CASE NO. 19-2411

IN THE

United States Court Of Appeals For The Federal Circuit

SIMO HOLDINGS INC.
Plaintiff – Appellee,

v.

HONG KONG UCLOUDLINK NETWORK TECHNOLOGY LIMITED, UCLOUDLINK (AMERICA), LTD.,
Defendants – Appellants.

Appeal from the Appeal United States District Court for the Southern District of New York Case No. 1:18-cv-05427-JSR

PLAINTIFF – APPELLEE SIMO HOLDINGS INC.'S CORRECTED COMBINED PETITION FOR PANEL REHEARING OR REHEARING *EN BANC*

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February 5, 2021

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CERTIFICATE OF INTEREST

Counsel for the Appellee, SIMO Holdings Inc., certifies the following (use "None" if applicable; use extra sheets if necessary):

1. Full name of Party Represented by me:

   SIMO Holdings Inc.

2. Name of Real Party in interest (Please only include any real party in interest NOT identified in Question 3) represented by me is:

   SIMO Holdings Inc.

3. Parent corporations and publicly held companies that own 10% or more of stock in the party:

   None.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (and who have not or will not enter an appearance in this case) are:

   Harold H. Davis (Greenberg Traurig, LLP)
   Kenneth Jenq
   Lei Howard Chen (Greenberg Traurig, LLP)
   Rachel Burnim (K&L Gates LLP)
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5. The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal. *See* Fed. Cir. R. 47.4(a)(5) and 47.5(b). (The parties should attach continuation pages as necessary).

   SIMO Holdings Inc. v. uCloudlink Network Technology Limited, and uCloudlink (America), Ltd., Case No. 1:18-cv-05427-JSR (S.D.N.Y.)

Hong Kong uCloudlink Network Technology Limited et al. v. SIMO Holdings, Inc., Case No. 1:20-cv.03399 (S.D.N.Y.)

SIMO Holdings, Inc., et al. v. Hong Kong uCloudlink Network Technology Ltd., et al., Case No. 2:20-cv-00003-JRG (E.D. Tex.)

SIMO Holdings Inc. v. uCloudlink Network Technology Limited, and uCloudlink (America), Ltd., Case No. 1:18-cv-05427-JSR (S.D.N.Y.)

Hong Kong uCloudlink Network Technology Limited et al. v. SIMO Holdings, Inc., Case No. 1:20-cv.03399 (S.D.N.Y.)

SIMO Holdings, Inc., et al. v. Hong Kong uCloudlink Network Technology Ltd., et al., Case No. 2:20-cv-00003-JRG (E.D. Tex.)

6. All information required by Federal Rule of Appellate Procedure 26.1(b) and (c) that identifies organizational victims in criminal cases and debtors and trustees in bankruptcy cases.

N/A

February 5, 2021

/s/ *Benjamin E. Weed*
Signature of Counsel

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FEDERAL CIRCUIT RULE 35(B)(2) STATEMENT

Based on my professional judgment, I believe the panel decision in *SIMO Holdings Inc. v. Hong Kong uCloudlink Network Technology Ltd. et al.*[1] is contrary to the following decision(s) of the Supreme Court of the United States or the precedent(s) of this Court: *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). The panel decision creates inconsistency in the approach to claim construction and adopts a rule expressly rejected in more than thirty district court opinions addressing this issue. The panel decision relies on the pre-*Phillips* panel decision in *SuperGuide Corp. v. DirecTV Enters., Inc.* (358 F.3d 870 (Fed. Cir. 2004)) to construe particular claim language even though the ruling announced in *SuperGuide* is contrary to this Court's *en banc Phillips* decision (15 F.3d 1303 (Fed. Cir. 2005) (*en banc*)) that governs all other claim language.

Based on my professional judgment, I believe this appeal requires an answer to one or more precedent-setting questions of exceptional importance:

(1) When construing claims of the form "a plurality of" followed by a list of items separated by the word "and," whether the panel is correct that *SuperGuide* (which Petitioner contends has been overruled by the *en banc* Court for the pertinent point) provides for a canon of claim

[1] The instant Petition cites to the underlying panel decision as "ADD#"; pursuant to Fed. Cir. Rule 35(e)(1)(H), a copy of the dispositive panel opinion is attached hereto.

construction compelling the elevation of certain grammatical constructs above the intrinsic record of a patent, particularly where (1) there are other, more reasonable grammatical constructs; (2) invocation of a particular grammatical construct contradicts the specification; and (3) invocation of a particular grammatical construct results in claim scope not supported by the specification.

/s/ Benjamin E. Weed
Benjamin E. Weed
Attorney for SIMO Holdings, Inc.

INTRODUCTION

Petitioner SIMO Holdings Inc. ("Petitioner") hereby requests a panel rehearing and rehearing *en banc* of the panel decision below because that decision contravenes this Court's *en banc* precedent in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*) ("*Phillips-II*"). In particular, the panel erroneously determined, using general English-language grammatical interpretation as a canon of claim construction, that a claim preamble reciting "a plurality of" and then a list of items (including in the list a "non-local calls database" ("NLCDB")) *requires* two or more of each element contained in the list to satisfy Claim 8 of U.S. Patent No. 9,736,689 ("the '689 Patent"). In its precedential opinion, the panel elevated the grammatical considerations articulated in *SuperGuide Corp. v. DirecTV Enters., Inc.* (358 F.3d 870 (Fed. Cir. 2004)) to a claim construction canon at the expense of this Court's subsequent *en banc Phillips-II* ruling, which emphasizes reliance on the intrinsic record read through the eyes of a person of skill in the art over grammar.

The panel made its erroneous finding by ignoring (1) the remainder of the at-issue claim; (2) the intrinsic record (which plainly states that the NLCDB is optional and plainly devoid of embodiments with multiple NLCDBs); and (3) the preamble's most natural grammatical reading.

Correcting the panel decision below is of particular importance because the panel opinion is a precedential opinion that refers to a pre-*Phillips-II* decision

construing a claim term based on a Strunk & White grammatical treatise as precedential "canon" law, and in so doing follows an outdated claim construction approach this Court has emphatically eliminated *en banc*.

FACTUAL BACKGROUND

The '689 Patent is directed to a "System and Method for Mobile Telephone Roaming." [Appx161 at 1:15-21.] Its purpose is to "allow users to access mobile networks while traveling abroad without incurring costly roaming fees or engaging in the cumbersome process[] of switching physical SIM cards." [Appx69.]

The '689 Patent explains that a so-called NLCDB is an optional feature that enables users already utilizing the '689 Patent's non-roaming functions to avoid higher priced, long distance calls. [Appx171 at 21:55-62.] In particular, the '689 Patent explains that the remote authentication module 524 is a component "optionally including a non-local calls database 525." [Appx168 at 19-21.] The '689 Patent never describes an embodiment containing *more than one* NLCDB. [*See generally* Appx144-174.] uCloudlink has never contested either the optionality of the NLCDB, or the fact that the '689 Patent does not disclose *more than one* NLCDB. The panel, for its part, engages in impermissible fact-finding by stating that "[t]he reference to 'a non-local calls database' would ordinarily be understood to encompass one or more such databases." [ADD21-22.] And the panel's statement that "claims 1 and 16 (apparatus claims)…address embodiments that lack a non-

local calls database," [ADD21], demonstrates its fundamental misunderstanding of the NLCDB. Claims 1 and 16 cannot recite an NLCDB because they are directed to different (back-end) apparatus which are not part of the wireless communication device or extension unit (terminal) ([Appx172 at 23:49 (authentication bank of claim 1); Appx173 at 26:27 (authentication bank of claim 16).])

The NLCDB resides, if at all, not on the back end but on the terminal. Claim 8 is the only independent apparatus claim that covers the terminal. [Appx173 at 25:4-5.]

Aside from the preamble of Claim 8, neither Claim 8 (nor its dependent claims) recites or references a NLCDB." [Appx173 at 25:4-26:26.]

Nonetheless, the panel held that the "language at issue [i.e., the preamble list, including the NLCDB] is limiting." [ADD13.] In particular, the panel "reject[ed] the district court's conclusion that claim 8 does not require a 'non-local calls database.'" [ADD15.] It so held because "a plurality of" purportedly always, uniformly "requires at least two of *each* of the listed items in the phrase at issue in claim 8." [ADD15] (emphasis in original).

The panel proceeded in two steps: it "first conclude[d], as a textual matter, that the most important features of the claim language point decisively against the district court's conclusion." [ADD15.] It "then conclude[d] that no other claim-

construction consideration overcomes the interpretive implication of the claim's text." [ADD15.]

The panel began its analysis by favorably citing to *SuperGuide*. [ADD15-16.] Citing Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts* § 19, 147 (2012), the panel continued by emphasizing the importance of the "general grammatical principle [of] a modifier coming before a series." [ADD16.] It concluded that the context of the '689 Patent "cements the canon's applicability in its particular *SuperGuide* form." [ADD17.] In so doing, the panel referred to the pre-*Phillips-II SuperGuide* panel decision as "canon" law. [ADD17.]

Having reached its construction based on this pre-*Phillips-II* law (*SuperGuide*) regarding the purported governance of grammatical constructs (Scalia & Garner), the panel then worked backwards to justify several inconsistencies in the intrinsic record created by its construction, which would have been unnecessary had the panel properly began with the intrinsic record. [ADD19-22.]

The panel *never* attempted to square its opinion, which it designated as precedential, with fact that *Phillips-II* specifically distinguishes its requirements from the previously used textual/grammatical approach. *Phillips-II*, 415 F.3d at 1319 (citing *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002)). The panel also did not address *SuperGuide*'s explicit and heavy reliance on *Texas Digital*. 358 F.3d at 874-75.

ARGUMENT

I. THE PANEL ERRONEOUSLY RELIED ON *SUPERGUIDE* AS A "CANON" OF CLAIM CONSTRUCTION

The panel overturned the District Court's claim construction by relying heavily on this Court's *SuperGuide* panel decision dated February 12, 2004. [ADD15-18.] Indeed, the panel went so far as to refer to the linguistic treatise-based rationale in *SuperGuide* (which relied on William Strunk, Jr. & E.B. White's "*The Elements of Style 27*" (4th ed. 2000), *see* 358 F.3d at 886) as a "canon." [ADD17.] But the panel's reliance was erroneous. Indeed, this Court has not addressed, either as a panel or *en banc*, the general applicability of *SuperGuide*, and certainly has not blessed that Court's linguistic approach based on Strunk & White as claim construction "canon" post-*Phillips-II*.

This is unsurprising, as the *SuperGuide* decision only shortly preceded this Court's July 12, 2005 *en banc* decision in *Phillips-II*. In *Phillips-II*, this Court did away with both the *SuperGuide* panel's and the prior *Phillips-I* panel's reliance on *Texas Digital*. *See SuperGuide*, 358 F.3d at 874-75, 887; *Phillips v. AWH Corp.*, 363 F.3d 1207, 1219-20 (Fed. Cir. 2004) (Dyk, J., dissenting) ("*Phillips-I*").

Nonetheless, the panel *never even cited Phillips-II*, let alone attempt to square the *en banc* Court's reasoning with the *Texas Digital*-based reasoning of *SuperGuide*.

A. ***Phillips-II* Upends the *SuperGuide* Rationale**

Phillips-II effectively consigned to history the days of relying on linguistic treatises as the primary governor of the meaning of claim terms in highly technical patent documents. Rather, the *Phillips-II* decision expressly recognized the primacy of the intrinsic record. The panel's decision to eschew the intrinsic record in favor of general English-language tools erroneously ignores the shift this Court commanded, *en banc*, in *Phillips-II*.

1. *Phillips-II* Demoted the *Texas Digital* Reliance on Grammatical Extrinsic Evidence

The *Phillips-II* court took painstaking steps to outline the view of the law expressed in *Texas Digital* and its progeny, criticizing its "different" approach to claim construction relying primarily on dictionary definitions at the expense of the specification and the prosecution history. *Phillips-II*, 415 F.3d at 1319-20.

The *Phillips-II* Court went on to state that "[a]lthough the concern expressed by the court in *Texas Digital* was valid, the methodology it adopted placed too much reliance on extrinsic sources such as dictionaries, treatises, and encyclopedias and too little on intrinsic sources, in particular the specification and prosecution history." *Id*. at 1320. The *Phillips-II* Court warned against the danger of assigning a limited role to the specification, noting favorably this Court's prior precedent that "the specification is 'the single best guide to the meaning of a disputed term.'" *Id.* at 1321 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996)).

This Court cautioned against grammatical approaches such as that taken by the panel below:

> [t]he main problem with elevating the dictionary to such prominence is that it focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent. Properly viewed, the "ordinary meaning" of a claim term is its meaning to the ordinary artisan after reading the entire patent. Yet heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification.

Phillips-II, 415 F.3d at 1321.

The *Phillips-II* Court invoked 1876 Supreme Court rationale that "nothing can be more just and fair, both to the patentee and the public, than that the former should understand, and correctly describe, just what he has invented, and for what he claims a patent." *Id*. (quoting *Merrill v. Yeomans*, 94 U.S. 568, 573-74 (1876)).

In short, following *Phillips-II*, the lower courts and this Court have consistently counseled that a proper claim construction inquiry properly begins with the intrinsic record, and that non-patent linguistic sources (e.g., dictionaries and grammatical treatises like Strunk & White) *should not* override a patent drafter's choice of language, which are written and should be read from the perspective of a person having ordinary skill in the art.

2. The Panel Improperly Reverted to Pre-*Phillips-II* Law, Elevating Grammatical Constructs over the Intrinsic Record

The panel decision suffers from the same malady as *Phillips-I*—it unduly relies on linguistic constructs (the "ordinary and customary meaning [of] a phrase grammatically comparable to 'a plurality of' at the start of a list of items joined together by 'and'" [ADD15]) at the expense of a specification and figures that plainly describe a feature as optional (the NLCDB). Indeed, the panel below went so far as to characterize its holding (and the pre-*Phillips-II* holding of *SuperGuide*) as based upon a "more general grammatical principle applicable to a modifier coming before a series." [ADD16.]

Even more problematic than the situation confronting the *SuperGuide* panel, which operated without the guidance of *Phillips-II*, the grammatical issues here are not straightforward. SIMO contends that the more proper grammatical read of the claims also counsels in favor of the list reciting a *single, optional* "NLCDB" because "a plurality of" followed by a list of six items is met if *any two or more of the six* are present (e.g., the first and last items). *See infra* Section II.B.1. Indeed, the panel's decision, though citing Scalia & Garner, neglected to include that treatise's prescient warning that the "series-qualifier canon [discussed in *SuperGuide*, p]erhaps more than most of the other canons . . . is highly sensitive to context." Antonin Scalia & Bryan A. Garner, *Reading Law* 150 (2012).

Contextually, the specification here supports construing the preamble list as expressed in the disjunctive. Claim 8's preamble list corresponds with the specification providing that "[t]he wireless communication client 106 (or extension unit 108) contains a plurality of components" and that "[d]ifferent embodiments may include some or all of these procedures or modules in memory." [Appx167 at 14:12-13; Appx168 at 15:22-24.] *See also Iridescent Networks, Inc. v. AT&T Mobility, LLC*, No. 6:16-CV-01003, 2017 WL 3033400, at *6 (E.D. Tex. July 18, 2017) ("the separate usage of 'at least one of' in claim 6 corresponds to a disclosure in which the specification uses the phrase 'any combination of or a single element of.'")

B. A Lower Court/PTAB Split Demonstrates the Impropriety of Relying on *SuperGuide* as a Claim Construction Canon

While the panel's opinion refers to the list analysis in *SuperGuide* as a "canon," [ADD17], the decisions of the district courts and the PTAB do not support canonization. "Numerous courts have declined to follow the *SuperGuide* court's construction of 'at least one of' where the facts before them called for a different understanding of the term." *Fujifilm Corp. v. Motorola Mobility LLC*, No. 12-cv-3587-WHO, 2015 WL1265009, at *8 (N.D.C.A. Mar. 3, 2015) (citing cases that have not followed *SuperGuide*); *see also Radware Ltd. v. A10 Networks, Inc.*, No. C-13-02024-RMW, 2014 WL 1572644, at 6-7 (N.D. Cal. Apr. 18, 2014) ("*SuperGuide* has not been read as a uniform rule that 'at least one of . . . and' be construed in the conjunctive.").

Of the 51 district court and PTAB decisions citing *SuperGuide* for the relevant "list" analysis, fewer than half follow the *SuperGuide* grammatical analysis. *See, e.g.*, *Inventio AG v. ThyssenKrupp Elevator Americas Corp.*, C.A. No. 8-874-RGA, 2014 WL 129799, at *3 (D. Del. Apr. 23, 2014). And even some of the cases that acknowledge *SuperGuide's* rationale note that *SuperGuide* is not controlling authority. *See, e.g.*, *Altera Corp. v. PACT XPP Techs., AG*, No. 14-CV-02868-JD, 2015 WL 4999952, at *3 (N.D. Cal. Aug. 21, 2015). Indeed, the majority of the cases citing *SuperGuide* recognize precisely the issue that lays at the heart of the instant request for rehearing: that claim construction is fact-based and requires in the first instance analysis of the specification and other intrinsic evidence to arrive at a legally correct claim construction. *See, e.g.*, *LMT Mercer Grp., Inc. v. Maine Ornamental, LLC*, No. CIV. 10-4615, 2014 WL 183823, at *27 (D.N.J. Jan. 16, 2014) (citing *Phillips II*).

The following table summarizes the cases distinguishing *SuperGuide*, with none recognizing *SuperGuide* as expressing a canon of claim construction law.

Venue	**No. of Cases**
Central District of California	2
Northern District of California	4
Southern District of California	1
District of Colorado	1

District of Delaware	6
Court of Federal Claims	1
Northern District of Illinois	4
District of New Jersey	1
Southern District of New York	2
Western District of New York	1
Western District of Pennsylvania	1
Patent Trial and Appeal Board	4
Western District of Tennessee	1
Eastern District of Texas	5
Northern District of Texas	2
Southern District of Texas	1

Such a split poses a substantial concern. Given that the panel below purportedly canonized doctrine that is contrary to governing *en banc* precedent, and given that the lower courts and the PTAB have declined to follow this "canon," the need for clarity and guidance is acute. Without question, leaving the lower court/PTAB split unresolved casts into doubt the role of linguistic extrinsic evidence in situations like the one here.

More troubling still, it is possible that litigants dissatisfied with claim construction arguments based on the intrinsic record will argue that under some kind of "*SIMO* Doctrine," which (litigants will argue) canonizes the use of linguistic

treatises, any claim language that can be characterized as being governed by a "grammatical principle" should be construed according to that principle irrespective of its consistency with the intrinsic evidence, in contravention to this Court's *Phillips-II* rationale.

In short, the "*SIMO* Doctrine" will undermine the recognition of *Phillips-II* that the *Texas Digital* line of reasoning no longer applies.

II. EVEN IF *SUPERGUIDE* APPLIES POST *PHILLIPS-II*, THE PANEL ERRED BY ELEVATING *SUPERGUIDE* OVER ESTABLISHED CLAIM CONSTRUCTION CANONS

A. ***SuperGuide's*** **Claim Language Dealt with Categories of Information, and is Thus Factually Distinguishable**

The PTAB and numerous district courts have highlighted the important factual distinction between the categories of information recited in *SuperGuide* and lists of discrete items. *See Ricoh Americas Corp. et al. v. MPHJ Tech. Inv. LLC Patent*, IPR 2013-00302 2013 WL 8563651, at * 6 (P.T.A.B. Nov. 21, 2013) ("*SuperGuide* . . . reasons that each term in the list embraces a different category, each of which *must* take on a chosen value."); *Fiber LLC v. Ciena Corp.*, No. 13-cv-00840, 2017 WL 3896443, at *8–9 (Sept. 6, 2017) (same); *Fujifilm*, 2015 WL1265009, at *8 (same); *Apple Inc. v. Evolved Wireless LLC*, 2017 IPR 2016-01177 WL 6543970 at *4 (P.T.A.B. Dec. 20, 2017) (same).

Consistent with these decisions, and unlike *SuperGuide*'s list of categories, Claim 8 of the '689 Patent contains a list of discrete items, some identified in the

singular (memory, non-local calls database), and some in the plurality (programs, processors). Claim 8 does not recite categories of items, and thus, unlike *SuperGuide*, the language "a plurality of" should not *per se* apply to each element of the preamble list, requiring more than one of each. This is so even if *SuperGuide's* rationale is (improperly) treated as canon (per the panel below).

B. Properly Evaluating the Context of the '689 Patent, per *SuperGuide*, Compels a Different Result than the Panel's Result

The '689 Patent's context further supports rejecting the panel's reliance on *SuperGuide* as a *per se* rule of claim construction. In *3rd Eye Surveillance LLC v. United States*, the Court of Federal Claims determined that the intrinsic record of the patent-in-suit did not support following *SuperGuide's* linguistic rule as a claim construction canon. *See* 140 Fed. Cl. 39, 60 (2018). Defendants' interpretation there "would require the system to get the image of flames or smoke before it could alert the appropriate responders. This limitation is not present from the context of the patent." *Id.* at 60. Likewise, the *Fujifilm* court emphasized that the purpose of the invention described in the patent at issue in *SuperGuide* required the inclusion of each item on the list. *Fujifilm* 2015 WL1265009, at *8.

In these and other similar cases, courts have declined to follow *SuperGuide* where the linguistic approach would conflict with the intrinsic record; this approach (i.e., declining to treat *SuperGuide* as canon law) is wholly consistent with the *Phillips-II* rationale described above in Section I.

Here, the panel's construction (which applies the *SuperGuide* linguistic analysis) requires *two* of a feature (a NLCDB) described *only* as a single component that may be "optionally included." [Appx168 at 15:19–22.] This requirement is unnecessarily restricting. And it is especially egregious given that there is *no disclosure* in the '689 Patent of any embodiment with more than one NLCDB. Thus, the panel construes the claims in a way that wholly ignores the intrinsic record, and in so doing allows its interpretation of the Scalia & Garner treatise to completely trump the intrinsic record.

1. <u>The Grammar of Claim 8 Mandates that the NLCDB is Optional</u>

The preamble of Claim 8 of the '689 Patent recites six discrete components, recited in collective nouns (e.g., communication circuitry), plural nouns (e.g., processors), and singular nouns (e.g., non-local calls database and memory). [Appx173 at 25:4-10.] For several of these components, requiring a "plurality" of those items makes no sense (e.g., the collective noun "circuitry"), is redundant (e.g. the plural noun processors), or is not supported by the '689 Patent (e.g., as uCloudlink's argument implicitly admits, the intrinsic record provides no written support for an apparatus with multiple "non-local calls database[s]"). Thus, from a grammatical perspective, a construction where two or more of the components in the list (be they singular, plural, or collective items) are required, makes the most sense

as compared to a construction where a plurality of *each component* in the list is required, per the panel's decision.

2. The NLCDB is Unrelated to Claim 8's Purpose

The '689 Patent indisputably relates to technology that enables a foreign device to operate as if it were local to a given cellular network rather than roam. [ADD3.] It is further undisputable that the limitations recited in the body of Claim 8 are limited to the functionality of certain programs on the device that achieve the goal of "providing a communication service to the wireless communication client or extension unit according to the established local [(i.e. not roaming)] wireless services " [Appx173 25:38-40.]

At least two components in the preamble, a NLCDB, and *stored* authentication data, are not necessary to achieve this goal. Nothing in the claim language explains what a NLCDB is or does. The specification, however, discloses what it is (a list of phone numbers for locations other than the location of the device), and what it is for (to enable the user to make phone calls to those other locations to appear as local to the recipient). [Appx168 at 15:57–16:2; Appx171 at 21:55-62.] These descriptions have nothing to do with the functionality of Claim 8, which both explains why NLCDB is not recited after the preamble and why it should not be found to be a limitation of the claim.

3. The Specification *Only* Supports Zero (i.e., *Optional*) or One NLCDBs

The specification *only* refers to the non-local calls database as an "optionally included" component of the wireless communication client or extension unit, and even then, it discloses only including one such component. [Appx168 at 15:19–22.] This optionality means that even applying *SuperGuide*, the rule articulated therein is not hard and fast. *See Iridescent Networks*, 2017 WL 3033400, at *6; *see also Inventio*, 2014 WL 129799, at *3 (overcoming the *SuperGuide* presumption because "every embodiment of the claim in the specification uses only one of [A] or [B], not both [A] and [B]").

The panel decision, however, construes Claim 8 to require *at least two* NLCDBs even though *every* embodiment discloses the inclusion of *a* NLCDB as optional. Moreover, the specification articulates, where appropriate, that more than one of an item (including more than one *database*) is possible. [*See e.g.* Appx163 at 6:27-27 ("one or more databases"); Appx163 at 7:24-28 ("one or more subscriber databases").] This shows that the description of embodiments containing either zero or one (but not more than one) NLCDB is intentional, and that the panel decisions attempt to revert to pre-*Phillips-II* law requires it to take a tortured, unsupported read of the specification.

4. The Panel's Construction Would Result in the Summary of the Invention Excluding Every Disclosed Embodiment.

The Summary of the Invention likewise provides context supporting a decision to refrain from applying *SuperGuide*. *Altera Corp.*, 2015 WL 4999952, at *4-5 (declining to apply *SuperGuide* because otherwise summary of the invention "would not describe a single invention claimed" and a conjunctive construction would "read a number of embodiments described in the patent specifications out of the asserted claims").

The Summary of the Invention of the '689 Patent referring to the wireless communication client or extension unit provides that "*the* disclosed embodiments also apply to a wireless communication client or extension unit comprising plurality of memory, processors, programs, communication circuitry, authentication data stored on a subscriber identification module (SIM) card and/or in memory and non-local calls database." [Appx162 at 3:25–30 (emphasis added).] The Summary contains no qualifying language that would exclude certain disclosed embodiments of the wireless device from this description. The panel's construction, however, reads out embodiments that have zero or one non-local calls database—embodiments that are explicitly disclosed in the specification—in favor of an embodiment that is nowhere to be found in the written description.

CONCLUSION

This Court should reverse the panel's decision, and find that the appealed claims do *not* require a NLCDB.

Respectfully submitted,

Dated: February 5, 2021

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CERTIFICATE OF COMPLIANCE

1. This petition for rehearing en banc complies with the type-volume limitation of Fed. R. App. P. 35(b)(2)(A) because it contains 3,814 words, excluding the parts of the petition exempted by Fed. Cir. R. 35(c) and 40(c).

2. This brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the typestyle requirements of Federal Rule of Appellate Procedure 32(a)(6) because it has been prepared in a proportionally spaced typeface using Microsoft Office Word in Times New Roman 14-point font.

Dated: February 5, 2021

By: /s/ *Benjamin E. Weed*
Benjamin E. Weed

Attorney for Plaintiff-Appellee
SIMO Holdings Inc.

United States Court of Appeals for the Federal Circuit

SIMO HOLDINGS INC.,
Plaintiff-Appellee

v.

HONG KONG UCLOUDLINK NETWORK TECHNOLOGY LIMITED, UCLOUDLINK (AMERICA), LTD.,
Defendants-Appellants

2019-2411

Appeal from the United States District Court for the Southern District of New York in No. 1:18-cv-05427-JSR, Judge Jed S. Rakoff.

Decided: January 5, 2021

BENJAMIN EDWARD WEED, GINA A. JOHNSON, K&L Gates LLP, Chicago, IL, argued for plaintiff-appellee. Also represented by PETER SOSKIN, San Francisco, CA; JEFFREY CHARLES JOHNSON, Seattle, WA.

JOHN A. DRAGSETH, Fish & Richardson PC, Minneapolis, MN, argued for defendants-appellants. Also represented by PHILLIP GOTER, JAMES HUGUENIN-LOVE; OLIVER RICHARDS, San Diego, CA; MICHAEL T. ZOPPO, New York,

NY; JONATHAN J. LAMBERSON, White & Case LLP, Palo Alto, CA.

Before O'MALLEY, WALLACH, and TARANTO, *Circuit Judges*.

TARANTO, *Circuit Judge*.

SIMO Holdings Inc. owns U.S. Patent No. 9,736,689, which describes apparatuses and methods that allow individuals to reduce roaming charges on cellular networks when traveling outside their home territory. SIMO sued Hong Kong uCloudlink Network Technology Limited and uCloudlink (America), Ltd. (collectively, uCloudlink) for infringement, alleging that four uCloudlink products came within claim 8 of the '689 patent (as well as dependent claims that present no separate issues on appeal). In cross-motions for summary judgment of infringement, the parties briefed whether claim 8 requires a "non-local calls database" and, if so, whether the accused products had such a database. The district court granted summary judgment to SIMO that uCloudlink was infringing (and denied uCloudlink's motion for summary judgment of noninfringement), concluding that claim 8 does not require such a database. The case went to trial, which, after post-trial proceedings, resulted in a final judgment of $8,230,654 for SIMO.

We reverse. We reject the district court's claim construction and hold that claim 8 requires two or more non-local calls databases. We also conclude that, in responding to uCloudlink's summary-judgment motion, SIMO did not identify a triable issue on the factual question of whether, as uCloudlink asserted, the accused products lack a non-local calls database. We therefore hold that uCloudlink is entitled to summary judgment of noninfringement.

I

A

The '689 patent deals with roaming charges on cellular networks. The patent describes a scenario in which an individual has a cellphone "with a wireless contract with" cellular-service provider "AT&T® in San Francisco" and, when in "London," uses the cellphone to "make[] a telephone call from a VODAPHONE® cellular telephone network in London." '689 patent, col. 5, lines 1–6. If the user lacks a cellular-service contract with Vodaphone, the user is likely to incur a "high roaming" fee (charged by Vodaphone to home-network provider AT&T and passed to the user). *Id.*, col. 5, lines 6–8.

The patent notes that one way the user can avoid the roaming charges involves replacing a physical component of the phone—specifically, replacing the subscriber identity module (SIM) card inside the phone that identifies the phone to an in-reach cellular network. The user can replace the home-network SIM card (an AT&T SIM card, in the above scenario) with a SIM card used for a "local" call on a cellular network in the user's present location (a Vodaphone card in London). *Id.*, col. 2, lines 46–51. According to the patent, however, "[p]urchasing and swapping-out SIM cards is inconvenient, inefficient, and technically challenging for most subscribers, especially when traveling to multiple foreign countries." *Id.*, col. 2, lines 51–54. To avoid those difficulties, the '689 patent proposes a different, electronic technique, not involving the swapping out of a SIM card, to have a present-location cellular provider with which the traveling user has no service agreement (Vodaphone, in London) treat the user's cellphone as a local device as if it had such an agreement, rather than as a "foreign" device. *Id.*, col. 6, lines 56–59 ("By 'foreign' it is meant that the wireless communication client 106 (or its SIM card) is not subscribed to the wireless communications network 102.").

Among other things, the '689 patent describes a "wireless communication client" and a "remote administration system." *Id.*, col. 3, lines 25–50. The client "stores at least a portion of authentication data 530 either on a SIM card and/or in memory 512 as authentication information 532." *Id.*, col. 14, lines 21–25. The remote administration system "authenticates" devices, "maintains subscriber accounts," "facilitates the rerouting of non-local calls to further provide reduced cost routing," and includes an authentication bank of a "plurality of physical identification modules (*e.g.*, SIM cards)." *Id.*, col. 7, lines 1–11; col. 10, line 65, through col. 11, line 2. SIMs generally "store network specific information used to authenticate and identify subscribers on the network." *Id.*, col. 11, lines 39–40. The SIMs in the authentication bank have the information needed for the wireless communication client to become authenticated (recognized as a local device) by a present-location (local) cellular network. *See*, *e.g.*, *id.*, col. 11, line 39, through col. 12, line 4.

Thus, in one embodiment, a wireless communication client uses authentication data already on a SIM card or stored in the client's memory to connect to a local cellular network, which connects the client to the remote administration system for the purpose of retrieving information that will enable the client thereafter to become authenticated as a local device by a local network (not necessarily the same local network). *Id.*, col. 17, line 36, through col. 18, line 14. Specifically, the remote administration system, after being connected with the client through the initial local-network connection, verifies the identity of the client and sends it a remote authentication module with SIM information from the authentication bank. *Id.* The client then uses the new SIM to become authenticated with a present-location cellular network on which the client works as a local device so that the user avoids further roaming charges. *Id.*

Some embodiments, of particular relevance on appeal, have an additional feature—a "non-local calls database" in the wireless communication client that helps "greatly reduc[e] the cost of [some] call[s]." *Id.*, col. 16, lines 5–6; fig. 5A. The specification describes how. "The non-local calls database 525 lists various locations, corresponding area codes, and corresponding local dial-in telephone numbers for use when the subscriber wants to make a non-local call when present at a particular location." *Id.*, col. 15, lines 57–61. "For example, when a user desires to make a non-local call when within a particular location (*e.g.*, a visiting caller in London wants to call his home office in San Francisco), the client 106 . . . is able to determine that the called number is not within the local area, and then dial a local communication server 128 (FIG. 1) at a local number from the list." *Id.*, col. 15, lines 61–67. The communication server "reroutes the call to the destination using the most suitable route," such as a Voice Over IP route, "thereby greatly reducing the cost of the call." *Id.*, col. 16, lines 1–6.

Claim 8 of the '689 patent, the only claim whose language is at issue on appeal, recites:

> A wireless communication client or extension unit comprising **a plurality of memory, processors, programs, communication circuitry, authentication data stored on a subscribed identify module (SIM) card and/or in memory and non-local calls database, at least one of the plurality of programs stored in the memory comprises instructions executable by at least one of the plurality of processors** for:
>
> > enabling an initial setting of the wireless communication client or the extension unit and a remote administration system;
> >
> > establishing a data communication link to transmit information among the wireless

communication client or the extension unit, and the remote administration system;

establishing a local authentication information request in response to a local authentication request by a local cellular communication network, wherein the local authentication information request comprises information regarding the local authentication request for local authentication information received by the foreign wireless communication client or the extension unit from the local cellular communication network, and wherein the data communication link is distinct from the local cellular communication network;

relaying the local authentication information request to the remote administration system via the data communication link and obtaining suitable local authentication information from the remote administration system via the data communication link;

establishing local wireless services provided by the local cellular communication network to the wireless communication client or the extension unit by sending the local authentication information obtained from the remote administration system to the local cellular communication network over signal link; and

providing a communication service to the wireless communication client or the extension unit according to the established local wireless services.

Id., col. 25, lines 4–40 (emphasis added).

B

In this case, SIMO has accused uCloudlink of infringing claim 8 through uCloudlink's sales and other actions involving four uCloudlink products: three GlocalMe WiFi hotspot devices (G2, G3, and U2 Series), and the S1 mobile phone.[1] The district court described how the accused products work. *See SIMO Holdings Inc. v. Hong Kong uCloudlink Network Technology Ltd.*, 376 F. Supp. 3d 369, 374–76 (S.D.N.Y. 2019) (*Summary Judgment Opinion*). There is no dispute over that description material to the issues we decide on appeal.

According to the district court's description, each product can act as a WiFi hotspot, wirelessly providing data to other devices. *Id.* at 375. Each device when sold has a SIM called a "seed" SIM. *Id.* With the seed SIM, none of which "are associated with cellular carriers operating in the United States," the device reaches out to a present-location cellular network, which connects the product to uCloudlink's back-end servers. *Id.* uCloudlink checks if the device is registered with it and, if so, sends the device a new virtual SIM (called a "Cloud" SIM) that is subscribed to a present-location (local) cellular network. *Id.* at 376. Then, the device sends certain identification information within the new Cloud SIM to the local cellular network. *Id.* After a series of exchanges, the client becomes authenticated with

[1] In the original complaint, filed in June 2018, SIMO alleged infringement of its U.S. Patent No. 8,116,735, which shares a specification with the '689 patent. In August 2018, SIMO amended its complaint to allege infringement of the '689 patent. In January 2019, SIMO voluntarily dismissed with prejudice its allegations based on the '735 patent.

the local cellular network, allowing access to the network without the user incurring roaming fees. *Id.*

uCloudlink does not sell only the accused devices. It also sells users of those devices data plans, which provide specified amounts of cellular data transmission with the device for the fee paid. For example, a user can buy a "Day-pass" allowing use of up to 500 megabytes of data within a 24-hour period. *See* J.A. 14934, 15026, 15028.

C

In March 2019, the parties cross-moved for summary judgment on infringement (among other issues). In April 2019, the district court granted SIMO summary judgment of infringement and denied uCloudlink summary judgment of noninfringement. *Summary Judgment Opinion*, 376 F. Supp. 3d at 378–88.

Necessary to the court's infringement analysis was a construction of claim 8—in particular, a construction of language that the court and parties treated as part of the preamble (the full first paragraph quoted above). The district court proceeded in two steps. It first determined that the preamble is limiting, *i.e.*, what the preamble requires must be present for an apparatus to come within the claim. The court relied on the fact that in claim 8, the preamble is the only part that identifies the physical components of the apparatus. *Id.* at 380. Specifically: "The body of the claim provides no information whatsoever about the structure of the invention; the body simply describes the actions taken by the invention. It is the preamble that supplies the necessary structure." *Id.*

The district court next addressed what the preamble requires—in particular, whether the preamble requires, for a device to come within the claim, that the device have the "non-local calls database" listed in the preamble. The court concluded that a "non-local calls database" is not actually required, siding with SIMO, despite recognizing that "[a]s

a matter of grammar and ordinary usage," uCloudlink's "argument ha[d] much to commend it." *Id.* at 381. The district court crucially relied on its understanding of statements in this court's decision in *Oatey Co. v. IPS Corp.* that we "normally do not interpret claim terms in a way that excludes embodiments disclosed in the specification" and that "[a]t leas[t] where claims can reasonably [be] interpreted to include a specific embodiment, it is incorrect to construe the claims to exclude that embodiment, absent probative evidence [to] the contrary." 514 F.3d 1271, 1276–77 (Fed. Cir. 2008). *See Summary Judgment Opinion*, 376 F. Supp. 3d at 381. The district court reasoned that, because "the specification indisputably states that the non-local calls database is optional," uCloudlink's construction requiring a non-local calls database, "although grammatically appealing, would contradict the specification." *Id.* at 381. That result would be avoided, the court held, by what it deemed "a reasonable alternative interpretation"—namely, "to treat 'and' in the preamble as though it read 'and/or.'" *Id.* With that substitution, the district court held "that the list of components in the plurality should be read disjunctively, such that not all of the components listed are required to practice claim 8." *Id.* at 382.

Following the claim-construction analysis, the district court determined that the accused products met all of claim 8's limitations. *Id.* at 382–88. For example, claim 8 requires that "the data communication link is distinct from the local cellular communication network." The district court explained that "to meet this limitation, it must be the case that the local cellular network used by the seed SIM is different from the local cellular network used by the Cloud SIM." *Id.* at 385.[2] As the court determined, the

[2] The district court also ruled that the accused devices infringed claim 11, which depends on claim 8. *Summary Judgment Opinion*, 376 F. Supp. 3d at 388. No

products "will sometimes, but not always" meet this limitation. *Id.* Because the accused products met every limitation of claim 8, the district court granted SIMO summary judgment of infringement and denied uCloudlink's motion for summary judgment of noninfringement. *Id.* at 388.

D

The case proceeded to trial on validity (two anticipation challenges), willfulness by uCloudlink, and damages. The jury found "[a]t least one Asserted Claim not invalid," awarded $2,183,562.40, and found the infringement willful. J.A. 12002. The district court later enhanced the damages by 30% (an addition of $655,069). *SIMO Holdings Inc. v. Hong Kong uCloudlink Network Technology Ltd.*, No. 18-cv-5427, 2019 WL 2656316, at *1 (S.D.N.Y. June 3, 2019). The court then amended the judgment to include pre-judgment interest, additional damages keyed to U.S. data use with U.S.-sold products before and after the verdict, and also additional damages keyed to foreign data use with such products. J.A. 2. The total judgment was $8,230,654. J.A. 2–3.

On August 28, 2019, the district court granted SIMO's motion for a permanent injunction and enjoined uCloudlink "beginning September 1, 2019, from selling, offering to sell, importing, or enabling the use of the Infringing Devices in the United States." *SIMO Holdings Inc. v. Hong Kong uCloudlink Network Technology Ltd.*, 396 F. Supp. 3d 323, 353 (S.D.N.Y. 2019). On December 9, 2019, the district court lifted the permanent injunction, concluding that uCloudlink had redesigned its devices so that they no longer met "the data communication link is distinct from the local cellular communication network" limitation. *SIMO Holdings Inc. v. Hong Kong uCloudlink Network*

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separate issue is presented on appeal regarding that claim or other dependent claims asserted by SIMO.

Technology Ltd., No. 18-cv-5427, 2019 WL 7816487, at *2 (S.D.N.Y. Dec. 11, 2019); *see also SIMO Holdings Inc. v. Hong Kong uCloudlink Network Technology Ltd.*, No. 18-cv-5427, 2020 WL 498200 (S.D.N.Y. Jan. 22, 2020) (denying reconsideration). Before the redesign, the cellular network the devices used to retrieve the Cloud SIM was sometimes different from the cellular network the devices used with the Cloud SIM (as claim 8 requires), but the redesign ensures that the networks are always the same, removing the redesigned devices from coverage by claim 8. *SIMO*, 2019 WL 7816487, at *1–2.

uCloudlink timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II

uCloudlink challenges several aspects of the judgment on appeal—the infringement determination, the willfulness determination, and aspects of the damages award. We need address only the proper construction of claim 8's phrase that includes reference to a "non-local calls database" and whether a remand is necessary.

A

Claim construction is a matter of law, with the district court's construction reviewed de novo, when, as in this case, the issue is resolved based on only intrinsic evidence, not on factual bases such as extra-patent usage of technical terms. *See Arctic Cat Inc. v. GEP Power Prods., Inc.*, 919 F.3d 1320, 1327 (Fed. Cir. 2019). In such a case, "[w]e generally give words of a claim their ordinary meaning in the context of the claim and the whole patent document; the specification particularly, but also the prosecution history, informs the determination of claim meaning in context, including by resolving ambiguities; and even if the meaning is plain on the face of the claim language, the patentee can, by acting with sufficient clarity, disclaim such a plain meaning or prescribe a special definition." *World Class*

Technology Corp. v. Ormco Corp., 769 F.3d 1120, 1123 (Fed. Cir. 2014). Whether preamble language is limiting is a claim-construction issue. *See Cochlear Bone Anchored Solutions AB v. Oticon Med. AB*, 958 F.3d 1348, 1354 (Fed. Cir. 2020).

1

Claim 8 begins:

> A wireless communication client or extension unit comprising a plurality of memory, processors, programs, communication circuitry, authentication data stored on a subscribed identify module (SIM) card and/or in memory and non-local calls database, at least one of the plurality of programs stored in the memory comprises instructions executable by at least one of the plurality of processors for: . . . .

'689 patent, col. 25, lines 4–10. We agree with the district court that this language is limiting in the sense that infringement of the claim requires that the accused device satisfy the language (literally or under the doctrine of equivalents). Specifically, we hold that the phrase "a plurality of memory, processors, programs, communication circuitry, authentication data stored on a subscribed identify module (SIM) card and/or in memory and non-local calls database, at least one of the plurality of programs stored in the memory comprises instructions executable by at least one of the plurality of processors" is limiting.

The language at issue follows, rather than precedes, the word "comprising," which is one of the transition words that typically mark the end of the preamble, with what follows constituting the body of the claim. *See*, *e.g.*, *CIAS, Inc. v. Alliance Gaming Corp.*, 504 F.3d 1356, 1360 (Fed. Cir. 2007); *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1371 (Fed. Cir. 2005). The placement of the language therefore suggests that it is part of the body of the claim, a

characterization that, if accepted, would place its limiting character beyond dispute. The parties, however, have treated the language at issue as part of the preamble, treating only the succeeding six paragraphs as the body of the claim. But even under that characterization, we conclude, the language at issue is limiting.

Claim 8 is not a method claim but an apparatus claim. Its subject matter is a "wireless communications client or extension unit." As the district court pointed out, the "preamble" contains the only language in the claim that identifies physical components of the claimed physical device—beginning with "a plurality of memory, processors, programs, communication circuitry, authentication data stored on a subscribed identify module (SIM) card and/or in memory and non-local calls database." "The body of the claim provides no information whatsoever about the structure of the invention; the body simply describes the actions taken by the invention. It is the preamble that supplies the necessary structure." *Summary Judgment Opinion*, 376 F. Supp. 3d at 381.

SIMO cites no authority holding a preamble not limiting in this situation, where the body identifies nothing but functional properties of the claimed apparatus. Our precedent explains why the preamble in this situation is limiting. In supplying the only structure for the claimed apparatus, the preamble language supplies "essential structure," and the body does not define "a structurally complete invention"—which are two key reasons for preamble language to be deemed limiting. *Catalina Marketing Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808, 809 (Fed. Cir. 2002) (internal quotation marks omitted). In addition, the opening language of the preamble—"a wireless communication client or extension unit"—provides an antecedent basis for terms in the body of the claim—"*the* wireless communication client or *the* extension unit," in the claim's first and last phrase, '689 patent, col. 25, lines 11–13, 38–40 (emphasis added). "We have repeatedly held a

preamble limiting when it serves as antecedent basis for a term appearing in the body of a claim." *In re Fought*, 941 F.3d 1175, 1178 (Fed. Cir. 2019); *see also*, *e.g.*, *Bio-Rad Labs., Inc. v. 10X Genomics Inc.*, 967 F.3d 1353, 1371 (Fed. Cir. 2020) (body's reliance on preamble for antecedent basis "is a strong indication that the preamble acts as a necessary component of the claimed invention" (internal quotation marks omitted)).

SIMO concedes that part of the preamble is limiting but argues that some components in the group of listed structures, including the non-local calls database, should not be deemed limiting, because they are "unnecessary to perform the" functions specified after the preamble. SIMO Response Br. at 24. We decline to parse the preamble in that way where, as here, the preamble supplies the only structure of the claimed device and the disputed language does not merely identify an intended use or functional property but is "intertwined with the rest of the preamble," *Bio-Rad*, 967 F.3d at 1371, and supplies structure noted in the specification as among the inventive advances. In the circumstances present here, which are unlike those of the cases to which SIMO points for its parsing suggestion, the listed structural requirements must be understood as part of the claimed invention.[3]

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[3] *See*, *e.g.*, *Arctic Cat*, 919 F.3d at 1329–30 (preamble term of generic non-inventive structure, with body defining inventive structure); *Georgetown Rail Equip. Co. v. Holland L.P.*, 867 F.3d 1229, 1236 (Fed. Cir. 2017) (preamble phrase referring to intended use; also citing a reference in *Catalina*, 289 F.3d at 809, to cases involving language about merely functional properties); *TomTom, Inc. v. Adolph*, 790 F.3d 1315, 1323 (Fed. Cir. 2015) (intended use); *see also Cochlear*, 958 F.3d at 1354–55 (preamble statement of intended use).

2

As to what those requirements are, we reject the district court's conclusion that claim 8 does not require a "non-local calls database." The determinative claim-construction issue is the role of "a plurality of" in the phrase, "a plurality of memory, processors, programs, communication circuitry, authentication data stored on a subscribed identify module (SIM) card and/or in memory and non-local calls database." The district court, treating the word "and" near the end of the phrase as meaning "and/or," concluded that "a plurality of" requires only "at least two" members selected from the entire list of identified items (memory, processors, etc.). We disagree. We conclude, along with uCloudlink, that "a plurality of" requires at least two of *each* of the listed items in the phrase at issue in claim 8.

We proceed in two steps. We first conclude, as a textual matter, that the most important features of the claim language point decisively against the district court's conclusion. We then conclude that no other claim-construction consideration overcomes the interpretive implication of the claim's text.

a

In *SuperGuide Corporation v. DirecTV Enterprises, Inc.*, 358 F.3d 870 (Fed. Cir. 2004), we recognized that, as a matter of ordinary and customary meaning, a phrase grammatically comparable to "a plurality of" at the start of a list of items joined together by "and" applied to each item in the list, not to the list considered as a whole. The phrase in *SuperGuide* was "at least one of"—followed by "a desired program start time, a desired program end time, a desired program service, *and* a desired program type." *Id.* at 884 (emphasis added). The court, after noting that "at least one" means "one or more," concluded that the use of "and" in the list meant that there had to be one or more of *each* item. *Id.* at 886. The court explained that, because the list uses "and" rather than "or," the phrase is properly

understood as if "of" or "at least one of" appears before each item, *i.e.*, to require at least one of a desired program start time, at least one of a desired program end time, at least one of a desired program service, and at least one of a desired program type. *Id.* (relying on William Strunk, Jr. & E.B. White, *The Elements of Style* 27 (4th ed. 2000) ("an article of a preposition applying to all the members of the series must either be used only before the first term or else be repeated before each term")); *see also Joao v. Sleepy Hollow Bank*, 348 F. Supp. 2d 120, 124 (S.D.N.Y. 2004) (making the same point about the grammatical rule for "at least one of").[4]

Our holding in *SuperGuide* reflects a more general grammatical principle applicable to a modifier coming before a series. "When there is a straightforward, parallel construction that involves all nouns or verbs in a series, a prepositive or postpositive modifier normally applies to the entire series." Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts* § 19, 147 (2012). As *SuperGuide* makes clear, the principle has particular force when the term joining the items in a series is "and."

The *SuperGuide* principle applies to "a plurality of" in claim 8. The phrase "a plurality of" means "at least two of." *See August Technology Corp. v. Camtek, Ltd.*, 655 F.3d 1278, 1286 (Fed. Cir. 2011) ("A plurality of wafers means

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[4] The district court relied on *Joao* when deciding to disregard its grammatical concerns with the construction it adopted. *Summary Judgment Opinion*, 376 F. Supp. 3d at 381. But, while the district court here concluded that ignoring otherwise-governing grammatical principles allowed for a claim construction that better reflected everything in the specification, it did not conclude—in contrast to the court in *Joao*, 348 F. Supp. 2d at 124—that applying those grammatical principles would produce a nonsensical claim construction.

more than one physically distinct wafer."); *ResQNet.com, Inc. v. Lansa, Inc.*, 346 F.3d 1374, 1382 (Fed. Cir. 2003) ("plurality" means "at least two"). If "at least one of" requires one or more of each item in a conjunctive list, "a plurality of" requires two or more of each item in a conjunctive list—such as claim 8's list joined by "and."

Although context can affect the force of the more general form of the grammatical canon, *see* Scalia & Garner, *Reading Law* § 19, at 150, here context cements the canon's applicability in its particular *SuperGuide* form. Two aspects of the context have that effect.

First, there is no article preceding "non-local calls database." If the series modifier did not apply to all members of the group, a relevant artisan would expect an "a" before "non-local calls database" (and perhaps "memory").[5] That is because "[t]he typical way in which syntax would suggest no carryover modification is that a determiner (*a*, *the*, *some*, etc.) will be repeated before" one of the items in the list. Scalia & Garner, *Reading Law* § 19, at 148. There is no such article negating the applicability of "a plurality of" to each list item.

Second, and what in our view is decisive, the words that come immediately after the list make clear that the "a plurality of" phrase applies to the individual items in the list, just as the *SuperGuide* canon indicates. Thus, after "non-local calls database," claim 8 continues: "at least one of *the plurality of* programs stored in the memory comprises instructions executable by at least one of *the plurality of* processors for: . . . ." '689 patent, col. 25, lines 8–10 (emphases added). The expression "*the* plurality," used in the two highlighted phrases, means that, in the preceding

[5] The patent's specification uses "a memory" four times. '689 patent, col. 7, lines 36–37; col. 8, line 59; col. 12, line 45; col. 14, line 15.

phrase requiring "a plurality of" memory, processors, programs, circuitry, certain data, and non-local calls database, there already is required a plurality of programs and a plurality of processors. The phrase "the plurality of" establishes that the earlier "a plurality of" does apply individually to at least some items in the list that follow "a plurality of," as the canon indicates. SIMO has suggested no grammatical basis for reading a phrase like "a plurality of" to apply to some but not other items in the list.

To be sure, the mix of plural, singular, and mixed-use forms of words in the list following "a plurality of" ("memory," "processors," "programs," "circuitry," "data," "database") leaves the phrase "a bit of a mess grammatically." *Summary Judgment Opinion*, 376 F. Supp. 3d at 382; *see also id.* at 380 ("[T]he preamble is not a model of grammatical correctness."). But given the collective character of the singular-form words, the extent of the divergence from standard American English, at least as used in patents, is not entirely clear.[6] In any event, such irregularities would exist "no matter what reading is assigned to" the preamble. *Id.* at 382. The textual sloppiness—which SIMO had the obligation as the patent drafter to avoid—provides no significant textual counterweight to what we conclude are the decisive textual considerations already discussed that favor uCloudlink's narrower reading of "a plurality of" as applying to each item in the list following that phrase.

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[6] For example, some patents use "a plurality of circuitry." U.S. Patent No. 7,378,902, claim 20; U.S. Patent No. 9,609,190, col. 21, line 66, through col. 22, line 1; *see also* U.S. Patent No. 7,969,284, claim 10 ("a plurality of communication circuitry").

b

The district court's contrary conclusion hinged, not on anything about claim 8's text, but on its view of this court's statement in *Oatey* about the role of the specification and, relatedly, its view that uCloudlink's reading "would contradict the specification." *Id.* at 381. We reject these rationales.

In *Oatey*, after we stated that "[w]e normally do not interpret claim terms in a way that excludes embodiments disclosed in the specification," we explained the important qualifiers: "At leas[t] where claims can *reasonably* [be] interpreted to include a specific embodiment, it is incorrect to construe the claims to exclude that embodiment, *absent probative evidence [to] the contrary*." 514 F.3d at 1276, 1277 (emphases added). *Oatey* itself thus recognizes that we should not infer that any particular embodiment is included in a claim when there is probative evidence that sufficiently indicates the contrary.

Beginning shortly after *Oatey* was decided, we have repeatedly reiterated that very caution. *See*, *e.g.*, *PSN Illinois, LLC v. Ivoclar Vivadent, Inc.*, 525 F.3d 1159, 1166 (Fed. Cir. 2008) (explaining that *Oatey* is not even "applicable" where a contrary construction covers a preferred embodiment and, in any event, that *"Oatey* is not a panacea, requiring all claims to cover all embodiments. Instead, courts must recognize that disclosed embodiments may be within the scope of other allowed but unasserted claims."); *PPC Broadband, Inc. v. Corning Optical Communications RF, LLC*, 815 F.3d 747, 755 (Fed. Cir. 2016) (rejecting the proposition that "each and every claim ought to be interpreted to cover each and every embodiment"); *Baran v. Med. Device Technologies, Inc.,* 616 F.3d 1309, 1316 (Fed. Cir. 2010) ("It is not necessary that each claim read on every embodiment."); *TIP Systems, LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1373 (Fed. Cir. 2008) ("Our precedent is replete with examples of subject matter

that is included in the specification, but is not claimed.”). Specifically, and most importantly for this case, we have repeatedly explained that “[a]lthough reluctant to exclude an embodiment, this court must not allow the disclosed embodiment to ‘outweigh the language of the claim, especially when the court’s construction is supported by the intrinsic evidence.’” *Rolls-Royce, PLC v. United Technologies Corp.*, 603 F.3d 1325, 1334 (Fed. Cir. 2010); *see also August Technology*, 655 F.3d at 1285 (“The mere fact that there is an alternative embodiment disclosed in the asserted patent that is not encompassed by our claim construction does not outweigh the language of the claim, especially when the court’s construction is supported by the intrinsic evidence.” (cleaned up)); *TIP Systems*, 529 F.3d at 1373 (same).

In this case, the language of the claim itself makes clear that, contrary to SIMO’s contention, claim 8 does not cover specification embodiments that lack a non-local calls database. For the grammatical reasons we have discussed, the text points decisively against such coverage. In this respect, *Oatey* was materially different.

This case does not present the issue of a construction that would exclude a *preferred* embodiment from a claim. That consequence affects the “careful weighing of the strengths of competing implicatures” that is required for language interpretation generally. Geoffrey P. Miller, *Pragmatics and the Maxims of Interpretation*, 1990 Wis. L. Rev. 1179, 1220 (1990). Our case law generally reflects the understanding that there is a stronger, though still not absolute, implication that a claim will cover preferred embodiments. *See*, *e.g.*, *Pacing Technologies, LLC v. Garmin Int’l, Inc.*, 778 F.3d 1021, 1026 (Fed. Cir. 2015); *GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1311 (Fed. Cir. 2014); *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1333 (Fed. Cir. 2007). But that notion is inapplicable in this case. The ’689 patent’s specification does not designate any particular embodiment as preferred. Simply stating that a “non-local calls database” is optional

does not mean that the embodiment without the database is preferred. And the specification's two uses of "preferred" have nothing to do with a hierarchy among embodiments. *See* '689 patent, col. 13, lines 58–62 ("The best routes database 422 lists the preferred routing details for connections between different geographic locations, such as between San Francisco and London, between San Francisco and Perth, and so on."); *id.*, fig. 5A ("Preferred PLMNs").

Nor does this case involve a situation in which adopting a narrow construction of the claim at issue leaves other disclosed embodiments entirely unclaimed—though we have hardly treated such a consequence, even when it exists, as overcoming strong textual indicators of a particular claim's narrow meaning. We have noted that "[i]t is often the case that different claims are directed to and cover different disclosed embodiments. The patentee chooses the language and accordingly the scope of his claims." *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1383 (Fed. Cir. 2008); *see also Nobel Biocare Servs. AG v. Instradent USA, Inc.*, 903 F.3d 1365, 1381 (Fed. Cir. 2018) (same); *PSN*, 525 F.3d at 1166 ("courts must recognize that disclosed embodiments may be within the scope of other allowed but unasserted claims"). Here, claims other than claim 8—*e.g.*, claim 19 (a method claim) and claims 1 and 16 (apparatus claims)—address embodiments that lack a non-local calls database.

For the foregoing reasons, uCloudlink's construction of claim 8 would not "contradict the specification." *Summary Judgment Opinion*, 376 F. Supp. 3d at 381. It simply leaves out some alternative embodiments of what SIMO's specification describes as inventive, while capturing one embodiment expressly described. *See* '689 patent, col. 3, lines 25–30; col. 15, lines 19–21; col. 15, line 56, through col. 16, line 6; *see also id.*, figs. 5A & 5B. Even requiring a plurality of non-local calls databases does not contradict the specification. The reference to "a non-local calls database" would ordinarily be understood to encompass one or

more such databases. *See SanDisk Corp. v. Kingston Technology Co., Inc.*, 695 F.3d 1348, 1360–61 (Fed. Cir. 2012) (general rule is that "a" means one or more, unless context limits the meaning to just one); *Baldwin Graphic Systems, Inc. v. Siebert, Inc.*, 512 F.3d 1338, 1342–43 (Fed. Cir. 2008) (same). And, notably, in its brief in this court, SIMO has made no showing, or even a developed argument, that having more than one non-local calls database would be "utter nonsense," *Joao*, 348 F. Supp. 2d at 124.

In sum, we conclude, contrary to the district court's conclusion, that "a plurality of memory, processors, programs, communication circuitry, authentication data stored on a subscribed identify module (SIM) card and/or in memory and non-local calls database" requires "a plurality of" each component in the list, including "non-local calls database." The district court's grant of summary judgment to SIMO based on its claim construction must be reversed.

B

Having concluded that claim 8 requires a plurality of non-local calls databases in the claimed device, we also conclude that no remand is warranted and that uCloudlink is entitled to a judgment of noninfringement. In its motion for summary judgment of noninfringement, uCloudlink expressly argued that, under its proposed claim construction (which we have adopted), the accused devices contain no non-local calls database. SIMO had a full opportunity to respond to that contention. But in responding to uCloudlink's motion, SIMO did not point to evidence that created a triable issue of fact on the presence in the accused products of even a single "non-local calls database," let alone more than one; nor has it done so on appeal in responding to uCloudlink's renewal of its argument for a judgment of noninfringement. We therefore hold that reversal of the

denial of uCloudlink's motion for summary judgment of noninfringement is warranted.[7]

We review the district court's denial of summary judgment de novo, following Second Circuit law on that general procedural matter. *Sprint PCS L.P. v. Connecticut Siting Council*, 222 F.3d 113, 115 (2d Cir. 2000); *Schaefer v. State Ins. Fund*, 207 F.3d 139, 142 (2d Cir. 2000). We apply our own law on patent-specific issues. *See*, *e.g.*, *In re ZTE (USA) Inc.*, 890 F.3d 1008, 1012 (Fed. Cir. 2018). "Infringement is a question of fact." *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1040 (Fed. Cir. 2016). "To prove literal infringement, the patentee must show that the accused device contains *each and every limitation* of the asserted claims." *Ericsson, Inc. v. D-Link Systems, Inc.*, 773 F.3d 1201, 1215 (Fed. Cir. 2014). For infringement, SIMO as the patentee has the burden of persuasion. *Medtronic, Inc. v. Mirowski Family Ventures, LLC*, 571 U.S. 191, 198–99 (2014). "[A] party may not avoid summary judgment simply by offering an opinion of an expert that states, in effect, that the critical claim limitation is found in the accused device." *Arthur A. Collins, Inc. v. N. Telecom Ltd.*, 216 F.3d 1042, 1047 (Fed. Cir. 2000). Rather, "[t]o satisfy the summary judgment standard, a patentee's expert must set forth the factual foundation for his infringement opinion in sufficient detail for the court to be certain that features of the accused product would support a finding of infringement . . . with all reasonable inferences drawn in favor of the non-movant." *Intellectual Sci. & Technology, Inc. v. Sony Elecs., Inc.*, 589 F.3d 1179, 1183 (Fed. Cir. 2009).

SIMO did not meet that standard for creating a triable issue on whether any accused product has even a single non-local calls database. In its response to uCloudlink's

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[7] SIMO has made no separate argument for infringement under the doctrine of equivalents.

motion, SIMO devoted one page to the issue, relying on a single exchange from the deposition of its infringement expert:

> Q. Do the – does the G2 have a non-local calls database?
>
> A. Again, it depends on how you construe that term. A database, in my experience, is generally construed by courts to be a structured store of data or any structured store of data, and the 3GPP [3rd Generation Partnership Project] certainly tells the device whether it's a – initiating a local or non-local call, and that's stored in memory. So you could make the argument that there's a non-local or local flag on that.

J.A. 5752; *see also* J.A. 5681, ¶ 108; J.A. 9444, Dep. Tr. 107. SIMO's sole support refers to just one of the four accused products (the G2 product) and, even as to that, lacks a simple declarative statement that the product has a non-local calls database. The expert instead said, "it depends on how you construe that term" and, based on his "experience," "you could make the argument that" the product has a "non-local calls database." *Id.*

That was SIMO's entire response in the district court to uCloudlink's motion for summary judgment of noninfringement if uCloudlink's proposed claim construction were adopted. In this court, after uCloudlink again argued that, under its proposed claim construction, it was entitled to a judgment of noninfringement, uCloudlink Opening Br. at 34, SIMO's response was similarly limited. In a single paragraph, it pointed only to the above exchange, along with a remark at trial by the district court, in another context, noting SIMO's expert report did not actually include an opinion about whether the accused products had a non-local calls database. SIMO Response Br. at 34 (citing above passage and J.A. 14910, Trial Tr. 7). Solely on that basis,

SIMO argues for a remand if we were to adopt uCloudlink's claim construction, as we do.

SIMO's limited response on the point is not enough to justify a remand or to create a triable issue of fact on whether the G2 product, or any of the other three accused products, has even one non-local calls database. SIMO made no request to the district court for further claim construction, for further discovery, or for supplementation of its expert's report, even though the issue of whether the accused products have a non-local calls database was squarely presented by uCloudlink's motion. Without such requests, the expert's statement provides no basis "for the court to be certain that features of the accused product would support a finding of infringement" if the infringement issue was tried under the uCloudlink-urged claim construction. *Intellectual Sci. & Technology*, 589 F.3d at 1183.

III

The judgment of the district court is reversed. Judgment of noninfringement shall be entered for uCloudlink.

Each party shall bear its own costs.

REVERSED

CERTIFICATE OF SERVICE

I hereby certify that on February 5, 2021, a true and correct copy of the foregoing PLAINTIFF – APPELLEE SIMO HOLDINGS INC.'S CORRECTED COMBINED PETITION FOR PANEL REHEARING OR REHEARING *EN BANC* was electronically filed and served through the Court's ECF system and via electronic mail to all counsel of record in this case.

Dated: February 5, 2021

By: /s/ *Benjamin E. Weed*
Benjamin E. Weed