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CASE NO. 13cv0798 DMS (BLM)

ORDER CONSTRUING PATENT CLAIMS

APPLE INC.,

AND RELATED COUNTERCLAIMS.

I.

On December 6, 2012, Wi-Lan filed the present Complaint against Apple alleging claims of infringement of United States Patent Numbers 8,311,040 (“the ‘040 Patent”) and 8,315,640 (“the ‘640 Patent”). The Complaint was filed in the United States District Court for the Southern District of Florida. In response, Apple filed an Answer and Counterclaims for noninfringement, invalidity,

unclean hands, waiver and estoppel, and exceptional case under 35 U.S.C. § 285. On Apple’s motion to transfer venue, the case was transferred to this Court on April 2, 2013.

II.

DISCUSSION

Claim construction is an issue of law, *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996), and it begins “with the words of the claim.” *Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1142 (Fed. Cir. 2005) (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Generally, those words are “given their ordinary and customary meaning.” *Id.* (citing *Vitronics*, 90 F.3d at 1582). This “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005)). “The person of ordinary skill in the art views the claim term in the light of the entire intrinsic record.” *Id.* Accordingly, the Court must read the claims “in view of the specification, of which they are a part.” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995)). In addition, “the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Id.* (quoting *Phillips*, 415 F.3d at 1318).

Here, there are two patents at issue: the ‘040 Patent and the ‘640 Patent. The ‘040 Patent is entitled, “Packing Source Data Packets Into Transporting Packets With Fragmentation.” Wi-Lan alleges Apple is infringing claims 1, 2, 4, 5, 6, 7, 8, 9, 10, 13, 14, 16 and 22 of the ‘040 Patent. The ‘640 Patent is entitled, “Methods and Systems for Transmission of Multiple Modulated Signals Over Wireless Networks.” Wi-Lan alleges Apple is infringing claims 1, 2, 4, 5, 6 and 7 of the ‘640 Patent. Of the asserted claims, there are six terms that require construction, which the Court discusses below.

A. The ‘040 Patent

All of the disputed terms in the ‘040 Patent are found in claim 1, which recites:¹

1. A **node** for a communications system that packs and fragments variable-length service data units (SDU) for mapping into variable length protocol data units (PDU), each SDU being associated with a **specified connection**, the node comprising:

¹ Disputed terms are in bold and underlined.

a communications processor configured to pack and fragment SDUs associated with a specified connection into a PDU, including

allocate **bandwidth** for the specified connection, based on the priority of the connection,

establish a length for the PDU based on the bandwidth allocated to the specified connection in a current frame,

pack a first SDU into a payload area of the PDU,

determine whether a second SDU is larger than a remaining payload area of the PDU,

if the second SDU is not larger than the remaining payload area of the PDU, map the second SDU to the remaining payload area of the PDU, and

if the second SDU is larger than the remaining payload area of the PDU, fragment the second SDU into at least two fragments and map the first fragment to the remaining payload area of the PDU, and

include **packing sub-headers** in the PDU to allow determination of the length of the SDUs and the lengths of the fragments that are mapped to the PDU.

1. “Node”

The first term at issue is “node.” Wi-Lan asserts this term should be construed as “a fixed, portable or mobile wireless unit,”² while Apple argues the term should be construed as “a module between a base station and an end user, that directs transmission of data over a communications link.”

Both sides rely on the specification to support their proposed constructions. However, Wi-Lan’s proposed construction finds little support therein. Rather, the specification provides greater support to Apple’s proposed construction. For instance, the specification states each node serves “multiple connections *for users*.” (’040 Patent at 4:40-41) (emphasis added). It then goes on to describe “users” as “a service network such as a LAN, WAN, Intranet, Ring Network or other type of network; or they may be a single user such as a work station.” (*Id.* at 41-44.)³ In describing the communications process, the specification states: “Information is received by the base station 12 from the data source, is prepared for and transmitted across a data link to a node 16, and is then directed to

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² Wi-Lan offers this same construction for different terms in the ’640 Patent, namely “wireless subscriber radio unit” and “wireless communication radio unit.”

³ Wi-Lan argues this language indicates the node may be a single user, but the language belies that argument. The specification is describing various types of *users*, not types of nodes.

1 the appropriate connection for transmission to the appropriate *user*.” (*Id.* at 4: 47-51) (emphasis
2 added).

3 This idea of the node as an intermediary between the base station and end users is found
4 throughout the specification. (*See id.* at 4:57-62) (stating node may “discard any data not pertinent
5 to *the users* on its connections.”) (emphasis added); (*id.* at 6:11-12) (stating communications processor
6 “converts the signal into the SDUs that *the users* had transmitted to the node 16.); (*id.* at 11:14-30)
7 (“The information intended for each node 16 contains information to be distributed to the *end users*
8 or services served by the connections of that node; ... The connection data 720 includes the
9 information to be transmitted to *the users* or services as well as control information the node uses to
10 identify to which of its connections each packet of information should be directed. Thus, the nodes
11 can ensure that each of the packets of information that it received is directed to the appropriate
12 connection to reach the intended *end user* or service.”) (emphasis added); (*id.* at 14:38-42) (describing
13 transformation of data from PDU format “back to the various SDU packet formats that were originally
14 received by the nodes *from the users*.”) (emphasis added). (*See also id.*, Figs. 3, 7.) Thus, the Court
15 adopts Apple’s proposed construction of the term “node” as “a module between a base station and an
16 end user that directs transmission of data over a communications link.”

17 2. “Specified Connection”

18 The second term at issue in the ‘040 Patent is “specified connection.” This term appears in
19 claim 1, as set out above. Wi-Lan argues this term should be construed as “specified service.” Apple
20 asserts it should be construed as “the communications link between a node module and a specific end
21 user.”

22 As with the term “node,” the Court adopts Apple’s proposed construction of “specified
23 connection.” Wi-Lan argues the specification uses “services” and “connections” interchangeably, but
24 the specification refutes that argument. For instance, the specification speaks of end users or services
25 as being “served by the connections” of the node. (*Id.* at 11:16.) This description of the system is
26 inconsistent with Wi-Lan’s proposed construction. Indeed, it is unclear how a service could be served
27 by itself.

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1 Apple's proposed construction is supported by the specification, and it is consistent with
2 Apple's proposed construction of "node." As Apple points out, the specification describes "multiple
3 connections" *between* end users and the "node." (*Id.* at 4:40-41, 47-51, 57-62; 6:16-20; 11:14-17, 17-
4 24.) The Figures of the '040 Patent also support this construction. (*Id.*, Figs. 3, 7.) Accordingly, the
5 Court construes "specified connection" as "the communications link between a node and a specific
6 end user."

7 3. "Packing Sub-Header"

8 The third term at issue in the '040 Patent is "packing sub-header." Wi-Lan argues "packing
9 sub-header" should be construed as "additional header information," while Apple asserts "packing
10 sub-header" should be construed as "a header located in a PDU payload." The parties agree a
11 "packing sub-header" has a particular structure (located within the PDU) and function (to indicate the
12 length of the SDU packed inside the PDU). Their dispute centers on whether the "packing sub-
13 header" must be included within the PDU payload area.

14 Wi-Lan argues the "packing sub-header" is not limited to the PDU payload area because it can
15 be contiguous with or separate from the SDU it represents. The parties do not appear to dispute this
16 issue, and it is supported by the specification. (*See id.* at 2:9-14.) However, it does not support Wi-
17 Lan's argument that the "packing sub-header" need not be included in the PDU payload area.

18 Apple asserts the only descriptions and drawings of the "packing sub-header" reflect it is
19 included in the PDU payload area, therefore the term should be construed accordingly. The
20 specification supports Apple's proposed construction. (*See id.* at 18:15-61; Fig. 14.) Therefore, the
21 Court adopts Apple's proposed construction and construes "packing sub-header" as "a header located
22 in a PDU payload."

23 4. "Bandwidth"

24 The final term at issue in the '040 Patent is "bandwidth." Wi-Lan argues this term should be
25 construed as "data-carrying capacity." Apple asserts it should be construed as "an amount of data that
26 can be transmitted in a particular time period."⁴

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28 ⁴ The parties agree this term should be construed consistently across both patents.

1 In support of its proposed construction, Wi-Lan relies on the specification of the ‘040 Patent.
2 It asserts the patentee expressly defined “bandwidth” as “data-carrying capacity,” (*see id.* at 1:22-23),
3 therefore the Court should adopt that construction. However, the Court disagrees. To act as his own
4 lexicographer, the patentee “must clearly redefine a claim term ‘so as to put a reasonable competitor
5 or one reasonably skilled in the art on notice that the patentee intended to so redefine that claim
6 term.’” *Elekta Instruments S.A. v. O.U.R. Scientific Int’l, Inc.*, 214 F.3d 1302, 1307 (Fed. Cir. 2000)
7 (quoting *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357 (Fed. Cir. 1999)). In this
8 case, it is not clear that the patentee intended to redefine bandwidth, as Wi-Lan suggests.

9 In contrast to Wi-Lan, who relies primarily on the specification of the ‘040 Patent, Apple relies
10 more on the specification of the ‘640 Patent to support its proposed construction of “bandwidth.”
11 However, the specification does not support Apple’s position. Apple also relies on an order
12 construing “bandwidth” in other Wi-Lan patents related to the ‘640 Patent to support its position, but
13 that order is not binding on this Court, and the Court is not persuaded by that court’s reasoning in
14 coming to its construction of “bandwidth.”

15 Although the patentee did not expressly define the term “bandwidth” as data-carrying capacity,
16 the Court finds that construction is more consistent with the inventions described in both the ‘040 and
17 ‘640 Patents. Throughout the Patents, “bandwidth” is described as a commodity of the system,
18 something that is allocated to various links, (‘040 Patent at 9:32-39; ‘640 Patent at abstract), and
19 distributed by the base station. (‘040 Patent at 13:44-48; ‘640 Patent at 1:20-24.) Contrary to Apple’s
20 suggestion, it does not describe a unit of speed. Rather, as Apple acknowledges, it describes the
21 capacity of the device or system to send information. Thus, based on the Court’s review of the
22 intrinsic evidence, the Court construes “bandwidth” as “data-carrying capacity.”

23 **B. The ‘640 Patent**

24 Turning to the ‘640 Patent, all of the disputed claim terms are found in claim 1, which recites:⁵

25 1. A method for requesting **bandwidth** on demand in a wireless communication
26 system, wherein the wireless communication system includes a **wireless subscriber**
radio unit, the method comprising:

28 ⁵ Disputed terms are in bold and underlined.

1 registering the **wireless communication radio unit** with a base station in the
2 wireless communication system and establishing communication between the
wireless subscriber radio unit and the base station;

3 transmitting from the wireless subscriber radio unit which is registered with the
4 base station, an explicit message to the base station requesting to be provided
an allocation of uplink (UL) bandwidth in which to transmit a bandwidth
5 request;

6 receiving at the wireless subscriber radio unit the allocation of UL bandwidth
in which to transmit a bandwidth request;

7 transmitting the bandwidth request within the allocation of UL bandwidth, the
8 bandwidth request specifying a requested UL bandwidth allocation; and

9 receiving an UL bandwidth grant for the wireless subscriber radio unit in
response to the bandwidth request;

10 wherein the wireless subscriber radio unit maintains a plurality of queues, each
11 queue for data pertaining to one or more **UL connections** with similar QoS and
wherein the wireless subscriber radio unit allocates the UL bandwidth grant to
12 the one or more UL connections based on QoS priority.

13 1. “Wireless Subscriber Radio Unit/Wireless Communication Radio Unit”

14 The first terms at issue in the ‘640 Patent are “wireless subscriber radio unit/wireless
15 communication radio unit.” These terms raise disputes similar to those raised by the term “node” in
16 the ‘040 Patent. Indeed, Wi-Lan offers the same proposed construction for these terms as they did for
17 the term “node,” namely “a fixed, portable or mobile wireless unit.” Apple argues the terms should
18 be construed as “customer premises equipment that receives UL bandwidth from a base station, and
19 allocates the bandwidth across its user connections.”

20 For the reasons set out above in the discussion of “node,” the Court agrees with Apple that the
21 “wireless subscriber radio unit/wireless communication radio unit” sits in a similar position as the
22 “node” in the ‘040 Patent: Both are intermediaries between the base station and end users.

23 The primary dispute, then, is whether the “wireless subscriber radio units/wireless
24 communication radio units” are equivalent to customer premises equipment (“CPE”).⁶ Although the
25 specification refers repeatedly to CPEs as part of the invention, it is not clear that CPEs are
26 interchangeable with “wireless subscriber radio units/wireless communication radio units.” For

27 ⁶ At oral argument, Apple conceded it was not necessary to construe the “wireless subscriber
28 radio units” and “wireless communication radio units” as CPEs. (Hearing Tr. at 81-82.) Therefore,
this issue may now be moot. However, to the extent it is not, the Court addresses it below.

1 instance, the specification describes “fixed subscriber stations or Customer Premises Equipment
2 (CPE).” (‘640 Patent at 1:62-65) (emphasis added). Furthermore, the specification refers to
3 “subscriber stations,” not wireless radio units. Finally, at oral argument, Apple stated the patentee
4 amended the claims to recite “wireless subscriber radio units” and “wireless subscriber communication
5 units” rather than CPEs. (Hearing Tr. at 56.) Under these circumstances, the Court declines to limit
6 “wireless subscriber radio units” and “wireless communications radio units” to CPEs. Rather, the
7 Court construes these terms as a “module that receives UL bandwidth from a base station, and
8 allocates the bandwidth across its user connections.”⁷

9 2. “UL Connections”

10 The final term at issue is “UL connections.” There is no dispute “UL” means uplink. The
11 dispute is how to construe “connections.” Wi-Lan argues, consistent with its proposed construction
12 of “specified connection” in the ‘040 Patent, that “connection” should be construed as “service,” while
13 Apple asserts it should be construed as a connection between the CPE and its users.

14 As it did with the ‘040 Patent, Wi-Lan argues the specification of the ‘640 Patent equates
15 “connections” with “services,” therefore the Court should adopt its proposed construction. However,
16 the Court again disagrees with that argument. The specification describes connections and services,
17 but nowhere does it equate the two.

18 Apple’s proposed construction is more consistent with the Court’s understanding of the
19 invention, which describes connections between end users and wireless subscriber radio units.⁸
20 Therefore, the Court construes this term as “an uplink connection between the wireless subscriber
21 radio unit and its users.”

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25 ⁷ In the briefing, there appeared to be a dispute as to whether the “wireless subscriber radio
26 units” and “wireless communication radio units,” as well as the “nodes” in the ‘040 Patent, were fixed,
27 portable or mobile. At oral argument, Apple appeared to concede that these modules “could be either
fixed or portable.” (*Id.* at 57-58.) Given that concession, the Court declines to address that issue
further.

28 ⁸ Apple uses the term CPE instead of “wireless subscriber radio unit.” As discussed above,
the Court declines to impose that limitation on the claims.

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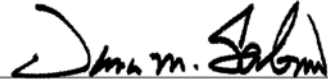
III.

CONCLUSION

For the reasons stated above, the disputed terms are interpreted as set forth in this Order.

IT IS SO ORDERED.

DATED: December 23, 2013

A handwritten signature in black ink, appearing to read "Dana M. Sabraw", is written over a horizontal line.

HON. DANA M. SABRAW
United States District Judge