

PUBLIC VERSION

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

In the Matter of

**CERTAIN ROBOTIC VACUUM CLEANING
DEVICES AND COMPONENTS THEREOF
SUCH AS SPARE PARTS**

Investigation No. 337-TA-1057

COMMISSION OPINION

On February 13, 2018, the presiding administrative law judge (“ALJ”) issued an initial determination (“ID”) (Order No. 39), granting summary determination that complainant iRobot Corporation (“iRobot”) of Bedford, Massachusetts has satisfied the economic prong of the domestic industry requirement. On March 15, 2018, the Commission determined to review the ID and requested the parties to brief the issue under review. Having considered the ID and the submissions of the parties, the Commission has determined to affirm with modifications the ID’s finding that iRobot has satisfied the economic prong of the domestic industry requirement.

I. BACKGROUND

A. Procedural History

The Commission instituted the investigation under section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, on May 23, 2017, based on a complaint filed by iRobot. 82 Fed. Reg. 23592-93 (May 23, 2017). The complaint alleges a violation of section 337 by reason of infringement of certain claims of U.S. Patent Nos. 6,809,490 (“the ‘490 patent”); 7,155,308 (“the ‘308 patent”); 8,474,090 (“the ‘090 patent”); 8,600,553 (“the ‘553 patent”); 9,038,233 (“the ‘233 patent”); and 9,486,924 (“the ‘924 patent”). *Id.* The complaint names as respondents Bissell Homecare, Inc. of Grand Rapids, Michigan (“Bissell”); Hoover, Inc. of Glenwillow, Ohio; Royal Appliance Manufacturing Co., Inc. d/b/a TTI Floor Care North America, Inc. of Glenwillow,

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Ohio; Bobsweep, Inc. of Toronto, Canada; Bobsweep USA of Henderson, Nevada; The Black & Decker Corporation of Towson, Maryland and Black & Decker (U.S.) Inc. of Towson, Maryland (collectively, “Black & Decker”); Shenzhen ZhiYi Technology Co., Ltd., d/b/a iLife of Shenzhen, China; Matsutec Enterprises Co., Ltd. of Taipei City, Taiwan (“Matsutec”); Suzhou Real Power Electric Appliance Co., Ltd. of Suzhou, China; and Shenzhen Silver Star Intelligent Technology Co., Ltd. of Shenzhen, China. *Id.* at 23593. The Office of Unfair Import Investigations is not a party in this investigation. *Id.*

The investigation has been terminated with respect to respondents Black & Decker, Bissell, and Matsutec. *See* Order No. 31, *not reviewed* Notice (Jan. 31, 2018); Order No. 34, *not reviewed* Notice (Feb. 16, 2018).

The '924 patent and the '308 patent are no longer part of the investigation. *See* Order No. 29, *not reviewed* Notice (Jan. 16, 2018); Order No. 40, *not reviewed* Notice (Mar. 15, 2018). The '090, '233, '553, and '490 patents (the “Asserted Patents”) remain in the investigation.

On January 8, 2018, iRobot moved for summary determination that it satisfied the economic prong of the domestic industry requirement under 19 U.S.C. §§ 1337(a)(3)(A) and (B). Respondents filed a joint opposition to the motion. On February 13, 2018, the ALJ issued the subject ID granting iRobot’s motion for summary determination. *See* Order No. 39 at 31. No party petitioned for review of the ID.

On March 15, 2018, the Commission determined to review the ID and requested the parties to brief the issue under review. The parties filed timely responses and replies to the Commission’s request for briefing.¹

¹ Complainant’s Written Submission Regarding the Commission’s Notice of Review of the Initial Determination Granting Complainant’s Motion for Summary Determination That the

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On March 29, 2018, non-parties Rovi Corporation and Rovi Guides, Inc. (collectively, “Rovi”) filed a motion for leave to submit an *amicus* brief in support of neither party in the investigation on the issues under review. This motion was rejected.

B. The Patents and the Domestic Industry Products at Issue

The '090, '233, and '553 patents relate to structural components of autonomous floor-cleaning robots, including drive and control systems, various bump and proximity sensors, and a cleaning head subsystem with a dual-stage brush assembly. CSub at 4. The '490 patent generally relates to a control system for a mobile robot to effectively cover a given area by operating in a variety of coverage modes. *Id.*

iRobot contends that all of the Asserted Patents are practiced by the 600, 800, and 900 series of Roomba products (collectively, the “Domestic Industry Products”). *Id.* at 5.

II. THE ECONOMIC PRONG OF THE DOMESTIC INDUSTRY REQUIREMENT

A. The ID (Order No. 39)

On January 8, 2018, iRobot moved for summary determination that it satisfied the economic prong of the domestic industry requirement under section 337(a)(3)(A) and (B) through its investments into developing its Domestic Industry Products. ID at 1, 5. iRobot asserted that it was not seeking summary determination under section 337(a)(3)(C) and, thus, according to iRobot, resolution of the motion did not require determining whether it has

Economic Prong of the Domestic Industry Requirement is Satisfied (“CSub”) (Mar. 29, 2018); Respondents’ Comments On the Commission’s Questions Regarding the Initial Determination That the Economic Prong of the Domestic Industry Requirement Was Satisfied (“RSub”) (Mar. 29, 2018); Complainant’s Reply Submission Regarding the Commission’s Notice of Review of the Initial Determination Granting Complainant’s Motion for Summary Determination That the Economic Prong of the Domestic Industry Requirement is Satisfied (“CReply”) (Apr. 5, 2018); Respondents’ Reply to Complainant’s Written Submission and Amicus Brief of Non-Party Rovi Regarding the Commission’s Questions Regarding the Initial Determination That the Economic Prong of the Domestic Industry Requirement Was Satisfied (“RReply”) (Apr. 5, 2018).

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established a technical nexus between its investments and the Asserted Patents. *Id.* at 5. iRobot also asserted that the overwhelming majority of work on developing its Domestic Industry Products has taken place at its Bedford, Massachusetts and Pasadena, California locations, notwithstanding the fact that the manufacturing has taken place in China. *Id.* at 1, 6. iRobot further asserted that the tasks performed by its more than 400 U.S.-based engineers involved in research and development of the Domestic Industry Products include designing the mechanical parts, software, electrical functions, and chipsets for iRobot's products and managing supply chain, manufacturing, and quality assurance for those products. *Id.* at 6-7. Among other expenditures, iRobot relied on the cost of the engineering work and managerial overhead for sixteen (16) projects related to the Domestic Industry Products, which iRobot estimated to be about [[]] in labor investment. *Id.* at 10. iRobot contends that its domestic expenditures and investments related to the Domestic Industry Products are significant in the context of iRobot's total research and development activities. *Id.* at 11-12.

Respondents opposed iRobot's motion for two reasons. First, Respondents argued that iRobot's expenses are not related to manufacturing, which Respondents assert is the type of expense addressed by subparagraphs (A) and (B). *Id.* at 14. Respondents contended that iRobot's expenses are of the type Congress intended for showing exploitation of the patents under subparagraph (C), but Respondents assert that iRobot's motion did not map the expenses to exploitation of the patents. *Id.* Second, Respondents argued that iRobot's analysis is flawed because it is overstated and includes expenses that should have been disaggregated for future products and non-Domestic Industry Products. *Id.* at 15.

In considering iRobot's Motion for Summary Determination, the ID rejects Respondents' first argument that a complainant's research and development expenses can only be considered

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under subparagraph (C) of the statute, as opposed to subparagraphs (A) and (B). *Id.* at 16. The ID notes that this issue was the focus of the Commission Investigative Staff's petition for review in *Certain Electric Skin Care Devices, Brushes and Chargers Thereof, and Kits Containing the Same*, Inv. No. 337-TA-959 ("*Electric Skin Care Devices*"), in which the presiding ALJ determined that subparagraphs (A) and (B) were meant for manufacturing expenses and research and development must be considered in the subparagraph (C) context. *Id.* (citing Inv. No. 337-TA-959, Initial Determination at 24-26 (Apr. 11, 2016)). Even though the ID acknowledges that the Commission vacated and took no position on the issue, the ID finds, apparently based on the Commission's decision to vacate the issue, that "the legal theory that research and development can only be considered under subsection (C) is not the law." *Id.* Thus, the ID concludes that Respondents' argument based on this legal theory does not raise a genuine issue of material fact to preclude summary determination. *Id.*

The ID also rejects Respondents' second argument because even when all of Respondents' criticisms are accepted as true for purposes of the motion, the ID finds that iRobot has still invested well over [[]] dollars in engineering labor alone in furtherance of its Domestic Industry Products. *Id.* at 17. Specifically, the ID finds that iRobot clearly allocated its labor investments between its Domestic Industry Products and non-Domestic Industry Products for seven of the sixteen projects.² *Id.* The ID explains that Respondents, however, believe that iRobot should have allocated its labor investments in three other projects.³ *Id.* Even if these

² The seven projects allocated by iRobot's expert, Dr. Vander Veen, include projects identified as IR&D HBU Berlin, IR&D HBU Chicago, IR&D HBU Las Vegas, SST HBU Localization, SST HBU CEC, SST HBU IEC Cliff Safety, and SST HBU R3. CSub at 12.

³ The three projects that Respondents contend should also have been allocated include [[]], [[]], and IR&D San Antonio (Wells). CSub at 12 n.7.

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three other projects are allocated, the ID finds that “no genuine issue remains over whether iRobot has invested significantly in labor directed to the Domestic Industry Products based on remaining facts which are not in dispute.” *Id.* at 18. The ID concludes that “even when all facts are viewed favorably to the Opposing Respondents, there is no genuine dispute that iRobot has invested at least [[]] in engineering labor alone in furtherance of the Domestic Industry Products” and “this is quantitatively significant by any measure.”⁴ *Id.* at 30.

The ID also relies on iRobot’s observation that its investment “rivals the ‘*combined annual revenue for all Respondents’ accused products*, which totals approximately \$18,162,188.” *Id.* at 30-31. Because the ID finds the at least [[]] in engineering labor expenses alone to be significant, the ID does not consider iRobot’s additional expenditures for managerial overhead, facilities, or capital, which total approximately another [[]]. *Id.*

B. The Commission’s Request for Briefing

On review, the Commission asked the parties to brief two questions.

Question 1

With respect to the ID’s determination regarding the economic prong of the domestic industry requirement with respect to all of the asserted patents in this investigation, discuss whether Complainant is permitted to rely upon its research and development investments to satisfy the requirements under section 337(a)(3)(A) and (B) or whether such investments are only applicable to establishing a domestic industry under section 337(a)(3)(C). Explain all relevant statutory provisions, case law, legislative history, and Commission precedent pertaining to this issue.

Referring to the plain language of the statute, iRobot argues that “[n]othing in the statute limits subsection (A) or (B) to investments related to manufacturing or any other category, other

⁴ The ID finds that because “iRobot’s U.S.-based employees are engaged in engineering, research, and development for products sold both inside and outside the U.S., *i.e.* worldwide,” the number of hours for the ten projects requiring allocation should be reduced by applying an allocation equal to the percentage of iRobot’s total worldwide sales accounted for by the Domestic Industry Products. ID at 29; CSub at 12 n.8.

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than that the investments must be ‘with respect to the articles protected by the patent.’” CSub at 14. iRobot explains that investments in “‘plant and equipment’ may be necessary to support research and development related to articles protected by the patent, inasmuch as research and development activities often require physical plants or workspaces for those individuals conducting the research and development” and “various types of technological equipment may be required to conduct research and development activities.” CReply at 2. Similarly, iRobot asserts that the “same is true with employment of ‘labor or capital,’ which may include research scientists or engineers working on development of the articles protected by the patent.” *Id.*

Respondents argue that the “Commission’s historical position before Congress and the Federal Circuit’s precedent confirm that until Congress amended the statute in 1988,⁵ a domestic industry was required to be shown through manufacturing.” RSub at 8. Respondents also argue that in 1988, “Congress adopted the Commission’s practice of recognizing domestic manufacturing investments to establish the existence of an industry in the United States, which is now codified in subsections A and B of the statute.” *Id.* at 5-6. Respondents contend that the legislative reports for the 1988 Act support “the dichotomy between manufacturing related investments under subsections (A) and (B) and non-manufacturing related investments under subsection (C).” *Id.* at 8 (citing H.R. Rep. No. 100-40, at 157 (1987)).

Contrary to Respondents’ suggestion, iRobot argues that “[a]t no point does the legislative history identify subsections (A) and (B) as encompassing only manufacturing, and at no point does the legislative history identify subsection (C) as being the exclusive subsection for any entity that manufactures outside the United States.” CReply at 4. iRobot asserts that in

⁵ Omnibus Trade and Competitiveness Act of 1988, Pub.L. No. 100-418, 102 Stat. 1107 (1988) (codified at Section 337(a)) (“1988 Act”).

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1988, Congress added subparagraph (C) “to improve access by others who may not satisfy subsections (A) and (B)” because “Congress was particularly concerned about ensuring access to entities that *solely* conducted research and development or licensing, but who did not have the requisite ‘investment’ or ‘employment’ ‘with respect to the articles protected’ under subsections (A) or (B)—such as universities, who often conduct research not expressly directed to product development.” CSub at 20 (H.R. Rep. No. 100-40, at 157; S. Rep. No. 100-71, at 129 (1987)).

iRobot contends that extensive precedent from the Commission has “permitted a complainant to count research and development expenses related to the domestic industry products under subsections (A) and (B).” *Id.* at 14-16 (citing *Certain Marine Sonar Imaging Devices, Including Downscan and Sidescan Devices, Products Containing the Same, and Components Thereof*, Inv. No. 337-TA-921, Comm’n Op. at 58-59 (Jan. 6, 2016) (“*Marine Sonar Imaging*”); *Certain Wireless Communication Devices*, Inv. No. 337-TA-745, Comm’n Op. at 93-94 (Sept. 17, 2012) (“*Wireless Communication Devices*”); *Certain Ground Fault Circuit Interrupters*, Inv. No. 337-TA-739, Comm’n Op. at 79-80 (Jun. 8, 2012) (“*Ground Fault Circuit*”); *Certain Electronic Imaging Devices.*, Inv. No. 337-TA-850, Comm’n Op. at 92-95 (April 21, 2014) (“*Electronic Imaging*”)).

To the contrary, Respondents assert that none of the cases cited by iRobot “find that research and development investments that have not been found to exploit the patents – as is the case here – are applicable under subsections (A) and (B).” RReply at 5. Respondents contend that “iRobot must establish that the R&D and engineering expenses are substantial and exploit the patents, even if asserting that the expenses fall under subsections A and B.” RSub at 10, 11-13.

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Question 2

If Complainant is allowed to rely on such investments as a general matter, are all the specific types of research and development investments relied upon in this investigation appropriate?

iRobot asserts that “by carving out expenses for non-domestic industry products, Dr. Vander Veen’s methodology, as applied by the ALJ, results in identifying *only* that portion of iRobot’s research and development investments that are attributable solely to the Domestic Industry Products.” CSub at 22. “Paralleling the situation from *Marine Sonar Imaging*,” iRobot argues that its “research and development investment includes the costs in labor, capital, and other expenses it takes to conceive and bring to market a [robotic vacuum cleaner] in addition to the costs of refining products that are in the market and updating the operating software so that the [robots] run optimally and provide the users with the best possible user experience.” *Id.* (quoting Inv. No. 337-TA-921, Comm’n Op. at 58 n.28). iRobot argues that while its “research and development expenditures include expenditures that are not exclusively related to specific patented features, all of those expenses fall broadly into the categories of ‘conceiv[ing] and bringing to market,’ ‘refining products,’ ‘updating the operating software,’ and ‘provid[ing] the users with the best possible user experience,’ that *Marine Sonar Imaging* held were appropriately considered under subsections (A) and (B).” *Id.*

Respondents argue that Dr. Vander Veen admitted that he failed to disaggregate certain project expenses for non-domestic industry products. RSub at 14-15. Thus, according to Respondents, “there is no affirmative evidence that iRobot’s investments (regardless of whether those investments are proper under subsections (A) and (B) and regardless of whether iRobot needed to establish that the investments exploit the patents) are exclusive to the DI products and are significant.” *Id.* at 15.

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iRobot argues that “each of the arguments advanced in Respondents’ brief with respect to Question 2 were *already accepted by the ALJ* for purposes of the motion for summary determination, and were incorporated into the Initial Determination.” CReply at 10. “Even after accepting those arguments, for purposes of the motion, and assuming all disputed facts in Respondents favor,” iRobot points out that “the ALJ *still* found that there was at least [[
]] in labor investment related exclusively to the Domestic Industry Products. *Id.* (citing ID at 30).

C. Analysis

In patent proceedings under section 337, a complainant must establish that an industry “relating to the articles protected by the patent . . . exists or is in the process of being established” in the United States. 19 U.S.C. § 1337(a)(2). Under Commission precedent, the domestic industry requirement of section 337 consists of an “economic prong” and a “technical prong.” *See, e.g., Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003).

The “economic prong” of the domestic industry requirement is satisfied when it is determined that the economic activities and investments set forth in subparagraphs (A), (B), and/or (C) of section 337(a)(3) have taken place or are taking place. *Certain Variable Speed Wind Turbines & Components Thereof*, Inv. No. 337-TA-376, USITC Pub. No. 3003, Comm’n Op. at 21 (Nov. 1996) (“*Wind Turbines*”). With respect to the “economic prong,” 19 U.S.C. § 1337(a)(3) provides that:

[A]n industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned—

- (A) significant investment in plant and equipment;
- (B) significant employment of labor or capital; or
- (C) substantial investment in its exploitation, including engineering, research and development or licensing.

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Given that these criteria are listed in the disjunctive, satisfaction of any one of them will be sufficient to meet the domestic industry requirement. *Wind Turbines*, Inv. No. 337-TA-376, Comm'n Op. at 15.

The ID finds that iRobot satisfies the economic prong of the domestic industry requirement under section 337(a)(3)(B) based on iRobot's domestic labor costs from research and development projects related to the articles that practice the asserted patents. In doing so, the ID summarily rejects Respondents' legal theories that labor costs from research and development can only be considered under section 337(a)(3)(C) and, in the alternative, that such costs must exploit the asserted patents even under subparagraphs (A) and (B). To support its conclusion, the ID cites only a case in which the Commission vacated and took no position on these issues. *See* ID at 16 (citing *Electric Skin Care Devices*, Inv. No. 337-TA-959, Comm'n Op. at 10 (Feb. 6, 2017)). Because the Commission vacated the ALJ's analysis and findings on these issues in *Electric Skin Care Devices*, the ID improperly relied on *Electric Skin Care Devices* to conclude that expenses in research and development can be a qualifying investment under subparagraphs (A) and (B). *See id.*; *see Certain Dynamic Random Access Memories, Components Thereof and Products Containing Same*, Inv. No. 337-TA-242, Pub. No. 2034, Comm'n Op. at 65 n.150 (Nov. 1987) ("We note that since the Commission vacated those portions of the ID concerning Hitachi, there are no findings of fact or conclusions of law remaining with regard to the '376 patent."). Thus, the Commission vacates the ID's discussion and citation of *Electric Skin Care Devices*. *See id.*

Nevertheless, the Commission has rejected the legal theory that labor costs from research and development can only be considered under subparagraph (C). Most recently, in *Certain Solid State Storage Drives, Stacked Electronics Components, and Products Containing Same*,

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Inv. No. 337-TA-1097 (“*Solid State Storage Drives*”), the Commission reasoned that the “statutory text of section 337 does not limit sections 337(a)(3)(A) and (B) to investments related to manufacturing or any other type of industry,”—“it only requires that the domestic investments in plant and equipment, and employment of labor or capital be ‘with respect to the articles protected by the patent.’” Comm’n Op. at 8 (Jun. 29, 2018). The Commission explained that “the legislative history surrounding the enactment of section 337(a)(3) suggests that Congress did not intend to limit subsections (A) or (B) to manufacturing activities in the United States.” *Id.* at 10 (citing S. Rep. No. 100-71, at 127-129; H. Rep. No. 99-581, at 112 (1986)); *see also* H.R. Rep. No. 100-40, at 157.

Since the 1988 Act, the Commission has permitted expenditures on plant and equipment and labor and capital employed in engineering and research and development activities to support a domestic industry under subsections (A) and (B), so long as the asserted expenditures satisfy the plain language of the statutory text. *Id.* at 10-12 (citing *Electronic Imaging*, Inv. No. 337-TA-850, Comm’n Op. at 92-93 (Mar. 21, 2014); *Wireless Communication Devices*, Inv. No. 337-TA-745, Comm’n Op. at 93-94 (Sep. 17, 2012); *Certain Digital Video Receivers and Hardware and Software Components Thereof*, Inv. No. 337-TA-1001 (“*Digital Video Receivers*”), Comm’n Op. at 35 (Dec. 6, 2017), ID at 578, 580 (May 26, 2017); *Marine Sonar Imaging*, Inv. No. 337-TA-921, Comm’n Op. at 58-59, 63-64 (Jan. 6, 2016)).

Commission precedent does not support Respondents’ additional arguments. Specifically, Respondents posit that even if section 337(a)(3)(B) permits consideration of iRobot’s domestic labor costs related to research and development, Respondents argue that iRobot must show “that the research and development investments exploit the patent.” RReply at 5. Respondents also argue that “the Commission has not taken a position on whether R&D

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expenses that have not been shown to be an exploitation of the patents are proper to satisfy the economic prong under subsections (A) and (B).” RSub at 9-10.

On the contrary, because the “statutory language concerning exploitation of a patent does not appear” in sections 337(a)(3)(A) and (B), *Ground Fault Circuit*, Inv. No. 337-TA-739, Comm’n Op. at 78, the “Commission has not required complainants to show exploitation of the patented technology (as the concept is understood under subsection (C)) to satisfy subsections (A) and (B).” *Solid State Storage Drives*, Inv. No. 337-TA-1097, Comm’n Op. at 13-14 (citing *Ground Fault Circuit*, Inv. No. 337-TA-739, Comm’n Op. at 80-81 (Jun. 8, 2012); *Wireless Communication Devices*, Inv. No. 337-TA-745, Comm’n Op. at 91-96); *Electronic Imaging*, Inv. No. 337-TA-850, Comm’n Op. at 92; *Marine Sonar Imaging*, Inv. No. 337-TA-921, Comm’n Op. at 58-64; *Digital Video Receivers*, Inv. No. 337-TA-1001, Final ID at 576-582).

Respondents provide no meaningful response to the Commission’s Question 2. Respondents’ only assertion is that, “iRobot should not be able to rely on its specific R&D investments because, as the ID correctly determined, some of iRobot’s R&D projects relate to non-domestic industry products.” RSub at 12-13. However, Respondents’ arguments with respect to Question 2 were already accepted by the ALJ for purposes of the motion for summary determination, and were incorporated into the Initial Determination. *See* ID at 17-18. Even after accepting Respondents’ arguments, the ALJ still found that there was at least [[]] in labor expenditures related exclusively to the Domestic Industry Products. *See id.* at 30. Thus, the Commission affirms, with the modified analysis set forth above, the ID’s finding that iRobot has satisfied the economic prong of the domestic industry requirement under 19 U.S.C. § 1337(a)(3)(B).

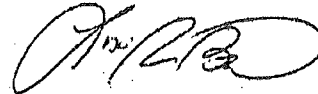
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Finally, Respondents' reply submission discusses the *amicus* brief submitted by non-party Rovi. *See* RReply at 1, 5. Since Rovi's motion for leave to submit an *amicus* brief was denied, the Commission strikes the portions of Respondents' reply that responds to Rovi's *amicus* brief.

III. CONCLUSION

For the reasons discussed above, the Commission affirms with modifications the ID's finding that complainant has satisfied the economic prong of the domestic industry requirement under 19 U.S.C. § 1337(a)(3)(B).

By Order of the Commission.



Lisa R. Barton
Secretary to the Commission

Issued: August 1, 2018

PUBLIC CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **OPINION, COMMISSION** has been served upon the following parties as indicated, on August 1, 2018.



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