

NOTE: This disposition is nonprecedential.

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

IRONWORKS PATENTS LLC,
Plaintiff-Appellant

v.

**SAMSUNG ELECTRONICS CO., LTD., SAMSUNG
ELECTRONICS AMERICA, INC.,**
Defendants-Appellees

2020-1191

Appeal from the United States District Court for the
Northern District of California in No. 4:17-cv-01958-HSG,
Judge Haywood S. Gilliam, Jr.

Decided: February 21, 2020

ALISON AUBREY RICHARDS, Global IP Law Group, Chi-
cago, IL, argued for plaintiff-appellant. Also represented
by DAVID P. BERTEN, C. GRAHAM GERST, HANNAH L.
SADLER.

ALLAN SOOBERT, Paul Hastings LLP, Washington, DC,
argued for defendants-appellees. Also represented by
STEPHEN BLAKE KINNAIRD; ELIZABETH BRANN, San Diego,
CA.

Before LOURIE, DYK, and MOORE, *Circuit Judges*.

MOORE, *Circuit Judge*.

MobileMedia Ideas, LLC sued Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, Samsung), alleging infringement of the claims of U.S. Patent No. 6,427,078 and U.S. Patent No. 5,915,239.¹ In March 2017, MobileMedia assigned the patents-in-suit to Ironworks, which was then substituted as plaintiff in July 2017. In October 2018, the district court issued a claim construction order, construing claim terms of both the '078 patent and '239 patent. Following the claim construction order, the parties stipulated to noninfringement of the claims of the '078 patent and to noninfringement and invalidity of the claims of the '239 patent. The district court entered judgment based on its claim construction order and the parties' stipulation. Ironworks appeals the

¹ MobileMedia also asserted infringement of the claims of U.S. Patent No. 5,553,125. Samsung filed counterclaims alleging noninfringement and invalidity of the asserted claims of the '125 patent. The district court dismissed with prejudice the claim of infringement of the asserted claims of the '125 patent. Order Granting Motion to Dismiss Claim Regarding '125 Patent, *Ironworks Patents LLC v. Samsung Electronics Co., Ltd., et al.*, No. 4:17-cv-01958-HSG (N.D. Cal. Nov. 16, 2017), ECF No. 140. It later dismissed without prejudice Samsung's counterclaims of noninfringement and invalidity of the asserted claims of the '125 patent. Order of Final Decision, *Ironworks Patents LLC v. Samsung Electronics Co., Ltd., et al.*, No. 4:17-cv-01958-HSG (N.D. Cal. Nov. 22, 2019), ECF No. 178. The district court also dismissed without prejudice Samsung's counterclaim for invalidity of the asserted claims of the '078 patent. *Id.*

district court's judgment, arguing that the district court's claim constructions were erroneous. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

For the reasons discussed below, we *vacate* and *remand* the district court's judgment of noninfringement of the asserted claims of the '078 patent because the district court erred in its construction of the term "camera unit." We also *vacate* and *remand* the judgment of invalidity of the asserted claims of the '239 patent because the district court erred in its construction of the term "means for interpreting the received voice commands." Finally, we *affirm* the judgment of noninfringement of the asserted claims of the '239 patent because the district court did not err in its construction of the term "means for storing the sub-identifiers."

I. THE '078 PATENT

Ironworks asserted infringement of claims 1–3, 6, 18, 36, 38, 42, 46, 73, and 77 of the '078 patent. All three asserted independent claims—claims 1, 36, and 73—require a "camera unit." The district court construed "camera unit" as "camera arrangement comprising a camera, optics, microprocessor and memory, battery, and interface to external systems constituting an individual component of a whole personal communication device or whole portable mobile cellular phone." J.A. 40. Based on the district court's construction of "camera unit," the parties stipulated to noninfringement of the asserted claims of the '078 patent. The district court entered final judgment of noninfringement of those claims. Ironworks appeals from that decision, arguing that the district court erroneously construed the term "camera unit."

We review a district court's claim construction *de novo* except for underlying fact findings related to extrinsic evidence, which we review for clear error. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 835 (2015). "The words of a claim are generally given their ordinary and customary

meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history.” *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). We hold that the district court erred in its construction of “camera unit.”

The ’078 patent is directed to a device for personal communication, data collection and data processing. ’078 patent at 1:10–12. The device is a “small-sized, portable and hand-held work station,” such as a notebook computer, that includes a data processing unit, a display, a user interface, at least one memory unit, a power source, and application software. ’078 patent at Abstract; *see also id.* at 1:12–17. In some embodiments, the device also includes a camera unit, which may be placed into the housing of the device or fitted on a PCMCIA card, e.g., an insertable camera card. *Id.*

The three independent claims in which the term “camera unit” appears differ in the elements the “camera unit” comprises. Claim 1 recites:

1. A portable cellular mobile phone for personal communication, data collection and data processing, which is a small-sized, portable and hand-held work station including a housing and comprising
 - a data processing unit comprising a microprocessor,
 - a display,
 - a user interface,
 - a number of peripheral device interfaces,
 - at least one memory unit;
 - a power source, and
 - application software,

wherein the device also comprises:

a *camera unit* for obtaining and outputting image information comprising:

a camera for receiving image information;

optics connected to said camera for passing said image information to the camera;

means for processing and for storing at least a portion of said image information obtained by said camera unit for later recall and processing;

at least one memory unit for storing said image information; and

an output coupled to said data processing unit for outputting image information from said memory unit to the processing unit; and

wherein at least a portion of said camera unit is located within said housing, and said data processing unit processes image information output by said camera unit,

wherein said display presents image information obtained by said camera unit, and

wherein said device further comprises means for transmitting image information processed by said processing unit to another location using a radio frequency channel.

(emphasis added). Claim 36 recites:

36. A portable notebook computer having a housing, comprising:

a *camera unit* for recording an image of a selected object, and having at least one memory unit for storing an image recorded by said camera unit;

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means, coupled to said camera unit, for processing an image recorded by said camera unit, and

means for transmitting an image processed by said processing means to another location using a radio frequency channel;

wherein at least a portion of said camera unit is integrated in one of said housing of said notebook computer and a circuit card.

(emphasis added). Claim 73 recites:

73. A portable cellular mobile phone comprising:

a built in *camera unit* for obtaining image information;

a user interface for enabling a user to input signals to operate the camera unit;

a display for presenting image information obtained by the camera unit;

a microprocessor adapted to control the operations of the camera unit in response to input signals from the user interface, and to process image information received by the camera unit; and

means, coupled to said microprocessor, for transmitting image information processed by said microprocessor to another location using a radio frequency channel;

and wherein the camera unit comprises:

optics for obtaining image information;

an image sensor for obtaining image information; and

means for processing and for storing at least a portion of the image information obtained by the camera unit for later recall and processing.

(emphasis added).

We hold that the proper construction of “camera unit” requires that the camera unit include a “camera, optics, and an image processing unit.” Each of the asserted independent claims recites a camera unit, but each describes the camera unit differently. For example, claim 1 describes that a camera unit comprises a camera, optics, means for processing and for storing, at least one memory unit, and an output. Claim 36 describes a camera unit as “having at least one memory unit.” And claim 73 describes that the camera unit comprises optics, an image sensor, and means for processing and storing. Because the claims recite differing components of a camera unit, we turn to the specification for context.

The specification confirms that a “camera unit” is a camera, optics, and an image processing unit. The specification consistently refers to camera unit 14 which includes camera arrangement 14o (comprising camera 14a and optics 14b) and image processing unit 14c (which comprises microprocessor 23 and memory units 24). *See, e.g.*, ’078 patent at 3:14–18, 3:22–26, 5:23–25. For example, the specification describes “[c]amera unit 14, which is represented in the form of a block diagram in FIG. 5, consists of camera arrangement 14[o] which comprises camera 14a provided with suitable optics 14b, and image processing unit 14c connected to the camera arrangement.” ’078 patent at 3:14–18. That is consistent with the specification’s other teachings that camera unit 14 is comprised of camera 14a, optics 14b, and image processing unit 14c. ’078 patent at 4:25–29, 3:22–26. And throughout the specification, the camera unit and its components are identified using a numbering convention that associates those components with the number 14. The specification refers to “camera unit 14” and its components as “camera 14a,” “optics 14b,” and “image processing unit 14c.”

Samsung argues that the district court correctly held that the camera unit also requires a battery and an interface. This argument is premised upon a single sentence in the specification that states, “the structure of both camera card 15 and camera unit 14 conforms to the block diagram shown in Fig. 5.” According to Samsung, everything in Figure 5 must therefore be included in the construction of camera unit. We do not agree. Figure 5 uses the same numbering convention as the rest of the specification, suggesting camera unit 14 is comprised of elements numbered as 14 (i.e., camera arrangement 14a, which comprises camera 14a and optics 14b, and image processing unit 14c). *See* ’078 patent at 4:25–29. Other elements in Figure 5 are numbered differently, such as battery 21 and interface 22, suggesting they are not part of the camera unit 14. *See id.* In fact, the description concerning Figure 5 explains that “camera card 15” (as opposed to “camera unit 14”) includes battery 21 and interface 22. *Id.* at 4:25–29. On the other hand, a camera unit as expressly defined in the specification includes a camera, optics, and an image processing unit. *Id.* at 3:14–18.

The specification demonstrates that the battery and interface are not necessary components of the camera unit itself. It describes two separate embodiments involving the camera unit: one in which the described camera unit is fixed on an insertable camera card separate from the personal communication device, and another where the camera unit is integrated with the device.

In the first embodiment, “the camera unit (14) is fitted on a PCMCIA card (15) which can be connected to the PCMCIA card slot (16) of the device.” ’078 patent at Abstract; *see also id.* at 3:22–29, 4:25–29. The PCMCIA card is an insertable, portable card that is connectable and detachable from the mobile device itself. *See id.* at 4:2–8. The specification describes that, in this embodiment, “[b]attery 21 is mainly used to ensure that images are maintained in the volatile memory units if the PCMCIA card is detached

from the card slot.” ’078 patent at 4:43–45. In that embodiment, the battery is a necessary component of the PCMCIA card on which the camera unit is fitted because it is necessary to ensure that images are not lost when the camera card is detached from the personal communication device. That embodiment further explains that “image information [from the camera card] is transmitted to processor 4 of the mobile organizer along PCMCIA interface 22 or a corresponding interface.” *Id.* at 4:59–61. It is the interface which enables communication of information on the card to the mobile device. However, the fact that the interface may be necessary for operation of the card does not necessitate that it be part of the construction for the camera unit.

In the second embodiment, the camera unit is “placed in the housing” or “integrated” with the device. ’078 patent at Abstract; 3:6–21; 4:48–51. In this embodiment, because the camera unit is integrated in the housing and not removable, there is not the same technical need for the battery or the interface. The specification makes clear that the battery is not a required component of such a camera unit, which is integrated in the housing that includes its own power source. The specification does, however, allow for the option of a battery in this embodiment: “[b]attery 21 *can* be also used for the same purpose [i.e., to ensure that images are maintained in the volatile memory units] in camera unit 14.” ’078 patent at 4:46–47 (emphasis added). Likewise, this second embodiment with a permanently installed, non-portable camera unit does not need a PCMCIA interface. The camera unit is directly integrated into the mobile device. *See id.* at 3:12–13 (“[c]amera unit 14 is connected via input/output controller 5 to data processing unit 2”).

The camera unit 14 as consistently defined throughout the specification consists of a camera, optics, and an image processing unit. Given the consistent usage in the specification and the technical differences between the two

embodiments disclosed, camera unit should not be construed so as to require a battery and interface. Because the district court erred in its construction of the term “camera unit,” and that construction was the basis for the parties’ stipulation of noninfringement of the ’078 patent, we vacate and remand the district court’s judgment of noninfringement of the asserted claims of the ’078 patent.

II. THE ’239 PATENT

Ironworks asserted infringement of claims 4, 10, 18, and 27 of the ’239 patent. The district court issued a claim construction order construing various terms of the ’239 patent. The parties stipulated to entry of judgment of noninfringement and invalidity of the asserted claims of the ’239 patent based on the district court’s claim construction.

The ’239 patent relates to a method that allows a user to make phone calls using voice commands by selecting, in response to a spoken voice command, a telephone number stored with an “identifier” in audio form, such as a person’s name. *See, e.g.*, ’239 patent at 1:5–15, 4:19–37. Ironworks asserted infringement of claims 4, 10, 18, and 27 of the ’239 patent. Claims 4 and 10 are the only asserted independent claims. Claim 4 recites:

4. A voice controlled device comprising:
 - means for storing the telephone numbers to be selected,
 - means for storing at least one identifier for each telephone number to be selected,
 - means for receiving an identifier given in a voice form,
 - means for interpreting the received voice commands,*
 - means for selecting a telephone number in response to a voice command,

wherein the identifier comprises a plurality of sub-identifiers, and the voice controlled device comprises *means for storing the sub-identifiers*, and

means for selecting a telephone number in response to a voice command comprising at least two of the plurality of sub-identifiers including the sub-identifier.

(emphases added). Claim 10 recites:

10. A voice controlled device comprising:

means for storing telephone numbers to be selected,

means for storing at least one identifier for each telephone number to be selected,

means for receiving an identifier given in a voice form,

means for interpreting received voice commands,

means for selecting a telephone number in response to a voice command,

wherein the identifier comprises several sub-identifiers, and the voice controlled device comprises *means for storing the sub-identifiers*, and

means for selecting a telephone number in response to a voice command comprising a combination of several sub-identifiers.

(emphases added).

1. “means for interpreting the received voice commands”

The district court construed the term “means for interpreting the received voice commands”² as a means-plus-function term having the function of “interpreting the received voice commands” and lacking corresponding structure in the specification, resulting in the term being indefinite under § 112. J.A. 56–60, 64. Based on the court’s holding that the term was indefinite under § 112, the parties stipulated that the asserted claims of the ’239 patent were invalid. J.A. 3450–51.

Ironworks argues that the district court erred to the extent that it held that “means for interpreting the received voice commands” lacks definite corresponding structure in the specification. Ironworks argues the ’239 patent discloses that the voice-control unit, including its subcomponents and associated programming, is the structure that interprets received voice commands. And Ironworks argues that the specification expressly discloses an algorithm for operation of the voice-control unit. We agree. The specification states that, “voice-control unit 2 comprises advantageously a voice-recognition means 3, a voice pattern memory 4, a controller unit 5, read-only memory 6, random access memory 7, speech synthesizer 8 and a interface 9.” ’239 patent at 3:26–30. It further discloses structure for the voice-control unit by describing the algorithm performed by the voice-control unit and its components. *Id.* at 5:9–25. The district court recognized that “column 5:9–25 could set forth a sufficiently specific step-by-step procedure for the operation of the voice-control unit.” J.A. 58. The specification includes sufficient structure for the voice-

² Claims 4 and 10 of the ’239 patent recite a “means for interpreting the received voice commands” and “means for interpreting voice commands,” respectively. As used in this opinion the term “means for interpreting the received voice commands” refers to both terms.

control unit of which the voice-recognition means is a component. '239 patent at 3:26–30 (“voice-control unit 2 *comprises* advantageously a voice-recognition means 3” (emphasis added)).

Samsung recognizes that the “voice recognition means 3” is a component of the larger “voice-control unit 2” and admits column 5:9–25 could set forth a sufficiently specific algorithm for the operation of the voice-control unit. But Samsung argues the district court correctly concluded that Ironworks’ statement in its claim construction reply brief that, “the proposed structure is not limited to the ‘voice-control unit’” forecloses reliance on an algorithm associated with the voice-control unit 2. J.A. 58 (citing J.A. 3437). Samsung also argues that the district court’s construction of the separate “means for selecting” terms relies on portions of the specification that overlap with Ironworks’ proposed construction here, and the specification does not support a construction in which the same structures support both functions.

Not only did Ironworks not disclaim an argument that column 5 provides an algorithm based on the relationship between voice recognition means 3 and voice-control unit 2, the fact that the algorithm overlaps with the undisputed algorithm associated with other terms is not unexpected. Indeed, an algorithm can support more than one function. *See* Oral Arg. at 13:37–50 (Judge: Isn’t it the case in electrical systems that the same software can perform multiple functions? Doesn’t it happen . . . all the time? A: Yes. Judge: Can’t the same algorithm achieve two different parts? A: Yes. Judge: Isn’t that a pretty regular occurrence? A: Yes, Your Honor.). Because the algorithm is sufficiently disclosed in the specification itself, and voice recognition means 3 is included within the voice-control unit 2, we hold the appropriate structure is “voice-control unit implementing the algorithm at Figure 3, col. 5:9–25, or col. 6:1–57.”

Because we conclude that the district court erred in holding that the term “means for interpreting the received voice commands” was indefinite, we vacate and remand the judgment of invalidity of the ’239 patent.

2. “means for storing the sub-identifiers”

The district court construed the term “means for storing sub-identifiers” as having the function of “storing sub-identifiers” and the structure of “voice pattern and voice-equivalent memory, and the control circuitry and programming for storing sub-identifiers in memory executing the algorithms disclosed in columns 4:19–54 [of the ’239 patent’s specification].” J.A. 64. Under that construction, the parties stipulated to noninfringement of the claims of the ’239 patent. J.A. 3451.

Ironworks argues that the district court erred in its requirement that the specification disclose an algorithm. Ironworks contends that this term falls within the exception set forth in *In re Katz Interactive Call Processing Patent Litigation* that a specification need not disclose algorithmic structure for a computer-implemented means-plus-function claim when the function “can be achieved by any general purpose computer without special programming.” 639 F.3d 1303, 1316 (Fed. Cir. 2011).

We do not agree. *Katz* “identified a narrow exception to the requirement that an algorithm must be disclosed for a general-purpose computer to satisfy the disclosure requirement.” *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1364–65 (Fed. Cir. 2012). “It is only in the rare circumstances where any general-purpose computer without any special programming can perform the function that an algorithm need not be disclosed.” *Id.*; see also *EON Corp. IP Holdings LLC v. AT&T Mobility LLC*, 785 F.3d 616, 621–22 (Fed. Cir. 2015) (“a microprocessor can serve as structure for a computer-implemented function only where the claimed function is ‘coextensive’ with a microprocessor itself”). The function of storing sub-identifiers

“requires more than merely plugging in a general-purpose computer.” *Ergo Licensing*, 673 F.3d at 1365. The specification describes that storing the identifier (which is comprised of a plurality of sub-identifiers) requires that the voice-control unit be set into a particular function mode, then perform several intervening steps, after which each sub-identifier is stored into the voice-equivalent memory. ’239 patent at Figure 2, 4:19–54. We see no error in the district court’s construction and likewise agree that the *Katz* exception does not apply. Accordingly, we affirm the district court’s judgment of noninfringement of the ’239 patent’s claims.

Ironworks contends that “all equivalents thereof” should be added to the district court’s constructions of “means for storing the sub-identifiers” and “means for selecting a telephone number” Samsung appears to agree that the district court’s constructions include “equivalents.”

CONCLUSION

For the foregoing reasons, we vacate and remand the judgment of noninfringement of the claims of the ’078 patent because it depends on the district court’s erroneous construction of the term “camera unit.” We further vacate and remand the judgment of invalidity of the claims of the ’239 patent because the district court erroneously construed “means for interpreting the received voice commands” as not having a definite structure. We affirm the judgment of noninfringement of the claims of the ’239 patent because the district court correctly construed the term “means for storing the sub-identifiers.” We have considered the appellants remaining arguments and conclude they are without merit.

**AFFIRMED-IN-PART, VACATED-IN-PART, AND
REMANDED**

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COSTS

The parties shall bear their own costs.