In the United States Court of Federal Claims

No. 16-783C
Filed: August 23, 2019
Redacted Version Issued for Publication: September 24, 2019[1]

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BRUHN NEWTECH, INC., et al.,           *
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                  Plaintiffs,          *      Liability Trial; Contract Disputes Act;
                                       *      Breach of Contract; Copyright
v.                                     *      Infringement.
                                       *
UNITED STATES,                         *
                                       *
                  Defendant.           *
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Steven J. Lewicky, Lewicky, O'Connor, Hunt and Meiser, LLC, Fulton, MD, for plaintiffs.

Scott D. Bolden, Deputy Director, Commercial Litigation Branch, Civil Division, Department of Justice, Washington, D.C., for defendant. With him were **Arthur Samora**, Agency Counsel, Department of Navy, **Nicholas Kim**, Trial Attorney, Commercial Litigation Branch, **Carrie Rosato**, Trial Attorney, Commercial Litigation Branch, **Gary L. Hausken**, Director, Commercial Litigation Branch, and **Joseph H. Hunt**, Assistant Attorney General, Civil Division, Department of Justice, Washington, D.C.

O P I N I O N

HORN, J.

In the above-captioned case, plaintiffs Bruhn NewTech, Inc. (BNT-US) and Bruhn NewTech, A/S (BNT-Denmark) filed a second amended complaint against the United States. In Count I of the second amended complaint, BNT-US asserts a breach of contract claim against the United States. In Count II of the second amended complaint, BNT-Denmark asserts that the United States infringed two of BNT-Denmark's copyright registrations. The court held a trial on liability on both of plaintiffs' counts in the second amended complaint.

FINDINGS OF FACT

[1] This Opinion was issued under seal on August 23, 2019. The parties were asked to propose redactions prior to public release of the Opinion. This Opinion is issued with redactions that the parties proposed in response to the court's request. Words which are redacted are reflected with the notation: "[redacted]."

BNT-US is a wholly-owned subsidiary of BNT-Denmark, and BNT-US was incorporated as a Delaware corporation in 1996. BNT-Denmark is a Danish corporation that sells computer software referred to as "NBC-Analysis," which is software used in military systems to track and analyze chemical, biological, radiological, and nuclear (CBRN) agents in military and civilian environments.

The parties have stipulated that the primary functions of NBC-Analysis software are predicting, warning, and reporting CBRN events based on informational inputs provided by NBC-Analysis users, as well as "other reliable sources." The output the NBC-Analysis software generates is consistent with the CBRN reporting standards articulated in North Atlantic Treaty Organization (NATO) Allied Tactical Publication 45 (ATP-45). NATO periodically revises the CBRN reporting standards set forth in ATP-45. When NATO revises ATP-45, BNT-Denmark updates its NBC-Analysis software to ensure compatibility with the CBRN reporting standards in ATP-45. The parties have stipulated that BNT-Denmark "released" "versions of" NBC-Analysis software compatible with ATP-45B from 2003 to 2005. From 2006 to 2009, the parties have stipulated that BNT-Denmark "released" "versions of" NBC-Analysis software compatible with ATP-45C. In 2011, BNT-Denmark updated its NBC-Analysis software to be compatible with NATO's ATP-45D.

During trial in the above-captioned case, the court heard testimony from Jacob Nielsen, who described himself as being the "CEO [chief executive officer] of Bruhn NewTech from May of 2005 until February of 2017," and who stated that, as CEO, he was responsible for managing the operations of BNT-Denmark, BNT-US, and a different Bruhn NewTech subsidiary based in the United Kingdom. According to Jacob Nielsen, Bruhn NewTech was founded in the 1980s by two software engineers who had previously served in the Danish military. Jacob Nielsen asserted that the two software engineers were the first individuals to create a software program used to predict the "outfall" of nuclear weapons in accordance with established NATO standards. Jacob Nielsen indicated that the relevant NATO standards initially only concerned nuclear weapons, but that the NATO standards became more complex over time. Jacob Nielsen also testified that "almost" "100 percent" of NBC-Analysis sales were to NATO countries, including, among other countries, Denmark, Italy, Norway, the United Kingdom, and the United States. When Jacob Nielsen began his employment with Bruhn NewTech in 2005, Bruhn NewTech's largest source of revenue was from contracts with the United States. According to Mr. Nielsen's testimony at trial, BNT-Denmark established BNT-US because DNT-Denmark was "not able to work for the U.S. Government with engineers other than engineers based in the U.S. for security reasons."

During his testimony, Jacob Nielsen described the functions of NBC-Analysis software as:

[A] Joint Warning and Reporting System, and that's basically what it does. So it takes in information about incidents of any of the kinds of -- nuclear, biological, chemical incidents -- and it takes those information in, and it computes and predicts the outcome of this, and it will also then send out

information to parties that have been logged in the software, that they should be warned and they should do this, that, or the other.

BNT-Denmark and BNT-US sold NBC-Analysis software in either a "dongled" format or an "undongled" format. Dongled software is protected by a hardware "dongle," which the parties describe as a "physical device with associated software or firmware that must be inserted into the computer" in order to prevent "NBC-Analysis from being used on any computer other than a computer that has a security dongle plugged into it." Undongled versions of NBC-Analysis software "have the physical capacity to be replicated and copied, but the terms of the license under which the software is delivered legally restrict the extent to which the software can be replicated and copied." BNT-Denmark and BNT-US also have sold NBC-Analysis software to governments under a "national license," which the parties have stipulated means that "NBC-Analysis may be freely used throughout the nation's armed forces and government, but only in a manner consistent with the terms of the negotiated national license." Under a national license, a government would receive an undongled version of NBC-Analysis software. According to the parties' joint stipulation of facts, when selling NBC-Analysis under a national license, BNT-Denmark and BNT-US would "always offer a support and maintenance service contract for NBC-Analysis," which the parties indicate is known as a Software Upgrade and Maintenance Agreement (SUMA). The parties also have stipulated that the SUMA provides the majority of BNT-US's and BNT-Denmark's revenue and profit under a national license contract.

Jacob Nielsen testified at trial that "the U.S. engineers would be doing the U.S. adaptations to our core" NBC-Analysis software, while the "Danish engineers would be developing along the lines of the annual updates, new functionality and new adaptations, to be sold throughout the world as a standard product." Mr. Nielsen also stated that the engineers working in Denmark for BNT-Denmark were responsible for keeping the NBC-Analysis software current and compliant with evolving NATO ATP-45 standards. Similarly, plaintiffs' former employee John O'Donahue, who was offered by plaintiff as an expert witness, and who testified at trial that he was a software engineer, as well as a manager, for BNT-US from July 2001 to August 2006,[2] stated that BNT-US customized NBC-

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[2] Former BNT-US employee John O'Donahue was designated as a fact witness by defendant and originally as an expert witness by plaintiffs. Without objection from defendant, Mr. O'Donahue was offered, and admitted, as plaintiff's expert on software development, software coding, software architecture, and NBC-Analysis software code. Although originally designated as an expert witness by plaintiffs, during his direct testimony when plaintiffs called Mr. O'Donahue as an expert witness, Mr. O'Donahue offered fact testimony as to his employment with BNT-US, as well as fact testimony regarding NBC-Analysis software. Mr. O'Donahue also testified that, while working for BNT-US, "I was asked to become manager of the group, which gave me responsibility for a large number of subsequent projects. A significant part of what I did was to develop sensor interfaces for JWARN, the joint military -- military Joint Warning and Reporting Network." According to Mr. O'Donahue's testimony, while employed by BNT-US, Mr. O'Donahue worked to "add[] in other what's called GOTS, Government-owned off-the-

Analysis for the United States military, such as "the addition of these sensors" and "deployment of the application on different platforms." According to John O'Donahue, BNT-Denmark was responsible for ensuring that Bruhn NewTech's NBC-Analysis software was current and compliant with the NATO ATP-45 standards.

Jacob Nielsen testified that, either at the end of 2012 or the end of 2013, BNT-US was reduced to having approximately one employee because "[t]he business went away." Jacob Nielsen also stated that, as CEO of Bruhn NewTech, he was the individual that decided to limit BNT-US' operations to approximately one employee. In plaintiffs' post-trial brief, plaintiffs also assert that there were insufficient business opportunities related to NBC-Analysis to justify continuing BNT-US' business operations as of the end of 2012.

The '2076 Contract

On May 13, 1998, the United States Marine Corps (USMC) awarded Contract No. M67854-98-C-2076 (the '2076 Contract) to BNT-US, which was a fixed-price contract. According to the parties' joint stipulations of fact, BNT-US delivered software and support services under the '2076 Contract "for at least two years" after the "effective date" of the '2076 Contract. The parties have stipulated that, under the '2076 Contract, BNT-US provided "NBC-Analysis software packages to the USMC to be used as the software component to the Joint Warning and Reporting Network Program (JWARN)." The '2076 Contract required BNT-US to deliver "the NBC Analysis Software packages (license, media, documents)" to the USMC "in accordance with the requirements listed in the JWARN PD [Purchase Description]."[3] The statement of work in the '2076 Contract indicated that the JWARN software was to provide analysis of nuclear, biological, and chemical detection information and was to automate nuclear, biological, and chemical warning and reporting for the United States Army, United States Navy, United States Air Force, and USMC. Section 1.1 of the statement of work stated that the scope of the '2076 Contract entailed "the delivery of the commercial software component of JWARN, the NBC Analysis program, and subsequent post-fielding support." The '2076 Contract's purchase description stated that the NBC-Analysis software must operate on the battlefield and provide military units with an overview of the nuclear, biological, and

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shelf software, to do functionality, which in the U.S. military is done by the NBC office, which is not necessarily part of the ATP-45 documentation."

[3] According to plaintiffs' post-trial brief, the terms NBC-Analysis and JWARN Block 1 are sometimes used interchangeably to refer to the product provided by BNT-US to the United States government. Plaintiffs also state: "More precisely, however, NBC-Analysis is BNT-Denmark's commercial product that it licenses to many nations, and JWARN Block 1 is that commercial product integrated with adaptive add-ons created by BNT-US for use by the U.S. Government." The parties jointly have stipulated that Paul Moroney was an employee of "contractor Sentek," which Mr. Moroney testified was a "DoD contractor." Mr. Moroney testified that, "from the beginning," "they" referred to the NBC-Analysis software as JWARN and used the terms NBC-Analysis, JWARN, and JWARN Block 1 interchangeably.

chemical situation in the area of operations. The parties have stipulated that the software delivered under the '2076 Contract was commercial-off-the-shelf software.

The '2076 Contract contained Federal Acquisition Regulation (FAR) clause 52.227-19, titled "COMMERCIAL COMPUTER SOFTWARE--RESTRICTED RIGHTS (JUN 1987)." (capitalization in original). In the '2076 Contract, FAR clause 52.227-19 was supplemented with the following terms:

In accordance with FAR 52-227-19, BRUHN NewTech, Inc. will place the following legend on the software.

NOTICE!

COMMERCIAL COMPUTER SOFTWARE

RESTRICTED RIGHTS

Notwithstanding any other lease or license agreement that may pertain to, or accompany the delivery of, this computer software, the rights of the Government regarding its use, reproduction and disclosure are as set forth in Government Contract No. M67854-98-C-2076.

LICENSE AGREEMENT

(Supplement to FAR 52.227-19)

All software to be delivered under this contract including source codes, is commercial computer software subject to restricted rights specified in FAR 52.227-19 "Commercial Computer Software - Restricted Rights" with the following additions to that clause:

1. The Government may make an unlimited number of copies of the software and may distribute and use the software in any computers owned or leased by the Government and operated by the U.S. Government personnel working for U.S. Government departments, organizations and agencies.

2. The Government's use of the software shall be limited to use in fulfillment of functions of the Government of the United States.

3. The Government shall not disclose the software and shall not give, sell, license or otherwise provide copies of the software or use of the software to any third party person or entity including but not limited to members of

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the public, governments of foreign countries, or international agencies or organizations.

(capitalization and emphasis in original). The parties have stipulated that the "software license provisions" in the '2076 Contract have not been amended or modified.

BNT-US and the government executed three modifications to the '2076 Contract. Modification No. P00001 to the '2076 Contract, which was dated July 1, 1998, stated that the purpose of the modification was to "add modifications to the Software Delivered under Line Item 0001." Modification No. P0001 stated that the "NBC Analysis software is to be modified to include NBC Battlefield Management functions from the Government owned software Automated Nuclear, Biological, and Chemical Information System (ANBACIS); a MICAD [Multipurpose Integrated Chemical Agent Detector] module; and Port Airbase ACTD [Advanced Concept Technology Demonstration] module." On January 21, 1999, BNT-US and the USMC executed Modification No. P00002 to the '2076 Contract, which added CLINs and deleted certain CLINs from the '2076 Contract. On September 30, 1999, BNT-US and the USMC executed a third modification which revised a CLIN to reflect an increase in cost. The parties have stipulated that BNT-US has been compensated in full for all work under the '2076 Contract as of June 3, 2004.

Joint Program Executive Office for Chemical and Biological Defense and the Joint Program Manager Information Systems

In 2003, the Department of Defense established the Joint Program Executive Office for Chemical and Biological Defense. The Joint Program Executive Office for Chemical and Biological Defense assists the United States armed forces with development, acquisition, and maintenance of chemical and biological defense equipment. There are several directorates within the Joint Program Executive Office for Chemical and Biological Defense, including the Joint Program Manager Information Systems (JPMIS).

According to the parties' joint stipulations of fact, in approximately 2003, management of military operations related to JWARN was transferred from the USMC to JPMIS. Thereafter, JPMIS administered contracts involving JWARN, including "deliveries to the Government of JWARN software and services by BNT-US." In the parties' joint stipulations of fact, the parties state that JPMIS is staffed by both uniformed military and civilian employees, as well as "Systems Engineering and Technical Assistance (SETA) contractors. SETA contractors are civilian employees or government contractors who are contracted to assist the Department of Defense pursuant to FAR [Federal Acquisition Regulation] Part 37."

The parties have stipulated that Scott White has been the Joint Program Manager for Chemical and Biological Defense Program since June 2006. According to the parties' joint stipulations of fact, "[i]n this capacity, Mr. White reports directly to the Joint Program Executive Office for Chemical and Biological Defense (JPEO-CBD) and oversees JPMIS, which has primary responsibility for United States military's acquisition of products and

services related to information systems." According to plaintiffs' post-trial brief, "[c]onfusingly, the term 'JPM-IS' is sometimes used by the CBRN community to refer to the joint program manager himself (Scott White, during all relevant time periods), and sometimes to refer to the office that he leads."

JWARN Block 1, JWARN Block 2, and BNT-US's Other Contractual Agreements

The parties have stipulated that the government's JWARN Block 1 "software suite evolved over time, as BNT-US provided periodic updates to maintain adherence to NATO ATP-45 requirements and other Government-Off-The-Shelf (GOTS) programs were added to the software suite, such as: Hazard Prediction and Assessment Capability (HPAC); Vapor, Liquid, and Solid Track (VLSTRACK); and the Emergency Management Information System (EMIS)." The parties' joint stipulation of facts also provides that BNT-Denmark and BNT-US developed and provided additional software components to "incorporate features" which were developed in response to JPMIS' requirements. The parties have stipulated that "BNT-US identified these features in a document titled 'GOTS Source Code Summary' dated January 28, 2008."

The government designated different versions of the JWARN Block 1 software suite with different, progressive alphabetic designations, such as JWARN Block 1A, JWARN Block 1B, JWARN Block 1C, etc. JWARN Block 1 software suites were further divided based on which government computer system the JWARN Block 1 software suite was compatible with, among others, the government's Command and Control Personal Computer System (C2PC) and the government's Maneuver and Control System (MCS). The parties have stipulated:

Three computer system designations relevant to this case are:

• Standalone: a version of JWARN Block 1 capable of operating in isolation from a network or a command and control host;
• C2PC: a version of JWARN Block 1 capable of operating on the C2PC system; and
• MCS: a version of JWARN Block 1 capable of operating on the MCS system.

The government began using JWARN Block 1 software in 1998. In 2002, the government issued Solicitation No. M67854-02-R-2056, which sought to procure a "next-generation" version of the JWARN software, which would be designated as JWARN Block 2 Increment 1. According to the parties' joint stipulation of facts, BNT-US "partnered" with Lockheed Martin to submit a proposal in response to Solicitation No. M67854-02-R-2056. In 2003, however, the government awarded a contract to Northrop Grumman under Solicitation No. M67854-02-R-2056. Thereafter, the government designated JWARN Block 2 Increment 1 as a "program of record." While Northrop Grumman was developing JWARN Block 2 Increment 1, the government continued to use JWARN Block 1 software. The parties have stipulated that the government ceased using JWARN Block 1 software on October 10, 2016.

According to the parties' joint stipulation of facts:

Between 1998 and 2013, BNT-US worked on a series of contracts and subcontracts relating to JWARN Block 1 support activities for the United States Government. The Government was the customer for these contracts and subcontracts. BNT-US provided to the Government updates, refinements and services related to NBC-Analysis/JWARN Block 1 during these years. BNT-US's last performance as a prime contractor to the Government concluded on October 25, 2005. After that date, BNT-US always served as a subcontractor to other prime contractors under contracts other than the '2076 Contract. The collective value of BNT-US's contracts and subcontracts for the government was more than $33 million. . . .

On January 12, 2009, BNT-US began working as a subcontractor to Northrop Grumman Systems Corporation (Northrop). BNT-US's subcontracting work related to Northrop's prime contract with the Government, Contract No. N00178-04-D-4091 (Task Order NS05). Some of BNT-US's subcontract work through Northrop included work on Northrop's "Global Operations" project, in addition to other matters.

(footnotes omitted). When discussing "Task Order NS05" in the joint stipulation of facts, the parties cite to joint exhibit 67,[4] which is a subcontract between Northrop Grumman and BNT-US that was entered into on January 12, 2009. The "Prime Contract No." listed on the January 2, 2009 subcontract located at joint exhibit 67 is listed as "N00178-04-D-4091-NS05" (the '4091/NS05 Task Order), while the Subcontract No. was listed as "65762EVT9S" (the January 12, 2009 subcontract). BNT-US' January 12, 2009 subcontract had a period of performance from January 12, 2009 to December 31, 2009. Under the January 12, 2009 subcontract, BNT-US was to:

[P]rovide the necessary personnel, material, and facilities, and exert its best efforts to do all things necessary or incidental to accomplish the effort as ordered by Buyer and as set forth in the Statement of Work identified and made a part of this Subcontract under the Subcontract Content and Order of Precedence article hereof.

(capitalization in original). [redacted]

The parties included in the record at joint exhibit 78 an October 11, 2011 document titled "[redacted] Global Ops Support," which indicates the document was produced by BNT-US and states on the cover page: "Proposal: NGC [Northrop Grumman Corporation] Subcontract 7500057539, TI #16." The "General Task Description" in the October 11, 2011 subcontract proposal states "Requested changes for JWARN Block 1F Signal Fire support of the [redacted] Global Operations Project." The parties also included in the

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[4] At the liability trial, the parties jointly moved to admit all joint exhibits into evidence.

record before the court joint exhibit 101, which is a June 25, 2012 bilateral change order executed by Northrop Grumman and BNT-US. The June 25, 2012 change order indicates that the change order was to a subcontract between Northrop Grumman and BNT-US, Subcontract No. 7500057539, which is a different subcontract number than the subcontract number listed on the January 31, 2009 subcontract. The Contract No. listed on the June 25, 2012 change order, however, was the Contract No. for Northrop Grumman's '4091/NS05 Task Order discussed above. The June 25, 2012 change order indicates that the value of Subcontract No. 7500057539 was increased by $[redacted] to $[redacted]. The June 25, 2012 "Change Notice Title" was "Change Order to add of [sic] funding for Signal Fire Maintenance Update," and that BNT-US was to perform the work for "Signal Fire Maintenance Update" between June 25, 2012 and September 23, 2012. (capitalization in original).

The parties also included as a joint exhibit Subcontract No. 7500112702, which is a February 22, 2013 subcontract between Northrop Grumman and BNT-US. The February 22, 2013 subcontract indicates that the subcontract was issued under Northrop Grumman's '4091/NS05 Task Order. The February 22, 2013 subcontract had a period of performance from February 22, 2013 to September 23, 2013, during which period BNT-US was to:

> [P]rovide the necessary personnel, material, and facilities, and exert its best efforts to do all things necessary or incidental to accomplish the effort as ordered by Buyer and as set forth in the Statement of Work identified and made a part of this Subcontract under Article XXVI- Subcontract Content and Order of Precedence.

Defendant contends that the software ultimately provided to the Republic of Korea and the Kingdom of Jordan was delivered by BNT-US to the government as part of Northrop Grumman's "Global Operations" project under Northrop Grumman's '4091/NS05 Contract, and that the software was not delivered under the '2076 Contract.

Deliveries of CRIDs to the United States

BNT-Denmark and BNT-US assigned a unique Customer Release Identification number (CRID) to each delivery BNT-US made to the government. The parties have stipulated that, "[i]n the years after making the initial delivery of NBC-Analysis software to the Government in 1998, BNT-Denmark and BNT-US developed and delivered to the government additional software components" to incorporate government requests and JPMIS requirements. As executed on May 13, 1998, the '2076 Contract contained five Contract Item Line Numbers (CLINs), although additional CLINs were added to the '2076 Contract when the three modifications were executed, as discussed above. In May 1998, BNT-US delivered an undongled disk operating system (DOS) version of NBC-Analysis to the USMC. A May 19, 1998 invoice submitted by Bruce Windesheim, who, at that time, was the vice president of BNT-US, to the USMC indicates that BNT-US billed the USMC $[redacted] for the NBC-Analysis software, which appears to have been CLIN 0001 in the '2076 Contract. The May 19, 1998 invoice indicates that BNT-US was invoicing the USMC

for the SUMA under the '2076 Contract, which was CLIN 0005 in the '2076 Contract, as well as for training material, which was CLIN 0002. The government appears to have paid BNT-US' May 19, 1998 invoice on July 21, 1998. The May 19, 1998 invoice does not include charges for a contractor training course, which was CLIN 0003 in the '2076 Contract, or a commercial software manual, which was CLIN 0004 in the '2076 Contract. A delivery note indicates that BNT-US delivered software labeled as CRID 40 to the USMC at Camp Pendleton in California on January 15, 1999. CRID 40 was a Windows version of the NBC-Analysis software. The January 15, 1999 delivery note indicates that CRID 40 was delivered under the '2076 Contract.

The parties have stipulated that, as of June 3, 2004,[5] the highest number CRID BNT-US had delivered to the government was CRID 395. According to a delivery note dated April 26, 2004, BNT-US delivered CRID 395 to the government, which was titled "NBC-Analysis for MCS-X" and consisted of a CD-ROM containing NBC-Analysis, as well as "MCS-X Proxy." The description under MCS-X Proxy stated: "Contains the .NET assemblies which represent the interface between NBC-Analysis and MCS-X." The April 26, 2004 delivery note states that BNT-US's delivery of CRID 395 was made to "JPM NBC CA" at Aberdeen Proving Ground, Maryland, pursuant to "Project no" 202503. Defendant asserts that CRID 395 was delivered under Contract No. DAAD13-03-F-A001 (the 'A001 Contract) between the United States Army and BNT-US. The 'A001 Contract was awarded by "US ARMY ROBERT MORRIS ACQUISITION CENTER" at the Aberdeen Proving Ground, Maryland, to BNT-US on January 16, 2003, with a value of $[redacted]. The statement of work in the 'A001 Contract stated that BNT-US "shall port, integrate, and test the Joint Warning and Reporting Network (JWARN) Block 1 software with the Army Battle Command System (ABCS)" and "shall upgrade and recompile the current versions of the Nuclear, Biological & Chemical-Analysis (NBC-Analysis), battlefield management modules, and Multipurpose Integrated Chemical Agent Alarm (MICAD) communication modules for target ABCS systems." (capitalization in original).

In the 'A001 Contract, CLIN No. 0001 states that BNT-US is to perform the requirements in "Bruhn NewTech proposal BNI/202503/PPS/001 dated 20 Dec 02." At trial, Bruce Windesheim, who stated he currently was, and had been "for a while," the interim president of BNT-US, and whose signature block in documents from 1998 indicates he once was the vice president of BNT-US, testified that the "202503" in "BNI/202503/PPS/001" in the April 26, 2004 delivery note associated with CRID 395 was the "project number." When asked whether the April 26, 2004 delivery note of CRID 395 was delivered pursuant to the 'A001 Contract, Bruce Windesheim stated:

> I am not doubting that Exhibit 18 [the delivery described in the April 26, 2004 delivery note] was delivered under the ['A001] contract. What I don't know with specificity is what items are covered by this document [the April 26, 2004 delivery note] that relate to the items called for in the statement of work [in the 'A001 Contract]. It may not have been the entire thing, as stated

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[5] As stated above, the parties have stipulated that the government had paid BNT-US for all work performed under the '2076 Contract by June 3, 2004.

in 1.0, the statement of work in Exhibit 44 [the 'A001 Contract]. I just don't
know.

Plaintiffs have not asserted that CRID 395 was delivered under the '2076 Contract. In
general, Mr. Windesheim struggled to recall the details of a number of relevant specifics
related to what had occurred, especially during cross-examination, and readily admitted
he was "not a software expert."

On October 25, 2011, BNT-US delivered "JWARN 1F Phase 2 for C2PC CRID
1414" on a "CD" to "JPM IS CM" in San Diego, California. An October 25, 2011 delivery
note states that CRID 1414 was delivered under "Our Order: Global Operations." The
parties have stipulated that, at the time BNT-US delivered CRID 1414 to the government,
BNT-US was serving as a subcontractor to Northrop Grumman. Defendant asserts that
CRID 1414 was delivered to the government under BNT-US' subcontract with Northrop
Grumman, not under the '2076 Contract. In a November 1, 2011 email message from
Ellen Billiter, an earlier employee of BNT-US, to an employee of Northrop Grumman, Ms.
Billiter stated she attached a monthly status report to her email "for the Global Operations
project." The monthly status report, under "Schedule Status," stated "Completed October
25, 2011 delivery to JPMIS CM," the same date on which the parties have stipulated that
BNT-US delivered CRID 1414 to the government in San Diego, California.

The parties also have stipulated that BNT-US delivered CRID 1489 to JPMIS on
September 28, 2012. The September 28, 2012 delivery note for "JWARN 1F Phase 2
Standalone CRID 1489" stated the BNT-US delivered CRID 1489 to JPMIS in San Diego,
California, under "order no: Global Operations." Defendant asserts that CRID 1489 was
not delivered to the government under BNT-US' '2076 Contract, but was delivered to the
government under BNT-US' subcontract with Northrop Grumman.

The parties further have stipulated that BNT-US delivered CRID 1490 to JPMIS on
September 28, 2012. The September 28, 2012 delivery note for "JWARN 1F Phase 2 for
C2PC CRID 1490" states that BNT-US delivered CRID 1490 to JPMIS in San Diego,
California under "order: Global Operations." Defendant contends BNT-US delivered CRID
1490 under its subcontract with Northrop Grumman and did not deliver CRID 1490 under
the BNT-US '2076 Contract.

Moreover, the parties have stipulated:

The software object code in CRIDs 1414, 1489, and 1490 was compiled
from a combination of COTS source code and GOTS source code. The
software object code in all three deliveries included Government-owned
components for Battlefield Management Functions. The software object
code in CRIDs 1414 and 1490 included Government-owned C2PC
integration code.

In addition, the parties' joint stipulation of facts states:

> Within each of the BNT-US deliveries to the Government designated as CRIDs 1414, 1489, and 1490, was a document titled "Software Administrator's Manual for JWARN 1F Phase 2." Within this document the following statement is found:
>
> > JWARN 1F Phase 2 is an application based on a Commercial Off-The-Shelf (COTS) software package developed by Bruhn NewTech, Inc. (BNI). Additional Government Off-The-Shelf (GOTS) capabilities are included in the package. JWARN 1F is sponsored by the Joint Program Executive Officer for Chemical and Biological Defense (JPEO-CBD) and is managed by the JPM IS Program Management Office (PMO).

The Software Administrator's Manual for JWARN 1F Phase 2 for CRIDs 1414, 1489, and 1490 all state:

4.1.1 Installation Wizard

Insert the CD-ROM into the CD-Rom drive. The program should **automatically** start up. If not:

- Click **Start**, select and click **Run**.
- Click **Browse** and browse to the CD-ROM drive and select **JWARN 1/Setup** and click **OK**.
- The Install Wizard will be displayed, click **Next**.
- **Accept** the License Agreement, click **Next**. (Figure 3)

Figure 3: License Agreement

- Enter the name and organization, click **Next**.
- The Destination Folder will be displayed. *The first entry* will default to the standard drive where program *files* are stored. The destination for the program can be changed to another drive and/or directory. *The second entry* will default to the standard drive where program *data* (exercises, settings etc.) are stored. The destination for the program *data* can be changed to another drive and/or directory.

The parties have stipulated that the "software license agreement language displayed on the screen is the same software license agreement language that is stated in the '2076 Contract."

CRIDs 1414, 1489, and 1490 also each came with a "SOFTWARE VERSION DESCRIPTION." (capitalization in original). The Software Version Descriptions for CRIDs 1414, 1489, and 1490 all state:

APPENDIX C. LICENSE AGREEMENT
NOTICE!

COMMERCIAL COMPUTER SOFTWARE

RESTRICTED RIGHTS

Notwithstanding any other lease or license agreement that may pertain to, or accompany the delivery of, this computer software, the rights of the Government regarding its use, reproduction and disclosure are as set forth in Government Contract No. M67854-98-C-2076.

LICENSE AGREEMENT

(Supplement to FAR 52.227-19)

All software to be delivered under this contract including source codes, is commercial computer software subject to restricted rights specified in FAR 52.227-19 "Commercial Computer Software - Restricted Rights" with the following additions to that clause:

The Government may make an unlimited number of copies of the software and may distribute and use the software in any computers owned or leased by the Government and operated by the U.S. Government personnel working for U.S. Government departments, organizations and agencies.

The Government's use of the software shall be limited to use in fulfillment of functions of the Government of the United States.

The Government shall not disclose the software and shall not give, sell, license or otherwise provide copies of the software or use of the software to any third party person or entity including but not limited to members of the public, governments of foreign countries, or international agencies or organizations.

(capitalization and emphasis in original).

For CRIDs 40, 395, 1414, 1489, and 1490, defendant asserts that BNT-US delivered "compiled executable software code." Defendant asserts that BNT-US did not deliver to the government the source code files needed to build the compiled executable software code for CRIDs 40, 395, 1414, 1489, and 1490. According to defendant's post-trial brief:

The Federal Circuit described these concepts in Blueport [v. United States]:

> **Source code** is the text of a software program written in a human-readable programming language. Microsoft Computer Dictionary 491 (5th ed. 2002). Once written, source code is compiled into machine-readable **object code** that runs on a computer. Id. at 372. **Software programmers usually provide users with only the object code in order to prevent users from modifying the program.** Theodore C. McCullough, Understanding the Impact of the Digital Millennium Copyright Act on the Open Source Model of Software Development, 6 Marq. Intell. Prop. L. Rev. 91, 93-94 (2002).

> Blueport Co. v. United States, 533 F.3d 1374, 1377 n.1 (Fed. Cir. 2008) (emphasis added).

(emphasis in original).

Activities Related to the Republic of Korea

According to the parties' joint stipulation of facts, the United States Forces Korea began using JWARN Block 1 in the Republic of Korea "no later than 2005." At the liability trial in the above-captioned case, Paul Moroney, who the parties jointly stipulated was an employee of "SETA contractor Sentek," testified. The parties also have jointly stipulated, as an employee of Sentek, Paul Moroney "provided training and field support services for all products that are acquired or managed by JPMIS, including JWARN Block 1F." The parties' joint stipulation of facts also states Paul Moroney "has detailed knowledge of the different JWARN versions, having regularly trained users over many years. [Paul] Moroney was described as the 'technical glue' for the JWARN program."

At the liability trial, Paul Moroney testified about JWARN software and "Signal Fire," which was a plug-in used in the JWARN Block 1 software in the Republic of Korea, as discussed below. The following discussion between counsel of record for plaintiffs, Steven Lewicky, and Paul Moroney occurred:

> Mr. Lewicky: So am I understanding you that sometimes the words "NBC-ANALYSIS" and "JWARN Block 1" were used somewhat interchangeably?

> Mr. Moroney: Yes.

> Mr. Lewicky: Okay. And as part of your training responsibilities at Bruhn NewTech, were you intimately familiar with NBC-ANALYSIS and JWARN Block 1?

> Mr. Moroney: Yes.

Mr. Lewicky: Have you ever -- are you familiar with the word -- with the term "Signal Fire"?

Mr. Moroney: Yes.

Mr. Lewicky: And what does "Signal Fire" refer to?

Mr. Moroney: To sum up Signal Fire, it's an enhanced capability added to JWARN or NBC-ANALYSIS, if you want to call it that. Back in 2007 is when we started the -- when the development for Signal Fire started, and it was deployed in the Korean Peninsula. Basically it's just some -- what we refer to as plug-ins that were added to the JWARN program that allowed certain capabilities to -- to allow the CBRN people and medical folks in the U.S. military to collaborate using Signal Fire capabilities.

Mr. Lewicky: Just so we're clear on what CBRN means, what does that refer to?

Mr. Moroney: Chemical/biological/radiological/nuclear.

* * *

Mr. Lewicky: During your tenure with Bruhn NewTech and after that Sentek, have you ever had occasion to do training in the Republic of Korea, South Korea?

Mr. Moroney: Yes.

Mr. Lewicky: And as part of that training, did you interact -- did you train not only on JWARN but also the Signal Fire plug-in aspect of it?

Mr. Moroney: Yes.

Mr. Lewicky: Can you tell us a little more about Signal Fire in the sense of it -- does that have something to do with networking with the sensors related to JWARN?

Mr. Moroney: [redacted]

Mr. Lewicky: [redacted]

Mr. Moroney: [redacted] So what Signal Fire did was it took that unclassified took and then, basically on a secured network, and sent it up to the CENTRIX-K network, which is a coalition network between the ROKs [Republic of Korea] and the U.S. military. And so that data then was put onto a map, and that's what Signal Fire provided as a plug-in for JWARN,

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because one of the capabilities was to be able to see the sensor data on a map for the entire peninsula and not just one installation.

Mr. Lewicky: Okay. Just so our recorded record is clear, could you spell out the acronym CENTRIX?

Mr. Moroney: C-E-N-T-E-X-K. [sic]

Mr. Lewicky: [redacted]

Mr. Moroney: Yes.

Mr. Lewicky: [redacted]

Mr. Moroney: Correct.

Mr. Lewicky: And then the Signal Fire system essentially gave a network capability to -- so you didn't have to be physically next to the sensor to know what it was assessing?

Mr. Moroney: Yes.

Mr. Lewicky: And how does the NBC-ANALYSIS/JWARN software come into play with that?

Mr. Moroney: So basically Signal Fire -- we referred to them as Signal Fire plug-ins. So you would -- you would have an installation of JWARN on a computer, and then we would install the Signal Fire plug-ins, and then the plug-ins would be configured to pull that data from the Signal Fire servers.

So there's -- there was two -- two servers we referred to as stage one and stage two for Signal Fire, and basically stage one is on the unclassified network, and then stage two is on the CENTRIX-K network. And somewhere in there is what's called a Radiant Mercury as a guard. So it was a one-way traffic from unclassified to classified network.

And so when you're sitting at a JWARN terminal, you would be able to see that data because of that -- that information flow from unclassified to CENTRIX, and then from the server, it sends the data out to the plug-ins once they're configured on your client [laptop].

Mr. Lewicky: [redacted]

Mr. Moroney: Correct, yes.

Mr. Lewicky: And if I understood you correctly, then JWARN -- that -- the JWARN part of it allows analysis and prediction from that data?

Mr. Moroney: Yes.

Mr. Lewicky: And is that consistent -- was that consistent throughout your use of the software or teaching of the software in Korea?

Mr. Moroney: [redacted]

    And there's also some other plug-ins with Signal Fire, too, so medical surveillance reports, there was HAZMAT spot reports as well, but all that did was allow the medical folks in one portal to communicate with the CBRN side on any type of event that medical should be aware of.

Mr. Lewicky: So these different plug-ins are basically taking data off the network that's distributing the sensor data.

Mr. Moroney: Yes.

Mr. Lewicky: And one of those things -- one of those plug-ins taking information out of that sensor network is JWARN?

Mr. Moroney: Correct.

Mr. Lewicky: Excuse me.

Mr. Moroney: And I just want to clarify that the sensors is just one aspect of Signal Fire. So the medical surveillance reports is a separate plug-in; HAZMAT spot reports was separate as well. So those are different capabilities that are included with the umbrella that we would call Signal Fire.

(capitalization in original).

Michael Meyer,[6] who the parties have jointly stipulated was an employee of SETA contractor "SAIC/Leidos" and who "served as the '*de facto*' program manager for the JWARN Block 1F Signal Fire program," testified that CENTRIX-K, mentioned above in the testimony of Paul Moroney, was a coalition network between the United States and Republic of Korea operated by the United States. (emphasis in original). Michael Meyer stated that the United States "had that [CENTRIX-K] network locked down pretty tightly. You can't really take a laptop from one room and plug it into a port in another room and expect it to work. It probably wouldn't work that -- it wouldn't work. You couldn't move it."

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[6] The parties filed a joint motion to designate portions of Michael Meyer's deposition testimony in lieu of live testimony at the liability trial, which the court granted. At the liability trial, the parties also played a video recording of Michael Meyer's deposition.

According to Michael Meyer, the "JWARN 1F software only works on a CENTRIX-K approved laptop. The government -- you know, there's a certain image that has to be installed. It has to be plug into a network port that only the U.S. Government allows it to be plugged into." Michael Meyer stated that "you could disconnect the thing -- the computer and take it anywhere you want," "[b]ut it wouldn't work." Michael Meyer also discussed the Republic of Korea's development of "AKJCCS," which stands for the Allied Korean Joint Command and Control System. Mr. Meyer described AKJCCS as "a Korean network, Korean only network, as opposed to CENTRIX-K, which is a coalition network." Michael Meyer stated that the CENTRIX-K network and the AKJCCS network were "firewalled off."

At the liability trial in the above-captioned case, Marvin Sikes (Marty Sikes) also testified. According to the parties' joint stipulation of facts, from 2010 to the middle of 2015, Marty Sikes worked as an employee of John Hopkins University Applied Physics Laboratory, which was a SETA contractor. As an employee of John Hopkins University Applied Physics Laboratory, Marty Sikes served as the JPEO liaison officer at the United States Forces Korea headquarters in the Republic of Korea. Regarding the CENTRIX-K and AKJCCS networks, Marty Sikes testified:

> As they [the Republic of Korea] continued to develop their own classified network, AKJCCS, I believe they employed a contractor in Korea, I believe it was Samsung, to work with U.S. Forces Korea to drive requirements that would have a capability, so AKJCCS could talk to CENTRIX-K.

> So a few years down the road, what happened was U.S. Forces Korea said we're not going to go to your new system. [redacted] We feel comfortable using the CENTRIX-K system. But there was an effort that would develop bridges, they called them, so the two could talk and share information.

At trial, Paul Moroney testified that there was a "big push" to get the Signal Fire plug-in operational in 2007. Paul Moroney testified that the United States Forces Korea first used JWARN Block 1 software with the Signal Fire plug-in in front of members of the Republic of Korea military during a "Key Resolve" exercise in 2007, which is an annual joint military exercise between the United States Forces Korea and the Republic of Korea. During the Key Resolve exercises, as well as during other joint training exercises, officers of the Republic of Korea would work "hand in hand with the U.S. Forces" and would see the technology and software being used by the United States Forces Korea. According to Paul Moroney's testimony at trial, the officers of the Republic of Korea were interested in obtaining access to the JWARN Block 1 software, and, in approximately 2008, "people were asking about how can the ROKs get that software as well."

According to the testimony of Marty Sikes [redacted] there was an "incident" [redacted]. In his testimony, Marty Sikes stated that the [redacted] incident "kind of made that issue [obtaining access to JWARN Block 1 software] rise on their [the Republic of Korea's] priority list." Moreover, the parties' joint stipulation of facts in the above-captioned case provides:

As of January 31, 2012, the Republic of Korea viewed JWARN/Signal Fire as a vital capability for CBRN-related information sharing and situational awareness. As of January 31, 2012, ensuring that the Republic of Korea had access to CBRN-related information sharing and situational awareness was getting high-level attention from the Pentagon. USFK [United States Forces Korea] wanted its ROK counterparts to have JWARN Block 1F, so that ROK forces would be able to use the same software that the USFK was using. Scott White[7] gave specific direction, on several occasions over a time period greater than one year, to not ever give JWARN Block 1 to the Republic of Korea.

On February 1, 2012, Marty Sikes sent an email message to Joseph Cartelli, whose signature block states that Mr. Cartelli at the time was the "Deputy JPM for Bio-Defense." In the February 1, 2012 email message, Marty Sikes stated "attached is the information paper providing an executive summary, background and intent of the ROK JCS request." Marty Sikes' attached information paper, which was dated February 1, 2012, stated:

> The ROK JCS [Republic of Korea Joint Chiefs of Staff] has submitted a written request to USFK to install the JWARN1F / Signal Fire system software fielded by JPM-IS and used by USFK and U.S. Component CBRN and Medical HQ units for situational awareness of [redacted], medical surveillance events and warning and reporting of other CBRN incidents in the ROK. USFK will endorse the request and forward to JUSMAG-K [Joint United States Military Affairs Group Korea] for coordination with the JPEO-CBD. ROK JCS has indicated their desire to further discuss this topic with Dr. Parker and Mr. Weber during the Able Response-12 MPC ["midplanning conference"] scheduled 9-10 February in Washington D.C.

The February 1, 2012 information paper further stated:

> The intent of the request is to install the JWARN/Signal Fire system software on ROK JCS hardware located in ROK command Posts and EOCs operating on the ROKUS [Republic of Korea and United States] coalition network "CENTRIX-K". USFK has authorized ROK JCS access to CENTRIX-K and will endorse their request to install the JWARN1F / Signal Fire system. Although a timeline has not been formally established recent activity and communication from ROK JCS and CFC [Combined Forces Command], coupled with their intent to discuss this with Dr. Parker and Mr. Weber during the MPC indicate fielding this capability is a near term goal of the ROK JCS.

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[7] As noted above, the parties have stipulated that Scott White has been the Joint Project Manager for Information Systems for the Chemical and Biological Defense Program since June 2006.

At the liability trial, Marty Sikes testified the "midplanning conference" referenced in his February 1, 2012 information sheet related to a meeting involving planning for an upcoming "Able Response" exercise. Marty Sikes testified that Able Response was an annual joint exercise between the Republic of Korea and the United States "focused on implementing a whole-of-government approach to biological defense on the Korean Peninsula." Marty Sikes also stated that "Able Response was an initiative supported and driven by ASD Weber, Assistant Secretary of Defense Weber. Deputy Assistant Secretary of Defense Parker was ASD Weber's deputy, and he was primary to the person in charge of planning it." According to Marty Sikes, Andrew Weber, who was the "the Assistant Secretary of Defense for Chem/Bio/Nuc Defense," and Dr. Gerald Parker, who was "the Deputy Assistant Secretary of Defense for Chem/Bio Defense," attended the midplanning conference in February 2012. During the liability trial, Marty Sikes and counsel of record for plaintiffs had the following discussion:

> Mr. Lewicky: [S]o you say in this information paper that the ROK Joint Chiefs of Staff has submitted a written request to U.S. Forces Korea to install JWARN for situational awareness. Is that the same request that we discussed a few moments ago?
>
> Mr. Sikes: Yes, it is.
>
> Mr. Lewicky: And it says that the ROKs wish to further discuss with Dr. Parker and Assistant Secretary of Defense Weber during Able Response MPC February 9th and 10th. What is "MPC" in this context?
>
> Mr. Sikes: Midplanning conference.
>
> Mr. Lewicky: And so was that a planning meeting in advance of Able Response?
>
> Mr. Sikes: Yes, it is.
>
> Mr. Lewicky: Do you know whether the ROKs did, in fact, discuss this with Mr. -- with Secretary Weber or Dr. Parker during that planning meeting?
>
> Mr. Sikes: Yes, they did.
>
> Mr. Lewicky: Now, at that -- at that meeting, that planning meeting, do you know specifically who made the request? In other words, what -- was it a general officer or was it a representative of the Korean Government?
>
> Mr. Sikes: I don't recall who from the Korean Government attended that meeting, but it would have been the most senior delegate there.

Mr. Lewicky: Okay. And either during or coming out of that meeting, do you recall whether you were directed to take further action by the official -- the American officials in that meeting?

Mr. Sikes: Well, yeah, the -- the decision that was made during that meeting is the U.S. would provide access to the ROKs for JWARN, and I would relay that, yes.

In plaintiffs' post-trial brief, plaintiffs assert that a "decision was made" during the February 2012 midplanning conference for the United States to "provide the ROK with its own access to JWARN."

According to the parties' joint stipulation of facts:

On March 20, 2012, Marty Sikes and Paul Moroney – Government SETA contractors – delivered two C2PC laptop computers containing, *inter alia*, images of JWARN Block 1F Phase 2 C2PC CRID 1414 to Republic of Korea personnel at Republic of Korea armed forces facilities. Sometime between October 27, 2011 and March 20, 2012, the Government made one or more copies of JWARN Block 1F Phase 2 C2PC CRID 1414 in San Diego and transferred one or more copies from San Diego to USFK. The software was thereupon copied (or imaged) onto the above laptops by Mark White[8] – a Government SETA contractor – while he was inside his workplace in a building in South Korea operated and controlled by the Government.

The JWARN Block 1F Phase 2 C2PC CRID 1414 software provided to ROK forces was the exact same software image that USFK was using at the time.

(capitalization and emphasis in original). The parties have stipulated that neither BNT-US nor BNT-Denmark "expressly authorized, licensed, or g[ave] permission to the Government" to "duplicate" the software licensed under the '2076 Contract or to distribute copies of the software licensed under the '2076 Contract to the Republic of Korea.

Both Marty Sikes and Paul Maroney testified at trial regarding the transfer of two laptop computers containing CRID 1414 to the Republic of Korea on March 20, 2012, as well as the subsequent transfer of five laptop computers containing images of CRID 1490 to the Republic of Korea, as discussed in detail below. Marty Sikes testified:

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[8] The parties' joint stipulation of facts provides: "Mark White, an employee of SETA contractor Group W, was a software engineer supporting the U.S. Forces Korea (USFK) J35 Plans Operations Analysis Branch (J35) in the Republic of Korea (ROK), and in that capacity provided support for JWARN Block 1F Signal Fire computers, servers and networks." Paul Moroney also testified that Mark White put JWARN software on the two laptop computers delivered by Paul Moroney and Marty Sikes to the Republic of Korea in March 2012.

Mr. Lewicky: Okay. And following that [the midplanning conference], was access provided in two command centers in or around February of 2012?

Mr. Sikes: I believe so, yes.

Mr. Lewicky: And, specifically, do you recall whether you personally made delivery of laptops?

Mr. Sikes: No. I don't deliver laptops to the Koreans.

Mr. Lewicky: Okay. My recollection is that -- well, do you recall at any point that you and Mr. Paul Moroney visited Korean command centers?

Mr. Sikes: Yes.

* * *

Mr. Lewicky: Do you recall the -- whether any materials, computers, or software was brought by either of you to that visit?

Mr. Sikes: I don't recall whether Paul brought them over or if they were already there. The intent of the visit was to provide training on JWARN and Signal Fire.

Mr. Lewicky: Very well. And do you recall during that visit to the Korean command post whether JWARN software was accessed on the computers by the Koreans?

Mr. Sikes: I'm assuming it was, because he did provide training and familiarity to the operators, the Korean operators.

Mr. Lewicky: And can you estimate how long that training lasted?

Mr. Sikes: An hour to two hours.

Mr. Lewicky: Okay. And was it on the functionality of JWARN and CBRN reporting?

Mr. Sikes: Yes.

Mr. Lewicky: Okay. Do you recall whether, at the conclusion of that training session at the Korean command post, whether any of the equipment brought by the American side was left at the Korean command post?

Mr. Sikes: I don't remember, because I don't remember if there was equipment delivered to the command post. It could have already been there,

and if I -- and if I can, I'll say that the intent was to train the Koreans on JWARN and -- on the JWARN software and Signal Fire. So if that was the intent, that means that obviously they had an image or something on those laptops so Paul could train on.

I don't recall us bringing anything there or taking anything back. Paul could have delivered those laptops and trained on them, but, again, I don't recall if they were there at the time or not.

According to Marty Sikes, "Major Connor," the "chief of the Countering Weapons of Mass Destruction Office for U.S. Forces Korea," "definitely" "would have been aware" of the training provided by Paul Moroney to the Republic of Korea in March 2012. Marty Sikes also testified that he understood that the "access" provided to the Republic of Korea was to be for a temporary duration. Marty Sikes stated: "It was our understanding that at the end of their assessment of JWARN, they would make a decision on what the -- the Republic of Korea would make a decision on what the next step would be, whether they would purchase it outright or go in a different direction."

In Paul Moroney's testimony, regarding the same transfer of two laptop computers containing images of CRID 1414 in March 2012 discussed by Marty Sikes above, Mr. Moroney stated that he and Marty Sikes "hand-delivered" to the Republic of Korea "two temp-loan laptops to two different locations." Mr. Moroney stated that one laptop computer was delivered to Command Center Seoul (CC Seoul), which is a joint command bunker located at United States Army Garrison Yongsan, while the second laptop computer was delivered to the Republic of Korea's Ministry of Defense. According to Paul Moroney:

[F]irst they signed for it, so Marty had a -- I don't know the number of the form, but there's an Army form that USFK required, and so whoever we gave the laptop to signed for it. So it was a temporary loan; it wasn't a permanent transfer. And then we connected to the network. We logged in. We made sure that the operator that was there at the time was able to log in to the machine, and then we op-checked, basically operations-checked on JWARN and made sure that all the Signal Fire data was coming through, the sensors and things like that, so we didn't have any issue there.

And then we kind of just walked through the creation of -- I think it was chem-1s, to produce a chem-2 and a chem-3, a chemical-1, 2, and 3. And we kind of went over the Signal Fire plug-ins, because that's really what they were looking for, is that sensor data.

Paul Moroney indicated that the two laptop computers containing CRID 1414 were left at the facilities at which the laptop computers were respectively delivered, and that he did not know whether Republic of Korean personnel "moved" or "used" the laptop computers after Marty Sikes and he left the facilities "because as soon as my travel's done, I leave.

Marty would have been able to have conversations with those individuals to see if they were using the system or not."

After delivering the two laptop computers containing CRID 1414 to the Republic of Korea, in an email dated March 21, 2012, Paul Moroney stated:

Just a heads up.

1. We officially have JWARN/Signal Fire up and running in the Ministry of National Defense Republic of Korea (MND). In one of their command bunkers, they have one client running C2PC/JWARN/Signal Fire. This was approved by JPEO. We are waiting for the ROKs to request in writing JEM [Joint Effect Models], which should happened later this week or next. Side note: Marty and I went over there yesterday and ensured the system was up and running. It was and we provided another two hours worth of training to their main operator.[9] I got to go inside one of their main bunkers, where a lot of white folks don't get to see. MND [Ministry of Defense] is to the Koreans as the Pentagon is to the US.

2. The ROKs will also request in writing and it will be approved by JPEO training on JWARN/Signal Fire and JEM. I provide Marty with dates in May we can conduct the training. Training will take place in here in Korea (Yongsang Army Garrison) is our initial guess. Details will be worked out once we get the request and Marty sends it over to the JPEO for his approval. Student count will be around 6-10 and their will provide interpreter for the class.

This is big news up at the JPEO level and more will come soon...

(ellipses in original). At the trial, while looking at the immediately above March 21, 2012 email message, counsel of record for plaintiffs asked Mr. Moroney "[w]hat was your understanding of the approval that had been given by the JPEO?" Mr. Moroney responded: "From Marty Sikes. He was the one that told me that we can go and deliver these laptops." Counsel of record for plaintiffs also asked Paul Moroney about the statement in his March 21, 2012 email message that "[t]he ROKs will also request in writing and it will be approved by JPEO training on JWARN/Signal Fire and JEM." Paul Moroney testified that he anticipated the training to be approved "[b]ased upon discussions with Marty Sikes." Paul Moroney, however, testified that the future training referenced in his March 21, 2012 email message did not occur.

On April 2, 2012, Curt Wall, who Paul Moroney stated was the acquisition program manager for the Joint Effects Model, also referred to as "JEM," sent an email message to

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[9] When asked at trial about the length of the training provided to the Republic of Korea, Paul Moroney stated that the training was not two hours long, but that the "whole trip" was about two hours long.

Michael Bingham, which Curt Wall appears to have forwarded to Mr. Moroney. In the April 2, 2012 email message, Curt Wall stated:

> I wouldn't touch this [transfer of laptop computers with JWARN software to the Republic of Korea] with a 10 foot pole until I saw the authority docs to do so….I'd just tell Paul to be very careful.
>
> The COCOM can authorize things like this. I'm not sure what they've done to effect this release. Since it was JWARN all along, I haven't considered it for my concern. This is a different org that is providing JEM to the ROKs. I don't know what release/authorization they've gone thru….

(ellipses in original). On April 3, 2012, Paul Moroney responded in an email message stating:

> Let me break this down shotgun style.
>
> 1. We did not give them software media, just the standard 8TH Army CBRN image for use on the Secret/ROK network. Joint network with US
>
> 2. They cannot use JEM or JWARN on any other machine other than the one given to them from JPEO. The [sic] do not have the media to install it.
>
> 3. The JPEO gave the approval for Marty/J35 to do this effort with the ROKs.
>
> Bottomline is we really didn't give them anything they haven't already had access to. The main difference is they are using our software 24/7 instead of just during exercise time and at different locations.

(capitalization in original).

Paul Moroney forwarded his April 3, 2012 email message to Marty Sikes, who responded to Mr. Moroney in an email message stating: "Send to Mike Meyer if you need top cover." Paul Moroney then forwarded the email message string to Michael Meyer, stating: "For ur [your] SA [situation awareness]." At trial, Paul Moroney testified that he understood Marty Sikes' email message involving "top cover" to mean to "[j]ust to make sure that the -- that the deputy program manager for JWARN1F understands what's going on."

Throughout the trial in the above-captioned case, witnesses testified as to what actually was given to the Republic of Korea when the two laptop computers containing JWARN Block 1F Phase 2 C2PC CRID 1414 were transferred to the Republic of Korea on March 20, 2012. Marty Sikes testified:

> I want to say that, to my recollection and knowledge -- and maybe it's a play with words -- but we didn't give -- we, the U.S. Government -- didn't give

software; we didn't give software code to the governments. We gave them access to an imaged laptop that was co-owned by the U.S. Government.

According to Marty Sikes, providing the Republic of Korea with "the software and the code versus giving them access I think are two different things." Marty Sikes also testified:

> I didn't give software, CDs. I'm not an IT professional, so I'm not giving anything to anyone on the software side. I facilitate, and I message back and forth, and I track, but I'm -- I'm not a mechanic, so I'm not working on cars and I'm not delivering laptops and software.

Marty Sikes stated that "[i]t was my understanding that we were never giving the Koreans software or code; we were only giving them access." Marty Sikes asserted that, to the extent of his knowledge, no one "at USFK gave the Koreans the software or code for JWARN," as the Republic of Korea only was given "access so they could share information. We didn't give them the code so they could break it or we didn't give them the software to do as they pleased with it, as I understand it."

Moreover, in an email message dated May 8, 2012, Marty Sikes stated: "JWARN1F/Signal Fire is releasable to the ROKs as I understand however USFK does not have authority to 'give' the ROK Government the software or code. At the current time USFK is providing ROK CFC [Combined Forces Command] and JCS [Joint Chiefs of Staff] limited access to the system via the CENTRIX-K network." At trial, Marty Sikes testified that the "limited access" referenced in his May 8, 2012 email message meant "they [the Republic of Korea] were able to log on, leverage the system, but they did not have the software CDs to load it up and things of that nature." Similarly, regarding the transfer of two laptop computers containing JWARN Block 1F Phase 2 C2PC CRID 1414 to Republic of Korea personnel in March 2012, Paul Moroney testified:

> Having access to the data and physically having access to the program are two different things. . . . So that that should be separated, because if I'm working next to somebody that's using a program and they're briefing me with a slide -- with slides or whatever command brief we're doing, I -- I can see the data; it's just I don't have access to the tool that's producing it. But there has -- 2012 or '13 is when we -- is when we physically gave or temp-loaned, I should say, laptops that were -- with the standard USFK image that had JWARN on it. The C -- the command and control personal computer is what it's called, C2PC, version of the JWARN1F.

Paul Moroney also testified concerning the controls on the laptop computers provided to the Republic of Korea, stating:

> If you're referring to being able to plug, like, a USB drive or anything like that, there -- those computers are locked down to where you can't copy the -- you can't image the hard drives. Back then, it was -- Bitlocker was the tool

that the network administrators used. So you were not able to image or copy the hard drive.

Paul Moroney described Bitlocker as:

[A] commercial product that a lot of U.S. Government organizations are using, and it prevents people from copying a hard drive. It also prevents you from taking that hard drive and putting it into -- and using it in another computer. So if you have two of the exact same computers, you take one hard drive out and try to put it in the other, you can't do that. . . . It basically encrypts the hard drive to use on that one shell, one computer only.

On May 23, 2012, Michael Smith, "Program Director, Critical Reagents Program," sent an email message to Brigadier General Jess Scarborough, in which Mr. Smith stated that he was summarizing for Brigadier General Scarborough meetings between the United States and Republic of Korea related to preparation for Able Response 2012. In the May 23, 2012 email message, Mr. Smith stated:

ROK participants communicated awareness of modeling and simulation tools JEM, JOEF, and HPAC. They also communicated that they had taken receipt of JWARN. We, USG [United States government], did not appear to have an awareness of the ROK capability. This observation served as the foundation for the following observation and recommendation presented to the senior leaders on the final day of the meeting. During the hot wash, Mr. Weber expressed concern over the ROK interest in modeling tools, which are identified above, that are becoming obsolete. He echoed the sentiment of many participants when he suggested that we work with our ROK counterparts in integrating tools that leverage social media into our collaborations resulting from AR12.

On May 23, 2012, Brigadier General Scarborough sent an email message to Mr. Smith thanking him for his summary and asking him to forward the summary to his staff.

On July 28, 2012, Marty Sikes sent an email message to a group of individuals Mr. Sikes described in his testimony at trial as "leadership from JPM-IS." In the July 28, 2012 email message, Marty Sikes stated:

I have a good news story to share. The Chairman of the ROK Joint Chiefs of Staff presented Paul Moroney with a Certificate of Commendation last week. This was awarded to Paul based on his performance and skills demonstrated while assisting the ROKs with accessing and utilizing JWARN1F/Signal Fire in the ROK JCS B-1 Bunker at MND and inside the ROK CBRN Cell at the Crisis Control (CC Seoul), located in USFK/CFC White House on the Yongsan Garrison. For the first time the ROKs independently monitored JWARN1F/Signal Fire during both Key Resolve-12 and the Nuclear Security Summit.

At the liability trial, Paul Moroney testified that, when a General from the Republic of Korea provided him with the Certificate of Commendation, the General from the Republic of Korea also gave Mr. Moroney a watch and a coin. Additionally, Paul Moroney stated that he received from a United States General "an email letter, a generic letter basically, a kind of fill-in-the-blank type thing that references this here, saying I did a good job and whatnot."

Less than five months later, on December 11, 2012, Marty Sikes sent an email message to Michael Meyer and two other individuals, on which Paul Moroney was copied, stating:

> USFK will provide JWARN1F/Signal Fire access to five additional ROK HQ level Command Posts via CENTRIX-K C2PC clients in early January and is requesting Paul Moroney to support a combined ROK/US JWARN1F CONOPS workshop 4-8 February 2013. Provided support will include an onsite overview of JWARN1F/Signal Fire to ROK operators at each of the five CP's [command posts] followed by a scenario driven workshop.

The parties have stipulated that Marty Sikes provided five additional laptop computers to the Republic of Korea. The parties' joint stipulation of facts provides:

> By January 2013, Marty Sikes delivered five additional C2PC laptop computers containing, *inter alia*, images of JWARN Block 1F Phase 2 C2PC CRID 1490 to Republic of Korea personnel at Republic of Korea facilities. Sometime between October 1, 2012 and the end of January 2013, the Government made one or more copies of JWARN Block 1F Phase 2 C2PC CRID 1490 in San Diego and transferred one or more copies from San Diego to USFK. The software was thereafter copied (or imaged) onto the above laptops by Mark White while he was inside his workplace in a building in South Korea operated and controlled by the Government.

(emphasis in original). Paul Moroney testified at trial that he did not recollect whether the five additional laptop computers containing images of CRID 1490 were delivered. Paul Moroney did, however, state that he provided a one-week training course on JWARN "software" to soldiers from the Republic of Korea in February 2013. Thus, the following two deliveries to the Republic of Korea appear to have been made: (1) a delivery of two laptop computers containing "images of JWARN Block 1F Phase 2 C2PC CRID 1414" on March 20, 2012; and (2) a delivery of five laptop computers containing "images of JWARN Block 1F Phase 2 C2PC CRID 1490" "[b]y January 2013."

According to the parties' joint stipulation of facts:

> Once the seven laptop computers containing images of JWARN Block 1F Phase 2 C2PC CRID 1414 and/or JWARN Block 1F Phase 2 C2PC CRID 1490 software were delivered by Sikes and/or Moroney to Republic of Korea

personnel, the United States Government had no way of knowing where the laptops computers were, or what was being done with them.

The parties also have stipulated that BNT-US first learned that laptop computers containing JWARN Block 1F software had been provided to the Republic of Korea on March 12, 2013.

During the liability trial, the following exchange between counsel of record for plaintiffs and Mr. Moroney occurred:

Mr. Lewicky: And do you know who authorized or directed that particular delivery [of two laptop computers on March 20, 2012] to those two facilities?

Mr. Moroney: The actual person, no, I don't.

Mr. Lewicky: Do you know what office or part of the Government directed it?

Mr. Moroney: It would have -- no, I don't. It would -- my -- I do know that Marty was working with JPM-IS to get approval to -- to deliver those laptops, but the actual inner workings of who said yes and when, I wasn't privy to that.

At the liability trial, however, Marty Sikes testified that, "as a contractor, I didn't have the authority to tell the Republic of Korea they could purchase JWARN or not," that he did not "have authority to tell the Government to sell" JWARN, and that he did not have "contracting authority" while in the Republic of Korea. At the liability trial, Nicholas Kim, a Department of Justice trial attorney, asked Marty Sikes about his "authorization" to "facilitate" the transfer of laptop computers containing JWARN software to Republic of Korea personnel, as follows:

Mr. Kim: [D]o you have any written authorization from JPM-IS to provide the Koreans access to JWARN?

Mr. Sikes: Not that I can recollect.

Mr. Kim: Okay. So no documents supporting or no documents authorizing access to the Koreans?

Mr. Sikes: No.

On redirect examination, the following colloquy between counsel of record for plaintiffs and Marty Sikes occurred:

Mr. Lewicky: You were being asked about some monthly reports where it discussed discussions and that sort of thing, and the questions were along

the lines of you never had any written authorization for the Koreans to provide access.

Mr. Sikes: I don't recall seeing written acquisition.

Mr. Lewicky: Is there any doubt in your mind that you had actual authorization from JPM-IS and JPEO to give the level of access to JWARN that the Koreans were given?

Mr. Sikes: Well, I wouldn't be given authorization, because I didn't have the authority to direct or give anything to anyone. The authorization would have began -- would have been, okay, we're going to give the Koreans access, so execute. I would communicate that message across all the players.

Mr. Lewicky: And that message that you're summarizing as we are going to give access to the Koreans, please execute, did that message come down the chain of command?

Mr. Sikes: Yes, it did.

Mr. Lewicky: And how do you know it came down the chain of command?

Mr. Sikes: In discussions, my monthly reports. I mean, often, people would come over to Korea and they could observe what's -- what's taken place. They can see for themselves who's using JWARN and who's not.

In the above-captioned case, defendant contends that the United States did not authorize the transfer of laptop computers containing JWANR software to the Republic of Korea. According to defendant's post-trial brief, "[a]t best, BNT-US established only that Government contractors took actions contrary to unilateral terms that BNT-US included in its deliveries years after the end of the '2076 Contract. BNT-US's breach of contract claim is deficient." According to plaintiffs, the "Government is responsible for its actions, even when undertaken by its contractors," because "employees of the Government directed the transfers, and knew they were taking place."

Activities Related to Jordan[10]

The parties have jointly stipulated:

In 2013, in response to the collapse of the Syrian government, the United States Government, through the Defense Threat Reduction Agency (DTRA), along with US-CENTCOM [United States Central Command] and with assistance from JPEO-CBD, provided the Jordanian military with

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[10] At trial, the parties presented significantly more testimony about the Republic of Korea than was presented about the Kingdom of Jordan.

millions of dollars in CBRN equipment, including the provision of ten[11] laptop computers containing JWARN Block 1F software.

At the liability trial, Paul Moroney testified that DTRA and US-CENTCOM provided the Kingdom of Jordan with CBRN-related equipment in order for the Kingdom of Jordan to be able to respond to a CBRN-related incident in Syria. As stated by counsel of record for defendant at the closing argument, "with respect to the Jordanian transfer, we actually do agree that that aspect was authorized by the Government, but with respect to the Korean transfers, that's where we have a fundamental disagreement as to whether that was authorized by the Government."

The parties have jointly stipulated that Paul Moroney imaged the hard drives of the ten laptop computers with images of JWARN Block 1F software, which BNT-US originally had delivered to JPMIS in San Diego, California, on September 28, 2012. The parties further jointly stipulated:

> Sometime between October 1, 2012 and October 2013, the Government made one or more copies in San Diego of JWARN Block 1F Phase 2 Standalone CRID 1489. Sometime between October 1, 2012 and October 2013, Moroney loaded JWARN Block 1F Phase 2 Standalone software on these ten laptop computers at a Leidos facility in San Diego, California, configured the program, and shipped the computers to DTRA for re-shipment to Jordan. In October 2013, the ten laptop computers were delivered to Jordan.

As noted above, "Standalone" JWARN Block 1 software is "a version of JWARN Block 1 capable of operating in isolation from a network or a command and control host." Although the parties stipulated that the ten laptop computers were delivered to Jordan in October 2013, both parties state in the post-trial briefs that the laptop computers were shipped to Jordan in August 2013 and were received by Jordanian armed forces on or before September 4, 2013. Indeed, in a July 31, 2013 email message from Mike Skinner, whose email message signature block indicates he worked in product support and property control at JPMIS, Mr. Skinner stated that the ten laptop computers were to be shipped to Jordan on August 1, 2013.

According to the parties' joint stipulation of facts, as well as the testimony of Paul Moroney, Paul Moroney visited Jordan and provided training to Jordanian armed forces in March 2013, October 2013, and during the spring of 2014. During the liability trial in the above-captioned case, Paul Moroney testified that, during the March 2013 training session, which occurred before the ten laptop computers were shipped to Jordanian

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[11] At the liability trial, Paul Moroney testified that "we were tasked to purchase 11 Panasonic Toughbook laptops and provide the joint warning reporting capability or warning capability to the Jordanians through the JPO." An attachment in a string of email messages between Paul Moroney and individuals associated with JPMIS, however, lists ten Panasonic Toughbook laptops as being included in the government's transfer of laptop computers to the Kingdom of Jordan.

armed forces in August 2013, Paul Moroney provided a training session using laptop computers from Mr. Moroney's "set from my normal training inventory" at a Jordanian "compound" called "KASOTC." (capitalization in original). Mr. Moroney stated that, when the March 2013 training session concluded, he brought his "set" of laptop computers back to the United States.

At the liability trial, Paul Moroney testified as to what actually was provided to the Kingdom of Jordan. According to Paul Moroney, the Kingdom of Jordan received laptop computers with JWARN Block 1F standalone installed. Paul Moroney testified that he did not provide the "software disk" or JWARN Block 1F standalone source code to the Jordanians. Paul Moroney also testified that he removed all "installation files" from the laptop computer provided to the Kingdom of Jordan. In between training sessions, Paul Moroney testified that the laptop computers were stored at Jordanian controlled facility, which Mr. Moroney described as being a facility that "was bought and purchased by DTRA, built for them [the Jordanians] specifically, and then the actual facility was turned over to the Jordanians from DTRA." The parties' joint stipulation of facts also provides that, in between training sessions administered by Paul Moroney, the ten laptop computers were stored in "locked cases" in a "warehouse" in Zarqa, Jordan, which was controlled by Jordanian armed forces. Mr. Moroney stated that the laptop computers were stored in "Pelican cases, hard-sided cases that you can ship laptops in." Paul Moroney further testified:

> So the laptops themselves were stored and locked in the Pelican case. So when I -- when I show up for training, the day before, I -- usually it's a Saturday. I come in Saturday, go into the storage area, grab the Pelican case out, get -- there's -- the XO [executive officer] of the Chemical Support Unit has the key most of the time. He would unlock it, bring it into the classroom, and we would set everything up and then start training on Sunday. And then when we're done, we would simply put everything back in the box, lock it back up.

Paul Moroney stated that the executive officer was an officer in the Jordanian military, and that the Jordanian executive officer maintained a key for the locked boxes containing the laptop computers.

Paul Moroney also testified regarding the Jordanians' use of the laptop computers, stating, "[o]ther than the training products that we did jointly in a classroom environment, no, I didn't see any evidence of JWARN being used at all." According to Paul Moroney:

> When we set up the classroom prior to training, we took the laptops out, set them out, and then they were either brought back to the hotel the night before training, and I'd connect them to the commercial network at the hotel to update Windows, Internet Explorer, that type stuff. And then I would take the laptops back the next day, set up the classroom.

So the -- every time that I was able to do that, which was every trip basically, there was no evidence -- and I hate saying this, because we spent a lot of money on them, DTRA spent a lot of money -- but there was no evidence that they were being used other than us conducting training.

When asked by Nicholas Kim of the Department of Justice what Paul Moroney meant by "no evidence," Mr. Moroney responded:

Data products that are produced from JEM or JWARN. If you open the program, you can -- you'll see the data or the output results in a PowerPoint slide or something like that. The only data that I saw literally from every trip was the data we left behind when we conducted training.

So there was no new -- no new introduction of data that was on those laptops from the time that I left to the next time that we trained . . . .

Paul Moroney, however, testified that the ten laptop computers provided to the Kingdom of Jordan did not contain Bitlocker or a similar type of "protective software." Paul Moroney stated that the Jordanians "can copy the hard drive. Yeah, they can copy the hard drive, yes. If they took it out and put it into another machine, they could do that." Paul Moroney also testified that he would not know whether the Jordanians turned the ten laptop computers on or off in between training session and would not know "whether software was copied off of those laptops to another location."

Paul Moroney stated that, after the conclusion of the training session he provided to the Kingdom of Jordan in March 2013, he attempted to build a map to be used in the JWARN software, but the JWARN software "crashed" each time Paul Moroney attempted to import the map. According to Paul Moroney's testimony at the liability trial, the map Mr. Moroney was attempting to create was a map of "Syria, Iraq, Jordan, and some other places, Israel and Lebanon." In an email dated May 6, 2013, Paul Moroney stated that he had put in a request with the "Help Desk" in an attempt to get BNT-US to address the mapping issue Mr. Moroney had been experiencing. (capitalization in original). Mr. Moroney also stated in the May 6, 2013 email message that "[w]e sent the files over to BNI [BNT-US] a while ago but still haven't gotten any work back from them. Sean [who has a "navy.mil" email address] has tried to follow up with BNI but hasn't gotten any thing [sic] back as of late last week."

In a May 21, 2013 email message from Michael Meyer, who the parties stipulated was a contractor and the de facto program manager of the JWARN Block 1F Signal Fire program, to Josh Rohrback, who, at that time, was an employee of BNT-US, Michael Meyer asked whether Mr. Rohrback had an opportunity to speak with Lisa Dunham of JPMIS regarding the Jordan-related mapping issue experienced by Paul Moroney. Also on May 21, 2013, Michael Meyer sent an email message to Paul Moroney stating: "When you went to Jordan, which JWARN did you set up for them - Block 1 or INCR [increment] 1? I'm assuming it was JWARN 1F. I got some backlash from BNI, since evidently their

license to the government doesn't cover giving it to the Jordanians. What have you heard?" That same day, Paul Moroney responded stating:

> It's 1F SA [JWARN Block 1F standalone] and we haven't gave it to them. We are giving them systems with it installed, not the actual software disc.
>
> Nobody really knows what we can or cannot do with it as in FMS. JPEO doesn't seem to care and they want it done to support the AOR [area of responsibility]. I believe Mike N was looking at contract infromation [sic] for BNI and what we can do with the software.
>
> Who is telling them we do? They should keep a tight lid on that information.

Mr. Moroney sent another email message to Michael Meyer nine minutes later, stating: "not sure but it could cause problems I am guessing. how come they haven't said anything about us giving it to the Koreans?" Michael Meyer responded in an email message stating:

> Actually they have said stuff...at least the guys in Maryland did. But they have kind of looked the other way since there were small numbers of workstations involved, and because JPMIS didn't provide SW media/manuals/training.
>
> Actually JCISA [Joint Command Information Systems Activity] was more perturbed (than BNI) in Korea, because we don't have any kind of foreign releaseability [sic] statement in effect currently for JWARN or JEM.
>
> But now that this strategy seems to be proliferating, I think the head shed at Bruhn (the Denmark guys) see this as a way for the US Gov't to circumvent FMS, with the end result being loss of revenue for BNI.

At the liability trial, when asked whether he had taken any action after learning of the provision of laptop computers to the Kingdom of Jordan, Josh Rohrback, who was a BNT-US employee, responded:

> I can't recall specifically. I would have imagined I bubbled it up within our leadership to Bruce [Windesheim]. I don't -- I don't recall that we took any specific action or -- with JPM-IS or with the JPEO in any way, but certainly within our own company, we would have made -- certainly would have made that awareness known.

In a December 17, 2013 email message from Josh Rohrback to Bruce Windesheim, who at the time of the trial was the interim president of BNT-US, and Jacob Nielsen, former CEO of Bruhn NewTech, Mr. Rohrback stated: "I have on a few occasions brought up the fact that JPM IS was basically pirating Bruhn NewTech's software to Mr. Meyer while he was still the DAPM for JWARN 1F. His only response on those occasions was to wonder what Bruhn NewTech was going to do about it." Bruce Windesheim testified at the liability

trial that BNT-US did not retain counsel until January 2014, and that there was "obviously the time from when we learned about it to when we -- and when we went to the -- we went to the Government."

The parties stipulated that, "[a]t the direction of JPMIS, Moroney removed the JWARN Block 1F Phase 2 images from the ten laptop computers in December 2014." Paul Moroney also testified that he removed the JWARN Block 1F images from the ten laptop computers in Jordan in 2014.

Copyright Registrations

BNT-Denmark has two copyright registrations that are at issue in the above-captioned case, which are United States Copyright Registration No. TX 7-836-500 (the '500 Registration) and United States Copyright Registration No. TX 7-836-490 (the '490 Registration). The '500 Registration is titled "NBC Analysis - CRID 0040." The '500 Registration indicates that the "Year of Completion" was 1998, that the "Date of 1st Publication" was January 12, 1999, and that the "Nation of 1st Publication" was Denmark. (capitalization in original). The '500 Registration also indicates that attorney Mary Beth Tung certified the copyright application on April 24, 2014. The effective date of the '500 Registration is April 28, 2014.

BNT-Denmark's second copyright at issue in this case, the '490 Registration, is titled "NBC Analysis JWARN 1F PHASE 2, CRID 1489, 1490, and 1491." The '490 Registration indicates that the "Year of Completion" was 2008, that the "Date of 1st Publication" was September 28, 2012, and that the "Nation of 1st Publication" was Denmark. (capitalization in original). The '490 Registration also indicates that attorney Mary Beth Tung certified the copyright application on April 24, 2014. The effective date of the '490 Registration is April 28, 2014.

Procedural History

On March 10, 2015, BNT-US and BNT-Denmark filed a complaint in the United States District Court for the District of Maryland (Maryland District Court) against Johns Hopkins University Applied Physics Laboratory, LLC (JHU) asserting that JHU had violated the Copyright Act, as well as the "Maryland Uniform Trade Secrets Act," by improperly transferring BNT-Denmark's software to third parties. See Complaint at 2-3, 9, 11, Bruhn NewTech A/S v. Johns Hopkins Applied Physics Lab., LLC, No. 15-671 (D. Md. Mar. 10, 2015). On April 10, 2015, BNT-US and BNT-Denmark filed an amended complaint in the Maryland District Court, in which BNT-US and BNT-Denmark added Leidos, Inc. (Leidos) as a defendant. See First Amended Complaint, Bruhn NewTech A/S v. Johns Hopkins Applied Physics Lab., LLC, No. 15-671 (D. Md. Apr. 10, 2015). As stipulated by the parties, Marty Sikes was an employee of JHU and Michael Meyer was an employee of SAIC/Leidos. On January 21, 2016, JHU and Leidos jointly filed a motion to dismiss for lack of jurisdiction and for failure to state a claim in the Maryland District Court. See Motion to Dismiss, Bruhn NewTech A/S v. Johns Hopkins Applied Physics Lab., LLC, No. 15-671 (D. Md. Jan. 21, 2016). On February 4, 2016, BNT-US and BNT-

Denmark filed an opposition to JHU's and Leidos' joint motion to dismiss. See Opposition to Motion to Dismiss, Bruhn NewTech A/S v. Johns Hopkins Applied Physics Lab., LLC, No. 15-671 (D. Md. Feb. 4, 2016). On June 4, 2016, while the joint motion to dismiss still was pending before the Maryland District Court, BNT-US and BNT-Denmark voluntarily filed a notice of dismissal, without prejudice, which the Maryland District Court granted on June 6, 2016. See Notice of Dismissal, Bruhn NewTech A/S v. Johns Hopkins Applied Physics Lab., LLC, No. 15-671 (D. Md. June 4, 2016).

While BNT-US's and BNT-Denmark's case was pending before the Maryland District Court, on August 27, 2015, BNT-US submitted a certified claim for a contracting officer's final decision regarding the '2076 Contract. In the August 27, 2015 certified claim, BNT-US asserted a breach of the '2076 Contract, infringement of BNT-Denmark's copyrights, and a violation of the "Uniform Trade Secrets Act." On January 8, 2016, a contracting officer for the USMC issued a contracting officer's final decision denying BNT-US' August 27, 2015 claim in full.

Prior to when BNT-US and BNT-Denmark filed the June 4, 2016 voluntary notice of dismissal in the Maryland District Court, BNT-US had filed a complaint against the United States in the United States Court of Federal Claims on January 19, 2016, which was Case No. 16-92C and was assigned to the undersigned. In Case No. 16-92C, BNT-Denmark was not listed as a party. On March 21, 2016, the United States filed a motion to dismiss Case No. 16-92C, in part because, according to the United States, 28 U.S.C. § 1500 (2012) barred some of BNT-US' claims in Case No. 16-92C based on BNT-US' and BNT-Denmark's case pending before the Maryland District Court. On June 15, 2016, BNT-US filed a notice of dismissal, without prejudice, in Case No. 16-92C, which the court granted. On June 24, 2016, the Clerk's Office of the United States Court of Federal Claims closed Case No. 16-92C.

Six days later, on June 30, 2016, BNT-US filed a complaint in the above-captioned case, Case No. 16-783C. BNT-Denmark was not listed as a plaintiff in the June 30, 2016 original complaint filed by BNT-US. On August 8, 2016, defendant filed a motion to dismiss pursuant to Rule 12(b)(1) (2016) of the Rules of the United States Court of Federal Claims (RCFC), as well as pursuant to RCFC 12(b)(6). In a December 2, 2016 Opinion, the court denied defendant's motion to dismiss BNT-US' breach of contract claim. See Bruhn NewTech, Inc. v. United States, 129 Fed. Cl. 656, 668 (2016). Regarding BNT-US' copyright claims, the court determined that BNT-US was not the legal, or the beneficial owner, of the copyrights at issue in the above-captioned case and dismissed BNT-US' copyright claims for lack of subject-matter jurisdiction. See id. at 671. The court also dismissed BNT-US' trade secrets claim because "the Uniform Trade Secrets Act is not binding law as it is not incorporated into the United States Code, but instead it is a model statute proposed for general consideration and must be enacted by individual jurisdictions to become law." See id.

On January 23, 2017, BNT-Denmark filed a motion to intervene in the above-captioned case, Case No. 16-783C, and to file a second amended complaint that would relate back to the date on which BNT-US' original June 30, 2016 complaint was filed,

which defendant opposed. On February 15, 2017, the court issued an Order permitting the filing of a second amended complaint, granting BNT-Denmark's motion to intervene, and stating that the second amended complaint was to be filed with a date relating back to the original August 30, 2016 complaint.

The second amended complaint in the above-captioned case lists both BNT-US and BNT-Denmark as plaintiffs. In Count I of plaintiffs' second amended complaint, plaintiffs' assert that, "[w]hen the United States Government provided un-protected copies of the Software to the ROK and Jordan in breach of the terms of the Software License, these non-dongled copies of the Software did not include technical means of preventing further copying and distribution." Plaintiffs' second amended complaint indicates that the "Software License" was contained in Contract No. M67854-98-C-2076, which is the '2076 Contract the USMC awarded to BNT-US on May 13, 1998. Plaintiffs' breach of contract action in Count I of the second amended complaint seeks $21,752,227.00 in damages. Count I of plaintiffs' second amended complaint is labeled as brought "[b]y BNT-US against Defendant."

Count II of plaintiffs' second amended complaint in this court is listed as brought "[b]y BNT-Denmark against Defendant" and asserts that defendant violated the United States Copyright Act. According to plaintiffs' second amended complaint, the United States'

> unauthorized transfer of the original software code (U.S. Copyright Reg. No. TX0007836490), and the updates and improvements to that code (U.S. Copyright Reg. No. TX0007836500), to ROK and Jordanian armed forces resulted in loss of revenue and profit to BNT-Denmark from licensing fees, loss of control of the copying and distribution of the Software, and inability to stop further damages from occurring due to further copying and distribution of the Software.

Count II also seeks $21,752,227.00 in damages.

After the court issued an Order setting a trial date on the issues of liability, defendant filed a motion to refer the copyright registration questions to the Register of Copyrights[12] pursuant to 17 U.S.C. § 411(b) (2018). The statute at 17 U.S.C. § 411(b)(2) states that, "[i]n any case in which inaccurate information" related to a copyright registration "is alleged, the court shall request the Register of Copyrights to advise the court whether the inaccurate information, if known, would have caused the Register of Copyrights to refuse registration." Id. Plaintiffs filed an opposition to defendant's motion to refer copyright questions to the Register of Copyrights. The court, however, granted defendant's motion to refer copyright questions to the Register of Copyrights pursuant to

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[12] "The Register of Copyrights is the 'director of the Copyright Office of the Library of Congress' and is appointed by the Librarian of Congress." Fourth Estate Pub. Benefit Corp. v. Wall-Street.com, LLC, 139 S. Ct. 881, 887 n.1 (2019) (quoting 17 U.S.C. § 701(a)).

17 U.S.C. § 411(b)(2), as defendant had "alleged" plaintiffs had included "inaccurate information" in BNT-Denmark's copyrights registration. See id. On February 8, 2019, the court issued an Order referring the copyright registration questions to the Register of Copyrights, which included questions jointly agreed-upon by plaintiffs and defendant, as well as relevant documents in the above-captioned case. On March 18, 2019, Karyn A. Temple, the Acting Register of Copyrights, submitted a response to the court's referral pursuant to 17 U.S.C. § 411(b), which is discussed below.

A trial on the issues of liability in the above-captioned case was held, and the parties submitted post-trial briefs, as well as supplemental briefs which addressed the Register of Copyright's March 18, 2019 response.

The following chart summarizes the CRIDs discussed above and below:

CRID	Date of Delivery to the United States	Contract Associated with Delivery
CRID 40	January 15, 1999	The '2076 Contract
CRID 395	April 26, 2004	The 'A001 Contract
CRID 1414	October 25, 2011	Disputed by the Parties
CRID 1489	September 28, 2012	Disputed by the Parties
CRID 1490	September 28, 2012	Disputed by the Parties

The chart below summarizes the transfer of laptop computers containing images of CRIDs:

CRID	Details of Transfer	Date of Transfer
CRID 1414	Two laptop computers containing images of CRID 1414 transferred to the Republic of Korea	March 20, 2012
CRID 1489	Ten laptop computers containing images of CRID 1489 were shipped to the Kingdom of Jordan	Shipped to the Kingdom of Jordan in August 2013
CRID 1490	Five laptop computers containing images of CRID 1490 transferred to the Republic of Korea	After March 20, 2012 and "[b]y January 2013"

DISCUSSION

Count I: BNT-US' Breach of Contract Claim

In Count I of plaintiffs' second amended complaint, BNT-US asserts that the United States breached the '2076 Contract "by breaching the Software License by misusing the Software in a manner that would subject the United States to liability if it were a private party." In order "[t]o recover for breach of contract, a party must allege and establish: (1) a valid contract between the parties, (2) an obligation or duty arising out of the contract, (3) a breach of that duty, and (4) damages caused by the breach." San Carlos Irr. & Drainage Dist. v. United States, 877 F.2d 957, 959 (Fed. Cir.), reh'g denied (Fed. Cir. 1989); see also Shell Oil v. United States, 130 Fed. Cl. 8, 34 (2017) (quoting San Carlos Irr. & Drainage Dist. v. United States, 877 F.2d at 959), aff'd, 896 F.3d 1299 (Fed. Cir. 2018). "'The plaintiff or party alleging the breach has the burden of proof on all of its breach of contract claims.'" Stockton E. Water Dist. v. United States, 583 F.3d 1344, 1360 (Fed. Cir. 2009) (quoting 23 RICHARD A. LORD, WILLISTON ON CONTRACTS § 63:14 (4th ed. 1999)), reh'g granted in part, 638 F.3d 781 (Fed. Cir. 2011); see also Beard v. United States, 125 Fed. Cl. 148, 157 (2016) ("To prevail on a breach-of-contract claim, the plaintiff bears the burden of proving: (1) the existence of a valid contract between the parties; (2) a duty arising from the contract; (3) a breach in duty; and (4) damages caused by the breach." (internal quotation marks and citations omitted)).

Whether defendant breached the '2076 Contract involves interpretation of the terms in the '2076 Contract. "Contract interpretation starts with the language of the contract." SUFI Network Servs., Inc. v. United States, 785 F.3d 585, 593 (Fed. Cir. 2015); see also Premier Office Complex of Parma, LLC v. United States, 916 F.3d 1006, 1011 (Fed. Cir. 2019) (citing NVT Techs., Inc. v. United States, 370 F.3d 1153, 1159 (Fed. Cir. 2004)); Precision Pine & Timber, Inc. v. United States, 596 F.3d 817, 824 (Fed. Cir. 2010), cert. denied, 562 U.S. 1178 (2011); Bell/Heery v. United States, 739 F.3d 1324, 1331 (Fed. Cir.), reh'g and reh'g en banc denied (Fed. Cir. 2014); LAI Servs., Inc. v. Gates, 573 F.3d 1306, 1314 (Fed. Cir.), reh'g denied (Fed. Cir. 2009); Barron Bancshares, Inc. v. United States, 366 F.3d 1360, 1375 (Fed. Cir. 2004); Foley Co. v. United States, 11 F.3d 1032, 1034 (Fed. Cir. 1993); Nw. Title Agency, Inc. v. United States, 126 Fed. Cl. 55, 57-58 (2016) (citing Foley Co. v. United States, 11 F.3d 1032, 1034 (Fed. Cir. 1993)) ("The starting point for any contract interpretation is the plain language of the agreement."), aff'd, 855 F.3d 1344 (Fed. Cir. 2017); Beard v. United States, 125 Fed. Cl. at 158; Eden Isle Marina, Inc. v. United States, 113 Fed. Cl. 372, 483-84 (2013).

""In contract interpretation, the plain and unambiguous meaning of a written agreement controls."" Arko Exec. Servs., Inc. v. United States, 553 F.3d 1375, 1379 (Fed. Cir. 2009) (quoting Hercules Inc. v. United States, 292 F.3d 1378, 1380-81 (Fed. Cir.), reh'g and reh'g en banc denied (Fed. Cir. 2002) (quoting Craft Mach. Works, Inc. v. United States, 926 F.2d 1110, 1113 (Fed. Cir. 1991))). "Terms must be given their plain meaning if the language of the contract is clear and unambiguous." SUFI Network Servs., Inc. v. United States, 785 F.3d at 593 (citing Coast Fed. Bank, FSB v. United States, 323 F.3d

1035, 1038 (Fed. Cir. 2003)); see also Canpro Invs. Ltd. v. United States, 130 Fed. Cl. 320, 347, recons. denied, 131 Fed. Cl. 528 (2017); Beard v. United States, 125 Fed. Cl. at 158 ("If the contract language is unambiguous, then it must be given its plain and ordinary meaning . . . ."). The United States Court of Appeals for the Federal Circuit stated in Massie v. United States:

> In interpreting a contract, "[w]e begin with the plain language." "We give the words of the agreement their ordinary meaning unless the parties mutually intended and agreed to an alternative meaning." In addition, "[w]e must interpret the contract in a manner that gives meaning to all of its provisions and makes sense."

Massie v. United States, 166 F.3d 1184, 1189 (Fed. Cir. 1999) (quoting McAbee Constr., Inc. v. United States, 97 F.3d 1431, 1435, reh'g denied and en banc suggestion declined (Fed. Cir. 1996) (internal citations omitted)); Jowett, Inc. v. United States, 234 F.3d 1365, 1368 (Fed. Cir. 2000) (quoting McAbee Constr., Inc. v. United States, 97 F.3d at 1435; and Harris v. Dep't of Veterans Affairs, 142 F.3d 1463, 1467 (Fed. Cir. 1998)); Harris v. Dep't of Veterans Affairs, 142 F.3d at 1467; see also Coast Prof'l, Inc. v. United States, 828 F.3d 1349, 1354 (Fed. Cir. 2016); Shell Oil Co. v. United States, 751 F.3d 1282, 1305 (Fed. Cir.), reh'g en banc denied (Fed. Cir. 2014); McHugh v. DLT Sols., Inc., 618 F.3d 1375, 1380 (Fed. Cir. 2010); Giove v. Dep't of Transp., 230 F.3d 1333, 1340-41 (Fed. Cir. 2000) ("In addition, we must interpret the contract in a manner that gives meaning to all of its provisions and makes sense. Further, business contracts must be construed with business sense, as they naturally would be understood by intelligent men of affairs." (citations omitted)); Gould, Inc. v. United States, 935 F.2d 1271, 1274 (Fed. Cir. 1991) (indicating that a preferable interpretation of a contract is one that gives meaning to all parts of the contract rather than one that leaves a portion of the contract "useless, inexplicable, void, or superfluous"). A Judge of the United States Court of Federal Claims has explained:

> "The words of a contract are deemed to have their ordinary meaning appropriate to the subject matter, unless a special or unusual meaning of a particular term or usage was intended, and was so understood by the parties." Lockheed Martin IR Imaging Sys., Inc. v. West, 108 F.3d 319, 322 (Fed. Cir. 1997). "Under general rules of contract law we are to interpret provisions of a contract so as to make them consistent." Abraham v. Rockwell Int'l Corp., 326 F.3d 1242, 1251 (Fed. Cir. 2003). "[A]n agreement is not to be read in a way that places its provisions in conflict, when it is reasonable to read the provisions in harmony. . . . [T]he provisions must be read together in order to implement the substance and purpose of the entire agreement." Air-Sea Forwarders, Inc. v. United States, 166 F.3d 1170, 1172 (Fed. Cir. 1999). "A reasonable interpretation must assure that no contract provision is made inconsistent, superfluous, or redundant." Medlin Const. Grp., Ltd. v. Harvey, 449 F.3d 1195, 1200 (Fed. Cir. 2006) (internal quotation marks omitted).

Dynetics, Inc. v. United States, 121 Fed. Cl. 492, 512 (2015); see also Marquardt Co. v. United States, 101 Fed. Cl. 265, 269 (2011) ("In interpreting contractual language, the court must give reasonable meaning to all parts of the contract and avoid rendering portions of the contract meaningless." (citation omitted)).
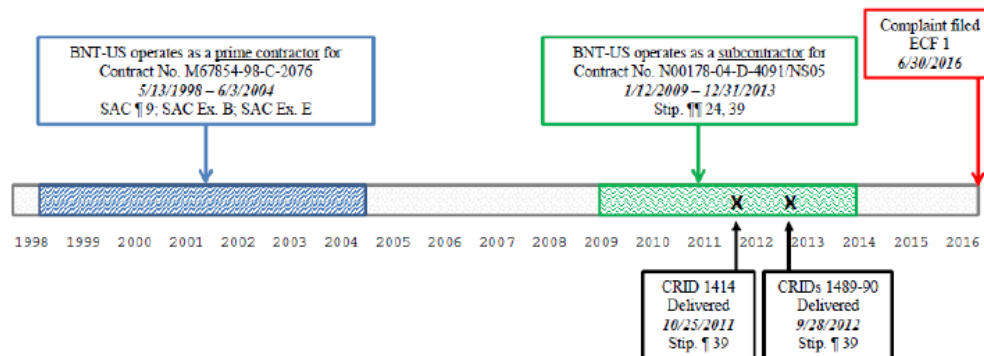
The United States Court of Appeals for the Federal Circuit also has indicated that "'[t]he contract must be construed to effectuate its spirit and purpose giving reasonable meaning to all parts of the contract.'" Arko Exec. Servs., Inc. v. United States, 553 F.3d at 1379 (quoting Hercules Inc. v. United States, 292 F.3d at 1380-81); see also LAI Servs., Inc. v. Gates, 573 F.3d at 1314; Gardiner, Kamya & Assocs., P.C. v. Jackson, 467 F.3d 1348, 1353 (Fed. Cir. 2006) (citations omitted); Medlin Constr. Grp., Ltd. v. Harvey, 449 F.3d at 1200; Hunt Constr. Grp., Inc. v. United States, 281 F.3d 1369, 1372 (Fed. Cir. 2002) ("We begin with the plain language when interpreting a contract . . . . The contract must be considered as a whole and interpreted to effectuate its spirit and purpose, giving reasonable meaning to all parts." (citations omitted)); Beard v. United States, 125 Fed. Cl. at 158 ("In construing the meaning of a contractual provision, the court does not interpret the disputed term or phrase in isolation, but 'construes contract terms in the context of the entire contract, avoiding any meaning that renders some part of the contract inoperative.'" (quoting Pac. Gas & Elec. Co. v. United States, 536 F.3d 1282, 1288 (Fed. Cir. 2008))).

It has been "'a fundamental precept of common law that the intention of the parties to a contract controls its interpretation.'" Tri-Star Elecs. Int'l, Inc. v. Preci-Dip Durtal SA, 619 F.3d 1364, 1367 (Fed. Cir. 2010) (quoting Beta Sys., Inc. v. United States, 838 F.2d 1179, 1185 (Fed. Cir. 1988) (quoting Firestone Tire & Rubber Co. v. United States, 195 Ct. Cl. 21, 30 (1971))); Alvin, Ltd. v. U.S. Postal Serv., 816 F.2d 1562, 1565 (Fed. Cir. 1987) ("In the case of contracts, the avowed purpose and primary function of the court is the ascertainment of the intent of the parties."); see also Flexfab, LLC v. United States, 424 F.3d 1254, 1262 (Fed. Cir. 2005) ("[I]ntent is determined by looking to the contract and, if necessary, other objective evidence. In the absence of clear guidance from the contract language, the requisite intent on the part of the government can be inferred from the actions of the contracting officer . . . ."); LaBatte v. United States, 142 Fed. Cl. 425, 433 (2019) (citations omitted); Canpro Invs. Ltd. v. United States, 130 Fed. Cl. at 347 ("Contract interpretation requires determining the intention of the parties.").

Plaintiffs and defendant do not dispute that the '2076 Contract was a valid contract between the United States government and BNT-US. Defendant, however, argues that the United States did not breach the '2076 Contract when two laptop computers containing JWARN Block 1F Phase 2 C2PC CRID 1414 were delivered to the Republic of Korea, when five additional laptop computers containing JWARN Block 1F Phase 2 C2PC CRID 1490 were delivered to the Republic of Korea, or when ten laptop computers containing JWARN Block 1F Phase 2 Standalone CRID 1489 were delivered to the Kingdom of Jordan. According to defendant, BNT-US did not deliver CRIDs 1414, 1489, or 1490 under the '2076 Contract, and the terms of the '2076 Contract, therefore, do not apply to CRIDs 1414, 1489, or 1490. Defendant argues that the USMC "administratively closed" the '2076 Contract on June 3, 2004, and that CRID 1414 was not delivered to the

United States government until 2011, while CRIDs 1489 and 1490 were not delivered to the United States government until 2012. Because CRIDs 1414, 1489, and 1490 allegedly were not delivered to the United States government pursuant to BNT-US' '2076 Contract, defendant contends that the terms and software licenses in the '2076 Contract do not apply to CRIDs 1414, 1489, and 1490.

Defendant asserts that BNT-US delivered CRIDs 1414, 1489, and 1490 under Northrop Grumman's '4091/NS05 Contract involving Northrop Grumman's "Global Operations" project, on which BNT-US served as a subcontractor. In an attempt to support its position that CRIDs 1414, 1489, and 1490 were not delivered under the '2076 Contract, defendant included the following figure in its post-trial brief:

BNT-US operates as a prime contractor for
Contract No. M67854-98-C-2076
5/13/1998 – 6/3/2004
SAC ¶ 9; SAC Ex. B; SAC Ex. E

BNT-US operates as a subcontractor for
Contract No. N00178-04-D-4091/NS05
1/12/2009 – 12/31/2013
Stip. ¶¶ 24, 39

Complaint filed
ECF 1
6/30/2016

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

CRID 1414
Delivered
10/25/2011
Stip. ¶ 39

CRIDs 1489-90
Delivered
9/28/2012
Stip. ¶ 39

Defendant argues that Northrop Grumman's '4091/NS05 Contract, which is the contract relating to the Northrop Grumman's "Global Operations" project, "has different terms than those identified by BNT-US in its certified contract claim and in this lawsuit. With respect to these computer program deliverables [CRIDs 1414, 1489, and 1490], BNT-US did not submit a certified claim that identified the proper contract that pertained to their delivery, nor did it identify the relevant contractual terms." Thus, defendant contends: "The Government's alleged transfer of the CRIDs 1414, 1489, and 1490 software acquired under the '4091/NS05 Contract could not have breached the software licensing terms of the '2076 Contract because the terms of that contract do not apply to the subcontracted deliverables under the Northrop Grumman '4091/NS05 Contract." Defendant also argues that BNT-US lacks privity with the government for claims arising under the Northrop Grumman '4091/NS05 Contract because BNT-US served as a subcontractor under Northrop Grumman's '4091/NS05 Contract.

Despite defendant's assertions, plaintiffs argue that defendant breached the '2076 Contract when the United States allegedly transferred CRIDs 1414 and 1490 to the Republic of Korea, as well as when the United States allegedly transferred CRID 1489 to the Kingdom of Jordan. According to plaintiffs' post-trial brief:

> Since BNT-US consistently made the Government aware that the core NBC-Analysis COTS software within deliveries remained subject to the license terms of the '2076 Contract, and those license terms on their face are perpetual in duration, the Government is not relieved of its obligation to

comply with these simply because the core software was re-delivered to the Government numerous times along with integration software developed by BNT-US under other subcontracts.

Plaintiffs argue that the '4091/NS05 Contract "was for BNT-US to perform system engineering, testing, troubleshooting, and certification services to the Government (through general contractor Northrop Grumman), on a time and material basis, with options to renew year to year." Plaintiffs further argue:

> Provision of system engineering, testing, and troubleshooting services to make NBC-Analysis compatible with evolving weapons systems and equipment (pursuant to the '4091/NS05 subcontract) necessarily required those systems to integrate with something. That "something" was the core-NBC-Analysis software that the Government licensed through the '2076 Contract – a license that expressly allowed the Government to modify NBC-Analysis for its internal purposes, and to combine the software with other software, provided the license restrictions remain.

In the above-captioned case, on May 13, 1998, BNT-US and the USMC entered into the '2076 Contract, which contained Federal Acquisition Regulation (FAR) clause 52.227-19, titled "COMMERCIAL COMPUTER SOFTWARE--RESTRICTED RIGHTS (JUN 1987)." (capitalization in original). In the '2076 Contract, FAR clause 52.227-19 stated:

> (a) As used in this clause, "restricted computer software" means any computer program, computer data base, or documentation thereof, that has been developed at private expense and either is a trade secret, is commercial or financial and confidential or privileged, or is published and copyrighted.

> (b) Notwithstanding any provisions to the contrary contained in any Contractor's standard commercial license or lease agreement pertaining to any restricted computer software delivered under this purchase order/contract, and irrespective of whether any such agreement has been proposed prior to or after issuance of this purchase order/contract or of the fact that such agreement may be affixed to or accompany the restricted computer software upon delivery, vendor agrees that the Government shall have the rights that are set forth in paragraph (c) of this clause to use, duplicate or disclose any restricted computer software delivered under this purchase order/contract. The terms and provisions of this contract, including any commercial lease or license agreement, shall be subject to paragraph (c) of this clause and shall comply with Federal laws and the Federal Acquisition Regulation.

Subparagraphs (c)(1) and (c)(2) of FAR clause 52.227-19 in the '2076 Contract stated:

> (c)(1) The restricted computer software delivered under this contract may not be used, reproduced or disclosed by the Government except as provided in subparagraph (c)(2) of this clause or as expressly stated otherwise in this contract.
>
> (2) The restricted computer software may be--
>
> (i) Used or copied for use in or with the computer or computers for which it was acquired, including use at any Government installation to which such computer or computers may be transferred;
>
> (ii) Used or copied for use in or with backup computer if any computer for which it was acquired is inoperative;
>
> (iii) Reproduced for safekeeping (archives) or backup purposes;
>
> (iv) Modified, adapted, or combined with other computer software, provided that the modified, combined, or adapted portions of the derivative software incorporating any of the delivered, restricted computer software shall be subject to same restrictions set forth in this purchase order/contract;
>
> (v) Disclosed to and reproduced for use by support service Contractors or their subcontractors, subject to the same restrictions set forth in this purchase order/contract; and
>
> (vi) Used or copied for use in or transferred to a replacement computer.

The '2076 Contract also contained a "Supplement to Terms & Conditions." The "Supplement to Terms & Conditions" in the '2076 Contract provided:

> In accordance with FAR 52-227-19, BRUHN NewTech, Inc. will place the following legend on the software.
>
> <u>NOTICE!</u>
>
> COMMERCIAL COMPUTER SOFTWARE
>
> RESTRICTED RIGHTS
>
> Notwithstanding any other lease or license agreement that may pertain to, or accompany the delivery of, this computer software, the rights of the Government regarding its use, reproduction and disclosure are as set forth in Government Contract No. M67854-98-C-2076.

LICENSE AGREEMENT

(Supplement to FAR 52.227-19)

All software to be delivered under this contract including source codes, is commercial computer software subject to restricted rights specified in FAR 52.227-19 "Commercial Computer Software - Restricted Rights" with the following additions to that clause:

1. The Government may make an unlimited number of copies of the software and may distribute and use the software in any computers owned or leased by the Government and operated by the U.S. Government personnel working for U.S. Government departments, organizations and agencies.

2. The Government's use of the software shall be limited to use in fulfillment of functions of the Government of the United States.

3. The Government shall not disclose the software and shall not give, sell, license or otherwise provide copies of the software or use of the software to any third party person or entity including but not limited to members of the public, governments of foreign countries, or international agencies or organizations.

(capitalization and emphasis in original). As noted above, the parties have stipulated that the "software license provisions" in the '2076 Contract have not been amended or modified.

Under the '2076 Contract, BNT-US delivered to the government a DOS version of the NBC-Analysis software on May 14, 1998, as well as a Windows version of NBC-Analysis software on January 15, 1999, the latter of which was labeled as CRID 40. The delivery note BNT-US provided when delivering CRID 40 specifically identified the '2076 Contract as the "order no" under which CRID 40 was being delivered. As stated in the parties' joint stipulation of facts, pursuant to the statement of work for the '2076 Contract, "BNT-US delivered the NBC-Analysis software to the USMC to be used as the 'Commercial-Off-The-Shelf' (COTS) software component to the Joint Warning and Reporting Network Program (JWARN)." As such, under the '2076 Contract, the United States government was granted "the rights that are set forth in paragraph (c) of this clause to use, duplicate or disclose any restricted computer software delivered under this purchase order/contract [the '2076 Contract]." In the referenced paragraph (c) in the '2076 Contract, subparagraph (c)(1) stated that the "restricted computer software delivered under this contract may not be used, reproduced or disclosed by the Government except as provided in subparagraph (c)(2) of this clause or as expressly stated otherwise in this contract." The referenced subparagraph (c)(2) in the '2076 Contract stated that the NBC-Analysis software delivered under the '2076 Contract could be "[u]sed or copied for use

in or with the computer or computers for which it was acquired," and could be "[m]odified, adapted, or combined with other computer software, provided that the modified, combined, or adapted portions of the derivative software incorporating any of the delivered, restricted computer software shall be subject to same restrictions set forth in this purchase order/contract." The "Supplement to Terms & Conditions" in the '2076 Contract further stated that the United States government could not "disclose" or "provide copies of the software or use of the software" delivered under the '2076 Contract to "any third party person or entity including but not limited to members of the public, governments of foreign countries, or international agencies or organizations." Thus, under the terms of the '2076 Contract, restricted computer software delivered by BNT-US under the '2076 Contract, such as the 1998 DOS version of NBC-Analysis and CRID 40, could be "modified," subject to the terms of the '2076 Contract, but could not be provided to a third party, entity, or foreign government.

According to the parties' joint stipulation of facts, under the '2076 Contract, BNT-US continued to deliver software and support services to the United States government until "at least" May 13, 2000. The parties further have stipulated that the government had paid BNT-US "in full for all work accomplished and deliverables under the '2076 Contract" as of June 3, 2004. The parties stipulated that, thereafter, "BNT-US worked on a series of contracts and subcontracts relating to JWARN Block 1 support activities for the United States Government," providing "updates, refinements and services related to NBC-Analysis/JWARN Block 1 during these years."

On January 12, 2009, BNT-US began working as a subcontractor to Northrop Grumman under Northrop Grumman's '4091/NS05 Contract, which included work on Northrop Grumman's "Global Operations" project. On October 25, 2011, BNT-US delivered CRID 1414 on a "CD" to "JPM IS CM," which indicates that delivery was made to the Joint Project Manager for Information Systems, in San Diego, California. (capitalization in original). BNT-US' October 25, 2011 delivery note accompanying CRID 1414 indicates that CRID 1414 was delivered under "Our Order: Global Operations." (capitalization in original). On September 28, 2012, BNT-US delivered CRID 1489 to "JPM IS CM" on a "CD" in San Diego, California. (capitalization in original). BNT-US' September 28, 2012 delivery note accompanying CRID 1489 indicates that CRID 1489 was delivered under "Our order no: Global Operations." (capitalization in original). Also on September 28, 2012, BNT-US delivered CRID 1490 to "JPM IS CM" on a "CD" in San Diego, California. (capitalization in original). BNT-US' September 28, 2012 delivery note accompanying CRID 1490 indicates that CRID 1490 was delivered under "Our order: Global Operations." (capitalization in original).

The version of FAR clause 52.227-19 in the '2076 Contract, which was discussed above, pertains to "restricted computer software delivered under this purchase order/contract," which was the '2076 Contract. Paragraph (c) of FAR clause 52.227-19 in the '2076 Contract limits the government's use of "restricted computer software delivered under this contract" to the articulated uses in subparagraph (c)(2) of FAR clause 52.227-19 in the '2076 Contract. The "Supplement to Terms & Conditions" in the '2076 Contract provides "additions" to FAR clause 52.227-19, which apply to "[a]ll software to be

delivered under this contract." The terms in the '2076 Contract, therefore, apply to software delivered under the '2076 Contract, such as CRID 40, which was delivered to the United States government on January 15, 1999.

BNT-US' delivery notes associated with CRIDs 1414, 1489, and 1490 all identified "Global Operations" as the "order" under which CRIDs 1414, 1489, and 1490 were being delivered. "Global Operations" was a Northrop Grumman project related to Northrop Grumman's '4091/NS05 Contract, under which the parties have stipulated BNT-US served as a subcontractor supporting Northrop Grumman's "Global Operations" project. The parties also have stipulated that, at the time when BNT-US delivered CRIDs 1414, 1489, and 1490 to the United States government, BNT-US was serving as a subcontractor to Northrop Grumman.[13] Moreover, the government had paid BNT-US "in full for all work accomplished and deliverables under the '2076 Contract" as of June 3, 2004. CRID 1414 was not delivered to the government until October 21, 2011, more than seven years after June 3, 2004. CRIDs 1489 and 1490 were not delivered to the government until September 28, 2012, more than eight years after June 3, 2004. The 2011 and 2012 dates when CRIDs 1414, 1489, and 1490 were delivered to the government, as well as the associated delivery notes, indicate that CRIDs 1414, 1489, and 1490 were delivered under Northrop Grumman's '4091/NS05 Contract. Moreover, the delivery dates and notes indicate that BNT-US was not delivering CRIDs 1414, 1489, and 1490 under BNT-US' earlier '2076 Contract, for which, according to the parties' joint stipulation of facts, BNT-US already had been paid "in full for all work accomplished and deliverables under the '2076 Contract." The terms of FAR clause 52.227-19 in the '2076 Contract, which apply to "any restricted computer software delivered under this purchase order/contract [the '2076 Contract]," and the "Supplement to Terms & Conditions" in the '2076 Contract, which apply to "[a]ll software to be delivered under this contract [the '2076 Contract]," therefore, are not contractual terms which apply to deliveries of software BNT-US made under Northrop Grumman's '4091/NS05 Contract, including CRIDs 1414, 1489, and 1490.

Moreover, the NBC-Analysis software delivered by BNT-US was updated and changed between 1999, when CRID 40 was delivered, and 2011 and 2012, when CRIDs 1414, 1489, and 1490 were delivered. The parties' joint stipulation of facts provides that, "[i]n the years after making the initial delivery of NBC-Analysis software to the Government in 1998, BNT-Denmark and BNT-US developed and delivered to the Government additional software components to incorporate features developed specifically in response to JPMIS requirements." In the report of plaintiffs' expert and fact witness, John O'Donahue,[14] a former employee of BNT-US, Mr. O'Donahue states that

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[13] When CRIDs 1414, 1489, and 1490 were delivered in 2011 and 2012, BNT-US was no longer serving as a prime contractor on a contract issued by the United States government. The parties have stipulated that BNT-US' "last performance" as a prime contractor on a contract issued by the United States government concluded on October 25, 2005.

[14] As discussed earlier, although originally designated as an expert witness by plaintiffs, John O'Donahue offered both expert testimony and fact testimony when called as a

CRID 40 was compatible with the CBRN reporting standards in NATO's ATP-45A and was on a "Bruhn Newtech Baseline" of "NBC-Analysis 2.1." According to John O'Donahue's expert report, CRIDs 1414, 1489, and 1490 all were compatible with the CBRN reporting standards in NATO's ATP-45C and were on a "Bruhn Newtech Baseline" of "NBC Analysis 10." CRIDs 1414, 1489, and 1490, therefore, were revised to be compatible with a version of NATO's ATP-45 standards which was first published after CRID 40 was delivered in 1999. In John O'Donahue's expert report, John O'Donahue provides the following chart:

	TOTAL CRID40 FILES	CRID40 FILES IN THIS CRID	PERCENT OF CRID40 IN THIS CRID
CRID395	1598	141	8.82%
CRID1414	1598	176	11.01%
CRID1489	1598	203	12.70%
CRID1490	1598	192	12.02%

Percentage of CRID 40 Source Files in Other CRIDS

(capitalization in original). As indicated in the image directly above, only 11.01% to 12.70% percent of the source code files in CRID 40 were in CRIDs 1414, 1489, and 1490.[15] CRIDs 1414, 1489, and 1490 also contained considerably more total files than CRID 40, as indicated in John O'Donahue's chart below:

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witness by plaintiffs. When called as a witness by plaintiffs, John O'Donahue offered fact testimony regarding his employment with BNT-US and work with NBC-Analysis software. Consequently, much of John O'Donahue's purported expert testimony consisted of a mix between factual testimony and testimony offered as expert testimony. Defendant also called John O'Donahue as a fact witness regarding Mr. O'Donahue's employment with BNT-US and work with NBC-Analysis software. John O'Donahue worked as a software engineer before becoming a manager for BNT-US, during which period of time a "significant part of what" Mr. O'Donahue "did was to develop sensor interfaces for JWARN, the joint military -- military Joint Warning and Reporting Network." Mr. O'Donahue also stated that his "supervising was around 24 or something like that, and these people were doing C and C++ coding and Java coding on versions of NBC-ANALYSIS in order to make it run on these different platforms." (capitalization in original).

[15] John O'Donahue's report indicates that approximately eighty percent of the files in CRID 395 were present in CRIDs 1414, 1489, and 1490, but CRID 395 was not "restricted computer software" delivered under the '2076 Contract, as the delivery note associated with CRID 395 indicates that BNT-US delivered CRID 395 under the 'A001 Contract to "JPM NBC CA" at Aberdeen Proving Ground, Maryland. (capitalization in original).

File Count by CRID #				
	All Files	C & C++ Files	Distinct C & C++ Files	Other Files Images Build Files
CRID40	3,026	1,913	1,898	1,113
CRID395	31,469	9,761	6,197	21,708
CRID1414	66,401	19,032	10,371	47,369
CRID1489	91,720	22,688	12,583	69,032
CRID1490	96,533	22,240	10,963	74,293
Totals	289,149	75,634	42,012	213,515

BNT-US and BNT-Denmark were revising and adding to the source code files in the NBC-Analysis software between 1999, when CRID 40 was delivered, and 2011 and 2012, when CRIDs 1414, 1489, and 1490 were delivered, which further indicates that CRIDs 1414, 1489, and 1490 were not "restricted computer software" delivered under the '2076 Contract.

Plaintiffs further argue that "BNT-US consistently made clear, with contemporaneous written notices, that the core NBC-Analysis software sold to the Government in the '2076 Contract remained subject to the perpetual software license terms of the '2076 Contract." In the Software Version Descriptions BNT-US provided to the government for CRIDs 1414, 1489, and 1490, the Software Version Descriptions stated that "the rights of the Government regarding its use, reproduction and disclosure are as set forth in Government Contract No. M67854-98-C-2076." The parties have stipulated that, within the Software Administrator's Manual for JWARN Phase 2 provided with CRIDs 1414, 1489, and 1490, "the instructions for installation state that, before the software installation may be completed, the installer must '[a]ccept the license agreement' by clicking 'next' after the software license agreement is displayed on the screen." (alterations in original). The software license agreement in the Software Administrator's Manual for JWARN Phase 2 identifies the '2076 Contract. Although BNT-US manuals accompanying CRIDs 1414, 1489, and 1490 reference the '2076 Contract, the references to the '2076 Contract do not lead to the conclusion that the 2011 and 2012 deliveries of CRIDs 1414, 1489, and 1490 occurred under the earlier '2076 Contract. CRIDs 1414, 1489, and 1490 were delivered pursuant to the Northrop Grumman's '4091/NS05 Contract, and, consequently, CRIDs 1414, 1489, and 1490 were not "software" delivered under the '2076 Contract and subject to the terms of the '2076 Contract. Moreover, John O'Donahue, when testifying as a fact witness, testified that he "believe[d]" the statement in the Software Version Descriptions that "the rights of the Government regarding its use, reproduction and disclosure are as set forth in Government Contract No. M67854-98-C-2076" "was something that we always added to deliverables." Further, the impact, if any, of BNT-US' statements in the Software Version Descriptions and Software Administrator's Manuals for JWARN Phase 2 for CRIDs 1414, 1489, and 1490 would need to be evaluated in light of the terms of Northrop Grumman's '4091/NS05 Contract, which Northrop Grumman contract was not offered for admission during the liability trial and is not in the record before the court, and which would relate to whether there was a potential breach of the '4091/NS05 Contract, not the '2076 Contract.

Plaintiffs also cite to the '2076 Contract and argue that "[n]othing in the software license suggests that the Government's obligations would sunset or expire, for as long as the Government used or deployed the NBC-Analysis software." The court's above analysis and conclusion that the transfer of laptop computers containing CRIDs 1414, 1489, and 1490 did not breach the terms of the '2076 Contract because CRIDs 1414, 1489, and 1490 were not delivered under the '2076 Contract does not suggest that the terms of the '2076 Contract expired. The terms of FAR clause 52.227-19 in the '2076 Contract apply to "any restricted computer software delivered under this purchase order/contract," and the "Supplement to Terms & Conditions" in the '2076 Contract apply to "[a]ll software to be delivered under this contract." Although the terms in the '2076 Contract remain applicable to deliveries of software that occurred under the '2076 Contract, such as CRID 40, the terms in the '2076 Contract do not automatically apply to deliveries of software made pursuant to the other contracts, such as Northrop Grumman's '4091/NS05 Contract, under which BNT-US, as Northrop Grumman's subcontractor, delivered CRIDs 1414, 1489, and 1490. And plaintiffs have not demonstrated that the terms and restrictions were included in the Northrop Grumman '4091/NS05 Contract. Thus, the court concludes that the government did not breach the terms of the '2076 Contract, and that Count I of the second amended complaint, in which BNT-US asserts a breach of the '2076 Contract, fails.

Count II: BNT-Denmark's Copyright Infringement Claim

In Count II of the second amended complaint, BNT-Denmark asserts that the United States engaged in actions infringing on two of BNT-Denmark's copyright registrations, which are the '500 Registration and the '490 Registration. The '500 Registration is titled "NBC Analysis - CRID 0040." The '490 Registration, is titled "NBC Analysis JWARN 1F PHASE 2, CRID 1489, 1490, and 1491." In discussing the elements of a copyright infringement claim, in the post-trial briefs, plaintiffs and defendant cite to the United States Supreme Court's decision in Feist Publications, Inc. v. Rural Telephone Service Co., 499 U.S. 340 (1991), in which the United States Supreme Court stated: "Not all copying, however, is copyright infringement. To establish infringement, two elements must be proven: (1) ownership of a valid copyright, and (2) copying of constituent elements of the work that are original." Id. at 361 (citing Harper & Row Publishers, Inc. v. Nation Enters., 471 U.S. 539, 547 (1985)). The United States Court of Appeals for the Federal Circuit similarly has stated that copyright "[i]nfringement requires two elements: '(1) ownership of a valid copyright, and (2) copying of constituent elements of the work that are original.'" Gaylord v. United States, 595 F.3d 1364, 1372 (Fed. Cir. 2010) (quoting Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. at 361). The party asserting a copyright infringement claim bears the burden of establishing both elements of a copyright infringement claim. See Chamberlain Grp., Inc. v. Skylink Techs., Inc., 381 F.3d 1178, 1193 (Fed. Cir.), reh'g and reh'g en banc denied (Fed. Cir. 2004), cert. denied, 544 U.S. 923 (2005); see also Guzman v. Hacienda Records & Recording Studio, Inc., 808 F.3d 1031, 1037 (5th Cir. 2015).

Standards for Invalidating a Copyright Registration

In the above-captioned case, the parties dispute whether BNT-Denmark's '500 Registration, relating to CRID 40, and '490 Registration, relating to CRIDs 1489, 1490, and 1491, are valid copyright registrations. The parties disagree as to the applicable standard regarding what is required to invalidate a copyright registration under 17 U.S.C. § 411(b). BNT-Denmark asserts that the certificates of registration for the '500 Registration and the '490 Registration, which are included as joint exhibits in the record before the court, constitute "'prima facie evidence of the validity of the copyright and of the facts stated in the certificate.'" (quoting 17 U.S.C. § 410(c)). According to plaintiffs, in order to show that the '500 and '490 Registrations are invalid, defendant bears a "heavy burden" of proving that "the application for registration was factually inaccurate, that the inaccuracies were willful and deliberate, and that the Copyright Office relied on those misrepresentations." Plaintiffs argue that "[a]n innocent misstatement or a clerical error in the affidavit and certificate of registration, unaccompanied by fraud or intent to extend the statutory period of copyright protection, does not invalidate the copyright, nor is it thereby rendered incapable of supporting an infringement action." Plaintiffs contend that defendant bears the burden of showing that plaintiffs submitted the copyright applications with knowledge of the inaccuracies allegedly contained in the applications, and that the alleged inaccuracies were intended to defraud the Register of Copyrights.

Defendant, however, argues that "a registration with known, material inaccuracies cannot satisfy the prerequisite or establish ownership" of a valid copyright registration under 17 U.S.C. § 411(a). Defendant argues that, "contrary to Plaintiffs' assertion, 17 U.S.C. § 411(b) does not require a showing of 'fraud,' 'intent,' or 'willful[ness].' The express language of the statutory provision requires none of those common-law-fraud-like elements." (alterations in original). Defendant also asserts that the legislative history of 17 U.S.C. § 411(b) does not reference fraud or indicate that a showing of fraud is required to invalidate a copyright registration. Defendant argues that plaintiffs in this case are attempting to introduce a scienter requirement related to fraud into the statute at 17 U.S.C. § 411(b) by citing to cases that predate the October 13, 2008 revision of 17 U.S.C. § 411(b) or cases that "fail to apply the statute."

Regarding the interpretation of a statute, the United States Court of Appeals for the Federal Circuit has stated:

When interpreting a statute, we start with the language of the statute itself. Williams v. Taylor, 529 U.S. 420, 431, 120 S.Ct. 1479, 146 L.Ed.2d 435 (2000). We search for Congress's intent using both the text and structure of the statute. Alexander v. Sandoval, 532 U.S. 275, 288, 121 S.Ct. 1511, 149 L.Ed.2d 517 (2001). In reviewing the statute's text, we give the words "their 'ordinary, contemporary, common meaning,' absent an indication Congress intended them to bear some different import." Williams, 529 U.S. at 431, 120 S.Ct. 1479 (quoting Walters v. Metro. Educ. Enters., Inc., 519 U.S. 202, 207, 117 S.Ct. 660, 136 L.Ed.2d 644 (1997)); see also Moskal v. United States, 498 U.S. 103, 108, 111 S.Ct. 461, 112 L.Ed.2d 449 (1990) ("In

determining the scope of a statute, we look first to its language, giving the words used their ordinary meaning." (citations and internal quotation marks omitted)). If the statute is clear and unambiguous, then the plain meaning of the statute is generally conclusive, and we give effect to the unambiguously expressed intent of Congress. Sullivan v. Stroop, 496 U.S. 478, 482, 110 S.Ct. 2499, 110 L.Ed.2d 438 (1990). When the statutory language is ambiguous, legislative history can be useful in determining Congressional intent. See In re Swanson, 540 F.3d 1368, 1376 (Fed. Cir. 2008).

Indian Harbor Ins. Co. v. United States, 704 F.3d 949, 954 (Fed. Cir. 2013); see also White v. United States, 543 F.3d 1330, 1337 (Fed. Cir. 2008) ("First and foremost, it is a bedrock canon of statutory construction that our judicial inquiry ends where statutory language is plain and unambiguous." (citations omitted)), reh'g and reh'g en banc denied (Fed. Cir. 2009); Texaco Marine Servs., Inc. v. United States, 44 F.3d 1539, 1543 (Fed. Cir. 1994) ("Our interpretation of the statute begins with the language employed by Congress." (citations omitted)).

According to 17 U.S.C. § 410(a), when the Register of Copyrights determines that "the material deposited constitutes copyrightable subject matter and that the other legal and formal requirements of this title have been met, the Register shall register the claim and issue to the applicant a certificate of registration under the seal of the Copyright Office." Id. In a judicial proceeding, a certificate of copyright registration

> made before or within five years after first publication of the work shall constitute prima facie evidence of the validity of the copyright and of the facts stated in the certificate. The evidentiary weight to be accorded the certificate of a registration made thereafter shall be within the discretion of the court.

17 U.S.C. § 410(c).

The relevant language in the currently in effect version of 17 U.S.C. § 411 provides:

> (a) Except for an action brought for a violation of the rights of the author under section 106A(a), and subject to the provisions of subsection (b), no civil action for infringement of the copyright in any United States work shall be instituted until preregistration or registration of the copyright claim has been made in accordance with this title. In any case, however, where the deposit, application, and fee required for registration have been delivered to the Copyright Office in proper form and registration has been refused, the applicant is entitled to institute a civil action for infringement if notice thereof, with a copy of the complaint, is served on the Register of Copyrights. The Register may, at his or her option, become a party to the action with respect to the issue of registrability of the copyright claim by entering an appearance

within sixty days after such service, but the Register's failure to become a party shall not deprive the court of jurisdiction to determine that issue.

(b)(1) A certificate of registration satisfies the requirements of this section and section 412, regardless of whether the certificate contains any inaccurate information, unless--

(A) the inaccurate information was included on the application for copyright registration with knowledge that it was inaccurate; and

(B) the inaccuracy of the information, if known, would have caused the Register of Copyrights to refuse registration.

(2) In any case in which inaccurate information described under paragraph (1) is alleged, the court shall request the Register of Copyrights to advise the court whether the inaccurate information, if known, would have caused the Register of Copyrights to refuse registration.

(3) Nothing in this subsection shall affect any rights, obligations, or requirements of a person related to information contained in a registration certificate, except for the institution of and remedies in infringement actions under this section and section 412.

17 U.S.C. § 411(a)-(b). The above-language of 17 U.S.C. § 411(b) was added into the currently in effect statute at 17 U.S.C. § 411 when 17 U.S.C. § 411 was amended on October 13, 2008, as part of the Prioritizing Resources and Organization for Intellectual Property Act of 2008 (the 2008 PRO IP Act), Pub. L. No. 110-403, 122 Stat. 4256 (Oct. 13, 2008). See also Archie MD, Inc. v. Elsevier, Inc., 261 F. Supp. 3d 512, 515 (S.D.N.Y. 2017) (noting that the 2008 PRO IP Act amended 17 U.S.C. § 411 to provide the currently in effect version of 17 U.S.C. § 411(b)). Prior to October 13, 2008, 17 U.S.C. § 411 did not include language similar to the current version of 17 U.S.C. § 411(b).

As indicated above, the statute at 17 U.S.C. § 411(a) states that, "subject to the provisions of subsection (b), no civil action for infringement of the copyright in any United States work shall be instituted until preregistration or registration of the copyright claim has been made in accordance with this title." 17 U.S.C. § 411(a); see also Fourth Estate Pub. Benefit Corp. v. Wall-Street.com, LLC, 139 S. Ct. at 886-87 ("[R]egistration occurs, and a copyright claimant may commence an infringement suit, when the Copyright Office registers a copyright. Upon registration of the copyright, however, a copyright owner can recover for infringement that occurred both before and after registration."). The statute at "subsection (b)," i.e., 17 U.S.C. § 411(b), states that a certificate of copyright registration "satisfies the requirements of this section and section 412, regardless of whether the certificate contains any inaccurate information, unless" the following circumstances are present: "inaccurate information was included on the application for copyright registration with knowledge that it was inaccurate;" and "the inaccuracy of the information, if known, would have caused the Register of Copyrights to refuse registration." See 17 U.S.C.

§ 411(b)(1). The statute at 17 U.S.C. § 411(b), therefore, states that a copyright registration does not satisfy the registration requirements of 17 U.S.C. § 411(a) for filing a copyright infringement claim if: (1) inaccurate information was included on a copyright registration application "with knowledge that it was inaccurate;" and (2) the Register of Copyrights would have "refuse[d] registration" of the copyright registration application if the Register of Copyrights knew that the copyright registration application included the inaccurate information. See id. § 411(a). Although plaintiffs in the above-captioned case argue that 17 U.S.C. § 411(b) requires that "the inaccuracies [in the copyright application] were willful and deliberate," the language of 17 U.S.C. § 411(b) does not prescribe a requirement that inaccurate information be willfully or deliberately included in a copyright registration application. Rather, the language in the statute at 17 U.S.C. § 411(b) only requires that inaccurate information be included on a copyright registration application "with knowledge that it was inaccurate," as well as a showing that the inaccurate information, if known by the Register of Copyrights, would have caused the Register of Copyrights to refuse the copyright registration application.

The language in 17 U.S.C. § 411(b) does not require a showing of willfulness or fraud. Therefore, the court need not resort to the legislative history to interpret 17 U.S.C. § 411(b) because the language in 17 U.S.C. § 411(b) is unambiguous.[16] Notwithstanding that the language in the statute at 17 U.S.C. § 411(b) does not require a showing of fraud or willfulness to find a copyright registration to be invalid for purposes of 17 U.S.C. § 411(a), plaintiffs attempt to put forth several arguments as to why fraud or willfulness is required to invalidate a copyright for purposes of filing a civil action for copyright

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[16] The court also notes, however, that the legislative history of the 2008 PRO IP Act also does not appear to indicate that a showing of fraud or willfulness is required under 17 U.S.C. § 411(b). In a May 5, 2008 report from the United States House Committee on the Judiciary, the United States House Committee on the Judiciary stated:

> It has also been argued in litigation that a mistake in the registration documents, such as checking the wrong box on the registration form, renders a registration invalid and thus forecloses the availability of statutory damages. To prevent intellectual property thieves from exploiting this potential loophole, the Act makes clear that a registration containing inaccuracies will satisfy the registration requirements of the Copyright Act unless the mistake was knowingly made and the inaccuracy, if known, would have caused the Register of Copyrights to refuse the registration. And in cases where mistakes in a copyright registration are alleged, courts will be required to seek the advice of the Register of Copyrights as to whether the asserted mistake, if known at the time of application, would have caused the Copyright Office to refuse registration.

H.R. Rep. 110-617, at 24 (2008) (footnote omitted). The above-quoted United States House Committee on the Judiciary report does not mention any requirement of fraud or willfulness, and plaintiffs have not cited to any legislative history indicating that a showing of fraud or willfulness is required under 17 U.S.C. § 411(b).

infringement. Prior to the amendment of 17 U.S.C. § 411(b) on October 13, 2008, when analyzing whether to invalidate a copyright registration, certain courts had stated that "an innocent misstatement, or a clerical error, in the affidavit and certificate of registration, unaccompanied by fraud or intent to extend the statutory period of copyright protection, does not invalidate the copyright, nor is it thereby rendered incapable of supporting an infringement action." See Advisers, Inc. v. Wiesen-Hart, Inc., 238 F.2d 706, 708 (6th Cir. 1956) (citing Ziegelheim v. Flohr, 119 F. Supp. 324 (E.D.N.Y. 1954)); see also Eckes v. Card Prices Update, 736 F.2d 859, 861-62 (2d Cir. 1984) ("Only the 'knowing failure to advise the Copyright Office of facts which might have occasioned a rejection of the application constitute[s] reason for holding the registration invalid and thus incapable of supporting an infringement action . . . or denying enforcement on the ground of unclean hands . . . .'" (alterations and omissions in original) (quoting Russ Berrie & Co. v. Jerry Elsner Co., 482 F. Supp. 980, 988 (S.D.N.Y. 1980))). Other courts, prior to the amendment of 17 U.S.C. § 411(b) on October 13, 2008, also had made similar statements regarding the validity of copyright registrations, such as "inadvertent mistakes on registration certificates do not invalidate a copyright and thus do not bar infringement actions, unless the alleged infringer has relied to its detriment on the mistake, or the claimant intended to defraud the Copyright Office by making the misstatement." See Urantia Found. v. Maaherra, 114 F.3d 955, 963 (9ᵗʰ Cir. 1997); see also S.O.S., Inc. v. Payday, Inc., 886 F.2d 1081, 1086 (9th Cir. 1989) ("'Absent intent to defraud and prejudice, inaccuracies in copyright registration do not bar actions for infringement.'" (quoting Harris v. Emus Records Corp., 734 F.2d 1329, 1335 (9th Cir. 1984))). As stated above, prior to October 13, 2008, 17 U.S.C. § 411 did not include language similar to the current version of 17 U.S.C. § 411(b) nor a standard regarding invalidation of a copyright registration for purposes of filing a copyright infringement claim. See 2 MELVILLE NIMMER AND DAVID NIMMER, NIMMER ON COPYRIGHT § 7.20[B][2] (Rev. ed. 2019) ("When it enacted the Prioritizing Resources and Organization for Intellectual Property Act of 2008, Congress for the first time took the court-made standards underlying the previous discussion and articulated the applicable standards directly in the Copyright Act." (footnotes omitted)).

Many of the cases cited in plaintiffs' post-trial filings regarding what is required to invalidate a copyright registration under 17 U.S.C. § 411(b) for purposes of filing a civil copyright infringement claim predate the current version of 17 U.S.C. § 411(b), which went into effect on October 13, 2008, including: Advisers, Inc. v. Wiesen-Hart, Inc., 238 F.2d 706 (6th Cir. 1956); Thornton v. J Jargon Co., 580 F. Supp. 2d 1261 (M.D. Fla. 2008);[17] Shady Records, Inc. v. Source Enterprises, Inc., No. 03 Civ. 9944(GEL), 2005 WL 14920 (S.D.N.Y. Jan. 3, 2005); Tuff-N-Rumble Management, Inc. v. Sugarhill Music Publishing Inc., 99 F. Supp. 2d 450 (S.D.N.Y. 2000); Lennon v. Seaman, 84 F. Supp. 2d 522 (S.D.N.Y. 2000); Testa v. Janssen, 492 F. Supp. 198 (W.D. Pa. 1980). The cases predating the October 13, 2008 amendment of 17 U.S.C. § 411(b) do not apply the standard for invalidating a copyright registration under the current version of 17 U.S.C. §

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[17] The United States District Court for the Middle District of Florida's decision in Thornton v. J Jargon Co., 580 F. Supp. 2d 1261, was issued on July 8, 2008, approximately three months before the current version of 17 U.S.C. § 411 went into effect on October 13, 2008.

411(b) because, prior to October 13, 2008, 17 U.S.C. § 411 did not include the standard in the current version of 17 U.S.C. § 411(b).

Since the amendment of 17 U.S.C. § 411(b), several United States Courts of Appeals have tried to address whether a showing of fraud on the Register of Copyrights is necessary to invalidate a copyright registration under 17 U.S.C. § 411(b).[18] See Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d 1140, 1146-48 (9th Cir. 2019); Roberts v. Gordy, 877 F.3d 1024, 1029-30 (11th Cir. 2017). In Roberts v. Gordy, the United States Court of Appeals for the Eleventh Circuit quoted the language in the current version of 17 U.S.C. § 411(b) and stated:

> This statute [17 U.S.C. § 411(b)], which Congress modified in 2008, codifies the defense of Fraud on the Copyright Office.[n.5] Appellees assert that the 2008 amendment to the Copyright Act "precludes reading 'fraud' into the statute," see Appellees Br. at 20, and they averred at oral argument that the 2008 amendment served as a 'sea change' in copyright policy that superseded this Court's precedent (even though the amendment was enacted between the Original Appalachian [v. Toy Loft, Inc., 684 F.2d 821 (11th Cir. 1985)] and St. Luke's [Cataract & Laser Inst., P.A. v. Sanderson, 573 F.3d 1186 (11th Cir. 2009)] decisions). They are wrong. This Court's analysis in St. Luke's directly cites to the post-2008 amendment statutory language and reaffirmed the finding from Original Appalachian that the "intentional or purposeful concealment of relevant information" is required to invalidate a copyright registration. See St. Luke's, 573 F.3d at 1201.
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> [n.5] See generally, e.g., U.S. Copyright Office, Annual Report of the Register of Copyrights, Fiscal Year Ending September 30, 2008 12-13 (2008), https://www.copyright.gov/reports/annual/2008/ar2008.pdf ("The Prioritizing Resources and Organization for Intellectual Property Act (Pub. L. No. 110-403), also known as the PRO-IP Act, strengthens the intellectual property laws of the United States in several respects. For example, it amends section 411 of the copyright law to codify the doctrine of fraud on the Copyright Office in the registration process.").

Roberts v. Gordy, 877 F.3d at 1029. The Eleventh Circuit's determination in Roberts v. Gordy that "[t]hey [the appellees in Roberts v. Gordy] are wrong" and that the current version of 17 U.S.C. § 411(b) requires a showing that of "intentional or purposeful concealment of relevant information" to invalidate a copyright registration appears to be primarily based on the language in the Annual Report of the Register of Copyrights, Fiscal Year Ending September 30, 2008 (the 2008 Annual Report of the Register of Copyrights), and the United States Court of Appeals for the Eleventh Circuit's post-October 13, 2008

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[18] Following the amendment of 17 U.S.C. § 411 on October 13, 2008, the United States Court of Appeals for the Federal Circuit has not directly addressed in a copyright case whether a showing of fraud on the Register of Copyrights is necessary to invalidate a copyright registration under the current version of 17 U.S.C. § 411(b).

decision in <u>St. Luke's Cataract & Laser Institute, P.A.</u> <u>See</u> <u>Roberts v. Gordy</u>, 877 F.3d at 1029 (internal quotation mark and citation omitted).

In the 2008 Annual Report of the Register of Copyrights, the Register of Copyrights provided a brief summary of the 2008 PRO IP Act, stating:

> The Prioritizing Resources and Organization for Intellectual Property Act (Pub. L. No. 110-403), also known as the PRO-IP Act, strengthens the intellectual property laws of the United States in several respects. For example, it amends section 411 of the copyright law to codify the doctrine of fraud on the Copyright Office in the registration process. The law also clarifies that registration is not a prerequisite for a criminal copyright prosecution and makes it unlawful (civilly and criminally) to export unauthorized copies or phonorecords of protected works from the United States. In addition, the law amends section 506 of the law to provide for the forfeiture to the U.S. government of any property used to commit or facilitate the commission of a criminal offense involving copyrighted works.

<u>See</u> U.S. COPYRIGHT OFFICE, ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS, FISCAL YEAR ENDING SEPTEMBER 30, 2008 12-13 (2008). In the 2008 Annual Report of the Register of Copyrights, the Register of Copyrights did not explain how the statement in the current version of 17 U.S.C. § 411(b) that "a certificate of registration satisfies the requirements of this section and section 412" unless "inaccurate information was included on the application for copyright registration with knowledge that it was inaccurate" and "the inaccuracy of the information, if known, would have caused the Register of Copyrights to refuse registration" codified "the doctrine of fraud on the Copyright Office." <u>See</u> U.S. COPYRIGHT OFFICE, ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS, FISCAL YEAR ENDING SEPTEMBER 30, 2008 12-13. Nor did the Register of Copyrights cite to any legislative material to support its statement in its 2008 Annual Report of the Register of Copyrights that the 2008 PRO IP Act "amends section 411 of the copyright law to codify the doctrine of fraud on the Copyright Office in the registration process." <u>See</u> <u>id.</u> Moreover, the Register of Copyrights also did not define its understanding of "the doctrine of fraud on the Copyright Office" and did not cite to any cases applying what the Register of Copyrights considered to be "the doctrine of fraud on the Copyright Office." <u>See</u> <u>id.</u>

In <u>St. Luke's Cataract & Laser Institute, P.A.</u>, which the Eleventh Circuit relied upon in <u>Roberts v. Gordy</u>, the United States Court of Appeals for the Eleventh Circuit was reviewing a district court's denial of a motion for a new trial involving a copyright infringement claim. <u>See</u> <u>St. Luke's Cataract & Laser Inst., P.A. v. Sanderson</u>, 573 F.3d at 1200. Regarding what was required to invalidate a copyright registration, the United States Court of Appeals for the Eleventh Circuit stated:

> A certificate of registration satisfies the registration requirement in § 411(a) "regardless of whether the certificate contains any inaccurate information, unless . . . (A) the inaccurate information was included on the application for copyright registration with knowledge that it was inaccurate; and (B) the

inaccuracy of the information, if known, would have caused the Register of Copyrights to refuse registration." Id. § 411(b)(1). "[O]missions or misrepresentations in a copyright application can render the registration invalid" where there has been "intentional or purposeful concealment of relevant information." Original Appalachian Artworks, Inc. v. Toy Loft, Inc., 684 F.2d 821, 828 (11th Cir. 1982). Thus, there must be a showing of "scienter" in order to invalidate a copyright registration. Id. "In general, an error is immaterial if its discovery is not likely to have led the Copyright Office to refuse the application." Data Gen. Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1161 (1st Cir. 1994).

St. Luke's Cataract & Laser Inst., P.A. v. Sanderson, 573 F.3d at 1201 (omission in original). Although the Eleventh Circuit in St. Luke's Cataract & Laser Institute, P.A. does quote the current language of 17 U.S.C. § 411(b), the St. Luke's Cataract & Laser Institute, P.A. court, nevertheless, relies on precedent predating the October 13, 2008 amendment of 17 U.S.C. § 411(b). See St. Luke's Cataract & Laser Inst., P.A. v. Sanderson, 573 F.3d at 1201 (quoting Original Appalachian Artworks, Inc. v. Toy Loft, Inc., 684 F.2d at 828). The St. Luke's Cataract & Laser Institute, P.A. court does not explain why pre-October 13, 2008 precedent involving a requirement of intentional or purpose concealment of information in order to invalidate a copyright registration still applies or how the October 13, 2008 amendment of 17 U.S.C. § 411(b) impacts the earlier precedent cited by the St. Luke's Cataract & Laser Institute, P.A. court. See St. Luke's Cataract & Laser Inst., P.A. v. Sanderson, 573 F.3d at 1201. Moreover, the St. Luke's Cataract & Laser Institute, P.A. court does not discuss why or how the plain language of 17 U.S.C. § 411(b) requires intentional or purposeful concealment of information in order to invalidate a copyright registration.

Thus, the authorities relied upon in Roberts v. Gordy, 877 F.3d at 1029, namely the 2008 Annual Report of the Register of Copyrights and St. Luke's Cataract & Laser Institute, P.A., 573 F.3d at 1201, contain limited analysis of the language in the post-October 13, 2008 version of 17 U.S.C. § 411(b). The United States Court of Appeals for the Eleventh Circuit in Roberts v. Gordy, 877 F.3d at 1029, stated that St. Luke's Cataract & Laser Institute, P.A. "reaffirmed the finding from Original Appalachian that the 'intentional or purposeful concealment of relevant information' is required to invalidate a copyright registration," but neither Roberts v. Gordy nor St. Luke's Cataract & Laser Institute, P.A. contain persuasive reasoning as to why intentional or purposeful concealment is required to invalidate a copyright registration in light of the explicit words in the October 13, 2008 amendment to 17 U.S.C. § 411(b).

In Gold Value International Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1146-48, the United States Court of Appeals for the Ninth Circuit, in 2019, addressed the requirements for invalidating a copyright registration under the current version of 17 U.S.C. § 411(b). According to the Ninth Circuit:

An inaccuracy in the application does not necessarily invalidate a copyright registration, however. See 17 U.S.C. § 411(b)(1). Rather, the inaccurate

information must have been included in the application for copyright registration "with knowledge that it was inaccurate" and "the inaccuracy of the information, if known, would have caused the Register of Copyrights to refuse registration." Id.; see also L.A. Printex [Indus., Inc. v. Aeropostale, Inc.], 676 F.3d [841,] at 852-53 [(9th Cir. 2012)].

Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1146. The United States Court of Appeals for the Ninth Circuit further stated:

Fiesta [the appellant] claims that L.A. Printex requires a showing of fraud on the part of the claimant in order to invalidate a copyright registration. L.A. Printex did not address this issue, however. Although we stated that there was no evidence that the claimant intended to defraud the Copyright Office, we did not consider the issue of whether a showing of fraud is required to invalidate a registration pursuant to § 411(b). L.A. Printex, 676 F.3d at 853-54. We hold that Fiesta's argument is foreclosed by the plain language of § 411(b), which does not require a showing of fraud, but only that the claimant included inaccurate information on the application "with knowledge that it was inaccurate." 17 U.S.C. § 411(b)(1)(A); see also Lamie v. United States Tr., 540 U.S. 526, 534 (2004) ("It is well established that 'when the statute's language is plain, the sole function of the courts—at least where the disposition required by the text is not absurd—is to enforce it according to its terms.'" (citation omitted)).

Fiesta was admittedly aware of the facts regarding its fabric sales; its inclusion of designs that it knew had been sold, and therefore published, in an unpublished collection cannot be characterized as an inadvertent or good faith mistake. Thus, Fiesta included inaccurate information on its application with knowledge that it was inaccurate.

Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1147-48 (footnote omitted).

In Gold Value International Textile, Inc., the Ninth Circuit also addressed the Eleventh Circuit's Opinion in Roberts v. Gordy. See Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1147 n.4. In a footnote, the Gold Value International Textile, Inc. court stated:

The Eleventh Circuit held in Roberts v. Gordy that a showing of "intentional or purposeful concealment of relevant information" is required to render a registration invalid. 877 F.3d 1024, 1029 (11th Cir. 2017) (citation omitted). The court relied upon its prior precedent, however, without attention to the plain language of § 411(b). Section 411(b) does not mention intentional concealment or fraud, but only that the information was included "with knowledge that it was inaccurate." 17 U.S.C. § 411(b)(1).

Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1147 n.4. The United States Court of Appeals for the Ninth Circuit, therefore, concluded that a showing of fraud or intentional concealment is not required under the current version of 17 U.S.C. § 411(b). See id. at 1147.

Plaintiffs cite, multiple times, to Jedson Engineering, Inc. v. Spirit Construction Services, Inc., 720 F. Supp. 2d 904 (S.D. Ohio 2010), which was issued two years after the 2008 PRO IP Act and the amendment of 17 U.S.C. § 411(b). In Jedson Engineering, Inc., the Jedson Engineering, Inc. defendants argued before the United States District Court for the Southern District of Ohio that "Jedson is not entitled to a presumption of validity because of irregularities in the registration of Jedson's copyrights." Jedson Eng'g, Inc. v. Spirit Constr. Servs., Inc., 720 F. Supp. 2d at 913. Without citing to the current version of 17 U.S.C. § 411, which was in effect at the time of the United States District Court for the Southern District of Ohio's 2010 decision, the Southern District of Ohio quoted from a 2008 unpublished decision, which the Southern District of Ohio stated "aptly explained" that a party seeking to establish fraud on the Register of Copyrights bears the heavy burden of establishing that the inaccuracies were deliberate. See id. (quoting Tacori Enters. v. Rego Mfg., No. 1:05CV2241, 2008 WL 4426343, at *1 (N.D. Ohio Sept. 25, 2008)). The United States District Court for the Southern District of Ohio's 2010 decision in Jedson Engineering, Inc., however, did not cite to or address the language in the current version of 17 U.S.C. § 411(b). See Jedson Eng'g, Inc. v. Spirit Constr. Servs., Inc., 720 F. Supp. 2d at 913-14. Moreover, the Jedson Engineering, Inc., court relied heavily on and quoted a large passage from the unpublished decision in Tacori Enterprises, which was issued on September 25, 2008. The version of 17 U.S.C. § 411(b) currently at issue in this court in the above-captioned cases went into effect on October 13, 2008, and, therefore, the current version of 17 U.S.C. § 411(b) was not addressed in the earlier September 25, 2008 Tacori Enterprises unpublished decision. Because Jedson Engineering, Inc. did not cite to or analyze the language in the current version 17 U.S.C. § 411(b) and heavily relied on the unpublished decision in Tacori Enterprises, which predated the current version of 17 U.S.C. § 411(b), plaintiffs' reliance on Jedson Engineering, Inc. is misplaced.

In the post-trial filings, plaintiffs also cite to Lego A/S v. Best-Lock Construction Toys, Inc., 874 F. Supp. 2d 75 (D. Conn. 2012), and Sierra-Pascual v. Pina Records, Inc., 660 F. Supp. 2d 196 (D.P.R. 2009). In Lego A/S, one party specifically alleged that a copyright registrant had committed fraud on the Register of Copyrights and, in discussing whether to invalidate the copy registrations at issue in Lego A/S, the United States District Court for the District of Connecticut also did not cite to or discuss the current version of 17 U.S.C. § 411(b). See Lego A/S v. Best-Lock Constr. Toys, Inc., 874 F. Supp. 2d at 102. In Sierra-Pascual, the United States District Court for the District of Puerto Rico stated that Pina Records, Inc. alleged "that Sierra *willfully* witheld [sic] the information here at issue, a fraudulent act that would in itself invalidate the copyright registration." Sierra-Pascual v. Pina Records, Inc., 660 F. Supp. 2d at 203 (emphasis in original). The Sierra-Pascual court did not cite to or discuss the current version of 17 U.S.C. § 411(b). See id. Both Lego A/S and Sierra-Pascual specifically involved allegations of fraud on the Register of Copyrights. Neither case provides persuasive support for plaintiffs' argument

that 17 U.S.C. § 411(b) requires a showing of fraud or willfulness to invalidate a copyright for purposes of filing a copyright infringement claim.

Additionally, plaintiffs cite to a patent case, Therasense, Inc. v. Becton, Dickinson & Co., 649 F.3d 1276 (Fed. Cir. 2011) (en banc), and argue, in plaintiffs' post-trial brief, that, "[s]ince the court in Theresense [sic] opined that '[b]ut-for proof is required to invalidate copyrights,[']" it "stands to reason that the same high standards of proof must be applied in a copyright infringement case." Therasense, Inc. was a patent case, in which the United States Court of Appeals for the Federal Circuit addressed the "inequitable conduct," patent doctrine. See Therasense, Inc. v. Becton, Dickinson & Co., 649 F.3d at 1285. The United States Court of Appeals for the Federal Circuit in Therasense, Inc. stated:

> Moreover, if this court were to consider standards of materiality in other contexts, the most analogous area of law is copyright. See Sony Corp. of Am. v. Univ. City Studios, Inc., 464 U.S. 417, 439, 104 S.Ct. 774, 78 L.Ed.2d 574 (1984) (finding it appropriate to draw an analogy between copyrights and patents "because of the historic kinship between patent law and copyright law"). But-for proof is required to invalidate both copyrights and trademarks based on applicant misconduct. See 17 U.S.C. § 411(b)(1) (copyright); Citibank, N.A. v. Citibanc Group, Inc., 724 F.2d 1540, 1544 (11th Cir. 1984) (trademarks). The dissent concedes that "but for" materiality is required to cancel a trademark but contends that it is not required to invalidate federal registration of a copyright. Various courts have held otherwise. See 2 Melville B. Nimmer & David Nimmer, Nimmer on Copyright § 7.20 [B][1] (rev. ed. 2010) ("plaintiff's failure to inform the Copyright Office of given facts is without substance, to the extent that the Office would have registered the subject work even had it known those facts"). Moreover, the Copyright Act has codified this "but for" requirement, making clear that copyright registration is sufficient to permit an infringement suit, even if the certificate of registration contains inaccurate information, unless "the inaccuracy of the information, if known, would have caused the Register of Copyrights to refuse registration." 17 U.S.C. § 411(b)(1); see also 2 Nimmer on Copyright § 7.20[B][2] (explaining that the materiality "standard [set forth in the 2008 amendment to the Copyright Act] is well in line with the construction of the Act prior to this amendment").

Therasense, Inc. v. Becton, Dickinson & Co., 649 F.3d at 1295 (alterations in original). The Federal Circuit's decision in Therasense, Inc. does not indicate that, under 17 U.S.C. § 411(b), a showing of fraud or willfulness is required to invalidate a copyright registration for purposes of filing a copyright infringement claim, as the Federal Circuit only mentions that "copyright registration is sufficient to permit an infringement suit, even if the certificate of registration contains inaccurate information, unless 'the inaccuracy of the information, if known, would have caused the Register of Copyrights to refuse registration.'" Therasense, Inc. v. Becton, Dickinson & Co., 649 F.3d at 1295 (quoting 17 U.S.C. § 411(b)).

Based on the discussion above, this court concludes that 17 U.S.C. § 411(b) does not require a showing of fraud or willfulness to invalidate a copyright registration for purposes of filing a copyright infringement claim, and plaintiff has not demonstrated otherwise. The court's conclusion in the above-captioned case regarding the interpretation of 17 U.S.C. § 411(b) is consistent with the United States Court of Appeals for the Ninth's Circuit's statement in Gold Value International Textile, Inc. that the "plain language of § 411(b)" "does not require a showing of fraud, but only that the claimant included inaccurate information on the application 'with knowledge that it was inaccurate.'" See Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1147 (quoting 17 U.S.C. § 411(b)(1)(A)). Moreover, other district courts have found that the language in the current version of 17 U.S.C. § 411(b) does not require a showing of fraud or willfulness. See SellPoolSuppliesOnline.com LLC v. Ugly Pools Ariz. Inc., No. CV-15-01856-PHX-BSB, 2018 WL 4565900, at *12 (D. Ariz. Sept. 24, 2018) ("The Court, therefore, concludes that it is not necessary to show fraud on the copyright office for § 411(b)(1)(A) and (B) to apply . . . ."), appeal docketed, No. 18-16839 (9th Cir. Sept. 25, 2018); Palmer/Kane LLC v. Gareth Stevens Publ'g, No. 1:15-CV-7404-GHW, 2016 WL 6238612, at *4 (S.D.N.Y. Oct. 24, 2016) (stating that 17 U.S.C. § 411(b) does not require a showing of fraudulent intent); Palmer/Kane LLC v. Rosen Book Works LLC, 188 F. Supp. 3d 347, 352 (S.D.N.Y. 2016) ("Nor is plaintiff correct that the statute [17 U.S.C. § 411(b)] requires a showing of fraudulent intent on the part of the applicant." (citing Family Dollar Stores, Inc. v. United Fabrics Int'l, Inc., 896 F. Supp. 2d 223, 231 (S.D.N.Y. 2012))).

BNT-Denmark's '500 Registration and '490 Registration, therefore, will be invalid for purposes of filing a copyright infringement action under 17 U.S.C. § 411(b) if the evidence in the record before the court demonstrates: (1) that inaccurate information was included on the two copyright registration applications "with knowledge that it was inaccurate;" and (2) that the inaccuracies, if known by the Register of Copyrights, would have caused the Register of Copyrights to refuse the copyright registration applications. See 17 U.S.C. § 411(b). Courts have indicated that the party asserting that a copyright registration is invalid under 17 U.S.C. § 411(b) bears the burden of proving that inaccurate information was included on a copyright application with knowledge that the information was inaccurate. See Lee v. Karaoke, No. 18-CV-8633-KM-SCM, 2019 WL 2537932, at *6 (D. N.J. June 19, 2019); see also Palmer/Kane LLC v. Gareth Stevens Publ'g, 2016 WL 6238612, at *4; Lennar Homes of Tex. Sales & Mktg., Ltd. v. Perry Homes, LLC, 117 F. Supp. 3d 913, 925 (S.D. Tex. 2015) (stating that the party seeking to invalidate a copyright registration under 17 U.S.C. § 411(b) had failed to identify information which would cause the Register of Copyrights to refuse registration of a copyright application).

Whether the '490 Registration Contains Inaccuracies

BNT-Denmark's '490 Registration is titled "NBC Analysis JWARN 1F PHASE 2, CRID 1489, 1490, and 1491."[19] Defendant argues that the '490 Registration is invalid

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[19] According to the parties' joint stipulation of facts, Marty Sikes transferred five laptop computers containing images of JWARN Block 1F Phase 2 C2PC CRID 1490 to Republic

because the '490 Registration contains "known, material inaccuracies and cannot support ownership of a valid copyright." Specifically, defendant contends that the '490 Registration: (1) incorrectly contains separate versions of JWARN Block 1F Phase 2 software under a single copyright registration; (2) incorrectly failed to exclude government-owned code; (3) contains the incorrect year of completion; and (4) contains the incorrect nation of first publication. Defendant contends that, in the Register of Copyright's March 18, 2019 response to questions referred by the court under 17 U.S.C. § 411(b)(2), the "Register concluded that all of the alleged inaccuracies" in the '490 Registration "would have been material if proven." Defendant argues that BNT-Denmark "cannot satisfy its prerequisites for bringing and establishing a claim, due to known and material errors" in the '490 Registration.

Plaintiffs, however, argue that defendant "has made no showing that any of the information in the applications was inaccurate." Plaintiffs contend that defendant has not met its "heavy burden" of proving that inaccurate information was included in the '490 Registration. Plaintiffs allege that the information contained in the '490 Registration was accurate.

As stated above, in a judicial proceeding, a certificate of copyright registration

> made before or within five years after first publication of the work shall constitute prima facie evidence of the validity of the copyright and of the facts stated in the certificate. The evidentiary weight to be accorded the certificate of a registration made thereafter shall be within the discretion of the court.

17 U.S.C. § 410(c); see also Scholz Design, Inc. v. Sard Custom Homes, LLC, 691 F.3d 182, 186 (2d Cir. 2012) ("A certificate of copyright registration is prima facie evidence of ownership of a valid copyright, but the alleged infringer may rebut that presumption." (citation omitted)); Feder'n of State Massage Therapy Bds. v. Mendez Master Training Ctr., Inc., No. CV 4:17-02936, 2019 WL 3774067, at *5 (S.D. Tex. May 7, 2019) (stating that a certificate of registration under 17 U.S.C. § 410(c) "creates a rebuttable presumption that the copyright is valid" (citation omitted)). Although the '490 Registration lists 2008 as the year of completion, the '490 Registration lists September 28, 2012 as the date of first publication, which is within five years of the April 28, 2014 effective date of the '490 Registration. The '490 Registration, therefore, constitutes "prima facie evidence" of the facts stated in the '490 Registration, although, as discussed below, the evidence in the record before the court refutes certain statements contained in the '490 Registration.

Defendant asserts that the '490 Registration improperly contains three versions of JWARN Block 1F Phase 2 software under a single copyright registration. Defendant argues:

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of Korea personnel. The parties also have stipulated that ten laptop computers containing images of JWARN Block 1F Phase 2 Standalone CRID 1489 were transferred to the Kingdom of Jordan. CRIDs 1489 and 1490 are registered under the '490 Registration.

> [E]ach CRID number refers to a different version of the software being delivered: CRID 1489 incorporated a "Standalone" version of JWARN Block 1F Phase 2; CRID 1490 incorporated a "C2PC" version of JWARN Block 1F Phase 2; and CRID 1491 incorporated an "MCS" version of JWARN Block 1F Phase 2.

Plaintiffs, however, argue the differences between CRIDs 1489, 1490, and 1491 are "functional, resulting from the program being adapted to run in three different configurations: standalone, C2PC, and MCS." Plaintiffs argue that the "Government presented no witness testimony at trial showing that differences between CRIDs 1489, 1490, and 1491 were anything other than the result of interoperability with different systems." Plaintiffs contend that CRIDs 1489, 1490, and 1491 were properly registered under a single copyright registration.

The statute at 17 U.S.C. § 101 states that, "where the work has been prepared in different versions, each version constitutes a separate work." 17 U.S.C. § 101 (2018). In the Register of Copyrights' March 18, 2019 response to the court's referral of copyright questions, the Register of Copyrights states:

> The *Compendium (Third)*[20] illustrates these principles through two relevant examples. The first example involves source code for two versions of the same video game, developed for two different consoles, where the code is "substantially different, and not simply the result of interoperability or hardware compatibility." In such a case, both versions of the software must be registered separately because each version contains different copyrightable authorship and the works are therefore separate works. In the

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[20] In its Register of Copyrights' March 18, 2019 response to the court's referral of copyright questions, the Register of Copyrights stated:

> The principles that govern how the Office examines registration applications are found in the *Compendium of U.S. Copyright Office Practices*. Bruhn NewTech, A/S filed its applications in 2014. The governing principles the Office would have applied at that time are set forth in the *Compendium of U.S. Copyright Office Practices, Second Edition* (referred to as "*Compendium II*"). In this response, the Acting Register cites the current, third edition of the Compendium (referred to as "*Compendium (Third)*"), which was released and became effective December 22, 2014, and was last updated in 2017, where the relevant practices have not materially changed and cites *Compendium II* if the relevant practices have materially changed or where helpful to further illustrate Office practices.

(emphasis in original). Courts have indicated that the Register of Copyright's interpretation of the versions of the Compendium and "copyright law" are entitled to deference. See, e.g., Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1145.

second example, where software is merely "adapted" to run on a different operating system, the different adaptations should not be registered separately. Office practice in such a case is for the registration specialist to communicate with the applicant to determine whether the author contributed a sufficient amount of copyrightable authorship, in which case a second application is warranted, or if the only differences between the versions were the result of interoperability or hardware compatibility, in which case a second application should not be filed.

Similarly, the *Compendium II* describes a scenario where a "previously published program is adapted to run on a different model or brand of computer." In such a case, the Office would have "question[ed] the nature and extent of the adaption" and refused registration for the second work if the changes were "functionally predetermined."

Under the *Compendium II*, where an applicant sought to register different versions of a published work and the versions contained only "uncopyrightable differences," such as modifications made for the purpose of interoperability or hardware compatibility, Office practice was to register only one claim using the "best edition" as the deposit.

(emphasis in original) (footnotes omitted).

According to the Register of Copyrights' March 18, 2019 response:

Had the Office been aware, prior to registration, that the claimed work encompassed three different separately-published versions of a computer program, the Office would have corresponded with the applicant to determine whether the three submitted versions of the program were substantially different or rather if the program had merely been adapted to run on a different model or brand of computer, as well as whether any differences between the versions were "functionally predetermined" or "simply the result of interoperability or hardware compatibility."

The Register of Copyrights stated that the three versions of the JWARN Block 1F Phase 2 software should have been registered under separate copyright registrations "[i]f the three versions of the program each contained a sufficient amount of copyrightable content that was not simply the result of interoperability or hardware compatibility."

In the above-captioned case, CRIDs 1489, 1490, and 1491 are registered under a single copyright registration, the '490 Registration. CRID 1489 was JWARN Block 1F Phase 2 Standalone software, CRID 1490 was JWARN Block 1F Phase 2 C2PC software, and CRID 1491 was JWARN Block 1F Phase 2 MCS software.[21] Plaintiffs' fact and expert

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[21] The parties' joint stipulation of facts defines Standalone software, C2PC software, and MCS software, stating:

witness, John O'Donahue, testified at the liability trial that: "As it happens, [CRIDs] 1489, 1414 and 1490 are all implementations of the same version of NBC-ANALYSIS, NBC-ANALYSIS 10, ATP-45(C). So the core code is the same, the variations being all GOTS code intended to interface them to the C2PC." (capitalization in original). John O'Donahue's testimony takes the position that CRIDs 1489 and 1490, which are registered under the '490 Registration, contain the same source code, except for government-owned code included in CRID 1490 in order to permit CRID 1490 to operate on the government's C2PC operating system. Former BNT-US employee John O'Donahue's testimony does not suggest, that in his opinion, CRIDs 1489 and 1490 were "substantially different" or that the differences in the source code files in CRIDs 1489 and 1490 were related to something other than compatibility with a standalone system and the government's C2PC system. John O'Donahue's expert report also indicates that CRID 1489 and CRID 1490 both were compatible with ATP-45C standards, and that CRID 1489 and CRID 1490 both utilize a "Bruhn Newtech Baseline" of "NBC-Analysis 10."

According to John O'Donahue's expert report, CRID 1489 contains 91,720 files, while CRID 1490 contains 96,533 files.[22] Defendant argues that "CRID 1489 (Standalone) was built from approximately **5000** fewer files than CRID 1490 (C2PC)" and that the difference in the number of files indicates that CRID 1489 should have been registered separately from CRID 1490. (emphasis in original). Defendant, however, has not demonstrated that the difference in the number of files between CRIDs 1489 and 1490 was related to anything other than the type of system each CRID was designed to operate on. Defendant did not call an expert witness to discuss the differences in the files in CRIDs 1489, 1490, and 1491 or offer an expert opinion as to whether there were substantial differences in the files in CRIDs 1489, 1490, and 1491. Rather, defendant, in one paragraph in its supplemental post-trial brief, argues that the CRIDs in the '490 Registration should have been registered separately. Defendant has not shown that CRIDs 1489, 1490, and 1491 should have been registered under separate copyright registrations, and the evidence before the court does not demonstrate that the '490 Registration contains an inaccuracy based on the '490 Registration's inclusion of CRIDs 1489, 1490, and 1491 under a single copyright registration, as the differences between CRIDs 1489, 1490, and 1491 appear to be related to the different operating systems each CRID is designed to operate on and not related to the functions of CRIDs 1489, 1490, and 1491. Although neither side made a strong showing of their position, the burden of proof on this issue remained with the defendant, and defendant has failed to carry the

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• Standalone: a version of JWARN Block 1 capable of operating in isolation from a network or a command and control host;
• C2PC: a version of JWARN Block 1 capable of operating on the C2PC system; and
• MCS: a version of JWARN Block 1 capable of operating on the MCS system.

[22] John O'Donahue's expert report does not provide the "Bruhn Newtech Baseline" or the numbers of files in CRID 1491.

burden that the '490 Registration improperly contains three versions of the JWARN Block 1F Phase 2 software under a single copyright registration.

The second alleged inaccuracy in the '490 Registration relates to whether BNT-Denmark knowingly failed to identify and exclude government code in the copyright application for the '490 Registration. According to defendant, there is a substantial amount of government code in the '490 Registration. Defendant argues:

> The trial record establishes that the Government owned at least these significant aspects of the source code:
>
> • Battlefield Management Functions, see, e.g., Stip. [the parties' joint stipulation of facts] ¶ 40;
>
> • C2PC and MCS Integration code, see, e.g., Stip. ¶ 40;
>
> • Messaging formats, see, e.g., Tr. [transcript] 608:25-09:24 (O'Donahue);
>
> • Modeling tools and interoperability, see, e.g. Stip. ¶ 33, Tr. 628:18-30:23 (O'Donahue); and
>
> • Additional features developed in response to JPMIS requirements, see Stip. ¶ 34.

Defendant further asserts that, "[b]y 2008, BNT-US's list of Government-owned software components spanned a 47-page 'GOTS Source Code Summary' document. In total, BNT-US identified 49 distinct GOTS source code components comprising hundreds of individual GOTS source code files."

According to plaintiffs' supplemental brief addressing the Register of Copyrights' March 18, 2019 response, a "question of fact exists as to whether uncopyrightable government material within CRIDs 1489, 1490, 1491 constituted a substantial portion of this software, when balanced against the copyrightable portion of the deliveries, i.e., BNT-Denmark core NBC-ANALYSIS COTS product." (capitalization in original). Plaintiffs argue that defendant has not presented evidence or expert testimony indicating that the government off-the-shelf components incorporated into CRIDs 1489, 1490, and 1491 were substantial. Plaintiffs also assert that defendant has not presented any evidence indicating that "the GOTS components of the CRID 1489/1490/1491 deliveries were previously published or registered."

The statute at 17 U.S.C. § 409 (2018) requires, "in the case of a compilation or derivative work, an identification of any preexisting work or works that it is based on or incorporates, and a brief, general statement of the additional material covered by the copyright claim being registered." See 17 U.S.C. § 409(9). According to the Register of Copyright's March 18, 2019 response to the court's referral of copyright questions:

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[T]he *Compendium II* required applicants who sought to register derivative textual works, including derivative computer programs, to exclude all material that had been previously registered or published, including by a third-party, or that was in the public domain.

Additionally, the *Compendium II* explicitly provided that if a work combines copyrightable elements with uncopyrightable government material, the claim does not extend to the uncopyrightable material and the application should include "an appropriate disclaimer or limitation of claims."

Significantly, the requirement to exclude preexisting material from the copyright claim only applied when the preexisting material was "substantial." The *Compendium II* defined "substantial" to mean that the preexisting material represents a "significant portion of the work." The *Compendium II* pointed to a derivative program containing a total of 5,000 lines of program text, fifty of which were previously published, as an example of a work in which the preexisting material was not a substantial portion of the work as a whole.

(emphasis in original) (footnotes omitted). The Register of Copyrights further stated:

If, alternatively, the material owned by the Government or a third-party had been previously published or registered, and the material constituted a 'substantial' portion of the version of the Software that is registered under Copyright Registration No. TX 7-836-490, Bruhn NewTech, A/S would have been required to exclude that material in its application for that version if the Government or third-party owned material was first incorporated into that version of the Software.

In the above-captioned case, the parties have stipulated that the "software object code in CRIDs 1489 and 1490 was compiled from a combination of COTS source code and GOTS source code," including Battlefield Managements Functions. CRID 1490 also contains government-owned C2PC integration code. The Software Administrator's Manuals for CRIDs 1489 and 1490 each state: "JWARN 1F Phase 2 is an application based on a Commercial Off-The-Shelf (COTS) software package developed by Bruhn NewTech, Inc. (BNI). Additional Government Off-The-Shelf (GOTS) capabilities are included in the package." Plaintiffs' expert and fact witness, John O'Donahue, also testified that there was "GOTS code" in CRIDs 1489 and 1490. Thus, based on the evidence before the court, CRIDs 1489 and 1490 contained government off-the-shelf code, which was not identified or specifically excluded in BNT-Denmark's copyright application for the '490 Registration.

As noted in the Register of Copyrights' March 18, 2019 response, BNT-Denmark would have needed to exclude in the copyright application for the '490 Registration the government-owned material incorporated into CRIDs 1489, 1490, and 1491 if "the material owned by the Government or a third-party had been previously published or

registered, and the material constituted a 'substantial' portion of the version of the Software that is registered under Copyright Registration No. TX 7-836-490." Defendant has not offered expert testimony as to whether the government-owned code in CRIDs 1489, 1490, and 1491 was "substantial." Moreover, defendant has not cited to any evidence regarding whether the government-owned code in CRIDs 1489, 1490, and 1491 was "previously published or registered." In the one paragraph in defendant's supplemental post-trial filings addressing whether BNT-Denmark was required to exclude the government-owned code from the application for the '490 Registration, defendant cites to joint exhibit 66, which was admitted into evidence during the liability trial, and argues that, in joint exhibit 66, "BNT-US identified 49 distinct GOTS source code components comprising hundreds of individual GOTS source code files." Joint exhibit 66, which is dated January 28, 2008, is titled "GOTS Source Code Summary" and states "[t]his document is meant to provide a correlation between the JWARN 1F SF2B1[23] feature list and the set of software components created to meet the requirements generated by Joint Project Manager Information Systems (JPM IS)." Joint exhibit 66 is not specific to CRIDs 1489, 1490, and 1491, and joint exhibit 66 does not identify how many of the government "software components" identified in joint exhibit 66 were incorporated into CRIDs 1489, 1490, or 1491. Rather, joint exhibit 66 indicates whether "features added to the NBC-ANALYSIS (now JWARN 1F SF2B1)" are either a "JPM IS Product" or an "NBC-A product (independent of JPM IS requirements)," without reference to CRIDs 1489, 1490, or 1491. (capitalization in original). Defendant has not offered any other testimony regarding which government "software components" in joint exhibit 66 were specifically incorporated into CRIDs 1489, 1490, and 1491. Defendant, therefore, has not established that there was inaccuracy in this regard in BNT-Denmark's application for registration of CRIDs 1489, 1490, and 1491 related to BNT-Denmark's alleged failure to exclude government-owned code from the application.

Regarding the third alleged inaccuracy in the '490 Registration, which involves the year of completion for the '490 Registration, the '490 Registration lists a year of completion of 2008. Defendant contends that BNT-Denmark's "internal records" demonstrate that CRIDs 1489, 1490, and 1491 were not complete until 2012, and that 2012 is the correct year of completion for CRIDs 1489, 1490, and 1491. According to plaintiffs, BNT-Denmark's "original, draft application for copyright registration for CRIDs 1489, 1490, and 1491 listed the date of creation as 2011," and BNT-Denmark's attorney, at the time, who completed the '490 Registration application, Mary Beth Tung, changed the year of completion date on the application from 2011 to 2008 for the '490 Registration after speaking with a copyright examiner. Plaintiffs argue:

> [T]he Government extracted a small number of file names from a much larger collection of file names examined by Mr. O'Donahue. Through this exercise, the Government called attention to the fact that these spreadsheets of file names within CRIDs 1489 and 1490 included a few revision dates from 2012 (i.e., after 2008). The Government provided no expert testimony at trial as to whether these 2012 dates reflected any

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[23] "SF2B1" is not defined in joint exhibit 66 or in the parties' acronym chart submitted to the court.

changes to the NBC-ANALYSIS code after 2008. On the face of the spreadsheets, however, these "2012" files each have "jemclient" file names. JEM is an entirely different software product from NBC-ANALYSIS, and is not a Bruhn NewTech software product. Revisions to code or file names in CRIDs 1489 or 1490 directed only toward allowing the NBC-ANALYSIS software to work with JEM software would not be copyrightable elements, but only software links to the separate JEM dispersion model. Adapting a program to run on a different piece of hardware is not a copyrightable difference. *Compendium II § 610.04.*

(internal references omitted) (emphasis in original).

When submitting an application for copyright registration, the application must include the year in which the creation of the work in the application was completed. See 17 U.S.C. § 409(7). According to the statute at 17 U.S.C. § 101:

A work is "created" when it is fixed in a copy or phonorecord for the first time; where a work is prepared over a period of time, the portion of it that has been fixed at any particular time constitutes the work as of that time, and where the work has been prepared in different versions, each version constitutes a separate work.

17 U.S.C. § 101. The regulation at 31 C.F.R. § 202.3 (2018) further states that the year of completion is defined as "the latest year in which the creation of any copyrightable element was completed." 37 C.F.R. § 202.3(c)(4). In the Register of the Copyrights' March 18, 2019 response to the court's referral of questions, the Register of Copyrights states: "According to the *Compendium II,* if multiple versions of a work are being registered together (because they do not contain copyrightable differences), the applicant should give the date of creation of the latest version of the work." (emphasis in original).

In the above-captioned case, witness Mary Beth Tung, as plaintiffs' attorney, created the application for the '490 Registration. In what plaintiffs and Mary Beth Tung refer to as a "draft" application for the '490 Registration, which is dated April 24, 2014, the year of creation for CRIDs 1489, 1490, and 1491 is listed as 2011. According to Mary Beth Tung's testimony at the liability trial, Ms. Tung received the information for the draft application for the '490 Registration "from the client," including "when it was created." As indicated in the quoted portions of Mary Beth Tung's testimony in the court's Opinion below, Ms. Tung had difficulty recalling many details related to her work in submitting applications for the '490 Registration and the '500 Registration. During her testimony at the liability trial, Mary Beth Tung noted that "[i]t's been years" since she submitted the copyright applications for the '490 Registration and '500 Registration and frequently responded to questions by stating that she could not remember. When Ms. Tung submitted the applications for the '490 Registration and '500 Registration, Ms. Tung was an attorney with Davis, Agnor, Rapaport & Skalny, which is a law firm at which plaintiffs' current counsel of record, Steven Lewicky, formerly was a partner. Ms. Tung testified that she left "the firm at the end of January of 2015." Ms. Tung testified that she became an

attorney in 2011, which is three years prior to when the applications for the '490 Registration and '500 Registration were submitted in 2014. During the liability trial, the following exchange between Ms. Tung and counsel of record for defendant, Scott Bolden, occurred:

> Mr. Bolden: In total, how many copyright applications have you filed as an attorney?
>
> Ms. Tung: I don't know. I wasn't -- at that point, I had been an attorney two or three years, so three years I guess, by 2014. So I don't know.
>
> Mr. Bolden: Could the number be four?
>
> Ms. Tung: It could have been. But I also assisted on copy -- a lot of copyright filings prior to that that were filed by attorneys in the firm. So I don't know. I really don't know.

At the liability trial, Mary Beth Tung was shown plaintiffs' exhibit 1071, containing handwritten notes on paper, and Mary Beth Tung identified the handwriting in plaintiffs' exhibit 1071 as her own handwriting. Ms. Tung stated that, based on her review of the handwritten notes in plaintiffs' exhibit 1071, she believed that she spoke with a copyright examiner on May 1, 2014. Ms. Tung stated that, during the May 1, 2014 discussion, "it appears that we discussed the creation publication date." Ms. Tung stated that her notes also indicated that she had a second discussion with a copyright examiner on May 7, 2014, and that her handwritten notes indicate that "[i]t appears there was some changes that she [the copyright examiner] wanted made," including a "change in the completion date to 2008." The following discussion occurred during Mary Beth Tung's testimony:

> Mr. Lewicky: And do you have a recollection of why the Copyright Office suggested these particular changes?
>
> Ms. Tung: If I remember, there was -- because the first 25 pages and last 25 pages were submitted, they wanted to -- the examiner wanted to make sure that the -- there were some dates I think embedded in the code if I remember, and she just wanted to make sure that those matched. It didn't have anything to do with the actual completion date, it's she felt that what was embedded in the code that was going to be visible to the public would match what the application said. So it was more of an administrative change.

In a May 12, 2014 email message sent by Mary Beth Tung to the copyright examiner, Ms. Tung requested that the completion date for the '490 Registration be changed from 2011 to 2008.

Plaintiffs' expert and fact witness, John O'Donahue, attached to his expert report Microsoft Excel spreadsheets, in native format, containing information related to the

source code files in CRIDs 40, 1489, and 1490, which were titled "CRID40Revisions," "CRID1489Revisions," and "CRID1490Revisions."[24] (capitalization in original). Each of the "Revisions" spreadsheets contained four columns. (capitalization in original). During the liability trial, John O'Donahue testified the first column, Column A, contains "essentially an assigned ID number," the second column, Column B, contains "the name of the source file itself," and the third column, Column C, "shows the name of the source file and the path that it's in." The fourth column, Column D, contains information related to the revisions made to the source code file, as well as the revision number, the date and time of the revision, and the initials of the individual who made the revision.

While looking at the "CRID1489Revisions" spreadsheet during the liability trial, the following exchange between counsel of record for defendant, Scott Bolden, and John O'Donahue occurred:

Mr. Bolden: Let's go to record ID number 122716. And, Mr. O'Donahue, this spreadsheet is with respect to CRID 1489, correct?

Mr. O'Donahue: Yes, it is.

Mr. Bolden: Okay. And so for this particular file, it's named invokejemclient.cpp, and if we could move to column D, please, and this file has a revision of 1.24, with a date of July 17th, 2012. Do you see that?

Mr. O'Donahue: I do.

Mr. Bolden: So does it appear that CRID 1489 was first built in 2012 or thereafter?

Mr. O'Donahue: It does.

Thereafter, when looking at the "CRID1490Revisions" spreadsheet, the following exchange between counsel of record for defendant and John O'Donahue occurred:

Mr. Bolden: Would you agree that you created this particular file with respect to CRID 1490?

Mr. O'Donahue: Yes, I would.

Mr. Bolden: Okay. And let's go to record 92354. All right, the listing at record 92354 is a file again named invokejemclient.cpp, and if we could go to column D, please. That has a revision number of 1.24 with a date of July 17th, 2012, correct?

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[24] CRID 40 is registered under the '500 Registration, and Mr. O'Donahue's revision spreadsheet regarding CRID 40 is discussed below. The record before the court does not contain a revisions spreadsheet for CRID 1491, which is registered under the '490 Registration.

Mr. O'Donahue: Correct.

Mr. Bolden: So do you believe that CRID 1490 was first built in 2012 or at some point thereafter?

Mr. O'Donahue: At some point thereafter, yes.

According to John O'Donahue's "CRID1489Revisions" spreadsheet, in CRID 1489, there are twenty-three source code files with revision dates in July 2012, two source code files with revision dates in 2011, and more than seventy source code files with revision dates in 2009. (capitalization in original). According to John O'Donahue's "CRID1490Revisions" spreadsheet, in CRID 1490, there are twenty-three source code files with revision dates in July 2012, two source code files with revision dates in 2011, and more than one hundred source code files with revision dates in 2009. (capitalization in original). The application for the '490 Registration did not identify any of the source code files revised in 2009, 2011, or 2012, nor did the '490 Registration disclaim those revised source code files from the application for the '490 Registration. Although the application for the '490 Registration claims that the works in the '490 Registration were complete in 2008, both CRIDs 1489 and 1490 were revised multiple times after 2008, most recently in 2012, and plaintiffs' expert and fact witness John O'Donahue testified that CRIDs 1489 and 1490 were not complete until 2012 or sometime thereafter. Thus, listing 2008 as the year of completion in the application for the '490 Registration was inaccurate because source code files in CRIDs 1489 and 1490 were revised in 2009, 2011, and 2012, and CRIDs 1489 and 1490 were not complete until after the revisions occurring in 2012.

Regarding the fourth alleged inaccuracy in the '490 Registration, which is that the '490 Registration allegedly incorrectly lists Denmark as the nation of first publication, defendant argues that the correct nation of first publication is the United States. Defendant contends that CRIDs 1489 and 1490 "were first distributed in the United States, to the United States, by a subsidiary based in the United States." According to defendant, BNT-Denmark's "internal records" demonstrate that CRIDs 1489 and 1490 were first published in the United States. Defendant argues that, "[s]ince the correct information is apparent from its internal records, BNT-Denmark knew or should have known about the inaccurate nations of first publication."

According to plaintiffs, CRIDs 1489 and 1490 were first published in Denmark. Plaintiffs argue that the "Government points out that delivery notes indicate that CRIDs 1489, 1490, and 1491 were delivered to locations in the United States, but the elements of NBC Analysis-JWARN that are protectible by copyright (i.e., the core NBC-Analysis product) were first published in Denmark." Plaintiffs argue that defendant "presented no evidence at trial showing that core NBC-ANALYSIS elements of CRIDs 1489 or 1490 were delivered or published in the United States before they were published and made available for commercial sale in Denmark." (capitalization in original).

An application for copyright registration must include the "date and nation of its first publication," "if the work has been published." See 17 U.S.C. § 409(8). In the third edition of the Compendium, the United States Copyright Office defines the nation of first publication as "the country where copies or phonorecords of the work were first published with the authorization of the copyright owner." U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES § 612.5 (3d ed. 2014).[25] The statute at 17 U.S.C. § 101 defines publication as:

> [T]he distribution of copies or phonorecords of a work to the public by sale or other transfer of ownership, or by rental, lease, or lending. The offering to distribute copies or phonorecords to a group of persons for purposes of further distribution, public performance, or public display, constitutes publication. A public performance or display of a work does not of itself constitute publication.

17 U.S.C. § 101. At least one court has indicated that computer software products are published when the computer software products are "distributed for sale." Auto. Data Sols., Inc. v. Directed Elecs. Can., Inc., No. CV 18-1560-GW(EX), 2018 WL 4742289, at *5 (C.D. Cal. Aug. 15, 2018); see also COMPENDIUM (THIRD) § 612.2 ("Software is distributed when copies are distributed by purchase or license, whether in CD-ROM format or online (provided that the copies are actually downloaded and not merely accessed online).").

In the April 24, 2014 draft application for the '490 Copyright Registration, as plaintiffs' then attorney Mary Beth Tung originally listed the United States as the nation of first publication for CRIDs 1489, 1490, and 1491 and listed the copyright "[c]laimants" as BNT-US. During her testimony, Ms. Tung testified that she received the information required for the April 24, 2014 draft application "from the client." During Ms. Tung's testimony, plaintiffs' counsel of record, Steven Lewicky, inquired about Ms. Tung's Mary 2014 telephone conversations with a copyright examiner, asking: "Do you recall any discussion with the Copyright Office about the changing or altering the location of the creation of the software, the country of creation?" Ms. Tung responded: "I don't remember any discussions about that at all." On the issued certificate of registration for the '490 Registration, however, the copyright claimant is BNT-Denmark, the nation of first publication is Denmark, and the date of first publication is listed as September 28, 2012. As discussed above, the nation of first publication is not determined by where a work is created, but, rather, is determined by where the work is first published. See U.S. COPYRIGHT OFFICE, COMPENDIUM OF U.S. COPYRIGHT OFFICE PRACTICES (THIRD) § 612.5.

BNT-US delivered JWARN Block 1F Standalone CRID 1489 and JWARN Block 1F Phase 2 C2PC CRID 1490 to JPMIS on September 28, 2012, which is the same date of first publication stated in the '490 Registration. BNT-US' September 28, 2012 deliveries of CRID 1489 and CRID 1490 were made to JPMIS in San Diego, California, and BNT-

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[25] As stated in the Register of Copyrights' March 18, 2019 response to the court's referral of questions, the "principles that govern how the Office examines registration applications are found in the *Compendium of U.S. Copyright Office Practices*." (emphasis in original).

US' delivery notes for CRIDs 1489 and 1490 both state "Release Date: September 28, 2012." BNT-US' delivery notes for CRIDs 1489 and 1490 also state that CRIDs 1489 and 1490 "may not be exported from the United States, either in their original form or incorporated in other end items, without the prior written approval of the U.S. Department of State." (emphasis omitted). The record before the court does not support that BNT-Denmark had distributed CRIDs 1489 and 1490, which were designed and delivered to the United States government pursuant to BNT-US' subcontracts with Northrop Grumman, to the public or any other entity in Denmark or elsewhere prior to BNT-US' September 28, 2012 deliveries of CRIDs 1489 and 1490 to the government in San Diego, California. As discussed above, the deliveries of CRIDs 1489 and 1490 were made by BNT-US as part of Northrop Grumman's "Global Operations" project, and both CRIDs 1489 and 1490 contained government off-the-shelf code. CRID 1490 specifically was designed to operate on the United States government's C2PC operating system. The accurate nation of first publication for the '490 Registration, therefore, is the United States, as opposed to the listed nation of Denmark. Indeed, the '490 Registration identifies September 28, 2012, as the date of first publication, which is the date BNT-US delivered CRIDs 1489 and 1490 to the United States government in San Diego, California.

Plaintiffs also argue that BNT-Denmark's "core" NBC-Analysis software, which plaintiffs define as the "core COTS product developed and periodically updated by BNT-Denmark," was first published in Denmark, and, thus, the country of first publication for the '490 Registration is Denmark for CRIDs 1489, 1490, and 1491. Under a heading titled "Limitation of copyright claim," the '490 Registration, however, stated "Material <u>excluded</u> from this claim: <u>previous versions</u>." (capitalization in original) (emphasis added). The '490 Registration, therefore, explicitly "excluded" previous versions of BNT-Denmark's NBC-Analysis, including previous versions of "core" software, published prior to CRIDs 1489, 1490, and 1491 from the '490 Registration. As stated in the Register of Copyrights' March 18, 2019 response:

> Any material that had been included in a version of the Software that had been published previously could not be claimed as part of the TX 7-836-490 application. Indeed, Bruhn NewTech, A/S explicitly disclaimed previous versions of the Software in the TX 7-836-490 application, so the material in those versions is not covered by that registration.

The '490 Registration pertains to CRIDs 1489, 1490, and 1491 and needed to reflect the nation in which CRIDs 1489, 1490, and 1491 were first published. As discussed above, the evidence before the court indicates that CRIDs 1489 and 1490 were first published in the United States on September 28, 2012. Moreover, if the court accepted plaintiffs' argument that CRIDs 1489 and 1490 were first published in Denmark because BNT-Denmark's "core" NBC-Analysis software was sold in Denmark, the date of first publication, which is September 28, 2012, would be inaccurate and incorrect, as BNT-Denmark had sold its "core" NBC-Analysis software prior to September 28, 2012. The '490 Registration, therefore, contains inaccuracy as to the nation of first publication.

Whether the '500 Registration Contains Inaccuracies

The '500 Registration is titled, "NBC Analysis - CRID 0040." Defendant argues that the '500 Registration is invalid for purposes of filing a copyright infringement claim because the '500 Registration allegedly contains an incorrect year of completion and an incorrect nation of first publication. Regarding the year of completion, defendant argues that the '500 Registration states that the year of completion for CRID 40 is 1998, while BNT-Denmark's "internal records" provide that CRID 40 was completed in 1999. Plaintiffs assert:

> The date of the '2076 Contract is May 13, 1998. Mr. Windesheim testified that Bruhn NewTech delivered the DOS software for NBC-ANALYSIS five or six days after the company signed the contract (i.e., during May 1998). The Windows version of NBC-ANALYSIS designated as CRID 0040 was delivered to the Government on January 15, 1999. Applying the Copyright Office's guidance, only the "most complete" version of a program is to be registered, and the Windows version was the most complete. Because the core software of NBC-ANALYSIS was created in 1998, and the 1999 Windows version was a modification to allow it to run on a different platform, both versions did not require registration.

(capitalization in original) (internal references omitted). Defendant, however, contends:

> Plaintiffs argue that the 1998 date was correct by conflating the registered CRID 40 delivery with an unregistered prior "DOS version" delivery. Plaintiffs' argument is deeply flawed and contradicted by the Register's views. Again, the Register explained that BNT-Denmark's registrations were limited to the most recent changes, and could not encompass content from previously published works. And again, BNT-Denmark's internal records demonstrate that CRID 40 was first completed and built in 1999.

(internal references omitted).

> As stated above, in a judicial proceeding, a certificate of copyright registration
>
> made before or within five years after first publication of the work shall constitute prima facie evidence of the validity of the copyright and of the facts stated in the certificate. The evidentiary weight to be accorded the certificate of a registration made thereafter shall be within the discretion of the court.

17 U.S.C. § 410(c). The '500 Registration lists a date of first publication of January 12, 1999, which indicates publication happened more than five years before the April 28, 2014 effective date of the '500 Registration. The "evidentiary weight to be accorded" to the '500 Registration, therefore, is "within the discretion of the court." See id. Certain courts have stated that, "[e]ven in the case where a registration certificate is dated more

than five years after the date of first publication, the court may exercise its discretion under § 410(c) and give it the weight of prima facie evidence." Lee v. Karaoke, 2019 WL 2537932, at *6 (internal quotation marks and citation omitted). Other courts have concluded that "the registrations here are entitled to no such presumption [under 17 U.S.C. § 410(c)] because they were filed more than five years after the first publication of the work." DRK Photo v. McGraw-Hill Glob. Educ. Holdings, LLC, 870 F.3d 978, 987 (9th Cir. 2017), cert. denied, 138 S. Ct. 1559, 200 L. Ed. 2d 744 (2018). In the above-captioned case, as discussed below, the evidence in the record before the court refutes certain assertions contained in the '500 Registration.

As discussed above, an application for copyright registration must include the year in which the creation of the work in the application was completed. See 17 U.S.C. § 409(7). The statute at 17 U.S.C. § 101 states:

> A work is "created" when it is fixed in a copy or phonorecord for the first time; where a work is prepared over a period of time, the portion of it that has been fixed at any particular time constitutes the work as of that time, and where the work has been prepared in different versions, each version constitutes a separate work.

17 U.S.C. § 101.

There are two draft copyright applications in the record before the court for the '500 Registration, both of which were prepared by plaintiffs' then attorney Mary Beth Tung. The first draft copyright application for the '500 Registration, plaintiffs' exhibit 1073, is dated April 22, 2014 and states that CRID 40 was complete in 2008. The second draft copyright application for the '500 Registration, which is dated April 24, 2014, lists 1995 as the year of completion for CRID 40. During the liability trial, Ms. Tung stated that she received information related to the year of completion for CRID 40 "from the client." Ms. Tung also reviewed her handwritten notes and testified that, when speaking to a copyright examiner, she believed that there "was a change in [the] completion date to 1998." On May 12, 2014, Ms. Tung sent an email message to the copyright examiner regarding CRID 40 and the '500 Registration, in which Ms. Tung stated: "Change the Year of Completion from '1995' to '1998.'" (capitalization in original).

BNT-US' delivery note for CRID 40 has a "[d]elivery date" of January 15, 1999 and indicates that delivery of CRID 40 was made to the United States Marine Corps Tactical Systems Support Agency in Camp Pendleton, California, pursuant to the '2076 Contract. During the liability trial, Bruce Windesheim, who joined BNT-US in 1995 and whose signature block in 1998 indicates that he was vice president of BNT-US as of 1998, testified that BNT-US's January 15, 1999 delivery included "six CDs" "to replace the original six DOS CDs with the Windows CD that the Government insisted that we do." In the "CRID40Revisions" spreadsheet attached to plaintiffs' expert and fact witness John O'Donahue's expert report, Mr. O'Donahue identifies over sixty source code files which were revised during January 1999. (capitalization in original). During the liability trial, while

examining the "CRID40 Revisions" spreadsheet, counsel of record for defendant, Scott Bolden, and Mr. O'Donahue had the following discussion:

Mr. Bolden: I'd like to turn our attention to assigned ID number 38228, please. On this particular line, do you see a file that's named analyp.csx?

Mr. O'Donahue: Yes, I do.

Mr. Bolden: And that file has a revision of 1.8, with a date of January 12th, 1999?

The Court: Could you highlight that one for us all?

Mr. Bolden: (Counsel complied)

The Court: All right, thank you.

Mr. Bolden: With a revision date of January 12th, 1999?

Mr. O'Donahue: I do.

Mr. Bolden: Okay. We'll look at another one. Let's look at assigned ID number 17844. So here we have a file named attack.cxx with a revision of 1.56, with a date of January 4th, 1999.

Mr. O'Donahue: I see that.

Mr. Bolden: Okay. So CRID 40, at least as what we've seen so far, includes source code files that are dated from 1999?

Mr. O'Donahue: From, yes, January -- contains some in January 1999. That's correct.

Mr. Bolden: So CRID 40 must have been built in 1999 or thereafter?

Mr. O'Donahue: Yes, basically any time after the latest revision you can find anywhere in that list.

The evidence in the record before the court, therefore, indicates that BNT-US was revising the source code files in CRID 40 in January 1999, prior to delivery of CRID 40 to the government on January 15, 1999. CRID 40 does not appear to have been created until after the revisions in the source code for CRID 40 were complete in January 1999. Indeed, plaintiffs' expert and fact witness, former BNT-US software engineer and manager, John O'Donahue, testified that there were revisions to the CRID 40 source code in January 1999, and that CRID 40 was not "built" until "after the latest revision you can find anywhere" in the "CRID40Revisions" spreadsheet. Thus, the statement in the '500

Registration that CRID 40 was complete in 1998 is inaccurate, as the revisions to the source code files in CRID 40 were not complete until 1999.

Moreover, plaintiffs' argument that, "[b]ecause the core software of NBC-ANALYSIS was created in 1998, and the 1999 Windows version was a modification to allow it to run on a different platform, both versions did not require registration" is incorrect. That the DOS version of NBC-Analysis software was created in 1998 does not change that completion of CRID 40, which was NBC-Analysis software designed for use on Windows, occurred in 1999, when the source code revisions of CRID 40 were complete. In the '500 Registration, under a heading titled "Limitation of copyright claim," the '500 Registration stated: "Material excluded from this claim: photographs, previous versions," thereby excluding previous versions of the NBC-Analysis software, including the 1998 DOS version of NBC-Analysis. (capitalization in original). The '500 Registration also identified "text, compilation, editing, computer program, artwork," as "[n]ew material included in this claim." In the Register of Copyrights' March 18, 2019 response, the Register of Copyrights states:

> [T]he application to register NBC Analysis – CRID 0040 covers only new material that was added to or modified in the Software when that version of the Software was published in January 1999. In the application to register this work, Bruhn NewTech, A/S explicitly disclaimed previous versions of the Software. That registration covers only the material in the Software that was first added or modified in the version that was published in January 1999. Any content that had been previously published as part of a different version of the Software is not included in the TX 7-836-500 registration.

(footnote omitted). Plaintiffs' argument involving a 1998 DOS version of NBC-Analysis, therefore, fails, and the '500 Registration inaccurately lists 1998 as the year of completion for CRID 40, which was not complete until 1999.

Defendant also alleges that the nation of first publication of CRID 40 in the '490 Registration, which is listed as Denmark, is inaccurate. Defendant argues that CRID 40 was first published in the United States, not Denmark. Defendant asserts that plaintiffs have not identified any previous publication of CRID 40 other than publication in the United States. According to plaintiffs, however, there is "no evidence" that CRID 40 was first published in the United States. Plaintiffs argue that the code for CRID 40 was written in Denmark, and that "NBC-ANALYSIS was the commercial-off-the-shelf (COTS) product of BNT-Denmark, created in Denmark and made available for commercial sale in Denmark." (capitalization in original).

In plaintiffs' "CRID40Revisions" spreadsheet, prepared by John O'Donahue who testified as both a fact witness and expert witness at the liability trial, Mr. O'Donahue lists revision dates of source code files as being as late as January 12, 1999, and, at the liability trial, Mr. O'Donahue testified that CRID 40 was not complete until "basically any time after the latest revision." As stated above, the '500 Registration stated that BNT-Denmark had "excluded from this claim," i.e., the '500 Registration, "previous versions,"

if any, of CRID 40, which would exclude any previously published versions of CRID 40 from the '500 Registration, including the alleged previous versions of "core" NBC-Analysis software and the 1998 DOS software. At the liability trial, plaintiffs' counsel of record asked Bruce Windesheim: "Did there come a time when Bruhn NewTech U.S. delivered a Windows version of NBC-ANALYSIS?" (capitalization in original). Mr. Windesheim responded: "At the customer's request, we first started it. When they took the original delivery, our Windows version wasn't quite ready. It was almost but not quite, and they insisted that as soon as it was ready, we had to then deliver that to them, and we did." In the delivery note of CRID 40, BNT-US lists a delivery date of January 15, 1999 to the United States government in Camp Pendleton, California. The record before the court indicates that CRID 40 was first complete on January 12, 1999, and was first published in the United States, when BNT-US delivered to the United States government CRID 40 in California on January 15, 1999, pursuant to the '2076 Contract. Thus, the '500 Registration inaccurately lists Denmark as the nation of first publication.

Knowledge and Materiality of the Inaccuracies in the '490 Registration and the '500 Registration

As demonstrated above, the '490 Registration and the '500 Registration both contain inaccurate years of completion, as well as inaccurate nations of first publication. "An inaccuracy in the application does not necessarily invalidate a copyright registration, however." Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1146 (citing 17 U.S.C. § 411(b)(1)). The statute at 17 U.S.C. § 411(b)(1) applies when "the inaccurate information was included on the application for copyright registration with knowledge that it was inaccurate," and "the inaccuracy of the information, if known, would have caused the Register of Copyrights to refuse registration." See 17 U.S.C. § 411(b)(1). "Section 411(b)(1) presents a conjunctive test: both conditions must be satisfied in order for an inaccuracy in a registration to defeat a claim." Archie MD, Inc. v. Elsevier, Inc., 261 F. Supp. 3d at 518-19 (citation omitted). An applicant for a copyright registrant will have knowledge of inaccurate information in a copyright application when the applicant is "aware" of the facts underlying the inaccuracy. See Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1147 ("Fiesta knowingly included previously published designs in its application to register an unpublished collection. Fiesta was aware that it had sold yards of fabric to customers prior to registering the 1461 Design as part of an unpublished collection. Although Fiesta asserts that it did not believe that such sales constituted publication as a matter of law, Fiesta provides no reasonable basis for this belief."); see also Palmer/Kane LLC v. Rosen Book Works LLC, 188 F. Supp. 3d at 352 ("While plaintiff objects that there is no evidence that plaintiff knew the information was inaccurate, plaintiff's 30(b)(6) witness testified that the works had been published by the time the May 18, 2001 application had been filed, which plaintiff surely would have known at the time as well." (emphasis in original)). "Moreover, 'the term """knowingly"""' does not necessarily have any reference to a culpable state of mind or to knowledge of the law. As Justice Jackson correctly observed, """the knowledge requisite to knowing violation of a statute is factual knowledge as distinguished from knowledge of the law.""""" Gold Value Int'l Textile, Inc. v. Sanctuary Clothing, LLC, 925 F.3d at 1147 (quoting Bryan

v. United States, 524 U.S. 184, 192 (1998) (quoting Boyce Motor Lines v. United States, 342 U.S. 337, 345 (1952) (Jackson, J., dissenting))).

Regarding the inaccurate years of completion in the '490 Registration and the '500 Registration, BNT-Denmark, the registrant of the '490 Registration and the '500 Registration, created and had access to the source code for CRIDs 40, 1489, 1490, and 1491. Based on the review by plaintiffs' fact and expert witness, John O'Donahue, of the source code from CRIDs 40, 1489, and 1490, Mr. O'Donahue was able to determine when revisions to source code files in CRIDs 40, 1489, and 1490 were made, as well as which Bruhn NewTech employee had made each revision to the source code files. Former BNT-US employee John O'Donahue described the process by which Bruhn NewTech maintained its source code files, stating:

> For Bruhn NewTech, Bruhn NewTech was actually ISO 9001 certified as an IT development company, which meant that they had to follow a large number of rules defined in ISO 9001. Amongst these are the use of what's called a code management system.
>
> Now, the purpose of a code management system is to track the software at various different levels. So starting at the lowest level, the lowest level would be a single code file, and that code file, as I mentioned earlier, tends to go through a number of revisions. So the configuration management system keeps track of those revisions by revision number, revision date and time stamp, and the ID of the developer who made the revision.
>
> The way that the system that Bruhn NewTech used did this was, at least in part, to record this information at the bottom of every file. So every source file will show at the bottom a list of revisions made to it with the revision number, date, time stamp and initials.
>
> The next level up is that the configuration management system keeps track of exactly which versions, so the revisions of each code file go into a given customer release. So, for instance, the first one that we've been discussing in this case is called customer release ID 40, or CRID40, and the code management system retained a record of exactly which source code files and which versions of those source code files went into that particular revision.
>
> Subsequently, higher numbers were reduced for later customer releases, and they would also be tracked the same way. So you would a find a list of files with the current revision level and then you could look in the file for the revision history for that particular file.

BNT-Denmark, therefore, had the source code files for CRIDs 40, 1489, 1490, and 1491 and was able to look at the source code files to determine when the CRIDs were

completed for CRIDs 40, 1489, 1490, and 1491 based on the latest revision to each of those four CRIDs.

Moreover, BNT-Denmark knew that the Copyright Office did not have the entire source code for CRIDs 40, 1489, 1490, and 1491. In her testimony at the liability trial in the above-captioned case, plaintiffs' then attorney Mary Beth Tung, who submitted applications for the '490 Registration and the '500 Registration, testified that she received only part of the "computer code" from "the client" and that she did not receive the entire "computer code" from "the client." Ms. Tung testified that "I did not have the complete computer code" and indicated that her deposits with the Copyright Office did not include the "complete computer code" because "[i]t's not required to be filed." According to Ms. Tung's testimony, only "the first 25 pages and last 25 pages were submitted," and "the examiner wanted to make sure that the -- there were some dates I think embedded in the code if I remember, and she just wanted to make sure that those matched." The dates Ms. Tung referred to were included in the record before the court. In the material deposited with the Copyright Office for the '490 Registration, the following image appears:

```
$Log: mainfrm.cpp $
    Revision 1.204  2008/03/28 06:52:52Z  ip
    NwtDb#16988: Contents file for EOD plug-in online help sometimes uses
WinNBCs content
```

As indicated in the image immediately above, the material deposited with the '490 Registration lists a revision date of March 28, 2008, which the copyright examiner would have been able to review. The materials deposited with the '500 Registration include numerous revision dates in 1998, including the following image:

```
$Log: MainFrm.cpp $
    Revision 1.120  1998/12/29 13:32:35Z  kpr
    Typos/Grammar correction from EBA.
    Revision 1.119  1998/12/21 06:47:30  jwj
    Operational mode and security level updated when setup wizard
    is started from the startup dialog
    -
    Revision 1.118  1998/12/15 10:52:42  jwj
    Corrected error NWTDB# 5955
    Security key check when program is running
    -
    Revision 1.117  1998/12/07 18:41:12  jwj
    Error NWTDB# 5802 corrected.
    (When closing program with a map maximized, the program fails to
open.)
    Error NWTDB# 5878 corrected.
    (Runtime error when changing scenario with message dialog open)
```

As indicated in the image immediately above, there are revision dates in 1998, which would have been available for review by the copyright examiner.

Plaintiffs, however, knew that they had not provided the entire source code for CRIDs 40, 1489, 1490, and 1491 to Ms. Tung and knew that Ms. Tung only had a portion of the source code for CRIDs 40, 1489, 1490, and 1491 to provide to the Copyright Office.

As such, BNT-Denmark knew that the revision dates in the portions of code for CRIDs 40, 1489, 1490, and 1491 being provided to the Copyright Office would not provide accurate years of completion because BNT-Denmark knew that Ms. Tung, and the Copyright Office, did not have the full source code for CRIDs 40, 1489, 1490, and 1491. Ms. Tung's testimony indicates that BNT-Denmark was aware that the copyright examiner was looking at dates "embedded in the code" provided to the Copyright Office, which was limited and incomplete, in an effort to determine when CRIDs 40, 1489, 1490, and 1491 were first completed. BNT-Denmark, however, had the complete source code for each of CRIDs 40, 1489, 1490, and 1491 at the time it submitted its applications for the '490 Registration and '500 Registration and was able to review the revision dates in the source code to determine when each of the CRIDs were first completed. As indicated in the testimony of John O'Donahue, BNT-Denmark had the ability to look at individual CRIDs to see when the source code files were last revised, which provides the year in which a CRID is completed. The evidence before the court does not indicate BNT-Denmark, as a multi-national software corporation, was unable to review the revision dates in its source code of CRIDs 40, 1489, 1490, and 1491 to determine when those CRIDs were created, as the information contained within BNT-Denmark's own files provided the BNT-Denmark with accurate years of completion. Thus, BNT-Denmark had knowledge of the correct years of completion for CRIDs 40, 1489, 1490, and 1491 and should have established whether the information being submitted to the Copyright Office was accurate. Specifically, BNT-Denmark had the knowledge to determine whether it was inaccurate to state in the copyright application for the '500 Registration that CRID 40 was complete in 1998, as opposed to 1999, and whether it was inaccurate to state in the '490 Registration that CRIDs 1489 and 1490 were complete in 2008, as opposed to 2012.

Regarding the inaccurate nations of first publication, BNT-US' delivery notes indicate when, where, and to which organization CRIDs 40, 1489, and 1490 were delivered. As stated above, BNT-Denmark had the source code and knew when CRIDs 40, 1489, and 1490 were first complete. By knowing when CRIDs 40, 1489, and 1490 were complete and where CRIDs 40, 1489, and 1490 were first distributed to a customer, BNT-Denmark knew where CRIDs 40, 1489, and 1490 were first published. BNT-Denmark also had knowledge that it had disclaimed previous versions, if any, of CRIDs 40, 1489, and 1490 in its copyright applications for the '490 Registration and '500 Registration, as its attorney at the time, Mary Beth Tung, had requested, in writing, that all previous versions be excluded from the '490 Registration and '500 Registration. BNT-Denmark had knowledge of the facts surrounding the first publication of CRIDs 40, 1489, and 1490, and knew that CRIDs 40, 1489, and 1490 were first sent for distribution to the United States government in California shortly after each CRID was complete. By expressly disclaiming previous versions, BNT-Denmark could not have reasonably believed that it had previously published versions of CRID 40, 1489, and 1490 in a nation other than the United States. Thus, BNT-Denmark had knowledge of the facts indicating that Denmark was an inaccurate nation of first publication for CRIDs 40, 1489, and 1490.

In the Register of Copyrights' March 18, 2019 response to the court's referral of copyright questions, the Register of Copyrights states that it "would have refused registration" if it was aware that the application for the '490 Registration listed an

inaccurate nation of first publication and states that it "would have refused registration" if it was aware that the application for the '500 Registration listed an inaccurate nation of first publication. Regarding the year of completion for the '490 Registration, the Register of Copyright's response states:

> Assuming that the work that was the subject of the application for TX 7-836-490 was completed in 2012, had the Office been aware at the time the application was submitted that the claimed work was completed in 2012 rather than 2008, the Office would have refused registration for the work if the application indicated the work had been completed in 2008.

In the Register of Copyright's March 18, 2019 response, the Register of Copyrights also states:

> Assuming that the work that was the subject of the application for TX 7-836-500 was completed in 1999, had the Office been aware at the time the application was submitted that the claimed work was completed in 1999 rather than 1998, the Office would have refused registration if the application indicated that the work had been completed in 1998.

The Register of Copyrights, therefore, would have refused registration of BNT-Denmark's copyright applications for the '490 Registration and the '500 Registration if the Register of Copyrights had known that the copyright applications for the '490 Registration and the '500 Registration contained the inaccurate years of completion discussed above and inaccurate nations of first publication also discussed above. Thus, BNT-Denmark does not have valid registrations for purposes of filing copyright infringement claims concerning the CRIDs BNT-Denmark applied to register under the '490 Registration and the '500 Registration. See 17 U.S.C. § 411(b)(1); see also SellPoolSuppliesOnline.com LLC v. Ugly Pools Ariz. Inc., 2018 WL 4565900, at *15 ("Therefore, the Court concludes that, pursuant to § 411(b)(1), Plaintiff's certificate of registration is not sufficient to bring a copyright infringement claim because the registration application includes inaccurate information, Plaintiff included the inaccurate information 'with knowledge that it was inaccurate,' and 'the inaccuracy of the information, if known, would have caused the Register of Copyrights to refuse registration' with a July 2014 publication date." (quoting 17 U.S.C. § 411(b)(1))).

In plaintiffs' second amended complaint, BNT-Denmark asserts that the "unauthorized transfer of the original software code, and the updates and improvements to that code, to ROK and Jordanian armed forces resulted in loss of revenue and profit to BNT-Denmark." (internal references omitted). The only two copyright registrations identified in the second amended complaint are the '490 Registration and '500 Registration. The '490 Registration and '500 Registration, however, are invalid for purposes of filing a copyright infringement claim under 17 U.S.C. § 411(b)(1), as discussed above. BNT-Denmark, therefore, has not established that the alleged transfers of software to the Republic of Korea and the Kingdom of Jordan constitute copyright

infringement. Thus, Count II in plaintiffs' second amended complaint is without merit as to both the allegations involving the Republic of Korea and the Kingdom of Jordan.

Application of 28 U.S.C. § 1498(c)

Although BNT-Denmark does not possess valid copyright registrations for the purposes of filing a copyright infringement claim, the court addresses defendant's argument involving 28 U.S.C. § 1498(c) (2018). Defendant argues that 28 U.S.C. § 1498(c) bars copyright infringement claims arising in a foreign country, and that "[t]he facts demonstrate that the alleged infringements in South Korea are barred because they accrued outside the United States." In a footnote in defendant's post-trial brief, defendant states that the "Government acknowledges that under the specific facts of this case, Section 1498(c) does not bar BNT-Denmark's claim with respect to the alleged infringing transfer of 10 laptops to Jordanian personnel."[26] Plaintiffs, however, assert that 28 U.S.C. § 1498(c) does not bar plaintiffs' copyright infringement claims because the software originally was delivered to the United States government in the United States. According to plaintiffs' post-trial brief:

> Even if §1498(c) did apply, the additional steps of copying and distribution that took place on a United States military base located in South Korea – on the way to delivering the software to South Korean facilities – should properly be considered additional acts undertaken within the United States under the circumstances of this case.

The statute at 28 U.S.C. § 1498(b) states:

> [W]henever the copyright in any work protected under the copyright laws of the United States shall be infringed by the United States, by a corporation owned or controlled by the United States, or by a contractor, subcontractor, or any person, firm, or corporation acting for the Government and with the

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[26] Although not explained in the footnote in defendant's post-trial brief, 28 U.S.C. § 1498(c) does not appear to bar BNT-Denmark's copyright infringement claim involving the Kingdom of Jordan because, as stipulated by the parties, Paul Moroney loaded CRID 1489 onto ten laptop computers "at a Leidos facility in San Diego, California, configured the program, and shipped the computers to DTRA for re-shipment to Jordan." The actions underlying BNT-Denmark's alleged copyright infringement claim involving the Kingdom of Jordan, therefore, occurred within the United States. As discussed below, regarding the laptop computers transferred to the Republic of Korea, the software was loaded onto the laptop computers inside of the Republic of Korea, and the actual transfer of the laptop computers occurred inside of the Republic of Korea. Although 28 U.S.C. § 1498(c) may not bar plaintiffs' alleged copyright infringement claim involving the alleged transfer of CRID 1489 to the Kingdom of Jordan, plaintiffs' alleged copyright infringement claim involving the alleged transfer of CRID 1489 to the Kingdom of Jordan, nevertheless, fails because, as discussed above, plaintiffs' '490 Registration and '500 Registration are invalid under 17 U.S.C. § 411(b).

authorization or consent of the Government, the exclusive action which may be brought for such infringement shall be an action by the copyright owner against the United States in the Court of Federal Claims for the recovery of his reasonable and entire compensation as damages for such infringement . . . .

Id. The statute at 28 U.S.C. § 1498(c), however, states that "[t]he provisions of this section shall not apply to any claim arising in a foreign country." Id.

In Leonardo v. United States, a Judge of this court stated:

It is apparent from the legislative history that section 1498(c) was adopted "to remove the possibility of [the bill] being interpreted as applying to acts of infringement in foreign countries." Zoltek Corp. v. United States, 51 Fed. Cl. 829, 835 (2002) (quoting S. Rep. No. 86-1877, at 7 (1960), reprinted in 1960 U.S.C.C.A.N. 3444, 3450). In addition, the Acting Director of the USIA [United States Information Agency] recommended the adoption of the language from section 2680(k)[27] for section 1498(c) because without it the proposed legislation was "not by its terms limited to infringements in the United States." Def.'s Mot. at 27 (quoting S. Rep. No. 86-1877, at 11 (1960), reprinted in 1960 U.S.C.C.A.N. 3444, 3452). He also brought to the attention of Congress the interpretation of the FTCA by the U.S. Supreme Court which confirmed its application only to acts occurring in the United States. Id.

The FTCA has been interpreted to apply only to tortious conduct occurring in the United States. See United States v. Spelar, 338 U.S. 217, 219, 70 S. Ct. 10, 94 L.Ed. 3 (1949); Smith v. United States, 507 U.S. 197, 200-202, 113 S. Ct. 1178, 122 L.Ed.2d 548 (1993). U.S. courts do not possess jurisdiction under the FTCA to hear a claim based on an incident that took place at a government facility, even an embassy, abroad. See id. In addition, for the purposes of the FTCA, an act "arises" "where the negligent act or omission occurs," Nurse v. United States, 226 F.3d 996, 1003 (9th Cir. 2000) (internal citations omitted), not at the place where the act or omission had its "operative effect." Richards v. United States, 369 U.S. 1, 10, 82 S. Ct. 585, 7 L.Ed.2d 492 (1962).

Leonardo v. United States, 55 Fed. Cl. 344, 354 (2003) (first alteration in original) (footnote omitted). The Leonardo court determined that the "the act which destroyed plaintiff's artwork took place in Brussels, Belgium," at a location the Leonardo court considered to be "diplomatic property" and concluded that the Leonardo "plaintiff's copyright infringement claim is barred by 28 U.S.C. § 1498(c)." See id.

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[27] Section 2680(k) states that the Federal Torts Claims Act (FTCA) shall not apply to "[a]ny claim arising in a foreign country." See 28 U.S.C. § 2680(k).

In the above-captioned case, there were two separate transfers of laptop computers, which contained software provided by BNT-US, to Republic of Korea personnel. The first transfer involved two laptop computers containing images of JWARN Block 1F Phase 2 C2PC CRID 1414, while the second transfer involved five additional laptop computers containing images of JWARN Block 1F Phase 2 C2PC CRID 1490. BNT-US initially delivered CRIDs 1414 and 1490 to the United States government in California. The parties have stipulated that, "[s]ometime between October 27, 2011 and March 20, 2012, the Government made one or more copies of JWARN Block 1F Phase 2 C2PC CRID 1414 in San Diego and transferred one or more copies from San Diego to USFK." The parties also have stipulated that, "[s]ometime between October 1, 2012 and the end of January 2013, the Government made one or more copies of JWARN Block 1F Phase 2 C2PC CRID 1490 in San Diego and transferred one or more copies from San Diego to USFK." The copying of CRIDs 1414 and 1490 in the United States and transferring of copies of CRIDs 1414 and 1490 to the United States Forces Korea appears to have been an authorized use of CRIDs 1414 and 1490, as the government appears to have been making copies of software it acquired for use by the United States military and providing the copies to the United States Forces Korea.

CRIDs 1414 and 1490 were not copied or imaged onto the seven transferred laptops until CRIDs 1414 and 1490 were in the Republic of Korea. The parties have stipulated that government contractor Mark White copied or imaged CRID 1414 onto two laptop computers and copied or imaged CRID 1490 onto five additional laptop computers while Mark White "was inside his workplace in a building in South Korea operated and controlled by the Government." On March 20, 2012, as discussed above, government contractors Paul Moroney and Marty Sikes transferred the two laptop computers containing CRID 1414 to members of the Republic of Korea military, and, subsequently, Marty Sikes transferred the five additional laptop computers containing CRID 1490 to members of the Republic of Korea military. The copying or imaging of CRIDs 1414 and 1490 onto the seven laptop computers which were ultimately transferred to the Republic of Korea, as well as the actual transfer of the seven laptop computers containing images of CRIDs 1414 and 1490, occurred within the Republic of Korea. BNT-Denmark's copyright infringement claims involving CRIDs 1414 and 1490, therefore, arose in a foreign country, and, consequently, the statute at 28 U.S.C. § 1498(c) bars BNT-Denmark's copyright infringement claims involving CRIDs 1414 and 1490. See 28 U.S.C. § 1498(c); see also Leonardo v. United States, 55 Fed. Cl. at 354; cf. United States v. Spelar, 338 U.S. 217, 219 (1949) (stating that an "air base" located in Newfoundland, which was leased to and operated by the United States, was considered to be a foreign country under the FTCA).[28]

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[28] Additionally, defendant argues that BNT-Denmark's "copyright infringement claim is barred by the Government time, material, or facilities proviso" in 28 U.S.C. § 1498(b), and that, "[t]o the extent that BNT-Denmark seeks recovery for acts of copyright infringement that allegedly occurred before June 30, 2013, recovery is barred by Section 1498(b)'s three-year limitation." The court already has determined that BNT-Denmark's '490 and '500 Registrations are invalid for purposes of filing a copyright infringement claim, and that BNT-Denmark's copyright infringement claim involving the Republic of Korea is

CONCLUSION

Plaintiffs have failed to support the breach of contract action asserted in Count I of the second amended complaint or the copyright infringement claims asserted in Count II of the second amended complaint. The Clerk of the United States Court of Federal Claims shall enter **JUDGMENT** in favor of defendant.

IT IS SO ORDERED.

<u>s/Marian Blank Horn</u>
MARIAN BLANK HORN
Judge

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barred under 28 U.S.C. § 1498(c). The court, therefore, does not address defendant's additional arguments in this regard.