

# United States Court of Appeals for the Federal Circuit

2009-1262

SIRF TECHNOLOGY, INC., E-TEN CORP.,  
PHAROS SCIENCE & APPLICATIONS, INC.,  
MITAC INTERNATIONAL CORP.,  
and MIO TECHNOLOGY LIMITED, USA,

Appellants,

v.

INTERNATIONAL TRADE COMMISSION,

Appellee.

and

BROADCOM CORPORATION and GLOBAL LOCATE, INC.,

Intervenors.

On appeal from the United States International Trade Commission in  
Investigation No. 337-TA-602.

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DECIDED: April 12, 2010

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Before MICHEL, Chief Judge, CLEVENGER, and DYK, Circuit Judges.

DYK, Circuit Judge.

SiRF Technology, Inc. (“SiRF”), E-TEN Information Systems Co., Ltd. (“E-TEN”),  
Pharos Science & Applications, Inc. (“Pharos”), MiTAC International Corp. (“MiTAC”),  
and Mio Technology Limited, USA (“Mio”) (collectively, “appellants”) appeal from a  
decision of the International Trade Commission (“Commission”). The Commission  
found that appellants violated section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337)

through the unlawful importation, sale for importation, and sale after importation of certain Global Positioning System (“GPS”) devices and products containing these devices that infringe certain patents owned by Global Locate, Inc. and Broadcom Corp. (“Broadcom”) (collectively, “Global Locate”).<sup>1</sup> The Commission issued a limited exclusion order and a cease and desist order. In re Certain GPS Devices & Prods. Containing Same, Inv. No. 337-TA-602 (Int’l Trade Comm’n Jan. 15, 2009) (“Final Determination”). We affirm.

## BACKGROUND

Global Locate owns U.S. Patent No. 6,417,801 (“the ’801 patent”), U.S. Patent No. 6,606,346 (“the ’346 patent”), U.S. Patent No. 6,651,000 (“the ’000 patent”), U.S. Patent No. 6,704,651 (“the ’651 patent”), U.S. Patent No. 6,937,187 (“the ’187 patent”), and U.S. Patent No. 7,158,080 (“the ’080 patent”). These six patents are in the field of GPS technology. GPS is a satellite navigation system comprising thirty-two satellites orbiting Earth that were placed in orbit by the United States and are operated by the United States. These satellites and their orbits are arranged so that at least four satellites are always in a direct line-of-sight to any point on Earth. The GPS system permits a GPS-enabled receiver to detect signals from at least four satellites and use that information to compute its distance from each satellite, and thus its precise position on Earth, through a process known as trilateration. Each satellite transmits two types of information to a GPS-receiver—(1) a pseudorandom noise (“PN” or “PRN”) code, and (2) the Navigation (“NAV”) message. PRN codes are used by the receiver to determine

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<sup>1</sup> Intervenor Broadcom Corp. acquired Global Locate in July of 2007, and was added as a complainant in this investigation on February 5, 2008.

the distance to the satellite. NAV messages contain information regarding when the received signals were sent by the satellite, ephemeris data which is data regarding the location and trajectory of the satellite, and almanac information which is information regarding the position of other satellites in the constellation. Conventional GPS receivers depend on both the PRN code and the NAV message to calculate their position. The GPS system itself is not patented. However, there are various patents in devices, systems, and methods for processing GPS satellite signals.

It is difficult to receive the NAV message in certain environments due to poor signal reception. In order to solve this problem, Assisted-GPS ("A-GPS") was developed. In A-GPS systems, the NAV message is collected by a receiving station with an unobstructed view of the sky, and then transmitted to GPS receivers via computer servers and over a connection such as the Internet or a wireless telephone network.

The patents-in-suit are owned by Global Locate and are directed to various improvements over conventional A-GPS technology. The '346 patent is entitled "Method and Apparatus for Computing Signal Correlation." It is directed to a novel method of performing signal correlation, which is the process by which GPS receivers compare incoming signals to locally generated codes in order to identify the satellite sending the signal and the "offset" between the received signal and the stored code. The '651 patent is entitled "Method and Apparatus for Locating Mobile Receivers Using a Wide Area Reference Network for Propagating Ephemeris." The '651 patent teaches sending satellite ephemeris to a mobile GPS receiver through an A-GPS network and using the ephemeris at the receiver to more precisely locate the satellites and narrow

the search for weak signals, thereby improving the receiver's acquisition sensitivity. The '000 patent is entitled "Method and Apparatus for Generating and Distributing Satellite Tracking Information in a Compact Format." The patent teaches the compaction of satellite ephemeris data in order for it to be received more quickly by GPS receivers than uncompacted data. The '080 patent is entitled "Method and Apparatus for Using Long Term Satellite Tracking Data in a Remote Receiver." It teaches using certain algorithms to predict ephemeris data for satellites in the future, receiving that "long term" data at a GPS receiver, and using it to locate satellites and calculate position. The '801 patent is entitled "Method and Apparatus for Time-Free Processing of GPS Signals." It teaches a GPS receiver that can calculate its position without having to wait to receive time information from a satellite, thereby allowing the receiver to calculate its position more quickly and even in weak-signal environments. The '187 patent is entitled "Method and Apparatus for Forming a Dynamic Model to Locate Position of a Satellite Receiver." This patent is a continuation-in-part of the '801 patent. It extends the solution of the '801 patent from the discrete calculation of a GPS receiver's position at a particular moment to the use of a "dynamic model" that allows the improved, repeated calculation of a GPS receiver's position as it changes over time.

SiRF, which is accused of both direct and induced infringement, developed, manufactured, and sold certain GPS chips. SiRF's SiRFstarIII chips are accused of being involved in the infringement of the '000, '080, '651, '801, and '187 patents. SiRF's InstantGPS chips are accused of being involved in the infringement of the '346, '801, and '187 patents. These chips, when incorporated into end-user GPS devices, allow such devices to compute absolute position using the GPS system. SiRF's

SyncFreeNav is software embedded in SiRFstarIII chips that calculates current positional information for the GPS receiver.

E-TEN, Pharos, MiTAC, and Mio, also accused of direct and induced infringement, incorporate SiRF chips into end-user, consumer GPS devices, such as portable navigation devices, personal digital assistants, and cell phones, and maintain intermediate servers. The products of these companies that contain SiRFstarIII chips are accused of being involved in the infringement of the '000, '080, '651, '801, and '187 patents. The consumer devices incorporating SiRF chips and software are imported into and sold in the United States.

SiRF's InstantFix service is an A-GPS system that provides server-generated extended-ephemeris ("EE") files to end-user GPS devices, which then use the EE files for signal acquisition and satellite position computation. The service is provided through a SiRF-operated server.<sup>2</sup> This server generates EE files once per day by receiving and downloading past GPS satellite information, including ephemeris data, from Jet Propulsion Laboratory ("JPL"). SiRF's server uses this data to predict future satellite

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<sup>2</sup> The Commission found as a factual matter that the servers at issue were in the United States based on the Rule 30(b)(6) deposition testimony of Makarand Phatak and Peter Kuykendall. At trial, Ashutosh Pande testified that the servers (with the exception of the server that serves Research in Motion ("RIM")) were then located in the United Kingdom and in Bangalore, India. Contrary to the suggestion in appellants' brief, Pande did not testify that the servers were moved after the date of Kuykendall's deposition. The Commission was justified in treating this testimony as conflicting and relying on Kuykendall's 30(b)(6) deposition testimony. If in fact the servers are now located outside of the United States, appellants are not without a remedy as appellants may petition for a modification or a rescission of an exclusion order or a cease and desist order under 19 C.F.R. § 210.76 if appellants are "no longer in violation of [section 337]." We express no opinion as to whether the facts here would support a modification or rescission.

orbits and clock information for all satellites in the GPS constellation in order to generate EE files. These EE files are then ultimately transmitted to remote GPS receivers by way of SiRF's customers' servers via the Internet, a wireless link, or a combination of the two. The InstantFix service, in utilizing SiRF's chips and the software that implements the InstantFix service, is alleged to infringe the '080, '000, and '651 patents.

On April 30, 2007, at the request of Global Locate, the Commission initiated an investigation to determine whether violations of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) had occurred by the importation into the United States, the sale for importation, or the sale within the United States after importation of certain GPS devices that allegedly were involved in infringing Global Locate's patents. See In re Certain GPS Devices & Prods. Containing Same, 72 Fed. Reg. 25,777-78 (Int'l Trade Comm'n May 7, 2007) (notice of investigation). SiRF, E-TEN, MiTAC, Pharos, and Mio were named as respondents. The Commission Investigative Staff ("Staff") was also a party to the investigation.

Global Locate alleged that appellants infringed fifteen claims of the six asserted patents. An Administrative Law Judge ("ALJ") held an evidentiary hearing and issued a 216-page Initial Determination. See In re Certain GPS Devices & Prods. Containing Same, Inv. No. 337-TA-602 (Int'l Trade Comm'n Aug. 8, 2008) ("Initial Determination"). The ALJ found violations of section 337 by each of the respondents, and with respect to each of the six patents. Specifically, the ALJ found infringement of claims 1, 2, and 11 of the '801 patent; claims 4 and 11 of the '346 patent; claims 1, 2, and 5 of the '000 patent; claims 1 and 2 of the '651 patent; claims 1 and 9 of the '187 patent; and claims

1, 2, and 22 of the '080 patent. Id. at 213-15. The ALJ also concluded that all six patents were not invalid or unenforceable. Id. at 213-14. Appellants petitioned the Commission for review of the ALJ's decision, and the Commission determined that it would review certain of the ALJ's findings.

On January 15, 2009, the Commission issued its opinion. See Final Determination. First, the Commission affirmed the ALJ's decision that Global Locate had standing to assert the '346 patent. Id. at 8-9. Second, the Commission concluded that SiRF infringes the '651 and '000 patents. In doing so, the Commission modified the ALJ's findings, finding "that SiRF directly infringes" and concluded "that SiRF exercises control over end users of the GPS receivers so as to cause infringement of the '651 and the '000 patents." Id. at 13. Third, the Commission addressed the issue of patentable subject matter of certain method claims of the '801 and '187 patents in light of In re Bilski, 545 F.3d 943 (Fed. Cir. 2008) (en banc), cert. granted, 129 S. Ct. 2735 (2009), and affirmed the ALJ's decision that the disputed claims recite patentable subject matter.<sup>3</sup> The Commission therefore affirmed the Initial Decision of the ALJ as modified by the Commission's opinion and adopted all findings of fact and legal conclusions in the Initial Decision that were not inconsistent with the Commission's opinion. Final Determination, slip op. at 23.

On January 15, 2009, the same day as it issued its opinion, the Commission issued a limited exclusion order prohibiting the entry into the United States of infringing

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<sup>3</sup> The Commission originally declined to review the ALJ's findings on patentable subject matter but addressed this issue on appellants' petition for reconsideration in light of In re Bilski, ultimately denying the petition as both as untimely and as without merit. Final Determination, slip op. at 14.

GPS devices that are manufactured abroad by or on behalf of, or imported by or on behalf of, SiRF and other respondents. The Commission also issued a cease-and-desist order against the respondents with U.S. operations: SiRF, Pharos, and Mio. The Commission's determination became final on March 16, 2009, at the conclusion of the sixty-day presidential review period. See 19 U.S.C. § 1337(j)(4). An appeal to this court was timely filed, and we have jurisdiction under 28 U.S.C. § 1295(a)(6).

## DISCUSSION

This appeal challenges not only the determinations by the full Commission, but also aspects of the decision of the ALJ that the Commission declined to review relating to claim construction, invalidity, and infringement. We have considered appellants' arguments as to the issues that the Commission declined to review and find them unpersuasive; we think it unnecessary to treat these issues separately in this opinion. We do however find that three issues addressed by the Commission merit further discussion.

### I Standing to Assert the '346 Patent

Appellants challenge the Commission's finding that Global Locate had standing to assert the '346 patent. The question of standing to assert a patent claim is jurisdictional, and we review that question de novo. Rite-Hite Corp. v. Kelley Co., 56 F.3d 1538, 1551 (Fed. Cir. 1995). However, we review underlying factual determinations upon which a conclusion of standing is based for substantial evidence. See Finnigan Corp. v. Int'l Trade Comm'n, 180 F.3d 1354, 1361-62 (Fed. Cir. 1999).

"Absent the voluntary joinder of all co-owners of a patent, a co-owner acting alone will lack standing." DDB Techs., L.L.C. v. MLB Advanced Media, L.P., 517 F.3d



1284, 1289 (Fed. Cir. 2008) (citing Isr. Bio-Eng'g Project v. Amgen, Inc., 475 F.3d 1256, 1264-65 (Fed. Cir. 2007) (internal quotation marks omitted). This rule applies equally in ITC investigations.<sup>4</sup> The '346 patent is directed to signal correlation and the named inventors are Charles Abraham and Donald L. Fuchs. The patent names Global Locate as the assignee. At issue is whether Magellan Corporation ("Magellan") is a co-owner of the '346 patent. If Magellan is a co-owner, Global Locate lacks standing to assert the '346 patent absent joinder of Magellan. The question of whether Magellan is co-owner of the patent depends on whether one of the inventors (Abraham) assigned his interest in the patent to Magellan.

Abraham conceived of the subject matter of the '346 patent in October of 1999 while employed at Magellan. In 1996, Abraham had entered into an employee inventions agreement with Ashtech, Inc. ("Ashtech") (a predecessor to Magellan) which assigned to Ashtech "all inventions . . . which are related to or useful in the business of the Employer . . . and which were . . . conceived . . . during the period of the Employee's employment, whether or not in the course of the Employee's employment." Final Determination, slip op. at 6. Apparently, Ashtech merged with Magellan in 1997. While the record is unclear, it appears likely that Abraham's agreement with Ashtech was assigned to the merged company (which retained the name Magellan). Abraham testified that at the time of conception of the invention, he was still subject to the original

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<sup>4</sup> See In re Certain Catalyst Components & Catalysts for the Polymerization of Olefins, Inv. No. 337-TA-307, 1990 ITC LEXIS 224, at \*10, \*26 (Int'l Trade Comm'n June 25, 1990) (noting that "infringement actions may only be brought by, or in the name of, all of the owners of the patent in suit or the exclusive licensee of all of the rights covered by the patent" because the Commission "strictly read[s] the federal standing precedent" into its rules); see also Final Determination, slip op. at 5.

Ashtech agreement. Abraham separated from Magellan in February 2000 and then joined Global Locate. In May of 2001, he and his co-inventor applied for the '346 patent, which was eventually assigned to Global Locate.

Initially, we conclude that the Abraham/Ashtech agreement provided for automatic assignment. The question of whether or not an agreement provides for automatic assignment is a matter of federal law. DDB Techs., 517 F.3d at 1290. “If the contract expressly grants rights in future inventions, ‘no further act [is] required once an invention [comes] into being,’ and ‘the transfer of title [occurs] by operation of law.’” Id. (quoting FilmTec Corp. v. Allied-Signal Inc., 939 F.2d 1568, 1573 (Fed. Cir. 1991)). Here, the agreement provides that “[t]he Employee assigns all of his or her right, interest, or title in any Invention to the Employer to the extent allowed by law.” Final Determination, slip op. at 6. By using the language “Employee assigns,” the employee-assignment agreement expressly grants rights with no further action needed on the part of the employee. Therefore the provision is one of automatic assignment. See DDB Techs., 517 F.3d at 1290 & n.3 (finding automatic assignment where the agreement used “the present, automatic” language “agrees to and does hereby grant and assign”).

The question remains whether the invention is “related to or useful in the business of the Employer” within the meaning of the agreement. That question is a matter of state law—here, California law. See id. at 1290. Neither the agreement nor the California Labor Code specifies what it means for an invention to be “related to or useful in the business of the Employer.” The terms “related to” and “useful in” are inherently ambiguous. Under California law, when a contract is ambiguous, “[e]xtrinsic evidence is admissible to prove a meaning to which the contract is reasonably

susceptible.” Founding Members of the Newport Beach Country Club v. Newport Beach Country Club, Inc., 109 Cal. App. 4th 944, 955 (Ct. App. 2003). Such extrinsic evidence may include evidence of the nature of the employer’s business and the nature of the employee’s work for the employer, as well as evidence of the conduct of the parties, i.e., evidence probative of whether or not they regarded the invention as falling within the agreement. See DDB Techs., 517 F.3d at 1292; see also 11 Samuel Williston & Richard A. Lord, A Treatise on the Law of Contracts § 32:14 (4th ed. 1999) (“[T]he parties’ own practical interpretation of the contract—how they actually acted, thereby giving meaning to their contract during the course of performing it—can be an important aid to the court.”). Here, as in DDB Technologies, “resort to extrinsic evidence . . . is necessary to determine whether the [contract] provision applies.” DDB Techs., 517 F.3d at 1292.

The Commission, in concluding that Global Locate has standing to assert the ’346 patent, found that there was “no evidence that the invention of the ’346 patent was ‘related to or useful in’ its business.” Final Determination, slip op. at 8-9. In reaching this conclusion, the Commission pointed out that “none of the evidence to which [appellants] have cited relates the specific invention of the ’346 patent to any particular aspects of Magellan’s business.” Id. at 7. The Commission also relied on the fact that “[i]n light of Magellan’s awareness of the invention of the ’346 patent and its failure to assert ownership of the invention at any time, . . . Magellan itself did not consider the invention of the ’346 patent ‘related to or useful in’ its business within the meaning of . . . the employee inventions agreement.” Id. at 8.

All parties agree that Global Locate had the burden to establish standing. Global Locate attempted to satisfy this burden by showing that Abraham and Fuchs, the inventors, had assigned the patent to Global Locate, and that Global Locate is shown as the assignee of the patent as issued.<sup>5</sup> The question is whether Global Locate also had the burden of establishing that an interest in the patent had not been previously assigned by Abraham to Magellan. We think that that the Commission properly found that that burden rests with the appellants.<sup>6</sup> The recording of an assignment with the PTO is not a determination as to the validity of the assignment. See 37 C.F.R. § 3.54. However, we think that it creates a presumption of validity as to the assignment and places the burden to rebut such a showing on one challenging the assignment. Such

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<sup>5</sup> “The inventor is presumed to be the owner of a patent application, and any patent that may issue therefrom, unless there is an assignment.” 37 C.F.R. § 3.73(a); see also Isr. Bio-Eng’g Project v. Amgen, Inc., 475 F.3d 1256, 1263 (Fed. Cir. 2007); Arachnid, Inc. v. Merit Indus., Inc., 939 F.2d 1574, 1578 n.2 (Fed. Cir. 1991); 8 Donald S. Chisum, Chisum on Patents § 22.01 (2006) (“The presumptive owner[s] of the property right in a patentable invention [are] . . . the several human inventors, in the case of a joint invention.”). The statute provides that “[p]atents may be granted to the assignee of the inventor of record in the Patent and Trademark Office, upon the application made and the specification sworn to by the inventor.” 35 U.S.C. § 152.

<sup>6</sup> Appellants argue that the burden rests with Global Locate as a matter of California law because under California law, the burden falls on “the employee” to prove that “[an] agreement does not apply to an invention which qualifies fully [to be retained by the employer] under the provisions of Section 2870.” Appellants’ Br. 19-20 (citing Cal. Lab. Code § 2872). Section 2870 provides that employee-invention assignment agreements may not provide for the assignment of certain inventions that “the employee developed entirely on his or her own time without using the employer’s equipment, supplies, facilities, or trade secret information.” Section 2870 allows an employee who claims the benefit of that section to render unenforceable an agreement that attempts to provide for such an assignment. Section 2872 provides that “[i]n any suit or action arising [under section 2870], the burden of proof shall be on the employee claiming the benefits of its provisions.” As this is not a suit arising under section 2870 of the California Labor Code to render the contract unenforceable, this provision is inapplicable.

an understanding is consistent with and supported by the provisions of 35 U.S.C. § 261. That section provides that the recordation of an assignment with the PTO can be the basis for a bona fide purchaser defense (“An assignment, grant or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent and Trademark Office within three months from its date or prior to the date of such subsequent purchase or mortgage.”).

Given that the burden of proof on this issue rested with appellants, we think that the Commission’s determination that appellants have not sustained their burden is supported by substantial evidence.

Because the phrase “related to or useful in” is inherently ambiguous, the Commission was correct in looking to the parties’ own interpretation of this language as being determinative. Here, there is evidence that the parties indeed interpreted the agreement in a way that is fatal to appellants’ interpretation. In June of 2000, Magellan sued Global Locate as well as Abraham personally (one of the named inventors of the ’346 patent) for trade secret misappropriation. At the time of the litigation, Abraham had already commenced working for Global Locate, and apparently had assigned his rights to the ’346 invention to Global Locate. The litigation was concluded by settlement in March of 2001. At the time of settlement, the application for the ’346 patent had not been filed, and the rights to the patent were not directly involved in the trade secret action. Abraham’s agreement with Magellan or Ashtech covered not only patented inventions, but also inventions that were not patented (including inventions represented by trade secrets) that were “related to or useful in the business of the Employer.” See Final Determination, slip op. at 6. During the litigation, Magellan was provided with

documents prepared by Abraham while at Magellan relating to the conception of the subject matter of the '346 patent. As part of the settlement agreement, although there was no compensation flowing from Magellan to Global Locate, Magellan and Abraham appeared to recognize that Global Locate was the owner of the invention in question, stating that “nothing in this Agreement shall preclude Global Locate from using any of the following technical concepts: . . . (vi) Shortening the signal shift register (with the number of bits being divisible into 1023).” Initial Determination, slip op. at 39. The parties agree that this is the technology involved in the asserted claims of the '346 patent. Id. If Magellan and Abraham recognized that Global Locate was the owner of the trade secret rights to the invention, it logically follows that Magellan and Abraham did not think that Magellan was the owner of similar rights that eventually became the subject of the '346 patent. Further, following the settlement, Magellan informed one of its customers that after “a diligent examination of information produced during discovery,” there was no evidence of trade secret misappropriation by Global Locate and Abraham. J.A. 13,516. If Magellan had owned the invention, the disclosure of its trade secrets by Abraham to Global Locate would have been misappropriation. It is therefore reasonable to conclude that during the trade secret litigation, Magellan determined that it was not the owner of the invention.

In sum, we find that there is substantial evidence to support the Commission’s finding that Global Locate had standing to assert the '346 patent.

## II Infringement of the '651 and '000 Patents

Appellants contend that the Commission erred in concluding that SiRF directly infringes claims 1 and 2 of the '651 patent<sup>7</sup> and claims 1, 2, and 5 of the '000 patent.<sup>8</sup> The resolution of this issue depends in part on claim construction, which is an issue of law and is subject to de novo review. See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc).

Appellants argue that the claims are only infringed when actions are taken by SiRF's customers and by the end users of the GPS devices; that SiRF accordingly can infringe the patents only when it is a joint infringer together with the customers and the

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<sup>7</sup> Claim 1 of the '651 patent reads as follows:

1. A method of receiving global positioning system (GPS) satellite signals comprising:
  - receiving satellite ephemeris at a first location;
  - communication [sic] the satellite ephemeris to a mobile GPS receiver at a second location; and
  - processing satellite signals received at the mobile GPS receiver using the ephemeris to reduce code and frequency uncertainty in the mobile GPS receiver to improve acquisition sensitivity of the mobile GPS receiver.

<sup>8</sup> Claim 1 of the '000 patent reads as follows:

1. A method of creating and distributing compact satellite orbit models comprising:
  - receiving satellite signals from at least one satellite and at least one receiving station;
  - extracting at least a portion of the satellite tracking data from said satellite signal, representing said data in a first format;
  - transmitting the formatted data to a remote receiver; and
  - at the remote receiver, representing said formatted data in a second format supported by the remote receiver.

end users; and that the requirements for joint infringement are not satisfied because SiRF does not control or direct the customers or end users. See Muniauction, Inc. v. Thomson Corp., 532 F.3d 1318, 1329 (Fed. Cir. 2008). The Commission found joint infringement. We do not reach the question of joint infringement because we do not read the relevant claims as requiring that any of the specified actions be taken by SiRF's customers or by the end users of the GPS devices. This is not a situation where a method claim specifies performance of a step by a third party, or in which a third party actually performs some of the designated steps, and thus control or direction of the performance of that step by the accused infringer is required.<sup>9</sup> Rather, the method claims at issue here are drawn to actions which can be performed and are performed by a single party. As they do not require that any of the steps be performed here by the customers or the end users, and the disputed steps are not in fact performed by third parties, we conclude that SiRF directly infringes.

First, at issue are the second, "communicati[ng]" step of claim 1 of the '651 patent and the third, "transmitting" step of the '000 patent. The second step of claim 1 of the '651 patent provides for "communication [sic] the satellite ephemeris to a mobile GPS receiver at a second location." '651 patent col.10 ll.64-65. The third step of claim 1 of the '000 patent provides for "transmitting the formatted data to a remote receiver." '000 patent col.6 l.47. Appellants argue that the performance of these steps necessarily

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<sup>9</sup> For example, in Muniauction, the method at issue required actions to be taken by both a "bidder" and an "issuer." See 532 F.3d at 1322. In BMC Resources, Inc. v. Paymentech, L.P., 498 F.3d 1373, 1378 (Fed. Cir. 2007), the parties "agree[d] [that] Paymentech [the accused infringer] does not perform every step of the method at issue in this case."



involves actions by SiRF's customers and by the end users of the GPS devices. They argue that in order for the data to be "communicat[ed]" or "transmit[ed]" to the GPS receiver, the data must travel first from SiRF's server to the servers of its customers (the intermediate distributors and GPS product manufacturers). Then, SiRF's customers must forward this data to the mobile GPS receivers, and the end users of the GPS devices must download the data from the customers' servers.

Neither the claim language nor the patent specification requires that the communication/transmission be direct. In fact, indirect communication is specifically contemplated. See '651 patent col.3 ll.42-48 ("The link may be a landline, or other direct communications path . . . . Alternatively, this link may have several parts . . . .") (label numbers omitted). Therefore, we construe these limitations as encompassing "communicating, whether direct or indirect" and "transmitting, whether direct or indirect."

With respect to infringement, under this construction it is clear that SiRF performs the step of communicating/transmitting the files to the end users' devices because SiRF initiates the process of transmitting and communicating, and the files are actually transmitted to the end users. The entire "end-to-end service," as SiRF's marketing describes it, J.A. 16,206, was designed by SiRF so that the EE files would be transmitted to end-user GPS devices containing SiRF chips and software. Indeed, the EE files generated by SiRF only work in the end-user devices of those devices containing SiRF chips and SiRF software. Here, it is true that the "communicati[ng]" or "transmitting" can only occur if the customer forwards the data to the end user and the end user downloads the data. However, the actions of "forwarding" or "downloading" are not required by the claims, and, therefore, the fact that other parties perform these

actions does not preclude a finding of direct infringement. By analogy, if a claim for a method of making a telephone call included the limitation: “placing a telephone call to a telephone at a second location,” the fact that the call must first be routed through a switched telephone network, and then eventually to the eventual recipient, would not prevent this claim limitation from being satisfied. Therefore, we conclude SiRF indirectly transmits or communicates the files to the GPS receivers and thereby meets these claim limitations.

Second, at issue are the third step of claim 1 of the '651 patent, which requires “processing [the] satellite signals received at the mobile GPS receiver,” '651 patent col.10 ll.66-67 and the fourth step of claim 1 of the '000 patent, which requires “representing [the] formatted data in a second format supported by the remote receiver,” '000 patent col.6 ll.48-49. With respect to the '651 patent, the ALJ noted that the processing “occurs at the mobile GPS receiver.” Initial Determination, slip op. at 140-42. With respect to the '000 patent, the ALJ noted that “[t]he parties are in agreement that [this limitation] is to be construed as ‘converting the data received in the first format to a second format supported by the remote receiver.’” Id. at 125-26. The parties agree that the “processing” and “representing” steps must take place in the mobile GPS device.

Appellants argue that SiRF does not perform this step because though the GPS receivers employ SiRF chips and InstantFix software, end users must actually initiate the process of downloading the EE data by connecting the device to the Internet and activating the InstantFix functionality. Then, the end user must either enable the “auto update” feature or enable the “manual update” feature in order for EE files to be

transmitted to the receiver. Appellants argue that this action by an end user negates performance by SiRF of the “processing” or “representing” claim limitations.

Appellants’ argument misreads the claim limitations. There exists no method step in any of the disputed claims that requires “enabling” or “activating” the devices that perform these claim limitations. Nor is there a step which requires “downloading” the data into the GPS receiver. Appellants, in essence, ask us to read such limitations into the claims. We decline to do so. See, e.g., Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1340-41 (Fed. Cir. 1999). We therefore construe the “processing” and “representing” steps of the asserted claims as taking place in a GPS receiver that is enabled and ready to process data.

When properly construed, it is clear that SiRF infringes as its devices and software dictate the performance of the “processing” and “representing” steps. Once the technology is enabled, SiRF’s SiRFstarIII chip and software, designed and built by SiRF, automatically perform the disputed steps of the claims at issue because the SiRFstarIII chips are programmed by SiRF to use the InstantFix ephemeris data automatically if it has been transmitted to the remote device. Neither SiRF’s customers (the equipment manufacturers and software developers) nor the end users of the GPS receivers can modify the use of the EE files by SiRF’s software or the functionality of the SiRFstarIII chip. Once the GPS receiver is enabled and ready to process the data, only SiRF’s actions are involved in “processing” or “representing” the data.

SiRF performs all of the claim limitations of claim 1 of the ’651 patent and claim 1 of the ’000 patent, and therefore directly infringes the asserted claims.

### III Patentable Subject Matter of the Asserted Claims of the ’801 and ’187 Patents

Appellants also challenge the Commission's finding that the asserted claims of the '801 and '187 patents recite patentable subject matter. Whether a claim is drawn to patent-eligible subject matter is an issue of law that we review de novo. Bilski, 545 F.3d at 951. At issue are claim 1 of the '801 patent, as well as claims 2 and 11, both of which depend from claim 1. Claim 1 recites:

1. A method for calculating an absolute position of a GPS receiver and an absolute time of reception of satellite signals comprising:
  - providing pseudoranges that estimate the range of the GPS receiver to a plurality of GPS satellites;
  - providing an estimate of an absolute time of reception of a plurality of satellite signals;
  - providing an estimate of a position of the GPS receiver;
  - providing satellite ephemeris data;
  - computing absolute position and absolute time using said pseudoranges by updating said estimate of an absolute time and the estimate of position of the GPS receiver.

Also at issue is Claim 1 of the '187 patent. That claim recites:

1. A method, comprising:
  - estimating a plurality of states associated with a satellite signal receiver, the plurality of states including a time tag error state, the time tag error state relating a local time associated with said satellite signal receiver and an absolute time associated with signals from a plurality of satellites; and
  - forming a dynamic model relating the plurality of states, the dynamic model operative to compute position of the satellite signal receiver.

The '187 patent is a continuation-in-part of the '801 patent. The ALJ held that the asserted method claims are "tied to a specific machine—a GPS receiver" and therefore found them directed to patentable subject matter. See Initial Determination, slip op. at 174-75, 205-06.

After the Initial Determination, but before review by the Commission, this court decided In re Bilski. In Bilski, we held that “[a] claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.” 545 F.3d at 954. We also held that the machine-or-transformation test has a further aspect: “the use of a specific machine or transformation of an article must impose meaningful limits on the claim’s scope to impart patent-eligibility.” Id. at 961 (see also Prometheus Labs., Inc. v. Mayo Collaborative Servs., 581 F.3d 1336, 1342-43 (Fed. Cir. 2009)). We agree with the Commission that the claims in question satisfy this test.<sup>10</sup>

We have defined a “machine” as “a concrete thing, consisting of parts, or of certain devices and combination of devices. This includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result.” In re Ferguson, 558 F.3d 1359, 1364 (Fed. Cir. 2009) (quoting In re Nuijten, 500 F.3d 1346, 1355 (Fed. Cir. 2007)) (internal quotation marks omitted).

A GPS receiver is a machine and is integral to each of the claims at issue. Claim 1 of the ’801 patent is expressly directed in its preamble to “calculating an absolute position of a GPS receiver.” ’801 patent col.12 ll.28-29. It also refers to “computing absolute position” by updating an “estimate of position of the GPS receiver,” providing

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<sup>10</sup> The Commission originally declined to review the ALJ’s decision on this issue, but after our decision in Bilski addressed the issue, appellants sought reconsideration. The Commission’s decision with respect to timeliness does not present an independent ground for affirmance of the ALJ’s decision with respect to patentable subject matter since that issue would be properly before us even if the Commission had declined to review the issue at all. The Commission, like this court, is bound to apply the current law. Therefore, it is appropriate to address this issue on the merits.

an estimate of the time at which a GPS receiver receives a plurality of satellite signals, and computing the position “of the GPS receiver.” Id. col.12 ll. 28-40. Further, claim 1 requires “pseudoranges” that estimate the distance from “the GPS receiver to a plurality of GPS satellites.” Id. col.12 ll.31-32. Pseudoranges, which are the distances or estimated distances between satellites and a GPS receiver, can exist only with respect to a particular GPS receiver that receives the satellite signals. Claim 1 of the ’187 patent is similarly tied to a GPS receiver. It requires the estimation of “states” that are “associated with a satellite signal receiver,” and the formation of a “dynamic model . . . to compute [the] position of the satellite signal receiver.” See ’187 patent col.20 ll.46-54. It is clear that the methods at issue could not be performed without the use of a GPS receiver; indeed without a GPS receiver it would be impossible to generate pseudoranges or to determine the position of the GPS receiver whose position is the precise goal of the claims.

We also think that the presence of the GPS receiver in the claims places a meaningful limit on the scope of the claims. In order for the addition of a machine to impose a meaningful limit on the scope of a claim, it must play a significant part in permitting the claimed method to be performed, rather than function solely as an obvious mechanism for permitting a solution to be achieved more quickly, i.e., through the utilization of a computer for performing calculations. We are not dealing with a situation in which there is a method that can be performed without a machine. Contrary to appellants’ contention, there is no evidence here that the calculations here can be performed entirely in the human mind. Here, as described, the use of a GPS receiver is essential to the operation of the claimed methods.

In conclusion, we hold that the claims at issue are properly directed to patentable subject matter as they explicitly require the use of a particular machine (a GPS receiver) and could not be performed without the use of such a receiver.

AFFIRMED

COSTS

No costs.