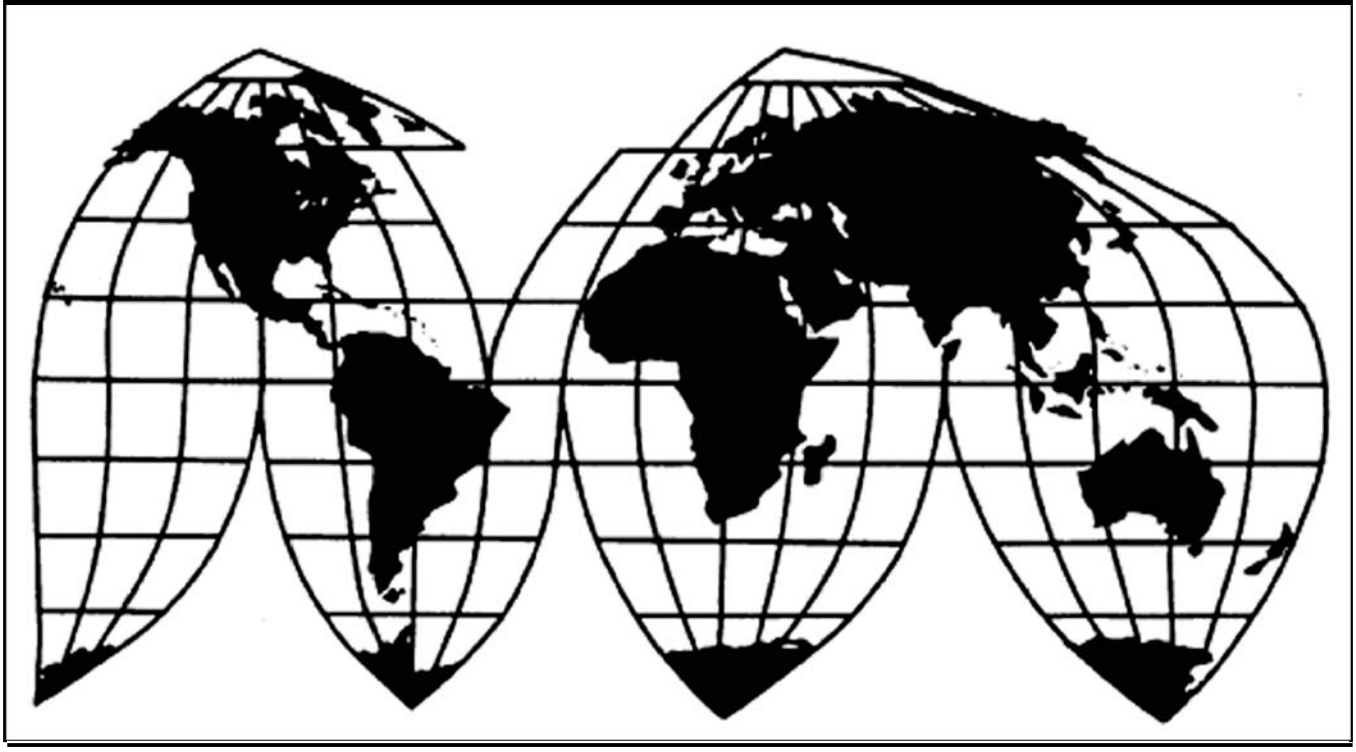
In the Matter of

Certain GPS Chips, Associated Software and Systems, and Products Containing Same

Investigation No. 337-TA-596

Publication 4133 **March 2010**

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

COMMISSIONERS

Shara L. Aranoff, Chairman
Daniel R. Pearson, Vice Chairman
Deanna Tanner Okun
Charlotte R. Lane
Irving A. Williamson
Dean A. Pinkert

Address all communications to
Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

U.S. International Trade Commission

Washington, DC 20436
www.usitc.gov

In the Matter of

Certain GPS Chips, Associated Software and Systems, and Products Containing Same

Investigation No. 337-TA-596

Publication 4133

March 2010

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

In the Matter of **CERTAIN GPS CHIPS, ASSOCIATED SOFTWARE AND SYSTEMS, AND PRODUCTS CONTAINING SAME**	**Investigation No. 337-TA-596**

NOTICE OF COMMISSION DECISION NOT TO REVIEW A FINAL DETERMINATION FINDING NO VIOLATION OF SECTION 337

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined not to review the presiding administrative law judge's ("ALJ") final initial determination ("ID") issued on June 13, 2008 finding no violation of section 337 of the Tariff Act of 1930, 19 U.S.C. § 1337 in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT: Megan M. Valentine, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 708-2301. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 205-2000. General information concerning the Commission may also be obtained by accessing its Internet server at *http://www.usitc.gov*. The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at *http://edis.usitc.gov*. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 205-1810.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation on March 13, 2007, based on a complaint filed by SiRF Technology, Inc. ("SiRF") of San Jose, California. 72 *Fed. Reg.* 11378 (March 13, 2007). The complaint alleged violations of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain GPS chips, associated software and systems, and products containing the same by reason of infringement of certain claims of United States Patent Nos. 6,304,216 ("the '216 patent"); 7,043,363 ("the '363

patent"); 7,091,904 ("the '904 patent"); and 7,132,980 ("the 980 patent"). The complaint named as respondent Global Locate, Inc. of San Jose, California ("Global Locate"). The complaint and notice of investigation were later amended to include one additional claim of the '904 patent. Subsequently, the investigation was terminated with respect to the '904 patent, the '980 patent, and certain claims of the '216 and the '363 patents, and the complaint and notice of investigation were amended to add Broadcom, Inc. of Irvine, California ("Broadcom") as a respondent to the investigation.

On March 13, 2008, the Commission determined not to review an ID issued by the ALJ granting in part SiRF's motion for summary determination that it had satisfied the importation requirements of 19 U.S.C. § 1337. On March 20, 2008, the Commission further determined not to review an ID issued by the ALJ granting SiRF's motion for summary determination that it had satisfied the economic prong of the domestic industry requirement.

On June 13, 2008, the ALJ issued his final ID finding no violation of section 337 by respondents Global Locate and Broadcom. The ID included the ALJ's recommended determination on remedy and bonding. In the subject ID, the ALJ found that Global Locate's products do not infringe asserted claims 1, 6, 10-12, 17-19, 64, 65, 69, 70, 72, or 73 of the '216 patent. The ALJ also found that the asserted claims are not invalid as anticipated by any prior art. The ALJ further found that SiRF failed to prove that a domestic industry exists for articles protected by the '216 patent. In addition, the ALJ found that Global Locate's products do not infringe asserted claims 7, 8, 10-12, 16, and 18-20 of the '363 patent. The ALJ also found that the asserted claims of the '363 patent are invalid as anticipated by each of the GPS Builder System and the First GPS system. The ALJ further found that SiRF has established that a domestic industry exists for articles protected by the '363 patent.

On June 27, 2008, SiRF filed a petition for review seeking review of the ALJ's ID with respect to the '216 patent. Also on June 27, 2008, Global Locate filed a contingent petition for review, seeking review of certain aspects of the ALJ's findings concerning both the '216 and '363 patents. On July 7, 2008, Global Locate filed an opposition to SiRF's petition for review and SiRF filed a response to Global Locate's contingent petition for review. Also on July 7, 2008, the Commission Investigative Attorney filed a response to both SiRF's petition and Global Locate's contingent petition.

Having examined the record of this investigation, including the ALJ's final ID, the petitions for review, and the responses thereto, the Commission has determined not to review the subject ID.

The authority for the Commission's determination is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and in section 210.42(h) of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.42(h)).

By order of the Commission.

William R. Bishop
Acting Secretary to the Commission

Issued: August 14, 2008

CERTAIN GPS CHIPS, ASSOCIATED SOFTWARE AND SYSTEMS, AND PRODUCTS CONTAINING SAME **337-TA-596**

PUBLIC CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **NOTICE OF COMMISSION DECISION NOT TO REVIEW A FINAL DETERMINATION FINDING NO VIOLATION OF SECTION 337** has been served by hand upon the Commission Investigative Attorney Kevin Baer, Esq., and the following parties as indicated, on August 15, 2008.

Marilyn R. Abbott, Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

ON BEHALF OF COMPLAINANT SiRF TECHNOLOGY, INC.:

Alan H. MacPherson, Esq.
Edward C. Kwok, Esq.
Steven M. Levitan, Esq.
MacPHERSON KWOK CHEN & HEID LLP
2033 Gateway Place, Suite 400
San Jose, CA 95110
P-408-392-9250
F-408-392-9262

( ) Via Hand Delivery
( ) Via Overnight Mail
(✓) Via First Class Mail
( ) Other: _____

Helen Li, Esq
Diana M. Rutowski, Esq.
ORRICK HERRINGTON & SUTCLIFFE, LLP
1000 Marsh Road
Menlo Park, CA 94025
P-650-614-7400
F-650-614-7401

( ) Via Hand Delivery
( ) Via Overnight Mail
(✓) Via First Class Mail
( ) Other: _____

F. David Foster, Esq.
Thomas Tso, Esq.
MILLER & CHEVALIER CHARTERED
655 Fifteenth Street, NW
Suite 900
Washington, DC 20005-5701
P-202-626-5800
F-202-626-0858

( ) Via Hand Delivery
( ) Via Overnight Mail
(✓) Via First Class Mail
( ) Other: _____

William L. Anthony, Jr., Esq.
Fabio E. Marino, Esq.
Bas de Blank, Esq.
ORRICK HERRINGTON & SUTCLIFFE, LLP
1000 Marsh Road
Menlo Park, CA 94025
P-650-614-7400
F-650-614-7401

( ) Via Hand Delivery
( ) Via Overnight Mail
(✓) Via First Class Mail
( ) Other: _____

Clarie Merrin, Esq.
T. Vann Pearce, Esq.
ORRICK HERRINGTON & SUTCLIFFE, LLP
Washington Harbour
3050 K Street, NW
Washington, DC 20007-5135
P-202-339-8400
F-202-339-8500

( ) Via Hand Delivery
( ) Via Overnight Mail
(✓) Via First Class Mail
( ) Other: _____

ON BEHALF OF RESPONDENT GLOBAL LOCATE, INC.:

James L. Quarles, III, Esq.
Michael D. Esch, Esq.
James M. Dowd, Esq.
WILMER CUTLER PICKERING HALE AND DORR LLP
1875 Pennsylvania Avenue, NW
Washington, DC 20006
P-202-663-6420
F-202-663-6363

( ) Via Hand Delivery
( ) Via Overnight Mail
(✓) Via First Class Mail
( ) Other: _____

William F. Lee, Esq.
WILMER CUTLER PICKERING HALE AND DORR LLP
60 State Street
Boston, MA 02109
P-617-526-6000
F-617-526-5000

( ) Via Hand Delivery
( ) Via Overnight Mail
(✓) Via First Class Mail
( ) Other: _____

Robert J. Grunther, Jr., Esq.
S. Calvin Walden, Esq.
Paul B. Keller, Esq.
WILMER CUTLER PICKERING HALE AND DORR LLP
399 Park Avenue
New York, NY 10022
P-212-230-8800
F-212-230-8888

( ) Via Hand Delivery
( ) Via Overnight Mail
(✓) Via First Class Mail
( ) Other: _____

PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of	)	
	)	
CERTAIN GPS CHIPS, ASSOCIATED SOFTWARE AND SYSTEMS, AND PRODUCTS CONTAINING SAME	)	Investigation No. 337-TA-596
	)	
	)	

Final Initial and Recommended Determinations

This is the administrative law judge's Final Initial Determination under Commission rule 210.42. The administrative law judge, after a review of the record developed, finds inter alia that there is jurisdiction and that there is no violation of section 337 of the Tariff Act of 1930, as amended.

This is also the administrative law judge's Recommended Determination on remedy and bonding, pursuant to Commission rules 210.36(a) and 210.42(a)(1)(ii). Should the Commission find a violation, the administrative law judge recommends the issuance of a limited exclusion order barring entry into the United States of infringing GPS chips, associated software and systems, and certain downstream products containing same, and the issuance of cease and desist orders, and that a bond be set in the amount of 5 percent of entered value of any downstream product containing said infringing articles during the Presidential review period.

APPEARANCES

For Complainant SiRF Technology, Inc.:

F. David Foster, Esq.
Miller & Chevalier Chartered
655 Fifteenth St., NW, Suite 900
Washington, DC 20005

Alan H. MacPherson, Esq.
MacPherson Kwok Chen & Heid LLP
2033 Gateway Place, Suite 400
San Jose, CA 95110

For Respondent Global Locate, Inc.; Broadcom, Corporation:

James L. Quarles, Esq.
Michael D. Esch, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP
1875 Pennsylvania Ave., NW
Washington, DC 20006

William F. Lee, Esq.
Donald R. Steinberg, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP
60 State St.
Boston, MA 02109

Mark D. Selwyn, Esq.
Joseph F. Haag, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP
1117 California Ave.
Palo Alto, CA 94304

ITC Staff:

Kevin Baer, Esq.
T. Spence Chubb, Esq.
Office of Unfair Import Investigation
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

TABLE OF CONTENTS

ABBREVIATIONS

CBr	Complainant's Post-hearing Brief
CDX	Complainant's Demonstrative Exhibit
CFF	Complainant's Proposed Finding
CORFF	Complainant's Objection To Respondents' Proposed Finding
COSFF	Complainant's Objection To Staff's Proposed Finding
CRBr	Complainant's Post-hearing Reply Brief
CRRFF	Complainant's Proposed Rebuttal Finding to RFF
CRSFF	Complainant's Proposed Rebuttal Finding To SFF
CX	Complainant's Exhibit
JX	Joint Exhibit
RBr	Respondents' Post-hearing Brief
RDX	Respondents' Demonstrative Exhibit
RX	Respondents' Exhibit
RFF	Respondents' Proposed Finding
ROCFF	Respondents' Objection To Complainant's Proposed Finding
ROSFF	Respondents' Objection To Staff's Proposed Finding
RRBr	Respondents' Post-hearing Reply Brief
RRCFF	Respondents' Proposed Rebuttal Finding To CFF
RRSFF	Respondents' Proposed Rebuttal Findings To SFF
SBr	Staff's Post-hearing Brief

SRBr	Staff's Post-hearing Reply Brief
SFF	Staff's Proposed Finding
SX	Staff's Exhibit
Tr.	Transcript Of Pre-hearing Conference and Hearing

OPINION

I. Procedural History

On March 13, 2007, the Commission instituted an investigation under section 337 of the Tariff Act of 1930, 19 U.S.C. § 1337, based on a complaint filed by SiRF Technology, Inc. of San Jose, California (SiRF), alleging a violation of section 337 in the importation, sale for importation, and sale within the United States after importation of certain GPS chips, associated software and systems, and products containing same by reason of infringement of certain claims of U.S. Patent Nos., 6,304,216 ('216 patent), 7,043,363 ('363 patent), 7,091,904 ('904 patent) and 7,132,980 ('980 patent).[1] 72 Fed. Reg. 11378 (Mar. 13, 2007). The complainant named Global Locate, Inc. of San. Jose, California (Global Locate) as the only respondent.

On July 5, 2007, the Commission permanently assigned this investigation to the undersigned.

On July 24, 2007, Order No. 18 extended the target date for completion of the investigation from June 13, 2008, which had been set by Order No. 3, to October 13, 2008, which meant that the final initial determination should be filed no later than June 13, 2008. On August 15, 2007, the Commission determined not to review Order No. 18.

A November 16, 2007 ID granted a motion to add, as a respondent, Broadcom Corporation (Broadcom), which had acquired Global Locate during the pendency of the

---

[1] Complainant subsequently withdrew the allegations with regard to the '904 and '980 patents. Complainant has also withdrawn allegations of certain previously asserted patent claims. See November 11, 2007 and January 24, 2008, IDs granting complainant's motions to terminate with respect to certain patent claims. The Commission determined not to review those IDs.

investigation.[2] The Commission determined not to review said ID.

A February 26, 2008 ID (Order No. 36) found that complainant had established the importation requirement of Section 337 for certain accused products.[3] A February 27, 2008 ID (Order No. 37) found that complainant had satisfied the economic prong of the domestic industry requirement for the '216 patent and '363 patent. The Commission determined not to review both IDs.

A telephone conference was held on March 11, 2008 and the prehearing conference was held on March 13, 2008.[4] Thereafter, a five day evidentiary hearing was held on March 13, 14, 17, 18 and 19, 2008. In issue are alleged infringement of claims 1, 6, 10-12, 17-19, 64-65, 69-70 and 72-73 of the '216 patent and of claims 7, 8, 10, 11, 12, 16, 18, 19 and 20 of the '363 patent. Post Hearing submissions have been filed.[5]

---

[2] Unless otherwise noted respondents in this ID will be referred to as "Global Locate."

[3] Order No. 36 in particular found that the respondents' { } products have been imported into the United States, sold for importation or sold within the United States by or on behalf of respondents, and that the following downstream products containing respondents' chips have been imported into the United States: { }

[4] At the prehearing conference Motion No. 596-76 in limine as it was related to a Dr. Michalson was denied. (Tr. at 39.)

[5] Complainant SiRF filed its initial post-hearing brief and proposed findings of fact on April 7, 2008. Since said filings complainant filed a corrected post-hearing brief and corrected proposed findings. In a letter dated April 23, 2008, to the administrative law judge, complainant attached a list of the "inadvertent errors." Said letter represented that said errors seek to correct typographical errors, and/or erroneous citations to supporting evidence; and that respondents and the staff were apprised of SiRF's intent to submit those errata in a letter dated April 15, 2008 (3 days before the parties' rebuttal briefs and rebuttal findings of fact were due), and did not express any objection.

The matter is now ready for a final decision.[6]

The Final Initial and Recommended Determinations are based on the record compiled at the hearing and the exhibits admitted into evidence. The administrative law judge has also taken into account his observation of the witnesses who appeared before him during the hearing. Proposed findings of fact submitted by the parties not herein adopted, in the form submitted or in substance, are rejected as either not supported by the evidence or as involving immaterial matters and/or as irrelevant. Certain findings of fact included herein have references to supporting evidence in the record. Such references are intended to serve as guides to the testimony and exhibits supporting the finding of fact. They do not necessarily represent complete summaries of the evidence supporting said findings.

II. Jurisdiction Including Parties And Importation

The private parties in this investigation are complainant SiRF and respondents Global Locate and Broadcom. See FF 1-4. The Commission has subject matter jurisdiction over this investigation because SiRF has alleged violation by respondents of Section 337 in connection with the importation of certain GPS chips, pursuant to 19 U.S.C. § 1337. Amgen, Inc. v. U.S. Int'l Trade Comm'n, 902 F.2d 1532, 1536 (Fed. Cir. 1990). Moreover, Order No. 36 found that SiRF has satisfied the importation requirement of 19 U.S.C. § 1337(a)(1)(B). In addition, the Commission has personal jurisdiction over respondents in this investigation because respondents have participated fully in said investigation, including participation in discovery and motion

---

[6] On May 20, 2008, the administrative law judge in his Order No. 44 granted the joint motion of the private parties to reopen the record to admit into evidence RX-112, RX-113, RX-252, RX-434, CX-479 and CX-485. On April 4, 2008 complainant also filed an unopposed motion for leave to modify its exhibit list. Said motion is granted.

practice. See Certain Audible Alarm Devices For Divers, Inv. No. 337-TA-365, Initial Determination, 1995 ITC LEXIS 66, *3 (Feb. 2, 1995).

III. Overview Of The Technology

Pursuant to a joint stipulation of the private parties responding to educational Order No. 31 and which has been identified as SX-2, the following has been stipulated to as an overview of the technology involved in this investigation.

1. History of GPS

The term "GPS" is the abbreviation for Global Positioning System, a satellite-based positioning and timing system which includes low-Earth-orbit satellites, ground stations, and a large and rapidly growing number of receivers. Currently, more than thirty GPS satellites are in orbit around the Earth.

2. Technical Underpinnings of GPS

The GPS satellites are constantly in motion around the Earth at a distance of approximately 10,900 nautical miles, and orbit the Earth in approximately 12 hours. The system is designed such that, at any given time, at least four GPS satellites are potentially visible to a GPS receiver on the ground at any location on the Earth.

Each GPS satellite broadcasts a radio signal that is detected by the GPS receivers. Each GPS satellite has an atomic clock, and continually transmits messages containing the current time at the start of the signal, parameters to calculate the location of the satellite (the "ephemeris"), and the general system health (the "almanac"). All of this information is transmitted on a signal on which a unique code associated with the transmitting satellite is superimposed. For civilian GPS applications, the unique code is called the Coarse/Acquisition ("C/A") code, which belongs to a class of codes used in communication known as pseudo-random noise (PRN) codes, based on their appearance in the signal energy spectrum. Each C/A code is a 1023-bit digital pattern (the bits of the C/A code are also referred to as "chips"), and each satellite transmits its code repeatedly. It takes a satellite one millisecond to transmit its C/A code once. The signals from the GPS satellites travel at a known speed - the speed of light through space (i.e., outside of the Earths atmosphere), and slightly slower through the atmosphere. A GPS receiver uses the measured arrival time to compute the distance from the receiver to each satellite, from which the receiver estimates its position using

geometry and trigonometry.

The estimated distance from the ground-based receiver to a satellite is called the "pseudorange." Using the pseudoranges from the visible satellites along with the estimated orbital positions of the satellites (called "ephemeris data"), which also is broadcast by the GPS satellites in their navigation messages, a GPS receiver can accurately determine its own position using the principles of trilateration. The ephemeris data can be obtained either by decoding directly from the satellite signal, or from an aiding source, such as a cellular telephone service provider.

A GPS satellite broadcasts its signal at very low power. (It has been described as a "5-watt light bulb, 11,000 miles away.") As a result, the GPS signals are difficult to distinguish from other radio-frequency ("RF") noise impinging on the GPS receiver. In order for a GPS receiver to determine the pseudoranges discussed above, therefore, the GPS receiver must be a sophisticated signal processor, able to distinguish the low-power GPS signals from other radio-frequency noise. These signal processors typically include both analog and digital electronic circuits, as well as software.

3. The GPS Signal

The GPS signal broadcast by each satellite is a "direct sequence spread spectrum" ("DSSS") signal combining a carrier signal, the PRN code signal, and a "navigation data bit" signal. The "navigation data bit" signal provides the GPS ephemeris data and other information. The carrier signal is a radio signal at a specific frequency that is modified ("modulated")[7] by both the PRN code and the navigation data bit signal. In GPS, while all of the satellites transmit on the same frequency, as mentioned above, each satellite transmits a unique PRN code. This PRN code is the signature that uniquely identifies a satellite from all other GPS satellites. At the receiver, the "modulation" is reversed, to retrieve the PRN code signal and the "navigation data bit" signal from the carrier signal.

4. The Doppler shift

When GPS signals are received by a user, each signal can have a slightly different frequency due to the Doppler effect, also called "Doppler shift." A familiar example of a Doppler shift is an approaching fire engine with its siren going. As the fire engine approaches the listener, the sound of the siren appears to rise in frequency, even though the frequency of the sound transmitted by the fire

---

[7] In a DSSS signal, the modulation does not modify the frequency of the carrier signal. The modulation modifies the "phase" of the signal.

engine is not changing. After the fire engine passes the listener, the frequency of the siren appears (to the listener) to go down in frequency. Because the fire engine is in motion, first toward the listener and then away from the listener, the frequency of the sound wave from the siren is shifted by the motion of the fire engine, relative to the stationary listener.

5. GPS Receiver

Currently, a typical GPS receiver may be implemented in one or more integrated circuits. A GPS receiver typically includes an analog signal processing portion in a radio-frequency circuit (an "RF Front End") and a digital signal processing portion in a baseband circuit (a "Baseband Processor"). In a GPS receiver, the RF Front End receives the GPS signal, filters and amplifies the signal, and converts the resulting signal into a digital format. The resulting digital signal, which is sometimes referred to as the "baseband signal," is sent to the Baseband Processor.

After receiving the baseband signal from the RF Front End, the Baseband Processor must identify the visible satellite sending the signal, and estimate the distance between the receiver and this satellite. The Baseband Processor does this for the signal from each of several visible satellites. Each estimate is based on the time information extracted from the received signal. In order to make the distance estimate, the Baseband Processor must detect the unique PRN code broadcast by each satellite. To "acquire" a satellite, the Baseband Processor has to roughly identify the signal transit time (hence the distance) from the satellite to the receiver and the shift in the frequency of the carrier signal due to the Doppler shift. To synchronize to the start of the GPS signal, the Baseband Processor tests a large number of hypothetical signals, loosely termed "hypotheses," which are constructed from selected combinations of possible PRN codes, code phases and Doppler values. Once the Baseband Processor has determined which hypothesis is most likely correct based on correlation of the received signal with the hypotheses, the satellite associated with the PRN code is then said to have been "acquired."

6. Correlation

Correlation, mentioned above, is a computational method of checking the received signals against the hypotheses to determine which hypothesis is most like the received signal being examined. Loosely speaking, the received signal and the hypotheses are compared to see if they are "lined up."

When the hypothesis and the received signal are properly lined up, if all of the values of samples in the received signal and the hypothesis are either 1 or -1,

multiplying two samples with the same value results in a "1" and multiplying samples with different values results in a "-1." Adding together results for the signal and an incorrect hypothesis would result in a much lower number, generally zero. The answer with the highest value is considered a match between a hypothesis and the received signal, and indicates which hypothesis is likely to be the correct one, as it is most like the received signal.

7. Acquisition

As part of the process of acquiring a satellite, the receiver generates a replica signal according to each hypothesis the receiver makes regarding the received signal. For a GPS signal, the relevant parameters that determine the replica signal include the satellite PRN code, the code-phase, and the Doppler shift. Using the replica signal and the received signal, the receiver calculates a correlation that is summed over a period of time (the "integration time"). As discussed above, the correlation indicates how closely the replica signal matches the received GPS signal. If the replica signal matches the received signal well, the sum of correlations increases with integration time. The process of summing has also been referred to by those of ordinary skill in the art at various times as accumulation or integration. When the correlation reaches a minimum threshold level for a given hypothesis, the receiver has "acquired" the GPS signal.

Further processing may include making pseudorange measurements, and decoding additional information modulated on the received GPS signals. When GPS signals from multiple satellites have been detected, the receiver's position may be determined.

The ability to detect a given GPS signal is affected by both the strength of the received signal and the noise in the environment. A weak signal typically requires a long integration time for the correlation to reach the threshold. Similarly, a noisy environment also requires a long integration time for the correlation to reach the threshold.

8. Tracking a satellite

Once a satellite has been "acquired" the process of "tracking" it can begin. During the tracking period, the GPS receiver and the satellite move relative to each other. The GPS receiver estimates the Doppler shift of the GPS signals, and the GPS receiver can track the GPS signals by making minor adjustments to the previous correct hypothesis to compensate for the relative movement during this tracking period. This allows the GPS receiver to make corrections to its location calculations.

Satellite acquisition and tracking require numerous computation steps for hypothesis testing. As discussed above, one part of hypothesis testing is to calculate a "correlation," between the received GPS signal and a replica of a hypothetical GPS signal.

In order to perform these correlations effectively, Baseband Processors take advantage of the benefits of parallel processing, with satellite acquisition and tracking are often performed in dedicated parts of the Baseband Processor.

IV. '216 Patent

A. Undisputed Facts Relating To The '216 Patent

The private parties in SX-2 stipulated to the following regarding the '216 patent:

The Gronemeyer '216 Patent discloses a method and apparatus for detecting signals, including GPS signals. The Gronemeyer '216 Patent discloses a technique that allows a signal to be processed over a period of time when the signal being received is interrupted by noise during part of the time period (e.g., during transmission of a cellular telephone).

As discussed above [SX-2], to detect a signal transmitted from a satellite, the receiver must be able to distinguish the signal from surrounding RF noise. Under low signal or high noise conditions, the receiver must accumulate correlation data for additional time to distinguish the signal from RF noise. The '216 patent teaches a technique for combining correlation data generated from two separate and distinct segments of the received satellite signal. The Gronemeyer '216 patent informs that:

> Moreover, it is difficult to combine segments of samples captured over different periods of time because each is subject to a different code phase which must be accounted for before the segments can be combined, and these code phases are unknown. In an effort to increase the signal to noise ratio of the received signal, prior art receivers either forgo operation during times in which the received signal is weak, or to extend the sampling period beyond the limits imposed by the external constraints. In certain applications, such as the case of a GPS receiver integrated with a mobile wireless phone, extension of the sampling window is not usually feasible since it would subject the received signal to unacceptable interference from the phone's transmitter. In such applications, the practical effect is to forgo operation of the GPS receiver when the received signal is weak.

> The Gronemeyer '216 Patent allows for combining of correlation data from different segments, even when intervening input data sample segments are interrupted by noise in the environment, or when a significant time has elapsed between these segments resulting from, for example, an interruption to allow transmission by a wireless telephone transmitter, to cause a consequential code phase difference.

In addition to the foregoing, the '216 patent, entitled "Signal Detector Employing Correlation Analysis of Non-Uniform and Disjoint Sample Segments," issued on October 16, 2001, based on an application filed on March 30, 1999. Steven Gronemeyer is the named inventor and he assigned the invention to his employer, Conexant Systems, which was subsequently acquired by SiRF. (CX-1.)

B. Experts

Chris Gregory Bartone was qualified as complainant's expert in the area of GPS technology. (Tr. at 581.)

Michael Braasch was qualified as respondents' expert in the design and operation of GPS receivers. (Tr. at 1874.)

C. Person Of Ordinary Skill In The Art

As of March 30, 1999, the filing date of the '216 patent, a person of ordinary skill in the art relevant to the '216 patent would have held at least a Bachelor's degree in electrical engineering (or had an equivalent academic background) and would have had at least a couple of years experience in GPS receiver design. (Braasch, Tr. at 1875, Bartone, Tr. at 588-90.)

D. Claims In Issue

Complainant has put in issue claims 1, 6, 10, 11, 12, 17, 18, 19, 64, 65, 69, 70, 72 and 73 of the '216 patent. They read:

1. A signal detector comprising:

a receiver for receiving a first segment of a signal, and a second segment of the signal, the first and second segments representing separate and distinct periods of time, and the signal comprising a signal of interest perturbed by noise or pseudo-noise;

a correlator coupled to the receiver for deriving first correlation data, representative of the correlation between the first segment and a hypothesis, and second correlation data representative of the correlation between the second segment and the hypothesis; and a combiner coupled to the correlator for determining a parameter difference between the first and second correlation data, for adjusting a selected one of the first and second correlation data responsive to the parameter difference, and combining the adjusted data with the other of the first and second correlation data to obtain cumulative correlation data useful for detecting the signal of interest or a parameter of the signal of interest.

6. The signal detector of claim 1 in which the parameter difference is a code phase difference, and the combiner is configured to adjust the selected one of the first and second correlation data responsive to the code phase difference.

10. A signal detector comprising:

a receiver for receiving a first segment of a signal and a second segment of the signal, the signal representative of a plurality of signals of interest, each signal of interest representative of a repeating PN code modulated onto a carrier signal, and the first and second segments representing separate and distinct periods of time;

a correlator coupled to the receiver for deriving first correlation data representative of the correlation between the first segment and a combined PN code and code phase hypotheses, and second correlation data representative of the correlation between the second segment and the combined PN code and code phase hypothesis; and

a combiner coupled to the correlator for determining a code phase

difference between portions of the first and second correlation data corresponding to the PN code hypothesis, for adjusting a selected one of the portions of the first and second correlation data responsive to the code phase difference, and combining the adjusted data with the other portion to obtain cumulative correlation data useful for detecting a signal of interest or a parameter of a signal of interest.

11. The signal detector of claim 10 in which the correlator is configured to derive correlation data representative of the correlation between a segment and a plurality of code, code phase, and Doppler shift hypotheses.

12. A GPS receiver including either of the signal detectors of claims 1 and 10.

17. A method for detecting a signal comprising:

receiving a first segment of a signal and a second segment of the signal, the signal representative of a plurality of signals of interest, each signal of interest representative of a repeating PN code modulated onto a carrier signal, the first and second segments representing separate and distinct periods of time;
deriving first correlation data representative of the correlation between the first segment and a combined PN code and code phase hypothesis, and second correlation data representative of the correlation between the second segment and the combined PN code and code phase hypothesis;

determining a code phase difference between portions of the first and second correlation data corresponding to the PN code hypothesis;

adjusting a selected one of the portions of the first and second correlation data responsive to the code phase difference; and

combining the adjusted data with the other portion to obtain cumulative correlation data useful for detecting a signal of interest or a parameter of a signal of interest.

18. The method of claim 17 further comprising successively combining the cumulative correlation data with correlation data from successive segments until the presence and code phase of a

signal of interest can be accurately and reliably detected.

19. The method of claim 17 further comprising deriving correlation data representative of the correlation between a segment and a plurality of code, code phase, and Doppler shift hypotheses.

64. A method for detecting signals of interest, comprising the steps of:

receiving a first segment of a signal of interest;

receiving a second segment of the signal of interest;

deriving a first correlation data representative of the correlation between the first segment and a hypothesis;

deriving a second correlation data representative of the correlation between the second segment and the hypothesis;

determining a parameter difference between the first aid the second correlation data;

selecting one of the first and the second correlation data;

adjusting the selected correlation data in response to the parameter difference to determine an adjusted data; and

combining the adjusted data with the non-selected correlation data to determine a cumulative correlation data useful for detecting the signal of interest.

65. The method of claim 64, wherein the period of time for the first segment and the time period for the second segment are separate, nonoverlapping time periods.

69. The method of claim 64, wherein the correlation data is representative of the correlation between the first segment and a plurality of code, code phase, and Doppler shift hypotheses, and between the second segment and the plurality of code, code phase, and Doppler shift hypotheses.

70. The method of claim 69, wherein a first portion of the first correlation data corresponds to a Doppler shift hypothesis and a second portion of the second correlation data corresponds to the Doppler shift hypothesis, and a code phase difference is determined from a time period between the beginning of the first segment and the Doppler shift hypothesis corresponding to the first

portion, and between the beginning of the second segment and the Doppler shift hypothesis corresponding to the second portion.

72. The method of claim 64, wherein the receiving step receives at least one global positioning system (GPS) signal.

73. The method of claim 64, wherein the parameter difference is a code phase difference.

E. Claim Construction

Claim construction is a question of law. Markman v. Westview Instruments, Inc.,52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996) (Markman); see Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455 (Fed. Cir. 1998). In construing claims, a court should look to intrinsic evidence consisting of the language of the claims, the specification and the prosecution history as it "is the most significant source of the legally operative meaning of disputed claim language." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (Vitronics); see Bell Atl. Network Servs., Inc. v. Covad Commc'n. Group, Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and, when necessary, to explain what the patentee covered by the claims" See U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997).

The claims themselves "provide substantial guidance as to the meaning of particular claim terms." Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (Phillips), citing Vitronics, 90 F.3d at 1582. It is essential to consider a claim as a whole when construing each term, because the context in which a term is used in a claim "can be highly instructive." Id. In construing claims, the administrative law judge should first look "to the words of the claims themselves . . . to define the scope of the patented invention." Vitronics., 90 F.3d at 1582; see

generally Phillips, 415 F.3d at 1312-13. Claim terms "are generally given their ordinary and accustomed meaning." Vitronics, 90 F.3d at 1582. Moreover, each term of a claim should be given its own meaning. See Merck & Co. v. Teva Pharm., USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005), cert. denied 546 U.S. 972 (2005). (Merck & Co.) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.").

In Pause Technology, Inc. v. T.V., Inc., 419 F.3d 1326 (Fed. Cir. 2005) the Court stated:

> . . . in clarifying the meaning of claim terms, courts are free to use words that do not appear in the claim so long as "the resulting claim interpretation . . . accord[s] with the words chosen by the patentee to stake out the boundary of the claimed property." Cf. Renishaw PLC v. Marposs Societá per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998) (noting that "[w]ithout any claim term susceptible to clarification . . . there is no legitimate way to narrow the property right").

Id. at 1333. Also, claim terms are presumed to be used consistently throughout the patent, such that the usage of the term in one claim can often illuminate the meaning of the same term in other claims. Research Plastics, Inc. v. Federal Packaging Corp., 421 F.3d 1290, 1295 (Fed. Cir. 2005) (Research Plastics).

The ordinary meaning of a claim term may be determined by reviewing a variety of sources, which may include the claims themselves, dictionaries and treatises, the written description, the drawings and the prosecution history. Ferguson Beauregard/Logic Controls v. Mega Sys., LLC, 350 F.3d 1327, 1338 (Fed. Cir. 2003). "Dictionaries...are often useful to assist in understanding the commonly understood meaning of words and have been used both by our court and the Supreme Court in claim interpretation." Phillips, 415 F.3d at 1322. The use of a dictionary, however, may extend patent protection beyond what should properly be afforded by a

patent. Also, there is no guarantee that a term is used in the same way in a treatise as it would be by a patentee. Id. Moreover, the presumption of ordinary meaning will be "rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1091 (Fed. Cir. 2003).

The presence of a specific limitation in a dependent claim raises a presumption that the limitation is not present in the independent claim. Phillips, 415 F.3d at 1315. This presumption is especially strong when the only difference between the independent and dependant claims is the limitation in dispute. SunRace Roots Enter. Co., Ltd. v. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003). Moreover, "claim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous." AllVoice Computing PLC v. Nuance Commc'ns, Inc., 504 F.3d 1236, 2007 U.S. App. LEXIS 23949, at *23 (Fed. Cir. 2007). In addition, a claim construction that gives meaning to all the terms of a claim is preferred over one that does not do so. See Merck & Co. 395 F.3d at 1372; Alza Corp. v. Mylan Labs. Inc., 391 F.3d 1365, 1370 (Fed. Cir. 2004) (Alza) (affirming the district court's rejection of both parties' claim construction where those constructions meant that "the inclusion of the word 'base' in the claims would be redundant"). Differences between the claims are helpful in understanding the meaning of claim terms. Phillips, 415 F.3d at 1314.

The preamble of a claim may be significant in interpreting a claim. Thus, "a claim preamble has the import that the claim as a whole suggests for it." Bell Commc'ns Research, Inc. v. Vitalink Commc'ns Corp., 55 F.3d 615, 620, 34 U.S.P.Q.2d 1816, 1820 (Fed. Cir. 1995). If said preamble, when read in the context of an entire claim, recites limitations of the claim, or if

the claim preamble is "necessary to give life, meaning, and vitality" to the claim, then the claim preamble should be construed as if in the balance of the claim. Kropa v. Robie, 187 F.2d 150, 152 (CCPA 1951) (Kropa); see also Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997) (Rowe); Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989) (Corning Glass). Indeed, when discussing the "claim" in such a circumstance, there is no meaningful distinction to be drawn between the claim preamble and the rest of the claim, for only together do they comprise the "claim." If, however, the body of the claim fully and intrinsically sets forth the complete invention, including all of its limitations, and the preamble offers no distinct definition of any of the claimed invention's limitations, but rather merely states, for example, the purpose or intended use of the invention, then the preamble may have no significance to claim construction because it cannot be said to constitute or explain a claim limitation. See Rowe, 112 F.3d at 478; Corning Glass, 868 F.2d at 1257; Kropa, 187 F.2d at 152.

In Pitney Bowes Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1306 (Fed. Cir. 1999) (Pitney Bowes), the preamble statement that the patent claimed a method of or apparatus for "producing on a photoreceptor an image of generated shapes made up of spots" was not merely a statement describing the invention's intended field of use. Instead, the Court found that said statement was intimately meshed with the ensuing language in the claim; and that, for example, both independent claims concluded with the clause "whereby the appearance of smoothed edges are given to the generated shapes." Id. Because this was the first appearance in the claim body of the term "generated shapes," the Court found that the term could only be understood in the context of the preamble statement "producing on a photoreceptor an image of generated shapes made up of spots." Id. Similarly, the Court found that the term "spots" was initially used in the

preamble to refer to the elements that made up the image of generated shapes that were produced on the photoreceptor; that the term "spots" then appeared twice in each of the independent claims; and that the claim term "spots" referred to the components that together made up the images of generated shapes on the photoreceptor and was only discernible from the claim preamble. Id. The Court concluded that in such a case, it was essential that the preamble and the remainder of the claim be construed as one unified and internally consistent recitation of the claimed invention. Id.

The specification of a patent "acts as a dictionary" both "when it expressly defines terms used in the claims" and "when it defines terms by implication." Vitronics, 90 F.3d at 1582. For example, the specification "may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents." Phillips, 415 F.3d at 1323, quoting Iredto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004). Importantly, a person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification. Phillips, 415 F.3d at 1314. Whatever ambiguity may exist with respect to the claim language may be resolved by an examination of the specification. Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002) ("The specification may assist in resolving ambiguity where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.")

A patentee may deviate from the conventional meaning of a particular claim term by making the intended meaning of a particular claim term clear (1) in the specification or (2) during

the patent's prosecution history. Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881, 889 (Fed. Cir. 1984). If using a definition that is contrary to the definition given by those of ordinary skill in the art, however, the patentee's specification must communicate a deliberate and clear preference for the alternate definition. Kumar v. Ovonic Battery Co., Inc., 351 F.3d 1364, 1368 (Fed. Cir. 2003), citing Apple Computers, Inc. v. Articulate Sys., Inc., 234 F.3d 14, 21 n.5 (Fed. Cir. 2000). In ascribing to an alternative definition rather than the ordinary meaning, the intrinsic evidence must "clearly set forth" or "clearly redefine" a claim term so as to put one reasonably skilled in the art on notice that the patentee intended to so redefine the claim term. Bell Atl. Network Servs., Inc. v. Covad Communs. Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001).

The prosecution history, including "the prior art cited," is "part of the 'intrinsic evidence.'" Phillips, 415 F.3d at 1317. The prosecution history "provides evidence of how the inventor and the PTO understood the patent." Id. Thus, the prosecution history can often inform the meaning of the claim language by demonstrating how an inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would be otherwise. Vitronics, 90 F.3d at 1582-83; see also Chimie v. PPG Indus., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005) ("The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution"), quoting ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988); Southwall Techs., Inc. v. Cardinal IG Co., F.3d 1570, 1576 (Fed. Cir. 1995); see also Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1306 (Fed. Cir. 2007), citing Microsoft Corp. v. Multi-tech Sys., Inc., 357 F.3d 1340, 1350 (Fed. Cir. 2004) ("We have held that a statement made by the patentee during prosecution history of a patent in the same

family as the patent-in-suit can operate as a disclaimer.") The prosecution history includes any reexamination of the patent. Intermatic Inc. v. Lamson & Sessions Co., 273 F.3d 1355, 1367 (Fed. Cir. 2001).

In addition to the intrinsic evidence, the administrative law judge may consider extrinsic evidence when interpreting the claims. Extrinsic evidence consists of all evidence external to the patent and the prosecution history, including inventor testimony and expert testimony. This extrinsic evidence may be helpful in explaining scientific principles, the meaning of technical terms, and terms of art. See Vitronics, 90 F.3d at 1583; Markman, 52 F.3d at 980. However, "[e]xtrinsic evidence is to be used for the court's understanding of the patent, not for the purpose of varying or contradicting the terms of the claims." Markman, 52 F.3d at 981. Also, the Federal Circuit has viewed extrinsic evidence in general as less reliable than the patent and its prosecution history in determining how to read claim terms. Phillips, 415 F.3d at 1318. In addition, while extrinsic evidence may be useful, it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence. Phillips, 415 F.3d at 1319.

In Nystrom v. Trex Company 424 F.3d 1136 (Fed. Cir. 2005), the Court stated:

> . . . as explained in Phillips, Nystrom is not entitled to a claim construction divorced from the context of the written description and prosecution history. The written description and prosecution history consistently use the term "board" to refer to wood decking materials cut from a log. Nystrom argues repeatedly that there is no disavowal of scope of the written description or prosecution history. Nystrom's argument is misplaced. Phillips, 415 F.3d at 1321 ("The problem is that if the district court starts with the broad dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly

> expansive."). What Phillips now counsels is that in the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public– i.e., those of ordinary skill in the art– that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source. Id.

Id. at 1144, 1145. In Free Motion Fitness Inc. v. Cybex Int'l Inc., 423 F.3d 1343 (Fed. Cir. 2005), the Court concluded that:

> under Phillips, the rule that "a court will give a claim term the full range of its ordinary meaning", Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir. 2001), does not mean that the term will presumptively receive its broadest dictionary definition or the aggregate of multiple dictionary definitions. Phillips, 415 F.3d at 1320-1322. Rather, in those circumstances, where references to dictionaries is appropriate, the task is to scrutinize the intrinsic evidence in order to determine the most appropriate definition.

Id. at 1348, 1349. In Network Commerce, Inc. v. Microsoft Corp. 422 F.3d 1353 (Fed. Cir. 2005), the Court concluded:

> As we recently reaffirmed in Phillips, "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court." Phillips, 415 F.3d at 1318. Here [expert] Coombs does not support his conclusion [the "download component" need not contain the boot program] with any references to industry publications or other independent sources. Moreover, expert testimony at odds with the intrinsic evidence must be disregarded. Id. ("[A] court should discount any expert testimony that is clearly at odds with the claim construction mandated by . . . the written record of the patent." (internal quotations and citation omitted). That is the case here.

Id. at 1361.

Patent claims should be construed so as to maintain their validity. However, that maxim is limited to cases in which a court concludes, after applying all the available tools of claim

construction, that the claim is still ambiguous. Phillips, 415 F.3d at 1327. If the only reasonable interpretation renders the claim invalid, then the claim should be found invalid. See, e.g., Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999).

1. The Claimed Term "Segment Of A Signal"

Complainant argued that the claimed term "segment of a signal" is a "set of samples of the signal, or a portion of the signal." (CBr at 22.)

Respondents Global Locate argued that a "segment of a signal" is "a portion of a signal." (RBr at 18.)

The staff agreed with respondents and argued that a "segment of a signal" is "a portion of a signal." (SBr at 16.)

Asserted claims 1, 10, 17, and 64 of the '216 patent include the phrase "segment of a signal." For example, the first element of claim 1 recites "a receiver for receiving a first segment of a signal, and a second segment of the signal, the first and second segments representing separate and distinct periods of time..." (CX-1 at 19:30-33 (emphasis added).)[8]

It is undisputed among the parties that a "segment of a signal" is at least "a portion of a signal." (CBr at 22; RBr at 18; SBr at 16.) Moreover, the specification confirms that a "segment" of a signal is indeed a portion of the signal that the receiver is configured to receive.

---

[8] In claims 10, 13, and 17 the term in issue is recited in "a receiver for receiving a first segment of a signal and a second segment of the signal, ... the first and second segments representing separate and distinct periods of time." In claim 22, said term is recited in "means for receiving a signal of interest comprising a first segment and a second segment of the signal of interest, each segment representing a distinct period of time." In claim 43, said term is recited in "a receiver configured to detect a first segment of a signal of interest and a second segment of the signal of interest, and the first segment and the second segment representing distinct periods of time." In claims 64 and 84, said term is recited in "receiving a first segment of a signal of interest; receiving a second segment of the signal of interest."

Thus, the specification repeatedly describes capturing sample "segments" of a continuously transmitted GPS satellite signal. Describing the signal capture process, for example, the specification states:

> In accordance with the purpose of the invention as broadly described herein, there is provided a signal detector configured to combine the results of performing correlation analysis on segments of samples of the received signal that may have non-uniform lengths and that may have been obtained over different and non-overlapping periods of time.
>
> * * *
>
> The GPS processor sends out data capture commands to the sampling circuitry and the matched filter directs the sampling circuitry to capture a segment of samples, and directs the matched filter to process the segment of samples.
>
> * * *
>
> As illustrated [in Fig. 2], the signal detector comprises a receiver 30 configured to receive segments of a signal. The segments may be of nonuniform-length and may be disjoint and separated by arbitrary periods of time. The signal may comprise a signal of interest perturbed by noise.
>
> * * *
>
> The RF receiver section 72 [of Fig. 4] demodulates the received signal to obtain a baseband signal which is provided to the sampling circuitry 74 over signal line 86. The sampling circuitry 74 provides, responsive to timing signals produced by the timing circuitry 76, a segment of samples of the baseband signal taken over a defined sampling window. The segment of samples is provided to the matched filter 82 over signal line 88. The matched filter 82 processes the segment of samples in accordance with a plurality of PN code, Doppler shift, and code phase hypotheses.
>
> * * *
>
> The GPS processor 84 issues data capture commands on signal line

> 92 to the sampling circuitry 74 and the matched filter 82 directs the sampling circuitry 74 to capture a segment of samples, and directs the matched filter 82 to process the segment of samples.

(CX-1 at 3:66-4:4; 4:40-44, 6:1-5; 6:67-7-10; 7-31-36.)

Based on the foregoing, the administrative law judge finds that the claimed term in issue should be construed to mean "a portion of a signal."

Regarding complainant's argument that a "segment of a signal" could also be "a set of samples of the signal," complainant bases its construction on the following passage from the specification (a portion of which is reproduced supra):

> In accordance with the purpose of the invention as broadly described herein, there is provided a signal detector configured to combine the results of performing correlation analysis on segments of samples of the received signal that may have non-uniform lengths and that may have been obtained over different and non-overlapping periods of time. In one embodiment, the segments are obtained during sampling windows of arbitrary length and at arbitrary times, and the results of processing the segments are successively combined until a threshold signal to noise ratio has been achieved.

(CX-1 at 3:66-4:9) (emphasis added) (CBr at 23.) Complainant argued that said passage demonstrates that "segments of samples of the received signal" is the same as "segment of a signal." Contrary to complainant's argument, the administrative law judge finds that the passage cited, supra, merely indicates that the segments of the signal that are subject to the correlation analysis are samples of the signal, (i.e. "segments of samples of the received signal") and not the entire signal. The administrative law judge finds that said passage does not define a single "segment of a signal" to mean the "set of samples of the signal."

2. Claimed Terms "Separate And Distinct Periods of Time" And "Segments Representing Separate And Distinct Periods of Time"

Complainant argued that the claimed term "separate and distinct periods of time" should be construed to mean "unique time periods." (CBr at 23.)

Respondents Global Locate argued that the phrase "segments representing separate and distinct periods of time" should be construed to mean "two portions of the signal captured during non-overlapping time periods that are set apart by a portion of intervening signal." (RBr at 19.)

The staff agreed with respondents. (SBr at 16-17.)

The claimed terms in issue appear in asserted claims 1, 10 and 17. (CX-1.) The parties agree that the "separate and distinct periods of time" limitation requires that the segments of the signals are captured during non-overlapping periods of time. (CBr at 23-24; RBr at 20.) The dispute between the parties is whether the "separate and distinct periods of time" limitation requires that the signal segments be set apart by a portion of intervening signal, i.e. whether the claims cover the situation where the captured signal segments are abutting. (See CBr at 24; RBr at 19.)

The analysis begins with the language of the claims, which requires that the first and second segments not only represent "distinct periods of time," but also represent "separate" time periods. Thus, the administrative law judge finds that the claims include two requirements, viz. the periods of time must be both "separate" and "distinct." See Merck & Co., supra. The administrative law judge finds that to limit "separate and distinct periods of time" to only "unique time periods," as complainant proposed, would ignore the independent meanings of "separate" and "distinct."

In addition an examination of a pair of non-asserted claims in the '216 patent is found to provide further context. In independent claim 22, the claim language requires that "each [signal] segment represent[s] a distinct period of time." (CX-1 at 21:36 (emphasis added).) In claim 23, which is dependent on claim 22, there is a further requirement that "the time period for the first segment and the time period for the second segment are separate, nonoverlapping time periods." (Id. at 21:51-53 (emphasis added).) The administrative law judge finds that claim 23, by using the terms "separate" and "nonoverlapping" together to describe both of the time periods, implies that the terms "separate" and "nonoverlapping" should each be given their own independent meanings. See Merck, 395 F.3d at 1372. If "distinct" means that time periods are unique and "nonoverlapping" means that the time periods do not overlap, the administrative law judge finds that "separate" must have a meaning that is different from "unique" and "overlapping." Otherwise, "separate" has no meaning in the context of claim 23 and would effectively be read out of the claim. See Bicon, Inc. v. Straumann Co., 441 F.3d 945, 951 (Fed. Cir. 2006) (rejecting a claim construction that would read claim elements out of the claim).

The administrative law judge finds that the specification describes the problem to be solved, i.e. when a receiver is only able to capture small segments of signals over intermittent periods of time. (CX-1 at 2:43-3:15.) The specification gives the example of a mobile wireless phone with an integrated GPS receiver. (Id. at 2:46-51.) The GPS receiver may only be able to capture signal segments while the phone is not transmitting. (Id.) This an example of how "external constraints limit the size and occurrence of the sampling period." (Id. at 2:45-46.)

To solve that problem, the specification teaches how to combine the small signal segments captured over different periods of time. (See generally CX-1.) The specification

explains that the signal samples may be "obtained over different and non-overlapping periods of time." (Id. at 4:4.) In describing the "Field of the Invention," the specification states that the signal segments of the "invention" are "separated in time:"

> This invention relates to the field of signal detection using correlation analysis, and more specifically, to correlation analysis in which the results of analyzing segments of samples separated in time and possibly having non-uniform lengths are combined to achieve a greater effective signal to noise ration (SNR).

(Id. at 1:9-14 (emphasis added).) Further, the administrative law judge finds that the specification only describes the situation where the captured signal segments to be combined are separated by an intervening portion of signal. Moreover, the administrative law judge finds nothing in the specification which suggests that a receiver could capture first and second signal segments that are abutting. To the contrary, the administrative law judge finds that the specification is focused only on solving the problem of detecting a signal of interest when the receiver can only capture signal segments that are not abutting, and resolves any potential ambiguity found in the phrase "separate and distinct."

Based on the foregoing, the administrative law judge construes "segments representing separate and distinct periods of time" to mean "two portions of the signal captured during non-overlapping time periods that are set apart by a portion of intervening signal."

3. The Claimed Term "Pseudo-Noise"

Complainant argued that the term "pseudo-noise" should be construed to mean "a noise that has a statistical distribution that is different from ideal thermal or white noise." (CBr at 31.)

Respondents Global Locate argued that the term "pseudo-noise" should be construed to mean "a digital signal other than the signal of interest." (RBr at 26.)

The claimed term "pseudo-noise" is found in asserted claim 1. The term appears in the phrase "the signal comprising a signal of interest perturbed by noise or pseudo-noise." (CX-1 at 19:33-34 (emphasis added).) The context of the term in the claim language demonstrates that "pseudo-noise" is part of the received signal that is not the signal of interest.

The administrative law judge finds that said understanding is confirmed by the specification, which explains that each GPS satellite transmits its own unique signal, and the receiver receives a signal made up of a mixture of the transmissions from various satellites:

> Each satellite transmits a signal modulated with a unique pseudo-noise (PN) code. Each PN code comprises a sequence of 1023 chips which are repeated every millisecond consistent with a chip rate of 1.023 MHZ. Each satellite transmits at the same frequency. For civil applications, the frequency is known as L1 and is 1575.42 MHZ. The GPS receiver receives a signal which is a mixture of the transmissions of the satellites that are visible to the receiver.

(CX-1 at 1:22-29.) Contained within the "mixture of the transmissions" are the signal of interest and the noise or pseudo-noise, which in this case are the signals transmitted by the other satellites. The administrative law judge therefore construes "pseudo-noise" to mean "a signal other than the signal of interest."

The administrative law judge rejects complainant's proposed construction for multiple reasons. Complainant ignored the intrinsic evidence when arguing its position, instead choosing to rely solely on the opinion of its expert. Additionally, complainant's proposed construction contains terms that are neither found nor explained in the specification, such as "statistical distribution" and "ideal thermal or white noise." Complainant however fails to explain what these technical terms mean or why the evidence mandates their inclusion in the construction of

"pseudo-noise." Complainant's construction also fails to accomplish the goal of clarifying the claim language. See U.S. Surgical Corp., supra.

Respondents, in support of their proposed construction, which specified that the signal be a digital signal, argued that the '216 specification discloses that "[e]ach satellite transmits a signal modulated with a unique pseudo-noise (PN) code" (CX-1 at 1:22-23); that "[e]ach PN code comprises a sequence of 1023 chips which are repeated every millisecond consistent with a chip rate of 1.023 MHz;" that a "GPS receiver receives a signal which is a mixture of the transmissions of the satellites that are visible to the receiver;" (CX-1 at 1:27-29); and that "in accordance with a spread spectrum environment, the signal may comprise the combination of multiple signals of interest each encoded using one of a plurality of pseudo-noise (PN) codes. In this case, other signals appear as noise to a particular signal of interest." (CX-1 at 6:6-10.) (RBr at 26-7.) However, respondents have cited no language in the '216 patent whereby the psuedo-noise as claimed must be limited to digital signals.[9]

4. The Claimed Term "Hypothesis"

Complainant argued that the claimed term "hypothesis" should be construed to mean "a quantity characterized by one or more predicted parametric values of interest, such as PN code, Doppler shift and code phase." (CBr at 19.)

Respondents Global Locate argued that the term "hypothesis" should be construed to mean "a signal generated by the receiver representing a theory of how the transmitted positioning signal would appear under a given set of parameters (e.g., PN code, Doppler shift, and/or code

[9] Respondents have argued that "[n]o issue" turns on the construction of the claimed term "psuedo-noise". On this point the staff in its post hearing brief and reply brief did not propose a construction for "psuedo-noise."

phase.)" (RBr at 32.)

The staff did not offer a construction for the claimed term but instead argued that regardless of the specific construction proposed by complainant and respondents, the same hypothesis must be tested against each of the claimed first and second signal segments received. (SBr at 12.)

The term "hypothesis" is found in asserted claims 1, 10, 11, 17, 19, 64, 65, 69, and 70. For example, the term appears in claim 1 as follows:

> a correlator coupled to the receiver for deriving first correlation data, representative of the correlation between the first segment and a hypothesis, and second correlation data representative of the correlation between the second segment and the hypothesis

(CX-1 at 19:35-39 (emphasis added).)

The parties have two areas of dispute with regard to "hypothesis." First, they dispute whether "a hypothesis" used to derive the first correlation data must be identical to "the hypothesis" used to derive the second correlation data.[10] Respondents and the staff argued that "a hypothesis" must be identical to "the hypothesis" (RBr at 13-15; SBr at 12), while complainant argued that "a hypothesis" does not need to be identical to "the hypothesis." (CRBr at 20.)

Respondents Global Locate rely heavily on an antecedent basis argument, stating that "the hypothesis" must be identical to "a hypothesis" as a matter of "hornbook patent law." (RRBr at 14.) The use of antecedent basis, while not conclusive,[11] provides a strong argument

---

[10] While claim 1 is used as an example, the other asserted claims are drafted similarly in terms of antecedent basis.

[11] See Microprocessor Enhancement Corp. v. Texas Instruments Inc., 520 F.3d 1367, 1375-76 (Fed. Cir. 2008).

for finding that the hypotheses are identical. See Warner-Lambert Co. v. Apotex Corp., 316 F.3d 1348, 1356 (Fed. Cir. 2003) ("[I]t is a rule of law well established that the definite article 'the' particularizes the subject which it precedes. It is a word of limitation as opposed to the indefinite or generalizing force of 'a' or 'an.' " (citations omitted)).

The claims require that the same hypothesis must be tested against each of the first and second segments of the received signal. Moreover all the asserted '216 claims have this requirement. Claims 10 and 17 require "deriving first correlation data representative of the correlation between the first segment and a combined PN code and code phase hypotheses and second correlation data representative of the correlation between the second segment and the combined PN code and code phase hypothesis." (CX-1 at 20:3-26, 20:59-21:13 (emphasis added).) Claim 64 recites "deriving a first correlation data representative of the correlation between the first segment and a hypothesis; deriving a second correlation data representative of the correlation between the second segment and the hypothesis." (CX-1 at 23:63-67 (emphasis added).)

The administrative law judge finds that the claims thus require, for example, that if the hypothesis tested against the first segment of received signal is that the signal has the unique PN code of satellite number 1, that the receiver began capturing the signal at the first bit of the repeating 1023 bit code (e.g., a code phase beginning at the first bit), and that the Doppler frequency shift of the received signal is zero kilohertz, then the hypothesis tested against the second segment must also be that the signal's PN code is that of satellite number 1, the code phase begins at the first bit, and the Doppler shift is zero kilohertz. Thus, the administrative law judge finds that changing any one of the parameters that comprised the hypothesis tested against

the first segments before testing it against the second segment would violate the requirement that "the hypothesis" be tested against the second segment.

The administrative law judge finds that an examination of the specification confirms that the hypotheses must be identical consistent with the use of "a hypothesis" and "the hypothesis" in the language of the asserted claims. In describing the combining process, the specification clearly shows that the correlation takes place between the signal segments and the same hypotheses. The correlation results are stored in arrays that correspond to the different possible PN code, code phase, and Doppler shift hypotheses. (CX-1 at 4:28-36.) The arrays are arranged with the each row corresponding to the possible Doppler shift hypotheses and each column corresponding to the possible code phase hypotheses. (Id.) There is a different array for every possible PN code hypothesis. (Id.) When the correlation data in the arrays is combined, it is done by row, and done in a way to match the same PN code and Doppler shift hypotheses. Thus the specification states:

> Numeral 120 identifies one of the arrays in the plurality of cumulative correlation arrays which are maintained. The particular array which is identified is the one corresponding to PN code hypothesis Pni. These arrays are assumed to have been initially set equal to the correlation arrays derived from a first segment of samples. Numeral 122 identifies the corresponding one of the arrays in the plurality of correlation arrays which are derived from a second set of samples. Again, this array corresponds to the PN code hypothesis Pni. In one implementation, the first segment of samples is obtained during a first time period, and the second set of samples is obtained during a subsequent non-consecutive time period.
>
> The row 124 from array 122 is combined with the row 126 from array 120 in the manner shown. Both rows are assumed to correspond to the same Doppler shift hypothesis, DPi.

(CX-1 at 8:32-45 (emphasis added).) In addition, the '216 specification teaches that correlation results should be "grouped" by the hypothesis used to generate them, and that only those results generated by the same hypothesis should be combined. Thus it states:

> [T]he correlation arrays for a segment are grouped by PN code hypothesis, and by Doppler shift hypothesis for a given PN code hypothesis. The result is that each grouping corresponds to a particular combination of PN code hypothesis and Doppler shift hypothesis. In this embodiment, the correlation arrays are combined one grouping at a time.

(CX-1 at 7:53-59 (emphasis added).) The specification also discusses the accumulation of two separate segments of signal by reference to Figure 13. Thus, the specification states that "the process begins at step 370, in which a PN code hypothesis is selected." (CX-1 at 17:42-44 (emphasis added).) Identifying the correlation results to be combined, the patent states that "in step 372, the cumulative correlation array for the selected PN code hypothesis is obtained, and in step 374, the incremental correlation array for the selected PN code hypothesis is obtained." (CX-1 at 17:44-46.)[12] Hence, the administrative law judge finds that the specification reinforces the reading of the plain claim language that the hypotheses are identical.

Based on the foregoing, the administrative law judge rejects the complainant's proposed construction, which allows for a change in the hypothesis between signal segments and finds that

---

[12] As further support for the argument that the two hypotheses must be identical, the only equation disclosed in the specification for calculating the code phase difference would not work if the Doppler shift hypotheses used to generate the correlation data for the two signals were different. (See RFF 587 (undisputed); CX-1 at 5:16-27.) A construction that renders the claimed invention inoperable must "be viewed with extreme skepticism." Talbert Fuel Sys. Patents Co. v. Unocal Corp., 275 F.3d 1371, 1376 (Fed. Cir. 2002), vacated and remanded on other grounds, 537 U.S. 802 (2002).

"a hypothesis" used to derive the first correlation data must be identical to "the hypothesis" used to derive the second correlation data.

Complainant appears to agree with respondents and staff when it states that "SiRF does not disagree with the fact that the same hypothesis must be tested against each of the claimed first and second signals received." (CRBr at 20.) Yet, complainant argued that the specification makes clear that the hypothesis used in the correlation with the first signal segment can be different from the hypothesis used in the correlation with the second segment. While complainant presented multiple arguments in an attempt to support its position, the administrative law judge finds that none of them succeeded in overcoming the plain language of the claims and the clear descriptions in the specification requiring that the hypotheses used in the correlation process be the same for the first signal segment and second signal segment.

Complainant also argued that the specification supports the use of non-identical hypotheses in deriving the first and second correlation data and relied on the following:

> In one implementation, for each segment of samples, the matched filter outputs correlation data derived by correlating various combinations of PN code, Doppler shift and code phase hypotheses with the segment of samples. <u>According to this implementation, the correlation data can be grouped into groupings which correspond to various combinations of specific hypotheses and ranges of hypotheses</u>. In one implementation example, the correlation data comprises a plurality of arrays, wherein each array corresponds to a PN code hypothesis, each row of an array corresponds to a Doppler shift hypothesis, each column of an array corresponds to a code phrase hypothesis, and each entry in the array is a measure of the degree to which the combined PN code, Doppler shift, and code phrase hypothesis corresponding to the entry correlates to the samples.

(CX-1 at 4:22-35.) (emphasis added by complainant.) (CRBr at 20.) Complainant's emphasized statement, however, which states that "the correlation data can be grouped into groupings which correspond to various combinations of specific hypotheses and ranges of hypotheses," does not describe the use of different hypotheses to derive the first and second correlation data. To the contrary the administrative law judge finds that the statement describes the groupings of correlation data after the correlation takes place. The administrative law judge finds that this is clear when the specification, supra, states that the "correlation data can be grouped[.]" (Id. (emphasis added).) Thus, the passage explains that the correlation data may be grouped to correspond to various combinations of hypotheses and ranges of hypotheses. The administrative law judge finds nothing in the quoted passage, supra, which provides support for complainant's argument that a range of hypotheses may be used when deriving the correlation data.

The second dispute among the parties relates to whether a hypothesis is a quantity or a signal. Complainant argued that a hypothesis is a quantity (CBr at 19) while respondents argued that a hypothesis is a signal. (RBr at 32.)

The administrative law judge finds that the specification describes three different kinds of hypotheses: a PN code hypothesis, a code phase hypothesis, and a Doppler shift hypothesis. It is undisputed, as established by the joint stipulation regarding technology (SX-2), that with respect to the GPS receiver:

> After receiving the baseband signal from the RF Front End, the Baseband Processor must identify the visible satellite sending the signal, and estimate the distance between the receiver and this satellite. The Baseband Processor does this for the signal from each of several visible satellites. Each estimate is based on the time information extracted from the received signal. In order to make the distance estimate, the Baseband Processor must detect the

> unique PRN code broadcast by each satellite. To "acquire" a satellite, the Baseband Processor has to roughly identify the signal transit time (hence the distance) from the satellite to the receiver and the shift in the frequency of the carrier signal due to the Doppler shift. To synchronize to the start of the GPS signal, the Baseband Processor tests a large number of hypothetical signals, loosely termed "hypotheses," which are constructed from selected combinations of possible PRN codes, code phases and Doppler values. Once the Baseband Processor has determined which hypothesis is most likely correct based on correlation of the received signal with the hypotheses, the satellite associated with the PRN code is then said to have been "acquired."

(emphasis added). As is seen from the foregoing a hypothesis is a signal generated by the receiver. Therefore, the administrative law judge construes "hypothesis" to mean "a signal generated by the receiver characterized by one or more predicted parametric values of interest, such as PN code, Doppler shift and code phase."

SiRF argued that respondents' construction is somehow inconsistent with Figure 8. (CBr at 20.) However, SiRF's expert Bartone testified:

> Q. One thing we know is there is an arrow labeled 188 coming out of the Doppler shift generator, right?
>
> A. Yes.
>
> Q. And that arrow is, the patent says, is a signal line, right?
>
> A. If it says that, yes, I would believe that.
>
> Q. Well, if you need to check, it is at column 10, line 34.
>
> A. No, that's okay.
>
> Q. That line, that signal line 188 sends a signal, right?
>
> A. Yes.
>
> Q. It sends a signal generated by the receiver, right?

A. Yes.

Q. A signal representing a theory about Doppler, right?

A. Yes.

Q. There is also line 90. Do you see that arrow?

A. Yes.

Q. That's also a signal line, right? If you need to check, it is at column 10, line 59.

A. I'm sorry, which column?

Q. Column 10, line 59, sir.

A. Yes, he uses that line and calls it a signal line.

Q. So line 90 of figure 8 is a signal line, right?

A. Yes.

Q. And it transmits a signal, right?

A. Yes.

Q. A signal generated by the receiver, right?

A. Yes.

Q. A signal representing a theory about PN code, right?

A. Yes.

Q. There is also an arrow between box 192 and 194, right?

A. Yes.

Q. And that's a signal line, right?

A. Yes.

Q. It sends a signal, right?

A. From 192 to 194, yes.

Q. And that signal represents a theory about code phase, right?

A. That's part of the information within that signal.

(Tr. at 1266-1268 (emphasis added).) Thus as to Figure 8, Bartone conceded that the Doppler shift hypothesis is a signal generated by a receiver and applied on signal line 188 representing a theory of how the transmitted positioning signal is affected by Doppler; that the PN code hypothesis is applied as a signal generated by a receiver and applied on signal line 90 representing a theory of what the transmitted positioning signal's PN code will be; and that the PN code phase hypothesis is applied as a signal generated by a receiver on the signal line between boxes 192 and 194, and represents a theory of what the transmitted positioning signal's PN code phase will be.

5. The Claimed Term "Correlation Data"

Complainant argued that the claimed term "correlation data" should be construed to mean "the correlation function and the parameter values of the correlation function." (CBr at 24.)

Respondents Global Locate argued that the claimed term "correlation data" should be construed to mean "the numerical result of mathematically comparing a segment of received signal against a hypothesis." (RBr at 28.)

The staff agreed with respondents. (SBr at 18-19.)

The claimed term "correlation data" appears in asserted claims 1, 10, 17-19, 64, 69, and 70. The context in which "correlation data" appears in the claims provides guidance as to its meaning. For example, claim 1 recites:

> a correlator coupled to the receiver for deriving first correlation data, representative of the correlation between the first segment and a hypothesis, and second correlation data representative of the correlation between the second segment and the hypothesis

(CX-1 at 19:35-39 (emphasis added).) The administrative law judge finds that the claim language makes clear that the "correlation data" must be the data that represents the correlation between a signal segment and a hypothesis. See Phillips, 415 F.3d at 1314 ("[T]he context in which a term is used in the asserted claim can be highly instructive."). Further, in reciting "a correlator coupled to the receiver for deriving first correlation data," (CX-1 at 19:35-36 (emphasis added)) the claim language explains that the correlation data is derived, meaning it is the result of the correlation.

The specification also explains that the correlation data is the result of the correlation between a signal segment and a hypothesis. The "Summary of the Invention" section begins by stating:

> In accordance with the purpose of the invention as broadly described herein, there is provided a signal detector configured to combine the results of performing correlation analysis on segments of samples of the received signal that may have non-uniform lengths and that may have been obtained over different and non-overlapping periods of time.

(CX-1 at 3:66-4:4.) The "Summary of the Invention" section goes on to state:

> In one implementation, for each segment of samples, the matched filter outputs correlation data derived by correlating various combinations of PN code, Doppler shift and code phase hypotheses with the segment of samples.

(Id. at 4:22-25 (emphasis added).) In fact, the parties agree that the specification teaches that correlation data is the output derived from the correlation between a signal segment and a

hypothesis. (RFF 536-37 (undisputed).) Moreover, the parties are in agreement on the meaning of "correlation." The parties jointly stated that "correlation" means "a computational method of checking the received signals against the hypotheses to determine which hypothesis is most like the received signal being examined." (SX-2, at 5.)

Based on the foregoing, the administrative law judge construes "correlation data" to mean "the numerical result from the computational method of checking the received signals against the hypotheses to determine which hypothesis is most like the received signal."

6. The Claimed Term "Combiner"

Complainant argued that the claimed term "combiner" should be construed to mean "a device which combines correlation data with cumulative correlation data accumulated for previous segments." (CBr at 21.)

Respondents Global Locate argued that the term "combiner" should be construed to mean "a device that performs the determining, adjusting and combining features recited in the claim." (RBr at 39.)

The staff agreed with respondents and argued that the term "combiner" should be construed to mean "a device that performs the determining, adjusting and combining features recited in the claim." (SBr at 13.)

The claimed term "combiner" appears in independent claims 1 and 10. In each claim, the "combiner" is defined by the functions that it performs, namely determining, adjusting, and combining. For example, claim 1 recites:

> a combiner coupled to the correlator for determining a parameter difference between the first and second correlation data, for adjusting a selected one of the first and second correlation data

> responsive to the parameter difference, and combining the adjusted data with the other of the first and second correlation data to obtain cumulative correlation data useful for detecting the signal of interest or a parameter of the signal of interest.

(CX-1 at 19:39-47 (emphasis added).) The administrative law judge finds that the claim language itself provides guidance as to what the term "combiner" means. See Phillips, 415 F.3d at 1314 ("Quite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claim terms.") Thus the administrative law judge finds that to a person of ordinary skill in the art, the plain meaning of the term "combiner," as that term is used in the '216 patent's asserted claims, is a device that must perform each of the determining, adjusting, and combining functions recited in the claim.

Further, the administrative law judge finds that the specification discloses that the combiner is the device that performs the claimed functions of determining, adjusting, and combining. Thus, the specification explains the device that performs the determining, adjusting and combining on correlation results is "GPS processor 84" which "combines these correlation arrays as additional segments are captured." (CX-1 at 7:59-62.) In performing the combiner steps, GPS processor 84 uses "an algorithm that accounts for the differing code phases between the segments even though the actual code phases are unknown." (CX-1 at 8:5-7.)

The '216 specification further confirms that a "combiner" performing each of the "determining," "adjusting," and "combining" actions is what the '216 inventor had in mind for his claimed invention. Thus, the problem the inventor was attempting to solve was the difficulty of combining correlation data from "segments of samples captured over different periods of time because each is subject to a different code phase which must be accounted for before the

segments can be combined, and these code phases are unknown." (CX-1 at 2:59-63.) The '216 solution is to combine correlation data for different segments "using an algorithm that allows for the differing code phases between the segments to be accounted for even though the actual code phases are unknown." (CX-1 at 4:63-66.) The claimed "combiner" executes that algorithm. Thus, the specification states that "the code phase difference is determined from the following equation: $\Delta CP = [(F_{PN} + D) \times \Delta T]$ modulo 1 mS" (CX-1 at 5:16-18), and "[t]his code phase difference is then used to combine the rows for the correlation arrays." (CX-1 at 5:44-45.)

Similarly, in describing the "Correlation Process," the specification explains the combining process is comprised of "determining," "adjusting" and "combining" steps. (CX-1 at 8:10-21.) It states that "the code phase difference corresponding to a row is derived from the total time offset between the start of the first segment and the start of the second segment, and the Doppler shift hypothesis corresponding to a row." (CX-1 at 8:13-16.) Thus, the combiner determines a parameter difference between the first and second correlation data. The specification further states that "[a] circular shift of the row for the second segment is then performed, with the amount of the shift being derived from the code phase difference which has been determined." (CX-1 at 8:17-19.) Hence, the combiner adjusts the second correlation data responsive to the parameter difference it has determined. Finally, the specification states that "[t]he entries in the shifted row are then added to the corresponding entries of the corresponding row in the cumulative array." (CX-1 at 8:19-21.) Thus the combiner combines the adjusted data with the unadjusted data.

The administrative law judge further finds that the specification repeatedly and consistently teaches that the way to combine a first correlation data with a second correlation data is by this three step, "determining," "adjusting," "combining" process:

> As indicated by identifying numeral 132 [in Fig. 6], the code phase difference, ΔCP, defining the code phase difference between the start of the first and second segments is determined. The row 124 obtained from array 122 is then circularly shifted by an amount derived from ΔCP. Such is indicated by identifying numeral 134. The entries in the shifted row are then added to corresponding entries in row 126.
>
> * * *
>
> In step 354 [of Fig. 12], the code phase difference, ΔCP, between the two portions is determined.... In step 356, the portion of the incremental correlation data obtained in step 352 is adjusted responsive to the code phase difference between the two portions determined in step 354.... In step 358, the portion of the cumulative correlation data obtained in step 350 is updated with the adjusted data determined in step 358.
>
> * * *
>
> [I]n step 378 (Fig. 13A), the code phase difference, ΔCP, for the selected Doppler shift hypothesis is determined.... In step 380, the corresponding row of the incremental array obtained in step 374 is circularly shifted by an amount derived from the code phase difference determined in step 378.... Then, in step 382, the shifted row from step 380 is added element by element to the corresponding row in the cumulative array.

(CX-1 at 8:51-58, 17:5-29, 17:48-60.) See also:

> This code phase difference is then used to combine the rows for the correlation arrays. In the implementation example, the row of correlation data for the second segment is circularly shifted by the code phase difference. Then, the shifted row is added to the corresponding row of cumulative correlation data, one data element at a time. This process is then repeated for each of the rows of each of the arrays for the second segment. The result is a

> plurality of cumulative correlation arrays which combine the results of the first and second segments.
>
> * * *
>
> In one embodiment, a plurality of cumulative correlation arrays are maintained, which are initially set equal to the correlation arrays derived from a first segment of samples. The correlation arrays for a second segment of samples are then combined with the cumulative correlation arrays one row at a time. According to this embodiment, the code phase difference corresponding to a row is derived from the total time offset between the start of the first segment and the start of the second segment, and the Doppler shift hypothesis corresponding to the row. A circular shift of the row for the second segment is then performed, with the amount of the shift being derived from the code phase difference which has been determined. The entries in the shifted row are then added to the corresponding entries of the corresponding row in the cumulative arrays.

(CX-1 at 5: 44-53, 8:7-21 (emphasis added).) In view of the foregoing the administrative law judge finds that the specification is consistent with the plain language of the claims.

Based on the foregoing, the administrative law judge therefore finds that the term "combiner" should be construed to mean "a device that performs the determining, adjusting and combining features recited in the claim."

Complainant argued that the construction offered by respondents is improper because it is circular, i.e., "if one replaces the term 'combiner' in the relevant claims with respondents' construction, then each of the components of this claim element following the word 'combiner' will appear twice because the word 'combiner' will be replaced by the very language which follows this word in this claim element." (CBr at 22.) However, the administrative law judge finds that the "combiner" in the '216 patent is defined by the claimed functions that it performs.

Hence, the administrative law judge finds that a proper construction must include the claimed functions.

Complainant's proposed construction for "combiner" does reflect a passage in the specification describing the combiner. (See CX-1 at 6:19-22.) However, the administrative law judge finds that complainant's proposed construction fails to provide the full context of the functions that the combiner must perform, thus improperly reading out the three functional limitations imposed by the claim language. See Bicon, 441 F.3d at 951 (rejecting a claim construction that would read claim elements out of the claim).

Further, by taking the construction directly from the specification, the administrative law judge finds that the complainant's construction improperly imports a limitation from the specification into the claims. Phillips, 415 F.3d at 1323 ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments"). He finds nothing in the claim language that requires correlation data to be combined with cumulative correlation data for previous segments. To the contrary, the claim language in claim 1 only requires that first and second correlation data be combined to obtain cumulative correlation data. (See CX-1 at 19:44-47) ("combining the adjusted data with the other of the first and second correlation data to obtain cumulative correlation data").

7. The Claimed Term "Code Phase Difference"

Complainant argued that the claimed term "code phase" should be construed to mean "the delay, in terms of chips or fractions of chips, that a satellite transmission experiences as it travels

between the satellite's transmitter to the GPS receiver." (CBr at 27.) Complainant argued that "code phase difference" should be construed as "the difference in code phase." (CRBr at 27.)

Respondents Global Locate argued that the term "code phase difference" should be construed to mean "a difference in the correlation data resulting from the correlations being performed against signal segments that begin at different points in a repeating code." (RBr at 53.)

The staff argued that it is not clear whether the private parties actually dispute the claimed term in issue. However, the staff further argued that respondents' construction of "code phase difference" is correct. (SBr at 17.)

The claimed term "code phase difference" appears in asserted claims 6, 10, 15, 16, 70, and 73. For example, in independent claim 10, "code phase difference" appears in the following context:

> a combiner coupled to the correlator for determining a code phase difference between portions of the first and second correlation data corresponding to the PN code hypothesis

(CX-1 at 20:18-21 (emphasis added).) The administrative law judge finds that a person of ordinary skill in the art would understand from the plain language of the claims that there is a code phase difference between first and second correlations data due to the fact that the first and second signal segments are captured during "separate and distinct periods of time." (See CX-1 at 20:3-26.)

Referring to the specification, the "Background of the Invention" section describes the problem that the inventor was trying to solve, viz. allowing a receiver to connect with a satellite when the receiver can only capture samples of the signal being transmitted by the satellite on an intermittent basis. (See generally CX-1 at 1:17-3:15.) The specification teaches how to combine

these signal segments in order for the receiver to connect with the appropriate satellite. (See generally CX-1.) Because the signal transmitted by the satellite is a periodic signal, and because the signal segments are captured by the receiver at intermittent times, the administrative law judge finds that one of the signal segments must be adjusted before it can be combined with the other signal segment. Thus the specification states:

> Moreover, it is difficult to combine segments of samples captured over different periods of time because each is subject to a different code phase which must be accounted for before the segments can be combined, and these code phases are unknown.
>
> * * *
>
> This code phase difference is then used to combine the rows for the correlation arrays. In the implementation example, the row of correlation data for the second segment is circularly shifted by the code phase difference. Then, the shifted row is added to the corresponding row of cumulative correlation data, one data element at a time. This process is then repeated for each of the rows of each of the arrays for the second segment. The result is a plurality of cumulative correlation arrays which combine the results of the first and second segments.

(CX-1 at 2:59-62; 5:44-53.) To accomplish the foregoing, the administrative law judge finds that the receiver must calculate the difference in the signal segments that results from the signal segments being captured during "separate and distinct periods of time." (Id.) Said difference is called the "code phase difference," and the specification provides an example equation of how to calculate the code phase difference. (Id. at 5:16-61.) The administrative law judge therefore finds that the term "code phase difference" should be construed to mean "a difference in the correlation data resulting from the correlations being performed against signal segments that begin at different points in a repeating code."

Complainant first construes "code phase" and then argues that "code phase difference" should mean "the difference in code phase."[13] The administrative law judge finds that this approach is incorrect, as "code phase difference" has a specific and separate meaning (as described supra) from the definition of "code phase" offered by complainants. Thus, he finds that the concepts of "code phase" and "code phase difference" are different because "code phase" relates to the delay caused by the signal traveling from the satelllite to the receiver while "code phase difference" relates to the difference between the captured signal segments based on the fact that they were captured during separate and distinct time periods. (See CX-1 at 1: 42-45, 2:59-62 and 5:44-53.)

Further, the administrative law judge finds that complainant takes its proposed construction directly from the "Background of the Invention" section, and thus improperly limits the claims to GPS satellites. He finds such a construction is contrary to the plain language of the claims. See Phillips, 415 F.3d at 1323.

8. The Claimed Term "Doppler Shift"

Complainant argued that the claimed term "Doppler shift" should be construed to mean "a frequency shift in the satellite transmission caused by relative movement between the satellite and the receiver along the line-of-sight (LOS)." (CBr at 30.)

---

[13] Contrary to complainant's assertion, the term "code phase" appears without modifying terms in asserted claims 18. (CX-1 at 21:17.) Otherwise, "code phase" appears as part of "code phase difference" (see, e.g., id. at 19:57-60 (claim 6)) or it appears when describing a code phase hypothesis. (See, e.g., id. at 20:27-30 (claim 11).)

Respondents Global Locate argued that the term "Doppler shift" should be construed to mean "an effective change in the frequency of a received signal due to the relative velocity of a transmitter with respect to the receiver." (RBr at 58.)

The staff agreed with respondents and argued that the term "Doppler shift" should be constructed to mean "an effective change in the frequency of a received signal due to the relative velocity of a transmitter with respect to the receiver." (SBr at 18.)

The claimed term "Doppler shift" appears in asserted claims 11, 19, 69, and 70.

The administrative law judge finds that a person of ordinary skill in the art would not limit the asserted claims containing "Doppler shift" to GPS, or even generic satellite systems. To the contrary, the claims are related to either a "signal detector," a "method for detecting a signal," or a "method for detecting signals of interest." Other claims in the '216 patent, such as claims 12 and 72, are expressly limited to GPS, demonstrating that the patentee intended for the broader claims to cover more than just GPS.

Referring to the specification of the '216 patent, it describes "Doppler shift" as follows:

> The Doppler shift (DS) is a frequency shift in the satellite transmission caused by relative movement between the satellite and the receiver along the line-of-sight (LOS).

(CX-1 at 1:64-66.) "Doppler shift" is defined more generally in relevant technical dictionaries. See, e.g., IEEE Standard Dictionary of Electrical and Electronics Terms 287 (4th ed. 1988) (defining "Doppler shift" as "[t]he magnitude of the change in the observed frequency of a wave due to the Doppler effect. The unit is the hertz" and "Doppler effect" as "[t]he effective change of frequency of a received signal due to the relative velocity of a transmitter with respect to receiver"). The specification's explanation of "Doppler shift" is consistent with the IEEE

dictionary definition. While the specification describes the "Doppler shift" in the context of satellite systems, the specification is not limited to satellite systems. Thus, it notes that signal detector may be used in a variety of applications, only one of which is GPS:

> It is contemplated that the foregoing signal detector can be beneficially employed in a variety of applications, such as in a GPS receiver 70.
>
> * * *
>
> While the discussion here has focused on GPS, the invention can be applied to any system using correlation methods for detecting signals.

(CX-1 at 6:60-62. 19:6-8.)

Based on the foregoing the administrative law judge finds that the more general dictionary definition is appropriate. The administrative law judge therefore construes "Doppler shift" to mean "the magnitude of an effective change in the frequency of a received signal due to the relative velocity of a transmitter with respect to the receiver."[14]

F. Infringement

The unfair acts covered under Section 337 include "all forms of infringement, including direct, contributory, and induced infringement." Certain Home Vacuum Packaging Machines, Inv. No. 337-TA-496, Order No. 44, 2004 ITC LEXIS 202 * 2 n.2 (March 3, 2004). There must be a preponderance of evidence to establish infringement. See Kao Corp. v. Unilever United States, Inc, 441 F.3rd 963 (Fed. Cir. 2006). A determination of patent infringement encompasses a two-step analysis. Advanced Cardiovascular Systems, Inc. v. Scimed Life Systems, Inc., 261

---

[14] The administrative law judge finds that the reference to "magnitude" is supported both by the IEEE dictionary definition, supra, and the specification. (See CX-1 at 1:64-2:40.)

F.3d 1329, 1336 (Fed. Cir. 2001) (Scimed). First, the court determines the scope and meaning of the patent claims asserted, and then properly construed claims are compared to the allegedly infringing device. Id. "Literal infringement of a claim exists when each of the claim limitations reads on, or in other words is found in, the accused device." Allen Engineering Corp. v. Bartell Indus., 299 F.3d 1336, 1345 (Fed. Cir. 2002).

Under the doctrine of equivalents, "a product or process that does not literally infringe upon the express terms of a patent claim may nonetheless be found to infringe if there is equivalence between the elements of the accused product or process and the claimed elements of the patented invention." Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 21 (1997). Equivalency may be determined using the "triple identity test," thus, "focusing on the function served by a particular claim element, the way that element serves that function, and the result . . . obtained by that element . . . ." Id. at 39. Regardless of the linguistic framework of the test used, the "essentially inquiry" is: "[d]oes the accused product or process contain elements identical or equivalent to each claimed element of the patented invention?" Id. at 40.

Direct infringement includes the making, using, selling, offering for sale and importing into the United States an infringing product, without authority. 35 U.S.C. § 271(a). To prove direct infringement, the plaintiff must establish by a preponderance of the evidence that one or more claims of the patent read on the accused device either literally or under the doctrine of equivalents. Scimed, 261 F.3d at 1336.

A person may also infringe a patent claim indirectly, although direct infringement is a necessary element of induced and contributory infringement. DSU Med. Corp. v. JMS Co., 471 F.3d 1293, 1303 (Fed. Cir. 2006) (DSU Med. Corp.). Section 271 (b) of the Patent Act provides

that "[w]hoever actively induces infringement of a patent shall be liable as an infringer." To establish liability for induced infringement, "a patent holder must prove that once the defendants knew of the patent, they actively and knowingly aided and abetted another's direct infringement." Id. However, "[t]he mere knowledge of possible infringement by others does not amount to inducement; specific intent and action to induce infringement must be proven." Id.

Additionally, 35 U.S.C. § 271(c) provides that:

> [w]hoever offers to sell or sells within the United States . . . a component of a patented machine, manufacture, combination or composition . . . constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article of commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer.

Thus, "[i]n order to succeed on a claim of contributory infringement, in addition to proving an act of direct infringement, plaintiff must show that defendant knew that the combination for which its components were especially made was both patented and infringing, and that defendant's components have no substantial non-infringing uses." Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1312 (Fed. Cir. 2005).

1. Accused Products

Complainant argued that the following devices directly infringe asserted claims 1, 6, 10-12, 17-19, 64-65, 69-70, and 72-73 of the '216 patent: {

} (CBr at 11-13.) While complainant

---

[15] {

} (CFF 598, 603 (undisputed).)

[16] {

} (CFF 649 (undisputed).)

did not allege that said { } has been imported into the United States, complainant argued that importation is imminent and that the { } incorporates the{ }(CBr at 13-15.) Complainant also argued that respondents are liable for inducement and contributory infringement. (Id. at 43-44, 70-74.)

Respondents argued that complainant has failed to demonstrate that any of the accused products infringe the asserted claims of the '216 patent, either directly or indirectly. (RBr at 59.) Respondents also argued that the { } does not infringe because it has never been made, used, offered for sale, sold or imported into the United States. (RBr at 59.)

The staff argued that none of the accused devices have been proven to infringe any of the asserted claims of the '216 patent. (SBr at 29-30.) The staff further argued that the { } should not be included in this investigation because it is still in development. (SBr at 32-33.)

a. { }

{

} (RFF 398 (undisputed).) The { } project has not been completed, and there is no final, finished product available to customers. (Tr. at 1437-39.) Complainant argued that because the importation of the { } is imminent, the Commission has jurisdiction over it. (CBr at 13-14.) However Charles Abraham, the director of engineering for the GPS business unit at Broadcom, testified that the { } product is not complete:

{ }

{

}

}

(Tr. at 1437-1438 (emphasis added).) Abraham explained that "tapeout" is a term of art in the chip industry that signifies when a chip design is given to the manufacturer to produce test chips:

> Q. What do you mean by tapeout?
>
> A. Well, tapeout is a term in the chip industry. It is a milestone in a project where a version of a chip is given to a manufacturing partner to build samples of the chip. So in this case when we say tapeout the test chip, then sometime later we would obtain back these test chips at Broadcom and we could start to test them.

(Tr. at 1438.)

Moreover it is undisputed that after tapeout, Broadcom engineers will test the chips and make any necessary design changes (Abraham, Tr. at 1438-39); that once changes are made, another version of the chip will be taped out (Id.); and that there is no known date when the { } will be available for sale. Thus, Abraham testified:

> Q. And do you now know when the chip will even be -- do you now know when the chip will be available for sale to customers?
>
> A. No, I don't know that. Of course it depends on how the project goes, how well the initial test chip works, what type of changes have to be made.

(Id.)

Section 337 only prohibits "[t]he importation into the United States, the sale for importation, or the sale within the United States after importation" of infringing articles. 19

U.S.C. § 1337(a)(1)(B) (2008). Nevertheless, "Section 337 is a remedial statute which authorizes the Commission to 'prevent unfair acts in their incipiency.'" Certain Low-Nitrosamine Trifluralin Herbicides, Inv. No. 337-TA-245, Order No. 23 (Sept. 4, 1986) (citation omitted) (Herbicides). Thus, it has been found that "the imminent importation by a party respondent in an ongoing investigation of a new product which is alleged to infringe complainant's patent and to have the tendency to injure the domestic industry, clearly falls within the Commission's jurisdiction." Id. (emphasis added). However, based on the record the administrative law judge finds that the design of the { } has not yet been finalized.

Complainant has the burden of establishing a violation of Section 337 by a preponderance of the evidence. The administrative law judge finds nothing in the record contrary to the testimony of Abraham. Thus, he finds that any infringement analysis is premature at this point because the design of the { } is subject to change. Therefore, the administrative law judge finds that the { } should not be included in this investigation.

In Order No. 23 of Herbicides, cited by complainant, the respondents admitted that the product at issue had already been manufactured, and that importation was imminent:

> I.Pi.Ci. made known to Lilly its intention to manufacture and export to the United States trifluralin purified by the process as early as July, and Lilly has had full discovery of that process...I.Pi.Ci. has further attested that trifluralin purified by the (C) process has been manufactured in Italy, and is in inventory, ready for imminent shipment to the United States.

(emphasis added). In Amgen, Inc. v. Int'l Trade Comm'n, the Court found that the Commission had jurisdiction when the accused product had been imported into the United States for FDA approval, and sale of the product was imminent. 519 F.3d 1343, 1350-52 (Fed. Cir. 2008). In

Certain Apparatus for the Continuous Production of Copper Rod, the Commission found that jurisdiction existed when the respondents had entered into a contract to sell the accused product in the United States and the product had already been partially imported. Inv. No. 337-TA-89, 214 U.S.P.Q. 892 (1980) ("[Respondents] have entered into a contract for sale of a continuous copper rod system to be used [in the United States]. The proposed importation of the system is occurring, with a significant portion already imported.")

In contrast to the authority cited by complainant, there has been no contract for sale of the { }, no importation or partial importation of the { } and no assertion from respondents that the importation of the { } is imminent.

Complainant argued that respondents promoted the { } to potential customers. (CRBr at 33.) Complainant, however, cites no authority for the proposition that the { } should be included in this investigation due to the mere promotion of it in the United States.

Complainant further argued that the { } incorporates the accused { } (CBr at 14-15.) However, {

—

} (Abraham, Tr. at 1436-1437.)

2. Complainant Has Not Established Infringement

Complainant argued that there is direct infringement because the accused devices meet, inter alia, the "separate and distinct periods of time" and "a hypothesis"/"the hypothesis" claim limitations. (CBr at 44-9.)

Regarding the "separate and distinct periods of time" limitation, complainant argued that the accused devices meet the claim limitation because they {

} (CRBr at 42-43.)

Respondents argued that complainant failed to prove that the accused devices meet the "separate and distinct periods of time" limitation found in claim 1. (RBr at 72-75.)

The staff took no position on this claim element.

The administrative law judge has found in Section IV.E.2, supra, that the claim language "segments representing separate and distinct periods of time" requires "two portions of the signal captured during non-overlapping time periods that are set apart by a portion of intervening signal." (emphasis added). Complainant argued that because the accused devices {

} they meet the "separate and distinct" limitation. (CRBr at 42-43.) However, {

} Thus the administrative law judge finds that they cannot meet the "separate and distinct" limitation as construed by the administrative law judge because {

}

Complainant argued that even under respondents' construction of "separate and distinct periods of time," the {

} meets the claim limitation. (CRBr at 42-43.) Complainant in support argued that {

} during "separate and distinct periods of time." (Id.) The administrative law judge finds that complainant's argument goes against the plain language of the claim construction, as accepting complainant's argument would read out the "separate and distinct" limitation from the claim language.

Regarding the "a hypothesis"/"the hypothesis" limitation, complainant argued that the accused devices meet this limitation. (CBr at 46-48; CRBr at 45-46.)

Respondents argued that complainant failed to prove that the accused devices meet the "a hypothesis"/"the hypothesis" limitation, in that complainant's infringement theory requires that the first and second correlation data are not derived using identical hypotheses. (RBr at 72-75, 77.)

The staff argued that the evidence does not show that the same hypothesis is used for each correlation, and thus, the accused devices do not literally infringe. (SBr at 29.)

The administrative law judge has found in Section IV.E.4, supra, that the second element of claim 1 requires that identical hypotheses are used to derive the first correlation data and second correlation data. Complainant's expert Bartone admitted during the hearing that under his theory of infringement, the hypotheses used to derive the first and second correlation data would not be identical:

{

}

{

}

{ }

(Tr. at 1271-74 (emphasis added).) The administrative law judge finds that Bartone's infringement theory requires that {

} Bartone also testified that changing the NCO settings results in a change of one of the parameters of the hypothesis. Hence, the administrative law judge finds that the first and second correlation data would not have been derived using identical hypotheses. Thus, he finds that complainant has failed to establish, by a preponderance of the evidence, that the accused devices contain the "a hypothesis"/"the hypothesis" limitation.

Complainant also argued that the accused devices infringe the asserted claims because they operate in an "infringing manner." (CRBr at 34-42.) Specifically, Bartone's infringement opinion is based on the accused devices performing {

} Complainant argued that the modes in question are enabled in the accused devices, and even if they aren't, the accused devices still infringe because they are capable of operating in such modes. (CRBr at 34-42.) Because complainant contends that the modes in question are relevant to its infringement argument, it is complainant's burden to demonstrate that each of the accused devices performs said modes. Centricut, LLC v. Esab Group, Inc., 390 F.3d 1361, 1367 (Fed. Cir. 2004) ("The patentee has the burden of proving infringement by a preponderance of the evidence").

Respondents argued that the accused devices are incapable of {

} (RBr at 59-69.)

Respondents therefore claim that on this basis alone, the accused devices do not infringe the asserted claims of the '216 patent. (Id.)

The staff argued that the evidence demonstrates that the accused devices are incapable of { } (SBr at 30.)

{

} (CBr at 51-52; CRBr at 34-38.)

Respondents argued that {

} (RBr at 65-67.)

The staff argued that the accused devices are not capable of { } (SBr at 30.)

{ } (Tr. at 1543.)

During the hearing, Sergei Podshivalov, the Senior Software Manager for the GPS business unit at Broadcom, testified that none of the accused devices are capable of { }:

{

}

(Tr. at 1543-44.)

Podshivalov explained that for all accused devices except the { }, the chip is programmed { } (Tr. at 1547.) Furthermore, because customers receive only a

compiled version of the software used to program the chips, the software cannot be modified to { } (Tr. at 1555-56.) { } (Tr. at 1452, 1558-59.) { } (Tr. at 1558-59.) Thus for all accused devices, { } The administrative law judge finds the testimony of Podshivalov credible and further finds nothing in the record to establish that the accused devices are capable of { }

In attempting to rebut the testimony of Podshivalov, complainant relies on the deposition testimony of John Pavan, a hardware engineer at Broadcom. Pavan's testimony explains how the hardware on the accused devices would { } (See JX-14C at 131-134, JX-15C at 147-148.) Respondents do not dispute that the accused devices { } (RBr at 61-65.) However, the administrative law judge finds that what Pavan's testimony fails to rebut is the testimony from Podshivalov explaining that { } { } (CRBr at 38-40.) Complainant further argued that respondents only demonstrated that { } (Id.)

[17] The administrative law judge also finds from Pavan's testimony that he is not familiar with all of the details of the software for the accused devices. Pavan does not work on the software, and when asked who does, Pavan identified Podshivalov. (JX-14C at 41- 42.)

Respondents argued that {

} (RBr at 65-67.)

The staff argued that the accused devices are not capable of { } (SBr at 30.)

{

}

Complainant argued that { }

(RBr at 63; RRBr at 38-39.) The administrative law judge finds that this assertion is directly contradicted by Podshivalov's credible testimony that {

}

{

}

---

[18] This software file is part of respondents' Global Locate Library (GLL), which is the software library that is provided to customers with the accused devices. (Tr. at 1458-59.)

[19] In addition, Podshivalov provided an alternative basis {

}

(See Tr. at 1571-72.)

}

(Tr. at 1562 (emphasis added).)

{

} (RFF 1212 (undisputed).) The complainant contends that {

} is relevant as to whether the accused devices meet the "combining the adjusted data with the other of the first and second correlation data" limitation found in certain '216 patent claims. (See CBr at 64.)

Complainant argued that {

} thus allowing the receiver to combine adjusted correlation data with non-adjusted correlation data. (CBr at 64; CRBr at 41.)

Respondents argued that {

} (Rbr at 68-69.) Because complainant alleges that { } constitutes "adjusting" correlation data as recited in the '216 patent claims, respondents argued that { } adjusted data cannot be combined with unadjusted data as required by the claims. (Id.)

The staff argued that the accused devices do not use { } (SBr at 30.)

Podshivalov testified that the accused devices {

}:

{

}

(Tr. at 1575-76 (emphasis added).) Podshivalov also testified that {

}

{

}

(Tr. at 1576-77 (emphasis added).) Having observed Podshivalov, the administrative law judge finds his testimony credible. Thus, he finds that {

}

Complainant argued that Podshivalov admitted that {

} (CRBr at 41.) However, what Podshivalov stated was that {

} (Tr. at 1581.)

Complainant also argued that Serge La Porte, another one of respondents' employees, testified that { } (CRBr at 41.) Reviewing the cited portion of La Porte's deposition testimony, the administrative law judge finds that La Porte did not state what complainant claims he stated. The cited portion of La Porte's testimony concerns { }

{

}

(JX-8C at 146:9-21.) Therefore, the administrative law judge finds that La Porte's testimony does nothing to rebut or contradict the testimony of Podshivalov demonstrating that the accused

devices do not { } as assumed by complainant and its expert Bartone.

Complainant argued that even if the accused devices do not { } they infringe because they are capable of operating in these modes. (CRBr at 34-35.) As found supra the accused devices are not capable of {

}

Even if the accused devices were capable of { } this would not be enough to prove infringement. Complainant's argument is based on the Federal Circuit's decision in Intel v. United States Int'l Trade Comm'n, 946 F.2d 821, 832 (Fed. Cir. 1991) (Intel) where the court held that the accused device "need only be capable of operating" in an infringing mode to infringe. As respondents argued, the holding in Intel was based on the specific claim language present in the case, namely the phrase "programmable selection means." Subsequent Federal Circuit decisions have distinguished Intel on this basis. See, e.g., Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1311 (Fed. Cir. 2005) (distinguishing Intel based on the permissive "programmable" claim language); Fantasy Sports Properties, Inc. v. Sportsline.com, Inc., 287 F.3d 1108, 1117-18 (Fed. Cir. 2002) ("Intel...does not stand for the proposition...that infringement may be based upon a finding that an accused product is merely capable of being modified in a manner that infringes the claims of a patent.") Because the claims at issue do not have the permissive claim language found in Intel, the case is readily

distinguishable and does not mandate a finding of infringement if it was to be found that the accused devices are capable of { }

The administrative law judge therefore finds that the complainant has failed to establish, by a preponderance of the evidence, that the accused devices directly infringe any of claims 1, 6, 10-12, 17-19, 64-65, 69-70, 72, and 73.

Because the complainant has failed to prove any underlying direct infringement, the administrative law judge finds that the complainant has failed to establish indirect infringement, whether through inducement or contributory infringement. DSU Med. Corp. supra.

G. Validity

Respondents argued that as "construed by SiRF," the asserted claims are invalid on the ground that each of "Kaplan, Krasner, and Harmes" anticipates the asserted claims "as construed by SiRF". Respondents further argued that the "prior art" renders the '216 patent obvious "under SiRF's claim construction." (RBr at 94-107.)

The staff argued that "[g]iven that SiRF's claim construction are incorrect," respondents' invalidity assertions fail to address validity under a "correct claim construction." (SBr at 38.)

Respondents have limited their assertions of invalidity to apply only under complainant SiRF's proposed claim constructions. The administrative law judge has rejected SiRF's claim

---

[20] The complainant failed to address the doctrine of equivalents in its post-hearing briefing, and complainant's expert Bartone failed to provide any particularized testimony on the doctrine of equivalents. The administrative law judge therefore finds that complainant has failed to meet its burden in proving that any of the accused devices infringe under the doctrine of equivalents. Texas Instruments, Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1567 (Fed. Cir. 1996) (requiring "particularized testimony and linking argument as to the 'insubstantiality of the differences' between the claimed invention and the accused device or process" to prove infringement under the doctrine of equivalents).

constructions. Thus he finds that respondents have not established, by clear and convincing evidence, that the asserted claims of the '216 patent are invalid over any prior art.

H. Domestic Industry

To invoke the protection afforded by Section 337, a complainant must show by a preponderance of the evidence that a domestic industry exists or is in the process of being established within the United States. The domestic industry requirement has two prongs: an "economic" prong and a "technical" prong.

Complainant has satisfied the economic prong of the domestic industry requirement. See Section I, supra.

The "technical" prong requires that the activities alleged to constitute a domestic industry actually utilize the intellectual property at issue. In the context of a patent-based investigation, the technical prong is satisfied if a complainant demonstrates that it is practicing at least one claim of a patent-in-issue. The test for claim coverage for purposes of the domestic industry requirement is the same as that for infringement. The technical prong of the domestic industry can be satisfied either literally or under the doctrine of equivalents. Certain Excimer Laser Systems for Vision Correction Surgery and Components Thereof and Methods for Performing Such Surgery, Inv. No. 337-TA-419, Order No. 43, 1999 ITC LEXIS 245, *7 (July 30, 1999). The complainant, however, is not required to show that it practices any of the claims asserted to be infringed, as long as it can establish that it practices at least one claim of an asserted patent. Certain Point of Sale Terminals and Components Thereof, Inv. No. 337-TA-524, Order No. 40, 2005 ITC LEXIS 374, *26 (Apr. 11, 2005).

Complainant argued that it has established that { } satisfies the technical prong of the domestic industry requirement; { } and that { } meets every limitation of claim 1 of the '216 patent. (CBr at 75-9, CRRFF 222.)

Respondents argued that { } does not practice the '216 claims. (RBr at 90.)

The staff argued that the evidence does not show that complainant SiRF practices the '216 patent under "a proper claim construction;" and that similar to the infringement issues, the evidence fails to show that SiRF's products determine a parameter difference, and thereafter adjust one or the other of correlated data before combining such correlations. (SBr at 34.)

The administrative law judge has found that complainant failed to establish that the accused device contain the "a hypothesis"/the hypothesis" limitation. For the same reasons as found with respect to non-infringement, the administrative law judge finds that complainant has not established that its { } contains at least the "a hypothesis"/ "the hypothesis" limitation. Thus as respondents expert testified:

{

}

(Tr. at 1974-75.)

V. '363 Patent

A. Undisputed Facts Relating To The '363 Patent

The private parties in SX-2 stipulated to the following regarding the '363 patent:

> The Yamamoto '363 Patent discloses a host-based positioning system. In a host-based GPS system, the baseband circuitry that detects satellite signals communicates with a GPS library of programs that execute on a host processor connected to the baseband circuitry via a hardware interface.
>
> The Yamamoto '363 Patent discloses a GPS receiver that allocates the GPS receiver functions between "GPS tracker hardware" and a host device. The GPS tracker hardware includes hardware that reads signals from GPS satellites, and sends the resulting measurement data to the host device for position calculation. A processor in the host device executes functions provided in a GPS library, i.e. GPS-related software that interfaces with the GPS tracker hardware, and performs positioning functions (e.g., calculates position fixes), and interfaces with an application with an application program. The GPS library is accessible by application programs running on the host device over a user interface.
>
> Host CPUs have developed to the point where they now possess the capacity to handle non-time-critical functions in a shared processing environment. In some applications, the dedicated DSP of contemporary GPS chips may handle real-time acquisition and tracking operation functions, while the host CPU handles non-real-time calculations such as position fixes.

> The Yamamoto '363 patent therefore provides a positioning system that uses a tracker interface function to receive positioning information over a tracker hardware interface, determines a position from this positioning information, and delivers the position to a user program using a user interface message deliver function.

In addition to the foregoing, the '363 patent, entitled "Host Based Satellite Positioning Systems," issued on May 9, 2006, based on an application filed on October 10, 2002. Clifford Yamamoto, Sebastian Norris, Ashutosh Pande, Nikola Bulatovic, and Stefan Witanis are the named inventors and assigned the invention to SiRF. (CX-2.)

B. Experts

Chris Gregory Bartone was qualified as complainant's expert in the area of GPS technology. (Tr. at 581.)

William Michalson was qualified as respondents' expert in the field of GPS technology and computer architecture. (Tr. at 1630.)

C. Person Of Ordinary Skill In The Art

As of 2002, a person of ordinary skill in the art relative to the '363 patent would be a person who had at least a Bachelor of Science in electrical engineering or electrical and computer engineering, and about two years of experience in the design of hardware and software architectures for software radios or for global positioning system receivers. (Michalson, Tr. at 1633.)

D. Claims In Issue

Complainant has put in issue claims 7, 8, 10, 11, 12, 16, 18, 19 and 20 of the '363 patent. They read:

7. The system of claim 4, wherein the positioning engine communication function is a command delivery function.

8. A method in a positioning system comprising a tracker hardware interface, the method comprising the steps of calling a tracker interface function to receive positioning information from a tracker hardware interface; determining a position from the positioning information using a positioning engine; and calling a user interface message delivery function to communicate the position to a user application.

10. The method of claim 8, wherein the positioning system further comprises a user interface, and further comprising the step of receiving a positioning engine start message from the user interface.

11. The method of claim 8, wherein the positioning system further comprises a user interface, and further comprising the step of receiving a user command for the positioning engine from the user interface.

12. The method of claim 8, wherein the positioning system further comprises a user interface, and further comprising the step of receiving a positioning engine stop message from the user interface.

16. A computer-readable medium containing instructions that cause a positioning system having a tracker hardware interface to perform a method comprising the steps of: calling a tracker interface function to receive positioning information from a tracker hardware interface; determining a position from the positioning information using a positioning engine; and calling a user interface message delivery function to communicate the position to a user application.

18. The computer-readable medium of claim 16, wherein the positioning system further comprises a user interface, and further comprising the step of receiving a positioning engine start message from the user interface.

19. The computer-readable medium of claim 16, wherein the positioning system further comprises a user interface, and further comprising the step of receiving a user command for the positioning engine from the user interface.

20. The computer-readable medium of claim 16, wherein the positioning system further comprises a user interface, and further

comprising the step of receiving a positioning engine stop message from the user interface.

(CX-2.)

Claim 7 is a dependent claim which depends on claim 4 which claim 4 depends on claim 1. Claims 1 and 4 read:

> 1. A system for processing positioning signals, the system comprising: a tracker hardware interface for receiving positioning information; a memory comprising a GPS library comprising a user interface, a tracker interface, and an operating system interface, the tracker interface comprising at least one tracker interface function for communicating over the tracker hardware interface; and a processor for running the tracker interface function.
>
> 4. The system of claim 1, wherein the user interface comprises at least one positioning control function and at least one positioning engine communication function.

(CX-2.)

E. Claim Construction

Applicable Law. See Section IV.E, supra

1. The Claimed Phrase "tracker"

Complainant argued that the claimed phrase "tracker" need not be construed alone as it appears only in certain phrases in the claims, but if a construction is needed, "tracker" is properly construed as "a device that supports acquisition and tracking of the signal of a positioning satellite (e.g., a GPS satellite) and sends measurement data to a host device for position calculation." (CBr at 95.) Complainant further argued that this construciton is supported by the intrinsic evidence, as stated in the CX-2 at 4:4-7, "The tracker hardware 104 acquires and tracks SPS satellites and sends raw measurement data to the host 102 for position calculation." (CBr at

95.) Complainant also argued that its construction does not require specific hardware, but instead focuses on what the tracker does. (CBr at 95-96.)

Respondents argued that a person of ordinary skill in the art would interpret a tracker to be a device that acquires and "tracks." (RBr at 109.) It is argued that the very purpose of "tracking" is to maintain alignment between a replica signal and an incoming signal from a satellite once acquisition has occurred. (RBr at 110.) Respondents argued that the specification of the '363 patent repeatedly states that the "tracker" must do more than merely "acquire" a GPS satellite. (RBr at 110.) Thus, respondents argued that the plain and ordinary meaning of a "tracker" to a person of ordinary skill in the art is a device that synchronizes to the code of a positioning satellite through use of a feedback loop. (RBr at 109.)

The staff argued that the claims require a "tracker hardware interface for receiving positioning information," and thus determining the structure with which the interface interacts is necessary. (SBr at 20.) The staff argued that neither claim construction offered by the private parties is correct, but a correct construction of tracker is "a device that acquires data from a GPS satellite and sends navigation information to a processor," which is supported by the specification at CX-2 at 3:48-49 ("the host 102 receives and processes navigation information from the hardware tracker"). (SBr at 20.) The staff further argued that respondents' proposed definition imports limitations not found in the claims or otherwise defined in the specification, while complainant's proposed construction is also too narrow by attempting to limit the claims to require "measurement data" to be sent to the host device. (SBr at 21.)

The claimed phrase "tracker" appears in one of the following phrases: "tracker interface," "tracker hardware interface" or "tracker interface function" in asserted independent claim 8 of the

'363 patent, from which asserted dependent claims 10, 11, and 12 depend, and asserted independent claim 16, from which asserted dependent claims 18, 19, and 20 depend, as well as, inter alia, nonasserted independent claim 1, from which asserted dependent claim 7 ultimately depends. Thus, the claimed phrase "tracker" is relevant to each of the asserted claims. The independent claims of the '363 patent read:

> 1. A system for processing positioning signals, the system comprising: a tracker hardware interface for receiving positioning information; a memory comprising a GPS library comprising a user interface, a tracker interface, and an operating system interface, the tracker interface comprising at least one tracker interface function for communicating over the tracker hardware interface; and a processor for running the tracker interface function.
>
> 8. A method in a positioning system comprising a tracker hardware interface, the method comprising the steps of calling a tracker interface function to receive positioning information from a tracker hardware interface; determining a position from the positioning information using a positioning engine; and calling a user interface message delivery function to communicate the position to a user application.
>
> 16. A computer-readable medium containing instructions that cause a positioning system having a tracker hardware interface to perform a method comprising the steps of: calling a tracker interface function to receive positioning information from a tracker hardware interface; determining a position from the positioning information using a positioning engine; and calling a user interface message delivery function to communicate the position to a user application.

(CX-2 at 41:61-42:3, 42:19-27, 42:53-62 (emphasis added).) Thus, while the claimed term "tracker" does not appear alone, the plain language of the claimed phrases listed, supra, require a tracker be involved with communicating positioning information, although the features of a tracker are not explicitly defined by any of the claims..

Regarding the specification, the abstract of the '363 patent states:

> Methods and systems consistent with the present invention provide a host based positioning system. The host based positioning system includes a tracker hardware interface that connects to a dedicated hardware space vehicle tracker. The tracker hardware interface receives positioning information from the space vehicle tracker. The host based positioning system also includes a memory that includes a GPS library having a user interface, a tracker interface, and an operating system interface. A processor runs functions provided by the interfaces.

(CX-2 at Abstract (emphasis added).) Also, the specification discloses that the "invention relates to satellite positioning systems." (CX-2 at 1:16.) The specification further discloses:

> In one example implementation, a host based SPS system may include a host processing system that connects through a tracker hardware interface to a dedicated hardware space vehicle tracker. The host processing system may also include a memory that includes a SPS library having a user interface, positioning engine, a tracker interface and an operating system interface. A processor in the host processing system runs the positioning engine and the functions provided by the interfaces.
>
> The tracker hardware interface receives positioning information from the space vehicle tracker. Through functions in the tracker interface, the positioning information is communicated to the positioning engine. In turn, the positioning engine may determine a position and communicate the position to a user application through functions provided in the user interface.

(CX-2 at 2:6-22 (emphasis added).) Hence, a "tracker" must be capable of sending positioning information about a "space vehicle." The specification also discloses:

> A typical satellite positioning system ("SPS") system has approximately 12 satellites that may be visible at any one time to a wireless device. SPS means any system utilizing satellites and/or land-based communications devices for providing or enabling the determination of a location of the wireless device on the earth, for example but not limited to: the global positioning system ("GPS") known as NAVSTAR, GLONASS, LORAN, Shoran, Decca, or TACAN. Although many of the interface functions below make reference to GPS, those functions are not limited to use with GPS, but, generally, are equally applicable in other SPS environments.

* * *

> The tracker hardware 104 acquires and tracks SPS satellites and sends raw measurement data to the host 102 for position calculation.

(CX-2 at 2:66-3:10, 4:4-7.) Thus, the "space vehicle" disclosed in the specification is a satellite, and the data that the tracker must send to the host is "positioning information." Hence, the administrative law judge finds that, for the purpose of the '363 patent, a tracker is construed as "a device that acquires data from a satellite and transmits positioning information."

Regarding respondents' argument that a "tracker" must "do more than just acquire, but also separately track," and must be a device that synchronizes to the code of a positioning satellite through use of a feedback loop, the administrative law judge finds that how a tracker gathers positioning information and transmits it is beyond that which the claims require.

Regarding complainant's argument that a "tracker" sends measurement data to a host device for position calculation, as stated, supra, the features of a "tracker" are not explicitly defined by any of the claims. The claims require, and the specification of the '363 patent discloses, that the tracker sends positioning information to the host (or the positioning system) through the "tracker hardware interface." (See CX-2 at 41:63-64 (first element of claim 1); CX-2 at 42:21-22 (first element of claim 8); CX-2 at 42:57-58 (first element of claim 16).) The specification further discloses:

> The host 102 connects through the hardware tracker interface 110 and the interface connection 126 to the tracker hardware 104 .

(CX-2 at 3:32-34 (emphasis added).) Thus, the "tracker" does not itself send positioning information directly to the host.

2. The Claimed Phrase "positioning information"

Complainant argued that the proper construction of the claimed phrase in issue "positioning information" is "data derived from a positioning signal that may be used for position calculation." (CBr at 98.) Specifically, complainant argued that claims 8 and 16 recite "determining a position from the positioning information," which requires that positioning information contain that data which is necessary for position calculation. (CBr at 98.) Complainant further argued that the claims and specification define positioning information as an intermediate result and not an actual position because it is this positioning information which is used to calculate position; for example, the '363 patent discloses that the positioning information used for position calculation is information derived from a satellite's positioning signal. (CBr at 98; see also CX-2 at 4:2-7.)

Respondents argued that a person of ordinary skill in the art would understand the term "positioning information" in the context of the claims to mean output data from a tracker, as the language of claims 1, 8, and 16 teaches that the "positioning information" is data received by a "tracker hardware interface." (RBr at 114.) Respondents further argued that the "positioning information" must be data that is received from the tracker hardware through the interface. (RBr at 114.) Respondents also argued that the only two examples of "tracker hardware" in the '363 patent, the "GSP2e and GSP2e,"[21] {

} (RBr at 114-15.) Finally, respondents argued that nothing in the '363 patent refers to

[21] The administrative law judge finds that the second occurrence of GSP2e should be GSP2t, as respondents cite to RFF 291 and 849, in the text, which discuss GSP2t.

"data derived from a positioning signal," as SiRF's proposed construction would have it. (RBr at 115.)

The staff argued that the specification uses the term "positioning information" loosely to mean different things, and lacks a "precise" definition. (SBr at 23.) The staff further argued that unasserted dependent claim 2 and asserted claim 8 each require that a "position" be calculated from the positioning information, and that the specification uses "position" to mean the location of the GPS device, which can be calculated using many different types of data, including the raw measurement data or more processed data such as a multitude of pseudoranges determined from raw measurement data pertaining to multiple satellites. (SBr at 23.)

The term "positioning information" appears in each of independent claims 1, 8, and 16 of the '363 patent, and is thus relevant to each of the asserted claims in issue. Claim 1 of the '363 patent recites "[a] system for processing positioning signals, the system comprising: a tracker hardware interface for receiving positioning information." (CX-2 at 41:61-64.) Claim 8 of the '363 patent contains the limitation "determining a position from the positioning information using a positioning engine." (CX-2 at 42:24-25.) Claim 16 of the '363 patent contains the same limitation as stated, supra, for claim 8. (CX-2 at 42:59-60.) Thus, the claims make a distinction between a position and "positioning information."

The parties have agreed to the following:

> The Yamamoto '363 Patent discloses a GPS receiver that allocates the GPS receiver functions between "GPS tracker hardware" and a host device. The GPS tracker hardware includes hardware that reads signals from GPS satellites, and sends the resulting measurement data to the host device for position calculation.

(SX-2 at 8 (emphasis added).) Further, the parties agreed that the specification of the '363 patent discloses that the tracker acquires and tracks GPS satellites and sends raw measurement data to the host for position calculation. (CFF 1195 (undisputed).) Thus, the specification discloses:

> Turning next to FIG. 2, that figure shows one example of an implementation of the tracker hardware 104. The tracker hardware 104 acquires and tracks SPS satellites and sends raw measurement data to the host 102 for position calculation.

(CX-2 at 4:3-7 (emphasis added).) Hence, the "positioning information" must comprise, inter alia, measurement data, and the position of the satellite is determined by the host, not the tracker hardware itself. The '363 patent also incorporates the U.S. Patent No. 6,430,503 (the '503 patent) by reference. (CX-2 at 1:45-49.) While the '503 patent does not specifically define the claimed phrase "positioning information," the '503 patent does disclose measurement data that is used to calculate a position. For example:

> In one embodiment, the intermediate measurement data includes the carrier phase, code phase and Doppler data.
>
> * * *
>
> Such intermediate measurement data may also include the pseudo-range to each satellite and the navigation message from each satellite being tracked. Other relevant data include Doppler offsets and carrier phase.

(RX-44 at 2:16-18, 3:31-35 (emphasis added).) Based on the foregoing, the administrative law judge finds that the claimed phrase "positioning information" is construed as "data comprising measurement information such as the carrier phase, code phase, Doppler data, and pseudo-ranges."

3. The Claimed Phrase "user interface"

Complainant argued that the claimed phrase "user interface" should be construed as "an interface to the positioning system including platform-independent functions that can be called by a user program." (CBr at 99.) Complainant also argued that the specification of the '363 patent defines the user interface to include a set of functions that can be invoked to allow a user program to start and stop the GPS engine, and to send and receive messages to and from a GPS engine (CBr at 99); that the interfaces described in the '363 patent are very specific interfaces used for specific purposes, such as platform independence (CBr at 99); that the '363 patent seeks to incorporate its solution "in many electronic devices designed by numerous manufacturers," i.e., platform independence (CBr at 100); and that the '363 patent at 3:22-24 explicitly notes that the preferred embodiment can be run on any OS platform. (CBr at 100.)

Respondents argued that a person of ordinary skill in the art would understand the term "user interface" in the context of the claims to mean an interface to a user program, and that the phrase is so common that there should be no need for construction. (RBr at 115.) Thus, respondents argued that claims 8 and 16 require "calling a user interface message delivery function to communicate the position to a user application." (RBr at 115 citing CX-2 at 42:26-27, 42:61-62.) Respondents, regarding complainant's construction, further argued that nothing in the '363 specification, claims, or file history requires that the user interface include "platform-independent functions." (RBr at 116.) Respondents also argued that a person of ordinary skill in the art would understand that an interface to a user program is a "user interface" regardless of whether it contains platform dependent or platform-independent functions, or whether those functions are called by the user program. (RBr at 116.)

The staff argued that respondents' claim construction, which it argued is based on the plain and ordinary meaning of the term, is correct. (SBr at 23.) The staff further argued that complainant's construction improperly attempts to insert additional limitations that cannot be found in the claims such as "platform-independent" and requiring that the user interface be "called by a user program," which elements are not found anywhere in the claim language. (SBr at 23.) The staff also argued that complainant incorrectly argued that the specification "explicitly defines" the term (CBr at 45), because the portion of the specification cited by complainant unambiguously states that it is describing "one exemplary implementation," which, staff argued, should not, in this case, be considered an explicit definition. (SBr at 23.) The staff further argued that complainant's argument that the purpose of the patent was to provide a platform-independent solution to problems in the prior art is not supported in the claim language itself. (SBr at 23.)

The claimed phrase "user interface" appears in independent claims 1, 8, and 16, and thus is relevant to each of the asserted claims. Unasserted claim 1 requires "a memory comprising a GPS library comprising a user interface. . ." (CX-2 at 41:65-66.) Unasserted claim 4, which depends from claim 1, reads:

> The system of claim 1, wherein the user interface comprises at least one positioning control function and at least one positioning engine communication function.

(CX-2 at 42:9-11.) Asserted claim 7 further requires:

> The system of claim 4, wherein the positioning engine communication function is a command delivery function.

(CX-2 at 42:17-18 (emphasis added).) Thus, the plain language of the claims shows that a "user interface" is an interface between a user and the system. Some of the claims in issue also require that the user interface have certain specific functions, viz. "command delivery function."

As regards the specification, it discloses:

> Through functions in the tracker interface, the positioning information is communicated to the positioning engine. In turn, the positioning engine may determine a position and communicate the position to a user application through functions provided in the user interface.

(CX-2 at 2:16-22 (emphasis added).) Further, the specification discloses, in Table 6, "one exemplary implementation of the user interface" through defining what functions are made available by the user interface. (CX-2 at 6:21-43.) Thus, the claimed phrase "user interface" is never precisely defined in the specification, except in terms of what functions may be available. The claims in issue, however, require that the user interface have certain specific functions that may differ for each claim, and no asserted claim requires that every function listed in Table 6 be available. For example, as shown, supra, claim 7 requires that the positioning engine communication function be a command delivery function. As another example, asserted claim 12 states:

> 12. The method of claim 8, wherein the positioning system further comprises a user interface, and further comprising the step of receiving a positioning engine stop message from the user interface.

(CX-2 at 42:39-42 (emphasis added).) Therefore, the administrative law judge finds that the specification, far from redefining user interface, supports a plain language definition. Based on the foregoing, the administrative law judge finds that "user interface" would be construed by a person of ordinary skill in the art, as "an interface between the system and a user."

Complainant argued that the interfaces described in the '363 patent are very specific interfaces used for specific purposes, such as platform independence, and that the plain language is too general and does not take into account the specification. As found, supra, the specification supports the plain language definition. The specification describes several functions that may be used in a user interface. Thus, while the user interface described in a particular claim may specify certain functions that are platform independent, or functions that are used for specific purposes, the administrative law judge finds that the claimed phrase "user interface," itself, should not be limited to any specific functions. Otherwise, he finds that the construction of "user interface" per se would be ambiguous.

4. The Claimed Phrase "operating system interface"

Complainant argued that the claimed phrase "operating system interface" should be construed as "an interface of the GPS library including platform-independent functions for obtaining operating system services (e.g., time service)." (CBr at101.) Specifically, complainant argued that, in the same way that "user interface" is defined as a collection of functions, the specification of the '363 patent defines "operating system interface" as a set of functions callable from the GPS library to request operating system services. (CBr at 101.) In further support, complainant argued that the '363 patent specifically states that numerous operating systems can run on the positioning system described in the patent, further evidencing platform independence, and that {

} (CBr at 101.)

Respondents argued that the claimed phrase "operating system interface" is simple and descriptive, and requires no construction, as a person of ordinary skill in the art would understand

said claimed phrase in the context of the claims to mean just what it says: an interface to an operating system. (RBr at 116.) In support, respondents pointed to Figure 3 of the '363 patent, which shows an "OS Interface 308" interfacing between the GPS Library 124 and the Operating System / BIOS 120, where OS refers to an "Operating System." (RBr at 116-117.)

The staff argued that respondents' proposed claim construction, which is based on the plain and ordinary meaning of the term, is correct. (SBr at 24.) The staff further argued that complainant is attempting to interpose claim elements that are not found in the claim term, and cites to the "one exemplary implementation" as support for complainant's construction. (SBr at 24.)

The claimed phrase "operating system interface" appears in unasserted independent claim 1, from which claim 7 ultimately depends. No other claim in the patent requires an operating system interface. Unasserted claim 1 requires "a memory comprising a GPS library comprising . . . an operating system interface. . ." (CX-2 at 41:65-67.) No claim, asserted or unasserted, requires that any specific function be made available by an operating system interface, nor does any claim require any particular operating system, which may require certain functions be available to implement the invention. Thus, the plain language of the claims shows that a "operating system interface" is an interface between the claimed system and an operating system which is not claimed.

Referring to the specification, it discloses:

> The host processing system may also include a memory that includes a SPS library having a user interface, positioning engine, a tracker interface and an operating system interface.

(CX-2 at 2:9-12.) Figure 3 of the '363 patent also illustrates that the operating system interface is part of the system disclosed, and communicates with an operating system that is not claimed. (See CX-2 at Fig. 3.) The specification further discloses, in Table 6, one exemplary implementation of the operating system interface 308, which implementation includes several functions. (CX-2 at 6:21-23, 44-58.) As shown, supra, the specification describes the claimed phrase in issue in terms of what functions may be available, but the administrative law judge finds no claim, asserted or unasserted, which requires that any specific function be made available by an operating system interface. Also, neither the claims nor the specification require any particular operating system. In fact, the specification discloses:

> The Operating System Interface functions are operating system dependent and are implemented in the open source format available from SiRF Technology, Inc. The functions include Thread, mutex and semaphore functions.

(CX-2 at 26:65-67.) Thus, far from requiring any specific "platform-independent functions," as argued by complainant, the administrative law judge finds that the specification contemplates that the available functions could change and, indeed, could be changed for any particular implementation, as per the reference to "open source." (Id.) Moreover, no specific functions, whether dependent or independent, are required by the claim language. Based on the foregoing, the administrative law judge finds that the claimed phrase "operating system interface" is construed as "an interface between the system and an operating system."

5. The Claimed Phrase "tracker interface function"

Complainant argued that the claimed phrase "tracker interface function" should be construed as "a function provided to allow communication between the tracker hardware and the host processor." (CBr at 102.) Complainant further argued that claim 1 recites that the "tracker

interface function" is for "communicating over the tracker hardware interface" and that a "processor" runs "the tracker interface function" and thus, that it is evident that the plain meaning of the term "tracker interface function" is a function provided to allow communication between the tracker hardware and the host processor. (CBr at 102-103.) Complainant further argued that its construction is supported by the specification of the '363 patent, which specifically characterizes a tracker interface function as a function that allows messages to be exchanged between the tracker hardware and various programs that run on the host processor. (CBr at 103.) Complainant also argued that the '363 patent specifies that its tracker interface functions allow communication between the tracker hardware and user programs/position library, both of which are run by the host CPU, and that the tracker interface in {

} (CBr at 103.)

Respondents argued that a person of ordinary skill in the art would understand the term "tracker interface function" in the context of the claims to mean a function for communication over the tracker hardware interface. (RBr at 118.) Respondents further argued that nothing in the plain language of the term "tracker interface function" or in the specification limits this function to one used to communicate with a "host."[22]

The staff argued that respondents' construction of the claimed phrase in issue is correct, as it is based on the plain meaning of the term, and that complainant's proposed interpretation improperly inserts a requirement that the communication is limited to a communication between the tracker hardware and the host processor. (SBr at 25.)

---

[22] Respondents represented that no issue in this investigation is dependent on the construction of "tracker interface function." (RBr at 119.)

The claimed phrase "tracker interface function" appears in each of independent claims 1, 8, and 16 of the '363 patent. The administrative law judge has found, supra, that a tracker is "a device that acquires data from a satellite and sends positioning information to a host." Unasserted claim 1 of the '363 patent requires:

> a memory comprising a GPS library comprising a user interface, a tracker interface, and an operating system interface, the tracker interface comprising at least one tracker interface function for communicating over the tracker hardware interface; and a processor for running the tracker interface function.

(CX-2 at 41:65-42:3 (emphasis added).) Claims 8 and 16 require "calling a tracker interface function to receive positioning information from a tracker hardware interface. . ." (CX-2 at 42:21-22; CX-2 at 42:57-58.) Thus, the plain language of the claims shows that a tracker interface function" is "a function performed by an interface between a tracker and the system." Several of the claims also require that the tracker interface function perform a specific action; for example, receiving positioning information from a tracker hardware interface.

Referring to the specification, it discloses:

> The tracker hardware interface receives positioning information from the space vehicle tracker. Through functions in the tracker interface, the positioning information is communicated to the positioning engine.
>
> * * *
>
> The tracker interface 306 provides for communication between the tracker hardware 104 and the host 102 and, to that end, may load and call the operating system 120 serial communication drivers.

(CX-2 at 2:15-18, 4:49-52 (emphasis added).) Thus, the specification discloses that communication is the purpose of the tracker hardware interface. Although Table 6 in the '363 specification lists several specific functions in one exemplary implementation of the tracker

interface (CX-2 at 6:21-22, 59-67), Table 114 shows that those functions in Table 6 facilitate general communications, not what information is communicated. Based on the foregoing, the administrative law judge finds that the specification supports the plain language construction for this claimed phrase, viz., "a function for the purpose of communication performed by an interface between a tracker and the system."

6. The Claimed Phrase, "command delivery function"

Complainant argued that the claimed phrase "command delivery function" should be construed as "a function called by a user program to send at least one of a plurality of different commands to a GPS engine." (CBr at 104.) Complainant further argued that the '363 patent utilizes an input function and an output function to communicate commands and messages, respectively, i.e., CX-2 at 8:9-12 (Table 12) describes GPS_Output() as "receives a data from the GPS engine" and GPS_Input() as "send commands to the GPS engine." (CBr at 104.) Thus, complainant argued, the '363 patent clearly describes the "command delivery" input function as being directional. (CBr at 105.) Complainant also argued that the GPS_Input() function can send many different commands, where CX-2 at 12:1-34 (Table 24) and CX-2 at 13:42-65 (Table 28) list various identifiers that can be used to send different commands. (CBr at 105.) Hence complainant argued that the GPS_Input() command is a command delivery function capable of sending a command from among a plurality of different commands. (CBr at 105.)

Respondents argued that the claimed phrase in issue is simple and self descriptive, and that a person of ordinary skill in the art would understand the said claimed phrase, "command delivery function," in the context of the claims, to mean a function used to deliver a command. (RBr at 119.) Respondents further argued that the phrases "command delivery function,"

"command delivery," and "delivery function" are not used in the specification and are not discussed in the prosecution history. (RBr at 119.) Respondents also argued that, although the GPS_Input function can be used to "send commands to the GPS engine" (CX-2 at 8:11-12 (Table 12)), this example in no way restricts or narrows the scope of the claim term "command delivery function," and the '363 patent makes clear that the GPS_Input and GPS_Output functions are but one exemplary implementation of the user interface 304 and that the description of an implementation of the invention does not limit the invention to the precise form disclosed. (RBr at 120.)

The staff argued that respondents' claim construction is correct, as it is based on the plain and ordinary meaning of the words found in the claims. (SBr at 26.)

The claimed phrase in issue appears in dependent claim 7, which reads:

> 7. The system of claim 4, wherein the positioning engine communication function is a command delivery function.

(CX-2 at 42:17-18 (emphasis added).) Unasserted claim 4 reads:

> 4. The system of claim 1, wherein the user interface comprises at least one positioning control function and at least one positioning engine communication function.

(CX-2 at 42:9-11 (emphasis added).) Thus, the plain language of the claims indicates that a "command delivery function" is a positioning engine communication function, which is a specific function of the user interface used to deliver a command. The administrative law judge has construed "user interface," supra, as "an interface between the system and a user." Thus, the "command delivery function" must be a function that communicates a command between the user and the positioning engine. Also, claim 4 discloses a distinction between a "control" and a "communications" function. In fact, claims 5 and 6 read:

> 5. The system of claim 3,[23] wherein the positioning control function comprises a positioning engine start function.
>
> 6. The system of claim 4, wherein the positioning control function comprises a positioning engine stop function.

(CX-2 at 42:12-15.) Hence, claims 5 and 6 disclose specific control functions.

Regarding the specification excepting the claims, the precise phrases "command delivery function, " "command delivery," and "delivery function" are not disclosed therein. However, the specification discloses:

> The user or GPS interface includes a GPS control interface and a GPS communication interface. The GPS control Interface functions allow a user program to start and stop the GPS engine using the functions shown in Table 11.

(CX-2 at 7:44-47.) The two functions listed in Table 11 are GPS_Start() and GPS_Stop(). (CX-2 at 7:49-54 (Table 11).) The specification further discloses:

> The GPS communication interface functions allow a user program to send and receive messages to and from the GPS engine using the functions shown in Table 12.

(CX-2 at 8:1-3.) The two functions listed in Table 12 are GPS_Output() and GPS_Input(). (CX-2 at 8:5-14 (Table 12).) As seen, supra, unasserted claim 4, from which asserted claim 7 depends, makes a distinction between a positioning control function and a positioning engine communication function, and unasserted claims 5 and 6 describe said control functions as "positioning engine start function" and "positioning engine stop function." Thus, the administrative law judge finds that the functions GPS_Start() and GPS_Stop are positioning

---

[23] Claim 5 purports to depend from claim 3, but its language, viz. "wherein the positioning control function comprises . . ." has no antecedent support in either claim 3 or claim 1, from which claim 3 depends. Said language does have antecedent support in claim 4. Thus, the administrative law judge reads claim 5 as depending on claim 4, and not on claim 3.

control functions, while GPS_Output() and GPS_Input() are positioning engine communication functions. The '363 patent discloses that the functions in Table 6 of the '363 patent show "one exemplary implementation of the user interface 304." (RFF 979 (undisputed).) Each of GPS_Output() and GPS_Input() are disclosed therein. (CX-2 at 6:30-33 (Table 6).) The specification further discloses:

> The GPS_Output function retrieves a message from [the] positioning engine. There are no return values. The function is called by the positioning engine whenever any message is sent out.
>
> * * *
>
> The GPS_Input function sends a command to the GPS engine. The function may be called by the client program to send a command to the GPS receiver.

(CX-2 at 10:66-67, 11:65-67 (emphasis added).) Thus, the function GPS_Output() does not meet the requirement of sending a command, while the function GPS_Input() does. Hence, GPS_Input() is an example of a function that meets all criteria of a "command delivery function." The administrative law judge however finds nothing in the specification that supports a command being sent from the engine to the user. Based on the foregoing, the administrative law judge finds that a "command delivery function" is "a function that communicates a command from the user to the positioning engine."

7. The Claimed Phrase "user interface message delivery function"

Complainant argued that the claimed phrase "user interface message delivery function" should be construed as "a function called by a GPS engine to output at least one of a plurality of different messages from the GPS engine to a user program." (CBr at 106.) Complainant also argued that the specification of the '363 patent describes a user interface message delivery function as the GPS_Output() function, which function is called by the positioning engine and is

used to send a message, selected from a list of messages, to a user application program. (CBr at 106.) Thus, complainant argued that a "user interface message delivery function" is called by a GPS engine to send messages to a user program. (CBr at 106.) Specifically, complainant argued that the '363 patent, CX-2 at 10:66-11:2, states that "The GPS_Output function retrieves a message from positioning engine. . . . The function is called by the positioning engine" and at CX-2 at 4:45-49 that "The positioning engine 302 calls a function provide by the user program 122 (e.g., GPS_Output) to deliver positioning messages . . . to the user program 122." Thus, complainant argued, as there is no description or even an indication of the "user interface message delivery function" GPS_Ouput() being sent to the GPS engine, the '363 patent clearly describes the "user interface message delivery" output function as being directional and in the opposite direction as the input function. Complainant further argued that its construction takes into account that it is a call-back function. (CBr at 107.) Complainant argued that the specification clearly defines the output function as a call-back function. (CBr at 108.) Finally, complainant argued that the "user interface message delivery function" is capable of delivering a message from a number of different messages, as described in the specification of the '363 patent as per Table 22 (CX-2 at 11:5-34) and Table 27 (CX-2 at 13:1-40), which list various identifiers that can be used to send messages via GPS_Output. (CBr at 108.)

Respondents argued that a person of ordinary skill in the art would understand the term "user interface message delivery function" in the context of the claims to mean a function used to deliver a message. (RBr at 120.) Respondents also argued that the terms "user interface message delivery function," "interface message delivery function," and "message delivery function" are not used in the specification, and are not discussed in the prosecution history. (RBr at 121.)

Respondents further argued that the '363 patent makes clear that the GPS_Input and GPS_Output functions are but "one exemplary implementation of the user interface 304" (RFF 979) and that the description of an implementation of the invention does not limit the invention to the precise form disclosed. (RBr at 121.) Respondents, in addition, argued that unasserted claim 9 of the '363 patent provides: "The method of claim 8, wherein the user interface message delivery function is provided by the user application." and likewise that claim 17 is a similar dependent claim from claim 16. (RBr at 122.) Hence, respondents argued, the view that the "user interface message delivery function" of claim 8 can only be provided by the user application renders claim 9 redundant. (RBr at 122.) Thus, respondents argued, because claim 8 must be broader than claim 9, the "user interface message delivery function" of claim 8 can be in either the user application or GPS engine, and therefore that the "user interface message delivery function" can be called by either the user application or the GPS engine. (RBr at 122.)

The staff argued that respondents' construction of the claimed phrase, which it argued is based on the plain and ordinary meaning of the words found in the claim, is correct. (SBr at 27.) The staff argued that nothing in the claims require the GPS engine to make the call, and nothing requires that a plurality of different messages be included with the function. (SBr at 27.) The staff further argued that the plain language does not support such a construction, especially when the term is read in context of the broader claim element: "calling a user interface message delivery function to communicate the position to a user application." Thus, the staff argued, the claim element, as a whole, provides that it encompasses a simple delivery function that merely provides the position information, and that a plurality of commands is not needed. (SBr at 27.)

The claimed phrase "user interface message delivery function" is found in asserted

independent claim 8 and unasserted dependent claim 9, as well as independent asserted claim 16 and unasserted dependent claim 17. Thus, the limitation containing the claimed phrase in issue in both claims 8 and 16 reads "calling a user interface message delivery function to communicate the position to a user application." (CX-2 at 42:26-27, 61-62 (emphasis added).) The relevant portions of claims 9 and 17 read "wherein the user interface message delivery function is provided by the user application." (CX-2 at 42:28-30, 63-64 (emphasis added).) Thus, the plain language of the claims requires that the function at issue be a part of a user interface and be able to communicate the position information to the user application. The administrative law judge has construed "user interface," supra, as "an interface between the system and a user." Therefore, the plain language of the claims reads that said function is a function that communicates a message between a user and the system. In the context of claims 8 and 16, that message is a position, and thus the question remains as to whether the function is restricted to only communicating a position.

Regarding the specification, it discloses that:

> The positioning engine 302 calls a function provide[d] by the user program 122 (e.g., GPS_Output) to deliver positioning messages (e.g., position updates and other synchronous and asynchronous data) to the user program 122 .

(CX-2 at 4:46-49 (emphasis added).) Thus, the specification discloses GPS_Output as an example of a function that delivers the position to the user application. The specification also discloses that the user application can call the GPS_Input() function to send a variety of types of messages to the GPS engine. (CX-2 at 8:1-14.) Moreover, the administrative law judge has found, supra, that both GPS_Output and GPS_Input are " positioning engine communication functions." Specifically, Table 24 of the '363 patent lists the GPS_Input function as having

"messages." (CX-2 at 12:1-34 (Table 24).) The '363 patent also discloses that inputs of both the GPS_Input and GPS_Output functions are messages. (See, e.g., CX-2 at 8:1-14, 10:66-67, 12:64-67.) Thus, the administrative law judge finds that either of the functions GPS_Input or GPS_Output can satisfy the plain language of the claims as regards "user interface message delivery function," and that said finding does not contradict his earlier finding, supra, that GPS_Input is also be a command delivery function. Hence, the specification supports the plain language of the claims, and that said function is not restricted to only communicating position information. Based on the foregoing, the administrative law judge finds that the claimed phrase "user interface message delivery function" is construed as "a function that communicates a message between a user and the system."

Regarding complainant's argument that said function must be called by the GPS engine, neither claim 8 nor claim 9 requires that any particular component of the system call said function. Although said function is construed as being a component of the user interface, the administrative law judge has construed "user interface," supra, as "an interface between the system and a user." Thus, any component of the system could call the function. Further, the specification shows several components that could, theoretically, interface with the user interface. Fig. 3, for example, shows that User Programs 122, through Users Tasks 310, communicates with the GPS Library through the User Interface 304; and each of the GPS Engine 302, Tracker Interface 306, and OS Interface 308 could also directly interact with the User Interface 304. Moreover, the administrative law judge has found, supra, that both GPS_Input and GPS_Output are user interface message delivery functions, and the specification describes one as being called by the user program and the other as being called by the GPS engine.

F. Infringement

Applicable Law. See Section IV.F, supra.

1. Accused Products

Complainant accuses respondents' {

} chips and their associated software of indirect infringement of claims 7, 8, and 10-12, and direct infringement of claims 16 and 18-20 of the '363 patent. (CBr at 111.) Specifically, complainant argued that the {

} (CBr at 111.) Complainant also accused each of these products of contributory infringement of the '363 patent. (CBr at 111.) Complainant argued that respondents produce the accused chips incorporated in the accused devices, as well as the GLL host software run on the host processors of the accused products. (CBr at 111.)

Respondents and the staff disputed that the { } is a product, as it is still in development. (RBr at 5.)

The administrative law judge has found, in Section IV.F.1.a, supra, that the { } is not an accused product in this investigation. Thus, the administrative law judge finds the accused products in isssue are the {

}

2. Complainant Has Not Established Infringement

Claim 7 reads: "The system of claim 4, wherein the positioning engine communication function is a command delivery function." (CX-2 at 42:17-18.) Complainant argued that the requirement of claim 7, viz. wherein the positioning engine communcation function is a command delivery function, is satisfied by respondents' {

} (CBr at 125.)

Respondents argued that the accused products lack numerous elements of claim 7, as the Global Locate baseband chips and the GLL software do not contain "a tracker hardware interface," "a memory," or a "processor" as required by claim 1 of the '363 patent, from which claim 7 depends. (RBr at 138.) Respondents further argued that the accused chips and the GLL software cannot directly infringe claim 1 of the '363 patent, as the chips and software must be added to components of the devices manufactured by Global Locate or Broadcom's customers. (RBr at 138.) Thus, respondents argued that Global Locate also cannot directly infringe claim 7. (RBr at 138.)

The staff argued that respondents' non-infringement argument concerning the "command delivery function" claim element is based on an incorrect claim construction advocated by complainant, and fails to address the correct claim construction; and that the evidence shows that the Global Locate systems call a user interface to communicate the positioning information. (SBr at 32.)

Claim 7 depends from claims 1 and 4 of the '363 patent. Complainant admitted that it is not accusing respondents' chips of direct infringement of claim 7. (CBr at 110.) However, complainant later argued that the "Accused Devices and Accused Products meet every limitation of, and thus literally infringe, all of the asserted claims." (CBr at 125.) It is a fact that complainant's expert Bartone testified that respondents' chip products do not infringe claim 1, which is a requirement for the products to infringe claim 7. Thus, he testified:

> Q. Do you have an opinion as to whether Global Locate's products infringe directly claim 1?
>
> A. The products?
>
> Q. Baseband chips and the software. Do you have that in mind?
>
> A. Yeah, yeah.
>
> Q. Do those products directly infringe claim 1?
>
> A. No.

(Tr. at 1086-1087.) Even more specifically, complainant's expert Bartone testifed that the accused chip products do not contain a memory, a tracker hardware interface, or a processor:

{

}

{

}

(Tr. at 1084-1085 (emphasis added).)

Based on the foregoing, the administrative law judge finds that the accused chip products do not directly infringe claim 7 of the '363 patent.

Complainant has also accused several third-party devices that include certain of respondents' chips of infringing claim 7, viz. {

} In order to infringe claim 7, said accused devices must practice not only the limitation of claim 7, but also the limitations of claims 1 and 4, from which claim 7 depends. Specifically, the language of claim 4 requires "at least one positioning communication

function" and "at least one positioning control function," and further requires that both functions be a part of the user interface. The administrative law judge has construed "user interface," supra, as "an interface between the system and a user." Complainant argued, with regard to claim 7, that:

{

}

(RBr at 172 (Exhibit A).) Neither complainant in its post hearing briefs nor complainant's expert Bartone opined on whether or not any specific accused device uses { } that complainant is depending on to prove infringement of claim 7.[24] In an attempt to show such a link, complainant, in its proposed finding of facts, points to certain evidence in the record that purportedly links the technical document CX-19C, which describes respondents' GLL functions,

---

[24] Complainant has not pointed to any testimony by its expert Bartone that articulates an opinion on direct infringement of claims 1, 4, or 7; even in response to a proposed finding of fact by respondents in which they stated that "Dr. Bartone did not testify or otherwise offer an opinion regarding infringement of claim 1, 4, or 7 of the '363 patent." (RFF 1369 (internal citation omitted).) Instead, complainant points to portions of discussions about claim 8 (see CRRFF 1369, CRRFF 1369B, CRRFF 1369C), claim 11 (see CRRFF 1369D), claim 16 (see CRRFF 1369A), and a portion of cross examination on claim 4 that appears to be concerning claim construction that does not even mention an accused product (see CRRFF 1369E). In its rebuttal brief, however, complainant does state that:

> Respondents' contention that Dr. Bartone did not testify to this at the Hearing is simply wrong. Dr. Bartone specifically identified { }
> (Bartone, Tr. 1177:2-1179:6; CRRFF 1369F.)

(RRBr at 87.) Even that testimony, however, does not link said function to any specific accused device.

including { } to certain accused devices. Based on the administrative law judge's construction of "user interface," supra, and his finding that the respondents' chip products, alone, cannot directly infringe claims 1, 4, and 7, the administrative law judge finds that, to establish infringement by a preponderance of the evidence, complainant must prove that a specific accused device implements and uses { }

Respondents admitted that "[t]he software that Broadcom supplies to its customers for GPS products is known as the Global Locate Library or GLL" and further admitted that CX-19C is a document that describes the GLL APIs. (RFF 389 (undisputed); RRCFF 1264.) The parties agreed that an API is an application programming interface. (RFF 1838 (undisputed).) The administrative law judge finds nothing in the document itself, however, that discusses any specific end product. (See generally, CX-19C.) {

}

{

}

}

(JX-7C at 55-56.) Even ignoring that the cited testimony is regarding CX-676C, which is a different document than CX-19C, said testimony specifically states that {

} Thus, complainant has not shown a direct link between {

}

{

}

{

}

}

(JX-17C at 111.) Again, the cited testimony fails to mention any specific function or any specific products. Thus, the administrative law judge finds that complainant has failed to show any connection between { }

{

}

Based on the foregoing, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that any of the accused devices have a user interface that implements { } which function complainant depends to prove infringement.

Moreover, the administrative law judge has found, supra, that a "command delivery function" is "a function that communicates a command from the user to the positioning engine." Said function is a "positioning engine communication function," which is distinct from a "positioning control function," such as functions used to start and stop the positioning engine. Thus, the administrative law judge finds that the key distinction between these types of functions, i.e., positioning control functions and positioning engine communication functions, is that control functions are essential to the operation of the positioning engine, whereas communication functions are concerned with either modifying the operation of or monitoring the position engine. Thus, starting and stopping the positioning engine are examples of control functions, as per Table 11 of the specification (see CX-2 at 7:44-54), whereas providing status information, as do both

GPS_Output (CX-2 at 13:1-40 (Table 27)) and GPS_Input (CX-2 at 13:43-67 (Table 28)), or setting non-essential parameters, such as the message rate, as does GPS_Input (CX-2 at 14:36-60 (Table 30), are examples of communication functions.

Complainant has relied only on CX-19C and its expert Bartone's explaination of such. CX-19C discloses:

{

}

(CX-19C at GL-596 000582.) {

}

(CX-19C at GL-596 000609 (emphasis added).) {

} Based on the foregoing, the administrative law judge finds that the function on which complainant relies for infringement, viz. { } is a positioning control function and not a positioning engine communciation function. Thus, the administrative law judge finds that complainant has not established, by a preponderance of the evidence, that the accused products have a "command delivery function" as required by claim 7.

Based on the foregoing, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that the accused products (chips or devices), practice claim 7 of the '363 patent.

Referring to claims 8 and 16, complainant argued that claim 8 is a method claim that recites a single apparatus limitation, viz. a tracker hardware interface; and that each accused product contains such an interface. (CBr at 112.) Thus, complainant argued that {

} (CBr at 112.)

Respondents argued that complainant has not establish that any accused product infringes the '363 patent, as the accused products work in a fundamentally different way and employ a fundamentally different structure from what is claimed in the asserted '363 patent claims. (RBr at 123.) Respondents further argued that no accused baseband chip is a "tracker" or outputs "positioning information," as required by each asserted claim (RBr at 123); that in an attempt to avoid the prior art, complainant's expert Bartone construed the terms "command delivery function" from claim 7 and "user interface message delivery function" from claims 8 and 16 narrowly, and these narrow constructions do not read on the accused products (RBr at 123); and that it was undisputed at the hearing that none of respondents' products, by themselves, directly infringe any asserted claim of the '363 patent. (RBr at 123.)

The staff argued that respondents dispute only a few elements and essentially base their non-infringement positions on claim construction arguments, including claim constructions offered by complainant, which constructions respondents have argued are incorrect. (SBr at 30-31.) The staff further argued that the evidence shows that the accused chips and software, as used in the accused devices, directly infringe the method claims and computer-readable medium claims. (SBr at 31.)

Complainant does not accuse any of respondents' chips of direct infringement. (CBr at 110.) Thus, only the accused devices, viz. {

} are in issue with respect to claim 8. The following two claimed phrases, however, appear in both claims 8 and 16: "calling a tracker interface function to receive positioning information from a tracker hardware interface" and "calling a user interface message delivery function to communicate the position to a user application."

Referring to the first phrase, viz. "calling a tracker interface function to receive positioning information from a tracker hardware interface," as found regarding claim construction, supra, the claims do not require a particular tracker, but rather that a tracker be "a device that acquires data from a satellite and transmits positioning information." Thus, a tracker hardware interface is an interface between the tracker hardware and the system at issue, which definition the parties agreed. The parties agreed that the accused baseband chips {

} (RFF 1454, 1455 (undisputed).) Moreover,

respondents' expert Michalson specifically testified that the accused products {

}

{

}

(Tr. at 1697-1698 (emphasis added).) Complainant, however, must show that the claim requirement "calling a tracker interface function to receive positioning information from a tracker

hardware interface" occurs. Hence, complainant must show that each of the accused devices calls a tracker interface function in order to receive the positioning information.

Complainant has argued that the accused products satisfy the limitation of "calling a tracker interface function to receive positioning information from a tracker hardware interface" by {

} (CFF 1314 citing Tr. at 987-988.) The CX-19C document,[25] also used by complainant in support, describes {

} (CX-19C at GL-596 000582.) {

} (CX-19C at GL-596 000631 (emphasis added).) {

}

{

}

(CX-19C at GL-596 000582 (emphasis added).) Thus, the administrative law judge finds that the mere reference to the CX-19C document is insufficient to show that the accused products use {

} For example, nothing in CX-19C discusses any details regarding specific end products or implementations (see, generally, CX-19C). Also any particular "target device," i.e. accused device, {

}

[25] As found, supra, respondents admit that "[t]he software that Broadcom supplies to its customers for GPS products is known as the Global Locate Library or GLL" and further admit that CX-19C is a document that describes the GLL APIs. (RFF 389 (undisputed); RRCFF 1264.)

} (CX-19C at GL-596 000631.) Complainant referenced CX-311C and CFF 322-330 as showing how {

} (RBr at 114.) The administrative law judge, however, finds that each of complainant's proposed findings of fact that purport to relate to the issue, viz. CFF 322-330, do not provide sufficient information to support complainant's contention. For example, CFF 322, 325, 330, and 331 merely confirm that data is sent to the ASIC. Regarding CX-311, complainant pointed out no explanation beyond the bare document reference. However, the administrative law judge notes that {

} (CX-311 at 6-7.) Therefore, the additional step of showing how said function might be used to facilitate the positioning system receiving positioning information remains unexplained. Hence, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that said limitation in issue is practiced by the accused third party devices. Moreover, {

} (CX-19C at GL-596 000582 {

} CX-19C at GL-596 000631.) Thus, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that the accused chip products { } to receive position information, as required by the limitation

of "calling a tracker interface function to receive positioning information from a tracker hardware interface."

Referring to the claimed phrase, "calling a user interface message delivery function to communicate the position to a user application," the administrative law judge has found, supra, that the claimed phrase "user interface message delivery function" is construed as "a function that communicates a message between a user and the system." In the context of the claimed phrase at issue, said message must be the "position." Complainant relies on one of {

} In the CX-19C document,

{ }

{

}

(CX-19C at GL-596 000636.) { }

{

}

(CX-19C at GL-596 000637.) {

} Moreover, complainant admits as such in their post hearing brief. (CBr at 116.) Communicating to the user application that a position is available is not the same as communicating the actual position. Complainant appears to argue that {

} (CBr at 116.) {

}

{

}

(CX-19C at GL-596 000587.) {

} Hence, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that said limitation is practiced by any of the accused products, whether chip or device.

Based on the foregoing, the administrative law judge finds that complainant has not shown, by a preponderance of the evidence, that the accused products, whether chip or device, practice the limitations of claims 8 or 16.

Referring to claims 10, 11, 12, 18, 19, and 20, each of said claims depend from asserted independent claim 8 or 16. The administrative law judge has found that complainant has not shown, by a preponderance of the evidence, that the accused products practice either claim 8 or 16. Thus, the administrative law judge finds that complainant has likewise not shown, by a preponderance of the evidence, that the accused products practice any of said dependent claims 10, 11, 12, 18, 19, and 20.

Regarding the doctrine of equivalents, complainant, in its proposed findings of fact, does not include any proposed facts regarding the doctrine of equivalents. Complainant does, in its post hearing brief, give a general argument as regards the doctrine of equivalents, consisting of mostly conclusory statements with no reference to any testimony at the hearing. In fact, the only sentence with any evidentary support whatsoever is:

{

} (CFF 396, 1312, 1348, 1350.)

(CBr at 131-32.) Said citation tends to show that the accused devices {

} which the administrative law judge finds is insufficient to show that

any particular element is infringed under the doctrine of equivalents. In its rebuttal brief, complainant argued that:

> Infringement by the doctrine of equivalents is a legal standard. Dr. Bartone presented explicit detailed testimony as to how the Accused Devices and Accused Products meet each limitation of the asserted claims. Should the Court determine that "tracker" is a limitation of the asserted claims, for the reasons set forth in SiRF's Post-Hearing Brief at pp. 131-132, SiRF submits that the function, way, result test for infringement under the doctrine of equivalents is fully supported by Dr. Bartone's testimony.

(RBr at 93.) Essentially, complainant here is admitting that its expert witness Bartone's testimony did not include any analysis of the function, way, result test for infringement under the doctrine of equivalents.

Complainant's rebuttal responses to respondents' proposed findings of fact likewise attempt to use Bartone's testimony for literal infringement to support an argument for infringement under the doctrine of equivalents. For example, in response to RFF 1371, which reads "SiRF presented no evidence at the hearing in this investigation regarding infringement under the doctrine of equivalents for any claim element of the '363 patent. (Bartone, Tr. at 977:5-1010:9.)", complainant argued:

> Mischaracterizes record; record supports opposite conclusion – the evidence presented at the hearing is sufficient to demonstrate infringement under the doctrine of equivalents; misleading; irrelevant – the question of infringement under the doctrine of equivalents is a legal conclusion, not a factual one, and arguments relating to infringement under the doctrine of equivalents can be made based on evidence presented at the hearing.

(CORFF 1371.) Thus, complainant appears to be arguing that underlying facts for literal infringement are identical to underlying facts for doctrine of equivalents. As the administrative law judge stated in reference to testimony by Bartone about the '216 patent during the hearing:

> JUDGE LUCKERN: As far as a difference between literal infringement and doctrine of equivalents, there is a huge difference. You know that. I mean, there is a way, meanings, whatever it is. He may not understand the law. I don't expect him to do it. He is not a lawyer. He is doing a great job but there is a big difference as to whether somebody literally infringes or infringes by the doctrine of equivalents.

(Tr. at 650.) Reference is also made to Texas Instruments, Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1567 (Fed. Cir. 1996) (requiring "particularized testimony and linking argument as to the 'insubstantiality of the differences' between the claimed invention and the accused device or process" to prove infringement under the doctrine of equivalents). Based on the foregoing, the administrative law judge finds that complainant has failed to adequately address the doctrine of equivalents in its post-hearing submissions, and that complainant's expert Bartone failed to provide any particularized testimony regarding the doctrine of equivalents with respect to the '363 patent. Thus, the administrative law judge finds that complainant has not established, by a preponderance of the evidence, that the accused products infringe under the doctrine of equivalents.

Because complainant has failed to prove any underlying direct infringement, the administrative law judge finds that complainant has failed to establish indirect infringement, whether through inducement or contributory infringement. DSU Med. Corp., supra.

G. Validity

A patent is presumed valid, and respondents have the burden of proving invalidity by clear and convincing evidence. 35 U.S.C. § 282; Iron Grip Barbell Co. v. USA Sports, Inc., 392 F.3d 1317, 1320 (Fed. Cir. 2004); Stryker Corp. v. Davol Inc., 234 F.3d 1252, 1259 (Fed. Cir. 2000). Clear and convincing evidence has been described as evidence which proves in the mind of the trier of fact "an abiding conviction that the truth of [the] factual contentions [is] 'highly probable.'" Intel Corp. v. United States Int'l Trade Comm'n, 946 F.2d 821, 829-30 (Fed. Cir. 1991) (quoting Colorado v. New Mexico, 467 U.S. 310, 316 (1984)).

A patent claim is invalid as anticipated if "the invention was patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or ... patented or described in a printed publication in this or a foreign country more than one year prior to the date of the application for patent in the United States." 35 U.S.C. § 102(a)-(b). Anticipation requires that a single prior art reference discloses each and every limitation of the claimed invention. Schering Corp. v. Geneva Pharms., 339 F.3d 1373, 1379-80 (Fed. Cir. 2003). Anticipation is a question of fact. SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1342-43 (Fed. Cir. 2005).

To anticipate, a prior art reference must also describe the claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention, and be "enabling." Helifix Ltd. v. Blok-Lok, Ltd., 208 F.3d 1339, 1346 (Fed. Cir. 2000). An enabling reference contains a description detailed enough to allow one skilled in the art to make and use the claimed invention without undue experimentation. In re Wright, 999 F.2d 1557, 1561 (Fed. Cir. 1993).

For a reference to anticipate a claim under the doctrine of "inherent anticipation," the evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." In re Robertson, 169 F.3d 743, 745 (Fed. Cir. 1999) (quoting Cont'l Can Co. v. Monsanto Co., 948 F.2d 1264, 1268 (Fed. Cir. 1991)). "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." Cont'l Can, 948 F.2d at 1269 (citations omitted) (emphasis added).

Respondents argued that each of the GPS Builder System, sold by SEC Plessey Semiconductors and the FirstGPS System of Trimble Navigation Limited contain "all limitations from all asserted claims of the '363 patent." (RBr at 142.)

1. GPS Builder System

Regarding whether or not the GPS Builder System is prior art, the parties agreed that the '363 patent was filed on October 10, 2002. (RFF 1800 (undisputed).) The parties agreed that the GPS Builder system was publicly available at least as early as 1995. (RFF 1867 (undisputed).) The parties agreed that a GPS Builder system was sold to respondents' expert Michalson in 1995 with documentation. (RFF 1866, 1868. (undisputed).) Michalson used the GPS Builder system from 1995 to about 2001, and had graduate students also working with it. (RFF 1872, 1873 (undisputed).) Complainant's expert Bartone was aware of the GPS Builder system, and that certain students were working with it in 1998. (RFF 1874, 1875 (undisputed).) Based on the foregoing, the administrative law judge finds that the GPS Builder system is prior art to the '363 under at least 35 U.S.C. §§ 102(a) and (b).

Referring to claim 7, respondents argued, regarding the claim requirement of a "command delivery function," that even under complainant's expert Bartone's improperly narrow claim interpretation, at least the track function of the GPS Builder was a "command delivery function" because it received input parameters that selected the channel number and the satellite pseudo-random noise (PRN) number being tracked; and that this function met Bartone's claim interpretation for "command delivery function" because it was "a function called by a user program to send at least one of a plurality of different commands to a GPS engine." (RBr at 149-150.)

Complainant argued that respondents' expert Michalson only provided conclusory statements and quotes about functions in the GEC Plessey GPS Builder, and did not demonstrate how those functions satisfied SiRF's constructions of the terms. (CBr at 145.) Complainant further argued that, under SiRF's construction, Michalson testified only that the GPS Builder track function meets the "command delivery function" limitation. (CBr at 146.) Complainant also argued that the GPS Builder track function does not meet complainant's construction of the term "command delivery function" because the GPS Builder track function is not capable of delivering at least one of a plurality of different commands like the "command delivery function" set forth in the Yamamoto '363 patent. (CBr at 146.)

The staff argued that the evidence shows that the GEC Plessey Semiconductors' GPS Builder System anticipates the asserted claims of the '363 patent and that the system was on sale for more than one year before the date of the '363 patent's application. (SBr at 40.) The staff argued that complainant disputes only a few claim elements, including the "command delivery

function" of claim 7, but relies on complainant's incorrect claim construction to argue that the command delivery function must be capable of delivering multiple commands. (SBr at 41.)

In order to anticipate claim 7 of the '363 patent, the GPS Builder system must anticipate each limitation of claims 1, 4, and 7. The preamble of claim 1 recites: "A system for processing positioning signals, the system comprising: . . ." (CX-2 at 41:61-62.) RX-98 is entitled, "GPS Builder 12 Channel GPS Development Kit," and has a copyright date of August 1994. (RFF 1879, 1880 (undisputed).) Said document discloses:

> There are many applications which use the Global Positioning System (GPS) so understanding how to design products with this capability is now crucial. To help satisfy this need, GEC Plessey Semiconductors offer GPS Builder - a development kit which can provide a fully functional demonstration of a 12 channel GPS receiver when installed in a 486 DX PC and coupled to an external antenna, which is also provided in the kit. GPS Builder is a prototyping aid for basic GPS receiver design and is based on the GP1010/GP1020 chipset. Included in the kit is the necessary software both in executable format and full source code to help in further development.

(RX-98 at GL_596 471468.) Respondents' expert Michalson used the GPS Builder system from 1995 to about 2001, i.e. around 6 years. (RFF 1872 (undisputed).) Thus, Michalson testified:

> Q. Can you describe for us the software architecture of the GPS Builder system?
>
> A. Yes. The software would reside in memory on the host. And it provided an interface to the operating system, the system operated on an operating system. It had user keyboard input and user display, and it would calculate navigation results. And the sample application they gave you would allow the user to send various commands to the GPS Builder positioning engine, and the positioning engine would deliver updated positions to the user and display them on screen.

(Tr. at 1735.) Complainant admits that in RX-97 for the GPS Builder, Fig. 2 depicts the microprocessor system as outputting a navigation solution. (RFF 1924 (undisputed); see also Tr. at 1732-1733; RX-97 at GL-596 471435.) Michalson's testimony stands unrebutted by complainant's expert and is supported by documents in evidence. Thus, the GPS Builder was a GPS receiver that received satellites signals and processed those signals to derive positioning information. To the extent that the preamble of claim 1 may be limiting, based on the foregoing, the administrative law judge finds that respondents have established, by clear and convincing evidence, that the GPS Builder system satisfies the preamble of claim 1.

Referring to the element of claim 1 reading "a tracker hardware interface for receiving positioning information" (CX-2 at 41:63-64), the administrative law judge has found, supra, that a tracker is "a device that acquires data from a satellite and transmits positioning information." The administrative law judge has also found that no particular kind of tracker is required by the claims, and that a "tracker hardware interface" is an interface between the system at issue and the tracker. Thus, Michalson testified that:

> Q. Can I have RDX-65, please. Did the GPS Builder have a tracker hardware interface for receiving positioning information?
>
> A. Yes. The GPS Builder System had a hardware interface to the host PC.
>
> Q. Under Dr. Bartone's construction of a tracker, did the GPS Builder have a tracker?
>
> A. Under Dr. Bartone's construction, it did.
>
> Q. Under your construction and the -- I'm sorry, under the staff's construction of a tracker, did the GPS Builder have a tracker?
>
> A. Yeah, to the extent that the staff's construction is read to be broader than Dr. Bartone's, it certainly would also have a tracker.

(Tr. at 1740.) The RX-97 document, to which Michalson refers in RDX-65, states:

> The GP1020 is a six-channel CMOS digital correlator which has been designed to work with the GP1010 L1-channel down-converter or other integrated circuits, and may be used to acquire and track the GPS C/A code or the GLONASS signals...The GP1020 interfaces with a microprocessor via a 16-bit data bus to control the acquisition and tracking processes using the various registers on the chip.

(RX-97 at GL-596 471434.) Michalson's testimony stands unrebutted by complainant's expert, and is supported by documents in evidence. Thus, the GPS Builder system comprises a tracker, and said tracker interfaces with the system to receive positioning information. Based on the foregoing, the administrative law judge finds that respondents have established, by clear and convincing evidence, that the GPS Builder system practiced this limitation of claim 1.

Referring to the claim 1 recitation, "a memory comprising a GPS library comprising a user interface, a tracker interface, and an operating system interface, the tracker interface comprising at least one tracker interface function for communicating over the tracker hardware interface" (CX-2 at 41:65-42:2), the administrative law judge has found, supra, that "user interface" is construed as "an interface between the system and a user;" that the claimed phrase "operating system interface" is construed as "an interface between the system and an operating system;" and that a "tracker interface function" is "a function for the purpose of communication performed by an interface between a tracker and the system." Thus, Michalson testified:

> Q. Could I have RDX-66, please. Did the GPS Builder System have a GPS library stored in memory?
>
> A. Yes. A large fraction of the GPS Builder code was relegated to doing functions that would be associated with the GPS library.

Q. As we go through each of these, if you could summarize the exhibit from which you found the information relied upon, that would be helpful.

A. Sure. The quotations refer to the requirement for disk space for the software. It also talks about the full source code being supplied with the GPS Builder.

Q. And what exhibits were you referring to?

A. I was referring to Exhibits RX-101 and RX-98.

Q. Turn, if you would, to RDX-67. Did the GPS library of the GPS Builder include a user interface?

A. Yes. I think there were several functions that could be interpreted as a user interface, citing to RX-125C, you will find a number of functions defined there, including GPS Builder function, which does initialization, a quit GPS function, which exits the positioning engine, and a track function, which does satellite selection and determines what satellites are tracked, a navigate function, which actually performs a navigation cycle and computes position.

And we also have a citation to RX-101, that, you know, talks about hardware IO and memory structures associated with a system using the GPS Builder card.

Q. Turn, if we could, to RDX-68. Did the GPS library of the GPS Builder include an operating system interface?

A. Yes, it did. If you look in the GPS Builder documentation, you will see that they say that it will run under MS-DOS and under Windows. And I have run it in both of those modes without difficulty.

It also, if you refer again to RX-125C, there are a number of C standard library calls to operating system functions that are used within the source code.

Q. And the exhibits that you were relying upon?

A. RX-101 and RX-125C.

> Q. Turn, if we could, to RDX-69 and the term "tracker interface." Did the GPS library of a GPS Builder include a tracker interface function for communicating over the tracker hardware interface?
>
> A. Yes. There were a number of functions that were involved on the low level processing of that data, functions like ProcAccum, TakeMeas, and BufferAccum were involved with doing things like reading the accumulations out of the correlator. In the case of BufferAccum, extracting the actual measurements from that correlation information and so on. Those are cited in RX-1257C.
>
> In terms of the tracker hardware interface element, the quote from RX-98 describes the interface card, the ISA bus interface that we had talked about being used to contribute the correlators.

(Tr. at 1740-1743 (emphasis added).) The RX-98 reference of the GPS Builder lists as a feature:

> Full Software including Source. Easily installed so you can be tracking in minutes!

(RX-98 at GL-596 471468 (emphasis added).) Said document also states:

> The software core routines acquire and track satellites using each of the 12 independent tracking channels in the GP1020 correlators, then compute a position solution from the resulting data.

(RX-98 at GL-596 471468 (emphasis added).) Thus, the software was a GPS library as disclosed in the '363 patent; that is, a collection of functions for the purpose of controlling a GPS system. The designers guide for the GPS Builder, RX-101, states:

> 1.4 MB of free hard disk space is required for installation of the software.

(RX-101C (Designer's Guide) at GL-596 472213.) Hence, the GPS Builder system required a memory for operation, which memory stored the GPS library.

Regarding a user interface, RX-98 reads in part:

> The results of this process are shown on various display screens on the PC monitor.

(RX-98 at GL-596 471468.) The display is updated by the "task Tdisplay in module DISPLAY.C," (RX-101 at GL_596 472259) the purpose of which is to "generate an updated CRT display at regular time intervals." (RX-101 at GL_596 472259.) Thus, the GPS Builder system comprises a function that interfaces between the system and a user.

As regards an operating system interface, RX-101 states:

> GPS Builder requires the MS-DOS™ operating system, version 5.0 or higher. It has been executed under Windows™ as a full-screen foreground DOS application with slight degradation in real-time performance.

(RX-101 at GL-596 472214.) The parties agreed that Michalson ran the software for the GPS Builder system under the MS-DOS, Windows, and Linux operating systems. (RFF 2007, 2008, 2009 (undisputed).) The GPS Builder source code included functions such as fprintf, rewind, fclose, fgets, sscanf, and fopen. (RFF 2011 (undisputed).) Said functions were used, inter alia, for the purpose of writing information to storage. (RX-125 at GL_596 471767, 792, 800, 801.) For example, the function SaveAlm purports to "Save almanacs, ionospheric/UTC models, and current ephemerides to a disk file" and uses the fwrite function to do so. (RX-125 at GL_596 471792.) Thus, the GPS Builder system includes functions that communicate with the underlaying hardware; which is a function of the operating system. (See, e.g., CX-2 at 4:52-55 ("The operating system interface 308 calls operating system functions for task scheduling and synchronization, RTC access, and storage access.").) Hence, the administrative law judge finds that respondents have established, by clear and convincing evidence, that the GPS Builder system comprises on operating system interface.

Regarding "the tracker interface comprising at least one tracker interface function for communicating over the tracker hardware interface," the administrative law judge has found,

supra, that the GPS Builder system comprises a tracker hardware interface. The correlators are described as the component that acquires and tracks the positioning information, thus:

> The GP1020 is a six-channel CMOS digital correlator which has been designed to work with the GP1010 L1-channel down-converter or other integrated circuits, and may be used to acquire and track the GPS C/A code or the GLONASS signals...The GP1020 interfaces with a microprocessor via a 16-bit data bus to control the acquisition and tracking processes using the various registers on the chip.

(RX-97 at GL-596 471434.) Complainant admits that several functions of the GPS Builder system control or otherwise communicate with the correlators. (RFF 2023, RFF 2025, RFF 2027 (all undisputed).) Thus, the GPS Builder system includes at least one tracker interface function.

Based on the foregoing, the administrative law judge finds that respondents have established, by clear and convincing evidence, that the GPS Builder system practices this limitation of claim 1 of the '363 patent.

Referring to the claim 1 recitation "and a processor for running the tracker interface function," (CX-2 at 42:3) the administrative law judge has found, supra, that GPS Builder system has at least one "tracker interface function" that communicates with the correlators. RX-98 states:

> The correlators are controlled by the host microprocessor via the ISA interface card.

(RX-98 at GL_596 471468.) Thus, to be controlled by the microprocessor, the administrative law judge finds that there must be communication between said correlators and said microprocessor. Hence, said tracker interface function(s) must be run by the processor. Also, RX-97 states:

> The very wide variety of types of GPS or GLONASS receiver need to operate the correlator in different ways so, to accommodate this and also to allow dynamic adjustment of loop parameters, the GP1020 has been designed to use software for as many functions as possible. This flexibility means that the device cannot be used without a microprocessor closely linked to it, but as a processor is always needed to convert the output of the GP1020 into useful information this is not a significant limitation.

(RX-97 at GL_596 47139.) Thus, a processor is a requirement of the GPS Builder system, and it is used to run a tracker interface function.

Based on the foregoing, the administrative law judge finds that respondents have established, by clear and convincing evidence, that claim 1 of the '363 patent at issue is anticipated by the GPS Builder system.

Claim 4 reads: "The system of claim 1, wherein the user interface comprises at least one positioning control function and at least one positioning engine communication function." (CX-2 at 42:9-12.) The language of claim 4, from which claim 7 depends, requires "at least one positioning communication function," "at least one positioning control function," and that both functions be a part of the user interface. As found, supra, the GPS Builder system comprises a user interface. Moreover, the administrative law judge has found, supra, that a "command delivery function" is "a function that communicates a command from the user to the positioning engine." Said function is a "positioning engine communication function," which is distinct from a "positioning control function," such as functions used to start and stop the positioning engine. Thus, the administrative law judge has found, supra, that the key distinction between these types of functions, i.e., positioning control functions and positioning engine communication functions, is that control functions are essential to the operation of the positioning engine, whereas communication functions are concerned with either modifying the operation of or monitoring the

positioning engine. Hence, starting and stopping the positioning engine are examples of control functions, as per Table 11 of the specification (see CX-2 at 7:44-54), whereas providing status information, as do both GPS_Output (CX-2 at 13:1-40 (Table 27)) and GPS_Input (CX-2 at 13:43-67 (Table 28)), or setting non-essential parameters such as the message rate, as does GPS_Input (CX-2 at 14:36-60 (Table 30), are examples of communication functions. The parties agreed that the GPS Builder source code included a gpsbldr function that "[initializes] the GPS Builder(TM) hardware and software." (RFF 2041 (undisputed in relevant part).) Initializing the system is a requirement of starting the positioning system and, thus, said function is analogous to a control function as described in the '363 patent. Moreover, the parties agreed that the GPS Builder source code included a quitgps function that "quits the application in a graceful way." (RFF 2042 (undisputed).) Also, Michalson testified:

> Q. Let's turn to claim 4 now. Can I have RDX-71, please. There is an additional limitation to claim 4. Let me ask you this question: Did the GPS Builder software include a "positioning control function"?
>
> A. Yes. I believe the source code, which is the RX-125C, contained at least two functions that you can interpret as a positioning engine control function. Those would be the GPS Builder function and the quit GPS function.

(Tr. at 1745 (emphasis added).) Thus, the GPS Builder system user interface comprises control functions.

Regarding the requirement of a "positioning engine communication function," the parties admitted that the GPS Builder source code included a track function that "performs a satellite selection process which decides which satellites should be tracked and which channels they should be assigned to." (RFF 2043 (undisputed).) The parties likewise agreed that the GPS

Builder source code included a navigate function that "[performs] one navigation cycle." (RFF 2044 (undisputed).) Also, respondents' expert Michalson testified:

> Q. Did the GPS Builder software include a positioning engine communication function?
>
> A. Yes, it did. Functions that we have identified as being positioning engine communications functions include the GPS Builder function, quit GPS function, track function, and navigate function, all of which are identified in the source code.
>
> Q. And that's RX-125C?
>
> A. Correct.

(Tr. at 1745 (emphasis added).)[26] RX-125 describes the navigation function, in part, as communicating "[u]pated current clock model and navigation states" after ordering the system to "[p]erform one navigation cycle." (RX-125 at GL_596 471522.) The track function is described as:

> Inputs: Channel number, satellite PRN number, and a Doppler prediction for that satellite.
> Outputs: Altered channel control blocks.
> Processing: The caller periodically performs a satellite selection process which decides which satellites should be tracked and which channels they should be assigned to. This procedure updates the SV's Doppler prediction in the channel control block, then if necessary switches the channel to a new satellite.

(RX-125 at GL_596 471533.) Thus, the track function communicates information from the user regarding what satellites to track and, if necessary, "switches the channel to a new satellite." (Id.)

---

[26] Although the transcript references RX-125C, said document is not designated as confidential as per the most recent exhibit list.

Hence, the GPS Builder system included, inter alia, the navigation function and track function, which were analogous to the positioning engine communication functions described in the '363 patent.

Based on the foregoing, the administrative law judge finds that respondents have established, by clear and convincing evidence, that the GPS Builder system anticipates claim 4 of the '363 patent at issue.

Claim 7 reads: "The system of claim 4, wherein the positioning engine communication function is a command delivery function." (CX-2 at 42:17-18.) The administrative law judge has found, supra, that a "command delivery function is "a function that communicates a command from the user to the positioning engine." Said function must also be distinct from a control function. The prior findings regarding claim 4, supra, show that the navigate function in the GPS Builder system ordered the system to perform a navigation cycle, and then communicated the results to the user. Likewise, the administrative law judge finds that the track function updates the SV's Doppler prediction in the channel control block and then, if necessary, switches the channel to a new satellite. Thus, the administrative law judge finds that both the navigate and track functions communicate a command from the user to the positioning engine.

Based on the foregoing, and in light of the fact that claims 1 and 4 are anticipated by the GPS Builder system, the administrative law judge finds that respondents have established, by clear and convincing evidence, that claim 7 of the '363 is anticipated by the GPS Builder system.

Referring to claims 8 and 16, and regarding the claimed requirement of "calling of a user interface message delivery function to communicate the position to a user application," (CX-2 at 26-27) respondents argued that the GPS Builder source code included a navigate function that

would provide updated position data to a user application through a navstatestruc data structure. (RBr at 151-152.) Respondents also argued that, while complainant's expert Bartone did not agree in the hearing that "the GPS engine could communicate a position to fix a user program," he did admit this fact in his deposition testimony, thus impeaching his statement at the hearing. (RBr at 152.) Respondents further argued that, under the proper construction of this claim term, as proposed by respondents and the staff, there is no dispute that this limitation is met. (Id.) Respondents also argued that Bartone offered no opinion regarding this claim element under respondents' expert Michalson's and the staff's claim construction of "user interface message delivery function" and, therefore, it should be noted that the GPS Builder performed the last step of claims 8 and 16. (Id.)

Complainant argued that the GPS Builder does not disclose the calling of a user interface message delivery function, as construed by complainant, because there is no function that is called by the GPS engine to deliver a message to a user application resulting in the communication of position. (CBr at 148.) Complainant also argued that the GPS Builder simply outputs its data to a data structure, not to a user application. (CBr at 148-49.) Complainant further argued that the navigate function in GPS Builder is not a callback function as required under complainant's construction, but instead is a polling function that has to query the data structure to retrieve the data and, thus, does not meet the "user interface message delivery function" limitation of claims 8 and 16 under complainant's construction. (CBr at 149.) Complainant argued that claims 10-12, which depend on claim 8, and claims 18-20, which depend on claim 16, are also valid over GPS Builder for at least the same reasons as claims 8 and 16. (Id.)

The preamble of claim 8 reads: "A method in a positioning system comprising a tracker hardware interface, the method comprising the steps of" (CX-2 at 42:19-20). The preamble of claim 16 reads: "A computer-readable medium containing instructions that cause a positioning system having a tracker hardware interface to perform a method comprising the steps of" (CX-2 at 42:53-56).[27] The administrative law judge finds that the preambles in issue are substantially identical to the preamble and first element of claim 1 of the '363 patent, in that claim 1 requires a "positioning system" and a "tracker hardware interface," as do claims 8 and 16. Based on the analysis of the preamble and first element of claim 1 with respect to anticipation by the GPS Builder system, the administrative law judge finds that respondents have established, by a preponderance of the evidence, that the preambles of claims 8 and 16 are likewise anticipated.

The claimed phrase, "calling a tracker interface function to receive positioning information from a tracker hardware interface" (CX-2 at 42:21-22, 57-58) is in each of claims 8 and 16. The administrative law judge has found, supra, in the finding of anticipation of claim 1 of the '363 patent, that the GPS Builder system has a tracker interface function that communicates with a tracker hardware interface, and that said tracker hardware interface receives positioning information. Also, respondents' expert Michalson testified:

> Q. Could I have RDX-74, again, in claim 8. Let me ask you this. Did the GPS Builder System perform the step of calling a tracker interface function to receive positioning information from a tracker hardware interface?

---

[27] The sole difference between the preambles of claims 8 and 16 is that claim 16 requires that a "computer-readable medium" contains instructions that cause the method to be performed. It has been shown in the finding of anticipation of claim 7 of the '363 patent by the GPS Builder system, supra, that the GPS Builder system is designed for use on a computer. Moreover, the parties agreed that respondents' expert Michalson received the source code for the GPS Builder software on a floppy disk in 1995. (RFF 2103 (undisputed).)

> A. Yes, it did. The correlators were hardware that was interfaced to the ISA bus. The correlators had the lowest level positioning information. They had the raw correlation data.
>
> And the only way to get that correlation data was to have functions in the GPS Builder software which would read that data from the correlators over that hardware interface.

(Tr. at 1747 (emphasis added).) The administrative law judge finds that the correlators have positioning information. The GPS Builder source code included a ProAccum function that "[processes] correlator accumulations & emit data bits" (RFF 2023 (undisputed)), a BufferAccum function that "[reads] correlator accumulations, buffer, & do Costas loop." (RFF 2116, 2025 (undisputed)), and an SVTRACK function that was a "[r]outine to process correlator interrupts." (RFF 2027, 2117 (undisputed)). Thus, the GPS Builder system contained functions that communicated with the correlators. Based on the foregoing, the administrative law judge finds that respondents have established, by clear and convincing evidence, that the GPS Builder system practices this element of claims 8 and 16 of the '363 patent.

The claimed phrase, "determining a position from the positioning information using a positioning engine" (CX-2 at 42:24-25, 59-60) is in each of claims 8 and 16. The administrative law judge incorporates his findings regarding anticipation of the preamble of claim 1 of the '363 patent, supra. Further, RX-98 for the GPS Builder states:

> The software core routines acquire and track satellites using each of the 12 independent tracking channels in the GP1020 correlators, then compute a position solution from the resulting data.

(RX-98 at GL_596 471468 (emphasis added).) Also, RX-97 for the GPS Builder states:

> The software associated with the GP1020 can be divided into two separate modules: one to acquire and track satellite signals to give pseudoranges and another to process these to give the navigation solution and format it in a form suitable for the user...

(RX-97 at GL-596 471439.) Thus, the GPS Builder determines the positioning information using a positioning engine. Based on the foregoing, the administrative law judge finds that respondents have established, by clear and convincing evidence, that the GPS Builder system practiced this limitation of claims 8 and 16 of the '363 patent.

The claimed phrase "calling a user interface message delivery function to communicate the position to a user application" (CX-2 at 42:26-27, 61-62) is in each of claims 8 and 16. The administrative law judge has found, supra, that the claimed phrase "user interface message delivery function" is construed as "a function that communicates a message between a user and the system." In the context of the claimed phrase at issue, said message must be the "position." The administrative law judge incorporates his findings regarding anticipation of claim 4 of the '363 patent, supra, in which he found that the GPS Builder system had at least one function that communicated between the user and the positioning engine. Further, complainant admitted that, in the GPS Builder system, the GPS engine could communicate a position fix to a user program. (RFF 2135 (undisputed).) Complainant further admitted that position fixes are communicated from the GPS engine to the user program through messages in the GPS Builder system. (RFF 2136 (undisputed).) The administrative law judge finds that his prior findings are sufficient to show anticipation. To the extent that a particular function is required, complainant admitted that the GPS Builder source code includes a navigate function that "perform[s] one navigation cycle." (RFF 2137 (undisputed).) Also, respondents' expert Michalson has testified that:

> Q. Can I have RDX-81? And can you explain to us briefly how the navigate function works?
>
> A. Yes. The navigate function is called periodically, and when the navigate function is called, and this is in -- I am referring now to RX-125C. When the navigate function is called, it reads the

> current observation from an observation data structure, processes that observation, and updates its current estimate of position.
>
> When it finishes updating its estimate of position, it delivers that to a navigation data structure that contains the user position.

(Tr. at 1761.) Specifically, the administrative law judge finds that the navigate function, as found, supra, communicated a position from the positioning engine to the user. Based on the foregoing, the administrative law judge finds that respondents have shown, by clear and convincing evidence, that the GPS Builder system practices this limitation of claims 8 and 16 of the '363 patent.

Complainant's expert Bartone has argued that the navigate function cannot be a "user interface message delivery function" because:

> And the second point that I made was that this user interface message delivery function does not really deliver the position -- it is not called by the GPS engine to deliver the positioning information to the user.
>
> So -- and the example is the navigate function. The navigate function has to actually go and get the information and, therefore, it is not a user interface message delivery function as I have construed it. And that applies to claim 8, 10 through 12, 16, 18 through 20. And the source of this information is RX-0125C.

(Tr. at 2116-2117 (emphasis added).) The administrative law judge finds that, under the administrative law judge's construction, which is substantially different than complainant's proposed construction, the navigate function is a "user interface message delivery function." Moreover, complainant has admitted, as found, supra, that position fixes are communicated from the GPS engine to the user program through messages in the GPS Builder system. (RFF 2136 (undisputed).)

Complainant has also argued, generally:

> Not supported by cited evidence: RX-125C, in describing the navigate function, states that navigate outputs an updated current clock model and navigation states, not an updated position.

(See, e.g., CORFF 2145 (emphasis in original).) Complainant cites to no expert opinion and no other evidence to explain its objection. Respondents' expert Michalson has interpreted the navigation function as communicating a position, and his testimony is unrebutted. (See, e.g., RFF 2145.) Thus the administrative law judge finds that the phrase "navigation states" may reasonably be interpreted as a position.

Based on the foregoing, the administrative law judge finds that respondents have established, by clear and convincing evidence, that each of claims 8 and 16 are anticipated by the GPS Builder system.

Claims 10 and 18, read in relevant part: "wherein the positioning system further comprises a user interface, and further comprising the step of receiving a positioning engine start message from the user interface." (CX-2 at 42:31-34, 42:66-43:2.) The administrative law judge finds that claims 10 and 18 are substantively identical as regards anticipation. The administrative law judge incorporates his findings regarding anticipation of claim 4, supra, which analysis found that the GPS Builder system has a user interface comprising control functions. Further, complainant admitted that the GPS Builder source code includes a gpsbldr function that "initialize[s] the GPS Builder(™) hardware and software." (RFF 2163 (undisputed).) Complainant further admitted that said gpsbldr function effectively started the GPS Builder system, and contains a positioning engine start message. (RFF 2164, 2165 (undisputed).) Based on the foregoing, and in light of the administrative law judge's findings that claims 8 and 16, the

base claims of 10 and 18, respectively, are anticipated, the administrative law judge finds that respondents have established, by clear and convincing evidence, that claims 10 and 18 are anticipated by the GPS Builder system.

Claims 11 and 19 read in relevant part, "wherein the positioning system further comprises a user interface, and further comprising the step of receiving a user command for the positioning engine from the user interface." (CX-2 at 42:36-39, 43:3-6.) The administrative law judge finds that claims 11 and 19 are substantively identical as regards anticipation. The administrative law judge further finds that claims 11 and 19 are substantively the same as claim 7 and, thus, that his finding of anticipation of claim 7 also applies to claims 11 and 19. Based on the foregoing, and in light of the administrative law judge's findings that claims 8 and 16, the base claims of 11 and 19, respectively, are anticipated, the administrative law judge finds respondents have established, by clear and convincing evidence, that claims 11 and 19 are anticipated by the GPS Builder system.

Claims 12 and 20 read in relevant part "wherein the positioning system further comprises a user interface, and further comprising the step of receiving a positioning engine stop message from the user interface." (CX-2 at 42:39-42, 44:1-4.) The administrative law judge finds that claims 12 and 20 are substantively identical as regards anticipation. The administrative law judge incorporates his findings of anticipation of claim 4 with respect to the GPS Builder system; specifically, the finding that the quitgps function is a positioning control function in the user interface. Thus, in light of the foregoing and his prior findings that claims 8 and 16, from which claims 12 and 20 depend, are anticipated, the administrative law judge finds that respondents

have established, by clear and convincing evidence, that claims 12 and 20 are anticipated by the GPS Builder system.

2. The FirstGPS System

Respondents argued that claims 7, 8, 10-12, 16, and 18-20 of the '363 patent are invalid as anticipated by the Trimble FirstGPS prior art under two separate bases; that a document describing the Trimble FirstGPS system, RX-418C (Trimble Ex. 12: { }), anticipates all asserted claims of the '363 patent; and that the Trimble FirstGPS system itself also anticipates all asserted claims of the '363 patent. (RBr at 155.) {

} Thus respondents' expert Michalson testified:

{

}

(Tr. at 1810-11 (emphasis added).) Since the Trimble FirstGPS system had all features of RX-418C, the findings on whether RX-418C discloses the asserted claims of the '363 patent applies to whether the Trimble FirstGPS system meets the asserted claims of the '363 patent.

Before reaching the issue of anticipation, complainant has argued that while respondents attempt to use numerous documents (RX-419C, RX-425C, RX-418C, RX-115, RX-420C, RX-421C, and RX-424C) for their arguments that the Trimble FirstGPS system anticipates the claims of the '363 patent, none qualify as prior art. (CBr at 138.) However through the testimony of Edward Jones and Greg Best, Trimble's corporate representatives on the FirstGPS product, the administrative law judge finds that the documents relied on by respondents do qualify as prior art. Thus respondents, through said testimony of Jones and Best, presented extensive evidence of business practice that the administrative law judge finds sufficient to prove that said documents were available and accessible to the interested public before the critical date. Evidence of routine business practice can be sufficient to prove that a reference was made accessible before a critical date. Hence, accessibility goes to the issue of whether interested members of the relevant public could obtain the information if they wanted to. If accessibility is proved, there is no requirement to show that particular members of the public actually received the information. See Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1569 (Fed. Cir. 1988). Also, the word "confidential" on a document may be of no consequence in determining whether there was a prior publication. See Crane Co. v. Goodyear Tire & Rubber Co., 577 F. Supp. 186, 197 (D. Ohio 1983). Moreover the administrative law judge finds unrefuted the testimony of Jones that

{

} (JX-51C (Jones Dep.) at 52) and that {

} (JX-51C (Jones Dep.) at 52, 124-129, 141-143, 150-154, 234-235; JX-35C (Best Dep.) at 41-43, 45-48, 49-57, 61-65,69-74, 85-88, 92-93, 103, 108-112, 114.)

Complainant argued that Jones and Best only testified as to their knowledge. See e.g. COFF 2236, 2244. The administrative law judge, however, expects fact witnesses to testify as to their knowledge. Moreover, the record established that each of Jones and Best was well qualified to testify as to the public availability of the documents in issue. Thus the following is undisputed: Jones was deposed under oath as Trimble's corporate representative on the FirstGPS product; {

}

} (RFF 2215-2233 (all undisputed).)

Complainant further argued the Trimble FirstGPS System was disclosed by the inventors, and considered by the Examiner, during prosecution of the '363 patent; that accordingly the asserted claims were already allowed over the Trimble FirstGPS System; and that in this situation, respondents' burden is especially difficult to overcome. However, while respondents admit that at least four of the prior art references made of record during prosecution of the '363 patent relate generally to Trimble's FirstGPS system (RBr at 182), the administrative law judge finds that the four cited prior art references do not contain anything close to a full disclosure of the details of the FirstGPS architecture; that RX-418C contains substantially more detail about the FirstGPS system than the four cited prior art references; and that the other documents relied upon to show the FirstGPS system (e.g., RX-419C, RX-420C, RX-421C, RX-424C, RX-425C) contain more detail about the FirstGPS system than said four cited prior art references. Complainant argued that respondents have admitted that U.S. Patent No. 6,430,503 cited on the face of the '363 patent was related to the FirstGPS architecture. However, complainant has not challenged the fact that documents such as RX-419C, RX-420C, RX-421C, RX-424C and RX-425C contain more detail about the FirstGPS system than any art that was before the Examiner.

Regarding whether the FirstGPS System anticipates the asserted claims of the '363 patent, the administrative law judge finds that complainant's expert Bartone, in complainant's rebuttal case, testified that the only limitations missing from the FirstGPS documents were the

"command delivery function" limitation of claim 7 and the "user interface message delivery function" limitation of claims 8 and 16. (Bartone, Tr. at 2118-21.) Moreover, respondents' expert Michalson argued that all limitations, including those limitations excepted to by Bartone, were disclosed by the FirstGPS documents. (Tr. at 1810-20, 1822-23, 1834-35.) Thus, the administrative law judge finds that only those two limitations disputed by Bartone are at issue.

With respect to respondents' argument that "command delivery function" limitation of claim 7 is anticipated by the FirstGPS system and related documents, respondents' expert Michalson testified:

{

}

(Tr. at 1818-1819 (emphasis added).) The administrative law judge has found, supra, that a "command delivery function" is "a function that communicates a command from the user to the positioning engine." The administrative law judge has also found, supra, that a "positioning engine communication function," which is from the language of claim 4, is distinct from a "positioning control function," such as functions used to start and stop the positioning engine. Thus, the administrative law judge finds that { } mentioned, supra, would not be command delivery functions. The description of { } however, reads:

}

(RX-418 at 69 (emphasis in orginal).) { } which is described in part as:

{
}

(RX-418 at 69 (emphasis added).) {

}

{

}

(RX-418 at 19 (emphasis in original).)[28] The administrative law judge finds that { } described in RX-424 is substantially the same as the { } described in RX-418. (RX-424 at 33.) Based on the foregoing, the administrative law judge finds that respondents have established, by clear and convincing evidence, that the FirstGPS system does disclose the "command delivery function" limitation of claim 7 of the '363 patent.

With respect to respondents' argument that "calling a user interface message delivery function" limitation of claims 8 and 16 is anticipated by the FirstGPS system and related

---

[28] { } (RX-418 at 9-12.)

documents, the administrative law judge has found, supra, that the claimed phrase "user interface message delivery function" is construed as "a function that communicates a message between a user and the system." In the context of the claimed phrase at issue, said message must be the "position." Thus, respondents' expert Michalson testified:

{

}

(Tr. at 1822-1823 (emphasis added).) {

}

{

}

Moreover, the RX-418 document further states:

{

}

(RX-418 at 34 (emphasis in original).) {

}

{

}

(RX-418 at 3, 8 (emphasis added).) {

} Therefore, the administrative law judge finds that respondents have established, by clear and convincing evidence, that the FirstGPS system does disclose the "calling a user interface message delivery function" limitation of claims 8 and 16 of the '363 patent.

Based on the foregoing, the administrative law judge finds that respondents have shown, by clear and convincing evidence, that the FirstGPS system and associated references anticipates each of the asserted claims of the '363 patent.

H. Domestic Industry

Complainant has satisfied the economic prong of the domestic industry requirement. See Section I, supra.

For applicable law for technical prong, see Section IV.H, supra.

Complainant argued that the '363 patent discloses the SiRFNav host software library as its preferred embodiment, and thus the same functions listed in the '363 patent exist in the

SiRFNav software library. (CBr at 133.) Complainant further argued that the SiRFNav code is used by { } and when incorporated into a host, meet every limitation of at least claim 8 of the '363 patent. (CBr at 133.)

Respondents argued that complainant has not met its burden of proof regarding the technical prong of domestic industry, because complainant has not demonstrated at the hearing how the { } devices allegedly practice claim 8 of the '363 patent. (RBr at 142.) The staff argued that complainant practices at least claim 8 of the '363 patent, as there was testimony that complainant's products are incorporated and used in third party devices. (SBr at 34.)

Complainant relies on two products for domestic industry: {

} (Tr. at 1010-1013; CX-79C[29] at SRF 112871; CX-80C[30] at SRF 125168.)

The preamble of claim 8 reads "[a] method in a positioning system comprising a tracker hardware interface, the method comprising the steps of." As regards said preamble, complainant's expert Bartone testified:

> Q. Can we move on to the domestic industry issue? You have an opinion on -- regarding whether or not SiRF practices any of the claims that we discussed, correct?
>
> A. Yes, I do.

---

[29] CX-79C is titled { } (CX-79C at SRF 112868.)

[30] CX-80C is titled { } (CX-80C at SRF 125165.)

Q. And what is that opinion you have?

* * *

{

}

(Tr. at 1010-1012.) Thus, regarding the { } CX-79C states:

}

(CX-79C at SRF 112872 (emphasis added).) Regarding the SiRFNavII, CX-80C states:

{

}

(CX-80C at SRF 125170 (emphasis added).) Hence, the administrative law judge finds that both products comprise a positioning system. As regards a "tracker hardware interface," the administrative law judge has found, supra, that a tracker is "a device that acquires data from a satellite and transmits positioning information," while a "hardware tracker interface" is an interface between the tracker and the system. Also, the administrative law judge has found that the claimed phrase "positioning information" is "data comprising measurement information such as the carrier phase, code phase, Doppler data, and pseudo-ranges." {

} (CX-79C at SRF 112871 { }; CX-79C at SRF 112872 { }); CX-79C at SRF 112875 {

}); see also CX-79C at SRF 112876 {

})

{

} (CX-

80C at SRF 125170 { }; see also CX-80C at SRF 125172 {

}; CX-80C at SRF 125173 {

}) Based on the foregoing, the administrative law judge finds that each of the products relied on by complainant for domestic industry practice the preamble of claim 8 of the '363 patent.

Claim 8 has the claimed phrase "calling a tracker interface function to receive positioning information from a tracker hardware interface." The administrative law judge has found, supra, that complainant's products comprise a tracker that receives positioning information and a tracker hardware interface that communicates with the tracker. As regards this limitation, complainant's expert Bartone testified:

{

}

}

(Tr. at 1013-1014.) {

} (CX-2 at 6:58-67; CX-79C at SRF 112880; CX-80C at SRF 125177.) {

} (CX-79C at SRF 112880; CX-80C at SRF 125177.)

Hence, complainant's alledged domestic industry products call a function to receive the positioning information from a hardware tracker interface. Based on the foregoing, the administrative law judge finds that complainant's products practice this element of claim 8 of the '363 patent.

Claim 8 has the claimed phrase "determining a position from the positioning information using a positioning engine." The administrative law judge has found, supra, that complainant's products receive positioning information from the tracker. Complainant's expert Bartone has testified:

{

}

}

(Tr. at 1014-1015.) The administrative law judge also has found, supra, in his finidng as to the preamble of claim 8 with respect to domestic industry that complainant's products comprise a positioning system that calculates a position. Further, regarding the { }

{

}

(CX-79C at SRF 112898-112899.) Regarding the { }

{

}

(CX-80C at SRF 125168.) {

} Based on the foregoing, the administrative law judge finds that complainant's products practice this element of claim 8 of the '363 patent.

Claim 8 has the phrase "calling a user interface message delivery function to communicate the position to a user application." The administrative law judge finds that the claimed phrase "user interface message delivery function" is "a function that communicates a message between a user and the system." In the context of the claim language, said function must communicate the position. Regarding the { }

{

}

(CX-79C at SRF 112878.) {

} Regarding the { }

{

}

(CX-80C at SRF 125175.) {

} In this regard, complainant's expert Bartone testified:

{

}

}

(Tr. at 1015-1017.) Hence, complainant's expert Bartone purports to describe the source code of the user interface message delivery functions of complainant's products. Moreover, respondents admit that, {

} (CFF 1452 (undisputed).) Thus, complainant's witness Witanis testified:

{

}

---

[31] The CX-1111 document appears to be the same document as CX-80C, as they are each titled { } and contain the same Bates numbers.

}

(Tr. at 476.) Therefore, the administrative law judge finds that complainant's products practice the final element of claim 8 of the '363 patent.

Based on the foregoing, the administrative law judge finds that complainant has satisfied the technical prong of the domestic industry requirement.

VI. Remedy

The available remedies for a violation of Section 337 include exclusion of the infringing articles from entry into the United States, other than entry permitted during the Presidential review period. 19 U.S.C. § 1337(d). Section 337(d) provides that:

> [i]f the Commission determines, as a result of an investigation under this section, that there is a violation of this section, it shall direct that the articles concerned, imported by any person violating the provision of this section, be excluded from entry into the United States. . . .

Id. The Commission also may issue a cease and desist order against "ny person violating this section, or believed to be violating this section. . . ." 19 U.S.C. § 1337(f). In particular, the Commission has entered cease and desist orders where a respondent has established a significant

domestic inventory of the infringing articles. See, e.g., Certain Condensers, Parts Thereof and Products Containing Same, Including Air Conditioners for Automobiles, ITC Inv. No. 337-TA-334 Commission Opinion (August 27, 1997) (cease and desist order appropriate where respondent had accumulated "commercially significant" inventories of infringing products in the United States). Id. at 26-28. The Commission has broad discretion in selecting the form, scope and extent of the remedy in a Section 337 proceeding. Viscofan S.A. v. U.S. Int'l Trade Comm'n, 787 F.2d 544, 548 (Fed. Cir. 1986).

Should a violation be found, complainant argued that, pursuant to 19 U.S.C. § 1337(d) and established Commission precedent, the appropriate remedy should include limited exclusion orders prohibiting the unlicensed entry into the United States of GPS chips and associated software and systems manufactured abroad by or on behalf of respondents or any of their affiliated companies, parents, subsidiaries, contractors {

}, or other related business entities, or their successors or assigns that infringe the asserted patents. Complainant also argued that the limited exclusion orders should extend to the downstream personal navigation devices (PNDs), cellular telephones, GPS modules, and PDAs, containing infringing GPS chips and associated software and systems manufactured abroad of behalf of respondents or any of their affiliated companies, parents, subsidiaries, contractors or other related business entities or their successors or assigns. (CBr at 154-7.) Complainant further argued that respondents maintain a commercially significant inventory of GPS chips and associated software and systems. Thus, it is argued that cease and desist orders should issue. (CBr at 165.)

Respondents argued that should the administrative law judge find a violation of Section 337 has occurred, any recommended remedy should be limited to the exclusion of any of Global Locate GPS chips that have been found to infringe the asserted patents; and that complainant has failed to establish on the record the necessary factual basis to support an exclusion order extending to downstream products, or for a cease and desist order. (RBr at 183.)

The staff argued that if a violation of Section 337 is found, entry of a limited exclusion order directed at least to respondents' infringing chips and associated software should be recommended; that the order should also extend to certain downstream products that incorporate the chips and software; that the evidence shows, inter alia, that the accused GPS chips are important to many of the downstream products; that all the downstream products are manufactured by third parties; that SiRF would likely benefit from an order reaching downstream products; that, the identity of the third party importers is largely known; that identifying downstream products containing infringing chips is not difficult; that Global Locate could easily evade an exclusion order in the absence of an order covering downstream products; and that the evidence shows that many manufacturers of the downstream products have been aware of this investigation and have received subpoenas and participated in discovery. The staff further argued that the evidence shows that the respondents maintain a commercially significant inventory of accused chips and hence, under Commission precedent, cease and desist orders against said respondents would appear to be appropriate. (SBr at 42-3.)

At the hearing, John Lauren Hansen was qualified as complainant's expert in the area of economic and accounting analyses. (Tr. at 1341.)

The administrative law judge in his Order No. 36 has found that Global Locate chips { } have been imported into the United States. Thus, in the event a violation is found, the administrative law judge recommends the issuance of a limited exclusion order prohibiting the importation into the United States of infringing GPS chips and associated software and systems "that are manufactured abroad or imported by or on behalf of [the respondents], or any of their affiliated companies, parents, subsidiaries, or other related business entities, or their successors or assigns." See Certain Laser Bar Code Scanners and Scan Engines, Components Thereof, and Products Containing Same, Inv. No. 337-TA-551, Limited Exclusion Order, ¶ 1 (May 30, 2007). Moreover, he recommends that said order should not be limited to specifically identified GPS chips, but rather should extend to all infringing chips and associated software and systems. See e.g., Certain Integrated Repeaters, Switches, Transceivers and Products Containing Same, Inv. No. 337-TA-435, Commission Opinion at 23, USITC Pub. 3547 (Oct. 2002).

As for downstream products and determining whether to include downstream products within the scope of an exclusion order,

> [t]he Commission balances the complainant's interest in obtaining complete protection from all infringing imports by means of exclusion of downstream products against the inherent potential of even a limited exclusion order, when extended to downstream products, to disrupt legitimate trade in products which were not themselves the subject of a finding of violation of section 337.

Certain Erasable Programmable Read-only Memories, Inv. No. 337-TA-276, USITC Pub. 2196, Comm'n Op. at 125, 1989 ITC LEXIS 122, at *252-53 (May 1989) ("EPROMs I"), aff'd sub nom. Hyundai Elecs. Indus. Co. v. USITC, 899 F.2d 1204, 1209 (Fed. Cir. 1990). In making this

determination, the Commission has traditionally examined nine "EPROMs" factors. These factors are:

> the value of the infringing articles compared to the value of the downstream products in which they are incorporated;
>
> the identity of the manufacturer of the downstream products;
>
> the incremental value to complainant of the exclusion of downstream products;
>
> the incremental detriment to respondents of such exclusion;
>
> the burdens imposed on third parties resulting from exclusion of downstream products;
>
> the availability of alternative downstream products which do not contain the infringing article;
>
> the likelihood that imported downstream products actually contain the infringing articles and are thereby subject to exclusion;
>
> the opportunity for evasion of an exclusion order which does not include downstream products; and
>
> the enforceability of an order by Customs.

EPROMS, Inv. No. 337-TA-276, USITC Pub. 2196, Commission Opinion on Violation, and Remedy, Bonding, and the Public Interest at 125-26 (May 1989) (EPROM factors). This list is not exhaustive as the Commission may "take into account any other factors which it believes may bear on the question." Certain Integrated Circuit Telecommunications Chips and Products Containing Same Including Dialing Apparatus, Inv. No. 337-TA-337, (Comm'n Op. at 29), USITC Pub. 2670 (Aug. 1993). See also Certain Baseband Processor Chips and Chipsets, Inv. No. 337-TA-543, Comm'n Op. at 26-27 (June 19, 2007) (Baseband Processors).

With respect to the first EPROM factor, the value of the infringing articles compared to the value of the downstream products in which they are incorporated, said value ranges from 1 percent to 8 percent. Thus respondents have represented that for each of the downstream product categories identified by SiRF, the Global Locate/Broadcom GPS chips made up {

} (RBr at 185.) Complainant does not dispute this range. (See CBr at 159.) With respect to the qualitative value of the allegedly infringing articles, it is undisputed that GPS chips are essential to Personal Navigation Devices (PNDs). (CFF 1944 (undisputed).) Moreover, GPS chips are important to operators of mobile telephone and cellular phone networks as a way to satisfy the E-911 mandate.[32] Thus, operators of mobile telephone and cellular phone networks have used GPS functionality as a way of meeting the E-911 mandate. (Chadhai, Tr. at 180-1.) {

} (CFF 837 (undisputed).) {

}

[32] E-911 service is an FCC requirement that one be able to locate a handset in the case of an emergency. (CFF 1989 (undisputed).)

The Commission considers the value of the infringing components relative to the targeted downstream products, both in terms of the monetary value of the components and the importance of the components to the operation of the downstream products are which they are incorporated. Baseband Processors at 36. The infringing chips at issue here are essential to the operation of at least PNDs and mobile telephone and cellular phone networks. Thus, the administrative law judge finds that EPROMs factor 1 weighs in favor of including at least PNDs and mobile telephone and cellular phone networks containing the infringing chips.

With respect to the second EPROM factor, the identity of the manufacturer of the downstream products, it is undisputed that Global Locate does not manufacture downstream products and that Global Locate's accused chipsets are typically designed into a downstream product. However, products from { } were identified in the complaint as using respondents' accused chipsets. In addition, certain of the manufacturers of the downstream products in issue have already been identified in Order No. 36. Also, depositions were taken of representatives of the downstream product manufacturers { } (see, e.g. JX-7C, JX-24C, JX-29C, JX-73C and JX-6C) and each was thus put on notice that SiRF was seeking to exclude their products containing the accused devices from the United States. Thus, while the Commission has previously found that this factor weighs against downstream relief where the downstream products are manufactured exclusively by parties other than the one(s) found in violation, in view of particular factors in this investigation the administrative law judge finds that EPROMs factor 2 weighs in favor of SiRF.

As for the third EPROM factors, viz. the incremetal value to SiRF for excluding downstream products, complainant's expert in economic and accounting analysis, John Hansen testified:

{

}

(Tr. at 1355, 85-86 (emphasis added).) Respondents argued that Hansen made no attempt to "quantify" the extent of any incremental benefit to SiRF. (RBr at 187.) However, as the Commission indicated in Baseband Processors at 63, it is not appropriate to assess whether or not chip sales will increase if the downstream products are covered by the exclusion order, as advocated by respondents; that to engage in such an analysis would be tantamount to reintroducing the injury requirement that Congress removed from the statute for patent infringement cases in 1988; and that the right to exclude is given in order to spur innovation. Based on the foregoing, the administrative law judge finds that EPROMs factor 3 weighs in favor of SiRF.

As for EPROMS factor 4, respondents argued that Hansen failed to address said factor, which is the incremental detriment to respondents from exclusion of downstream products. (RBr at 188.) Complainant argued that respondents have not shown what, if any, incremental harm would befall respondents and that respondents should not continue to benefit from their "unlawful" use of SirF's patented technology. (CBr at 163.) As the Commission stated in Baseband Processors at 69, in considering EPROMs Factor 4, we distinguish between detriment related to a respondent's sales of infringing articles and its sales of non-infringing articles; and that as our reviewing Court has held, "[o]ne who elects to build a business on a product found to infringe cannot be heard to complain if an injunction against continuing infringement destroys the business so elected;" and that accordingly, the Commission generally gives little if any weight to detriment occurring as to respondents' sales of infringing articles, absent unusual circumstances. Moreover the evidence in the record as to respondents' sales of downstream

products with infringing chips and without infringing chips is lacking. Hence, the administrative law judge gives no weight to EPROM factor 4.

Referring to EPROMs factor 5, which relates to the burden on third parties, alternate GPS chips that would not be subject to any exclusion order are available and are sold by others, including Qualcomm, ST Micrelectronics, JRC Furuno, NXP and Texas Instruments (CFF 1980 (undisputed).) Moreover, as found supra, third parties were aware that SiRF was seeking to exclude downstream products containing the accused chips from the United States. Hence, the administrative law judge finds that this favor weighs for downstream product exclusion.

With respect to EPROMs factor 6, viz. the availability of alternative downstream products that do not contain the infringing articles, the Commission has taken into account whether alternatives to the infringing articles themselves are available. See Baseband Processor at 87. In view of the finding, as to EPROMs factor 5, the administrative law judge finds that EPROMS factor 6 weighs in favor of downstream product exclusion.

The analysis of EPROMs factor 7, viz. the likelihood that the downstream products actually contain the infringing articles and are thereby subject to exclusion, involves an assessment of the impact that the exclusion of a product containing an infringing component will have on non-infringing products. The more likely the downstream products are to contain the infringing chips, the more this factor weighs towards downstream product exclusion. Baseband Processor at 99. Complainant's expert Hansen testified:

{

}

{

}

(Tr. at 1383-84.) Thus the administrative law judge finds that EPROM factor 7 weighs somewhat against the issuance of downstream product relief although a certificate requirement, which the administrative law judge is recommending, infra, would substantially lessen the possibility that legitimate concerns in the exclusion of non-infringing downstream products would be impacted.

Referring to EPROMs factor 8, viz. the opportunity for evasion of an exclusion order which does not include downstream products, it is not denied that respondents could evade an exclusion order by continuing to have third parties import infringing devices into the United States as components of downstream products. Moreover, respondents admit that they have recently moved most warehousing of the accused device off-shore. Thus, prior to acquisition by Broadcom, { } (CFF 2000 (undisputed).) After the Broadcom acquisition, {

} (CFF 2001 (undisputed).) {

} (CFF 2002 (undisputed).)

Before July 2007, Global Locate products were warehoused by {

} (JX-30C (Wilder Dep.) at 148:6-150:7; CX-411C.) As of October 10, 2007, the majority of the Global Locate chips are warehoused in {

} (JX-16C (Pence Dep.) at 20:13-15.)

After the merger with Broadcom, the {

} (CFF (undisputed).) As of October 10, 2007, {

} (JX-16C (Pence Dep.) at 20:9-21.) Hence, the opportunity for evasion of an exclusion, which does not exclude downstream products with infringing chips, has increased. Thus, the administrative law judge finds that EPROMs factor 8 favors exclusion of downstream products with infringing chips.

Referring to EPROMs factor 9, which is the enforceability of a downstream exclusion order by Customs, the administrative law judge recommends that any exclusion order should include a certification provision, which should reduce any burden on Customs and reduce any adverse impact on legitimate commerce. Electrical Connectors, Inv. No. 337-TA-374, Comm'n Op. at 14-15; Certain Microsphere Adhesives Process for Making Same, and Products Containing Same, Including Self-Stick Repositionable Notes, USITC Pub. 2949, Inv. No. 337-TA-366, Comm'n Op. (Jan. 16, 1996).

Based on consideration of the EPROMs factors the administrative law judge recommends that any exclusion order should exclude PNDs, as well as mobile telephone and cellular phone networks, containing the infringing devices.

As for the issuance of cease and desist orders, as seen supra, respondents have maintained a commercially significant inventory of GPS chips, alleged to be infringed, in warehouses in the United States. While respondents' warehouse facilities have changed, supra, the administrative law judge finds that there are still said chips warehoused in the United States. Moreover, there is no assurance that the present warehouse situation will not change. Hence, if a violation is found, he recommends issuance of cease and desist orders.

VII. Bond

Section 337 provides that the bond during the Presidential review period should be set at an amount "sufficient to protect the complainant from any injury." 19 U.S.C. § 1337(j)(3); Commission rule 210.50. Under Section 337(j)(3), if an exclusion order is issued, respondent(s) may, upon payment of bond (as prescribed by the Secretary of the Treasury), continue to import

and sell products subject to the exclusion order until the expiration of the 60-calendar-day Presidential review period. Id.

Complainant argued that a bond rate of 100% of the value of respondents' infringing products and 5% of the value of any downstream product that incorporates respondents' infringing products is reasonable and appropriate. (CBr at 165-6.) Complainant later argued that a bond based on price comparison is not practical because SiRF and respondents sell numerous different products at varying prices; {

} usually depending on the volumes sold and other factors; and that where direct price comparisons between the parties' respective products are not practical and it is impossible to determine a reasonable royalty rate, a bond rate of 100% of the entered value for the infringing product is appropriate. With respect to the bond to be imposed on downstream products that incorporate respondents' infringing products, SiRF believes that a rate of 5% of the value of the downstream product is a reasonable estimate of the relative value of the infringing product to the cost of the downstream product, and will offset SiRF's injury resulting from respondents' unlawful use of SiRF's patented technology. (CRBr at 126-7.)

Respondents argued that where a complainant has not shown need for protection from injury during the Presidential review period, the Commission may dispense with a bond requirement, citing Certain Rubber Antidegrandants, Inv. No. 337-TA-533, Comm'n Op. at 39-

40 (July 21, 2006). It was argued that SiRF has offered no evidence in support of a bond. (RBr at 189-90.) Respondents later argued that SiRF failed to meet its burden to prove a 100% bond appropriate; that while SiRF offers the excuse of "the fluctuating price" of GPS chipsets, the evidence is that Broadcom's chips are sold { } that any imprecision is the fault of complainant; and that a 5% bond, at most, is appropriate. (RRBr at 110-11.)

The staff argued that Commission rule 210.36(a)(1) provides that the administrative law judge shall take evidence and hear arguments for the purpose of determining the amount of bond to be posted by the respondents during the Presidential review period; that at the evidentiary hearing, SiRF did not put on evidence concerning bonding; that while SiRF's expert did provide evidence concerning the weighted average price of Global Locate's products, he did not offer any similar figures for SiRF's product, although the evidence obviously was within SiRF's control; that the absence of comparable sales is not the fault of a respondent failing to provide information; that it appears to be the complainant that elected not to provide the information and, in fact one SiRF witness testified about sales and revenue, which also provides an average price of a particular chip set { } that said information is too imprecise for calculating a proposed bond rate, which imprecision was the fault of complainant; and that, thus, "a 5% bond would be appropriate." (SBr at 44-5.)

With respect to a bond rate for respondents' infringing chips and associated software, while there is evidence of the weighted average price of Global Locate's products, the record is lacking evidence of the weighted average price of SiRF's products. Hence, the administrative law judge finds that complainant has failed to provide evidence necessary for setting a bond rate

for any infringing chips and associated software and system. The administrative law judge is recommending a bond rate of 5% of the value of any excluded downstream product that incorporates respondents' infringing articles.

VIII. Additional Findings

1. Complainant SiRF is a Delaware corporation with its principal place of business in San Jose, California. (Complaint, 2.1, p. 2.)

2. Respondent Global Locate is a Delaware corporation with its principal place of business in San Jose California. (Complaint, 3.1, p. 4; Broadcom's Memo. in Opposition to SiRF's Motion to Amend Complaint (Nov. 15, 2007), Conf. Ex. 7 (Agreement & Plan of Merger) at 1 (BCM_596 044582).)

3. Respondent Broadcom is a California corporation with its principal place of business in Irvine, California. (Broadcom's Response to First Amended Complaint, 1, p.1.)

4. Broadcom acquired Global Locate in July 2007. (Broadcom's Memo. in Opposition to SiRF's Motion to Amend Complaint (Nov. 15, 2007), Conf. Ex. 7 (Agreement & Plan of Merger) at 1 (BCM_596 044582).)

CONCLUSIONS OF LAW

1. The Commission has in personam jurisdiction and subject matter jurisdiction.

2. There has been an importation of accused products which are the subject of the unfair trade allegation.

3. Respondents' products do not infringe asserted claims 1, 6, 10, 11, 12, 17, 18, 19, 64, 65, 69, 70, 72, or 73 of the '216 patent.

4. Claims 1, 6, 10, 11, 12, 17, 18, 19, 64, 65, 69, 70, 72, and 73 of the '216 patent are not invalid as anticipated by any prior art.

5. Complainant SiRF failed to prove that a domestic industry exists for the articles allegedly protected by the '216 patent.

6. Respondents' products do not infringe asserted claims 7, 8, 10, 11, 12, 16, 18, 19, and 20 of the '363 patent.

7. Claims 7, 8, 10, 11, 12, 16, 18, 19, and 20 of the '363 patent are invalid as anticipated by each of the GPS Builder System and the FirstGPS System.

8. Complainant SiRF has established that a domestic industry exists for the articles allegedly protected by the '363 patent.

9. Respondents have not violated 19 U.S.C. § 1337.

10. If a violation is found the record supports issuance of a limited exclusion order covering infringing GPS chips, associated software and systems, as well as certain downstream products containing said infringing articles, cease and desist orders and a bond set in the amount of 5 percent of entered value of certain downstream products containing infringing GPS chips, associated software and systems during the sixty day Presidential review period.

ORDER

Based on the foregoing, and the record as a whole, it is the administrative law judge's Final Initial Determination that there is no violation of section 337 in the importation into the United States, sale for importation, and sale within the United States after importation of certain GPS chips, associated software and systems, and products containing same. It is also the administrative law judge's recommendation that, should a violation be found, a limited exclusion order should issue barring entry into the United States of infringing GPS chips, associated software and systems as well as certain downstream products containing said infringing articles, and cease and desist orders should issue, and a bond should be set in the amount of 5 percent of entered value of certain downstream products containing the infringing articles during the Presidential review period.

The administrative law judge hereby CERTIFIES to the Commission his Final Initial and Recommended Determinations together with the record consisting of the exhibits admitted into evidence. The pleadings of the parties filed with the Secretary and the transcript of the pre-hearing conference, and the hearing, are not certified, since they are already in the Commission's possession in accordance with Commission rules.

Further it is ORDERED that:

1. In accordance with Commission rule 210.39, all material heretofore marked in camera because of business, financial and marketing data found by the administrative law judge to be cognizable as confidential business information under Commission rule 201.6(a), is to be given in camera treatment continuing after the date this investigation is terminated.

2. Counsel for the parties shall have in the hands of the administrative law judge those portions of the final initial and recommended determinations which contain bracketed confidential business information to be deleted from any public version of said determinations, no later than July 11, 2008. Any such bracketed version shall not be served via facsimile on the administrative law judge. If no such bracketed version is received from a party, it will mean that the party has no objection to removing the confidential status, in its entirety, from these initial and recommended determinations.

3. The initial determination portion of the Final Initial and Recommended Determinations, issued pursuant to Commission rule 210.42(h)(2), shall become the determination of the Commission forty-five (45) days after the service thereof, unless the Commission, within that period, shall have ordered its review of certain issues therein or by order has changed the effective date of the initial determination portion. The recommended determination portion, issued pursuant to Commission rule 210.42(a)(1)(ii), will be considered by the Commission in reaching a determination on remedy and bonding pursuant to Commission rule 210.50(a).

Paul J. Luckern
Administrative Law Judge

Issued: June 13, 2008

CERTAIN GPS CHIPS, ASSOCIATED SOFTWARE AND SYSTEMS, AND PRODUCTS CONTAINING SAME

Inv. No. 337-TA- 596

CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **Public Version Final Initial and Recommended Determination** was served upon Kevin Baer, Esq., Commission Investigative Attorney, and the following parties via first class mail and air mail where necessary on February 23, 2009.

Marilyn R. Abbott, Secretary
U.S. International Trade Commission
500 E Street, SW, Room 112A
Washington, DC 20436

FOR COMPLAINANT SIRF TECHNOLOGY, INC.:

Alan H. MacPherson, Esq.
Edward C. Kwok, Esq.
MacPherson Kwok Chen & Heid LLP
2033 Gateway Place, Suite 400
San Jose, CA 95110

F. David Foster, Esq.
David Nickel, Esq.
Miller & Chevalier Chartered
655 Fifteenth St., NW, Suite 900
Washington, DC 20005

William L. Anthony Jr., Esq.
Fabio E. Marino, Esq.
Orrick, Herrington & Sutcliff, LLP
1000 Marsh Road
Menlo Park, CA 94025

Certificate of Service page 2

FOR COMPLAINANT SIRF TECHNOLOGY, INC.:

Claire Merrin, Esq.
T. Vann Pearce, Esq.
Orrick, Herrington & Sutcliff, LLP
3050 K St., NW
Washington, DC 20007

FOR RESPONDENT GLOBAL LOCATE, INC. AND BROADCOM CORPORATION:

James L. Quarles, Esq.
Michael D. Esch, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP
1875 Pennsylvania Ave., NW
Washington, DC 20006

William F. Lee, Esq.
Donald R. Steinberg, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP
60 State St.
Boston, MA 02109

Robert J. Gunther, Jr., Esq.
S. Calvin Walden, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP
399 Park Ave.
New York, NY 10022

Mark D. Selwyn, Esq.
Joseph F. Haag, Esq.
Wilmer Cutler Pickering Hale and Dorr LLP
1117 California Ave.
Palo Alto, CA 94304

CERTAIN GPS CHIPS, ASSOCIATED SOFTWARE AND SYSTEMS, AND PRODUCTS CONTAINING SAME

Inv. No. 337-TA- 596

PUBLIC MAILING LIST

Heather Hall
LEXIS-NEXIS
9443 Springboro Pike
Miamisburg, OH 45342

Kenneth Clair
Thomson West
1100 Thirteen Street, NW, Suite 200
Washington, DC 20005