

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**NEOLOGY, INC.,**  
*Appellant*

v.

**INTERNATIONAL TRADE COMMISSION,**  
*Appellee*

**KAPSCH TRAFFICCOM USA, INC., KAPSCH  
TRAFFICCOM HOLDING CORP., KAPSCH  
TRAFFICCOM CANADA INC., STAR SYSTEMS  
INTERNATIONAL LTD., STAR RFID CO., LTD.,**  
*Intervenors*

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2018-1338

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Appeal from the United States International Trade  
Commission in Investigation No. 337-TA-979.

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Decided: April 19, 2019

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VINAY VIJAY JOSHI, Amin Turocy & Watson LLP, San  
Jose, CA, argued for appellant. Also represented by  
DANIEL W. BEDELL, ANTHONY KIM, ANDREW TIMOTHY  
OLIVER.

CATHY CHEN, Office of the General Counsel, United States International Trade Commission, Washington, DC, argued for appellee. Also represented by DOMINIC L. BIANCHI, WAYNE W. HERRINGTON, SIDNEY A. ROSENZWEIG.

NATHAN S. MAMMEN, Kirkland & Ellis LLP, Washington, DC, argued for intervenors. Also represented by GREGG F. LOCASCIO, BRIAN H. GOLD.

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Before TARANTO, SCHALL, and CHEN, *Circuit Judges*.

TARANTO, *Circuit Judge*.

Neology filed a complaint with the International Trade Commission in 2015, alleging, as now relevant, infringement of claims 13, 14, and 25 of its U.S. Patent No. 8,325,044 and claims 1, 2, and 4 of its U.S. Patent No. 8,587,436. The patents, which share a specification, describe and claim systems and methods for tracking identifying information, particularly those relying on radio frequency identification (RFID). The Commission held the claims now at issue invalid because (1) they lack adequate written description support and (2) they are invalid for anticipation by U.S. Patent No. 5,627,544 (Snodgrass) or for obviousness based on the combination of Snodgrass and two other pieces of prior art. Neology appeals. We affirm on the written-description ground and do not reach anticipation or obviousness.

I

A

Neology filed applications for both the '044 and '436 patents in 2012, both applications tracing by the same chain of continuation applications to an application filed in 2003 and a provisional application filed in 2002. The claims that appeared in the 2012 applications as filed (the 2012 claims) issued with very few changes as the claims in the '044 and

'436 patents. *Compare* J.A. 3549–54, *with* '044 patent, col. 23, line 5, through col. 24, line 63; *compare* J.A. 3755–59, *with* '436 patent, col. 23, line 13, through col. 25, line 17. The patents share a title, “System and Method for Providing Secure Identification Solutions,” as well as a specification. They describe and claim methods and systems “for verifying and tracking identification information” in a secure system that, for one embodiment, “includes at least one of the following: a radio frequency (RF) identification device, an identification mechanism (e.g., a card, sticker), and an RF reader/writer.” *See, e.g.*, '044 patent, col. 1, lines 39–45. An example is an RF device (corresponding to the claims “RFID transponder”) on an automobile, with identifying information embedded in the RFID device readable by an RFID reader. The important claim limitation for the asserted claims here involves exchanges of a “security key” between the RFID reader and transponder.

The claims of the '044 patent now at issue are claims 13, 14, and 25. Claims 13 and 14 depend on claim 10, which reads:

10. A toll system, comprising:

a central database configured to:

store toll accounts,

receive identifiers related to toll accounts, and

compare the received identifiers to identifiers associated with the toll accounts to determine if a match exists;

an RFID reader comprising a radio and an antenna, the RFID reader configured to:

send a first communication to a RFID transponder that includes a memory the contents of which include an identifier,

send a second communication to the RFID transponder that includes a security key for validation by the RFID transponder,

receive at least the identifier included in the memory contents in response to the second communication and as a result of validation of the security key, and transmit the identifier to the central database.

*Id.*, col. 23, lines 39–56. Claim 13 adds the limitation of an RFID reader sending a “third communication . . . that includes a second security key for validation by the RFID transponder and receive further memory contents in response to the third communication and as a result of validation of the second security key.” *Id.*, col. 23, line 64, through col. 24, line 4. Claim 14, which depends on claim 13, further requires that “the second security key is based on information received from the RFID transponder.” *Id.*, col. 24, lines 5–7. Claim 25 depends on claim 23, which recites the same series of communications and transfers of security keys but for an RFID transponder, not the “toll system” of claim 10. *Id.*, col. 24, lines 37–50, 54–60.

The ’436 patent claims also include the same series of communications between the RFID reader and transponder. ’436 patent, col. 23, lines 13–43. Independent claim 1 recites:

1. A RFID reader, comprising:

a radio and an antenna;

a processor coupled with the radio, the processor configured to:

send a first communication to a RFID transponder via the radio and the antenna that includes a memory the contents of which includes an identifier,

send a second communication to the RFID transponder via the radio and the antenna that includes a security key for validation by the RFID transponder,

receive at least the identifier included in the memory contents via the radio and the antenna in response to the second communication and as a result of validation of the security key, and

transmit the identifier to a central database;

wherein the processor is further configured to send a third communication to the RFID transponder via the radio and the antenna that includes a second security key for validation by the RFID transponder and receive via the radio and the antenna further memory contents in response to the third communication and as a result of validation of the second security key.

*Id.*, col. 23, lines 13–34. Claims 2 and 4 depend directly on claim 1. Claim 2 adds the limitation that “the security key is based on information received from the RFID transponder.” *Id.*, col. 23, lines 35–36. Claim 4 adds the limitation that “the second security key is based on information received from the RFID transponder.” *Id.*, col. 23, lines 41–43.

## B

Neology filed a complaint with the Commission on December 4, 2015. The complaint alleged infringement of various claims of the '044 and '436 patents, as well as claims of another patent not at issue here. Neology accused Kapsch TrafficCom U.S. Corp., Kapsch TrafficCom IVHS Technologies Holding Corp., Kapsch TrafficCom IVHS Holding Corp., Kapsch TrafficCom IVHS, Inc., Kapsch TrafficCom Canada Inc., Kapsch TrafficCom Holding Corp., Star Systems International, Ltd., and STAR RFID Co., Ltd. (collectively, Kapsch) of importing infringing products. The

Commission instituted an investigation on January 11, 2016. After Neology terminated the investigation with respect to claims 3, 6–12, and 14–18 of the '436 patent, what remained were claims 13, 14, and 25 of the '044 patent and claims 1, 2, and 4 of the '436 patent.

The administrative law judge concluded on June 22, 2017, that the '044 and '436 patents are not entitled to the priority date of U.S. Patent Application No. 10/615,026, filed in 2003, because that application “does not provide written description support” for some of the key limitations of the at-issue claims of the '044 and '436 patents. The ALJ also found invalidity of the claims on several grounds, including the following: (a) claims 13, 14, and 25 of the '044 patent and claims 1, 2, and 4 of the '446 patent are invalid for lack of written description; (b) claim 25 of the '044 patent and claims 1, 2, and 4 of the '436 patent are anticipated by Snodgrass; and (c) claims 13 and 14 of the '044 patent are invalid for obviousness over a combination of Snodgrass, U.S. Patent No. 5,819,234 (Slavin), and an article, “RFID for Road Tolling, Road-Use Pricing and Vehicle Access Control,” by Phil Blythe (Blythe).

Neology appealed to the full Commission, which issued its final decision on October 30, 2017. The Commission determined that the ALJ was correct that the two patents are not entitled to an earlier priority date, that the claims are invalid for lack of written description, and that the claims are invalid for anticipation by Snodgrass or obviousness based on a combination of Snodgrass, Slavin, and Blythe. The Commission reversed certain other invalidity determinations made by the ALJ.

Neology filed a timely notice of appeal on December 22, 2017. We have jurisdiction under 28 U.S.C. § 1295(a)(6).

## II

We review the Commission’s factual findings for substantial evidence. *Rivera v. Int’l Trade Comm’n*, 857 F.3d

1315, 1319 (Fed. Cir. 2017). Whether a claim is adequately supported by the written description is an issue of fact. *GlaxoSmithKline LLC v. Banner Pharmacaps, Inc.*, 744 F.3d 725, 729 (Fed. Cir. 2014). We review “procedural and evidentiary determinations made by the Commission,” including “waiver” determinations, for abuse of discretion. *Windbond Elecs. Corp. v. Int’l Trade Comm’n*, 262 F.3d 1363, 1370 (Fed. Cir. 2001).

A

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Contrary to Neology’s initial contention, Kapsch did not waive the argument that the claims are invalid for lack of written description. Both the ALJ and the Commission decided whether the claims at issue have adequate written-description support both in determining priority and in determining validity. *See* J.A. 38–45; J.A. 147–74. The Commission specifically held that Kapsch had not waived the direct invalidity challenge based on inadequate support in the written description. *See* J.A. 39–40. We see no error in that determination. In pre- and post-hearing briefs, Kapsch and the Commission’s Office of Unfair Import Investigations timely raised, and they and Neology all discussed, the issue of invalidity due to inadequate written description. J.A. 764; J.A. 937; J.A. 977; J.A. 1187; J.A. 1188; J.A. 4770–71; J.A. 5135. There was no waiver.

2

When the investigation went to the Commission, on review of the ALJ decision, Neology argued that the specification and the 2012 claims themselves each provided adequate written description, but the Commission concluded that Neology had waived reliance on the 2012 claims by not relying on those claims before the ALJ as a basis for written-description support. J.A. 42–43. We see no error in that conclusion. Neology’s briefing, even after the hearing, relied on the argument that the specification

of the '026 application (the 2003 application), which did not include the 2012 claims, provided the written-description support of the claims in the '044 and '436 patents, and it did not make an argument that the 2012 claims furnished the required written-description support. J.A. 4775 (“How a [person of ordinary skill in the art] would specifically understand that each challenged claim limitation is disclosed in the *specification of the '026 Application* is described in even more detail below.”) (emphasis added); *id.* (“As further evidence that the *specification of the '026 Application* provides adequate written description for the asserted claims . . . .”) (emphasis added). It was not until after the Commission requested additional briefing that Neology raised the argument that the 2012 claims contained adequate disclosure to provide written-description support for the issued claims. J.A. 5570 (“For *validity*, the written-description analysis properly relies on the cumulative disclosure of the applications that became the '044 and '436 patents—including the *originally-filed claims* [(the 2012 claims)] *in the asserted patents* along with all prior applications incorporated by reference—to determine whether the asserted claims have adequate support.”) (second emphasis added); J.A. 5573 (“Therefore, unlike priority, the written-description analysis for invalidity in this case . . . also relies on the *originally-filed claims of the applications* [(the 2012 claims)] that led to the '044 and '436 patents . . . .”) (emphasis added).

In response to the Commission’s determination that Neology waived the argument that the 2012 claims provide written-description support, Neology points to one passage in the pre-hearing brief it submitted to the ALJ. There, previewing its evidence for written description, Neology stated that “[e]xcept for the claims, the as-filed specification of the '026 Application is nearly identical to the respective applications that issued as the later member patents in the same family . . . .” J.A. 765. Neology argues that the



quoted sentence differentiates between the claims in the '026 application and the 2012 claims and thereby preserves the argument that the 2012 claims alone provide written description support for the issued claims.

We disagree. We have recognized that claims can be self-describing. *See, e.g., Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1297 (Fed. Cir. 2017); *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1349–51 (Fed. Cir. 2010). On the other hand, genus claims, especially those that “use functional language to define the boundaries of a claimed genus,” are unlikely to provide an adequate written description so as to be self-describing. *Ariad Pharm.*, 598 F.3d at 1349. Determining whether a particular claim is self-describing is not a cut-and-dried, simple matter, but would require more development—factual and legal—than the passing reference on which Neology now relies. We conclude that the Commission did not abuse its discretion in finding that Neology waived its argument that the asserted claims are supported by the 2012 claims. We therefore affirm the Board’s conclusion that Neology waived this argument. The written-description contention preserved before the ALJ and Commission, therefore, was simply whether support for the claims at issue can be found in the body of the written description without the 2012 claims—which is substantively the same as the 2003 written description.

## B

A patent must “contain a written description of the invention . . . in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same.” 35 U.S.C. § 112 ¶ 1.<sup>1</sup> We have long held that,

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<sup>1</sup> Although the relevant wording has not changed, we cite the version of § 112 that pre-dated the amendments to

for any given claim, “the description must ‘clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed.’” *Ariad Pharm.*, 598 F.3d at 1351 (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1562–63 (Fed. Cir. 1991)). As we have noted, the adequacy of support in the written description is a question of fact, and we review the Commission’s answer to that question for substantial evidence. *Rivera*, 857 F.3d at 1319; *GlaxoSmithKline*, 744 F.3d at 729.

The ALJ identified five limitations of the asserted claims that lacked adequate written description, a finding affirmed by the Commission. The five limitations are: “a second communication . . . that includes a security key”; transmission of an “identifier” from transponder memory “in response to the second communication” as a result of “validation” of the “security key”; a central database and toll system; a “third communication . . . that includes a second security key”; and a “security key is based on information received from the RFID transponder.” J.A. 24–25; J.A. 70. We find it unnecessary to discuss the third limitation. It suffices to discuss the other four limitations, for which the Commission’s findings of inadequate support largely rest on a shared basis.

The first limitation claims the transmission of a second communication containing a security key and is part of claims 13, 14, and 25 of the ’044 patent and claims 1, 2, and 4 of the ’436 patent. It requires both the existence of a “security key” and the transmission of that same key. The specification mentions five types of keys: cryptographic,

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that section made by the Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 4(c), 125 Stat. 284, 296 (2011). Those amendments do not apply to patents, like the ’044 and ’436 patents, that issued from applications filed before September 16, 2012. *Id.*, § 4(e), 125 Stat. 297.

security, credit and debit exchange, encryption, and exchange encrypted. The specification describes cryptographic keys as “check[ed] and validate[d]” by the “security management unit” and being “sent to the cryptographic block.” ’044 patent, col. 2, lines, 51–53. The “cryptographic block” also “stores the security keys.” *Id.*, col. 2, lines 53–54. Credit and debit exchange keys are disclosed as part of the “Optional Security Features” where identifying information is stored in “[h]ighly secure chips with a hardware programmable cryptographic block” that has the credit and debit exchange key. *Id.*, col. 12, lines 7, 20–23. Encryption keys are disclosed in the same optional security features section and are needed to “initialize[]” equipment that interacts with the device storing identifying information. *Id.*, col. 12, lines 28–31. Finally, the specification discloses a “hardware wired cryptographic block 2210 (with 4 exchange encrypted keys . . .).” *Id.*, col. 22, lines 18–19.

Based on the disclosures in the specification and testimony from the experts, the Commission had substantial evidence to support its finding of insufficient written description. Despite disclosing several types of keys, the specification discloses only where they are stored and not whether they are exchanged. Experts for both Kapsch and Neology agreed that cryptographic and encryption keys, by their nature, are not exchanged. J.A. 2908–09; J.A. 3046. Dr. Gregory Durgin, Kapsch’s expert, testified that credit and debit exchange keys and exchange encrypted keys function like cryptographic keys, in that they are stored in the same cryptographic block, and are not exchanged, because cryptographic keys are not exchanged. J.A. 2433–34. He also testified that the credit and debit exchange and exchange encrypted keys are not exchanged because the specification “doesn’t involve those keys in any sort of RFID protocol.” J.A. 2433 The Commission could reasonably rely as well on the inventor’s own testimony that the keys disclosed in the specification are encryption keys, J.A. 1704–

07, which, as previously discussed, are not exchanged, even though he later clarified his testimony that two of the disclosed keys are the credit and debit exchange keys, *id.* And Jack Goldberg, Neology’s expert, originally testified that he simply did not know if the keys were exchanged, J.A. 3060–61, which allowed the Commission not to credit—against other evidence—Mr. Goldberg’s later testimony that the credit and debit and exchange encrypted keys must be exchanged because of their names. We conclude that there is substantial evidence in the specification and the testimony to support the Commission’s finding that the specification does not adequately describe a second communication that includes a security key.

The Commission’s finding that there is no disclosure of a transmission of the security key supports the finding that three additional claim limitations are likewise inadequately supported. The second limitation requires the transmission of an “identifier” “in response to the second communication” as a result of “validation of the security key.” ’044 patent, col. 23, lines 53–56; ’436 patent, col. 23, lines 23–26. If there is no transmission of a security key, there cannot be validation of such a key or transmission of an identifier in response to the second communication. Similarly, the fourth limitation requires a “third communication . . . that includes a second security key,” ’044 patent, col. 23, line 64 through col. 24, line 4; ’436 patent, col. 23, lines 27–29, so the finding that there is no disclosure of a second communication including a key means that there can be no third communication that includes a “second” one of that key. The fifth limitation, which requires the “security key”/“second security key” from the independent claim to be “based on information received from the RFID transponder,” ’044 patent, col. 24, lines 5–7; ’436 patent, col. 23, lines 34–35, 40–43, also is reasonably found unsupported in the absence of a disclosure of information exchanged between the transponder and the device. Additionally, Dr. Durgin testified that “there is no disclosure of an RFID

protocol or any specific step that would involve the security key, based on information from the RFID transponder.” J.A. 2449–53. Thus, the Commission had substantial evidence to find inadequate written-description support for limitations two, four, and five.

For those reasons, we affirm the Commission’s finding that the asserted claims lack sufficient written-description support. In view of that conclusion, we need not reach the issues of anticipation or obviousness.

### III

The ruling of the Commission that the claims at issue are invalid is affirmed.

**AFFIRMED**