ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeals of --	)	
	)	
CANVS Corporation	)	ASBCA Nos. 57784, 57987
	)	
Under Contract No. USZA22-03-C-0027	)	

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OPINION BY ADMINISTRATIVE JUDGE PEACOCK

These appeals arise from a contracting officer's deemed denial and final decision involving a claim for $100 million asserting breach of contract for the unauthorized disclosure of allegedly proprietary information delivered under the contract. Only entitlement is before us for decision. We dismiss ASBCA No. 57784 as duplicative. We deny ASBCA No. 57987 for the reasons indicated below.

FINDINGS OF FACT

A. The Small Business Innovation Research (SBIR) Program

1. The SBIR program assists small business concerns in obtaining and performing innovative research and development (R&D) work. *See* Small Business Innovation Development Act of 1982, Pub. L. No. 97-219, sec. 4, § 9, 96 Stat. 217 (codified as amended at 15 U.S.C. § 638). The SBIR program has three phases. Phase I "determining…the scientific and technical merit and feasibility of ideas that appear to have commercial potential." 15 U.S.C. § 638(e)(4)(A). Phase II "further develop[s] proposals which meet particular program needs." 15 U.S.C. § 638(e)(4)(B). Phase III involves "commercial applications of SBIR-funded research or research and development" or "products or services intended for use by the Federal Government, by follow-on non-SBIR Federal funding awards" or "the continuation of research or research

and development that has been competitively selected using peer review or merit based selection procedures." 15 U.S.C. § 683(e)(4)(C). (GPF ¶ 1)[1]

2. The federal agency in charge of overseeing the SBIR program is the Small Business Administration (SBA) (GPF ¶ 2). To implement the SBIR legislation, the SBA issued policy directives and regulations (GPF ¶ 3).

3. SBA Regulations require the small business receiving an SBIR contract to conduct research and development during SBIR Phase I and Phase II. The primary objective of a Phase I SBIR contract is to prepare a paper study. A prototype is permitted to be developed and delivered under a SBIR Phase II contract. (GPF ¶ 4) A SBIR Phase III contract is not funded by SBIR appropriations (tr. 6/64, 68, 135-36, 8/166-67, 180). The 2002 SBIR Policy Directive stated that "SBIR Phase III…is funded by sources other than the SBIR Program" (GPF ¶ 6).

4. Department of Defense (DoD) Federal Acquisition Regulation Supplement (DFARS) clause 252.227-7018, RIGHTS IN NONCOMMERCIAL TECHNICAL DATA AND COMPUTER SOFTWARE—SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM (JUN 1995) (the 7018 clause), is the technical data rights clause used in the DoD SBIR program contracts. *See* DFARS 227.7104(a) (prescribing the use of the 7018 clause).

B. Background of Night and Color Vision Science as of June 2005

5. In general, visible light, e.g., light visible to the human eye, spans a narrow range of the electromagnetic spectrum, ranging between 400 and 700 nanometers (nm) in wavelengths. Wavelengths below 400 nm begin to transition into the ultraviolet (UV) range and those greater than 700 nm begin to transition into the infrared (IR) range. The wavelength range between 700 and 900 nm is referred to as "near infrared." (GPF ¶¶ 54-56)

6. Under low light conditions, such as night, the sensitivity of the human eye drifts towards the lower frequencies or the infrared range. Typically, the human eye is

[1] The Board issued a Briefing Order requiring the parties to propose, in their initial post-hearing briefs, numbered and detailed findings of fact with supporting citations to the record. The parties were directed to note detailed, specific objections to the opposing party's proposed findings (GPFs or APFs) and citations to the record in the initial brief, if any. Accordingly, the Board has adopted undisputed (or undisputed portions) of the parties' proposed findings as our own factual findings, without the accompanying supporting citations to the record. However, for reasons discussed in the Decision portion of this Opinion, appellant failed substantively to comply with the Briefing Order. Consequently, we have relied to a considerable extent on the government's proposed findings in our Findings of Fact herein.

sensitive to visible and infrared light in the range between 400 and 600 nm. This wavelength range is typically referred to as the "photopic band." (GPF ¶ 57)

7. In the context of human perception, the term "color" has a scientific definition and the term "color" denotes a perception, not wavelengths. The term "true color" has a scientific definition and it means that the perceived color is the same irrespective of the different levels of illumination—i.e., all viewers would agree that a green wire is green, a red is red, a purple wire is purple, regardless if there are clouds out, if it is daytime, or if there is artificial lighting. (GPF ¶¶ 58-59) The term "life-like color" has a scientific definition and it means those colors associated with a scene that are within our experience. The term "pseudo color" has a scientific definition and it means the assignment of a color to a brightness level. The term "false color" has a scientific definition and it means the assignment of a color to an image taken in a specific spectral band. (GPF ¶¶ 60-62)

8. The term "contrast" has a scientific definition and it means the brightness of a particular spot in the scene. The term "contrast" has no relationship to color. (GPF ¶¶ 63-64)

9. The term "color contrast" has a scientific definition and it means a comparison or differentiation of the level of brightness. Human perception of color is created out of color contrast. It is a surreal notion that colors are a perception and do not actually exist. Oranges are not actually orange, but generally humans perceive them as orange. The sky is not actually blue, but generally humans perceive it as blue. (GPF ¶¶ 65-66)

10. A monocular percept is a percept generated in the human or biological brain as a result of an input to just one eye. The term "monocular color" has a scientific definition and it means a percept generated in the brain as a result of color contrast signals input into just one eye. (GPF ¶¶ 67-68)

11. If a red image and green image are presented one on top of another to a monocular visual process, a yellow percept is created. Color perception is a monocular visual process that creates a stable and lasting percept. Because color perception is a monocular visual process, if a red image is presented to one eye, and a green image is presented to another eye, color mixing is not possible, and as a result, there will not be a yellow percept. When both eyes perceive the same colored scene, each colored scene is still generated by the monocular visual process for one eye independent of a separate monocular visual process that generates an identical color scene for the other eye. The color percept for each eye is still monocular color. (GPF ¶¶ 69-72)

12. The term "binocular vision" has a scientific definition and it means a percept generated in the brain that is a result of inputs to both eyes. Binocular vison allows humans to perceive depth. (GPF ¶ 73) The term "binocular rivalry" has a scientific definition and it means a percept generated in the brain that is a result of disparate inputs to

two eyes, prompting the brain to shutoff the input from one eye. The brain could also alternate the inputs from the two eyes. The binocular rivalry phenomenon is well established and was first documented in the 1830s. (GPF ¶ 74) The term "binocular color rivalry" has a scientific definition and it occurs when the color perceived by one eye is different from the color perceived by the other eye causing the brain to shut down the color pathway from one eye. When one eye is viewing a single color, there is no contrast that would permit a stable color percept, causing that color to fade to gray. When one eye is viewing a scene consisting of a single color and the other eye is viewing a scene consisting of an entirely different color, there is no color contrast in either eye. This results in color rivalry where the brain will alternate between the inputs. (GPF ¶ 75)

13. One deleterious physiological side effect of binocular color rivalry is nausea. Another deleterious side effect of binocular color rivalry is headache. (GPF ¶ 76)

14. In the 1950s, Dr. Edwin H. Land, the founder of Polaroid Corporation, conducted a series of experiments that led to the Land's Retinex Theory of Color Vision (Land Theory). Dr. Land proved definitively that color percept does not directly correspond to wavelengths. Rather, he proved that one can achieve nearly full true color with only two narrow bands of visible light wavelength. In his experiments, Dr. Land separated the photopic band into thirds: a short wavelength band (generally understood to be blue), a medium wavelength band (generally understood to be yellow), and a long wavelength band (generally understood to be orange/red). He then eliminated completely the short wavelength band, but was still able to achieve full color perception, including blue percepts, from the remaining two wavelength bands. (GPF ¶ 77) Importantly, Dr. Land's work involved the superimposition of the two wavelength bands prior to a monocular presentation to each eye—i.e., each eye saw the same thing (tr. 6/195-96; ex. G-149). His work did not involve the presentation of one waveband band to one eye and another waveband to another eye (GPF ¶ 78).

15. At night, the amount of visible light is low while other parts of the spectrum, such as near-infrared, are more abundant. As a result, various night vision technologies have been created to help both amplify what little visible light that may exist at night and to convert non-visible light into visible light. (GPF ¶ 79)

16. Night vision goggles are devices which permit users to perceive images under low light or night conditions. Each night vision goggle includes at least one image intensifier tube that receives, amplifies, and displays an image under low light or night conditions. When using a night vision goggle, the low light and infrared radiation entering that goggle first encounters a transparent objective lens that focuses the radiation onto an input window of an image intensifier tube. (GPF ¶¶ 80-82)

17. Image intensifier tubes are one of the primary light amplification mechanisms used in night vision technologies. The current generations of image intensifier tubes are

capable of amplifying visible light and infrared under low light conditions. The current generation of tubes also convert the amplified infrared into visible light for the user. An image intensifier tube is frequently referred to as an "I^2 tube." The components of an image intensifier include a photocathode, a microchannel plate, a phosphor screen, a fiber optic twist, and an eyepiece. (GPF ¶¶ 83-84) The focused radiation, consisting of photons, impacts on a photocathode of the image intensifier tube that transforms photons to electrons (GPF ¶ 85). Each electron then passes through a microchannel plate that generates tens of thousands of additional electrons. This process is also referred to as intensification. (GPF ¶ 86) The electrons then strike a phosphor screen that converts electrons to photons (GPF ¶ 87).

18. A "green-color phosphor" stimulates responsive cells, primarily medium wavelength cones, in the retina which eventually would lead to a percept of "green color." A "red-color phosphor" stimulates responsive cells in the retina, primarily long wavelength cones, which eventually would lead to a percept of "red color." A "white-color phosphor" stimulates responsive cells in the retina which eventually would lead to a percept of "white color." (GPF ¶¶ 89-91)

19. A tint of one color is generally referred to as monochromatic. In turn, the photons constitute an amplified or intensified image of a previously low light or infrared image. (GPF ¶¶ 92-93)

20. In conventional image intensifier tubes, the selected phosphor is of the P-43 type or an equivalent, which creates a green percept to users (GPF ¶ 94).

21. In general, multicolored phosphors have been used in color television tubes since the 1960s. A full color cathode ray tube (CRT) television typically has three phosphors that correspond to the primary colors of the display—red, green and blue (referred to as RGB). (GPF ¶ 95)

22. By 2002, it was general knowledge that a phosphor screen for an image intensifier tube may employ phosphors of different colors, including red-color phosphors. For example, the German company Proxitronic in 1997 offered to sell image intensifier tubes that employed phosphor screens of different colors. (GPF ¶ 96)

23. U.S. Patent No. 5,233,183 (1993 Field Patent), reflecting an invention by Mr. Robert J. Field, Jr., of ITT Corporation (ITT), disclosed the use of different colored phosphors in a single image intensifier tube. On 3 August 1993, the date that the 1993 Field Patent issued, the use of different colored phosphors in an image intensifier tube was publicly available information. (GPF ¶ 97)

24. U.S. Patent No. 3,987,299 (Mulder Patent), reflecting an invention by Mr. Hendrik Mulder of a Dutch corporation, also disclosed the use of two different

colored phosphors in an image intensifier tube. On 19 October 1976, the date that the Mulder Patent issued, the use of two different colored phosphors in a single image intensifier tube was publicly available information. (GPF ¶ 98)

25. By 1988, Litton Industries was already manufacturing image intensifier tubes having red color phosphor screens (GPF ¶ 99). By 2002, ITT was willing to manufacture image intensifier tubes having phosphor screens of different colors beside the green color. It was capable of manufacturing image intensifier tubes with red color phosphor screens. (GPF ¶ 100)

26. By 2002, there were only two manufacturers of image intensifier tubes in the United States—ITT and Litton (GPF ¶ 101).

27. By 2002, image intensifier tubes having white color phosphor screens were also available. In its 1998 proposal for the ACT II contract (the Act II contract is discussed in finding 61), CANVS asked the Army to provide white-color phosphor image intensifier tubes manufactured by Litton Industries as government-furnished equipment (GFE) items. Litton did provide white-color phosphor image intensifier tubes for incorporation into the color night vision camera systems delivered under the ACT II contract. (GPF ¶ 102)

28. When a human eye views an image projected from an I^2 tube's phosphor screen, such viewing is often referred to as "direct viewing." Direct view devices are distinguished from indirect view devices which use a video screen. (GPF ¶ 103) A night vision device permitting use by two eyes is referred to as a binocular device. A binocular night vision device employs two image intensifier tubes such that each tube presents an image to one eye. This presentation to two separate eyes creates some perception of depth or stereopsis. By 2002, there were several monochromatic binocular night vision goggles such as the AN/AVS-6 or ANVIS (Aviator's Night Vision Imaging System), the AN/AVS-9, the AN/PVS-5, the F4949, and the F5050 goggles. (GPF ¶¶ 108-10)

29. The term "multi-spectral" relative to imaging technology means the formation of a scene taken from different segments of the electromagnetic energy spectrum, for example, visible and infrared. Multiple segments or bands of different wavelengths may be used—for example, for three, or up to ten segments. These multiple bands of different wavelengths may be created by a combination of image intensifier tubes and filters—e.g., red-color phosphor tube in combination with green-color phosphor tube, or white-color tubes with red and green filters. (GPF ¶¶ 111-12)

30. Night Vision and Electronic Sensors Directorate (NVESD), Ft. Belvoir, Virginia, is a subordinate organization of the U.S. Army Research, Development and Engineering Command (RDECOM). NVESD is also sometimes referred to by its earlier name—the Night Vision Laboratory (NVL). (GPF ¶ 113) NVESD for the past 50 years

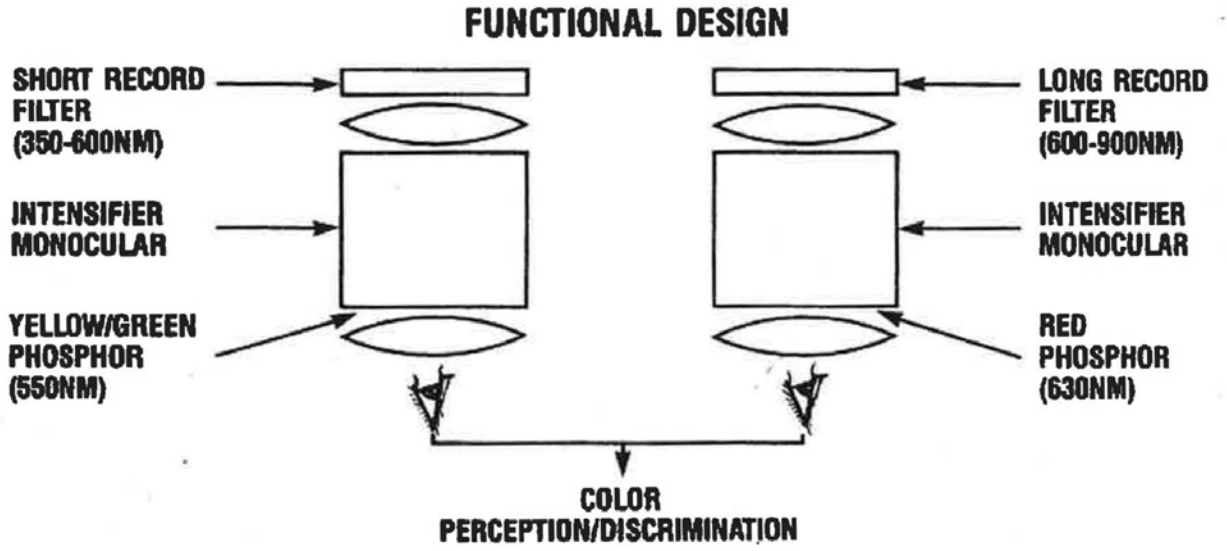
has been the primary federal government agency identifying and developing promising night vision technology to the point of production for implementation into actual equipment (GPF ¶ 114).

31. Until his retirement in early 2015, Mr. Edward Bender had been an engineer with NVESD since 1974. Mr. Bender had extensive experience with the technical aspects of night vision devices, especially night vision devices using image intensifier tubes. He authored or co-authored about 25 publications. For the 15 years prior to his retirement, Mr. Bender held the position of Subject Matter Expert for image intensifier tubes. (GPF ¶¶ 115-16)

32. In 1987, inspired by the Land Theory, Mr. Bender designed a binocular night vision goggle having a green-phosphor image intensifier tube in one channel and a red-phosphor image intensifier tube in the other channel, along with external objective lens filters that permitted the transmission of appropriate ranges of wavelengths. This night vision goggle was called the Chromatic PVS-5. (GPF ¶ 117)

33. Mr. Bender's 1987 design was prompted by the Army's requirement for night vision goggles that would be capable of distinguishing colors at night so as to permit nighttime repair and maintenance of aircraft, including distinguishing color-coded electrical wires (GPF ¶ 118).

34. The design of the Chromatic PVS-5 goggle is nearly identical to appellant's CNVS-4949 goggle (GPF ¶ 119). Below is a sketch of the functional design of the Chromatic PVS-5:



(*Id.*; ex. G-9 at 2100)

35. In creating the Chromatic PVS-5 goggle, Mr. Bender realized that Dr. Land's work did not involve the presentation of one waveband band to one eye and another

waveband to another eye, and Mr. Bender identified this design as an engineering risk (GPF ¶ 120). The design of the Chromatic PVS-5 night vision goggle varied from the standard production model by substituting one of the identical green phosphor tubes with a red phosphor tube (tr. 6/199). It provided a green-colored scene in one optical channel and a red-colored scene in the other channel (GPF ¶ 121). Mr. Bender used appropriate external objective lens filters with this goggle (GPF ¶ 122; exs. G-10, -180.2, -180.3).

36. Mr. Bender, his colleague Mr. Daniel Hosek, and other colleagues at NVESD operated the Chromatic PVS-5 goggle during the 1988 time period. None were able to obtain any consistent, reproducible true-color views. (GPF ¶¶ 126-29; tr. 6/206-09, 211)

37. NVESD generated a purchase order, dated 2 February 1987, for the purchase of a standard AN/PVS-5A binocular night vison goggle having one image intensifier tube capable of operating in the wavelength range of 610-650 nm. This wavelength range is best accomplished by a red-color phosphor screen image intensifier tube. NVESD forwarded this purchase order to the corporations which were at that time manufacturing not only image intensifier tubes but also entire PVS-5 goggles—ITT, Litton Systems, and Varo. The purchase orders contained no restrictions on the manufacturers' ability to use the information therein. (GPF ¶¶ 130-31; ex. G-9 at G2094-95; tr. 6/199-201, 214)

38. NVESD issued Contract No. DAAK70-87-P-1009, dated 19 May 1987, to Litton for the purchase of a modified AN/PVS-5 goggle having a standard green-color phosphor image intensifier tube and a red-color phosphor image intensifier tube (GPF ¶ 132). Via this purchase order, Mr. Bender's design was made known to the night vision technology industry. Mr. Bender discussed his design in some detail with Litton representatives. (GPF ¶ 133) Litton was not required to sign any nondisclosure agreement (NDA) to protect Mr. Bender's design (GPF ¶ 134).

39. NVESD received the Chromatic PVS-5 goggle in mid-December 1987. This goggle was released into Mr. Bender's custody in January 1988. (GPF ¶ 136) Mr. Bender did not consider his design to be a trade secret (GPF ¶ 135). NVESD did not treat the Chromatic PVS-5 night vision goggle as a trade secret. Mr. Bender discussed the Chromatic PVS-5 goggle with Litton representatives, even after delivery. Mr. Bender distributed his design schematics to other government personnel. (GPF ¶ 137; tr. 6/212, 240-41)

40. The Chromatic PVS-5 night vision goggle was displayed in a glass exhibit display case located in the hallway of the NVESD building, accessible to both government and private sector personnel, for several years (GPF ¶ 139). CANVS' expert witness, Mr. Brian Gillespie, recalls observing the Chromatic PVS-5 goggle in the glass display case prior to 2000, and he recalls it "using these two different color phosphor tubes in the systems, and filtering the imagery that came—I mean light that came into the

tubes" (GPF ¶ 140). Mr. Bender's design of the Chromatic PVS-5 night vision goggle was generally known in the night vision technology industry (GPF ¶ 141).

41. U.S. Patent No. 5,162,647 (1992 Field Patent), invented by Mr. Robert J. Field, Jr., of ITT Corporation, disclosed the simultaneous presentation of a reddish image and a greenish image by a binocular night vision goggle, utilizing color input and output filters (ex. G-169; tr. 9/94-99). On 10 November 1992, the date that the 1992 Field Patent issued, the simultaneous presentation of a reddish image in one optical channel and a greenish image in the other optical channel of a binocular night vision goggle was publicly available information (GPF ¶ 142).

42. In 1998, Mr. John Walkenstein, appellant's president, filed two patent applications, U.S. Patent Application Serial Nos. 09/062,141 and 09/206,992, directed towards a night vision goggle with one channel that appears green and one channel that appears red (GPF ¶ 143). Both patent applications were rejected by the U.S. Patent and Trademark Office examiner for lack of patentability in light of previous inventions by others. For both applications, the primary references cited for these rejections was the 1992 Field Patent. Other references cited as part of the rejection included the 1993 Field Patent (ex. G-170), the 1976 Mulder Patent (ex. G-168), and the 1993 Chiu Patent (ex. G-171). All the claims in both applications were rejected based on either 35 U.S.C. § 102 for lack of novelty, or 35 U.S.C. § 103 for obviousness in light of prior patents (ex. G-165 at 144-54, 236-51, ex. G-166 at 98-114). Mr. Walkenstein failed to overcome these rejections, and later, he abandoned both patent applications (GPF ¶ 144).

43. In October 1994, Dr. William McLean of the U.S. Army Aeromedical Research Laboratory (USAARL), Ft. Rucker, Alabama, presented his work regarding merging or fusing images viewed through different spectral bands at a technical conference (GPF ¶ 146). The mission of USAARL is to support operational research, and develop and evaluate equipment used on aircraft. One area of focus is directed to biomedical issues that might have an impact on aviators, including night vision. (GPF ¶ 147) Dr. McLean is a research optometrist who has extensive experience in analyzing, evaluating, and testing night vision devices, including night vision goggles (exs. G-182, -183; tr. 1/130, 7/8-10, 128). He authored or co-authored over 50 publications and received three U.S. patents (GPF ¶ 148).

44. One benefit of multi-spectral imaging is that different objects are perceived under different ranges of wavelengths. Specifically, multi-spectral imaging provides better contrast between objects such that different details might be discerned. (GPF ¶ 152) According to Dr. McLean, multi-spectral images generated by night vision goggles where optical channels have different spectral ranges are not true color or life-like color images (GPF ¶ 153).

45. The October 1994 conference was an open conference and Dr. McLean's presentation was an unclassified presentation without any distribution restrictions (tr. 7/20). Thus, information presented by Dr. McLean as to his work on multi-spectral imaging of

image intensified scenes became knowledge that was publicly available as of 1994 (GPF ¶ 154). Representatives of all the key participants and developers in the night vision technology industry were present at the 1994 conference. For example, Dr. Allen Waxman, the government's principal expert, attended the 1994 conference. Thus, the information presented by Dr. McLean as to his work on multi-spectral imaging of image intensified scenes became general knowledge in the night vision industry. (GPF ¶ 155) Participants at the 1994 conference did not sign any nondisclosure agreements (GPF ¶ 156).

46. In his September 1996 technical report, Dr. McLean described the use of a binocular night vision goggle where one image intensifier tube employed a yellowish, green-color phosphor screen and the other tube employed a deeper green-color phosphor screen. The spectral content of the image provided by one image intensifier tube is different from the spectral content of the other image. (GPF ¶ 157) Dr. McLean's September 1996 technical report was released to the general public (GPF ¶ 158).

47. Dr. McLean continued to develop, analyze, and test multi-spectral night vision goggles. He generated multi-spectral scenes by placing different spectral filters over the image intensifier tubes. In April 1999, he placed a filter that blocked red-color wavelengths over one optical channel of a monochromatic binocular night vision goggle, the AN/PVS-5, and a separate filter that blocked near-infrared wavelengths over the other optical channel, creating multi-spectral scenes. The multi-spectral scenes provided better color contrast. (GPF ¶ 159)

48. Dr. McLean also suggested the use of image intensifier tubes having different colored phosphor screens to generate multi-spectral scenes. For example, a binocular would have a green-color phosphor screen image intensifier tube and an orange-color phosphor screen image intensifier tube. (GPF ¶ 160)

49. By 1999, Dr. McLean did not consider the use of external filters with binocular night vision goggles to be a trade secret (tr. 7/39-40). By 1999, he did not consider providing different color images to different eyes by night vision goggles equipped with different spectral filters to be a trade secret (GPF ¶ 162).

50. An April 1997 *Armada International* article, described a Delft Sensor Systems' camera system where two image intensifier tubes were used to observe the same scene (ex. G-159 at 4). Because the same scene was observed in two different wavelength bands, the spectral response of one tube is different from the spectral band of the other tube such that the difference between the two responses was used to generate color images by means of spectral filtering (GPF ¶ 163). By 2003, the Delft Sensor System was described and shown in greater detail at technical conferences and in publications (GPF ¶ 164).

51. Along with CANVS' multi-spectral imaging project there were three other SBIR Phase I awardees—Equinox, I Technology Applications, and LSA (R4, tab 28

at 227-28[2]). During the competition for a Phase II award in 2002, Equinox submitted a Phase II Proposal entitled Multi-spectral Intensified Night Vision (GPF ¶ 165). In this proposal, Equinox discussed [R E D A C T E D R E D A C T E] multi-spectral night vision system where the image from [R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D] (ex. G-4 at 916; tr. 9/99). Specifically, the proposal explained that [R E D A C T E D] (GPF ¶ 166). The [REDACTED] design discussed in the Equinox Proposal also suggested using [R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D R E D] (GPF ¶ 167). The [REDACTED] design discussed in the Equinox Proposal differed from the CANVS design in that it would [R E D A C T E D R E D A C T E D R E D A C T E D], creating monocular color (GPF ¶ 168). While the Equinox SBIR Phase II Proposal was not a public document, the [REDACTED] design discussed in that Proposal illustrates what was generally known in the industry prior to CANVS' SBIR Phase II contract in 2002. After reviewing the Equinox Proposal, CANVS' expert witness, Mr. Gillespie, admitted that as of 2001 "others in the industry knew of this approach." (GPF ¶ 169)

52. By 2002, it was general knowledge that a binocular night vision goggle may employ viewing components capable of providing different spectral responses, i.e., different wavelengths or frequencies. By 2002, it was general knowledge that a binocular night vision goggle may be capable of presenting multi-spectral, non-monochromatic images. By 2002, it was general knowledge that the images generated by multi-spectral, non-monochromatic images provide high contrasts. Relative to certain objects, multi-spectral imaging creates better contrast between objects. By 2002, it was general knowledge that there are several different types of filters that are capable of transmitting or blocking certain wavelengths, for example, glass filters or dielectric filters. By 2002, it was general knowledge that the vernacular term "red filter" means a filter that passes a range of wavelengths that would be perceived by an observer to be red. By 2002, it was general knowledge that the vernacular term "green filter" means a filter that passes a range of wavelengths that would be perceived by an observer to be green. By 2002, it was general knowledge that the perceived coloration of the reflected light from a filter may be dependent on the direction of the light source and the viewing angle. By 2002, it was general knowledge that a reddish image may be created by using an image intensifier tube having either green, white or red-color phosphor in conjunction with appropriate external filters. By 2002, it was general knowledge that a greenish image may be created by using an image intensifier tube having either green, white or red-color phosphor in conjunction with appropriate external filters. By 2002, it was generally known as to how to create simultaneously a reddish image in one channel

[2] Citations to the government's Rule 4 files are to consecutively-numbered pages unless indicated otherwise.

of a night vision goggle and a greenish image in the other channel by using appropriate phosphors for the image intensifier tubes and appropriate filters. (GPF ¶¶ 170-79)

C. CANVS' Corporate Practices Regarding Nondisclosure Agreements

53. Mr. Walkenstein is and has been the president of CANVS Corporation since its establishment in 1998 (GPF ¶ 181). He has a background in applied physics. He also has experience in several different experimental fields. He gained this experience during his tenure with the Nonlinear Dynamics Laboratory (NDL) of the University of Miami, Coral Gables, Florida, spanning between 1983 and 2009. (GPF ¶ 182) Mr. Walkenstein does not hold a bachelors or a graduate degree (GPF ¶ 183).

54. Mr. Walkenstein was knowledgeable as to the design and operation of conventional night vision goggles and image intensifier tubes since the mid-1990s. By the early 2000s, he was aware that image intensifier tubes employed either green or white-color phosphors. Mr. Walkenstein served in the U.S. Army as a warrant officer between 1994 and 1996, during which he was assigned for a period in 1996 to USAARL. (GPF ¶¶ 185-87)

55. When assigned to assist Dr. McLean at USAARL in 1996, Mr. Walkenstein completed a project where he transformed black-and-white photographs of night vision scenes into color scenes. For this work, Dr. McLean issued a letter of recommendation in which he stated that the assigned task merged:

> [V]ideo images to simulate characteristics of a theoretical color night vision goggle (NVG). WO1 [Warrant Officer] Walkenstein was shown black and white video tapes of scenes imaged through colored and near infrared filters that replicated spectral responses of candidate photocathodes of night imaging devices. Using a computer and auxiliary hardware, he digitized the images adding false colors and combined the images into all possible combinations.

(GPF ¶¶ 188-89)

56. As early as the mid-1990s, Mr. Walkenstein was knowledgeable as to computer video recording equipment. To carry out the project assigned by Dr. McLean in 1996, Mr. Walkenstein used a generally well-known computer software technique. After leaving the Army in 1996, Mr. Walkenstein embarked on developing night vision devices. (GPF ¶¶ 190-92)

57. Mr. Walkenstein understood that one mechanism for protecting confidential information is by using nondisclosure agreements. It was standard business practice for CANVS to use nondisclosure agreements when disclosing confidential information.

Mr. Walkenstein held the view that nondisclosure agreements would be needed if CANVS were to disclose proprietary information to commercial entities. He understood that a nondisclosure agreement would permit parties to discuss proprietary information without fear of that information being retransmitted to others. (GPF ¶¶ 212-14)

58. Mr. Walkenstein held the view that a nondisclosure agreement would even preclude a recipient from disclosing public information if that recipient had received it under that nondisclosure agreement (GPF ¶ 215).

59. Mr. Walkenstein held the view that nondisclosure agreements are not needed to protect proprietary information when it is disclosed to federal, state or local government officials (GPF ¶¶ 223-24). Mr. Walkenstein held the view that nondisclosure agreements are not needed when disclosing proprietary information to government officials if that meeting took place in a classified setting because additional safeguards would have been in place. He stated that laws and regulations for protecting national security information added another layer of protection for a contractor's proprietary information. (GPF ¶ 226)

D. CANVS' Early Night Vision Technology

60. In 1998, CANVS submitted a proposal, entitled "Dismounted Color Night Vision Systems," to the U.S. Army regarding color night vision equipment. In its proposal, CANVS stated that actual component's specifications were not yet finalized and components not yet purchased. It proposed to purchase critical hardware such as tubes, objective lenses, eyepieces, filters, etc. (Ex. G-19 at 857) CANVS specifically asked the government to provide white-color phosphor image intensifier tubes as GFE items (GPF ¶¶ 242-43).

61. In response to CANVS' proposal, the U.S. Army Communications-Electronics Command (CECOM), Ft. Monmouth, New Jersey, awarded Contract No. DAAB07-99-C-K752 to CANVS in December 1998. The contract is referred to by the parties and herein as the K752 or "ACT II contract." (GPF ¶¶ 245-46)

62. The contracting officer's representative (COR) for the ACT II contract was Mr. Hosek, an employee of NVESD. Mr. Hosek is an engineer and has been an employee of NVESD since 1979. He has had extensive experience with the technical aspects of night vision devices, especially night vision devices using image intensifier tubes. (GPF ¶¶ 247-48)

63. CANVS was paid $299,250 for its ACT II work. A substantial portion, $222,250, was paid specifically for the technical data and rights thereto, while $77,000 was paid for the delivery of the prototype systems. (Ex. G-20 at 625-30)

64. The ACT II contract required CANVS to "develop" and deliver three night vision camera systems (ex. G-20 at 626; tr. 1/80-81). Direct view night vision

technologies, such as a colorized binocular device, were not within the scope of the ACT II contract (*id.*; GPF ¶ 250).

65. As required by the ACT II contract, CANVS delivered a monocular rotating optics camera device. CANVS also delivered a two-tube night vision camera system and a four-tube night vision camera system. (GPF ¶¶ 251-52)

66. Because the ACT II contract was not an SBIR contract, it contained the government's standard technical data rights clause, DFARS clause 252.227-7013, RIGHTS IN TECHNICAL DATA – NONCOMMERCIAL ITEMS (Nov 1995) (the 7013 clause) (ex. G-20 at 646; tr. 2/107-08). The K752 contract also included a special clause H-9 that required the delivery of all technical data with unlimited rights pursuant to the 7013 clause except for three specific categories of technical data (ex. G-20 at 644; tr. 2/108-09). Specifically, CANVS was only permitted to deliver technical data bearing limited rights markings which were already present in (1) Mr. Walkenstein's patent application; (2) the technical proposal resulting in this contract; or (3) "technical data pertaining to items, components or processes developed in connection with the production of colorized night vision devices" (*id.*; GPF ¶ 254).

67. As required by the ACT II contract (ex. G-20 at 626-27, 630), CANVS delivered to the Army at least 11 monthly reports and a final report (tr. 2/110, 4/83; GPF ¶ 256). The final report, dated February 2000, was marked with the limited rights legend (ex. G-21; tr. 2/111; GPF ¶ 257). The limited rights legend marked on the final report for the ACT II contract was in substantial conformity with the marking requirements of the 7013 clause, including the additional identifiers such as contract number, contractor name, and contractor's address (ex. G-21 at 658; GPF ¶ 258). In addition, CANVS delivered an operator's manual for each of the two night vision camera systems (ex. G-20 at 629, exs. G-22, -23; tr. 1/80-81, 2/112; GPF ¶ 260).

68. Prior to the SBIR Phase I contract, CANVS had created a goggle, generally referred to as the "pirate goggle," where colored filters were positioned in front of and behind green-color phosphor image intensifier tubes. One of the objective filters was red in color and the other filter was green in color. Similarly, one of the back-end filters was red in color and the other filter was green in color. (Ex. G-17 at 7; tr. 2/121-23; GPF ¶ 265)

69. During the trial, a physical exhibit which was the "functional equivalent" of the pirate goggle was received into evidence as exhibit A-93 (GPF ¶¶ 265-66). Exhibit A-93 is constructed from two AN/PVS-14 monocular devices connected together each having one green-color phosphor image intensifier tube. Exhibit A-93 does not contain a red-color phosphor image intensifier tube. (Ex. A-93; tr. 1/92-95; GPF ¶ 267) Exhibit A-93 includes a red-color filter placed over one of the eyepiece positions to make the view red in color (tr. 1/97-98, 2/130). According to Mr. Walkenstein, the CNVS-4949 "is actually identical [to Exhibit A-93], except that [A-93] got a red

phosphorous [tube]. So now you don't need the filter on the back, and you have significantly higher brightness on your red output side." (Tr. 2/132; GPF ¶ 268)

70. The U.S. Army Aviation Applied Technology Directorate (AATD) had provided Mr. Walkenstein with a binocular goggle having two green-color phosphor image intensifier tubes, and he modified that goggle into the pirate goggle. The underlying goggle already included a manual gain control mechanism in both channels. (Tr. 2/123-24; GPF ¶ 270) Mr. Walkenstein stated that he modified the existing Army-provided goggle by providing filters at both the objective lens end of that goggle and the eyepiece end (tr. 2/123; GPF ¶ 271). The pirate goggle was not within the scope of work of the ACT II contract, and accordingly was not covered by the technical data provisions of that contract (ex. G-20 at 626; tr. 1/80-81; GPF ¶ 273). Although the exact date of creation of the pirate goggle is unknown, it would have been prior to the SBIR Phase I, as a photograph of the pirate goggle appeared in briefing slides that were presented prior to the SBIR Phase I—i.e., mid-2002 (ex. G-17 at 7; tr. 2/120-12; GPF ¶ 274).

71. Mr. Walkenstein presented briefing slides of exhibit G-17, entitled "White Paper Proposal for Direct View Color Night Vision Goggle," to government personnel prior to the SBIR Phase I contract (tr. 2/121-22). These briefing slides contained details regarding the pirate goggle and included a photograph of Mr. Walkenstein displaying the pirate goggle with a red optical channel and a green optical channel (ex. G-17). Mr. Walkenstein discussed, among other things, the use of a short-pass channel having P-43 green-color phosphor screen and a long-pass channel "utilizing a 'Red' phosphor tube" (*id*. at 7). The briefing slides also mentioned that the long-pass filter would block light below 600 nm and transmit light above 600 nm while the short-pass filter would block light above 600 nm and transmit light below 600 nm (*id*. at 2). These briefing slides also discussed the use of manual gain control (*id*. at 7; GPF ¶ 275).

72. CANVS also briefed USAARL on its colorized night vision technology on 6 April 1999 (ex. G-13; tr. 7/30-34). This briefing included a demonstration of the pirate goggle concept (ex. G-13). Specifically, Dr. McLean's memorandum for record explains:

> Another approach demonstrated was using two different band pass filters in front of the right and left tubes of an NVG. One filter transmitted above 650 nanometers and the other below approximately 650 nanometers. Different colored filters (red and blue) were attached to the NVG eyepieces. However, both previous vision research and this demonstrator showed that there is very little color mixing between the right and left eyes. Rather the image when viewed binocularly appears to be a colored form of luster and alternating suppression between the two images.

(*Id.*; GPF ¶ 279)

73. Following the briefing, CANVS loaned Dr. McLean the front-end and back-end filters, and Dr. McLean added them to a PVS-5 night vision goggle and took that filtered goggle on an operational flight test during the evening of 21 April 1999 (ex. G-14; tr. 7/35-41; GPF ¶ 280). Dr. McLean the next morning wrote the following email to Mr. Walkenstein which stated in part:

> Went flying last night with 40% moon illum. Took the AN/PVS-5s with the red and near IR blocking filters on the objective lenses and the orange and "green" (changed from the original double blue) filters on the eyepieces. The NVG output was way too dark for pilotage. However, I saw good color contrast and some other interesting things. I sat on the right side and for trees near the aircraft, the leaves were orange but the limbs appeared light blue. On a higher moon illumination I'm going to switch the objective lens filters which will make the leaves greenish. That also means that blood will appear green like a grass hopper, but it may be distinguishable from other fluids which is the main benefit of using color. What if we mixed a standard PVS-14 with manual gain and green phosphor with a ???? with orange phosphor for the other eye? I would have the low light performance and a quazi [sic] color or color separation when the light levels are higher.

(Ex. G-14)

74. The concept of using a different color phosphor screen in one optical channel in lieu of back-end filters appears to have been communicated by Dr. McLean, as a suggestion to Mr. Walkenstein in this email. Notably, the concept of using a different color phosphor screen for each channel was absent from Mr. Walkenstein's 1998 patent applications. (Exs. G-165, -166) As detailed in those applications, Mr. Walkenstein's "preferred embodiment" for the invention requires, that "at least one back end filter is placed between at least one image intensification structure and at least one eye such that the photons emerging from that image intensification structure appear to be of a corresponding spectral range to the eye of the user"(ex. G-166 at 13-14). In other words, the patent applications only disclosed the use of back-end filters (*id.*; GPF ¶ 281).

75. Dr. McLean was an expert in the field and fully appreciated the technical details of the pirate goggles (ex. G-182; tr. 7/8-10; GPF ¶¶ 145-62). Dr. McLean did not consider the use of different filters over a binocular night vision device to constitute a trade secret in 1999 (tr. 7/39-40).

76. Mr. Walkenstein filed patent applications relating to color night vision devices (ex. G-165; tr. 2/92-93, 97). As pertinent here, the invention discussed in the patent applications was directed to a night vision device capable of displaying colors at night (tr. 2/94-95). The patent application marked as ex. G-165 is one of the patent applications directed to such night vision devices (tr. 2/97). That patent application is U.S. Patent Application Serial No. 09/062,141, filed 17 April 1998 (ex. G-165 at 1; tr. 2/98). Another one of the three patent applications is marked as ex. G-166. The patent application marked as ex. G-166 is U.S. Patent Application Serial No. 09/206,992, filed 7 December 1998 (ex. G-166 at 1). None of the three patent applications resulted in patents (tr. 2/97-98). The patent applications marked as exs. G-165 and G-166 were rejected by the U.S. Patent and Trademark Office for lack of patentability in light of previous inventions by others (ex. G-165 at 236-51, ex. G-166 at 98-114; tr. 9/172-73). Mr. Walkenstein subsequently abandoned all three patent applications (tr. 2/100-01). The patent application marked as ex. G-165 was abandoned in March 2001 (ex. G-165 at 263-64, 273), and the patent application marked as ex. G-166 was abandoned in November 2001 (ex. G-166 at 115, 133; *see also* GPF ¶¶ 285-90).

E. Development of the CNVS-4949 and CNVS-5050 goggles

77. In an effort to evaluate the technical feasibility of providing soldiers with night vision devices capable of producing color images, USSOCOM promulgated a topic for its SBIR program (tr. 6/128). Specifically, USSOCOM issued Topic No. SOCOM 02-001, entitled "Multi-Spectral Low-Light Imaging," for fiscal year 2002 (R4, tab 18 at 124; ex. G-29 at 4121; tr. 6/129).

78. A key objective of this USSOCOM SBIR topic was to

> Investigate the technical feasibility of fielding reproducible, meaningful, real-time color Image Intensification (I2) devices. This innovation would remove the existing constraint of monochrome (green) imagery of current night vision devices and provide color imagery in its place. Producing color imagery would allow multiple users from different physical locations to identify targets in the scene by color content.

(Ex. G-29 at 4121; tr. 6/130-31) Once a topic was issued, USSOCOM would receive on average about 20 proposals per topic (tr. 8/165). After a selection process, typically three or four SBIR Phase I contracts would be awarded under that topic (*id.*). Due to limited USSOCOM SBIR program funding, usually only one Phase I contractor would advance into Phase II (tr. 8/165-66). Phase II contracts are also funded by dedicated SBIR funding (tr. 6/43, 133-35).

79. Responding to USSOCOM's SBIR Topic No. SOCOM 02-001, CANVS submitted its proposal in December 2001 (R4, tab 20; ex. G-27; tr. 1/84, 2/175). CANVS proposed four different system configurations for color night vision devices (R4, tab 20; ex. G-27 at 1608). One of the systems proposed was the "Retrofit Goggle" (R4, tab 20 at 143-44).

80. USSOCOM awarded CANVS an SBIR Phase I contract on 3 July 2002, Contract No. USZA22-02-P-0609 (hereinafter the 0609 contract or SBIR Phase I contract or Phase I contract) (R4, tab 19; tr. 1/82-83). The 0609 contract required CANVS "to conduct research, development and design of a Multi-Spectral Low Light Imaging System" (R4, tab 19 at 129). The 0609 contract included the 7018 clause (*id.* at 136). The period of performance of the SBIR Phase I contract was three months from the date of contract award. The ending date for the 0609 contract was 3 October 2002. (*Id.* at 132)

81. As required by the SBIR Phase I contract, CANVS delivered two monthly reports and a final report. Monthly report No. 1 for the SBIR Phase I contract included a discussion of the capabilities of CANVS' proposed color night vision goggle, as well as a photograph showing a red-color optical channel and a green-color optical channel in a binocular night vision goggle. The report also discussed "a Long-pass filter (This filter blocks light below 600nm and transmits light above 600nm) and a Short-pass filter (This filter blocks light above 600nm and transmit[s] light below 600nm)." (GPF ¶¶ 313-14)

82. The final report for the SBIR Phase I contract included a sketch of the CNVS-4949 goggle from Drawing 275076 that Mr. Walkenstein had received from ITT in September 2002 (GPF ¶ 315). The sketch of the CNVS-4949 in the SBIR Phase I final report included a caption "Note independent manual gain controls for each channel" (GPF ¶ 316).

83. The three reports delivered under the SBIR Phase I contract were all marked with the legend "This is a CANVS Corporation Confidential Document. It is not to be retransmitted without expressed written consent of CANVS Corporation." (GPF ¶ 319)

84. No hardware was required to be delivered under the 0609 contract. It only required the delivery of the three reports. (GPF ¶¶ 321-22) CANVS was paid $100,000 for its SBIR Phase I work (GPF ¶ 323).

85. CANVS submitted a proposal for a SBIR Phase II contract in early October 2002 in which it stated that "CANVS proposes the delivery of the following instrumentation: Three Contrast-Enhanced (Retrofit) goggles" (GPF ¶ 343). USSOCOM awarded CANVS an SBIR Phase II contract on 20 February 2003—Contract No. USZA22-03-C-0027 (the 0027 contract or SBIR Phase II contract) (GPF ¶ 347).

86. Contract line item number (CLIN) 0001 of the SBIR Phase II contract stated that "[t]he contractor shall provide all facilities, labor, and travel to conduct the

research, design, development, testing and delivery of technical data and prototypes of Multi - Spectral Low - Light Imaging Systems as described in the contractor's proposal received 10 October 2002 which is incorporated herein by reference" (R4, tab 1 at 3). The 0027 contract included the 7018 clause (*id.* at 17). The COR for the SBIR Phase II contract was initially NVESD employee Mr. Soyka. Modification No. P00002 to that contract indicated that Mr. Hosek subsequently replaced Mr. Soyka as the COR. (GPF ¶ 351)

87. The SBIR Phase II contract required CANVS to deliver progress and technical reports, two CNVS-5050 and one CNVS-4949 contrast enhanced (retrofit) goggles, and video systems (R4, tab 1 at 12). The video systems are not pertinent to this dispute.

88. As required by the SBIR Phase II contract, CANVS delivered 15 monthly reports. In its monthly report No. 1, CANVS attached a purchase order to ITT that requested the manufacture of three color night vision goggles. (GPF ¶¶ 356-57)

89. In its monthly report No. 2, dated April 2003, CANVS stated that it had asked ITT to construct a "CNVS-4949 (external to the SBIR funding) and is testing the system so that when the SOCOM goggles are delivered, CANVS modifications will be refined to the extent possible prior to delivery" (R4, tab 7; ex. G-39). The goggle constructed by ITT for CANVS is referred to herein as the ITT/CANVS-4949 goggle (R4, tab 7 at 62-63; ex. G-39 at 425-26; tr. 2/208; GPF ¶ 335).

90. In its monthly report No. 4, dated June 2003, CANVS informed USSOCOM that it had received the three goggles from ITT in June 2003 and planned to deliver to Mr. Hosek in early July 2003 (ex. G-40 at 442; tr. 2/207, 4/83; GPF ¶ 359). In addition, report No. 4 included a photograph of the three goggles taken from an oblique angle (ex. G-40 at 442; tr. 2/205; GPF ¶ 360).

91. In October 2003, CANVS submitted its monthly report No. 8 for the SBIR Phase II contract (R4, tabs 9, 15; tr. 4/105). In particular, photographs depicting various images taken using CANVS goggles were included (R4, tab 9 at 83, tab 15 at 115; tr. 4/105-06; GPF ¶¶ 391-92).

92. In monthly report No. 14, CANVS identified a number of U.S. Government agencies that had either tested one of its color night visions goggles or saw a demonstration of such goggles. As for the federal agencies identified in report No. 14, CANVS did not ask these agencies to execute nondisclosure agreements before demonstrating its equipment. (GPF ¶¶ 411-12)

93. Monthly reports delivered under the SBIR Phase II contract affixed a marking on every page, referred to by CANVS as its "Confidential Legend," that stated the following: "This is a CANVS Corporation Confidential Document. It is not to be retransmitted without expressed written consent of CANVS Corporation." (R4, tabs 6-10, 15, 34)

94. At the inception of the SBIR Phase II contract, CANVS had not yet constructed a binocular night vision goggle employing a conventional green-color phosphor image intensifier tube and a red-color phosphor image intensifier tube (GPF ¶¶ 324-35, 408). The photographs of monthly report No. 8 were not in existence before the advent of the SBIR Phase II contract. They were generated during the period of performance of the 0027 contract during the summer of 2003. (GPF ¶ 409)

95. Sometime around April 2003, CANVS demonstrated a fully-functioning CNVS-4949 goggle manufactured by ITT to the Coral Gables Police Department. CANVS did not ask the Coral Gables Police Department to sign a written nondisclosure agreement when demonstrating the goggle. (GPF ¶¶ 336-37, 339)

96. Sometime around April 2003, CANVS also demonstrated the CNVS-4949 goggle to the Federal Bureau of Investigations (FBI). CANVS did not ask the FBI to sign a nondisclosure agreement. (GPF ¶¶ 340-42)

97. Performance of the SBIR Phase II contract ended on 31 October 2004. Final payment was made in December 2004, and the contract completion statement, DD Form 1594, was signed on 28 February 2005. (GPF ¶ 367) CANVS was paid $750,000 for its SBIR Phase II work (GPF ¶ 368).

98. The CNVS-4949, as well as the similar CNVS-5050, was a binocular night vision goggle having two optical channels each of which included an image intensifier tube. One of the image intensifier tubes employed a conventional green-color phosphor screen and the other tube employed a red-color phosphor screen. Filters for the objective lens were delivered with each CNVS-4949 or CNVS-5050 goggle. (GPF ¶ 361)

99. To conduct tests on the goggles to be delivered under the SBIR Phase II contract, CANVS executed a Cooperative Research and Development Agreement (CRADA) with USAARL in March 2003 (R4, tab 24; tr. 2/133-35; GPF ¶ 369).

100. CANVS' goggle identified as CNVS-4949 Serial No. 1 was forwarded to USAARL and tests were conducted by Army personnel during the summer of 2003. Such tests included photographing scenes through the optical channels of the goggle. (GPF ¶ 371) As part of the CRADA project, about a dozen government employees used the CNVS-4949 goggle (GPF ¶ 373).

101. USAARL issued an Abbreviated Assessment of the CNVS-4949 (hereinafter the CRADA Report) in September 2003. Dr. McLean authored the CRADA Report. Mr. Hosek was a designated government recipient of the CRADA Report. (GPF ¶¶ 374-75)

102. During the CRADA testing, Dr. McLean conducted three observation flights and one night of ground observations with the CNVS-4949 goggle (R4, tab 27 at 214). Regarding color rivalry, the CRADA Report noted that:

> The color difference between green and red inputs to the separate eyes may be greater than most individuals can adapt to. When we used the same color green into both eyes but different input spectra with the visible wavelengths passed to one image intensifier channel and the near IR passed to the other channel, the objects in the scene with different amounts of contrast between the right and left images were noticeable, but not nearly as apparent as with the separate red and green phosphors for each eye. However, the red and green phosphors also tended to set up a rivalry affect with color shifts of objects within the field of view.

(*Id*. at 220) The Report also noted that the "opinion of 4 out of 5 observers was [that] the visible channel was too dark and the different colors would probably give them a headache within a few minutes" (*id.* at 215). Dr. McLean and his colleagues experienced headaches as a result of the color rivalry (ex. G-51; tr. 7/60-61, 74-75, 126; GPF ¶ 453).

103. In January 2003, responding to Mr. Hosek's inquiry, Mr. Walkenstein forwarded a quote for supplying a CNVS-4949 goggle having a red-color phosphor screen image intensifier tube (ex. G-88). As indicated in monthly report No. 2 for the SBIR Phase II contract, the internally-funded CNVS-4949 goggle was demonstrated to NVESD no later than late April 2003 (GPF ¶¶ 416-17). Responding to NVESD's request to purchase the CNVS-4949 goggle that CANVS had quoted in January 2003, appellant forwarded its purchase order to ITT for one CNVS-4949 goggle based on Drawing 275076. Mr. Walkenstein informed Mr. Hosek regarding the submission of CANVS' purchase order to ITT. CANVS forwarded its invoice to NVESD in October 2003. NVESD directly purchased the goggle outside of any SBIR funding. The CNVS-4949 goggle purchased by NVESD was delivered to Mr. Hosek in late 2003 or early 2004. This goggle is hereinafter referred to as the "NVESD CNVS-4949 goggle." (GPF ¶¶ 418-21)

104. The NVESD CNVS-4949 goggle is similar, if not identical, to the CNVS-4949 goggle delivered under the SBIR Phase II contract (tr. 4/24). The photograph on page 2463 of ex. G-46 is a view of the external filters of the NVESD CNVS-4949 goggle that are positioned over the objective lenses. In this view, the goggle is standing on the eyepiece side. The left external filter (from the perspective of a user of that goggle) is reddish in tint and the right external filter is greenish in tint. The photograph of ex. G-46 on page 2452 is another view of the external filters of the NVESD CNVS-4949 goggle. The photograph of ex. G-46 on page 2446 is a view of the NVESD CNVS-4949 goggle with the external filters removed. (GPF ¶¶ 424-25)

105. The photograph of ex. G-46 on page 2458 is a view of the NVESD CNVS-4949 goggle from the eyepiece direction. The eyepieces are removed. The external filters are also removed. In this view, the left image intensifier tube is orange in tint and the right image intensifier tube is greenish in tint. The reddish left external filter is associated with the orange-tint left tube and the greenish right external filter is associated with the greenish right tube. (GPF ¶ 426) When demonstrating or selling the single CNVS-4949 goggle to NVESD, CANVS did not ask Mr. Hosek to sign a nondisclosure agreement (GPF ¶ 427).

F. Events Leading to the June 2005 Special Operations Forces (SOF)/Advance Planning Briefing to Industry (APBI) Conference

106. By June 2003, government agencies had purchased a total of nine CNVS-4949s and CNVS-5050s—three under the SBIR Phase II contract, one by NVESD, and five by OSI Technologies on behalf of a government customer (tr. 2/226-27; ex. G-91; GPF ¶ 709).

107. No later than February 2005, CANVS had provided on its public website information regarding the CNVS-4949 goggle. The CANVS website included a photograph of the CNVS-4949 goggle with the annotation "independent manual gain control" pointing at a component in each optical channel of the goggle. The CANVS website also disclosed the per-unit cost of each CNVS-4949 goggle—$30,000. (GPF ¶¶ 706-08)

108. DoD sponsored a conference and exhibition to demonstrate new technologies to staff members of the United States Congress (2nd supp. R4, tab 64). This event was referred to as either the "Congressional Staffer Day" or "demo" (GPF ¶ 717).

109. One of the new technologies demonstrated at the Congressional Staffer Day was the CNVS-4949 goggle. Mr. Thomas Piazza, a program official in USSOCOM's SBIR office, coordinated the presentation of various USSOCOM technologies for the Congressional Staffer Day exhibition. (GPF ¶ 719)

110. Attached to an email from Mr. Walkenstein dated February 15, 2005 was a poster describing the CNVS-4949 goggle (2nd supp. R4, tab 62 at 290; tr. 4/226). Mr. Piazza forwarded this poster to his colleague Mr. Shawn Martin (2nd supp. R4, tab 63; tr. 4/227, 243).

111. Mr. Hosek in February 2005 prepared a poster (hereinafter the Hosek Poster) having six photographs, including captions, and textual descriptions of the CNVS-4949 goggle. The Hosek Poster does not contain the CANVS Confidential Legend or any other proprietary marking. (GPF ¶¶ 722-23) Mr. Hosek does not recall as to why the Hosek Poster was prepared. It was likely that a USSOCOM official had asked Mr. Hosek to make a poster. He does not recall whether the Hosek Poster was prepared for use at the Congressional Staffer Day event. He also does not recall whether the Hosek Poster

was prepared for display inside the government or outside of the government. Mr. Hosek does not recall when he prepared the Hosek Poster. He does not recall whether that poster was prepared in February 2005, or at an even earlier date. (GPF ¶¶ 724-25)

112. As for the top center, top right, lower center, and lower right photographs in the Hosek Poster, they are identical to the four photographs on page 12 of monthly report No. 8 for the SBIR Phase II contract (R4, tab 9 at 83, tab 15 at 115; ex. A-43.2; ex. G-68 at 2283; tr. 3/266, 268; GPF ¶ 726). The four photographs of interest from the Hosek Poster are the top center red-color photograph having the caption "Through left eye of CNVS-4949"; the top right pale green-color photograph having the caption "Through right eye of CNVS-4949"; the lower center green-color photograph having the caption "Standard AN/AVS-6 View"; and the lower right multi-color photograph having the caption "Constructed image illustrates effect of CNVS-4949" (ex. A-43.2; ex. G-68 at 2283; GPF ¶ 728). It is apparent that the photograph with the caption "Through left eye of CNVS-4949" was an error and should have contained the photograph with the caption "Standard AN/AVS-6 View" and vice versa, which is consistent with the photographs in monthly report No. 8. Mr. Hosek does not recall the origin of the top center, top right, lower center, and lower right photographs in the Hosek Poster (tr. 3/268). He believes that these four photographs came from either monthly report No. 8 or the CRADA Report, but does not recall extracting them from either report (tr. 3/268, 4/26-27; GPF ¶¶ 728-29). As for the top left photograph in the Hosek Poster showing a CNVS-4949 goggle, Mr. Hosek does not specifically recall the origin of that photograph (ex. A-43.2; ex. G-68 at 2283; tr. 3/267-68; GPF ¶ 731).

113. Mr. Hosek held the view that the information disclosed on the Hosek Poster was general information (tr. 4/11; GPF ¶ 736). When preparing the Hosek Poster, Mr. Hosek did not consider that the poster revealed any information that was confidential or proprietary to CANVS such as "numbers," "specific identifiers," etc. He characterized this poster as a "vanilla poster." (Tr. 4/13, 15; GPF ¶ 737) Mr. Hosek was knowledgeable as to the security classification guide for night vision equipment that controls the dissemination of information concerning night vision devices. A picture of the exterior of a device is not classified under his interpretation of the guide. (Tr. 4/11-12; GPF ¶ 738)

114. Mr. Hosek on 24 February 2005 forwarded the Hosek Poster to Mr. Piazza for use at the upcoming Congressional Staffer Day exhibition (R4, tab 60; exs. A-12, -28; exs. G-68, -132, ¶ 8; tr. 4/7-9, 213-14). Mr. Piazza does not have any present recollection whether he forwarded the Hosek Poster to others for use at the Congressional Staffer Day event (tr. 4/230-32, 243-44; GPF ¶ 739).

115. On 18 February 2005 Mr. Walkenstein forwarded to Mr. Piazza a second document that described CANVS' night vision goggle work (2nd supp. R4, tabs 65-67; ex. A-17; tr. 4/229). This second document did not reveal any information that CANVS considered to be confidential (tr. 1/154-58; GPF ¶ 740).

116. The Congressional Staffer Day took place in Arlington, Virginia, on 28 February 2005 (2nd supp. R4, tab 64).

117. A National SBIR Phase II Conference was scheduled to take place in July 2005 (R4, tab 29; ex. A-27). Likely for the purpose of highlighting successful SBIR projects, officials from the National SBIR Conference requested success stories from USSOCOM (ex. A-29; tr. 4/244-45). Ms. Virginia Hoover was a service support contractor for the DoD SBIR office, and was involved in the gathering of materials for the upcoming National SBIR Conference (app. supp. R4, tab 60; 2nd supp. R4, tab 69; tr. 4/211-13; GPF ¶ 744). Responding to her request, Mr. Piazza on 5 April 2005 forwarded the Hosek Poster to Ms. Hoover (2nd supp. R4, tab 69; tr. 4/244-45).

118. Simultaneously, Mr. Piazza on 5 April 2005 also informed Mr. Walkenstein via email that the USSOCOM SBIR office had selected the multi-spectral imaging project as a "success story" for the upcoming National SBIR Conference. Mr. Piazza also attached the Hosek Poster to his email to Mr. Walkenstein. (2nd supp. R4, tab 71 at 321; tr. 4/214) Also attached to the email was a one-page information sheet describing the SBIR multi-spectral project (2nd supp. R4, tab 71 at 322; tr. 4/215; GPF ¶ 747). In his 5 April 2005 email to Mr. Walkenstein, Mr. Piazza stated that "I'm using the information that you and Mr. Hosek previously sent me while working the Congressional Staffers Visit to describe your goggles" (2nd supp. R4, tab 71 at 319).

119. Mr. Piazza again on 6 April 2005 forwarded the Hosek Poster to Mr. Walkenstein (app. supp. R4, tab 60; 2nd supp. R4, tab 72; ex. A-20; tr. 1/162-64, 4/234-35). Specifically, Mr. Piazza asked Mr. Walkenstein to remove all proprietary information from the Hosek Poster so as to permit USSOCOM to release the poster to the public (app. supp. R4, tab 60; 2nd supp. R4, tab 72 at 323; GPF ¶ 749). Mr. Piazza stated that "[p]lease ensure that there is no proprietary data that you would not want released" (app. supp. R4, tab 60).

120. In turn, Mr. Walkenstein, in a 6 April 2005 email, provided Mr. Piazza with a poster having four photographs and revised captions for the photographs, as well as revised textual materials (app. supp. R4, tab 59; 2nd supp. R4, tab 73; ex. A-51; tr. 1/161, 165-66, 4/236-37, 239-40; GPF ¶ 750). This revised poster is hereinafter referred to as the "Sanitized Poster." Mr. Walkenstein also provided to Mr. Piazza a revised informational sheet (2nd supp. R4, tab 75; GPF ¶ 752). Mr. Piazza forwarded the revised information sheet to Ms. Hoover (2nd supp. R4, tab 80; tr. 4/247).

121. In addition to the sanitized poster, Mr. Walkenstein's email further provided an alternate poster for the National SBIR Conference (2nd supp. R4, tab 77; ex. A-42; tr. 1/159-61, 4/238). This poster is hereinafter referred to as the "Alternate SBIR Poster." Both the Sanitized Poster and the Alternate SBIR Poster included the following textual description: "Spectral selection optimized to present lifelike color under moderate

illumination conditions" and "Goggle prototypes with independent variable gain for each channel." Concerning the phosphor tubes, the Sanitized Poster used the phrase "I^2 tubes utilizing COTS components" while the Alternate SBIR Poster used the phrase "I^2 tubes utilizing COTS phosphors." (R4, tabs 59, 77 at 342; GPF ¶¶ 755-56) The Alternate SBIR Poster did not reveal any information that CANVS considered to be confidential (tr. 1/160-61; GPF ¶ 757).

122. In an email dated 9 May 2005, Mr. Walkenstein asked Mr. Piazza to change a photograph on the National SBIR Phase II Conference webpage (ex. A-37.1; ex. G-71; tr. 4/213-14). The webpage also included a textual description of CANVS' color night vision goggle project. Specifically, the textual description stated: "The goggles are optimized to present more lifelike color under moderate illumination conditions, and better contrast under all conditions. Goggle prototypes with independent variable gain for each channel can be used on an ANVIS compatible helmet." (Ex. A-37.2; ex. G-71; GPF ¶ 759). The photograph on the National SBIR Phase II Conference website was removed and another substituted (tr. 4/219; GPF ¶ 760). Mr. Piazza did not create this webpage and did not upload this page to the National SBIR Phase II Conference website (tr. 4/247; GPF ¶ 761).

123. The webpage from the National SBIR Phase II Conference described CANVS' color night vision goggle project. Specifically, the webpage stated: "The goggles are optimized to present more lifelike color under moderate illumination conditions, and better contrast under all conditions. Goggle prototypes with independent variable gain for each channel can be used on an ANVIS compatible helmet." (R4, tab 29; ex. A-27)

124. The 2005 SOF/APBI (an exhibition of military wares) took place from 6-10 June 2005 at the Tampa Convention Center. The exhibition hall was opened for three days, 7-9 June 2005. (GPF ¶ 769) The SOF/APBI conference was sponsored by USSOCOM during which it briefed the industry as to future acquisition opportunities. It was also an opportunity for vendors to exhibit their products and technologies to the SOF community. (Ex. G-74 at 14104, ex. G-80 at 2-3, ex. G-83 at 4212). Primarily vendors, but also government agencies, had booths on the exhibition floor (ex. G-74 at 14110, ex. G-83 at 4222; GPF ¶ 766). Administration of the exhibition hall and exhibitors, as well as the registration of all attendees, was handled by a USSOCOM contractor (GPF ¶ 767). NVESD exhibited the results of certain projects at the 2005 SOF/APBI conference related to the mission of USSOCOM (tr. 6/58-59; GPF ¶ 790).

125. A government employee, Mr. Soyka forwarded all posters to be displayed at the 2005 SOF/APBI conference to the NVESD public affairs and security officials before the conference, including the Hosek Poster (tr. 6/60, 73-74). The Hosek Poster, with minor modifications not relevant to the dispute, was displayed at the SOF/APBI conference and is hereinafter referred to as the "APBI Poster" (R4, tab 12 at 98; GPF ¶¶ 795-96). Mr. Soyka did not contact Mr. Walkenstein to ascertain whether any

information on the Hosek Poster should have been deleted (GPF ¶ 800). We find that the government did not receive express consent from appellant to display the APBI Poster.

126. Among the posters displayed by NVESD was the APBI Poster (GPF ¶ 802). CANVS alleges that the display of the APBI Poster resulted in the disclosure of CANVS' proprietary information or trade secrets at the SOF/APBI conference relative to the CNVS-4949 goggle (GPF ¶ 803). CANVS alleges that a comparison of the APBI Poster with monthly report No. 8 "clearly shows that proprietary photographs and information were displayed at a conference at which competitors and non-Government persons were present" (GPF ¶ 817). Neither the complaint nor the first supplemental complaint identifies with specificity what photographs or what information on the APBI Poster was proprietary (compl. ¶¶ 5, 19, 20, 21; first supp. compl. ¶ 11; GPF ¶ 818). CANVS' contract claim filed on 6 June 2011 also failed to identify with specificity what photographs or what information on the APBI Poster was proprietary (R4, tab 11).

G. Alleged Proprietary Features and Components of CNVS-4949 and CNVS-5050 Goggles Disclosed in the APBI Poster

127. In its post-hearing brief, CANVS identified the following eight features and components that it alleged were proprietary and disclosed in the APBI Poster:

(1) A red-color photograph identified as the view from one optical channel of a binocular night vision goggle;

(2) A green-color photograph identified as the view from the other optical channel of a binocular night vision goggle;

(3) The phrase "I2 tubes utilizing different color phosphors" confirmed the use of red-color phosphor screen image intensifier tube in one optical channel of the binocular night vision goggle and the use of a green-color phosphor screen image intensifier tube in the other optical channel;

(4) Independent variable gain control for each image intensifier tube;

(5) The multi-color photograph along with the words "constructed lifelike view" in the caption illustrated the combining of the red-color image from one eye of the observer and the green-color image from the other eye in the brain of that observer;

> (6) The red sliver in the multi-color photograph illustrated the combining of the red-color photograph and the green-color photograph;
>
> (7) The reflections from the objective lenses of the goggle in the upper left photograph indicated the presence of red-and green-color filters; and
>
> (8) The phrase "filtering optimized to present more lifelike color" in combination with the phrase "color imaging systems provide improved contrast and color output using only the image intensification band" confirmed the use of separate red- and green-color filters.

(App. br. at 29 (citing to GPF ¶ 855))

128. In its response to USSOCOM's Interrogatory No. 8, CANVS identified a litany of features displayed on the APBI Poster that included proprietary information (ex. G-2 at 18-19). Specifically, CANVS identified the following proprietary features from the APBI Poster that would have permitted a person skilled in the art to build a CNVS-4949: (1) I^2 tubes utilizing different color phosphors; (2) Red-color phosphor screen image intensifier tube in the left eye of CNVS-4949; (3) Green-color phosphor screen image intensifier tube in the right eye of CNVS-4949; (4) Goggle prototype with independent variable gain control for each channel; (5) The phrase "filtering optimized to present more lifelike color" in combination with the phrase "color imaging systems provide improved contrast and color output using only the image intensification band"; (6) The above two phrases in combination with three photographs on the APBI Poster that showed images taken through each eye and the constructed color image; (7) Color image of the goggle itself that showed different colorations of the reflections from the objective lenses indicated green and red filters; and (8) The color image of the reflections plus the individual photographs taken through each image intensifier tube of the goggle would allow one skilled in the art to select the filter colors, and the corresponding colors of the phosphor screens (*id.*, GPF ¶ 821).

129. In its response to USSOCOM's Interrogatory No. 11, CANVS identified the "sufficient information" that would have permitted a person skilled in the art to construct a CNVS-4949 goggle from the photographs and the associated captions (ex. G-2 at 21-22). As for the top left photograph showing the goggle, along with the caption "Helmet mounted Goggle, CNVS-4949," the skilled observer would have acquired the following "sufficient information": (1) This photograph disclosed red and green color filters which were mounted over the objective lenses of the goggle; (2) An inspection of the physical CNVS-4949 goggle would have revealed the use of the red and green external filters and the different color phosphor screens for the image intensifier tubes; (3) The

colored reflections from the external filters would correspond to the red and green phosphor screens for the image intensifier tubes; and (4) The skilled observer would have understood that colored phosphor screens and filters were used on the goggle (*id.*; GPF ¶ 822).

130. In its response to USSOCOM's Interrogatory No. 11, CANVS stated that the skilled observer would have acquired the following "sufficient information" from the top center reddish photograph, along with the caption "Through left eye of CNVS-4949": (1) From the red image, the skilled observer would have understood that the filter and phosphor screen in the left optical channel had created that red image; and (2) The skilled observer would have noticed the contrast between the clouds and the sky in this image (ex. G-2 at 21-22; GPF ¶ 823).

131. In its response to USSOCOM's Interrogatory No. 11, CANVS stated that the skilled observer would have acquired the following "sufficient information" from the top right greenish photograph, along with the caption "Through right eye of CNVS-4949": (1) From the green image, the skilled observer would have understood that the filter and phosphor screen in the right optical channel had created that green image; (2) The skilled observer would have noticed the lack of contrast between the clouds and the sky; and (3) The skilled observer would have noticed the high contrast between the trees and the power pole in this image (ex. G-2 at 22; GPF ¶ 824).

132. In its response to USSOCOM's Interrogatory No. 11, CANVS stated that the skilled observer would have acquired the following "sufficient information" from the lower right photograph, along with the caption "Constructed life-like image illustrates effect of CNVS- 4949": (1) The skilled observer would have understood that this blended-color photograph was an overlay of the separate red and green photographs because of the misalignment of the constructed image; (2) The skilled observer would have understood that the blended-color photograph was intended to simulate the biological fusion of the red image and the green image; and (3) The skilled observer would have appreciated the benefit of using different phosphor and filters for the optical channels would enhance the color contrast of the image; for example, sharper contrast among the trees due to the high degree of infrared reflectivity from the leaves (ex. G-2 at 22-23; GPF ¶ 825).

133. In its response to USSOCOM's Interrogatory No. 11, CANVS stated that the skilled observer would have acquired the following "sufficient information" from the lower center greenish photograph, along with the caption "Standard Image Intensified View": (1) When compared to the red image from the left optical channel, the green image from the right optical channel, and the blended-color constructed view, the skilled observer would have noticed benefits of color contrast from those photographs showing greater detail within and between objects (ex. G-2 at 23-24; GPF ¶ 826).

134. In its response to USSOCOM's Interrogatory No. 11, CANVS stated that the skilled observer would have acquired the following "sufficient information" from the

phrase "I^2 tubes utilizing different color phosphors": (1) Alerted the skilled observer to observe the photographs more closely to differentiate the different phosphors (ex. G-2 at 24; GPF ¶ 827).

135. As perhaps awkwardly phrased by the government's proposed finding in its response to USSOCOM's Interrogatory No. 11, CANVS stated that the skilled observer would have acquired the following "sufficient information" from the phrase "filtering optimized to present more lifelike color" in combination with the phrase "color imaging system provide contrast and color output using only the image intensification band": (1) When combined with the photographs, would have permitted the skilled observer to build a binocular goggle by selecting the red-color phosphor image intensifier tube, the red-color phosphor tube, along with corresponding external filters, that would be capable of providing a blended-color image; and (2) The blended-color image would provide enhanced color contrasts (ex. G-2 at 24; GPF ¶ 828).

136. In its response to USSOCOM's Interrogatory No. 12, CANVS discussed how the skilled observer would use the "sufficient information" discussed in Interrogatory No. 11 to construct a CNVS-4949 goggle (ex. G-2 at 25-26). Specifically, the skilled observer would have deduced the following: (1) Based on the reflection from the external filter, a red-color filter would need to correspond to the red-color phosphor image intensifier tube, as confirmed by the red-color image for the left optical channel; (2) Based on the reflection from the external filter, a green-color filter would need to correspond to the green-color phosphor tube, as confirmed by the green-color image for the right optical channel; (3) Based on the caption "combined lifelike image," the blended-color image would have been generated in the brain from the red and green image intensifier tubes; (4) The phrase "I^2 tubes utilizing different color phosphors," would have confirmed critical components need to construct the goggle; and (5) The phrase "filtering optimized to present more lifelike color under moderate illumination conditions, and better contrast under all conditions" would have also confirmed the benefits of the goggle (*id.*; GPF ¶ 829).

137. Mr. Walkenstein testified that much of the proprietary information disclosed on the APBI Poster originated from monthly report No. 8 for the SBIR Phase II contract (tr. 1/128). Specifically, the four photographs on page 12 of monthly report No. 8 appeared on the APBI Poster (GPF ¶ 833). It is unclear from our examination of the record whether the APBI Poster included data or information from other reports delivered by appellant under the SBIR Phase II contract.

138. Mr. Walkenstein testified that the APBI Poster disclosed CANVS' proprietary information as to having a red-color phosphor image intensifier tube for one eye and a green-color phosphor image intensifier tube for the other eye (GPF ¶ 834).

139. If the reddish image of the top center photograph on the APBI Poster were viewed alone without the caption and the descriptive text, Mr. Walkenstein testified, there were many different color phosphor screens and filters that could have created the reddish image (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 3/35; GPF ¶ 835). Mr. Walkenstein testified that a red-color phosphor, or green-color phosphor, or white-color phosphor, used in conjunction with an appropriate filter, would create the reddish image (tr. 3/48).

140. If the reddish image of the top center photograph on the APBI Poster were viewed in conjunction with the caption "Through left eye of the CNVS-4949," Mr. Walkenstein testified, a person viewing the APBI Poster would not be able to discern the color of the phosphor screen used to create the reddish image of a scene through the left channel of the goggle (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 3/35-39; GPF ¶ 836).

141. If the greenish images on the APBI Poster were viewed alone without the captions and the descriptive text, Mr. Walkenstein testified, there were many different-color phosphor screens and filters that could have created the greenish image (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 3/35; GPF ¶ 837). Mr. Walkenstein testified that a red-color phosphor, or green-color phosphor, or white-color phosphor, used in conjunction with an appropriate filter, would create the reddish image (tr. 3/48-49).

142. If the greenish images on the APBI Poster were viewed in conjunction with the caption "Through right eye of CNVS-4949," Mr. Walkenstein testified, a person viewing the APBI Poster would not have been able to discern the color of the phosphor screen used to create the greenish image of a scene through the right channel of the goggle (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 3/39-40; GPF ¶ 838).

143. If the multi-color image in the lower right photograph on the APBI Poster were viewed together with reddish image and the greenish image, along with their captions, Mr. Walkenstein testified, a person viewing the APBI Poster would have been able to discern that the multi-color image was constructed from the red image and the green image (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 3/40-42, 49-50; GPF ¶ 839). Mr. Walkenstein testified that the person would have concluded that a red-color phosphor view was presented to one eye and a green-color phosphor view was presented to the other eye. However, Mr. Walkenstein testified that that person would not know the specific red-color phosphor used. (Tr. 3/42)

144. Because Mr. Walkenstein had used a computerized video technique to create the multi-color photograph as opposed to overlaying existing photographic images (tr. 1/132-33, 3/43-45), he testified, the term "constructed" was more appropriate to describe the multi-color photograph (tr. 3/49-50; GPF ¶ 840). He stated that he created the photograph by using images taken by Dr. McLean at USAARL that "were sent to me in digital format. They were changed from color format to black and white format.

They were then mathematically mapped to the red and green channels and produced in digital image. Then based on the misalignment, I moved them over, created the image." (Tr. 3/44-45) The APBI Poster did not disclose the method and techniques used by Mr. Walkenstein to create this photograph.

145. As for the top left photograph on the APBI Poster, Mr. Walkenstein testified that an observer would perceive a green-color filter and a red-color filter due to the fact that different colored light was bouncing off the filters (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 1/145). Based on the different coloration of the filters, Mr. Walkenstein testified, one skilled in the art would have recognized the presence of two different color filters capable of passing different wavelength bands (tr. 1/145-46). This was allegedly CANVS' proprietary information (tr. 1/144-46; GPF ¶ 841).

146. Mr. Walkenstein testified that different colorations in the filters in the top left photograph did not disclose the specific spectral band, i.e., the exact bandpass information for the filters (tr. 1/145-46; GPF ¶ 842).

147. Mr. Walkenstein testified that the phrase "color imaging systems provide improved contrast and color output using only the image intensified band" under the "Payoff" section of the APBI Poster disclosed that color was obtained through the spectral response of the goggle's image intensifier tubes (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 1/147; GPF ¶ 844).

148. Mr. Walkenstein testified that the phrase "Filtering optimized to present more lifelike color under moderate illumination" revealed the use of inputs to the image intensifier tubes (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 9/292; GPF ¶ 845).

149. Mr. Walkenstein testified that the phrase "goggle prototypes with independent variable gain for each channel" was CANVS' proprietary information (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 1/144; GPF ¶ 849).

H. Expert Testimony on Issue of Whether APBI Poster Disclosed Proprietary Features and Components of CNVS-4949 and CNVS-5050 Goggles

150. Appellant's expert witness, Mr. Gillespie, in his initial expert report, dated 26 July 2013, specifically stated that he would not opine as to whether any of the information displayed on the APBI Poster was CANVS' proprietary technical data. Instead, Mr. Gillespie assumed that the information displayed on the APBI Poster was CANVS' proprietary technical data for the purposes of his analysis. (Ex. A-85.10, ¶ 20; GPF ¶ 853). At the hearing, Mr. Gillespie acknowledged that "the intent of my [expert] report here is not to discuss proprietary information. It was to discuss whether technical data is being disclosed or not. So it's assumed that its proprietary data, but whether it is or

isn't is not a subject of my testimony, either now or in this paper [expert report]." (Tr. 5/165; GPF ¶ 854)

151. Mr. Gillespie's expert report defined "a person of ordinary skill in the art" as someone with experience and knowledge working with image intensification and thermal imaging techniques and their components and properties; experience in applying these technologies to military tactical environments; and a thorough understanding of the principles of physics with respect to light, thermal radiation, optics, and filters (ex. A-85, ¶¶ 17-19). He later concluded that the photographs and textual narrative in the APBI Poster would enable a skilled engineer to observe the physical characteristics of the image intensifier tubes and color filters to recreate and build the CNVS-4949 goggle (*id.* ¶¶ 3, 20). Additionally, he stated a physical examination of the CNVS-4949 goggle at the conference would allow a person to observe the physical characteristics of the phosphor tubes and the colored filters (*id.* ¶ 3). Although Mr. Gillespie did not identify himself as an engineer and the government objected to his admission as an expert (tr. 5/131), we find that his background and experience in the night vision technology industry, particularly his years of experience as a program manager and research and development coordinator at NVESD, qualify him as an expert. His reports and testimony were previously admitted into the record.

152. According to Mr. Gillespie, the APBI Poster identified the major components of the CNVS-4949—the housing of the goggle; the red and green phosphor intensifier tubes for each channel, and matching red and green optical filters affixed to the objective lenses of each channel (tr. 5/136-38). His initial expert report asserted that a skilled observer would recognize that the red and green photographs of each channel of the goggle corresponded to a red and green phosphor tube and filter; that the multi-colored photograph was the simulated "biologic fusion" of the red and green photographs in which "the observer would learn the benefit that the two phosphor/filter colors would have on enhancing the color contrast of the image of the scene displayed to the viewer"; and that the standard AN/AVS-6 image, in combination with the other photographs, would reveal the choice of red and green filters and phosphor screens to optimize the lifelike color of that image (ex. A-85, ¶ 24).

153. When a user positions his eyes toward the eyepiece side of a CNVS-4949 goggle, he would immediately see a red-color optical channel and a green-color optical channel (tr. 3/18-19, 223). The red image of the top center photograph of the APBI Poster is what a user of a CNVS-4949 would see from the eyepiece side (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 3/52). When a user looks at the objective lens side of a CNVS-4949 goggle, he would discern different coloration on the optical channel which is an indication that different-color filters are being used (tr. 3/21-22, 225-28). When a user is using the CNVS-4949 goggle, he would need to adjust the independent manual gain control mechanisms to adjust the brightness in each image intensifier tube (tr. 8/67, 90).

154. When a user of a CNVS-4949 goggle positions his eyes toward the eyepiece side of the goggle, he would immediately see a red-color optical channel and a green-color optical channel (tr. 3/18-19, 8/83). Mr. Walkenstein stated that the red image of the top center photograph of the APBI Poster is what a user of a CNVS-4949 goggle would see from the eyepiece side (R4, tab 12 at 98, tab 16 at 119; ex. A-96; tr. 3/52; GPF ¶ 902). When a user looks at the objective lens side of a CNVS-4949 goggle, he will discern different coloration on the optical channel which is an indication that different-color filters are being used (tr. 3/21-22; GPF ¶ 904). When a user is using the CNVS-4949 goggle, he will need to operate the independent manual gain control mechanisms so as to adjust the brightness in each image intensifier tube (tr. 8/67, 90; GPF ¶ 905). The following findings address issues regarding the alleged proprietary issues raised by appellant and Mr. Walkenstein's testimony.

155. Relative to the top center photograph on the APBI Poster showing a reddish image (R4, tab 12 at 98, tab 16 at 119; ex. A-96), it was public knowledge or generally known in the night vision industry as of 2005 that an image intensifier tube having any type of phosphor when used with an appropriate external filter would create a reddish image (tr. 4/109, 9/88-90). The phosphor used could be green-color phosphors, red-color phosphors, or white-color phosphors (*id.*). The appropriate filter would be one that permitted the passage of red-color wavelengths (tr. 4/109, 9/88-90; *see* ex. G-139 at 6; GPF ¶ 856).

156. Relative to the two photographs on the APBI Poster showing a greenish image (R4, tab 12 at 98, tab 16 at 119; ex. A-96), it was public knowledge or generally known in the night vision industry as of 2005 that an image intensifier tube having any type of phosphor when used with an appropriate external filter would create a greenish image (tr. 9/91, 93). The phosphor used could be green-color phosphors, red-color phosphors, or white-color phosphors (tr. 9/91). The appropriate filter would be one that permitted the passage of green-color wavelengths (tr. 9/91; *see* ex. G-139 at 6; GPF ¶ 857).

157. As for the greenish image shown in the top right photograph on the APBI Poster, even if the caption was corrected to indicate that it was a standard night vision view, it was general knowledge by 2005 that the greenish tint was the standard coloration of conventional night vision goggles (GPF ¶ 858).

158. As of 2005, it was public knowledge or generally known in the night vision industry that a binocular night vision goggle could create a reddish image for one optical channel and a greenish image for the other channel (R4, tab 12 at 98; ex. A-96; tr. 9/94-98, 101-02). The phosphor used could be green-color phosphors, red-color phosphors, or white-color phosphors (tr. 9/95, 101-02). The appropriate filter would be one that permitted the passage of red-color or green-color wavelengths (tr. 9/95, 101-02; *see* ex. G-139 at 6; GPF ¶ 859). According to monthly report No. 8 delivered under the SBIR Phase II contract, the reddish image was acquired through a "RG-665 2mm thick filter material" and the

greenish image was acquired through a "Hotmirror filter" (R4, tab 9 at 83). These characteristics and specifications of the filters were not disclosed in the APBI Poster.

159. The simultaneous presentation of a reddish image in one optical channel and a greenish image in the other channel of a binocular night vision goggle was already disclosed in the 1992 Field Patent (ex. G-139 at 23-24, ex. G-169; tr. 9/94-95). The reddish image would have been created by a red-color external filter which is identified as filters 51a, 51b, 52a, or 52b in Figures 5A and 6A of the patent. The greenish image would have been created by a green-color external filter. (Ex. G-169 at 4; tr. 9/95-97; GPF ¶ 860)

160. As for the top left photograph on the APBI Poster illustrating a binocular goggle having purported red coloration or hue on one of its objective lens (R4, tab 12 at 98, tab 16 at 119; ex. A-96), it was public knowledge or generally known in the night vison industry as of 2005 that the coloration of reflections from external filters was dependent on the angle of the light source (ex. G-139 at 15-17; tr. 9/102-07; GPF ¶ 863). This photograph is a colored image of the CNVS-4949 goggle.

161. As for the phrase "Filtering optimized to present more lifelike color" shown on the APBI Poster (R4, tab 12 at 98, tab 16 at 119; ex. A-96), it was public knowledge or generally known in the night vision industry as of 2005 that there were a variety of techniques that were capable of performing the rather generic term of "filtering" (tr. 9/123). Filtering techniques included "spectral filtering," "polarization filtering," "temporal filtering," or "spatial filtering" (*id.*; GPF ¶ 865).

162. In his expert report, the government's expert witness, Dr. Waxman, stated that it was "impossible by simply looking at one visible photograph, or even by casual inspection of an assembled device…, to infer a filter's spectral characteristics such as cut-on wavelength, cut-off wavelength, spectral transmission characteristics, filter thickness, material composition, and importantly its characteristics in the near-IR part of the NVG [night vision goggle] spectrum" (ex. G-139 at 13-14, ¶ 14.6). Dr. Waxman testified that filtering could encompass spectral filtering using band pass filters, filtering with polarizers, and modulating any part of the tube (tr. 9/218). On cross-examination, appellant's expert, Mr. Gillespie, stated that spectral filtering of intensifier tubes was commonly known prior to June 2005 (tr. 5/198).

163. Mr. Gillespie asserted that a skilled person would observe that the red and green colors of the objective filters in the colored photograph of the CNVS-4949 goggle match with the intensifier tube phosphor screens upon examination of the physical goggle (ex. A-85, ¶ 23). The government's expert, Dr. Waxman, disputed this assertion. He asserted that the APBI Poster did not divulge specific characteristics of the spectral filters, including the cut-on and cut-off wavelengths, spectral transmission characteristics, filter thickness, filter material, and the characteristics in the near-IR part of the night vision goggle spectrum (ex. G-139, ¶¶ 14.2, 14.6; tr. 9/90-91). He further explained that the

visible appearance of a filter through photographs or visual inspection conveyed nothing about a filter's spectral characteristics and properties. He asserted that the filter on the red channel could appear red, blue, or green and the filter on the green channel could appear blue or green depending on several factors such as the viewing angle, the angle of incidence of incoming light, and the design and composition of the spectral filters. (Ex. G-139, ¶¶ 14.8-14.11) The government's witness, Mr. Bender, stated that the wavelength selection was a critical component in analyzing and evaluating a goggle (tr. 6/217).

164. On cross-examination, Mr. Gillespie stated that the characteristics and properties of the filters would be important in configuring a night vision goggle. He stated that one would not communicate to a manufacturer the color of the filter but provide "a specification, and a wave length that they had to pass or not pass the cut off filters." (Tr. 5/176) On recross-examination, he further confirmed that a skilled person viewing the photographs and visually examining the CNVS-4949 goggle could not determine whether a "hotmirror" filter was used and what wavebands were filtered (tr. 5/267-68). We find that Mr. Gillespie's testimony supports Dr. Waxman's assessment that the spectral characteristics of a filter could not be determined by the photographs in the APBI Poster and visual examination of the physical goggle.

165. As for the phrase "I^2 tubes utilizing different color phosphors" shown on the APBI Poster (R4, tab 12 at 98, tab 16 at 119; ex. A-96), it was public knowledge or generally known in the night vision industry as of 2005 that image intensifier tubes may employ phosphors of different colors, even red-color phosphors (tr. 9/50, 113-14, 122; GPF ¶ 864).

166. Mr. Gillespie asserted that the phrases "I^2 tubes utilizing different colored phosphors" and "Color Imaging systems provide improved contrast and color output using only the image intensification band," in combination with the photographs, would have further revealed to a skilled person the use of red and green phosphor tubes and filters (ex. A-85, ¶¶ 25, 27). At the hearing though, Mr. Gillespie stated that a skilled person "would suspect or easily project" that a red and green phosphor were used because they were known in the industry. He added that the APBI Poster did not explicitly state a white phosphor or a different colored phosphor. (Tr. 5/152)

167. Dr. Waxman testified that the red photograph would reveal that "the filters pass band must at least include some of the part of the spectrum that we tend to call red" but not the exact color of the phosphor, and that any phosphor with appropriate filters could generate the images (tr. 9/90, 92). This is consistent with Mr. Walkenstein's testimony in which he stated that the red photograph could be achieved by placing a white or red phosphor with the appropriate spectral filter (tr. 3/48-49). Dr. Waxman opined that the red and green photographs in the APBI Poster were exact images from a goggle disclosed in the 1992 Field Patent (tr. 9/97-98).

168. Mr. Hosek testified that, when viewing the red photograph and caption in the APBI Poster, he could not determine whether a red, white, or a colored phosphor with red content and a filter that strips other colors out of the phosphor was used to produce the image (tr. 4/109).

169. As for using independent variable gain for each channel of the night vision goggle, it was public knowledge or general knowledge in the night vision industry by 2005 that such independent variable gain controls were available in existing night vison goggles in the market place. For example, the advertising material for the ITT F4949 and F5050 goggles indicated their use of such independent gain control mechanisms. (Ex. G-219 at 3, 4) Even CANVS' own website in 2005 illustrated independent gain control mechanisms for the CNVS-4949 goggle (ex. G-58; GPF ¶ 866).

170. Mr. Gillespie stated that the photographs in the APBI Poster supplied a skilled person with "benchmark data points" to confirm the proper construction and configuration of the CNVS-4949 goggle (ex. A-85, ¶ 25). At the hearing, he opined that one could easily test and validate to confirm the proper configuration (tr. 5/259). However, he did not further explain the time, effort, and expense to perform such a validation. Mr. Walkenstein testified that thousands of filters were tested by CANVS over a ten-year period (tr. 3/34). We find Mr. Gillespie's testimony that testing and validation of the construction and configuration of the filters would be relatively easy is unpersuasive.

171. Mr. Walkenstein testified that an extended cathode was an attribute to the phosphor tube that was not disclosed in the APBI Poster (tr. 3/33). Nothing in the APBI Poster disclosed the particular type or model of the phosphor tube used to acquire the displayed photographs.

172. Appellant has not presented any evidence to indicate that any individual other than Mr. Walkenstein had both actually seen the APBI Poster at the 2005 SOF/APBI conference *and understood* the alleged proprietary information or trade secrets that were displayed on that poster (GPF ¶¶ 973, 976).

I. <u>CANVS Disclosed Claimed Proprietary Features and Components Prior to June 2005</u>

173. Appellant disseminated the allegedly proprietary information to persons, organizations, and firms outside the U.S. Government without obtaining nondisclosure agreements. In particular, the goggles and accompanying descriptions were included in marketing literature and available on the company's website. (GPF ¶¶ 886-91, 893-95, 897) On recross-examination, Mr. Walkenstein stated that, although CANVS may not have sold CNVS-4949 or CNVS-5050 goggles prior to submitting its SBIR Phase II proposal to the government, it was actively marketing and selling goggles that were

identical in performance and capability. He stated that one could buy a goggle directly from CANVS or retrofit a goggle incorporating the CANVS technology. (Tr. 11/79-81)

174. Appellant disseminated the allegedly proprietary information to individuals employed by U.S. Government agencies not involved with the USSOCOM SBIR color night vision program without obtaining nondisclosure agreements (GPF ¶¶ 873, 879-85, 892, 897).

175. CANVS demonstrated its color night vision goggles to many potential public and private customers by 2005, including the demonstrations that took place at the 2003 and 2005 Force Protection Equipment Demonstrations (FPEDs) (R4, tab 7 at 62; ex. G-42 at 1649-653; exs. G-84, -85; tr. 2/38-40, 43, 3/17-18). CANVS also permitted potential customers to use the goggles (exs. G-84, -85; tr. 2/38-40, 43, 3/17-18; GPF ¶ 906). Organizers of the FPEDs did not require attendees to sign nondisclosure agreements and attendees were not obligated to protect any confidentiality associated with displayed products and demonstrations (tr. 7/142).

176. CANVS showed its products to other vendors at the FPEDs, including the CNVS-4949 goggles (tr. 3/28; GPF ¶ 910). The CANVS color night vision goggles demonstrated at the FPEDs were operable (tr. 3/18; GPF ¶ 907). Users of the CNVS-4949 goggle could clearly see a red channel and a green channel (tr. 3/18-19; GPF ¶ 909). The CNVS-4949 goggles demonstrated at the FPEDs included external filters. Those who used the CNVS-4949 goggles at the FPEDs saw the external filters. (Tr. 3/19, 21-22; GPF ¶ 908)

177. As relevant here, the criteria for attendance at the 2005 SOF/APBI conference were substantively the same as the criteria for attendance at the 2003 and 2005 FPEDs (GPF ¶ 968). Mr. Walkenstein held the incorrect belief that the 2003 and 2005 FPEDs, unlike the APBI conference, were "closed" conferences such that he could freely display and demonstrate fully operative CNVS-4949 goggles (GPF ¶ 970). On cross-examination, Mr. Walkenstein testified that attendees participating in the demonstrations did not sign nondisclosure agreements (tr. 3/19).

178. Photographs and textual materials from the APBI Poster alleged to be trade secrets or proprietary information appeared in the Sanitized Poster or the Alternate SBIR Poster. Mr. Walkenstein prepared both of these posters and provided them to USSOCOM for use at public events. (App. supp. R4, tab 60; 2nd supp. R4, tab 72 at 323, tabs 73, 77; exs. A-42, -51; tr. 1/159-61, 236-38; GPF ¶ 911) Specifically, a green-color photograph having the caption "Standard AN/AVS-6 View" is present in both the Sanitized Poster and the Alternate SBIR Poster (2nd supp. R4, tab 73 at 330, tab 77 at 342). This photograph is identical to the lower center photograph on the APBI Poster (R4, tab 12 at 98). There is no dispute that a green-color view, along with the caption indicating that it is the view of a standard monochromatic night vision goggle, was not a trade secret or proprietary information (tr. 1/160-61; GPF ¶ 912). In addition, a multi-color photograph having the

caption "CNVS Color Goggle View" is present in both sanitized posters (2nd supp. R4, tab 73 at 330, tab 77 at 342; GPF ¶ 913). This photograph is essentially identical to the lower right photograph of the APBI Poster; however, the APBI Poster's photograph contains a red "sliver" along the border of the image (R4, tab 12 at 98).

179. The Sanitized Poster clearly identified the night vision goggle as a "CNVS-4949 Helmet Mounted Aviation Color Night Vision Goggle." This photograph and description also appeared in the Alternate SBIR poster. Under the "Payoff" section, the Sanitized Poster stated that "[t]he Color Imaging Systems provide improved contrast and color output using only the image intensification band." This exact phrase also appeared in the Alternate SBIR poster. Under the "Description" section, the Sanitized Poster stated that "[s]pectral selection optimized to present more lifelike color under moderate illumination conditions, and better contrast under all conditions." This exact phrase also appeared in the Alternate SBIR poster. (2nd supp. R4, tab 73 at 330, tab 77 at 342; GPF ¶¶ 915-17)

J. The Appeals

180. In its claim letter, dated 6 June 2011, CANVS referred to the APBI Poster, but it did not identify with particularity the alleged trade secrets or proprietary information revealed by that poster. The claim letter merely alleged that "[a] comparison of the display and at least the monthly report 8 of 15…clearly shows that proprietary photographs and information were displayed at a conference…. This display included technical details sufficient to manufacture the device." (R4, tab 11) The letter contended that the government improperly disclosed the alleged proprietary information to SOF/APBI conference attendees that included non-government and foreign entities and competitors of CANVS. CANVS alleged that data from other technical reports outside of the APBI Poster were also released based upon the government's award of contracts to its competitors, and that it was unable to secure "procurement" funding from industry and government sources for its night vision goggle products. The letter demanded $100 million in breach damages from the government and included a Contract Disputes Act (CDA) certification. (*Id.*)

181. By correspondence dated 19 September 2011, CANVS filed its notice of appeal to the Board from the deemed denial on the 6 June 2011 claim by the contracting officer. The appeal was docketed as ASBCA No. 57784.

182. On 11 January 2012, the contracting officer issued a final decision denying the claim in its entirety. The contracting officer concluded that the allegations in the claim were unsubstantiated and baseless. (Supp. R4, tab 43 at 279, 281) He asserted, among other things, that the photographs and descriptions of the device and components were not proprietary data; that the government did not violate the 7018 clause under the SBIR Phase II contract; and that the government has not awarded any color night vision technology contracts to date (*id.* at 281-82). CANVS timely appealed from this final

decision which was docketed by the Board as ASBCA No. 57987. The identical issues are presented in both appeals. Accordingly, we dismiss ASBCA No. 57784 as duplicative.

183. In its initial complaint, CANVS expanded that the alleged improper disclosure deprived it of an "income-producing asset" and affected its ability to receive an SBIR Phase III award or production contract for its night vision goggles (compl. ¶ 44).

K. Additional Findings

184. There is no evidence that between the 2005 SOF/APBI Conference and the completion of the hearing, that any manufacturer in the U.S. military market has even begun to manufacture a device similar to the CNVS-4949 goggle (GPF ¶ 977). Both Mr. Hosek and Mr. Soyka testified that they were not aware of any red/green direct view night vision goggles currently being manufactured (GPF ¶¶ 978-79). Mr. Robert Kabala, the USSOCOM night vision program manager from 1998 to 2010, testified that USSOCOM has not purchased any direct view color night vision goggles from any other source (tr. 7/205-06; GPF ¶ 980). Additionally, Mr. Kabala's direct successor and the current USSOCOM night vision program manager, Mr. Miguel Isasmendi, testified that since 2007 he is unaware of any color night vision goggles being fielded (tr. 8/14-16, 31-32; GPF ¶ 980). CANVS' expert witness, Mr. Gillespie, could not identify a single manufacturer of a similar device (tr. 5/220; GPF ¶ 981).

185. Mr. Walkenstein testified that he is aware of only one entity that has manufactured color night vision goggles using different color phosphors in different optical channels since 2005. According to Mr. Walkenstein, that entity is the Russian government or a manufacturer having a relationship with the Russian government. (Tr. 3/82-83; GPF ¶ 982) CANVS has produced no technical details or other substantiating evidence regarding this alleged Russian manufacturer of a night vision goggle having different color phosphors in different optical channels. There is no documentary proof in the record relating to this alleged Russian night vision goggle. CANVS has produced no evidence to indicate that this alleged Russian manufacturer had gleaned the information concerning color night vision goggles from the APBI Poster. (Tr. 3/83-84; GPF ¶¶ 983-84)

186. There is no persuasive evidence that CANVS contacted the USSOCOM contracting officer, nor any contracting official about this incident until it was about to file its contract claim in early June 2011 (tr. 3/57-58). Mr. Walkenstein did not contact directly any USSOCOM contracting official during this period (tr. 3/69). Even though CANVS was performing tasks under the USSOCOM Contract No. H92222-05-C-0030 between mid-2005 and late 2006, Mr. Walkenstein has no recollection of contacting a USSOCOM contracting officer regarding the display of the APBI Poster (tr. 3/70-71).

187. Mr. Walkenstein has no recollection of having contacted any USSOCOM official regarding the alleged improper disclosure at the 2005 SOF/APBI during 2005 or

2006 (tr. 2/68-69, 3/58-59, 66-67). Mr. Walkenstein did not contact USSOCOM directly by sending any written communication regarding this alleged breach between the 2005 SOF/APBI conference and the filing of the contract claim in mid-2011. Mr. Walkenstein has no recollection of contacting anyone at NVESD regarding the alleged improper disclosure at the 2005 SOF/APBI conference from the time of the alleged breach in June 2005 to time of the filing of the contract claim in 2011. He has no recollection of contacting Mr. Hosek regarding the display of the APBI Poster. He has no recollection of contacting Mr. Soyka regarding the display of the APBI Poster. (Tr. 2/68-69, 3/58-60, 66-67; GPF ¶ 991) He testified that contacting any USSOCOM official would have been futile, akin to "being mugged by a police officer and then thinking if you report the crime to him you're going to get your wallet back and treated fairly. So I didn't think it was appropriate for me to talk directly to the people I was having a problem with immediately and to go through their chain of command." (Tr. 2/70, 3/57-58; GPF ¶ 986)

188. CANVS did not contact any USSOCOM official associated with night vision equipment such as officials in the USSOCOM program office. Specifically, he did not mention this event to Mr. Kabala, who was the program official overseeing the development of night vision equipment, in 2005 or 2006. (Tr. 7/163, 173; GPF ¶ 987)

189. The day following the SOF/APBI conference, Mr. Walkenstein met with Navy CAPT Rowland Huss who headed the overall program office responsible for the development of night vision equipment. Mr. Walkenstein had a brief conversation with both CAPT Huss and Mr. Kabala; and the alleged breach that had occurred the previous day was not discussed. (Tr. 2/48, 7/160-63; GPF ¶ 988)

190. On 15 June 2005, Mr. Walkenstein forwarded an email to many members of Congress seeking assistance in funding the purchase of CANVS' color night vision goggles (R4, tab 37). In its request, CANVS touted the fact that its technology had been highlighted at the recent SOF/APBI conference (*id.* at 266; ex. G-106 at 1562; tr. 7/168-69). Specifically, Mr. Walkenstein stated that "[t]his technology was also recently highlighted (by U.S. SOCOM and U.S. Army Research, Development, and Engineering Command) through a series of briefings and demonstrations at SOF APBI week (7-9JUN05) in Tampa Florida" (R4, tab 37 at 266, tab 44 at 284; ex. G-106 at 1562; tr. 3/61-62). This communication was intended to encourage the U.S. Congress to appropriate funds to purchase CANVS' goggles (tr. 3/65, 7/169-70). CANVS also forwarded this communication to *The Washington Post* (ex. G-106 at 1557; tr. 3/62-63; *see* also GPF ¶ 990).

DECISION

I. Government Motion to Strike

The government has moved to strike substantial portions of appellant's briefs for failure to comply with the Board's briefing order. We agree with the government that appellant has substantively failed to comply with that order. Appellant's initial brief provided few citations to the record supporting its proposed factual findings and, to the extent record citations are included, those citations are often inaccurate and misstate the record. In addition, although appellant's reply brief is 395 pages in length, the vast majority of that brief merely quotes verbatim each of the 1,002 proposed findings set forth in the government's initial brief. In general, appellant has simply responded to the government's proposed findings with blanket denials or argumentative assertions such as "not correct" or "untrue," or the government "mischaracterizes" the record without elaboration or providing supporting citations specifically addressing and/or refuting the accuracy of references to the record set forth in the government's proposed findings. Appellant's noncompliance has frustrated the intent and purpose of identifying and refining factual issues through precise references to the *evidentiary record*, permitting the Board to carefully analyze and weigh conflicting testimony and proof. It is not for the Board to parse through the record to find requisite support for appellant's own proposed findings and its generic blanket responses to the government's proposed findings. The government was also deprived of the intended opportunity to join issue with appellant on disputed matters. Without substantive guidance from appellant, the Board does not intend to *sua sponte* conduct an independent examination into the voluminous record compiled over the course of the 11 days of hearing to assess whether appellant's unsubstantiated denials, etc., potentially are supported somewhere in that record. Both parties were expressly put on notice of their duties regarding detailed, precise refutation of the opposing party's proposed findings and legal analyses. To the extent that CANVS has not complied with the Board's briefing order and has declined to offer substantive, specific, detailed objections and replies to the government's proposed findings (and included record citations), the Board, *in its discretion*, has adopted certain findings (or portions thereof) that have been proposed by the government with the notation GPF (Government Proposed Finding), followed by its number. In general, the citations to the record provided by the government and set forth in a GPF have been omitted (but are incorporated by reference) where the Board has adopted the finding in whole or in part, as envisioned by the briefing order. To the limited extent that appellant, in compliance with the briefing order, expressly and precisely objected to the correctness of government citations set forth in GPFs, the Board verified the accuracy of the citations and any other related portions of the record prior to adopting the GPF (or portion thereof). In the vast majority of cases, after study of the record, the Board concluded that the government had accurately characterized the testimony and record, contrary to appellant's blanket assertions that the government mischaracterized it. In effect, appellant has not substantively responded with detailed counter citations and precise reasons why the

record was "mischaracterized" by the government or proposed contrary findings revising the language considered objectionable. It has failed to join issue in a constructive, precise and detailed manner that assists the Board in identifying and resolving key factual differences. For the above reasons, the government's motion to strike has merit and the Board has taken the above remedial actions.

II. Jurisdiction: Statute of Limitations

The government contends that appellant's breach claim was time-barred under the CDA's six-year statute of limitations. The CDA requires a claim to be submitted to the contracting officer within six years after its accrual. 41 U.S.C. § 7103(a)(4)(A). FAR 33.201 defines claim accrual as "the date when all events, that fix the alleged liability of either the Government or the contractor and permit assertion of the claim, were known or should have been known. For liability to be fixed, some injury must have occurred. However, monetary damages need not have been incurred." It is undisputed that appellant filed its claim with the contracting officer on 6 June 2011 (finding 180). Therefore, to be timely for purposes of the CDA, claim accrual must not have occurred prior to 6 June 2005.

According to the government, the facts fixing its alleged liability for improper disclosure of appellant's technical data were known or should have been known by 5 April 2005, the date upon which Mr. Walkenstein became aware that the information was disclosed as part of the Hosek Poster presented at a Congressional Staffer Day event in February 2005. The government argues that the Hosek Poster was materially similar to the SOF/AFBI conference poster at issue presented at the June 2005 National SBIR Conference underlying appellant's breach cause of action; that the Hosek Poster lacked any restrictive markings; that the technical data was disclosed in contravention of restrictions imposed by appellant's "Confidential Legend" in the monthly report; and that Mr. Walkenstein did not authorize the disclosure. Therefore, the government argues that a potential claim for breach of the 7018 clause under the SBIR Phase II contract accrued more than six years prior to its submission to the contracting officer and is untimely under the CDA's statute of limitations. (Gov't br. at 179-83)

Appellant counters that its breach claim did not accrue on 5 April 2005 because it suffered no injury when the government presented the Hosek Poster to Congressional staff at the February 2005 event. Appellant argues that Mr. Walkenstein was fully aware of the presentation and actively communicated with individuals associated with the event. Appellant also argues that it approved and authorized the disclosure based on the belief that the information would be protected in accordance with the contract. (App. br. at 8-9)

As the proponent of its affirmative defense, the government bears the burden of proving that appellant's claim was time-barred by the CDA's statute of limitations. *Public Warehousing Company, K.S.C.*, ASBCA No. 59020, 16-1 BCA ¶ 36,366 at 177,270. To determine the claim accrual date, we examine the legal basis of the claim. *Id.* at 177,271.

Here, the 6 June 2011 claim asserted a monetary demand for the government's alleged breaches of release restrictions imposed by appellant's "Confidential Legend" markings and the 7018 clause in technical data packages provided under the SBIR Phase II contract. The underlying basis for appellant's claim is that the government disclosed, without the consent of appellant, proprietary information contained in the technical data packages to competitors to the detriment of appellant's business. Specifically, the claim cited to the government's display, in particular, of photographs and materials taken from monthly report No. 8, submitted pursuant to the SBIR Phase II contract, at the June 2005 SOF/APBI conference to competitors and non-government personnel, which appellant alleged was an unauthorized release "that was in violation of the Limited Rights nature of the delivered technical data package" and the "Confidential Legend" marking.

Generally, a cause of action for breach of contract accrues at the time of the breach. *Parsons-UXB Joint Venture*, ASBCA No. 56481, 09-2 BCA ¶ 34,305 at 169,459 (citing *Franconia Associates v. United States*, 536 U.S. 129, 141-42 (2002)). Paragraph (a)(14) of the 7018 clause defines the term "Limited rights," in part, as the "rights to use, modify, reproduce, release, perform, display, or disclose technical data, in whole or in part, within the Government. The Government may not, without the written permission of the party asserting limited rights, release or disclose the technical data outside the Government." According to appellant, its "Confidential Legend" marking restricted the retransmission of technical data without its express written consent. Thus, the events that fix the government's alleged liability for breach of contract and start the running of the statute of limitations are the government's disclosure of the technical data "outside the government" without permission.

The 5 April 2005 email from Mr. Piazza informed Mr. Walkenstein that the government intended to use information in the "Hosek Poster" displayed at the congressional event for the upcoming National SBIR Phase II Conference (finding 118). The government's contention that the claim accrued on this date because appellant learned of an unauthorized disclosure of its technical data at the congressional event lacks merit. The email fails to show that appellant disapproved of the display of the "Hosek Poster" as the government suggests. Nothing in the record demonstrates, and the government points to no evidence, that the congressional event was open to audiences other than congressional staff, or in other words, persons *outside* of the government. Under the circumstances here, appellant had a reasonable expectation of confidentiality that its technical data would be protected at the congressional briefing. In contrast, the June 2005 SOF/APBI conference included industry vendors and foreign representatives, and potential competitors. In a 6 April 2005 email, Mr. Piazza requested Mr. Walkenstein to remove all proprietary information from the Hosek Poster so as to permit the government to release the poster to the public (findings 119-20). We can reasonably infer that the government did not view the congressional event as a public event. For the foregoing reasons, the government has not proven that appellant's claim accrued on 5 April 2005.

The exhibition hall which displayed the SOF/APBI poster was open beginning 7 June 2005 (finding 124). Appellant was required to file its claim with the contracting officer no later than six years from this date or 7 June 2011. Accordingly, appellant's 6 June 2011 claim was timely.

III. Breach of Contract

To establish entitlement to recover for breach of contract, appellant has the burden to prove the elements of liability, causation, and resultant injury. *Mylene Will Company L.L.C.*, ASBCA No. 58154, 13 BCA ¶ 35,415 at 173,749 (citing *Wunderlich Contracting Co. v. United States*, 351 F.2d 956, 968-69 (Ct. Cl. 1965)); *Action Support Services Corp.*, ASBCA Nos. 46524, 46800, 00-1 BCA ¶ 30,701 at 151,682 (appellant, as proponent of its breach claim, must prove the nature and extent of government's breach, the damages suffered, and the causal link between the government's breach and claimed damages); *Ship Analytics International, Inc.*, ASBCA No. 50914, 01-1 BCA ¶ 31,253 at 154,353 (citing *Cosmo Construction Co. v. United States*, 451 F.2d 602, 605 (Ct. Cl. 1971)) (in entitlement hearing, appellant still had to prove that some damage occurred to support a finding of liability).

Under the SBIR Phase II contract, appellant was obligated to deliver monthly reports and, pertinent to this dispute, two CNVS-5050 and one CNVS-4949 contrast enhanced (retrofit) goggles (findings 85, 87). Of relevance to this dispute, monthly report No. 8 delivered by appellant under the contract affixed a restrictive marking requiring the express consent of appellant prior to disclosure or release of its contents (finding 93). The 7018 clause, at the time of contract award, granted the government a royalty-free, worldwide, nonexclusive, irrevocable rights in the delivered technical data. Paragraph (a)(19) of the 7018 clause defined technical data, in part, as "recorded information, regardless of the form or method of the recording, of a scientific or technical nature." There is no dispute that the APBI Poster contained technical data, including four photographs which originated from monthly report No. 8 (findings 112, 137). Appellant did not expressly consent or approve of the display of the APBI Poster (finding 125).

Appellant argues that, by disclosing its technical data, the government did not comply with 7018 clause. The parties have significant disagreement over the proper interpretation of the clause, including, but not limited to, what bundle of rights to the data the government received; whether the restrictive markings in monthly report No. 8 were non-conforming; and whether the data was first "generated" under the contract as that term is defined under the clause. For purposes of this opinion, we determine that resolution of the parties' conflicting contentions regarding these issues is unnecessary to decide the merits of these appeals. Assuming, *arguendo*, that the government did not technically comply with the 7018 clause when it displayed the APBI Poster at the SOF/APBI conference, appellant has not demonstrated, by a preponderance of the

evidence, that it suffered some injury or damages and that any such alleged damages claimed were caused by the government's disclosure to support its breach claim.

Appellant claimed $100 million, plus interest, in damages for the government's disclosure and release of alleged proprietary or trade secret information in the APBI Poster to non-government and foreign entities. The underlying premise is that this disclosure caused competitive harm to appellant. To support its contention, appellant first argues that the APBI Poster disclosed specific features and components embodying the CNVS-4949 and CNVS-5050 goggles that were allegedly unknown to the public prior to June 2005. Alternatively, it argues that the disclosed features and components would allow a person skilled in the ordinary art to reconstruct and manufacture an identical replica of the goggles. For the reasons set forth below, appellant has not proven either assertion.

A. The alleged proprietary features and components of the CNVS-4949 goggle disclosed in the APBI Poster were either publicly available or common knowledge in the night vision technology industry.

Appellant specifically identified the following features and components disclosed in the APBI Poster as proprietary or trade secrets:

(1) A red-color photograph identified as the view from one optical channel of a binocular night vision goggle;

(2) A green-color photograph identified as the view from the other optical channel of a binocular night vision goggle;

(3) The phrase "I2 tubes utilizing different color phosphors" confirmed the use of red-color phosphor screen image intensifier tube in one optical channel of the binocular night vision goggle and the use of a green-color phosphor screen image intensifier tube in the other optical channel;

(4) Independent variable gain control for each image intensifier tube;

(5) The multi-color photograph along with the words "constructed lifelike view" in the caption illustrated the combining of the red-color image from one eye of the observer and the green-color image from the other eye in the brain of that observer;

(6) The red sliver in the multi-color photograph illustrated the combining of the red-color photograph and the green-color photograph;
(7) The reflections from the objective lenses of the goggle in the upper left photograph indicated the presence of red-and green-color filters; and

(8) The phrase "filtering optimized to present more lifelike color" in combination with the phrase "color imaging systems provide improved contrast and color output using only the image intensification band" confirmed the use of separate red- and green-color filters.

(Finding 127) Information in the public domain or that is common knowledge in an industry cannot be considered proprietary or a trade secret. *See Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 475 (1974) (trade secret must be secret); *PAW & Associates, LLC*, ASBCA No. 58534, 15-1 BCA ¶ 36,078 at 176,174 (alleged proprietary technique or process was publicly disclosed); *Mobile Medical International Corp. v. United States*, 95 Fed. Cl. 706, 739 (2010) (information no longer proprietary if publicly disclosed). Additionally, there is no protectable interest over information that can be readily discovered through published materials or by independent invention, accidental disclosure, or "reverse engineering." *Kewanee Oil*, 416 U.S. at 476. Moreover, disclosure of a trade secret to others, who have no obligation to protect the confidentiality of the information, forfeits any protectable interest. *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1002 (1984) (citations omitted).

We begin our analysis by assessing whether the above-listed eight alleged features and components disclosed in the APBI Poster were proprietary or trade secrets. Prior to the June 2005 SOF/APBI conference, Mr. Walkenstein, at the request of Mr. Piazza to remove all proprietary information to permit release to the public, prepared and submitted two edited versions of the "Hosek Poster" on 6 April 2005 which perforce did not contain proprietary information—the Sanitized Poster and the Alternate SBIR Poster (findings 120-21). Consequently, element (4) above is not proprietary. Under the "Description" section, the "Sanitized Poster" and "Alternate SBIR Poster" both disclosed that the goggles were equipped with independent variable gain for each channel (finding 121). Further, appellant advertised on its website in February 2005 the "independent manual gain control" feature of the CNVS-4949 goggle (findings 107, 169), and therefore, publicly disclosed it. Consequently, element (7) is also not proprietary. The APBI Poster included a colored photograph of the CNVS-4949 goggle (finding 160). Appellant appears to assert that inclusion of a colored photograph revealed the color of the external filters on the end of each channel of the goggle and was protectable. However, the government acquired the CNVS-4949 goggle as a deliverable under the Phase II contract (finding 87), and appellant sold the goggle to others prior to June 2005 (finding 106). The color of the external filters

would be readily ascertainable when a purchaser observes the physical goggle (finding 154). Therefore, there is nothing "secret" about this feature.

With respect to elements (1) and (2), appellant concedes that a green phosphor producing a green image and a red phosphor producing a red image are not protected technical data (app. br. at 33). The Sanitized Poster and the Alternate SBIR Poster used the phrases "I^2 tubes utilizing COTS components" and "I^2 tubes utilizing COTS phosphors," respectively (finding 121), compared to the APBI Poster's description of "I^2 tubes utilizing different color phosphors" (findings 127, 165). Appellant argues that element (3) combined with elements (1) and (2) revealed its use of a green phosphor tube in one channel and a red phosphor tube in the other channel to produce these images which was previously unknown to the public (app. br. at 33-34). We disagree. The record establishes numerous instances in which red and green phosphor tubes were utilized prior to June 2005. For example, NVSED designed a similar binocular night vision goggle having a green phosphor tube in one channel and a red phosphor tube in the other channel, resulting in the development of the chromatic PVS-5 goggle in 1987. The PVS-5 goggle provided a green-colored scene in one channel and a red-colored scene in the other channel. (Findings 32-39) Appellant's expert witness, Mr. Gillespie, recalled observing the displayed PVS-5 goggle at NVSED prior to 2000 and noted the two different colored phosphor tubes (finding 40). Additionally, the 1992 Field Patent disclosed the simultaneous presentation of a reddish image in one optical channel and a greenish image in the other optical channel of a binocular night vision goggle (finding 41). Other patents and inventions in the field taught the use of different colored phosphors in image intensification tubes (*see* findings 22-25). Appellant filed two applications to obtain patent protection for its technology that were subsequently rejected by the U.S. Patent and Trademark Office for lack of patentability and obviousness in light of prior art such as the 1992 Field patent (finding 42). Appellant has failed to rebut any of this evidence to show that elements (1), (2), and (3), individually or in combination, were not publicly known or common knowledge in the industry.

With respect to elements (5) and (6), appellant claims that the multi-colored photograph with the caption "Constructed life-like image illustrates the effect of CNVS-4949" in the poster and the red "sliver" bordering the image revealed its technique of combining the red-colored and green-colored images corresponding to elements (1) and (2). The APBI Poster did not reveal any of the particular computerized techniques or methods used to construct the image (finding 144). Both the Sanitized Poster and the Alternate SBIR Poster contained the same multi-color photograph but did not include the red "sliver" along the border of the image and does not use the phrase "life-like image" in the caption. However, the term "life-like" was included in all three versions in the "Description" section. (Findings 161, 179) Therefore, the only conceivable critical difference between the APBI Poster and the edited versions is the red "sliver" along the border of the multi-colored photograph. Appellant argues that this is "the result of the imprecise overlay of a red image on a green image and exposes the entire secret of the

CANVS goggle, i.e. the overlay of offset red and green imagery to produce color" (app. br. at 34-35). The threshold issue is whether combining or "overlay" of red and green images taken from elements (1) and (2) was publicly unknown and unique to appellant. Creation of multi-spectral scenes to generate color was performed in the night vision technology field prior to June 2005 (findings 44-48, 50-52). Even one of appellant's competitors submitted a SBIR Phase II proposal that described a multi-spectral night vision system where an image from [R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D R E D A C T E D] in 2002 (finding 51). While this proposal was not publicly available, it demonstrates that appellant was not the only entity creating multi-spectral scenes by combining or "overlay" of images. Appellant's expert admitted that other entities in the industry were aware of this approach (*id.*). Nothing in the record leads us to conclude that the practice to create a multi-colored image was something unique to appellant to warrant proprietary or trade secret protection.

With respect to element (8), appellant asserts that the phrase "filtering optimized to present more lifelike color" in combination with the phrase "color imaging systems provide improved contrast and color output using only the image intensification band" confirmed the use of separate red and green colored filters. The Sanitized Poster and the Alternate SBIR Poster contained materially the same language except that these two versions included the phrase "spectral selection" rather than the word "filtering" (finding 179). The government's expert, Dr. Waxman, noted that the term "filtering" could include spectral filtering, filtering with polarizers, and modulating any part of the tube (finding 162). Moreover, it was generally known in the industry that multiple "filtering" techniques could be used to obtain color (finding 161). Appellant's expert, Mr. Gillespie, declined to opine on whether the information in the APBI Poster was proprietary (finding 150). He stated that spectral filtering of intensifier tubes was commonly known prior to June 2005 (finding 162). The APBI Poster did not disclose the specific characteristics and properties of the filters used by appellant to obtain the photographs (finding 158). After weighing the evidence, we determine that appellant has not sufficiently demonstrated that the change from "spectral selection" to "filtering" disclosed proprietary information.

In conclusion, appellant has not carried its burden of proving that any of the features and components of the CNVS-4949 goggle, individually or in combination, were proprietary. Additionally, unlike the Sanitized Poster and the Alternate SBIR Poster, the APBI Poster did not explicitly reference the CNVS-5050 goggle. Therefore, appellant has failed to demonstrate that the APBI Poster disclosed proprietary features and components of the CNVS-5050 goggle.

B. Appellant has not demonstrated that the APBI Poster enabled a person of ordinary skill in the art to construct the CNVS-4949 and CNVS-5050 goggles.

Alternatively, appellant argues that the APBI Poster disclosed a combination of features and components that enabled a person of ordinary skill in the art to assemble an

exact replica of the CNVS-4949 goggle (app. br. at 33-35). A protectable interest in the combination of characteristics and components that is unique and affords a competitive advantage may arise even though the characteristics and components individually are publicly disclosed or common knowledge in an industry. *Mobile Medical*, 95 Fed. Cl. at 734 (citing *3M v. Pribyl*, 259 F.3d 587, 595-96 (7th Cir. 2001)) (combination of publicly known characteristics and components that is unique and affords a competitive advantage is protectable); *see also Tewari De-Ox Systems, Inc. v. Mountain States/Rosen, L.L.C.*, 637 F.3d 604, 613 (5th Cir. 2011) (combination of disclosed technologies could constitute a trade secret). To support its contention, appellant primarily relies on its expert, Mr. Gillespie. Although Mr. Gillespie declined to express any opinion as to whether the APBI Poster contained proprietary technical data (finding 150), he asserted that the photographs and textual narratives in the poster identified the major components of the CNVS-4949 goggle—the housing of the goggle; the red and green phosphor intensifier tubes for each channel; and matching red and green optical filters affixed to the objective lenses of each channel (finding 152). He concluded that access to the poster and a physical examination of the goggle would enable a skilled person with "benchmark data points" to confirm the proper construction and configuration (finding 170).

As the finder of fact, the Board is responsible for evaluating the credibility, persuasiveness, and weight accorded to conflicting evidence in the record. *Pro-Built Construction Firm*, ASBCA No. 59278, 18-1 BCA ¶ 36,975 at 180,116. We determine that certain assumptions and conclusions reached by Mr. Gillespie are either contradicted by his own testimony, successfully rebutted by the government, or uncorroborated by any documentary evidence in the record. With respect to the phosphor tubes, Mr. Gillespie's analysis is based upon an assumption that the APBI Poster did not explicitly state that white phosphor tubes or other colors were used and that red and green phosphor tubes were well known (finding 166). However, the colored photographs did not reveal the exact color of the phosphor tube, and both Mr. Hosek and Mr. Walkenstein stated a red phosphor or a white phosphor with an appropriate filter could generate the red photograph in the poster (findings 162, 167-68). With respect to the external filters of the goggle, the government persuasively rebutted Mr. Gillespie's report and testimony (findings 162-64). The APBI Poster did not describe any of the spectral characteristics, properties, or materials of the filters used for the photographs (finding 158). Mr. Gillespie conceded that a skilled person would communicate a filter's configuration by its filtering characteristics and not by its color, and that a filter's characteristics could not be deduced by viewing the photographs or visual appearance of the filters (finding 164). Nor has Mr. Gillespie demonstrated how one skilled in the art could readily test and validate to confirm the proper phosphor tube and filter design and configuration, or the time, effort, and expense to perform such a validation (finding 170). Other attributes and components of the CNVS-4949 goggle were not disclosed in the APBI Poster (finding 171).

We find Mr. Gillespie's conclusions and assumptions unpersuasive. Appellant has not established that the APBI Poster enabled a skilled person to construct the CNVS-4949

goggle. Since the APBI Poster did not mention or depict any features and components of the CNVS-5050 goggle and appellant has not pointed to any other evidence in the record, appellant has not adequately demonstrated that the APBI Poster would enable a skilled person to construct an exact replica of the CNVS-5050 goggle. Our conclusion is further strengthened by the fact that neither Mr. Gillespie nor any of the witnesses at the hearing knew of any other company that produced a similar goggle since 2005 (finding 184).

C. Appellant publicly disclosed the use of red and green phosphor intensifier tubes to other entities prior to June 2005.

Appellant disclosed its use of green and red phosphor intensifier tubes prior to the display of the APBI Poster, and therefore, lost any protectable interest. The evidentiary record reveals numerous instances in which appellant has voluntarily disclosed the allegedly proprietary features and components to the public (findings 95-96, 173-76). For example, appellant demonstrated an operable CNVS-4949 goggle at the 2003 FPED to potential vendors and customers (finding 176). By demonstrating the functionality of the goggle, a user would have observed the red and green phosphor tubes (*id.*; *see also* finding 154). Attendees at the FPEDs were under no obligation to protect the confidentiality of the demonstrations, and appellant did not require attendees to execute a nondisclosure agreement or take other steps to protect its claimed proprietary features before demonstrating its technology (findings 175, 177). Mr. Walkenstein also conceded that his technology incorporating red and green phosphor tubes was fully developed and available for sale prior to the SBIR Phase II contract award (finding 173). Although appellant may not have marketed or sold the CNVS-4949 or CNVS-5050 goggles prior to the SBIR Phase II contract, appellant was marketing and selling the underlying technology. The technology was not limited or restricted to the CNVS-4949 or CNVS-5050 housing and could be retrofitted to any goggle (*id.*). Selling the technology in this manner and publicly demonstrating the operability of its goggles deprived CANVS of any reasonable expectation of confidentiality. *Cf. Mobile Medical*, 95 Fed. Cl. at 738 (plaintiff lost secret status of its product's features when it publicly displayed the internal elements of its manufactured product at a trade show).

D. Appellant has failed to prove that it's claimed damages were caused by the government's display of the APBI Poster.

Appellant also has not proved that its alleged loss of an "income producing asset" resulted from the display of the APBI Poster. There is no persuasive evidence of any causative linkage between the poster's display and the alleged loss. In its claim, appellant asserted that the government's disclosure of its alleged proprietary information at the June 2005 conference harmed its ability to secure future funding from industry and the government for its night vision goggle products. Specifically, appellant cited its inability to receive a SBIR Phase III award or production contract from the government. (Findings 180, 183) However, the government was not obligated to award appellant a

SBIR Phase III contract. *See Night Vision Corp. v. United States*, 469 F.3d 1369, 1374 (Fed. Cir. 2006), *cert. denied*, 550 U.S. 934 (2007) (SBIR statutory provisions did not impose on the government an obligation to award a Phase III contract after successful completion of Phase II.) In fact, government testing demonstrated that the goggles were unreliable, inadequate, and subjected users to adverse physiological effects including headaches (finding 102, *see also* finding 13).

Additionally, appellant has not pointed to any evidence that demonstrates that a competitor or the government has produced a goggle that utilizes appellant's claimed technology. Mr. Walkenstein's allegations that an unidentified Russian manufacturer or governmental entity was producing a similar goggle is wholly speculative and unsupported by any corroborative, much less persuasive, evidence (finding 185). Highly credible witnesses who worked for governmental night vision programs were not aware of any color night vision goggles being fielded or operated by the government. Even appellant's own expert could not identify a single manufacturer who produced a similar goggle, much less improperly appropriated appellant's allegedly confidential data (finding 184).

With regard to appellant's alleged damages, we further observe that appellant never contacted the cognizant contracting officer or any contracting official subsequent to the government's display of the APBI Poster until the summer of 2011 (findings 186-89). There was no opportunity during the virtually six-year delay between the display of the poster and the filing of appellant's claim for the government to inquire into or mitigate any possible adverse consequences. After appellant witnessed the display of the poster at the conference, it continued to advocate for additional funding from Congress and promote its technology to organizations such as *The Washington Post*, highlighting the June 2005 conference (finding 190). Not until appellant realized that it would not receive further funding and support from the government did appellant notify the government of its claim for breach, one day prior to expiration of the CDA's statutory deadline. This lack of urgency from CANVS underscores and is consistent with the evidence discussed above that it, in fact, suffered no damages from the government's use of the poster.

For the reasons stated above, appellant has failed to show any causal connection between the government's display of the APBI Poster and its claimed inability to secure funding and future awards from the government or any other competitive harm.

CONCLUSION

Appellant has failed to prove the requisite elements of liability, causation, and resultant injury to sustain its breach of contract allegations. We have fully considered all arguments raised in appellant's briefs and found them lacking in merit and insufficient to warrant recovery. Because we determine that appellant has not carried its burden to establish breach for the reasons detailed above, individually and collectively, we need not discuss additional, alternative arguments raised by the government supporting denial of the appeals.

ASBCA No. 57987 is denied. ASBCA No. 57784 is dismissed as duplicative.

Dated: September 6, 2018

ROBERT T. PEACOCK
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

RICHARD SHACKLEFORD
Administrative Judge
Acting Chairman
Armed Services Board
of Contract Appeals

I concur

J. REID PROUTY
Administrative Judge
Vice Chairman
Armed Services Board
of Contract Appeals

I certify that the foregoing is a true copy of the Opinion and Decision of the Armed Services Board of Contract Appeals in ASBCA Nos. 57784, 57987, Appeals of CANVS Corporation, rendered in conformance with the Board's Charter.

Dated:

JEFFREY D. GARDIN
Recorder, Armed Services
Board of Contract Appeals