses element (a)(3) and that the German patent application discloses element (b). Furthermore, the Court of Federal Claims found that it would have been obvious to combine these prior art references. Honeywell argues that the Court of Federal Claims was clearly erroneous in finding, among other things, that Boehm and Verney each disclose element (a)(3).

Element (a)(3) of claim 2 recites “a plurality of filters at the local color display including . . . (3) a third filter for filtering the red color band of the local source of light and passing a narrowband of the red color band.” The Court of Federal Claims construed “local color display” and “color bands” to require perceptible red light. *Claim Construction Order* at 444; *id.* at 466 (“color bands’ . . . ‘include the range of wavelengths, within which the colors blue, red, and green are *visible to the human eye*’” (emphasis added)).²

Before the Court of Federal Claims, the parties’ disputes regarding infringement and invalidity raised the issue of whether the claimed invention requires the passing of perceptible red light. With respect to claim 1, the court explained that this claim requires the “local

² The Court of Federal Claims further construed “red color band” to mean “[a] range of color from 620 nm to 780 nm” and “narrowband of the red color band” to mean “a narrow range of wavelengths within the red color band.” *Claim Construction Order* at 471, 487.

color display” to emit *perceptible* light within the red color band. *Infringement Order* at 464 (concluding that the designated displays emit perceptible light within the red color band). During the phase of the litigation relating to the government’s defenses, the Court of Federal Claims explained that this interpretation applies equally to claim 2. *See* Trial Tr. 17:25–18:15, Nov. 13, 2006.

On appeal, the obviousness dispute turns upon whether claim 2 requires perceptible red light. Claim construction is a question of law, which we review *de novo*. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454–56 (Fed. Cir. 1998) (en banc). Claim 2—and specifically element (a)(3)—requires a local color display. The specification describes “[a] local color display which is . . . viewable by the crewmember, although the crewmember would tend to avoid looking through the [NVG] while viewing the color local display.” ’914 patent col.2 ll.40–44. The specification continues to explain that “[t]he cockpit has several local displays such as [the aforementioned] color display, which are illuminated so as to be clearly visible without the use of the [NVG].” *Id.* col.2 ll.57–59. In addition, figure 3 of the specification depicts a local color display with a local source of light that comprises red, green, and blue color bands. *Id.* col.4 ll.40–41. The Court of Federal Claims’ undisputed construction of color bands requires light that is “visible to the human eye.”

We conclude that the proper construction of local color display is that it must emit perceptible red light. Furthermore, element (a)(3) is a filter that passes a narrow band of this red light. The claimed invention addressed the need for red warning lights in NVG-compatible cockpits, and it is inconceivable that an aircraft would use warning lights that are not perceptible to the crew. In other words, there would be no point, in the context of this invention, to pass a narrowband of red light that cannot

be seen. The local color display emits perceptible red light, and element (a)(3) requires a narrow band of this perceptible red light to pass. We conclude, therefore, that element (a)(3) requires the passing of perceptible red light—i.e., red light which is visible to the human eye.

In the context of obviousness, however, it appears as though the Court of Federal Claims deviated from its earlier construction with regard to claim 2. Specifically, the court stated that its claim construction “did not require the *perception* of the red primary of a full color display” and instead that the local color display requires only that “at least one color [be] perceptible.” *Invalidity/Defenses Order* at 545 (alteration in original). Importantly, the Court of Federal Claims’ obviousness determination is premised on the conclusion that element (a)(3), and in fact, claim 2, does not require the passing of perceptible red light. In light of the correct construction of element (a)(3), which requires the passing of perceptible red light, we conclude that claim 2 would not have been obvious to one of skill in the art. Neither Boehm nor Verney disclose passing perceptible red light.

The government provided no evidence that either Boehm or Verney discloses perceptible red light. The government’s expert, Dr. Task, testified that “Boehm discloses a splitting of the red color band at about 710 nm,” but he did not testify that Boehm discloses the passing of *perceptible* red light. J.A. 623157. Honeywell presented un rebutted expert testimony from Mr. Tannas that graph IV of figure 3 does not disclose the passing of perceptible red light:

Based upon the information contained in [Boehm, Uchida and Stolov], it cannot be shown that the LCD display of [Uchida] or the projection display of [Stolov] would pass a “narrowband of the red color band” if filtered with the BG 7 filter. These references contain no information regarding the

emission spectrum of any light source that would be used to illuminate the LCD or projection display and no information regarding the emission spectrum of light emitted by the display after filtering with BG 7. Therefore it cannot be shown that the LCD display of [Uchida] or the projection display of [Stolov] filtered with BG 7 would emit light within the red color band or that such light would be perceptible.

J.A. 622958. According to Mr. Tannas, “[b]ased upon its transmission spectrum, it appears to me that the BG 7 filter would suppress red to such a degree that any red light passing through the filter would not be sufficient to provide the red primary of a full color display.” J.A. 622958–59. This unrebutted expert testimony is consistent with various statements in Boehm. For example, according to section 3 of Boehm, which identifies problems of cockpit illumination, “[t]he main idea is to use only special *green* and *blue* illumination in the cockpit or switch off all lighting and use a special type of floodlight when necessary.” J.A. 605298. This requirement of “blue/green lighting” is listed among “the most important factors for a NVG compatible cockpit.” *Id.* Moreover, Boehm mentions the filtering of “red and near [infrared]” light only with respect to incandescent lighting and discusses green/blue light with respect to lighting from the display. Boehm also states that “filtering conventional incandescent lighting with dyed-glass filters [such as BG-7] should be used sparingly.” J.A. 605302. Because the Court of Federal Claims’ analysis was premised on an erroneous claim construction, it clearly erred in finding that Boehm discloses element (a)(3) of claim 2.

With respect to Verney, the Court of Federal Claims’ analysis was more limited. *See Invalidity/Defenses Order* at 546. First, the court relied on Dr. Task’s testimony that Verney “shows *excellent transmission* out to about

640 nm and *measurable transmission* out to about 700 nm.” J.A. 623178. Again there is no testimony on whether this would result in perceptible red light. Verney teaches the conventional wisdom that “red or white integral lighting systems cannot be activated while the pilot is using NVGs due to their adverse interaction To meet this deficiency, a new infrared free blue-green light has emerged as the basic type of light to be used in NVG applications” J.A. 623393. Though the government claims Verney discloses a transmission of wavelengths within the red color band construed by the trial court, there is no evidence that this transmission results in any perceptible red light visible to the human eye. Second, the court stated that “Honeywell does not dispute that Verney discloses claim 2(3)(a) [sic].” *Invalidity/Defenses Order* at 546 (citing Pls.’ Post-Trial Opp’n Br. Regarding Defenses 61–62). But this statement is directly contradicted by Honeywell’s brief before the Court of Federal Claims. Citing testimony by Mr. Tannas, Honeywell argued that “one of ordinary skill in the art would understand that, because Verney teaches that the filtered red warning light does not adversely affect the performance of the NVGs, the red warning light would have to be dimmed to a level where it is not perceptible to the human observer.” Pls.’ Post-Trial Opp’n Br. Regarding Defenses 65 (explaining that “the Court’s claim construction requires that the ‘narrowband of the red color band’ that is emitted by a local color display be perceptible”). Honeywell unambiguously contended that “Verney (DE-511) is completely unrelated to the ’914 invention.” *Id.* Third, according to the Court of Federal Claims, “Mr. Tannas also agreed that ‘[Verney] is very close to the CMFD filter.’” *Invalidity/Defenses Order* at 546 (alteration in original). This statement alone, however, cannot support a finding that Verney discloses the passing of perceptible red light. Indeed it is clear from the reference itself that Verney discloses only dimming and blocking

near infrared light, which is not the same as passing perceptible red light. Specifically, Verney identifies two approaches for permitting aircraft pilots to see caution and warning lights *through* NVGs: (1) use limited filtering to “cut[] out the near infrared [light]” and (2) “where installation of limited filtering proves impracticable,” use dimming to “set the intensity low enough so that [the] energy level can be seen through the NVGs.” J.A. 623400 (stating in the context of the first approach that “[t]his filter when combined with a source that is dimmable provides an effective warning since the energy emitted from the display stands out in the NVG without adversely affecting their performance”). Verney concludes: “One significant finding during the BLACK HAWK development program is that red warning lights are permissible in the cockpit if the appropriate filtering and dimming is present.” J.A. 623402. The government points to no record evidence to support a finding that Verney discloses perceptible red light. For these reasons, the Court of Federal Claims committed clear error in finding that Verney discloses element (a)(3) of claim 2. Given the failure to prove that the cited references disclose element (a)(3), the government has failed to carry its burden of proving by clear and convincing evidence that the claimed invention would have been obvious to one of skill in the art. In light of the foregoing, we need not address Honeywell’s additional argument that the objective considerations warranted a determination of nonobviousness.

B. Written Description

The Court of Federal Claims concluded, in the alternative, that claim 2 is invalid under the written description requirement of 35 U.S.C. § 112, ¶ 1. *Invalidity/Defenses Order* at 567–72. “Compliance with the written description requirement is a question of fact.” *ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1376 (Fed. Cir. 2009). To comply, a patent applicant must

“convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the [claimed] invention.” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991) (emphasis omitted).

According to the Court of Federal Claims, claim 2 encompasses a variety of displays, but the originally filed '269 application “contains no indication that the inventor conceived of the invention being used with any displays other than CRTs.” *Invalidity/Defenses Order* at 570. During prosecution of the '914 patent, Honeywell amended the '269 application to substitute claims from another application for which the PTO had issued a notice of allowability. Honeywell also amended the specification and drawings of the '269 application, including replacing figure 3. It is true that figures 2 and 3 of the original application disclosed an embodiment using a local display (37) consisting of three monochromatic CRTs (51–53). But the original application also explained that “[i]n the case of the local display 37 using separate cathode ray tubes 51–53 or other display transducers, it is possible to more easily filter offending colors from reaching the [NVG].” J.A. 606271 (emphasis added). Moreover, the original application stated that “[w]hile specific configurations of the local display . . . 37 have been described, it is understood that the present invention can be applied to a wide variety of display and vision aid devices.” J.A. 606272. While original figure 3 may have disclosed a CRT, there is no reason, in light of the other statements in the specification, to limit the disclosure to only CRTs. For these reasons, the Court of Federal Claims clearly erred in finding that the original application’s disclosure was limited to CRT displays and that claim 2 of the '914 patent is invalid under the written description requirement of 35 U.S.C. § 112, ¶ 1.

C. Indefiniteness

The government contends that the Court of Federal Claims' invalidity determination could alternatively be affirmed by concluding that claim 2 is indefinite under 35 U.S.C. § 112, ¶ 2. Indefiniteness is a question of law, which we review *de novo*. *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1376 (Fed. Cir. 2001). “[A] claim is indefinite only if the ‘claim is insolubly ambiguous, and no narrowing construction can properly be adopted.’” *Honeywell Int’l, Inc. v. Int’l Trade Comm’n*, 341 F.3d 1332, 1338–39 (Fed. Cir. 2003) (quoting *Exxon*, 265 F.3d at 1375). “If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds.” *Exxon*, 265 F.3d at 1375. Nevertheless, “[e]ven if a claim term’s definition can be reduced to words, the claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope.” *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008).

The Court of Federal Claims concluded that claim 2 is not indefinite. *Invalidity/Defenses Order* at 574–76. The court construed “local color display” to require “color perceptible to an observer or observers utilizing a night vision aid.” *Claim Construction Order* at 444. According to the government, claim 2 is indefinite because “perceptible” is a subjective standard amenable to two different interpretations—color and brightness. We disagree. In *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559 (Fed. Cir. 1992), we upheld a construction of “lubricant” that used the term “slippery.” *Id.* at 1567. The accused infringer argued that this construction “renders the claims indefinite because it is impossible to know how ‘slippery’ the

product has to be.” *Id.* We explained that this argument was “improperly framed in its use of the term ‘slippery’ because this term is not used in the claims. The claims only require lubrication.” *Id.* We then held that “the amount of lubrication required is laid out in the specification and should be sufficient to achieve the fundamental purpose of the invention.” *Id.* (stating also that “we do not perceive any difficulty or confusion in determining what is ‘lubricated’ and what is not lubricated in terms of the . . . patent”).

In this case, claim 2 requires a “local color display” and it is the court’s construction that uses the term “perceptible.” Accordingly, like the accused infringer in *Minnesota Mining & Manufacturing*, the government improperly frames its argument by focusing on the term “perceptible.” With respect to the claim term “local color display,” the patent specification explains that the display is “viewable by the crewmember.” ’914 patent col.2 ll.40–42. The specification further describes a local color display that uses a local source of light comprising red, green, and blue color bands, *see id.* col.4 ll.40–45, which the Court of Federal Claims construed as “includ[ing] the range of wavelengths, within which the colors blue, red, and green are *visible to the human eye.*” *Claim Construction Order* at 466 (emphasis added). Moreover, the fundamental purpose of the invention is to permit displays that convey information—i.e., red warning lights—to crewmembers in an aircraft cockpit without such light overwhelming sensor elements in NVGs. We do not perceive any difficulty or confusion in determining what is a local color display and what is not a local color display in terms of the ’914 patent. That is, local color displays are displays that emit visible, color light. Therefore, because “local color display” is amenable to construction and is not insolubly ambiguous, we agree with the Court

of Federal Claims that the government did not meet its burden of proving that claim 2 is indefinite.

In sum, we conclude that the government has not met its burden of proving that claim 2 is invalid. In about 1-1/2 pages of briefing, L-3 Communications provides four alternative bases on which to affirm. We see no merit in these arguments.

II. Invention Secrecy Act

Honeywell's Amended Complaint also seeks compensation under the Invention Secrecy Act for pre-issuance use of the invention. The Court of Federal Claims concluded that "Honeywell cannot establish the second element of Article III standing to assert a claim for just compensation under the Invention Secrecy Act, i.e., 'causation—a fairly traceable connection between the plaintiff's injury and the complained-of conduct of the defendant.'" *Invention Secrecy Act Order* at 233 (quoting *Steel Co. v. Citizens for a Better Env't*, 523 U.S. 83, 103 (1998)). The "right to compensation" provision of the Invention Secrecy Act provides as follows:

The owner of any patent *issued upon an application* that was subject to a secrecy order issued pursuant to section 181 of this title, who did not apply for compensation [from a government agency] as above provided, shall have the right, after the date of issuance of such patent, to bring suit in the United States Court of Federal Claims for just compensation for the damage caused by reason of the order of secrecy and/or use by the Government of the invention resulting from his disclosure.

35 U.S.C. § 183 (emphasis added). Section 184 states that "[t]he term 'application' when used in this chapter includes applications and any modifications, amendments, or supplements thereto, or divisions thereof." *Id.* § 184.

The Court of Federal Claims concluded that “Honeywell’s ’914 patent did not issue ‘upon’ or ‘on’ the ’269 Application as there is no contiguous relationship or dependence between the two.” *Invention Secrecy Act Order* at 233. According to the Court of Federal Claims, “the claims in the ’269 Application, subject to the April 2, 1986 Secrecy Order, were completely different than the claims in the ’914 patent that issued on October 22, 2002.” *Id.* at 232.

The court’s interpretation of § 183 contradicts the plain language of the statute and its creation of a “contiguous relationship or dependence” test lacks any foundation in the text of the statute itself. The ’269 application issued, albeit after amendment, as the ’914 patent. Section 184 explicitly includes amendments made to an application. Honeywell owns the ’914 patent, this patent issued from the ’269 application, this application was subject to a secrecy order. Honeywell thus has standing to assert a claim for just compensation under the Invention Secrecy Act.

The government argues that several issues remain to be decided regarding Honeywell’s pre-issuance damages claim. All but one of these defenses, however, have been resolved by our decision on standing. Claim amendments during prosecution cannot defeat entitlement as the statute does not require the proposed claims to have issued – we have rejected the trial court’s “contiguous relationship or dependence” test. The only remaining issue is the government’s defense related to pre-issuance damages for “use by the Government of the invention resulting from his disclosure.” On remand, the Court of Federal Claims should determine whether the statute requires that the government use must result from the disclosure, and, if so, whether it does in this case.

III. First Sale Doctrine

The Court of Federal Claims concluded that the first sale doctrine precludes Honeywell from recovering damages from the government for use of at least one infringing system. This appeal concerns three accused systems: (1) the Color Multifunction Display (CMFD) and NVGs in the F-16 aircraft, (2) the Radar Display Unit (RDU) and NVGs in the C-130H aircraft, and (3) the Color Multifunction Display Unit (CMDU) and NVGs in the C-130J aircraft. Importantly, Honeywell Inc.³ manufactured and sold the CMFDs. According to the Court of Federal Claims, the first sale doctrine thus precludes Honeywell from recovering damages from the government for use of infringing CMFDs and NVGs in the F-16 aircraft. For the first sale doctrine to apply, there must be an authorized first sale. *See Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1105 (Fed. Cir. 2001) (“To invoke the protection of the first sale doctrine, the authorized first sale must have occurred under the United States patent.”). This case presents a peculiar set of facts, to be sure. Nevertheless, Honeywell Inc.’s sale of infringing CMFDs was not authorized because, at the time of the sale, Honeywell Inc. had no rights under the ’914 patent, which AlliedSignal owned. The fact that Honeywell now owns the patent does not retroactively authorize the earlier sale. As such, the first sale doctrine does not preclude Honeywell from recovering damages against the government for use of infringing CMFDs and NVGs in the F-16 aircraft. To the extent that the government has recourse, such recourse is not through the first sale doctrine.

³ Recall that AlliedSignal was the original assignee of the ’914 patent and that Honeywell (specifically Honeywell International, Inc.) resulted from a December 1999 merger between AlliedSignal and Honeywell Inc.

CONCLUSION

We conclude (1) that the government has not proved by clear and convincing evidence that claim 2 of the '914 patent is invalid, (2) that Honeywell has standing to assert a claim for just compensation under the Invention Secrecy Act, and (3) that the first sale doctrine does not preclude Honeywell from recovering damages against the government for use of infringing CMFDs and NVGs in the F-16 aircraft. Accordingly, the final judgment of the Court of Federal Claims is reversed. We remand for the trial court to resolve the government's defense related to pre-issuance damages under the Invention Secrecy Act and to determine damages.

REVERSED and REMANDED

**United States Court of Appeals
for the Federal Circuit**

**HONEYWELL INTERNATIONAL, INC.,
and HONEYWELL INTELLECTUAL PROPERTIES,
INC.,**

Plaintiffs-Appellants,

v.

**UNITED STATES,
*Defendant-Appellee,***

and

**LOCKHEED MARTIN CORPORATION,
*Defendant-Appellee,***

and

**L-3 COMMUNICATIONS CORPORATION,
*Defendant-Appellee.***

2008-5181

Appeal from the United States Court of Federal
Claims in 02-CV-1909, Judge Susan G. Braden.

MAYER, *Circuit Judge*, dissenting-in-part.

In my view the trial court correctly decided that claim
2 of U.S. Patent No. 6,467,914 (“the ’914 patent”) is inva-
lid as obvious, that U.S. Patent Application No.
06/786,269 (“the ’269 application”), which eventually
issued as the ’914 patent, did not fully disclose the inven-

tion of claim 2 of the '914 patent, and that Honeywell International Inc. and Honeywell Intellectual Properties Inc. (collectively "Honeywell") are precluded from recovering damages for infringement by products that a predecessor company, Honeywell Inc., sold to the government. I therefore respectfully dissent from Parts I.A, I.B, and III of the court's opinion.

I. Obviousness

The '914 patent claims a color display system, such as that used in aircraft cockpits, that is compatible with the use of night vision goggles ("NVGs"). Compatibility between a color display and NVGs is a concern because the presence of too much light inside the cockpit, particularly light with wavelengths in the red and infrared regions of the spectrum, can overwhelm NVGs and interfere with their use. There is no dispute that elements (a)(1) and (a)(2) of claim 2 of the '914 patent, which discuss filtering of the blue and green bands of the color display, were well known in the art in 1985, the year the '269 application was filed. Honeywell argues that what would not have been obvious in 1985 is the idea of "splitting" the red color band, using filters to allow a narrowband of red to be displayed while blocking this same narrowband at the NVGs, as is taught by claim 2 elements (a)(3) and (b). As the trial court correctly found, however, the prior art does disclose this concept. One of ordinary skill in the art in 1985 would have known how to apply this prior art to a color display in a cockpit and make adjustments to the filters and light source to achieve the display system taught in claim 2 of the '914 patent. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) ("A person of ordinary skill is . . . a person of ordinary creativity, not an automaton."). I would therefore affirm the trial court's determination that the claim is invalid as obvious.

Element (a)(3) of claim 2 of the '914 patent teaches a filter “for filtering the red color band . . . and passing a narrowband of the red color band.” According to the trial court’s construction, the red color band represents light with a wavelength between 620nm and 780nm. *Honeywell Int’l, Inc. v. United States*, 66 Fed. Cl. 400, 470-71 (2005) (*Claim Construction Order*). One of the prior art references employs a filter that passes red light from 620nm to 710nm, thereby teaching the limitation of element (a)(3) of claim 2. See H.D.V. Boehm, *The Night Vision Goggle Compatible Helicopter Cockpit*, Tenth European Rotorcraft Forum, August 28-31, 1984 (“Boehm”). A second prior art reference also discloses the limitation of element (a)(3), as it describes filtering that allows for “excellent transmission throughout the visible region and then cuts out the near infrared.” See Jay F. Verney, *Aircraft Lighting Systems*, American Helicopter Society, 41st Annual Forum Proceedings, May 15-17, 1985 (“Verney”). According to the government’s expert, Verney “shows *excellent transmission* out to about 640 nm and *measurable transmission* out to about 700 nm.”

The majority agrees with Honeywell’s argument that the limitation of element (a)(3) of claim 2 is not met because the filters employed in Boehm and Verney would not pass perceptible red light. This argument confuses the trial court’s holding that claim 2 requires perceptible light to be emitted within the wavelengths defined as the red color band with a holding that claim 2 requires light to be emitted which is perceived as red. The trial court consistently held the former—in its orders on claim construction, infringement, and validity—and never held the latter. See *e.g. Honeywell Int’l, Inc. v. United States*, 70 Fed. Cl. 424, 464 (2006) (*Infringement Order*) (noting that the light emitted need not be perceived as red to infringe the red color band element of claim 1); *id.* at 467 (“Claim 2(a)(3) of the '914 patent requires *only* that the

third filter pass a ‘narrow band at the red color band,’ i.e., a narrow range of wavelengths within 620 nm to 660 nm.”) (emphasis added); *Honeywell Int’l Inc.*, 81 Fed. Cl. 514, 545 (2008) (*Invalidity/Defenses Order*) (“The court’s claim construction . . . did not require the *perception* of the red primary of a full color display.”).^{*} In fact, the trial court specifically found that the accused systems infringe claim 2 despite the fact that they do not emit perceptible red light; there is no indication that the accused systems would have been found to infringe had the trial court applied the majority’s new construction. *Infringement Order*, 70 Fed. Cl. at 467; *see also id.* at 464 (rejecting the argument that an accused system did not infringe claim 1 because there was no evidence that it “produces red energy that can be detected by the human eye”). In any case, testimony by experts for both Honeywell and the government indicates that one of skill in the art at the time would have known how to adjust the light source to increase the perceptibility of the light in the red color band while employing the filters of Boehm or Verney. In determining whether a patented invention is invalid for obviousness, “we do not ignore the modifications that one skilled in the art would make to a device borrowed from the prior art.” *In re Icon Health & Fitness, Inc.*, 496 F.3d 1374, 1382 (Fed. Cir. 2007).

Element (b) of claim 2 of the ’914 patent employs a complementary filter at the NVGs, which blocks the same narrowband of red light that is passed by the filter of

^{*} While the trial court construed “color bands” “to include the range of wavelengths, within which the colors blue, red, and green are visible to the human eye,” *Claim Construction Order*, 66 Fed. Cl. at 466, this construction does not mean that each color band is only present when a human can perceive the relevant color. Instead, the construction reflects the fact that the range of wavelengths associated with each band can only be defined in terms of colors perceived by humans.

element (a)(3). The use of such a complementary filter at the NVGs is described in Boehm and a third prior art reference, German Patent Application, DE 33 13 899, Oct. 18, 1984 (“the German patent”). While neither reference teaches a cutoff point (below which light will be blocked from entering the NVGs) in the red color band, as is taught by the ’914 patent, one skilled in the art at the time the patent application was filed would have understood that this cutoff point could be shifted along the wavelength spectrum. In fact, the German patent clearly teaches that the cutoff point can be set at any wavelength, explaining that the display filter must simply block light above some threshold wavelength and the NVG filter must block light below that threshold wavelength.

The prior art therefore discloses all the elements of claim 2 of the ’914 patent. While none of the references perform the filtering exactly as taught by the claim, that does not preclude a finding of obviousness. *KSR Int’l*, 550 U.S. at 418 (“[T]he analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”). Once the military made the decision to allow more red light in the cockpit, at the expense of NVG performance, it would have been obvious to those skilled in the art to combine these references to allow the display of a limited amount of red light in such a way as not to interfere with the NVGs, which is taught by claim 2.

Honeywell’s argument against obviousness relies heavily on secondary considerations. It places great weight on the fact that, prior to the filing of the ’269 application, the military solved the NVG compatibility problem by limiting the amount of red light in cockpits. The military later provided a second option to pilots that allowed a small amount of red light to be displayed with a

corresponding degradation in NVG functionality. According to Honeywell, this change reflects the military's review of the '269 application, pursuant to the Invention Secrecy Act, between the issuance of the two specifications governing NVG use in cockpits. Several military witnesses testified, however, that the two events are unrelated. *Invalidity/Defenses Order*, 81 Fed. Cl. at 564-65. The change in the military specification reflected a desire on the part of some military pilots, particularly those of fixed-wing aircraft, to sacrifice some amount of NVG sensitivity in exchange for allowing more red light to be displayed in the cockpit. This was a simple shift, changing the cutoff point for the red light that could be displayed (and was therefore blocked by the NVGs) from 625nm to 665nm, a shift that was well within the technical ability of those of ordinary skill in the art at the time.

An additional influence on the military specification was the advancements made to the color displays themselves, which were in their infancy at the time the original NVG specification was drafted. Problems with the use of color displays that were independent of NVG compatibility—in particular their limited daylight readability—initially prevented the military from attempting to accommodate their use in cockpits. Once these problems were resolved and color displays could otherwise be implemented, their compatibility with NVGs became more important. These factors, not the review of the '269 application, caused the military to adjust the specification governing red light in cockpits. *See KSR Int'l*, 550 U.S. at 419 (“[I]t often may be the case that market demand, rather than scientific literature, will drive design trends.”). The secondary considerations advanced by Honeywell are therefore insufficient to overcome the strong showing of obviousness.

II. Written Description

The three claims that issued in the '914 patent were not filed with the original '269 application. Instead, they were first filed in a continuation of the related '268 application, years after the '269 application was filed. Honeywell later abandoned the continuation and transferred its allowed claims to the '269 application, making conforming amendments to the '269 specification and drawings.

The trial court held that the '269 application did not fully disclose the invention of claim 2 of the '914 patent. The '914 patent claims “a local source of light having blue, red, and green color bands.” To this single, multiband source of light the '914 patent applies “a plurality of filters,” including one that filters only the red color band and passes a narrowband of red. In contrast, the '269 application claimed a local source of light that “includes a plurality of distinct monochromatic color generators.” In other words, each color generator would emit a single color: red, green, or blue. The application further claimed a bandpass filter “arranged to block light from one of said color generators except at preferred range of frequencies.” In this manner the '269 application sought to limit the red light emitted by the display; a bandpass filter over the red color generator would allow only a portion of the red color band to pass.

In order to meet the written description requirement of 35 U.S.C. § 112, the specification “must describe the invention sufficiently to convey to a person of skill in the art that the patentee had possession of the claimed invention at the time of the application, i.e., that the patentee invented what is claimed.” *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005). There is no indication in the '269 application that the inventor conceived, at that time, the invention in claim 2 of the '914 patent, which filters a single source of light

carrying multiple color bands. As noted by the trial court, the use of the bandpass filter described in the '269 application over the multiband light source claimed in the '914 patent would render the full color display inoperative. *Invalidity/Defenses Order*, 81 Fed. Cl. at 569-70. This is because the bandpass filter of the '269 application would block everything except the narrow red band, including the blue and green light, resulting in the display of only red light. The trial court therefore did not commit clear error in finding that the original disclosure of three separate, monochromatic light generators would not demonstrate to one skilled in the art that the inventor possessed the subject matter of claim 2 at the time the application was filed.

III. First Sale Doctrine

One of the accused infringing devices, the Color Multi-function Display ("CMFD") installed in F-16 aircraft, was manufactured and sold to the government by Honeywell Inc. prior to its 1999 merger with AlliedSignal Inc., the company that held the rights to the '269 application. Honeywell resulted from the merger of the two companies. The trial court held that Honeywell is barred by the first sale doctrine from recovering damages for infringement because "[t]he patentee and the seller of the patented product . . . are now the same corporate entity." *Invalidity/Defenses Order*, 81 Fed. Cl. at 576-77. Once again, I would affirm.

The sale by a patentee of a patented product extinguishes the patent rights with respect to that product. *Quanta Computer, Inc. v. LG Elecs., Inc.*, 128 S. Ct. 2109, 2115 (2008). While the seller of the CMFDs did not hold the rights to the '269 application at the time they were sold, the interests of the owner of the application later merged with those of the company that sold the infringing devices. Because Honeywell received compensation for

the sales, through Honeywell Inc., its patent rights in those products are extinguished. The majority's contrary finding allows Honeywell to recover for infringement when Honeywell itself is the ultimate recipient of the profits from the sale of the infringing products.

This situation parallels that presented in *AMP Inc. v. United States*, 389 F.2d 448 (Ct. Cl. 1968). There the court held that a patentee was barred from using a preexisting, but later acquired, patent to derogate from a license negotiated under a different patent, noting “[t]he grantor is estopped from taking back in any extent that for which he has already received consideration.” *Id.* at 452; *see also Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp.*, 123 F.3d 1445, 1451 (Fed. Cir. 1997) (“Generally, when a seller sells a product without restriction, it in effect promises the purchaser that in exchange for the price paid, it will not interfere with the purchaser’s full enjoyment of the product purchased.”). Similarly, Honeywell should not be permitted to interfere with the government’s enjoyment of products sold to the government by its predecessor.