United States Court of Appeals for the Federal Circuit

CORE WIRELESS LICENSING S.A.R.L.,
Plaintiff-Appellant

v.

APPLE INC.,
Defendant-Appellee

2015-2037

Appeal from the United States District Court for the Eastern District of Texas in No. 6:12-cv-00100-JRG, Judge J. Rodney Gilstrap.

Decided: April 14, 2017

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JOSEPH J. MUELLER, Wilmer Cutler Pickering Hale & Dorr LLP, Boston, MA, argued for defendant-appellee. Also represented by CYNTHIA D. VREELAND, RICHARD W. O'NEILL, MICHAEL WOLIN.

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

BRYSON, *Circuit Judge.*

This appeal arises from a patent infringement action brought in the United States District Court for the Eastern District of Texas. The plaintiff, Core Wireless Licensing S.a.r.l., is the owner of U.S. Patent No. 6,978,143 ("the '143 patent"). Claim 17 of the patent, the only claim at issue in this appeal, recites a mobile station, such as a mobile telephone, that is connected to a cellular system or network. The claim is directed to means for sending packet data from the mobile station to the network using a selected channel.

Following trial, the jury found that the defendant, Apple Inc., did not infringe any of the asserted claims. The district court denied Core Wireless's motion for judgment as a matter of law, and Core Wireless took this appeal. We affirm.

I

Mobile stations such as cellular telephones can transmit data packets to a cellular network (known as an uplink) in one of two ways—either by using a shared "common channel," which carries transmissions from multiple mobile stations, or by using a "dedicated channel," which carries transmissions from a single mobile station without competing transmissions from other mobile stations. Dedicated channels are valuable because they permit faster and more reliable transmissions than common channels. But dedicated channels are at a premium, as there are not enough dedicated channels to carry all cellular transmissions. The industry has therefore worked to solve the problem of how to allocate dedicated channels (when the need for a dedicated channel is greatest).

One aspect of this problem is whether the network or the mobile station should select the channel for the uplink. The network initially has no information about the data packet to be sent, such as data packet size, and therefore does not have the necessary information to make a channel selection decision. In the prior art, the mobile station would send the network information about the data packet to be sent so that the network could make the channel selection decision. As noted in the '143 patent, selection by the network wastes valuable system resources, because it requires the mobile station to send a message to the network regarding the data packet the mobile station wants to transmit, and then requires the network to make the channel selection decision. *See* '143 patent, col. 3, ll. 41-49.

The solution provided by the '143 patent is to have the mobile station, not the network, make the uplink channel selection decision. The way that is done is for the network to provide the mobile station with certain parameters that the mobile station is directed to apply in determining whether to use a dedicated channel or a common channel. *See* '143 patent, col. 3, ll. 53-56; *id.*, col. 4, ll. 37-58. According to the patent, the described method reduces "the signaling load associated with the allocation of packet data transfer" and reduces "the delay associated with the starting of data transfer." *Id.*, col. 3, ll. 64-67. Because the mobile station makes the channel selection decision, it does not use up traffic capacity by sending the message about the data packet to the network so that the network may select a channel. *Id.*, col. 3, ll. 40-49.

Although Core Wireless initially asserted a number of claims from several different patents against Apple, this appeal involves only a single claim—claim 17 of the '143 patent. That claim reads as follows:

> A mobile station connected with a cellular system, comprising means for sending uplink packet

> data to the system using a selected channel, wherein the selected channel is either a common channel (RACH) or dedicated channel (DCH), characterized in that it also comprises:
>
> > means for receiving a threshold value of the channel selection parameter from the system,
> >
> > means for storing said threshold value of the channel selection parameter, and
> >
> > means for comparing said threshold value of the channel selection parameter to a current value of the channel selection parameter for basis of said channel selection.

A magistrate judge conducted the claim construction proceedings and construed the "means for comparing" limitation of claim 17 to have the function of "comparing said threshold value of the channel selection parameter to a current value of the channel selection parameter for basis of said channel selection."

The magistrate judge construed the corresponding structure for performing that function to be

> [a] control unit 803 [in the mobile station] wherein the control unit 803 is programmed to control the comparison of the threshold value of the channel selection parameter to the current value of the channel selection parameter in accordance with the algorithm shown in Fig. 6, step 650, and described in 6:20-39; 7:17-20; and 7:24-28 of the '143 specification; and statutory equivalents thereof.

At trial, Apple introduced evidence that Apple's accused mobile stations lack the capability to select between common and dedicated channels for packet data transfer. Instead, in systems in which Apple's devices are used, Apple's evidence showed that the network, not the mobile

station, is responsible for selecting which channel to use for uplink transmissions. At the conclusion of the trial, the jury found that Apple did not infringe claim 17 of the '143 patent.

In its post-trial motion for judgment as a matter of law ("JMOL"), Core Wireless argued that Apple had misapplied the court's construction of claim 17 when it interpreted the court's construction to mean that the "means for comparing" limitation requires the mobile station to be capable of making uplink channel decisions. The district court disagreed, holding that the claim requires that the mobile station "must have the capability to perform 'channel selection,' even if that capability was not used during the actual alleged performance of the claimed method." The court concluded that there was sufficient evidence from which a reasonable jury could find noninfringement based on that claim construction.

II

Core Wireless does not object to the claim construction that was given to the jury, which was the same as the claim construction adopted by the magistrate judge. Instead, Core Wireless argues both that the district court misapplied the magistrate judge's pretrial claim construction, and that the claim construction adopted by the district court was erroneous.

A

Core Wireless's first argument is that Apple took a position at trial that was contrary to the magistrate judge's claim construction, and that the district court improperly upheld the jury's verdict in favor of Apple by in effect altering the magistrate judge's claim construction.

Core Wireless explains its view of the difference between the magistrate judge's pretrial claim construction and Apple's construction as follows: Under the magis-

trate judge's claim construction, as Core Wireless interprets it, an infringing device need only be capable of performing the functions of receiving a threshold parameter from the cellular network, storing that threshold parameter in local memory, and then comparing a current value of that parameter to the threshold. Under Apple's construction, in order to infringe, a mobile station must also be able to make a channel selection decision based on that comparison, rather than leaving the channel selection decision to the network. That is, Core Wireless contends that under the magistrate judge's claim construction the mobile station need do no more than make a comparison, while Apple contends that the mobile station must have the capability to select a dedicated channel when the relevant threshold conditions are met.

The problem with Core Wireless's argument is that the premise is incorrect: The magistrate judge did not clearly reject Apple's position and adopt Core Wireless's position. Core Wireless bases its argument on the magistrate judge's failure to include certain language, proposed by Apple, in the description of the corresponding structure for performing the "means for comparing" limitation. As Core Wireless points out, the magistrate judge did not include Apple's suggested language that control unit 803 "provide[s] the comparison result to a channel selection function within the mobile station" and Apple's reference to step 660 of Figure 6 in the patent. Those exclusions, Core Wireless contends, indicate that the magistrate judge rejected Apple's position on the construction of that limitation.

We disagree. The magistrate judge did not state at the hearing or include in his order any explanation for omitting Apple's proposed text from the claim construction. Instead, he focused primarily on whether control unit 803 was a general purpose processor within the meaning of *WMS Gaming Inc. v. International Game Technology*, 184 F.3d 1339 (Fed. Cir. 1999). Significantly,

the magistrate judge included in his construction references to Figure 6, step 650, and to column 7, lines 17-20, of the '143 patent. As discussed below in further detail, both of those references indicate that channel selection can be performed by the mobile station, consistent with the district court's discussion of the claim construction issue in its JMOL order.

Core Wireless did not raise the issue of Apple's allegedly improper interpretation of the magistrate judge's claim construction during trial, when it had the opportunity to do so. Core Wireless contends that Apple improperly offered evidence and argument to the jury that Core Wireless was required to prove that Apple's accused devices had the capability to make channel selection decisions. In fact, Core Wireless states that Apple's noninfringement position at trial was based exclusively on that theory. But Core Wireless did not object to Apple's evidence on that ground, nor did it object to Apple's argument to the jury as contrary to the proper claim construction. Moreover, although Core Wireless contends that the magistrate judge's pretrial claim construction did not require a showing that the mobile station was capable of making channel selection decisions, Core Wireless did not seek a clarification of the claim construction on that ground either during the trial or before the jury was instructed.

Based on Core Wireless's failure to seek clarification of the pretrial claim construction, Apple argues that Core Wireless has waived its claim construction argument. Citing *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1314 (Fed. Cir. 2003), Core Wireless responds that it made its position known by moving for judgment of infringement as a matter of law under Fed. R. Civ. P. 50(a) at the close of the evidence, and thereby preserved its claim construction argument for review.

We find it unnecessary to decide whether Core Wireless waived its claim construction argument by failing to seek clarification of the pretrial claim construction at trial. That is because we do not agree that the magistrate judge adopted Core Wireless's position on claim construction and because, for the reasons discussed below, Core Wireless's claim construction argument is erroneous on the merits.

B

Core Wireless argues that the district court erred in its JMOL order, where it explicitly construed the "means for comparing" limitation of claim 17 of the '143 patent to require that the mobile station have the capability to make channel selections. We conclude that the district court was correct, as it stated in its JMOL order, that claim 17 of the '143 patent requires a showing that the accused mobile stations were capable of making channel selection decisions.

The invention disclosed in the '143 patent is a system in which the mobile station gathers and analyzes appropriate information and makes a channel selection decision. The basic architecture of the system depicted in the '143 specification is depicted in Figure 6 of the patent. The patent characterizes Figure 6, which is set forth below, as "a flow chart of a method according to the invention for transferring packet data in the uplink direction." '143 patent, col. 5, ll. 58-59.

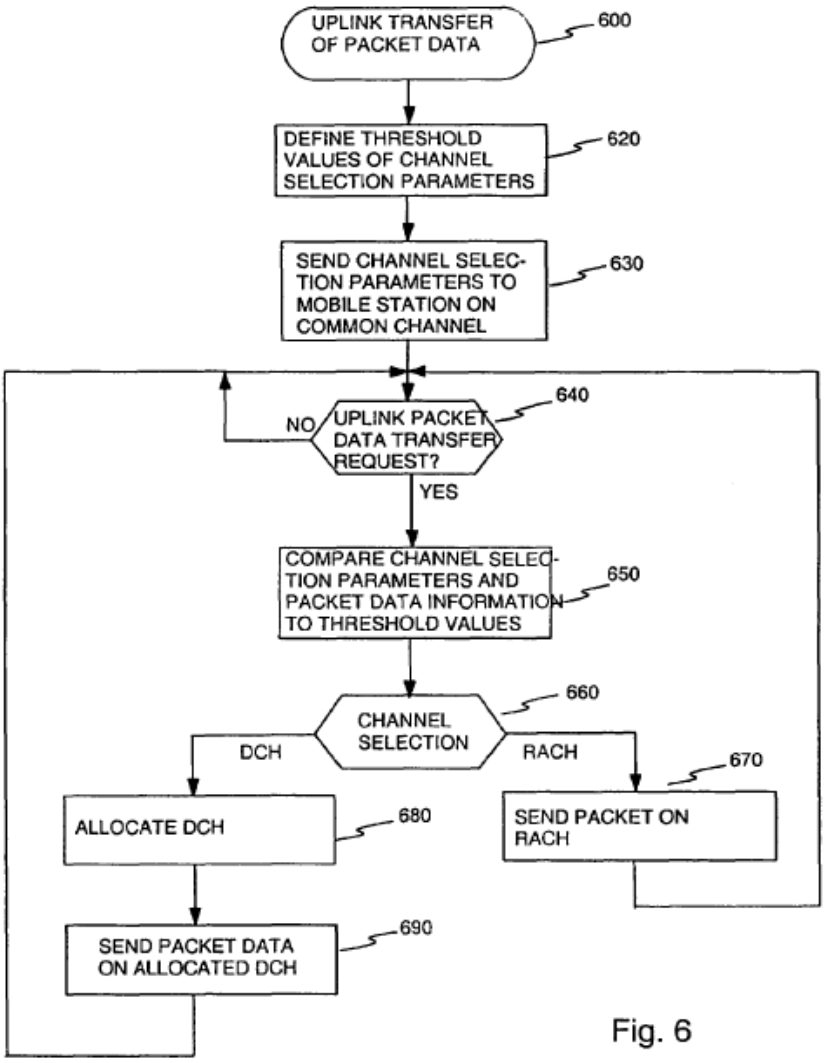

Fig. 6

Figure 6 shows that "threshold values are determined for the channel selection parameters and stored in the mobile station's memory," as depicted at step 620. '143 patent, col. 5, ll. 60-62. At step 630, the base station sends to the mobile station "one or more of said channel selection parameters," i.e., the factors on which the channel selection is based. *Id.*, col. 6, ll. 1-9. Once the mobile station receives a request to send a data packet, as de-

picted at step 640, "the (RLC/)MAC layer [of the mobile station] either makes an autonomous decision on the use of a common channel vs. dedicated channel on the basis of parameters received from the system or requests the RRC layer [of the mobile station] to determine the appropriate channel type." *Id.*, col. 6, ll. 14-19. The description of Figure 6 set forth in the specification thus makes clear that the channel selection process occurs in the mobile station and is not made by the network, although if the mobile station selects a dedicated channel, the mobile station may need to then request that the network allocate the dedicated channel (step 680) before the mobile station can actually transmit on that channel. *See id.*, col. 3, ll. 10-30.

Core Wireless's position is that Figure 6, as well as other portions of the specification that describe the process by which the mobile station makes the channel selection decision, all simply describe preferred embodiments of the invention. According to Core Wireless, claim 17 recites a different process in which the mobile station is not required to perform the channel selection. The problem with Core Wireless's theory is that the entire point of the invention is to enable the mobile station to make the channel selection decision in order to minimize traffic between the mobile station and the network.

Claim 17 is a means-plus-function claim and thus is controlled by 35 U.S.C. § 112, ¶6 (now codified as section 112(f) under the America Invents Act, which does not apply to this case). As such, claim 17 covers any device that performs the function recited in the claim with structure described in the specification or its equivalents. *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 934 (Fed. Cir. 1987) (en banc).

The function recited in claim 17 is "comparing said threshold value of the channel selection parameter to a current value of the channel selection parameter for basis

of said channel selection." '143 patent, col. 9, ll. 14-16. The structure that performs that function is the structure described in Figure 6 and the accompanying text, as well as elsewhere in the specification.

As stated in the magistrate judge's claim construction, adopted by the district court, the recited structure includes the algorithm shown in Figure 6 and described in the specification, and in particular in column 6, lines 20-39, and column 7, lines 17-20 and 24-28. *See WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999) ("In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm."); *see also Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1364 (Fed. Cir. 2012) ("Requiring disclosure of an algorithm properly defines the scope of the claim and prevents pure functional claiming."). The recited portions of the specification describe an algorithm in which the threshold value for the channel selection parameter is provided to the mobile station, the mobile station compares that threshold value with the current value of the channel selection parameter, and the mobile station then uses the result of that comparison as the basis for the channel selection decision.

In addition to the portions of the specification that describe the algorithm depicted in Figure 6, each description of the structure that performs the recited function depicts the mobile station as making the channel selection decision. Beginning with the Abstract, the patent describes a structure in which "[t]he decision about the channel used for the transfer of packet data is made based on a channel selection parameter and values of the parameters needed in the decision-making are sent to the mobile station."

The summary of the invention describes the "method according to the invention for the uplink transfer of packet data from a mobile station to the system in such a manner that . . . [the] channel selection parameter is sent from the system to the mobile station, and said selection is made on the basis of said value of the channel selection parameter." '143 patent, col. 4, ll. 38-51.

In one embodiment, a threshold value of the channel selection parameter is stored at the mobile station. The current value of the channel selection parameter is sent to the mobile station. And that current value "is compared to said threshold value of the channel selection parameter, and said selection is made on the basis of said comparison." *Id.*, col. 4, ll. 52-58.

In another embodiment, a value corresponding to the channel selection parameter is calculated at the mobile station on the basis of the parameters of the data packet to be transferred. The last current value of the channel selection parameter that was sent to the mobile station is then compared to the calculated value of the channel selection parameter. And a channel selection is made on the basis of that comparison. *Id.*, col. 4, ll. 60-67.

Significantly, in each of the embodiments the comparison between the threshold value of the channel selection parameter and the current value is made at the mobile station, and the clear implication is that the channel selection decision, which is based on that comparison, is also made at the mobile station. Meanwhile, nowhere does the patent describe an embodiment in which the network expressly, or by clear implication, makes the channel selection decision.

Other portions of the specification support that interpretation. The specification describes the "cellular system according to the invention" as having "means for sending the value of said channel selection parameter from the system to the mobile station in order to make said selec-

tion on the basis of the value of the channel selection parameter." '143 patent, col. 5, ll. 1-15. And the specification describes the "mobile station according to the invention" as having "means for receiving a channel selection parameter value from the system, and means for making said selection dependent on said channel selection parameter value." *Id.*, col. 5, ll. 16-25. Once again, the description of the structure that performs the claimed function contemplates a mobile station that has the means to make the channel selection decision.

Column 7 of the patent describes Figure 8, which is a schematic drawing of the mobile station of the invention. The specification explains that the control unit 803 in the mobile station "controls the reception blocks in such a manner that the parameters relating to the selection of the uplink channel are received from a common channel in accordance with the invention. Channel selection is advantageously performed in the control unit 803 which also controls the transmission blocks such that the packet data are transmitted on the selected channel." '143 patent, col. 7, ll. 14-20. The specification then states that the base station "sends the parameters associated with the selection of the packet data transfer channel to the mobile station in accordance with the invention and receives the packet data sent by the mobile station *through a channel selected by the mobile station*." *Id.*, col. 7, ll. 37-42 (emphasis added).

Although that passage from the specification would seem to be dispositive, Core Wireless argues that the description of the mobile station selecting the channel to be used for the uplink transmission is only a preferred embodiment, and that other aspects of the '143 patent support Core Wireless's position that claim 17 does not require that the mobile station be capable of making the channel selection decision.

In particular, Core Wireless points to the language at column 7, lines 17-20, which states: "Channel selection is advantageously performed in the control unit 803 which also controls the transmission blocks such that the packet data are transmitted on the selected channel." The use of the term "advantageously," according to Core Wireless, shows that the patent may prefer embodiments in which the mobile station makes the channel selections, but that the patent is not limited to such embodiments.

The more natural reading of the passage in question is that the function of channel selection is "advantageously" performed in the control unit 803 of the mobile station, as opposed to in some other component of the mobile station that is controlled by control unit 803. The previous sentence states that "control unit 803 controls the reception blocks [in the mobile station] in such a manner that the parameters relating to selection of the uplink channel are received from a common channel in accordance with the invention." '143 patent, col. 7, ll. 14-17. The rest of the sentence in question refers to the control unit 803 as also controlling the transmission blocks so as to enable the transmission of the data packets on the selected channel. *Id.*, col. 7, ll. 18-20. That suggests that the term "advantageously" alludes to the advantage of having one component with all the necessary information—the control unit 803, which controls both the reception blocks (incoming information) and transmission blocks (outgoing information)—make the channel selection decisions. The language of that passage thus supports the inference that the mobile station must be capable of channel selection, particularly in light of the unambiguous statement a few lines farther down in the same column that the "packet data [is] sent by the mobile station through a channel selected by the mobile station." *Id.*, col. 7, ll. 40-42.

Core Wireless next points to claim 18 of the '143 patent, which depends from claim 17 but adds "means for

making said channel selection on the basis of the result of said comparison." According to Core Wireless, the added language in the dependent claim indicates that claim 17 does not speak to the structure that makes the channel selection decision.

The language of the dependent claim does not support Core Wireless's claim construction argument. The dependent claim does not focus on the performance of the channel selection process in the mobile station, but instead focuses on the fact that the channel selection process is based on the result of the comparison between the threshold value of a channel selection parameter and the current value of the channel selection parameter. The comparison in independent claim 17 is performed "for basis of said channel selection" but is not necessarily the actual basis of the subsequent channel selection, which may be based on other parameters. In contrast, the comparison in dependent claim 18 must in fact be the basis of the subsequent channel selection. Thus, under claim 17, the channel selection process is not strictly tied to the result of the comparison of those values, while under claim 18, it is. For that reason, nothing in claim 18 suggests that the only limitation added in that claim—and thus absent from claim 17—is the requirement that the mobile station be capable of channel selection.

Core Wireless makes much of the fact that claim 17 has four "means" clauses, none of which expressly refers to the means for selecting the channel to be used for particular uplink transmissions. But that argument overlooks the full text of the "means for comparing" limitation. That limitation provides "means for comparing said threshold value of the channel selection parameter to a current value of the channel selection parameter *for basis of said channel selection*." '143 patent, col. 9, ll. 14-16 (emphasis added). Given that the function of that limitation is to compare the values for the purpose of channel selection, the corresponding structure must be

the structure that compares those values for the subsequent channel selection. And the only structure in the specification that compares values for the purpose of channel selection is the structure that performs both the comparison and the selection in the mobile station.

In addition to the textual support in the patent, both the prosecution history and the extrinsic evidence confirm that the district court was correct in construing claim 17 to require that the mobile station have uplink channel selection capabilities. In a brief filed with the Board of Patent Appeals and Interferences in connection with an appeal from an examiner's rejection, the applicant described "the present invention" as comprising a system in which "a channel selection threshold value is sent from the system to the mobile station," and "[a]t the mobile station the received threshold value is compared with a current value (650), and then a channel selection decision is made (660, page 10, lines 3-6 [of the specification])." Appellants' Br. Serial No. 09/507,804 (July 24, 2003), at 3. That the brief describes the channel selection as being made by the mobile station is confirmed by the citation to the specification, which refers to the statement (found at column 6, lines 14-19 of the issued '143 patent) that "the (RLC/)MAC layer [of the mobile station] either makes an autonomous decision on the use of the a common channel vs. dedicated channel on the basis of parameters received from the system or requests the RRC layer [of the mobile station] to determine the appropriate channel type." That reference makes clear that during the prosecution the applicant's position was that channel selection would be performed in the mobile station.

With regard to extrinsic evidence, the applicant was even more explicit on this point in the invention disclosure for the '143 patent. He stated that the "(RLC/)MAC layer [in the mobile station], upon reception of a request to send a data packet, makes a decision between common and dedicated channel by using the information received

and information of the data packet to be sent." The applicant added that the network supplies information "that MS [mobile station] uses to make decisions whether to send uplink packet data on common channels or on dedicated physical channel," and that the decision to use either common channel or dedicated channel . . . will be done in (RLC/)MAC layer [in the mobile station]." Those statements unambiguously describe a system in which the mobile station is capable of making channel selection decisions, contrary to the way the evidence showed the accused Apple devices operate.

Similarly, in a contemporaneous presentation made to the European Telecommunications Standards Institute, the inventor described his proposal as one in which the mobile station "itself should be able to make decision whether to send data packets on [the common channel] or whether to request a [dedicated channel]. Otherwise there will be unnecessary signalling [sic] . . . before [the mobile station] can send a data packet on the [common] channel." Although Core Wireless argues that the proposal represents only a "subset" of the invention disclosed in the '143 patent, the proposal—like the patent—is clear that the invention requires the mobile station to make the selection decision in order to solve the prior art problem. The language of that proposal provides further support for the district court's ruling in the JMOL opinion that claim 17 of the '143 patent requires that the mobile station must have the capability to make channel selection decisions.

C

Core Wireless also argues in the alternative that Apple's devices infringe even if claim 17 requires the mobile station to be capable of channel selection. Core Wireless points to the Event 4a measurement report, a traffic volume report that Apple's devices generate and send to the network. Apple, however, introduced testimo-

ny from its expert and an engineer that the network may choose not to use the report in its channel selection decision or even use the report at all, and that the mobile station has no further input beyond merely sending the report. Thus, sending the report is not a channel selection decision by the mobile station because it is up to the network to decide what to do with the transmitted information, if anything. We agree with the district court that a reasonable jury could find Apple's devices noninfringing based on that evidence.

We conclude that the district court correctly denied Core Wireless's motion for judgment as a matter of law and properly upheld the jury's verdict of noninfringement.

AFFIRMED