PUBLIC VERSION

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

In the Matter of **CERTAIN MARINE SONAR IMAGING DEVICES, INCLUDING DOWNSCAN AND SIDESCAN DEVICES, PRODUCTS CONTAINING THE SAME, AND COMPONENTS THEREOF**	**Inv. No. 337-TA-921** **(Enforcement Proceeding)**

ENFORCEMENT INITIAL DETERMINATION

Administrative Law Judge David P. Shaw

Pursuant to the notice of investigation, 79 Fed. Reg. 40778 (2014), this is the Enforcement Initial Determination in *Certain Marine Sonar Imaging Devices, Including Downscan and Sidescan Devices, Products Containing the Same, and Components Thereof*, United States International Trade Commission Investigation No. 337-TA-921.

It is held that respondents have violated the December 1, 2015 cease and desist orders issued in the original investigation.

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The following abbreviations may be used in this Initial Determination:

ALJ	-	Administrative Law Judge
CDX	-	Complainants' Demonstrative Exhibit
CPX	-	Complainants' Physical Exhibit
CX	-	Complainants' Exhibit
Dep.	-	Deposition
EDIS	-	Electronic Document Imaging System
Enf.	-	Enforcement Proceeding
JPX	-	Joint Physical Exhibit
JX	-	Joint Exhibit
P.H.	-	Prehearing
RDX	-	Respondents' Demonstrative Exhibit
RPX	-	Respondents' Physical Exhibit
RWS	-	Rebuttal Witness Statement
RX	-	Respondents' Exhibit
Tr.	-	Transcript
WS	-	Witness Statement

I. Background

A. Institution of the Investigation; Procedural History

Underlying Investigation

By publication of a notice in the *Federal Register* on July 14, 2014, pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), the Commission instituted the underlying investigation to determine:

> [W]hether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain marine sonar imaging devices, including downscan and sidescan devices, products containing the same, and components thereof by reason of infringement of one or more of claims 1–20, 22–27, 29–46, 49–59, 61–63, 66, 68–73 of the '840 patent [U.S. Patent No. 8,305,840], 1, 2, 4–7, 16, 19–21, 23–25, 27–30, 39, 42–44, 46–49, 58, 62–66, and 69–81 of the '499 patent [U.S. Patent No. 8,300,499], and claims 1–5, 7, 12–15, 17, 19–25, 32–36, 38–42, 44–45, 47–52, and 57 of the '550 patent [U.S. Patent No. 8,605,550], and whether an industry in the United States exists as required by subsection (a)(2) of section 337.

79 Fed. Reg. 40778 (2014).

The complainants are Navico, Inc. of Tulsa, Oklahoma; and Navico Holding AS of Egersund, Norway. The violation respondents are Garmin International, Inc.; Garmin North America, Inc.; and Garmin USA, Inc., of Olathe, Kansas; and Garmin (Asia) Corporation of New Taipei City, Taiwan. The Office of Unfair Import Investigations is also a party to this investigation. *Id.*

On July 28, 2014, the target date for completion of the underlying investigation was set at approximately 15.5 months, *i.e.*, October 30, 2015. *See* Order No. 4. On June 30, 2015, the target date was extended by one day. *See* Order No. 23. Accordingly, the

due date for the initial determination on violation was July 2, 2015, and the target date for completion of the underlying investigation was November 2, 2015.

On December 31, 2014, the Commission determined not to review an initial determination terminating claims 2, 6, 8, 10, 12-14, 22, 25, 26, 30, 33-36, 38, 43, 52, 56-59, 66, and 69 of U.S. Patent No. 8,305,840 ("the '840 Patent"); claims 5-7, 16, 28-30, 39, 47-49, 58, 63, 69, 71, 73, and 76-78 of U.S. Patent No. 8,300,499 ("the '499 patent"); and claims 2, 3, 17, 19-23, 25, 34-36, 40, 41, 47-50, 52 of U.S. Patent No. 8,605,550 ("the '550 Patent"). Order No. 10 (Dec. 2, 2014), *aff'd*, Notice of Commission Determination Not to Review an Initial Determination Terminating the Investigation with Respect to Certain Patent Claims (Dec. 31, 2014).

On January 9, 2015, the Commission determined not to review an initial determination terminating respondent Garmin North America, Inc. Order No. 11 (Dec. 11, 2014), *aff'd*, Notice of Commission Determination Not to Review an Initial Determination Terminating One Respondent from the Investigation (Jan. 9, 2015).

On January 13, 2015, the Commission determined not to review an initial determination terminating claims 3, 4, 15, 20, 24, 27, 29, 31, 37, 42, 44-46, 49-51, 53-55, 61, 62, 68, and 73 of the '840 patent; claims 4, 23, 27, 46, 64, 65, 70, 72, 74, 75, and 81 of the '499 patent; and claims 4, 5, 14, 15, 24, 33, 38, 39, 42, 45, and 51 of the '550 patent. Order No. 13 (Dec. 17, 2014), *aff'd*, Notice of Commission Determination Not to Review an Initial Determination Terminating the Investigation with Respect to Certain Asserted Patent Claims (Jan. 13, 2015).

Accordingly, the following claims were at issue in the underlying investigation: claims 1, 5, 7, 9, 11, 16-19, 23, 32, 39-41, 63, and 70-72 of the '840 patent; claims 1, 2,

19-21, 24, 25, 42-44, 62, 66, 79, and 80 of the '499 patent; and claims 1, 7, 12, 13, 32, 44, and 57 of the '550 patent. *See* Order No. 13 (Dec. 17, 2014), *aff'd*, Notice of Commission Determination Not to Review an Initial Determination Terminating the Investigation with Respect to Certain Asserted Patent Claims (Jan. 13, 2015).

On March 3, 2015, the Commission determined not to review two initial determinations finding that the economic prong of the domestic industry requirement was satisfied as to the '840 and '499 patents, and that the technical prong of the domestic industry requirement was satisfied as to the '840 and '550 patents. Order No. 14 (Jan. 29, 2015) and Order No. 15 (Jan. 30, 2015), *aff'd*, Notice of Commission Decision Not to Review Two Initial Determinations Regarding the Domestic Industry Requirement (Mar. 3, 2015).

A prehearing conference was held on March 18, 2015, with the evidentiary hearing in the underlying investigation commencing immediately thereafter. The hearing concluded on March 24, 2015. *See* Order No. 5 (July 28, 2014); P.H. Tr. 1-23; Tr. 1-1135. The parties were requested to file post-hearing briefs not to exceed 350 pages in length, and to file reply briefs not to exceed 100 pages in length. P.H. Tr. 9-10. On April 8, 2015, the parties filed a joint outline of the issues to be decided in the Final Initial Determination. *See* Joint Outline of the Issues to Be Decided ("Joint Outline") (EDIS Doc. ID No. 554808).

The administrative law judge issued the final initial determination on violation ("ID") on July 3, 2015. The Commission issued its final determination on December 1, 2015. The Commission adopted certain determinations from the ID and determined to review and revise or reverse other findings. The Commission found that the named

respondents had violated section 337 based upon the importation and sale of marine sonar products that infringed claims 1, 5, 7, 9, 11, 16-19, 23, 32, 39-41, 63, and 70-72 of the '840 patent and claims 32 and 44 of the '550 patent. *See* 80 Fed. Reg. 76040 (Dec. 7, 2015). The Commission therefore issued a limited exclusion order as well as cease and desist orders to each named respondent, on Dec. 1, 2015. *See id.*

Both complainants and respondents have appealed portions of the Commission's violation final determination to the United States Court of Appeals for the Federal Circuit. The Federal Circuit heard oral argument in the appeals on January 10, 2017. The appeals remain pending before the Federal Circuit.

Enforcement Proceeding

By publication of a notice in the *Federal Register* on October 17, 2016, pursuant to section 337 of the Tariff Act of 1930, as amended, and section 210.75 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.75), the Commission instituted a formal enforcement proceeding to determine "whether Garmin is in violation of the December 1, 2015 cease and desist orders issued in the original investigation and what, if any, enforcement measures are appropriate." 81 Fed. Reg. 71531 (2016).

The Commission ordered that "the target date should be set at no more than twelve months from the date of institution," and that "such target date is to exceed the date of issuance of the EID by three months." Comm'n Enf. Order (Oct. 11, 2016) at 3. On November 2, 2016, the target date for completion of the enforcement proceeding was set at approximately 10 months and one week after institution, *i.e.*, August 25, 2017. *See* Order No. 27. Accordingly, the due date for the enforcement initial determination on violation is May 25, 2017.

On December 15, 2016, the administrative law judge struck respondents' invalidity, prosecution disclaimer, and prosecution history estoppel affirmative defenses from their Answer to the Enforcement Complaint. *See* Order No. 31 at 6. On January 6, 2017, respondents filed a motion for summary determination that their "tilted design" DownVü products do not infringe the claims of the '840 patent and the '550 patent asserted by complainants in this enforcement proceeding. The administrative law judge denied the motion for summary determination on March 2, 2017, finding in particular that respondents had not met their burden to prove judicial estoppel. *See* Order No. 36 at 6.

A prehearing conference for the enforcement proceeding was held on March 6, 2017, with the evidentiary hearing commencing immediately thereafter. The hearing concluded on March 7, 2017. *See* Order Nos. 29 (Nov. 23, 2016); P.H. Enf. Tr. 1-28; Enf. Tr. 1-465. The parties were requested to file post-hearing briefs not to exceed 110 pages in length, and to file reply briefs not to exceed 30 pages in length. Enf. P.H. Tr. 8. On March 17, 2017, the parties filed a joint outline of the issues to be decided in the Enforcment Initial Determination ("EID"). *See* Joint Outline of the Issues to Be Decided ("Joint Outline") (EDIS Doc. ID No. 605746).

B. The Parties

The complainants for the underlying investigation and the enforcement proceeding are Navico, Inc. of Tulsa, Oklahoma; and Navico Holding AS of Egersund, Norway. According to the original complaint, Navico, Inc. is the U.S. entity of one of the world's largest manufacturers of marine sonar equipment. *See* Original Complaint, ¶ 9. Navico, Inc. is the successor corporation of Lowrance Electronics, Inc. which has been

involved in marine sonar electronics since its founding in 1957. Original Complaint, ¶ 10. Navico, Inc. was formed by the merger of Lowrance Electronics, Inc. and Simrad Yachting in 2006. Original Complaint, ¶ 13.

Navico Holding AS is a holding company that owns the entire right, title, and interest to the asserted patents. Original Complaint, ¶ 17; CX-0091C (Chemi WS) at Q/A 20-21; JX-0007 – JX-0009 (Assignment Records for Asserted Patents); *see also* CX-0711 (Garmin Responses to RFA's) at CX-0711.0004-5 (admitting that Garmin does not dispute that Navico has standing and that Navico Holding AS owns the entire right, title, and interest to the asserted patents). Navico, Inc. licenses the asserted patents from Navico Holding AS. *Id.*

The named respondents in the underlying investigation were initially Garmin International, Inc.; Garmin North America, Inc.; and Garmin USA, Inc.; all of Olathe, Kansas; and Garmin (Asia) Corporation of New Taipei City, Taiwan. 79 Fed. Reg. 40778 (2014). As noted above, the investigation was terminated with respect to Garmin North America, Inc. The original complaint alleges that Garmin International, Inc. imports all or a substantial portion of the products accused in the investigation. Complaint, ¶ 20.

The respondents for the enforcement proceeding are Garmin International, Inc.; and Garmin USA, Inc. (collectively, "Garmin"). 81 Fed. Reg. 71531 (2016); Comm'n Enf. Order at 2.

The Office of Unfair Import Investigations ("Staff") is also a party to the enforcement proceeding. *Id.*

C. The Accused Products

On December 23, 2016, complainants and respondents filed a Joint Statement Regarding Identification of Accused Products for the enforcement proceeding. *See* EDIS Doc. ID No. 599020. On January 6, 2017, the parties submitted a Joint Stipulation Regarding Representative Products. *See* EDIS Doc. ID No. 600352.

The Staff provides the following five Accused Product groups for the enforcement proceeding:

- ***Accused Product Group 1:*** Kitted Marine Sonar Systems Composed of a DownVü or DownVü/SideVü Compatible Head Unit and a Legacy "Straight Down" DownVü Transducer
- ***Accused Product Group 2:*** Kitted Marine Sonar Systems Consisting of a DownVü or DownVü/SideVü Compatible Head Unit and a redesigned "Tilted" DownVü Transducer.
- ***Accused Product Group 3:*** Standalone Legacy "Straight Down" DownVü Transducers Not Including the GT20 or GT30
- ***Accused Product Group 4:*** Standalone Redesigned "Tilted" DownVü Transducers
- ***Accused Product Group 5:*** Standalone DownVü and DownVü/SideVü Head Units

See Staff at 2-3. This product grouping is consistent with those argued by complainants and respondents. *See* Compls. Br. at 12-16; Resps. Br. at 14-16.

D. Technological Background

United States Patent No. 8,305,840 ("the '840 Patent"), entitled "Downscan Imaging Sonar," issued on November 6, 2012, to named inventor Brian T. Maguire. JX-0001 ('840 Patent). The '840 patent issued from Application No. 12/460,139, filed on July 14, 2009. *Id.* The '840 patent generally relates to "sonar systems, and more

particularly, to providing a downscan imaging sonar using a linear transducer." JX-0001 at col. 1, lns. 5-7.

United States Patent No. 8,605,550 ("the '550 Patent"), entitled "Downscan Imaging Sonar," issued on December 10, 2013, to named inventor Brian T. Maguire. JX-0002 ('550 Patent). The '550 patent issued from Application No. 13/627,318, filed on September 26, 2012. *Id.* The '550 patent generally relates to "sonar systems, and more particularly, to providing a downscan imaging sonar using a linear transducer." JX-0002 at col. 1, lns. 12-14.

II. Jurisdiction and Importation

In the underlying investigation, the Commission found a violation of section 337 and issued a limited exclusion order and cease and desist orders. *See* 80 Fed. Reg. 76040 (Dec. 7, 2015). The Commission instituted a formal enforcement proceeding to determine if there has been a violation of these orders. *See* 19 C.F.R. § 210.75(b); 81 Fed. Reg. 71531 (Oct. 17, 2016). The Commission therefore has subject matter jurisdiction over this enforcement proceeding. *See VastFame Camera, Ltd. v. Int'l Trade Comm'n*, 386 F.3d 1108, 1111-13 (Fed. Cir. 2004).

In addition, respondents have responded to the enforcement complaint and notice of institution and have participated in the investigation. The Commission therefore has personal jurisdiction over the respondents. *See e.g., Certain Ink Cartridges and Components Thereof*, Inv. No. 337-TA-565, Enforcement Init. Det. at 30-31 (April 17, 2009), *aff'd*, Notice of a Commission Determination Not to Review an Enforcement Initial Determination Finding a Violation of Cease and Desist Orders and a Consent Order (June 19, 2009). Respondents do not contest personal jurisdiction in this

proceeding. *See* Resps. Br. at 17.

The evidence shows that the Accused Products have been imported and sold after importation in the United States. *See* CX-2001C (Prowse WS) at Q/A 53; CX-2063C (Prowse importation database). The Commission therefore has *in rem* jurisdiction over the Accused Products. Respondents assert there must be evidence of importation, but have not identified any products for which the evidence of importation is lacking. Respondents do not challenge the Commission's jurisdiction over this enforcement proceeding or the Accused Products. *See* Resps. Br. at 17.

III. Scope of Cease and Desist Orders

Complainants argue:

> While the Commission included a carve-out in the CDOs for products found not to infringe, that carve out was limited to the specific standalone products "found to be non-infringing as detailed in the Commission Opinion dated December 1, 2015, ***at pages 28-31 and 45-46***." CDOs at § I(G) (emphasis added). The cited pages are where the Commission found no contributory infringement by Garmin through the importation and sale of the non-tilted GT-20 and GT-30. Thus, the carve-out applies to those transducers, but not to any other transducer.

Compls. Br. at 52 (emphasis in original).

Respondents argue:

> The only Garmin products that are subject to the CDOs are those that fall within the Commission's definition of "covered products." CDOs at I.(G). The parties dispute whether "covered products" include Garmin's standalone head units and transducers (Navico's position), or whether "covered products" is limited to marine sonar systems (Garmin's position). The language of the CDOs answers this question because it defines "covered products" as marine sonar systems that were found to infringe the asserted claims of Navico's patents, and specifically excludes standalone products from their scope: "Covered products shall not include marine sonar imaging devices, including downscan and sidescan devices, products containing the same, and components thereof, found to be non-infringing as detailed in the Commission opinion dated December 1, 2015,

> at pages 28–31 and 45–46." *Id.* The carve-outs exist because the parties contested indirect infringement of standalone products at the violation proceeding, and the Commission determined that Garmin's standalone products do not infringe because Navico failed to prove induced infringement and contributory infringement. As pages 28–31 and 45–46 of the FD explain, the ID found that Garmin's importation of standalone transducers does not contributorily infringe the asserted claims, Garmin's importation of standalone head units does not contributorily infringe the asserted claims, and Navico failed to show that Garmin had the requisite intent for induced infringement. FD at 28–31 ('840 Patent), 45–46 ('550 Patent).

Resps. Br. at 20-21.

The Staff argues:

> In sum, the carve out from "covered products" in the C&D Orders is limited to precluding a finding of violation based upon (1) contributory or induced infringement related to the standalone non-tilted GT-20 and GT-30 DownVü transducers; (2) contributory infringement related to the standalone violation head units; or (3) induced infringement related to the combination of standalone violation head units with non-tilted GT-20 and GT-30 DownVü transducers.

Staff Br. at 10.

On December 21, 2015, the Commission issued cease and desist orders to Garmin (Asia) Corporation, Garmin International, Inc., and Garmin USA, Inc. EDIS Doc. ID No. 569987 ("the C&D Orders"); *see* JX-2129C (marked exhibit of C&D Orders). As noted above, Garmin International, Inc. and Garmin USA, Inc. are the respondents in this enforcement proceeding. *See* 81 Fed. Reg. 71531. The C&D Orders apply to each respondent "and to any of its principals, stockholders, officers, directors, employees, agents, distributors, controlled (whether by stock ownership or otherwise) and majority-owned business, successors, and assigns." C&D Orders at 2, Section II.

In the Section I Definitions, the C&D Orders define the term "covered products" as follows:

> The term "covered products" shall mean marine sonar imaging devices, including downscan and sidescan devices, products containing the same, and components thereof covered by one or more of claims 1, 5, 7, 9, 11,16-19, 23, 32, 39-41, 63, and 70-72 of the '840 patent and claims 32 and 44 of the '550 patent. Covered products shall not include marine sonar imaging devices, including downscan and sidescan devices, products containing the same, and components thereof, found to be non-infringing as detailed in the Commission Opinion dated December 1, 2015, at pages 28-31 and 45-46.

C&D Orders, Section I(G). Indeed, the definition of "covered products" explicitly includes "components" of "marine sonar imaging devices" covered by one or more of the enumerated claims of the '840 and '550 patents. *Id.* The exception or carve out to that general definition of "covered products" is limited to "sonar imaging devices . . . and components thereof, ***found to be non-infringing*** as detailed in the Commission Opinion dated December 1, 2015, ***at pages 28-31 and 45-46***." *Id.* (emphasis added).

Those products outside the carve out, if shown to be covered by one or more of the enumerated claims of the '840 and '550 patent and sold or imported after the effective date of the C&D Orders, can form the basis for a finding that respondents violated the C&D Orders. The products within the carve out cannot do so.

As an initial matter, none of respondents' redesigned "tilted" DownVü transducer products (whether kits with a head unit or standalone transducers) were ever at issue in the violation investigation. *See* ID at 5-9 (The Accused Products section). Therefore, none of the "tilted" DownVü transducer products (kitted or standalone) could have been "found to be non-infringing" in the Commission's Opinion. At page 45 of the Commission Opinion cited in the C&D Orders, the Commission stated that it did "not reach" infringement as to "Garmin's new 2015 transducers, namely the GT40, GT41, GT50, and GT51 transducers" due to a lack of evidence of importation of those

transducers.[1] Comm'n Op. at 45 n.19 (EDIS Doc. ID No. 569986). Therefore, the Garmin "straight down" GT40, GT41, GT50, and GT51 transducers (kitted or standalone) were also not "found to be non-infringing" in the Commission's Opinion. As a result, the only standalone transducers falling within the C&D Order carve out are the original non-tilted GT-20 and GT-30 DownVü transducers. Complainants may not allege a violation of the C&D Orders based upon the importation and sale of standalone non-tilted GT-20 and GT-30 transducers.

The analysis with respect to Garmin standalone head units follows similar reasoning. The Commission had jurisdiction to make findings for standalone head units that were imported during the violation investigation (hereinafter, "violation head units"). *See* ID at 11-12. Thus, the Commission's determination that those specifically identified and imported violation head units did not contributorily infringe the asserted '840 or '550 patent claims (*see* Comm'n Op. at 31) means that complainants may not allege that the importation and sale of those same standalone head units violate the C&D Orders based on contributory infringement of the asserted patents. Similarly, complainants may not put forward an induced infringement theory as to those violation head units based on acts of direct infringement resulting from the combination of those violation head units with

[1] Although that statement was made in the section of the Commission Opinion regarding infringement of the '550 patent, the underlying basis for the decision not to reach infringement as to those products applies equally to the '840 patent. To the extent any ambiguity existed due to the fact that this same statement was not repeated in the Commission's discussion of infringement of the '840 patent, that ambiguity was resolved by the Commission later in the Remedy section. In the Remedy section, the Commission stated that "the Commission notes that the record contains no evidence of importation as to Garmin's 2015 products . . . and as such the Commission has not adjudicated infringement as to those products." Comm'n Op. at 81.

GT20 or GT30 transducers, inasmuch as those combinations were within the Commission's jurisdiction in the violation investigation, and were subject to the Commission's determination that there was no induced infringement. *See* Comm'n Op. at 31. However, inasmuch as the 2015 Garmin transducers were not subject to any findings by the Commission, induced infringement predicated on the combination of violation head units with 2015 transducers does not fall within the "covered products" carve out. It follows that induced infringement based on the combination of violation head units with "tilted" DownVü transducers does not fall within the "covered products" carve out either. Any new models of standalone head units accused in the violation investigation that were not included among the violation head units cannot fall within the "covered products" carve out because they could not have been "found to be non-infringing" by the Commission.

Respondents' arguments concerning the scope of the "carve out" to "covered products" in the C&D Orders are unpersuasive. Respondents assert that the "carve out" covers all "standalone products" without limitation. *See* Resps. Br. at 20-21. While they quote the C&D Orders, respondents do not address the language in the carve out limiting its scope in accordance with findings on specific pages of the Commission's opinion of December 1, 2015. *See id.* Nor do respondents address the fact that the carve out refers to specific product categories "found to be non-infringing as detailed in the Commission opinion." As discussed above, respondents interpret the carve out to cover standalone products for which the Commission explicitly stated that it was making no findings. *See* Comm'n Op. at 45 n.19, 81 (EDIS Doc. ID No. 569986).

Therefore, the carve out from "covered products" in the C&D Orders precludes a

finding of violation based on (1) contributory or induced infringement related to the standalone non-tilted GT-20 and GT-30 DownVü transducers; (2) contributory infringement related to the standalone violation head units; or (3) induced infringement related to the combination of standalone violation head units with non-tilted GT-20 and GT-30 DownVü transducers. The carve out does not preclude a finding of violation based upon any other products or theories of infringement.

IV. United States Patent Nos. 8,305,840 and 8,605,550

United States Patent No. 8,305,840 ("the '840 Patent), entitled "Downscan Imaging Sonar," issued on November 6, 2012, to named inventor Brian T. Maguire. JX-0001 ('840 Patent). The '840 patent issued from Application No. 12/460,139, filed on July 14, 2009. *Id.* The '840 patent generally relates to "sonar systems, and more particularly, to providing a downscan imaging sonar using a linear transducer." JX-0001 at col. 1, lns. 5-7. The '840 patent has a total of seventy-three (73) claims.

Navico asserts independent apparatus claims 1 and 23 and dependent claims 5, 7, 9, 11, 16-19, 23, 39-41, 63, and 70-72. The asserted independent claims 1 and 23 read as follows:

> **1**. A sonar assembly for imaging an underwater environment beneath a watercraft traveling on a surface of a body of water, the sonar assembly comprising:
>
> a housing mountable to the watercraft;
>
> a single linear downscan transducer element positioned within the housing, the linear downscan transducer element having a substantially rectangular shape configured to produce a fan-shaped sonar beam having a relatively narrow beamwidth in a direction parallel to a longitudinal length of the linear downscan transducer element and a relatively wide beamwidth in a direction perpendicular to the longitudinal length of the

transducer element, the linear downscan transducer element being positioned with the longitudinal length thereof extending in a fore-to-aft direction of the housing;

wherein the linear downscan transducer element is positioned within the housing to project fan-shaped sonar beams in a direction substantially perpendicular to a plane corresponding to the surface of the body of water, said sonar beams being repeatedly emitted so as to sequentially insonify different fan-shaped regions of the underwater environment as the watercraft travels; and

a sonar signal processor receiving signals representative of sonar returns resulting from each of the fan-shaped sonar beams and processing the signals to produce sonar image data for each fan-shaped region and to create an image of the underwater environment as a composite of images of the fan-shaped regions arranged in a progressive order corresponding to the travel of the watercraft.

23. A sonar system for imaging an underwater environment beneath a watercraft traveling on a surface of a body of water, the sonar system comprising:

a single linear downscan transducer element positioned within a housing that is mountable to the watercraft, the linear downscan transducer element having a substantially rectangular shape configured to produce a fan-shaped sonar beam having a relatively narrow beamwidth in a direction parallel to longitudinal length of the linear downscan transducer element and a relatively wide beamwidth in a direction perpendicular to the longitudinal length of the transducer element, the linear downscan transducer element being positioned with the longitudinal length thereof extending in a fore-to-aft direction of the housing;

wherein the linear downscan transducer element is positioned to project fan-shaped sonar beams in a direction substantially perpendicular to a plane corresponding to the surface of the body of water, said sonar beams being repeatedly emitted so as to sequentially insonify different fan-shaped regions of the underwater environment as the watercraft travels;

> a sonar module configured to enable operable communication with the linear downscan transducer element, the sonar module including:
>
> > a sonar signal processor to process sonar return signals, and
> >
> > at least one transceiver configured to provide communication between the linear downscan transducer element and the sonar signal processor;
> >
> > the sonar signal processor receiving signals representative of sonar returns resulting from each of the fan-shaped sonar beams and processing the signals to produce sonar image data for each fan-shaped region and to create an image of the underwater environment as a composite of images of the fan-shaped regions arranged in a progressive order corresponding to the travel of the watercraft.

JX-0001 ('840 Patent) at col. 17, lns. 34-62; col. 19, lns. 10-48.

United States Patent No. 8,605,550 ("the '550 Patent), entitled "Downscan Imaging Sonar," issued on December 10, 2013, to named inventor Brian T. Maguire. JX-0002 ('550 Patent). The '550 patent issued from Application No. 13/627,318, filed on September 26, 2012. *Id.* The '550 patent generally relates to "sonar systems, and more particularly, to providing a downscan imaging sonar using a linear transducer." JX-0002 at col. 1, lns. 12-14. The '550 patent has a total of fifty-seven (57) claims.

Navico asserts independent apparatus claims 1, 32 and 57 and dependent claims 7, 12, 13, and 44. The asserted independent claim 32 reads as follows:

> **32**. A sonar system comprising:
>
> a sonar transducer assembly, including:
>
> > a plurality of transducer elements, each one of the plurality of transducer elements having a substantially rectangular shape configured to produce a sonar beam having a beamwidth in a direction parallel to a longitudinal length of the transducer element that is significantly less than a

beamwidth of the sonar beam in a direction perpendicular to the longitudinal length of the transducer element,

wherein the plurality of transducer elements are positioned such that the longitudinal lengths of the plurality of transducer elements are substantially parallel to each other, and

wherein the plurality of transducer elements include at least:

a first linear transducer element positioned within a housing and configured to project sonar pulses from a first side of the housing in a direction substantially perpendicular to a centerline of the housing,

a second linear transducer element positioned within the housing and spaced laterally from the first linear transducer element,

wherein the second linear transducer element lies substantially in a plane with the first linear transducer element and is configured to project sonar pulses from a second side of the housing that is generally opposite of the first side, and is also in a direction substantially perpendicular to the centerline of the housing, and

a third linear transducer element positioned within the housing and configured to project sonar pulses in a direction substantially perpendicular to the plane defined by the first and second linear transducer elements; and

a sonar module configured to enable operable communication with the transducer assembly, the sonar module including:

a sonar signal processor to process sonar return signals received via the transducer assembly, and

a transceiver configured to provide communication between the transducer assembly and the sonar signal processor.

JX-0002 ('550 Patent) at col. 19, ln. 41 - col. 20, ln. 15.

A. Claim Construction

1. Applicable Law

Claim construction begins with the plain language of the claim.[2] Claims should be given their ordinary and customary meaning as understood by a person of ordinary skill in the art, viewing the claim terms in the context of the entire patent.[3] *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005), *cert. denied*, 546 U.S. 1170 (2006).

In some instances, claim terms do not have particular meaning in a field of art, and claim construction involves little more than the application of the widely accepted meaning of commonly understood words. *Phillips*, 415 F.3d at 1314. "In such circumstances, general purpose dictionaries may be helpful." *Id.*

In many cases, claim terms have a specialized meaning, and it is necessary to determine what a person of skill in the art would have understood the disputed claim language to mean. "Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to 'those sources available to the public that show what a person of skill in the art would have understood disputed claim language to

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[2] Only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n*, 366 F.3d 1311, 1323 (Fed. Cir. 2004); *Vivid Tech., Inc. v. American Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

[3] Factors that may be considered when determining the level of ordinary skill in the art include: "(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984).

mean.'" *Id.* (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)). The public sources identified in *Phillips* include "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Id.* (quoting *Innova*, 381 F.3d at 1116).

In cases in which the meaning of a claim term is uncertain, the specification usually is the best guide to the meaning of the term. *Phillips*, 415 F.3d at 1315. As a general rule, the particular examples or embodiments discussed in the specification are not to be read into the claims as limitations. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996). The specification is, however, always highly relevant to the claim construction analysis, and is usually dispositive. *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Moreover, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Id.* at 1316.

Claims are not necessarily, and are not usually, limited in scope to the preferred embodiment. *RF Delaware, Inc. v. Pacific Keystone Techs., Inc.*, 326 F.3d 1255, 1263 (Fed. Cir. 2003); *Decisioning.com, Inc. v. Federated Dep't Stores, Inc.*, 527 F.3d 1300, 1314 (Fed. Cir. 2008) ("[The] description of a preferred embodiment, in the absence of a clear intention to limit claim scope, is an insufficient basis on which to narrow the claims."). Nevertheless, claim constructions that exclude the preferred embodiment are "rarely, if ever, correct and require highly persuasive evidentiary support." *Vitronics*, 90 F.3d at 1583. Such a conclusion can be mandated in rare instances by clear intrinsic

evidence, such as unambiguous claim language or a clear disclaimer by the patentees during patent prosecution. *Elekta Instrument S.A. v. O.U.R. Sci. Int'l, Inc.*, 214 F.3d 1302, 1308 (Fed. Cir. 2000); *Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319 (Fed. Cir. 2002).

If the intrinsic evidence does not establish the meaning of a claim, then extrinsic evidence may be considered. Extrinsic evidence consists of all evidence external to the patent and the prosecution history, and includes inventor testimony, expert testimony, and learned treatises. *Phillips*, 415 F.3d at 1317. Inventor testimony can be useful to shed light on the relevant art. In evaluating expert testimony, a court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent. *Id.* at 1318. Extrinsic evidence may be considered if a court deems it helpful in determining the true meaning of language used in the patent claims. *Id.*

2. A Person of Ordinary Skill in the Art

The level of ordinary skill in the art for the '840 and '550 patents was previously determined during the underlying investigation. The administrative law judge found the level of ordinary skill in the art to be "a person who has a bachelor's degree or higher in the field of electrical engineering, computer science, ocean engineering, or comparable field of study, along with course work in underwater acoustics or equivalent work experience related to underwater acoustics." ID at 31. Although the Commission determined to review the ID's findings with respect to validity, the Commission did not alter the ID's finding as to the level of ordinary skill in the art. *See generally*, Comm'n Op. Complainants agree that the previous finding as to the level of ordinary skill in the

art continues to apply, and respondents do not address the issue. *See* Compls. Br. at 20, *see generally*, Resps. Br. at 1-108.

3. Issue Preclusion

Issue preclusion operates to prevent all parties from rearguing claim construction in this enforcement proceeding to the extent that those issues were decided in the underlying investigation. "'When an issue of fact or law is actually litigated and determined by a valid and final judgment, and the determination is essential to the judgment, the determination is conclusive in a subsequent action between the parties, whether on the same or a different claim.'" *Foster v. Hallco Mfg. Co.*, 947 F.2d 469, 480 (Fed. Cir. 1991) (quoting Restatement (Second) of Judgments, § 27). The Federal Circuit applies the law of the regional circuit for issue preclusion. *See eDigital Corp. v. Futurewei Tech., Inc.*, 772 F.3d 723, 726 (Fed. Cir. 2014). For its own jurisdiction, the Federal Circuit has explained that applying issue preclusion "requires four factors: (1) identity of the issues in a prior proceeding; (2) the issues were actually litigated; (3) the determination of the issues was necessary to the resulting judgement; and (4) the party defending against preclusion had a full and fair opportunity to litigate the issues." *Jet, Inc. v. Sewage Aeration Sys.*, 223 F.3d 1360, 1365-66 (Fed. Cir. 2000) (citations omitted). When these requirements are met, claim construction is one of the issues to which issue preclusion applies. *See eDigital*, 772 F.2d at 726-27.

In Order No. 31, the administrative law judge found that issue preclusion applies to preclude respondents' validity, prosecution history disclaimer, and prosecution history estoppel defenses. For similar reasons, the issue preclusion applies to construction of the terms of the asserted claims of the '840 and '550 patents because (1) claim construction

of the same asserted claims is the same issue; (2) claim construction was actually litigated; (3) claim construction was clearly necessary to the resulting judgments regarding infringement and validity; and (4) all the parties had a full and fair opportunity to litigate the issue.

Thus, the following constructions are binding upon the parties: "single linear downscan transducer element" in claims 1 and 23 of the '840 patent means "a single downwardly pointed transducer that is formed from a single crystal or a plurality of crystals that act simultaneously and in phase as if they were a single crystal" (Comm'n Op. at 17); and "linear transducer element" in claim 32 of the '550 patent means "a transducer that is formed from a single crystal or a plurality of crystals that act simultaneously and in phase as if they were a single crystal," *Id.* at 44. The claim term "wherein the linear downscan transducer element is positioned within the housing to project fan-shaped sonar beams in a direction substantially perpendicular to a plane corresponding to the surface of the body of water" in claims 1 and 23 of the '840 patent and the claim term "a third linear transducer element positioned within the housing and configured to project sonar pulses in a direction substantially perpendicular to the plane defined by the first and second linear transducer elements" in claim 32 of the '550 patent were not identified for construction during the violation investigation. Thus, having had a full and fair opportunity to seek construction of those terms, the parties are bound by the plain and ordinary meaning of those terms to one of ordinary skill in the art. *See Phillips*, 415 F.3d at 1312-13.

Complainants appear to argue that the analysis of claim construction ends there. *See* Compls. Br. at 19-20. Whether respondents' marine sonar systems with redesigned

"tilted" transducers infringe turns on the meaning of the "downscan" (or "downwardly pointed" as restated in the construction) and the "substantially perpendicular" claim terms. "A determination that a claim term 'needs no construction' or has the 'plain and ordinary meaning' may be inadequate when a term has more than one 'ordinary' meaning or when reliance on a term's 'ordinary' meaning does not resolve the parties' dispute." *O2 Micro*, 521 F.3d at 1361 (Fed. Cir. 2008). It is undisputed that the parties disagree about claim construction. Complainants and respondents have put forward opposing arguments about the plain and ordinary meaning of these terms that must be resolved. Yet, the fact that these terms must be given their plain and ordinary meanings necessarily precludes certain claim constructions. For example, there can be no arguments that the patentee acted as his own lexicographer (*i.e.*, overrode the plain and ordinary meaning) or that the patentee disclaimed the plain and ordinary meaning of the terms.

Respondents argue that no further construction of the disputed terms is necessary for a different reason. Respondents argue that the administrative law judge and the Commission have already construed "downscan" and the "substantially perpendicular" limitations to mean "straight down." *See* Resps. Br. at 37-41. Although respondents acknowledge that "neither term was explicitly construed to mean 'straight down,'" they argue that the administrative law judge and the Commission necessarily relied implicitly on a "straight down" construction in order to find the asserted patent claims not invalid over the prior art. *Id.* at 47-50. However, the evidence does not show that such an implicit construction was necessary, and, thus, one cannot be assumed.

4. Claim Construction

Complainants argue:

> The Commission construed the claims of the 840 and 550 patents during the underlying violation proceeding. This enforcement proceeding involves the exact same claims that were litigated, construed, and held valid and infringed by Garmin. The Commission construed these claims, and no additional claim construction is necessary. In fact, no additional claim construction is permitted. "It is well-established that parties are bound by the Commission's prior claim constructions; ***neither [the Complainants] nor [the Respondents] can seek to broaden (or narrow) the scope of the asserted claims during this enforcement proceeding***." *Certain Personal Data and Mobile Communications Devices*, Inv. No. 337-TA-710 (Enforcement), Order No. 128, 2012 WL 7961881, at *2 (Nov. 1, 2012) ("*Mobile Devices*") (emphasis added). Indeed, the ALJ already stated in Order No. 30 that issue preclusion applies to claim construction where, as here, the requirements for issue preclusion are met. Order No. 30 at 5 (ruling that "issue preclusion applies" to the issues that were decided in the underlying investigation, and stating: "The same is true for claim construction.") (citing *eDigital Corp. v. Futurewei Tech., Inc.*, 772 F.3d 723, 726-27 (Fed. Cir. 2014)).
>
> The private parties and OUII Staff identified all claim terms that needed construction during the violation proceeding: "single linear downscan transducer element" in the 840 patent, and "linear transducer element" in the 550 patent. The Commission construed the former to mean "a single downwardly pointed transducer that is formed from a single crystal or a plurality of crystals that act simultaneously and in phase as if they were a single crystal." Comm'n Op. at 17. That construction included construing the term "downscan" to mean "downwardly pointed." *Id.* Since the claims have already been construed, the parties are bound by those constructions and the ALJ should not revisit that claim construction. *See Mobile Devices*, Order No. 128 at *2.

Compls. Br. at 19-20 (emphasis in original) (footnote omitted).

Respondents argue:

> The construction of the patent claims to require a straight-down transducer applied in the Commission's validity determination also applies in the enforcement proceeding: it is both law of the case, and also required by Federal Circuit precedent that claims be construed the same for validity and infringement. Any finding otherwise would be contrary to Section 337 and the APA: Commission rulings in the same Investigation

> that are based on contradictory claim constructions are arbitrary and capricious. As the D.C. Circuit has held, internally inconsistent agency decisions "fall below the standard of reasoned decisionmaking." *Gen. Chem.*, 817 F.2d at 854. In that case, the Interstate Commerce Commission considered certain rate concession information relevant even though it had taken the opposite position before. The D.C. Circuit determined that: "The Commission cannot have it both ways. ... The Commission is free to regard evidence of rate concessions as evidence of either geographic or intramodal competition or both. But it must do so in a rational and consistent manner that is fair to the parties involved." *Id.* The D.C. Circuit thus held that the Commission's actions were impermissibly arbitrary and capricious, pointing out that "[s]uch intuitional forms of decisionmaking, completely opaque to judicial review, fall somewhere on the distant side of arbitrary." *Id.* at 855 (citation omitted). Here too, a finding of validity based on a construction of the patent claims to require a straight-down transducer is internally inconsistent with a finding of infringement as to tilted transducers. "Such inconsistency is a hallmark of arbitrary action." *Sierra Club v. EPA*, 719 F.2d 436, 459 (D.C. Cir. 1983).

Resps. Br. at 28-29.

The Staff argues:

> [T]he Staff believes that it is unnecessary to further construe "single linear downscan transducer element" (claims 1 and 23 of the '840 patent) beyond the construction adopted by the Commission. The transducer's "downwardly pointed" nature arises from the related limitation requiring that it be "positioned within the housing to project fan-shaped sonar beams in a direction substantially perpendicular to a plane corresponding to the surface of the water." In other words, projecting sonar beams in the claimed direction requires that the transducer be "downwardly pointed." However, nothing requires that the "downscan transducer" be positioned so that the center of the beamwidth (a.k.a. main response axis) is aligned to be "substantially perpendicular" to the water's surface. Construing claims 1 and 23 of the '840 patent in this manner, as Respondents request, would improperly read a limitation from the specification's preferred embodiment into the claims. Because the "fan-shaped" beam is three-dimensional, the "substantially perpendicular" claim language is satisfied so long as the direction "substantially perpendicular to a plane corresponding to the surface of the body of water" is located within that three-dimensional -3 dB beam geometry. And because issue preclusion requires that the "substantially perpendicular" claim limitation be construed with its plain and ordinary meaning, it cannot be construed based on lexicography arguments or negative limitations. Neither the ALJ

> nor the Commission explicitly relied upon a "straight down" construction of either term to distinguish the prior art, and the evidence does not support Respondents' "implicit reliance" argument. Respondents have thus not met their burden to establish that judicial estoppel should apply.
>
> For similar reasons, it is the Staff's view that "third linear transducer element positioned within the housing and configured to project sonar pulses in a direction substantially perpendicular to the plane defined by the first and second linear transducer elements" claim term (claim 32 of the '550) patent should be construed consistent with the "substantially perpendicular" claim term of the '840 patent. To be clear, because the sonar beam is three-dimensional, the "substantially perpendicular" claim language is satisfied so long as the direction "substantially perpendicular to the plane defined by the first and second linear transducer elements" is located within that three-dimensional beam geometry.

Staff Br. at 22-23.

Language of the Asserted Claims

Understanding the meaning of the disputed claim terms begins with an examination of the claims themselves. As discussed above, "[t]he claims themselves provide substantial guidance as to the meaning of particular claim terms." *Phillips*, 415 F.3d at 1314; *ACTV, Inc. v. The Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003) ("the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms"). In both claims 1 and 23 of the '840 patent, the "single linear downscan transducer element" is required to "produce a fan-shaped sonar beam [1] having a relatively narrow beamwidth in a direction parallel to a longitudinal length of the linear downscan transducer element and [2] a relatively wide beamwidth in a direction perpendicular to the longitudinal length of the transducer element." JX-0001 ('840 Patent) at col. 17, lns. 38-46, col. 19, lns. 13-22. Thus, the '840 patent claims define the sonar beam as "fan-shaped" and as having a

particular orientation relative to the transducer itself.

Turning to the next relationship, the first limitation on the orientation of the "downscan transducer" within the housing is that it must be "positioned with the longitudinal length thereof extending in a fore-to-aft direction of the housing." *Id.* at col. 17, lns. 46-48, col. 19, lns. 22-25. The second limitation on the orientation of the "downscan transducer" within the housing is that it must be "positioned within the housing to project fan-shaped sonar beams in a direction substantially perpendicular to a plane corresponding to the surface of the water." *Id.* at col. 17, lns. 49-52, col. 19, lns. 26-29 (claim 29 does not include the words "within the housing" after "positioned"). Thus, the "fan-shaped sonar beams" must travel in the defined direction perpendicular to the surface of the water.

Inasmuch as those sonar beams are "fan-shaped," they are three-dimensional, but claims 1 and 23 of the '840 patent do not require defining that shape relative to a single characteristic vector (*e.g.*, the main response axis) within that three-dimensional shape. Therefore, the claim language allows for leeway in the positioning of the "downscan transducer" within the housing while still insonifying the water in "a direction substantially perpendicular to a plane corresponding to the surface of the water." In sum, then, nothing in the language of claims 1 and 23 of the '840 patent requires orienting the "downscan transducer" itself within the housing with its transmission face substantially parallel to the surface of the water in order to "project fan-shaped sonar beams" in the claimed direction. It is the sonar beam, not the transducer, that is perpendicular to the surface of the water.

A similar analysis applies to the language of asserted claim 32 of the '550 patent.

Claim 32 of the '550 patent does not use the term "fan-shaped" but recites "transducer elements having a substantially rectangular shape configured to produce a sonar beam having a beamwidth in a direction parallel to a longitudinal length of the transducer element that is significantly less than a beamwidth of the sonar beam in a direction perpendicular to the longitudinal length of the transducer element." JX-0002 ('550 Patent) col. 19, lns. 43-50. Claim 32 then recites "a third linear transducer element positioned within the housing and configured to project sonar pulses in a direction substantially perpendicular to the plane defined by the first and second linear transducer elements." *Id.* at col. 20, lns. 3-7. The parties previously agreed that "the plane defined by the first and second linear transducer elements" is parallel to the plane defined by the surface of the water. *See* Compls. Br. at 24-25, 70; Resps. Br. at 46; Resps. P.H. Br. at 79; Staff Br. at 17-18. Thus, it is the "sonar pulses" that must travel in the defined direction perpendicular to the surface of the water.

The sonar beams in claim 32 of the '550 patent are three-dimensional, but claim 32 does not require defining that shape relative to a single characteristic vector (*e.g.*, the main response axis) within that three-dimensional shape. As with the '840 patent, the language of claim 32 of the '550 patent thus allows for leeway in the positioning of the "third linear transducer" within the housing while still insonifying the water in "a direction substantially perpendicular to the plane defined by the first and second linear transducer elements." Nothing in the language of claim 32 requires orienting the "third linear transducer" itself within the housing with its transmission face substantially parallel to the surface of the water in order to "project sonar pulses" in the claimed direction. Again, it is the sonar beam, not the transducer, that is substantially

perpendicular to the surface of the water.

'840 and '550 Patent Specification

The '550 patent resulted from a continuation of the application leading to the '840 patent, and they share the same specification. The specification of the asserted patents provides a straightforward description of the context for the claimed inventions in the Background of the Invention:

> More recently, ceramic sidescan transducer elements have been developed that enable the production of a fan shaped sonar beam directed to one side of a vessel. Accordingly, the sea floor on both sides of the vessel can be covered with two elements facing on opposite sides of the vessel. . . . However, employment of these types of sidescan elements typically leaves the column of water beneath the vessel either un-monitored, or monitored using conical beam or circular transducers. . . . However, cylindrical transducers provide poor quality images for sonar data relating to the structure on the bottom or in the water column directly below the vessel.
>
> Accordingly, it may be desirable to develop a sonar system that is capable of providing an improved downscan imaging sonar.

JX-0001 ('840 Patent) col. 2, lns. 36-62. Thus, the stated goal of the asserted patents is marine sonar systems that provide higher quality imaging of the structure in the water directly beneath a vessel than that provided by a traditional conical transducer and that also provide imaging of bottom areas and structure that would not traditionally be imaged by sidescan transducers. Inasmuch as a transducer produces three-dimensional sonar beams, there is a range of orientations on the bottom of vessel that will allow it to insonify the water directly underneath the vessel in such a manner.

The '840 and '550 patent specification shows that the patentee is relying on the -3 dB boundaries of the transmitted sonar beams as the point of reference for defining the shapes of the sonar beams:

> [A]lthough beam patterns and projections of beam patterns are generally shown herein as having fixed and typically geometrically shaped boundaries, those boundaries merely correspond to the -3 dB (or half power) points for the transmitted beams. In other words, energy measured outside of the boundaries shown is less than half of the energy transmitted. Thus, the boundaries shown are merely theoretical half power point boundaries.

JX-0001 ('840 Patent) col. 10, lns. 3-10. Thus, for example, a person of ordinary skill in the art would have understood that the shape of the "fan-shaped beam" in claims 1 and 23 of the '840 patent was meant to be defined by reference to the -3 dB power boundary of the transmitted beams.

The preferred embodiment of the '840 and '550 patents is illustrated as placing the downwardly pointed linear transducer in a straight down orientation in the direction perpendicular to the longitudinal length of the transducer. *See e.g.*, JX-0001 ('840 Patent) at Figs. 7B, 8A, 8B, 9A, 9B, 11A. Yet, there is nothing the specification of the asserted patents requiring that specific orientation. Indeed, "it is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited." *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004); *see also Akamai Techs., Inc. v. Limelight Networks, Inc.*, 805 F.3d 1368, 1375 (Fed. Cir. 2015). Furthermore, although the discussion is not extensive, the '840 and '550 patent specification explicitly states that "the physical orientation of the transducer elements 60 [see Figs. 6, 9] with respect to each other could be changed." *See* JX-0001 ('840 Patent) at col. 11, lns. 49-67. Respondents' reference to the specification at column 11, lines 10-15 is not to the contrary both because the quoted passage uses the permissive word "may" and because the quoted passage uses different

words than those in the claim to specifically describe a fan-shaped beam that is "centered at 90 degrees below the plane substantially parallel to the surface of the water." *See* Resps. Br. at 39. This understanding is further confirmed by unasserted claim 40 of the '550, which demonstrates that the patentee specifically referenced the "center" of the "beamwidth" when necessary. *See* JX-0002 ('550 Patent) at col. 20, lns. 35-41. Similarly, respondents' interpretation of the asserted claims always to reference the center (or main response axis) of the beams cannot be reconciled with the language of unasserted claim 43 of the '550 patent, which states that the "beams produced by each of the first, second and third linear transducers do not overlap with each other." *Id.* at col. 20, lns. 47-49. Claim 43 references the full width of the beams, not their centers.

As discussed above, the constructions of "downscan" and the "substantially perpendicular" limitations are limited to their plain and ordinary meanings. Arguing, for example, that the patentee acted as his own lexicographer or made a clear disclaimer would require deviating from the plain and ordinary meaning:

> "[O]ur cases recognize that the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed.Cir.2005) (en banc). However, a claim term is only given a special definition different from the term's plain and ordinary meaning if the "patentee ... clearly set[s] forth a definition of the disputed claim term other than its plain and ordinary meaning." *Thorner v. Sony Comput. Entm't Am., LLC*, 669 F.3d 1362, 1365 (Fed.Cir.2012) (citations omitted). A patentee can also disavow claim scope, but the standard "is similarly exacting." *Id.* at 1366.

Akamai, 805 F.3d at 1375. Thus, there is no basis in the '840 and '550 patent specification to limit the "downscan transducer" or "third linear transducer," respectively, to a "straight down" orientation.

Prosecution History

The sole portion of the prosecution histories on which respondents appear to rely on for purposes of claim construction and literal infringement concerns a September 22, 2011, examiner rejection during the prosecution of the '840 patent. *See* Resps. Br. at 40; JX-0004 ('840 Patent File History) at 0167-80. The examiner stated concerning pending claim 72 that "the phrase 'substantially perpendicular' [was] indefinite. The examiner interprets any angle between the center of the beams that is between 85 degrees and 95 degrees to be substantially perpendicular." *Id.* at 0170. The phrase "any angle between the center of the beams" makes it difficult to understand the examiner's intention. More importantly, respondents' argument that complainants failed to challenge this statement, and thus conceded to it, is incorrect. In the next office action on December 20, 2011, all the rejections under 35 U.S.C. § 112 were withdrawn by the examiner without amendment to the "substantially perpendicular" claim language relevant here. *See id.* at 3728-48. It is unreasonable to expect a patentee to traverse an unsupported assertion by the examiner that the examiner abandoned. This is not a clear and unmistakable disavowal of claim scope. *See SanDisk Corp. v. Memorex Products, Inc.*, 415 F.3d 1278, 1287 (Fed. Cir. 2005) ("There is no 'clear and unmistakable' disclaimer if a prosecution argument is subject to more than one reasonable interpretation, one of which is consistent with a proffered meaning of the disputed term.") Thus, the examiner's statement is irrelevant to any issue in this enforcement proceeding.

Judicial Estoppel

The administrative law judge addressed the issue of judicial estoppel in Order No. 36, denying respondents' motion for summary determination "that its Titled DownVü

products do not infringe" the asserted claims. *See* Order No. 36 (Mar. 2, 2017). In that order, the administrative law judge rejected respondents' argument that complainants have taken inconsistent positions as to the construction of "downscan" and "substantially perpendicular," and that the doctrine of judicial estoppel prevents any finding of literal infringement by the tilted DownVü products. *See* Order No. 36 at 5-6. The undersigned stated that "respondents have not met their burden to prove that the doctrine of judicial estoppel is applicable." *See id.* at 6.

Respondents nevertheless argue again that "judicial estoppel prevents Navico from arguing for a new claim construction of downscan," but make no attempt to address the defects in their prior argument identified in Order No. 36. *See* Resps. Br. at 35. Although not necessary, the substance of respondents' argument is addressed below.

In the underlying investigation, the claim limitation "single linear downscan transducer element" in claims 1 and 23 of the '840 patent was construed by the Commission as "a single downwardly pointed transducer that is formed from a single crystal or a plurality of crystals that act simultaneously and in phase as if they were a single crystal." *See* Comm'n Op. at 17. The Commission has construed "linear transducer element" in claim 32 of the '550 patent to mean "a transducer that is formed from a single crystal or a plurality of crystals that act simultaneously and in phase as if they were a single crystal." *Id.* at 44. These are the only claim terms explicitly construed during the underlying investigation that are relevant in this proceeding.

The claim term "wherein the linear downscan transducer element is positioned within the housing to project fan-shaped sonar beams in a direction substantially perpendicular to a plane corresponding to the surface of the body of water" in claims 1

and 23 of the '840 patent and the claim term "a third linear transducer element positioned within the housing and configured to project sonar pulses in a direction substantially perpendicular to the plane defined by the first and second linear transducer elements" in claim 32 of the '550 patent were not identified for construction during the violation investigation. These claim limitations above, with the exception of "linear transducer element" (which was expressly construed) are the only claim terms whose constructions are in dispute in this proceeding.

As noted, respondents' argument that judicial estoppel should apply to restrict the meaning of "downscan transducer" and the "substantially perpendicular" limitations to linear transducers oriented with their main response axis pointed straight down (*i.e.*, at a 90 degree angle to the surface of the water) was rejected by the administrative law judge in Order No. 36. Respondents attempt to negate Order No. 36 by asserting the same judicial estoppel argument, which has been rejected, as an argument about "the law of the case" doctrine[4] or consistency in claim construction. *See* Resps. Br. at 25-27, 28-34. However respondents cast their arguments, they bear the burden to show that the doctrine or principle of law in question applies. Neither the administrative law judge nor the Commission explicitly construed the claim terms in question as argued by respondents. Order No. 36 found with respect to their judicial estoppel argument that respondents had not carried their burden to show that the administrative law judge or the Commission had implicitly and necessarily adopted a "straight down" construction. By making the same

[4] In any case, "[t]he law of the case doctrine is limited to issues that were actually decided, either explicitly or by necessary implication, in the earlier litigation." *Toro Co. v. White Consol. Indus., Inc.*, 383 F.3d 1326, 1335 (Fed. Cir. 2004); *see also Exxon Corp. v. United States*, 931 F.2d 874, 877 (Fed. Cir. 1991).

argument in their posthearing brief and only changing the name, respondents have similarly failed to carry that burden here.

A fundamental problem with respondents' argument is that respondents have failed to provide a complete description of the context and events in the underlying investigation. Respondents' Accused Products in the underlying investigation had transducers with a straight down orientation. They thus chose to make their invalidity arguments in those terms. In other words, it was respondents that framed the invalidity argument in terms of whether one or more of the asserted prior art references, alone or in combination, disclosed a linear transducer in a straight down orientation such that it would produce sonar beams substantially perpendicular to the surface of the water. *See e.g.*, ID at 144 ("None of these references [Betts with Tucker, Mazel, Clausner, and/or the Wesmar 700SS System] discloses or suggests pointing the sidescan transducer ***straight down as Garmin suggests***.") (emphasis added).

Nowhere in respondents' argument for supposed consistency (*i.e.*, that the administrative law judge and the Commission have already construed the asserted claims to require a transducer oriented with its main response axis pointed straight down) do they identify a piece of prior art or combination of prior art for which they argued that the claims were invalid based on a reference that disclosed a tilted transducer (*i.e.*, a transducer not pointed straight down but that nonetheless produced sonar beams substantially perpendicular to the surface of the water). Similarly, respondents do not point to any part of the ID or the Commission's opinion where any argument was considered and rejected on the basis that the claims are limited to a transducer oriented with its main response axis pointed straight down.

It was respondents who chose to make their invalidity arguments in those terms. They presumably had an interest in invalidating the '840 and '550 patents on those terms so that they would be free to sell their then existing designs without alteration. The administrative law judge and the Commission were not required to address invalidity arguments that were never made. Respondents cannot now point to hypothetical invalidity arguments and conclude that the administrative law judge and the Commission could only have rejected those arguments by concluding that the asserted claims were limited to sonar devices with transducers in a straight down orientation.

Respondents' attempt to transform statements by complainants, their expert, the administrative law judge, and the Commission, regarding whether certain prior art references or combinations thereof disclosed a transducer oriented straight down, into a conclusion that there was an implicit narrowing construction is unavailing. It was respondents who framed the invalidity issue by the arguments they made. It was respondents who argued invalidity based on whether the prior art disclosed transducers oriented straight down. Respondents cannot now fault complainants, their expert, the administrative law judge, or the Commission for addressing invalidity in the context in which respondents made their arguments. Respondents cannot assume an implicit narrowing construction. Those addressing whether the prior art satisfied the claim limitations did not state their arguments and conclusions concerning arguments that respondents never made (*i.e.*, the issue of whether the claims cover a tilted transducer).

Moreover, respondents have not carried their burden to demonstrate the existence of a prior implicit claim construction by the administrative law judge and the

Commission. Respondents base their key argument about the Commission's prior claim construction on conclusory statements about their prior briefing:

> Garmin argued in the violation proceeding that the asserted claims are invalid in view of prior art such as the Mazel transducer pointed 80 degrees below horizontal, the Betts transducer pointed 40 degrees below horizontal, and the Wesmar transducer pointed at least 50 degrees and up to 90 degrees below horizontal. EDIS Doc ID 554795 (Garmin Br.) at 87–88, 126–28, 130–31.

Resps. Br. at 30. Respondents do not provide the relevant arguments, context, and evidence.

Additionally, this conclusory argument is unpersuasive because it contradicts the record in the underlying investigation. For example, respondents argued in their initial post-hearing brief in the underlying investigation that "the sole question with respect to the Betts Patent disclosing this [single linear downscan transducer] limitation of the '840 Patent is whether there is a teaching in the prior art to turn one of the ***sidescan transducers already included in the Betts Patent*** downward." Resps. Br. (Violation) (EDIS Doc. ID No. 554795) at 126 (emphasis added). Respondents thus described the alleged "40 degrees below horizontal" in Betts as "sidescan" not "downscan" in the underlying investigation. *Id.* In other words, there was no discussion, either explicit or implicit, of whether a transducer that did not point "straight down" could satisfy the limitation.

Similarly, respondents' arguments with respect to Mazel relied upon an obviousness combination with Betts, but the administrative law judge found that modifying one (or both) of the sidescan transducers in Betts would have departed from the whole purpose of Betts, which is to image "the underwater environment ***to the sides***

of the watercraft." *See* ID at 142-43 (citing JX-0358 (Betts) at col. 1, lns. 17-19 (emphasis added)). Next, the undersigned found:

> The Mazel article is directed to using a towfish to inspect vertical wall structures by rotating the entire towfish 90°. . . . Thus, Mazel does not address imaging the lake or sea floor, as in the '840 patent. As Dr. Vincent explained, a person of ordinary skill would not have combined Mazel with Betts, which concerned imaging to the sides of a watercraft using linear sidescan transducers.

ID at 146. Further, the administrative law judge found that "Garmin does not provide a reason why a person of ordinary skill would combine Betts with Mazel . . . ." *Id.* at 147. Thus, there is no indication that the administrative law judge relied upon a narrow straight down construction of "downscan" to find the '840 patent claims over the combination of Betts and Mazel.

Similarly, respondents did not argue that Wesmar was relevant because it was tilted. "Garmin argue[d] that each of the transducers in the Wesmar 700SS towfish can be rotated from +90° to -90°." ID at 128. While the administrative law judge rejected that argument, finding that physical capabilities of the transducer housing were not the same as a teaching to operate them in that manner (*id.*), this does not change the fact that respondents argued only that Wesmar disclosed a straight down linear transducer. The ID contains extensive additional discussion of the Wesmar reference, alone and in obviousness combinations (*see* ID at 127-140), that does not support a conclusion that the administrative law judge construed the asserted claims to require a straight down transducer.

The same deficiencies are apparent from other aspects of respondents' claim construction argument. For example, respondents argue:

> The ALJ cited Navico's expert testimony and required that the asserted claims be limited to sonar systems with transducers pointing straight down and emitting sonar beams whose main response axes are pointed at 90 degrees below the water surface. ID at 127–29, 132, 133, 135, 136, 144, 146, 147, 150, 151, 159, 183.

Resps. Br. at 28.[5] This analysis is insufficient to carry respondents' burden, particularly as respondents are attempting to establish a prior implicit construction of the disputed claim terms. In addition, respondents argue that there is risk of "arbitrary" Commission action with respect to the Somers reference. *See* Resps. Br. at 29-30 (arguing that "a finding of validity based on a construction of the patent claims to require a straight-down transducer is internally inconsistent with a finding of infringement as to tilted transducers"). However, the Somers reference was not discussed by the administrative law judge in the ID or by the Commission in its opinion. *See generally* Violation Resps. Br. (which does not rely on Somers). In any event, respondents' criticism of the Commission's opinion as being inconsistent with respect to validity and infringement was addressed in full above.

In sum, respondents' argument that a narrow construction of the "downscan" and "substantially perpendicular" claim terms limited to a straight down transducer is required for consistency with the Commission's prior validity findings is not supported by the record evidence. The "downscan" and "substantially perpendicular" claim terms should be construed in accordance with their plain and ordinary meaning in view of the intrinsic evidence.

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[5] There is slightly more detail with respect to some of these citations at page 32 of respondents' post-hearing brief. However, in view of the discussion above as to how respondents chose to frame the invalidity argument, these isolated references to "straight down" in the ID are unpersuasive.

Accordingly, it is unnecessary to construe further "single linear downscan transducer element" (claims 1 and 23 of the '840 patent) beyond the construction adopted by the Commission. The transducer's "downwardly pointed" nature arises from the related limitation requiring that it be "positioned within the housing to project fan-shaped sonar beams in a direction substantially perpendicular to a plane corresponding to the surface of the water." In other words, projecting sonar beams in the claimed direction requires that the transducer be "downwardly pointed." However, nothing requires that the "downscan transducer" be positioned so that the center of the beamwidth (main response axis) is aligned to be "substantially perpendicular" to the water's surface. Construing claims 1 and 23 of the '840 patent in this manner, as respondents request, would improperly read a limitation from the specification's preferred embodiment into the claims. Inasmuch as the "fan-shaped" beam is three-dimensional, the "substantially perpendicular" claim language is satisfied so long as the direction "substantially perpendicular to a plane corresponding to the surface of the body of water" is located within that three-dimensional -3 dB beam geometry. In view of the fact that issue preclusion requires that the "substantially perpendicular" claim limitation be construed with its plain and ordinary meaning, that limitation cannot be construed based on lexicography arguments or negative limitations. Neither the administrative law judge nor the Commission explicitly relied upon a "straight down" construction of either term to distinguish the prior art, and the evidence does not support respondents' "implicit reliance" argument. Respondents have not met their burden to establish that judicial estoppel should apply.

For similar reasons, the "third linear transducer element positioned within the

housing and configured to project sonar pulses in a direction substantially perpendicular to the plane defined by the first and second linear transducer elements" claim term (claim 32 of the '550) patent should be construed consistent with the "substantially perpendicular" claim term of the '840 patent. Inasmuch as the sonar beam is three-dimensional, the "substantially perpendicular" claim language is satisfied so long as the direction "substantially perpendicular to the plane defined by the first and second linear transducer elements" is located within that three-dimensional beam geometry.

B. Infringement Analysis

1. Applicable Law

Under 35 U.S.C. §271(a), direct infringement consists of making, using, offering to sell, or selling a patented invention without consent of the patent owner. The complainant in a section 337 investigation bears the burden of proving infringement of the asserted patent claims by a "preponderance of the evidence." *Certain Flooring Products*, Inv. No. 337-TA-443, Comm'n Notice of Final Determination of No Violation of Section 337, 2002 WL 448690, at *59, (Mar. 22, 2002); *Enercon GmbH v. Int'l Trade Comm'n*, 151 F.3d 1376 (Fed. Cir. 1998).

Literal infringement of a claim occurs when every limitation recited in the claim appears in the accused device, *i.e.*, when the properly construed claim reads on the accused device exactly.[6] *Amhil Enters., Ltd. v. Wawa, Inc.*, 81 F.3d 1554, 1562 (Fed. Cir. 1996); *Southwall Tech. v. Cardinal IG Co.*, 54 F.3d 1570, 1575 (Fed Cir. 1995).

[6] Each patent claim element or limitation is considered material and essential. *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991). If an accused device lacks a limitation of an independent claim, the device cannot infringe a dependent claim. *See Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1552 n.9 (Fed. Cir. 1989).

If the accused product does not literally infringe the patent claim, infringement might be found under the doctrine of equivalents. "Under this doctrine, 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., Inc. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 21 (1997) (citing *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 609 (1950)). "The determination of equivalence should be applied as an objective inquiry on an element-by-element basis."[7] *Id.* at 40.

"An element in the accused product is equivalent to a claim limitation if the differences between the two are insubstantial. The analysis focuses on whether the element in the accused device 'performs substantially the same function in substantially the same way to obtain the same result' as the claim limitation." *AquaTex Indus. v. Techniche Solutions*, 419 F.3d 1374, 1382 (Fed. Cir. 2005) (quoting *Graver Tank*, 339 U.S. at 608); *accord Absolute Software*, 659 F.3d at 1139-40.[8]

Prosecution history estoppel can prevent a patentee from relying on the doctrine of equivalents when the patentee relinquished subject matter during the prosecution of the

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[7] "Infringement, whether literal or under the doctrine of equivalents, is a question of fact." *Absolute Software, Inc. v. Stealth Signal, Inc.*, 659 F.3d 1121, 1130 (Fed. Cir. 2011).

[8] "The known interchangeability of substitutes for an element of a patent is one of the express objective factors noted by *Graver Tank* as bearing upon whether the accused device is substantially the same as the patented invention. Independent experimentation by the alleged infringer would not always reflect upon the objective question whether a person skilled in the art would have known of the interchangeability between two elements, but in many cases it would likely be probative of such knowledge." *Warner-Jenkinson*, 520 U.S. at 36.

patent, either by amendment or argument. *AquaTex*, 419 F.3d at 1382. In particular, "[t]he doctrine of prosecution history estoppel limits the doctrine of equivalents when an applicant makes a narrowing amendment for purposes of patentability, or clearly and unmistakably surrenders subject matter by arguments made to an examiner." *Id.* (quoting *Salazar v. Procter & Gamble Co.*, 414 F.3d 1342, 1344 (Fed. Cir. 2005)).

2. The Accused Products

On December 23, 2016, complainants and respondents filed a Joint Statement Regarding Identification of Accused Products for the enforcement proceeding. *See* EDIS Doc. ID No. 599020. On January 6, 2017, the parties submitted a Joint Stipulation Regarding Representative Products. *See* EDIS Doc. ID No. 600352.

The Staff provides the following five Accused Product groups for the enforcement proceeding:

- ***Accused Product Group 1:*** Kitted Marine Sonar Systems Composed of a DownVü or DownVü/SideVü Compatible Head Unit and a Legacy "Straight Down" DownVü Transducer
- ***Accused Product Group 2:*** Kitted Marine Sonar Systems Consisting of a DownVü or DownVü/SideVü Compatible Head Unit and a redesigned "Tilted" DownVü Transducer.
- ***Accused Product Group 3:*** Standalone Legacy "Straight Down" DownVü Transducers Not Including the GT20 or GT30
- ***Accused Product Group 4:*** Standalone Redesigned "Tilted" DownVü Transducers
- ***Accused Product Group 5:*** Standalone DownVü and DownVü/SideVü Head Units

See Staff at 2-3. This product grouping is consistent with those argued by complainants and respondents. *See* Compls. Br. at 12-16; Resps. Br. at 14-16.

3. Direct Infringement

Marine Sonar Systems with Non-tilted Transducers

For purposes of the asserted claims of the '840 patent, the parties have stipulated that the non-tilted version of the GT-20 DownVü transducer is representative of all non-tilted GT DownVü transducers (including non-tilted DownVü/SideVü transducers) and that any kit of the non-tilted GT-20 DownVü transducer with any DownVü-supporting head unit is representative of any kitted non-tilted GT DownVü transducer with any DownVü-supporting head unit. Joint Statement Regarding Representative Products ("Rep. Prod. Stip.") at ¶ 3.

For purposes of the asserted claims of the '550 patent, the parties have stipulated that the non-tilted version of the GT-40 DownVü/SideVü transducer is representative of all non-tilted GT DownVü/SideVü transducers and that any kit of the non-tilted GT-40 DownVü/SideVü transducer with any DownVü/SideVü-supporting head unit is representative of any kitted not-tilted GT DownVü/SideVü transducer with any DownVü/SideVü-supporting head unit. *Id.* at ¶ 4.

The evidence shows that no changes have been made to the non-tilted GT-20 or GT-30 transducers since the Dec. 1, 2015, Commission Opinion. Respondents have not raised an argument that marine sonar systems kitted with non-tilted transducers do not fall within the "covered products" definition of the cease and desist orders. *See generally* Resps. Br. at 1-108. Rather, respondents argue that there have been no sales of such systems on or after December 2, 2015. For these reasons, the evidence shows that any non-tilted GT DownVü transducer kitted with any DownVü-compatible head unit infringes the asserted claims of the '840 patent for the same reasons that the

representative GT-20 transducer kits were previously found to infringe. *See* Comm'n Op. at 17-31; CX-2000C (WS Vincent) at Q/A 104. Similarly, the evidence shows that any non-tilted DownVü/SideVü transducer kitted with any DownVü/SideVü-compatible head unit infringes the asserted claims of the '550 patent for the same reasons that the representative GT-30 transducer kits were previously found to infringe. *Id.* at 44-46.

Marine Sonar Systems with Tilted Transducers

For purposes of the asserted claims of the '840 patent, the parties have stipulated that the tilted version of the GT-20 DownVü transducer is representative of all tilted GT DownVü transducers (including tilted DownVü/SideVü transducers) and that any kit of the tilted GT-20 DownVü transducer with any DownVü-supporting head unit is representative of any kitted tilted GT DownVü transducer with any DownVü-supporting head unit. Rep. Prod. Stip. at ¶ 5.

For purposes of the asserted claims of the '550 patent, the parties have stipulated that the tilted version of the GT-40 DownVü/SideVü transducer is representative of all tilted GT DownVü/SideVü transducers and that any kit of the tilted GT-40 DownVü/SideVü transducer with any DownVü/SideVü-supporting head unit is representative of any kitted tilted GT DownVü/SideVü transducer with any DownVü/SideVü-supporting head unit. *Id.* at ¶ 4.

The evidence shows that the only changes made to the tilted GT-20 or GT-30 transducers since the Dec. 1, 2015, Commission Opinion with respect to the asserted claims is to alter the orientation of the downwardly pointed linear transducer so that the main response axis points sixteen degrees toward the port side referenced from the straight down vertical (seventy-four degree angle of depression from the water's surface

on the port side). *See* Resps. Br. at 49-53; CX-2000C (WS Vincent) at Q/A 86, 87, 105. Respondents' only argument that the redesigned marine systems incorporating the "tilted" transducers do not infringe the asserted claims is based upon the construction of the "downscan" and "substantially perpendicular" claim terms discussed above (*i.e.*, construing the asserted claims to require that the linear transducer be pointed straight down). *See* Resps. Br. at 49-53. As discussed above in the claim construction section, that construction is incorrect. As complainants and the Staff argue, the tilted transducers produce a fan-shaped beam, and a portion of that beam travels perpendicular to the plane of the water's surface. *See* Simonton Enf. Tr. 269-270, 275. Respondents do not dispute that fact. Inasmuch as the claim language is satisfied whens properly construed, and because the Commission's infringement findings from the Dec. 1, 2015, Commission Opinion as to the remaining limitations remain applicable, all marine systems sold on or after Dec. 2, 2015, infringe the asserted patents. Respondents have therefore violated the C&D Orders with respect to all sales of "tilted" transducer marine sonar systems.[9]

4. Doctrine of Equivalents

Even if the "downscan" and/or "substantially perpendicular" claim terms were to be construed to require that the center (or main response axis) of the sonar beams produced by the linear transducer be straight down (perpendicular to the surface of the water), respondents' marine systems kitted with "tilted" transducers would nonetheless infringe those limitations under the doctrine of equivalents.

[9] This conclusion applies to kitted marine sonar systems including a "tilted" transducer. Complainants' allegations of indirect infringement for the standalone sonar components are discussed below.

Prosecution History Estoppel

In this instance, the doctrine of prosecution history estoppel does not operate to prevent a finding of infringement under the doctrine of equivalents. The Federal Circuit has summarized the law of prosecution history estoppel based upon the holding of *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722 (2002), as follows:

> Prosecution history estoppel prevents a patentee from recapturing through the doctrine of equivalents the subject matter that the applicant surrendered during prosecution. It presumptively applies when the applicant made a narrowing claim amendment related to patentability. A patentee bears the burden to rebut the presumptive application of prosecution history estoppel by establishing one of three exceptions by a preponderance of the evidence. First, "[t]he equivalent may have been unforeseeable at the time of the application." Second, "the rationale underlying the amendment may bear no more than a tangential relation to the equivalent in question." Third, "there may be some other reason suggesting that the patentee could not reasonably be expected to have described the [equivalent]."

Integrated Tech. Corp. v. Rudolph Techs., Inc., 734 F.3d 1352, 1356 (Fed. Cir. 2013) (internal citations omitted).

Respondents first point to an amendment made during the prosecution of the '840 patent to add the word "downscan" to pending claims 57 and 76 (that became claims 1 and 23 in the issued patent). *See* Resps. Br. at 40-41. Respondents' argument that "[t]he amendment was substantially related to patentability because it added 'downscan' in order to distinguish over sidescan prior art" is not supported by the evidence. *Id.* The amendment in question has been reordered in the certified file history of the '840 patent, such that page 1 is at JX-0004.3798, pages 2-14 are at JX-0004.3785-97, and pages 15-23 are at JX-0004.3776-84.

The markups of the amended claims (in typical strikethrough and underline

format) can be seen on JX-0004.3785, 3788-89 ('840 Patent File History). The first paragraph in the "Remarks" section under the heading "Summary of Claim Amendments" does not even mention "downscan." JX-0004.3777-78 ('840 Patent File History). The next paragraph under the "Summary" states that "Claims 57 and 76 additionally have been amended, for clarity, to refer to a linear downscan transducer element (to distinguish from a linear side scan transducer element, for example)." *Id.* at 3778. In the section of the amendment filing specifically addressing the § 103 rejection over the Hamada patent in view of the Imagenex reference, the patentees offer multiple reasons that they believed that the examiner's understanding of Hamada was incomplete and multiple grounds for distinguishing their pending claims, but they did not refer to Hamada (or Imagenex) as a sidescan system. *Id.* at 3378-83.

Thus, while other amendments to pending claims 57 and 76 were both "narrowing" and "related to patentability," the addition of the word "downscan" was not. In other words, the patentees did not surrender some potential claim scope over "sidescan" devices to secure patentability over Hamada that they are now trying to recapture. In addition, respondents did not seek admission of Hamada into the record or otherwise offer support for their characterizations of Hamada (which conflict with the intrinsic record).

Respondents next point to an examiner's amendment made during the prosecution of the '550 patent to change some of the wording in claim 32. *See* Resps. Br. at 46-47. The examiners amendment is shown in the '550 patent file history. *See* JX-0005.0286-87 ('550 Patent File History). The amendments to the "third linear transducer" limitation, for which the "substantially perpendicular" language is at issue in this proceeding, are

shown in the excerpt below:

> a third linear transducer element positioned within the housing and configured to project sonar pulses in a direction substantially perpendicular to the plane defined by the first and second linear transducer elements;

Id. Thus, the addition of the words "and configured" was simply for clarity and was not a narrowing amendment. Similarly, the words added after "plane" were only for clarity and not narrowing as they merely repeated a condition already stated earlier in the claim, even in the original claim language:

> a second linear transducer element positioned within the housing and spaced laterally from the first linear transducer element,
>
> wherein the second linear transducer element lies ~~to lie~~ substantially in a plane with the first linear transducer element and is configured to project sonar pulses from a second side of the housing that is generally opposite of the first side, and is also in a direction substantially perpendicular to the centerline of the housing, and

Id. (yellow highlighting added to show the presence of this requirement in the original language). Again, respondents have identified no relevant narrowing amendment to trigger the rebuttable presumption that prosecution history estoppel applies.

Doctrine of Equivalents Discussion

The evidence shows that the "tilted" transducers perform substantially the same function as "non-tilted" transducers. Indeed, nearly all of the functions of the "tilted" transducers are exactly the same as before (*e.g.*, generating sonar beams from electrical pulses and vice versa), only the area of the water within the -3 dB geometry has been shifted by the change in orientation of the transducer. *See* CX-2000C.0053-55 (Vincent WS) at Q/A 129-138. However, some sonar energy will travel to the same areas and may

still generate a return; it is simply that a greater portion of the focused sonar energy has been shifted to the port side of the vessel. *See id.* at Q/A 136; RX-2013C.0022-23 (Huff RWS) at Q/A 68, 70. Garmin's own test results show that [

], and that there is a broad and even distribution of energy across the area that would be underneath a boat. *See* Simonton Enf. Tr. 269-270; JX-2070 (email with tilted beam pattern test results).

The evidence also shows that the "tilted" transducers work in exactly the same way as the "non-tilted" transducers. The new designs are backwards compatible with prior models of the head units. *See* CX-2000C.0057 (Vincent WS) at Q/A 143-144. In other words, both older and newer head units have [

]. *See* CX-2246C (Seymour Dep. Enf. Tr.) at 64-65. [

].

See id.; Simonton Enf. Tr. 271-272, 275-277.

The evidence shows that the "tilted" transducers produce substantially the same results as the "non-tilted" transducers. Significantly, a portion of the sonar beams generated by the tilted transducers travels straight down from the transducer to produce images of the structures in the water column and the bottom of the water body located directly beneath the boat. *See* CX-2000C.0054-55 (Vincent WS) at Q/A 136-138. While the tilted transducer could theoretically receive different sonar returns due to the direction of a greater portion of the -3 dB beam geometry to the port side, the evidence shows that any difference in the results is insubstantial. *See* CX-2000C.0056, 57 (Vincent WS) at

Q/A 88-93, 141-42, 145-46; JX-2102 to JX-2105, JX-2108, JX-2113 (native format marine sonar files); CDX-1001C.0023-25 (Vincent sonar testing screenshots). While Dr. Huff identified some very small differences between Dr. Vincent's test results for the tilted and non-tilted transducers, he provided no reason a person of ordinary skill in the art would have found those differences to be substantial. *See e.g.*, RX-2013C (Huff RWS) at Q/A 203; Huff Enf. Tr. 365-376. Indeed, the evidence shows that respondents relied on the lack of any discernable difference in the displayed results on the head units to reassure their distribution partners and customers that the tilted redesign products would not suffer from any performance degradation. *See* JX-2015C (Garmin press release).

In summary, the evidence shows that any differences between the non-tilted transducers and the tilted transducers are insubstantial. Both designs perform substantially the same function in substantially the same way to achieve substantially the same results. Thus, if the tilted transducers do not literally infringe, they infringe under the doctrine of equivalents.

5. Indirect Infringement

Standalone Non-tilted Transducers Other Than the GT-20 and GT-30

The evidence shows that, given the information in the Dec. 1, 2015, Commission Opinion, respondents had the requisite knowledge that they were inducing infringement of and contributorily infringing the asserted claims of the asserted patents by selling

standalone non-tilted transducers (other than the GT-20 & GT-30[10]), and promoting their combination with compatible head units that would produce infringing marine sonar systems. The evidence shows that the transducers have no substantial noninfringing uses. *See* CX-2000C (WS Vincent) at Q/A 194 ("The only use for these transducers—and specifically the only use that actually uses their DownVü or DownVü/SideVü functionality—is to use them with a head unit or black box that supports such functionality"). The evidence shows that respondents publish literature, manuals, selection guides, and marketing materials that induce customers to combine head units with straight down DownVü and DownVü/SideVü transducers to create infringing marine sonar systems. *See* CX-2000C (WS Vincent) at Q/A 188; JX-2134C (2016 Transducer Guide); CX-2240 (2017 Transducer Guide); CPX-0134 (website captures). Furthermore, the evidence shows the associated acts of direct infringement resulting from respondents' inducement and contributory infringement with respect to the non-tilted standalone transducers. *See* Dunn Enf. Tr. 224-227. Thus, the evidence shows that respondents have contributorily infringed and induced infringement of the asserted patents through their sales of standalone "non-tilted" DownVü transducers other than the GT-20 and GT-30.

Standalone Tilted Transducers

Respondents changed the design of their transducers to incorporate the "tilt" feature rather than simply continuing to import the exact same design found infringing by the Commission. Furthermore, no court or administrative proceeding has found the

[10] The GT-20 and GT-30 non-tilt transducers were found not to contributorily infringe or induce infringement in the Dec. 1, 2015, Commission Opinion, and thus fall within the carve out to "covered products" in the C&D Orders.

redesign to be infringing. Thus, complainants have not met their burden to prove the requisite level of intent for induced or contributory infringement with respect to the "tilted" standalone transducers. *See Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926 (2015) ("Like induced infringement, contributory infringement requires knowledge of the patent in suit and knowledge of patent infringement."); *Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 765-66 (2011); *see also* Comm'n Op. at 30 (discussing *Commil* and *Global-Tech*).

Standalone Head Units

Head units combined with either the old non-tilted transducers or the new tilted transducers will produce infringing marine sonar systems, but the evidence only shows the required intent to induce infringement for head units combined with non-tilted transducers. Nevertheless, that is sufficient to support a finding of induced infringement with respect to the standalone head units. "It is well settled that an accused device that sometimes, but not always, embodies a claim nonetheless infringes." *Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1333 (Fed. Cir. 2013); *see also Braintree Labs., Inc. v. Novel Labs., Inc.*, 749 F.3d 1349, 1366-67 (Fed. Cir. 2014). This rule should apply to acts of indirect infringement. The frequency of infringement is accounted for in the remedy. *See Braintree*, 749 F.3d 1367 (citing *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1334 (Fed.Cir.2009) ("The damages award ought to be correlated, in some respect, to the extent the infringing method is used by consumers.")).

In this case, the evidence shows that respondents publish literature, manuals, selection guides, and marketing materials that induce customers to combine head units with straight down DownVü and DownVü/SideVü transducers to create infringing

marine sonar systems. *See* CX-2000C (WS Vincent) at Q/A 188; JX-2134C (2016 Transducer Guide); CX-2240 (2017 Transducer Guide); CPX-0134 (website captures). There is also sufficient evidence to demonstrate acts of direct infringement resulting from respondents' inducements. *See* Dunn Enf. Tr. 224-227. As discussed further below, it is appropriate to count a portion of sales of standalone head units, corresponding to the number of standalone straight-down transducers sold, for purposes of assessing the civil penalty.

Respondents argue that they can have a good faith belief in noninfringement that negates the intent required for contributory and induced infringement without regard for the Commission infringement findings in the final determination ("FD"). *See* Resps. Br. at 22-23, 66-67. However, the reason that the Commission found that there was no contributory infringement by standalone straight down transducers and no induced infringement by standalone straight down transducers and head units was a lack of proof that respondents knew that the combination of such transducers and head units produced sonar systems that infringed the asserted claims of the '840 patent and '550 patent. *See* Comm'n Op. at 28-31, 46. The Commission did not find the standalone products of indirect infringement due to the absence of a claim limitation. One should reject the argument that the issuance of the FD did not alter respondents' knowledge and intent with respect to products with similar designs that were not previously adjudicated. Respondents cannot maintain that they do not intend to contributorily infringe or induce infringement when knowledge of the findings in the FD compels the conclusion that all similarly designed standalone DownVü transducers and DownVü compatible head units are infringing.

V. Remedy

The Commission instituted this formal enforcement proceeding pursuant to its authority under Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and Commission Rule 210.75 (19 C.F.R. § 210.75). 81 Fed. Reg. 71531 (Oct. 17, 2016). Commission Rule 210.75(b)(4) specifies the actions the Commission may take following the conclusion of a formal enforcement proceeding:

> (i) Modify a cease and desist order, consent order, and/or exclusion order in any manner necessary to prevent the unfair practices that were originally the basis for issuing such order;
>
> (ii) Bring civil actions in a United States district court pursuant to paragraph (c) of this section (and section 337(f)(2) of the Tariff Act of 1930) to recover for the United States the civil penalty accruing to the United States under that section for the breach of a cease and desist order or a consent order, and to obtain a mandatory injunction incorporating the relief the Commission deems appropriate for enforcement of the cease and desist order or consent order; or
>
> (iii) Revoke the cease and desist order or consent order and direct that the articles concerned be excluded from entry into the United States.

19 C.F.R. § 210.75(b)(4).

The administrative law judge provides the following recommendations in the event that respondents are found to have violated the terms of the cease and desist orders.

A. Modification of Remedial Orders

Respondents argue that the Commission's remedial orders should be modified pursuant to 19 C.F.R. § 210.75(b)(4)(i) explicitly to exclude any of respondents' products found not to infringe the asserted patents. Resps. Br. at 107. In particular, respondents

argue that the "ClearVü product"[11] should be found not to infringe and consequently explicitly excluded from the remedial orders in effect. *Id.*

In the proper circumstances, the administrative law judge might recommend modifications of the remedial orders in this investigation commensurate with the infringement findings made with respect to the Accused Products. Yet, it is not appropriate for the administrative law judge to make any infringement determination as to ClearVü systems (*i.e.*, ClearVü head units bundled with ClearVü transducers for sale) as they are not Accused Products. *See Certain Inkjet Print Cartridges and Components Thereof*, Inv. No. 337-TA-446, ID (Order No. 17), 2001 WL 1471697 (Nov. 15, 2001) ("[T]he purpose of Section 337 is not for creating a record for use in district court proceedings.").

B. Civil Penalty

"Civil penalties are mandatory for violations of the Commission's cease and desist orders . . . issued under section 337." *Certain Two-way Global Satellite Communication Devices, System and Components Thereof*, Inv. No. 337-TA-854 (Enforcement), Comm'n Op. at 26 (July 1, 2014) ("*Global Satellite*") (EDIS Doc. ID No. 537131). "[F]or each day on which an importation of articles, or their sale, occurs in violation of [a cease and desist] order," the Commission shall impose a civil penalty "of not more than the greater of $100,000 or twice the domestic value of the articles entered

[11] Respondents do not specify with particularity their intended meaning for "ClearVü product" in this context. Complainants have accused standalone ClearVü head units of induced infringement of the asserted patents. Compls. Br. at 61-62, 76. However, complainants have not identified kitted ClearVü products (ClearVü head unit bundled with ClearVü transducers) as products accused of infringement. *See* CX-2291C.0004 at ¶ 7 (Joint Stipulation Regarding Representative Products).

or sold on such day in violation of the order." 19 U.S.C. § 1337(f)(2). "The Commission has the discretion to impose a civil penalty that is appropriate to the circumstances." *Global Satellite*, Comm'n Op. at 27 (citing *Certain Erasable Programmable Read Only Memories, Components Thereof, Products Containing Such Memories, and Processes for Making Such Memories*, Inv. No. 337-TA-276 (Enforcement), Comm'n Op. at 29 (July 19, 1991) (hereinafter, "*EPROMs*")).

1. Maximum Penalty

As discussed below, the maximum civil penalty the Commission may impose resulting from a violation of the cease and desist orders in this proceeding corresponds to "twice the domestic value of the articles entered or sold" in violation of the C&D Orders. *See* 19 U.S.C. § 1337(f)(2). The evidence shows that respondents imported certain head units and transducers separately but then kitted them together as sonar systems for sale. As argued by the Staff, using violating sales rather than violating imports will allow for a simpler determination of the potential maximum civil penalty. *See* Staff at 36-39.

A number of different outcomes for the penalty are possible based upon which product categories are determined to infringe. The evidence shows all of the accused kitted devices (with both non-tilted and tilted transducers) directly infringe. The evidence shows that standalone non-tilted transducers other than the GT-20 and GT-30 indirectly infringe. The evidence shows that standalone head units induce infringement.

There is adequate evidence to adjust the calculated maximum penalty for various possible outcomes.

Maximum Penalty Based Upon Days in Violation

Complainants' expert, Dr. Prowse, testified that Garmin made sales of the

Covered Products on [ ] during the time period of December 2, 2015 to November 18, 2016. CX-2001C (Prowse WS) at Q/A 29; CDX-1002.7-12C (Prowse updated Exhibit 9 showing day by day sales); CPX-0121C (Garmin sales spreadsheet); CPX-0122C (Garmin sales spreadsheet). The sales details indicate that there were [ ]. *See* CDX-1002.7-12C (Prowse updated Exhibit 9 showing day by day sales); CPX-0121C (Garmin sales spreadsheet); CPX-0122C (Garmin sales spreadsheet). Thus, the fact that sales of standalone tilted transducers do not meet the standard for indirect infringement does not affect the applicable number of days for calculating the penalty. Respondents' expert Ms. Kobe addresses some issues related to the number of days of importation but does not challenge Dr. Prowse's testimony concerning the number of sales days. *See generally*, RX-2014C (Kobe RWS). The evidence shows that sales in violation of the C&D Orders occurred on [ ] following issuance of the C&D Orders. Thus, the maximum civil penalty based on days of sales in violation of the C&D Orders is [ ]. *See* 19 U.S.C. § 1337(f)(2).

Maximum Penalty Based Upon Twice the Value of Articles Sold

The evidence shows that the value of kitted imported covered products (straight down and tilted combined) sold following issuance of the C&D Orders was approximately $[ ]. *See e.g.*, CX-2001C (Prowse WS) at Q/A 22-32, 50-54, 70; CDX-1002.1C (Prowse summary RDX showing kitted total; CDX-1002.3C (Prowse RDX showing underlying figures for kitted total); CPX-0121C (Garmin sales spreadsheet); CPX-0122C (Garmin sales spreadsheet); CX-2061C (Prowse chart of covered product sales by day); RX-2014C (Kobe RWS) at Q/A 57, 127; RDX-

2000C.0001 (Kobe RDX re total kitted sales) at 3.[12]

The evidence shows that the value of imported standalone straight down transducers (not including the GT-20 or GT-30) sold following issuance of the C&D Orders was approximately $[ ]. *See* RX-2014C (Kobe RWS) at Q/A 74-76; RDX-2000C.0005 (Kobe RDX re total standalone sales) at 9 of exhibit (total generated by adding values for white-coded standalone transducers on the referenced page). The corresponding number of standalone straight down transducers is [ ]. *Id.*

The evidence shows that the value of imported standalone head units sold following issuance of the C&D Orders was approximately $[ ]. *See* CX-2001C (Prowse WS) at Q/A 33; CDX-1002C.0003-5 (Prowse CDX with per product sales figures for non-kitted head units); CPX-0121C (Garmin sales spreadsheet); CPX-0122C (Garmin sales spreadsheet); RX-2014C (Kobe RWS) at Q/A 74-76; RDX-2000C.0005 (Kobe RDX re total standalone sales) at 9 of exhibit ("All Non-Kitted Products, Subtotal"). Dividing that total figure by the quantity of head units sold ([ ]) gives an average sales price of approximately $[ ] per head unit. *See id.* Each of the standalone straight down transducers discussed must have been combined with a head unit to serve a useful purpose. Multiplying the average head unit price of $[ ] by the

[12] Respondents challenge whether orders for kitted products with straight down transducers that predate the C&D Orders but were shipped after Dec. 1, 2015, are "sales." The C&D Orders prohibit "transfer . . . in the United States [of] imported covered products." C&D Orders at III(B). Thus, respondents' argument is insufficient to avoid a finding of violation as to those units. Respondents are also incorrect about the definition of "sales." The Uniform Commercial Code states that a "'sale' consists in the passing of title from the seller to the buyer for a price." U.C.C. § 2-106. "Unless otherwise explicitly agreed title passes to the buyer at the time and place at which the seller completes his performance with reference to physical delivery of the goods . . . ." *Id.* at § 2-401.

[ ] standalone straight down transducers sold gives a total of $[ ]. As discussed above, the evidence supports a finding of indirect infringement with respect to standalone head units based upon their combination with straight down transducers, but the remedy assessment should be scaled to the number of head units ultimately put to that use. This is a reasonable revenue to attach to standalone head unit sales for purposes of assessing the maximum penalty.

Adding these subtotals ([ ]) yields a grand total of sales in violation of the C&D Orders of $[ ]. Thus, based on the evidence adduced at the hearing, the maximum civil penalty based on the value of covered articles sold would be 2 times $[ ], or $[ ]. *See* 19 U.S.C. § 1337(f)(2).

A brief summary of what the evidence shows for each accused product category is provided below:

Accused Product Group 1: **Kitted Marine Sonar Systems Composed of a DownVü or DownVü/SideVü Compatible Head Unit and a Legacy "Straight Down" DownVü Transducer**

Respondents acknowledge invoicing and shipping [ ] orders of kitted marine sonar imaging products, that included the infringing legacy straight down transducers, at a value of $[ ], after the issuance date of the C&D Orders. *See* Resps. Br. at 77, 93. Respondents assert that the fact that the order date for these shipments was prior to the issuance of the C&D Orders means they are not violating sales, but they provide no support in the case law or the Uniform Commercial Code for their argument. As the Staff argues, the C&D Orders prohibit "transfers" of covered products, and, in any event, the invoice and shipment date of these kitted products constitutes the sale date. *See* Staff

Br. at 38. Thus, these sales of the legacy kitted products are included in the total violating sales of kitted marine sonar imaging products. *Id.*

***Accused Product Group 2*: Kitted Marine Sonar Systems Consisting of a DownVü or DownVü/SideVü Compatible Head Unit and a Redesigned "Tilted" DownVü Transducer.**

The evidence shows that without using established procedures at the Commission or U.S. Customs and Border Protection to obtain a ruling as to whether their redesigned products infringe the relevant patents and without proof of reliance on an opinion of legal counsel, respondents sold after importation infringing marine sonar imaging systems kitted from separately imported head units and redesigned "tilted" transducers as well as a small number of such kitted systems that were kitted prior to importation. Respondents do not challenge the figure of $[ ] in sales of kitted products that included a redesigned tilted DownVü transducer. *See* Resps. Br. at 77, 92. Respondents' only argument that the $[ ] in sales of kitted products with redesigned transducers should not be included in the maximum penalty calculation is that the redesigned transducers do not infringe. *See id.* As discussed above, under the correct construction of the disputed claim terms, the redesigned tilted transducers continue to infringe the asserted claims of the '840 and '550 patents.

***Accused Product Group 3*: Standalone Legacy "Straight Down" DownVü Transducers Not Including the GT20 or GT30**

The evidence shows violating sales of [ ] standalone "straight down" transducers at a value of $[ ] that indirectly infringe the asserted patents. *See* Staff Br. at 38. Respondents include a value for imported straight down transducers for standalone sale in their initial brief, but identify no figure for sales of standalone straight

down transducers. *See* Resps. Br. at 76. Respondents instead argue that all standalone transducer sales are exempt from the scope of "covered products" under the C&D Orders. *See* Resps. Br. at 77, 92. As discussed above, respondents' interpretation of the C&D Orders as providing a blanket exception for all standalone transducers and head units is not reasonable.

Accused Product Group 4: **Standalone Redesigned "Tilted" DownVü Transducers**

Contrary to complainants' argument (Compls. Br. at 54), inasmuch as the "tilted" transducers are the result of a redesign effort, the evidence is insufficient to prove the requisite level of intent for indirect infringement as to the standalone "tilted" transducers sold following entry of the cease and desist orders. *See Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926 (2015); *Global-Tech Appliances, Inc. v. SEB S.A.*, 563 U.S. 754, 765-66 (2011); *see also* Comm'n Op. at 30 (discussing *Commil* and *Global-Tech*). Thus, the sales of standalone tilted transducers are not included in the calculation of the maximum civil penalty.

Accused Product Group 5: **Standalone DownVü and DownVü/SideVü Head Units**

The evidence shows that standalone head units combined with original "straight down" transducers are infringing marine sonar imaging systems. The maximum civil penalty calculation includes a fractional value ($[ ]) of the total sales of standalone head units in proportion to the number of sales of standalone legacy straight down transducers and the average price of the head units. *See* Staff Br. 38-39. Respondents do not offer an alternative methodology for treatment of the standalone head units in the event that the administrative law judge rejects their argument that the C&D

Orders make a blanket exception for all sales of standalone devices. *See* Resps. Br. at 77, 92. As noted above, complainants incorrectly argue that standalone sales of tilted transducers induce infringement of and contributorily infringe the asserted claims. *See* Compls. Br. at 54-55. Complainants thus incorrectly include the entire amount of standalone DownVü supporting head unit sales (approximately $[ ]) in their maximum penalty calculation, and do not attempt any correlation to either the number of standalone straight down transducer sales or standalone tilted transducer sales or make allowance for the possible usage of standalone head units with non-accused transducers (*e.g.*, third party or circular downview transducers). *See* Compls. Br. at 77-78.

In sum, the totals for each of the categories outlined above yields a grand total of sales in violation of the C&D Orders of $[ ],[13] making the maximum civil penalty that may be assessed against respondents $[ ].[14]

2. Factors Considered in Assessing a Civil Penalty

When calculating an appropriate civil penalty as a result of a cease and desist order violation, the Commission may consider a number of factors: "(1) the good or bad faith of the respondent; (2) any injury due to the violation; (3) the respondent's ability to pay the assessed penalty; (4) the extent to which the respondent benefitted from its violations; (5) the need to vindicate the authority of the Commission; and (6) the public interest" (hereafter, "the penalty factors"). *Global Satellite*, Comm'n Op. at 27 (citing *EPROMs*, Comm'n Op. at 23-24, 26); *see also Certain DC-DC Controllers and Products Containing the Same* (Enforcement), Inv. No. 337-TA-698, Comm'n Op. at 38

[13] $[ ].

[14] $[ ].

(December 12, 2012) ("*DC Controllers*"); *Certain Ink Cartridges and Components Thereof* (Enforcement), Inv. No. 337-TA-565, Comm'n Op. at 17-18 (Sept. 24, 2009) ("*Ink Cartridges*"); *Certain Lens-Fitted Film Packages*, Inv. No. 337-TA-406 (Enforcement II), Op. on Enforcement Measures at 12 (April 4, 2005) ("*Cameras II*"); *Certain Lens-Fitted Film Packages*, Inv. No. 337-TA-406 (Consolidated Enforcement and Advisory Opinion Proceedings), Comm'n Op. at 17 (June 23, 2003) ("*Cameras I*"); *Certain Agricultural Tractors Under 50 Power Take-Off Horsepower*, Inv. No. 337-TA-380 (Enforcement), Comm'n Op. at 31, USITC Pub. 3227 (Aug. 1999) ("*Tractors*"); *Certain Neodymium-Iron-Boron Magnets, Magnet Alloys, and Articles Containing Same*, Inv. No. 337-TA-372 (Enforcement), Comm'n Op. at 22-33, USITC Pub. 3073 (Nov. 1997) ("*Magnets*"). This six-factor test takes into account "the three overarching considerations enumerated by Congress in the legislative history [of section 337(f)(2)], *viz.*, the desire to deter violations, the intentional or unintentional nature of any violations, and the public interest." *San Huan New Material High Tech, Inc. v. USITC*, 161 F.3d 1347, 1362 (affirming *Certain Neodymium-Iron-Boron Magnets, Magnet Alloys, and Articles Containing the Same*, Inv. No. 337-TA-372, Comm'n Op. on Violation of Consent Order (May 6, 1997)).

Each of the six penalty factors is discussed below.

Good or Bad Faith of the Respondents

The first penalty factor is an evaluation of the good or bad faith of the respondents. To make that determination, the Commission examines whether the respondent "(1) had a reasonable basis to believe that the violating product was not within the scope of the Commission's order, (2) requested an advisory opinion or

clarification from the Commission, (3) provided any opinion of counsel indicating that it obtained legal advice before engaging in the acts underlying the charge of violation, (4) decided which products were subject to the order based on the decisions of management and technical personnel, without legal advice, and (5) satisfied its reporting requirements under the relevant Commission order." *Ink Cartridges*, Comm'n Op. at 14; *see also EPROMs*, Comm'n Op. at 28-29. Respondents have "an affirmative duty to take energetic steps to do everything in their power to assure compliance, and . . . this duty not only means not to cross the line of infringement, but to stay several healthy steps away." *Cameras II*, Comm'n Op. at 16 (internal quotations omitted); *Tractors*, Comm'n Op. at 32; *Magnets*, Comm'n Op. at 24.

The first question is whether the respondents had a reasonable basis to believe the violating products were not within the scope of the order. Here, the evidence shows that respondents altered the design of their DownVü transducers to change them from a "straight down" orientation to a "tilted" orientation. The evidence shows that the vast majority of the violating sales involved sales of sonar systems with a "tilted" design transducer. *See* Resps. Br. at 77, 92 ($[ ] in sales of kitted products that included a redesigned tilted DownVü transducer).[15]

The fact that respondents made a design change to their infringing products suggests at least some belief that the change would help the new products to avoid infringement. However, the fact that respondents ceased sales of the kitted sonar systems that included "tilted" transducers following the issuance of the modified limited

[15] The $[ ] amount in sales of kitted products that included a redesigned tilted DownVü transducer is [ ]% of the grand total amount of sales in violation of the C&D Orders of $[ ].

exclusion order, *see* RX-2014C (Kobe RWS) at Q/A 94, suggests that respondents were aware that there was a significant risk that the "tilted" design transducers continued to infringe the asserted patents when sold as part of a kitted sonar system. That, in combination with consideration of the other factors discussed below, undermines the reasonableness of respondents' belief to some degree that the products were not within the scope of the order.

In addition, respondents did not seek an advisory opinion or clarification from the Commission for their "tilted" design products. There is no evidence that respondents obtained legal advice before importing and selling the "tilted" design products. The evidence shows that the decisions to import and sell the "tilted" design products were made by technical and management personnel without any evidence of advice from legal counsel. The evidence shows that respondents largely complied with the reporting requirements under the C&D Orders.

In sum, the evidence leans toward a finding of bad faith on the part of the respondents because, although they did not engage in the most egregious forms of behavior possible (*e.g.*, complete and total disregard of the remedial orders), neither did they take reasonable and energetic steps to avoid violations of the C&D Orders. Thus, this factor is likely to support imposition of a substantial, though not maximum, penalty.

Respondents argue that they have established good faith in their attempts to comply with the C&D Orders, but they do not evaluate "good or bad faith" according to the test outlined by the Commission. *See* Resps. Br. at 96-100; Staff Br. at 40-41 (identifying test). In addition, respondents have repeatedly stated they are not relying on an advice of counsel defense. Respondents' argument that lawyers were included in the

working group addressing compliance with the C&D Orders is thus irrelevant (Resps. Br. at 97-98), as there is no evidence of anything those attorneys said and, more importantly, no evidence that any such advice was actually acted upon or relied upon.

Any Injury Due to the Violation

In general, "[t]he focus of this factor is injury to the domestic industry and protection of intellectual property rights." *Ink Cartridges*, Comm'n Op. at 27. The Commission has explained that "[t]he harm to the domestic industry can be measured in terms of respondents' unlicensed sales." *Magnets*, Comm'n Op. at 25. Moreover, injury to the public need not be precisely quantified because a patent owner has the right to exclude all infringing products. *See Tractors*, Comm'n Op. at 38 (citing *EPROMs*, Comm'n Op. at 25 ("[A]ny lack of evidence of harm to the domestic industry resulting from the sales in violation of the Commission's order is not controlling on the question of whether the violations were harmful. . . . Atmel's violations harmed Intel by the loss of unlicenced sales to which it was entitled by virtue of its patent rights")).

"DownScan" technology is a key feature in complainants' products for the recreational inland fishing market and is incorporated in all but entry-level products (for which it is not cost-feasible). *See* CX-2002C (Chemi WS) at Q/A 11. Complainants' major competitors responded to the introduction of "DownScan" by adding a similar feature to their own products. *Id.* at Q/A 22. "DownScan" continues to be a part of complainants' new product launches. *Id.* at Q/A 11. This evidence demonstrates the significant impact of the patented technology in the inland fishing market.

Complainants and their licensees ([ ] and Raymarine) would have been the only alternative domestic sources of downscan sonar systems if

respondents' infringing products had not been sold in violation of the C&D Orders. *See* CX-2002C (Chemi WS) at Q/A 22-25, 27, 34-35; CX-0598C ([ ] license); CX-0189C (Raymarine license). Among those alternative sources, complainants hold the largest share of the domestic market. *See* CX-2002C (Chemi WS) at Q/A 29-35; CX-2270C (Navico market share analysis). Thus, complainants' domestic industry was directly injured through respondents' violating sales, which deprived them of sales revenue and the commensurate profits. *See* CX-2002C (Chemi WS) at Q/A 37-38, 41-42. In addition, by engaging in violating activity, respondents were able to preserve their share in the domestic market, thereby avoiding the long term effects from even a temporary exclusion from the market place.

Given the $[ ] in sales that violated the C&D Orders as discussed above, the injury to complainants is substantial. Furthermore, the evidence shows that respondents' profit margin on kitted sales was $[ ] over a period of less than a year. *See* CDX-1002C.0003 (Prowse sales and margins demonstrative); CPX-0121C (Garmin sales spreadsheet); CPX-0122C (Garmin sales spreadsheet). The profit margin for the standalone straight down transducers was $[ ]. *See* CDX-1002C.0005 (Prowse sales and margins demonstrative) cross-referenced to RDX-2000C.0005 (Kobe sales demonstrative) (white designated entries) at 9 of exhibit; CPX-0121C (Garmin sales spreadsheet); CPX-0122C (Garmin sales spreadsheet). Finally, the evidence shows that respondents' profit margin on standalone head units, using the same proportional methodology above (average head unit margin of $[ ] by the [ ] standalone straight down transducers sold), was $[ ]. *See* CDX-1002C.0005 (for numbers to calculate average margin); CPX-0121C (Garmin sales spreadsheet); CPX-0122C (Garmin

sales spreadsheet). This gives a total profit from violating sales of approximately $[ ]. This factor strongly supports the imposition of a substantial penalty.

Ability to Pay

The evidence shows that as of Sept. 24, 2016, Garmin Ltd., the parent company of the respondents, had total cash and cash equivalents of $912 million available to satisfy any civil penalty assessed in this proceeding. *See* CX-2001C.0029 (Prowse WS) at Q/A 87-89; CX-2135 (Garmin 10-K Sept. 24, 2016); CX-3308 (Garmin 10-K fiscal 2016). In addition, Garmin, Ltd. had an additional $2.2 billion in current assets available as of that time. *Id.* In its enforcement briefing, respondents argued that Garmin Ltd.'s marine division could not pay a substantial penalty, but failed to show why the penalty would be paid only by that division. *See* Resps. Br. at 102. Thus, even the maximum possible civil penalty is well within respondents' ability to pay. This factor thus strongly supports the imposition of a substantial penalty.

As noted above, Garmin International, Inc. and Garmin USA, Inc. are the respondents in this enforcement proceeding. *See* 81 Fed. Reg. 71531. Respondents, in their enforcement briefing, did not attempt to differentiate the activities of the two entities. *See, e.g.*, Resps. Br. at 86-88; Resps. Reply Br. at 21-22. The C&D Orders apply to each respondent "and to any of its principals, stockholders, officers, directors, employees, agents, distributors, controlled (whether by stock ownership or otherwise) and majority-owned business, successors, and assigns." C&D Orders at 2, Section II. Thus, respondents Garmin International, Inc. and Garmin USA, Inc. are jointly and severally liable for the penalty.

Extent to Which Respondents Benefitted from Violations

The fourth penalty factor is the extent to which the respondents have benefitted from any violations of the cease and desist orders. The Commission has explained that "the benefit to a violating party can be measured in a number of ways, including revenues received from infringing sales, profits from those sales, or even revenues from sales of related products where those sales would not have occurred but for the sales of the infringing goods." *Tractors*, Comm'n Op. at 42. The benefits to a respondent may also include intangible benefits, such as customer retention. *See Ink Cartridges*, Comm'n Op. at 32. Moreover, the Commission has explained that "[w]e do not believe that this factor requires the Commission to establish with precision the amount of benefit derived by respondents. Rather, we have considered this factor with a view to determine the general order of magnitude of the infringing conduct." *Magnets*, Comm'n Op. at 28.

Consideration of this factor overlaps in large part with the discussion of harm to the domestic industry above. Respondents benefitted greatly from sales in violation of the C&D Orders in terms of revenue, profit margin, and preservation of market share. Thus, this factor strongly supports the imposition of a significant penalty.

Need to Vindicate the Commission's Authority

"[T]he Commission generally has an interest in vindicating its authority where one of its orders is violated." *Magnets*, Comm'n Op. at 33. The need to vindicate the Commission's authority is an aggravating factor in cases where a respondent has acted in bad faith or has deliberately evaded the Commission's orders. *See Ink Cartridges*, Comm'n Op. at 35 (bad faith and deliberate evasion of orders); *Cameras II*, Comm'n Op. at 27 (knowingly making infringing sales, or making them with reckless or willful

indifference); *Tractors*, Comm'n Op. at 43 (finding a pattern of activity intended to circumvent the orders); *Magnets*, Comm'n Op. at 32-33 (finding bad faith in the fact that the respondents proposed a consent order and then violated it).

The evidence shows that the Commission's C&D Orders were violated. The Commission thus has an interest in vindicating its authority though imposition of a civil penalty. In this instance, consideration of this factor largely overlaps with consideration of respondents' level of bad faith, but there is evidence of further violations of the C&D Orders that are not directly measured by the statutory formula for calculating the maximum civil penalty.

For example, advertising "covered products" is a violation of the C&D Orders. *See* C&D Orders at III(C). Yet, respondents engaged in advertising of covered products on their website even after graying out the "add to cart" option in some instances. *See* CPX-0134 (Garmin website captures) (*e.g.*, NAVG10385444 promoting echoMAP CHIRP 72dv "Transducer Version" with GT20-TM transducer); Dunn Enf. Tr. 227-230. In addition, the C&D Orders state that respondents shall not "aid or abet other entities in the . . . sale after importation, transfer, or distribution of covered products." C&D Orders at III(E). The evidence shows that respondents engaged in their typical end-of-life activities for the infringing straight down marine sonar systems, including [

], that would support respondents' retailer network in selling out end-of-life products rather than returning them for a refund. *See* CX-2001C (Prowse WS) at Q/A 40-49 and exhibits cited therein.[16] These violations of

[16] Complainants argue that respondents solicited their "authorized distributor network to continue to distribute and sell through its then-existing inventory of legacy (non-tilt)

the C&D Orders that do not directly go to the calculation of the maximum penalty should be considered under the factor evaluating the need to vindicate the Commission's authority. The significant level of these additional violating activities suggests that they should be applied as a further aggravating factor in assessing the civil penalty.

Public Interest

In previous proceedings, the Commission analyzed the public interest as follows:

> We adopt the ALJ's analysis of the public interest factor and find that the public interest weighs in favor of substantial penalties. The public interest at issue in this case, as in most section 337 investigations, is the protection of intellectual property rights. The public interest is not served if intellectual property rights are not respected, and the imposition of a penalty that is substantial enough to deter future violations is in the public interest. While the purpose of the penalty is not to destroy the businesses, as the ALJ points out, the Ninestar Respondents should not complain if their business suffers if a severe penalty is imposed in response to their misconduct.

Ink Cartridges, Comm'n Op. at 38; *see also, e.g., Magnets*, Comm'n Op. at 33 ("the public interest favors the protection of U.S. intellectual property rights and therefore militates in favor of a substantial penalty").

Here, the evidence shows that the revenues from sales in violation of the C&D Orders were substantial. Thus, the public interest is likely to weigh in favor of imposition of a substantial civil penalty to vindicate complainants' patent rights and serve as a deterrent to future misconduct.

3. Balancing the Penalty Factors

All of the penalty factors support the imposition of a substantial civil penalty for

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DownVü products after December 1, 2015." *See* Compls. Br. at 80-81; C&D Orders at III(D). The administrative law judge agrees with respondents that there is insufficient evidence of soliciting. *See* Resps. Br. 80.

respondents' violations of the C&D Orders, but not all of the factors support imposition of a maximum penalty. The fact that the revenues greatly exceed the alternative maximum penalty of $100,000 per day of sales or imports in violation of the C&D Orders shows that the Commission's consideration of penalties in most prior enforcement proceedings is of limited relevance. The penalty should not be any less than the respondents' margin from sales in violation of the C&D Orders (*i.e.*, no less than $[ ]) because otherwise respondents will have profited from violating the Commission's Orders. However, that amount may not be sufficient to serve as a deterrent to future violations. The size and profitability of this market segment strongly suggest that a rational economic actor may well be willing to forgo any profits for a time simply to preserve its share of the domestic market. As discussed above, the evidence shows that the vast majority of the violating sales involved sales of sonar systems with a "tilted" design transducer. *See* Resps. Br. at 77, 92. Inasmuch as the value of the articles sold ($[ ]) is driven mostly but not completely from the sales of sonar systems with a "tilted" design transducer, the administrative law judge finds it reasonable to recommend a civil penalty amount less than than that argued by the Staff. Accordingly, largely adopting the Staff's argument, the administrative law judge recommends imposition of approximately a $37 million civil penalty if the C&D Orders are found to have been violated.[17] This amount is significant but still less than half the potential

[17] The $37 million amount is approximately [ ] percent above respondents' margin from sales amount of $[ ]. The $37 million amount also falls between [ ], *i.e.*, two times the value of articles sold. Given that the penalty factors weigh heavily, but not overwhelmingly, in favor of a substantial penalty, a figure in this range appears to be consistent with Commission precedent.

penalty that the Commission could assess pursuant to the statute.

Respondents argue that "[ ]" for the legacy straight down DownVü products in the inventory of their retail partners were merely in accordance with the ordinary course of business. *See* Resps. Br. at 81-82. Yet, if the ordinary course of business is a violation of the C&D Orders, then the ordinary course of business is no defense. The C&D Orders state that respondents shall not "aid or abet ***other entities*** in the . . . sale after importation, transfer, or distribution of covered products." C&D Orders at III(E) (emphasis added). Thus, respondents' argument that the sales of the products to which [ ] were applied occurred prior to the issuance of the C&D Orders (Resps. Br. at 93-94), is misguided. The products in the inventories of respondents' retail partners were and are covered products. The C&D Orders thus prohibit respondents for undertaking activities to assist their retail partners in sell those imported products. [

], is unquestionably assisting those retail partners in making sales of those products, [ ]. Thus, while not an activity that counts toward the calculation of the maximum civil penalty under the statute, respondents' "[ ]" are a violation of the C&D Orders that should be considered as an aggravating factor in determining what percentage of the maximum civil penalty to assess. *See* Staff Br. at 46.

Thus, for the reasons discussed above, all of the penalty factors support the imposition of a substantial civil penalty for respondents' violations of the C&D Orders, but not all of the factors support imposition of a maximum penalty. As the Staff argued, the penalty should not be any less than the respondents' margin from sales in violation of the C&D Orders, *i.e.*, no less than $[ ]. As noted, the administrative law judge

recommends imposition of approximately a $37 million civil penalty (approximately [ ] percent above respondents' margin from sales amount of $[ ], and [ ]% of the $[ ] maximum penalty) if the C&D Orders are found to have been violated.

VI. Enforcement Initial Determination and Order

It is the administrative law judge's ENFORCEMENT INITIAL DETERMINATION (EID) that the enforcement respondents violated the consent order issued at the conclusion of Inv. No. 337-TA-921 on December 1, 2015. It is also the administrative law judge's recommendation that enforcement measures are appropriate for violation of the consent order which measures are set forth in the Remedy section of this EID.

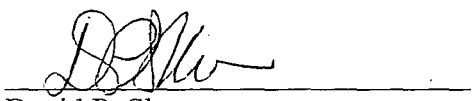
Further, this EID, together with the record of the hearing in this investigation consisting of (1) the transcript of the hearing, with appropriate corrections as may hereafter be ordered, and (2) the exhibits received into evidence in this investigation, is CERTIFIED to the Commission.

In accordance with 19 C.F.R. § 210.39(c), all material found to be confidential by the undersigned under 19 C.F.R. § 210.5 is to be given *in camera* treatment.

The Secretary shall serve a public version of this EID upon all parties of record and the confidential version upon counsel who are signatories to the Protective Order, as amended, issued in this investigation.

To expedite service of the public version, no later than June 1, 2017, the parties shall file a joint copy of this enforcement initial determination with the Commission Secretary, with red brackets to show any portion considered by the parties (or their suppliers of information) to be confidential, accompanied by a list indicating each page

on which such a bracket is to be found. At least one copy of such a filing shall be served upon the office of the undersigned, and the brackets shall be marked in red. If a party (and its suppliers of information) considers nothing in the initial determination to be confidential, and thus makes no request that any portion be redacted from the public version, then a statement to that effect shall be filed.[18]



David P. Shaw
Administrative Law Judge

Issued: May 25, 2017

[18] Confidential business information ("CBI") is defined in accordance with 19 C.F.R. § 201.6(a) and § 210.5(a). When redacting CBI or bracketing portions of documents to indicate CBI, a high level of care must be exercised in order to ensure that non-CBI portions are not redacted or indicated. Other than in extremely rare circumstances, block-redaction and block-bracketing are prohibited. In most cases, redaction or bracketing of only discrete CBI words and phrases will be permitted.

CERTAIN MARINE SONAR IMAGING DEVICES, INCLUDING DOWNSCAN AND SIDESCAN DEVICES, PRODUCTS CONTAINING THE SAME, AND COMPONENTS THEREOF

INV. NO. 337-TA-921 (Enforcement)

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **Enforcement Initial Determination** has been served by hand upon the Commission Investigative Attorney, **Peter J. Sawert, Esq.**, and the following parties as indicated, on JUN 05 2017.

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

FOR COMPLAINANTS NAVICO, INC.; AND NAVICO HOLDING AS:	
M. Scott Stevens, Esq. **ALSTON & BIRD LLP** 950 F Street, NW Washington, DC 20004	( ) Via Hand Delivery (✓) Express Delivery ( ) Via First Class Mail ( ) Other: _____
FOR RESPONDENTS GARMIN INTERNATIONAL, INC.; AND GARMIN USA, INC.:	
Nicholas Groombridge, Esq. **PAUL, WEISS, RIFKIND, WHARTON & GARRISON LLP** 1285 Avenue of the Americas New York, NY 10019	( ) Via Hand Delivery (✓) Express Delivery ( ) Via First Class Mail ( ) Other: _____