**IN THE UNITED STATES DISTRICT COURT**
**FOR THE EASTERN DISTRICT OF TEXAS**
**TYLER DIVISION**

WI-LAN INC.,

Plaintiff,

v.

ALCATEL–LUCENT USA INC., *et al*.,

Defendants.

CIVIL ACTION NO. 6:10–CV–521–LED

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**ALCATEL-LUCENT USA INC. AND THE ERICSSON DEFENDANTS' MOTION FOR PARTIAL SUMMARY JUDGMENT THAT PATENT CLAIMS ARE INDEFINITE**

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## PRELIMINARY STATEMENT

In this patent-infringement suit, Wi-LAN asserts that Ericsson Inc., Telefonaktiebolaget LM Ericsson (collectively, "Ericsson"), and Alcatel-Lucent USA Inc. have infringed certain patent claims, including claims 6–8 of U.S. Patent No. 6,088,326 ("the '326 Patent) and claim 10 of U.S. Patent No. 6,222,819 ("the '819 Patent).[1] Each of those claims includes a software means-plus-function limitation, but the specifications do not disclose structures for performing the claimed means. The claims are therefore invalid as a matter of law because they are impermissibly indefinite under 35 U.S.C. § 112 ¶ 2.

As a result, Alcatel-Lucent and Ericsson respectfully request that the Court grant summary judgment that claims 6, 7, and 8[2] of the '326 Patent and claim 10 of the '819 Patent are invalid as indefinite.

## BACKGROUND

### A. Technology

In general, the '326 and '819 Patents relate to various communication protocols for use in a wireless communication network. Although the claims are directed to different alleged inventions, they share an essentially common specification. The systems described in that specification include central terminals that establish radio links with various subscriber terminals within the same geographic location. The central terminal provides for communications between the public switched telephone network and the subscriber terminals.

Early in the development of wireless networks, designers recognized that due to the limited frequency bandwidth that was available, it was not feasible to assign different frequency

[1] The '326 and '819 Patents are attached as Exs. A and B. Wi-LAN is also asserting claims of U.S. Patent Nos. 6,195,327 and 6,381,211, but those claims are not at issue in this motion.

[2] Claim 8 of the '326 patent is dependent from claim 7, and thus, incorporates all limitations of that claim. Because claim 7 is invalid as indefinite, claim 8 is as well.

channels to each customer. Thus, intelligent schemes were necessary to allow multiple users to communicate using the same radio frequencies. An early technique to increase the number of users that could be served by a single central terminal is code-division multiple access, or "CDMA." In CDMA, a set of mathematical codes (more specifically, orthogonal codes), is applied to the radio signals transmitted within a single frequency channel. These codes divide the frequency channel into a set of "code channels." Each wireless link between a central terminal and a user would operate over one of these code channels.

Another early technique for allowing multiple users to communicate using the same radio frequencies is time-division multiplexing, or "TDM." In TDM, a frame period for transmission by a central terminal is divided into a number of time slots. Each wireless link — in other words, a communication for a particular user — is assigned a specific time slot within the frame period. The central terminal transmits a portion of the data for that user during the assigned time slot. During the next time slot, the central terminal transmits a portion of the data for the next wireless link, and this process is repeated until the end of the frame period, at which time the process begins again.

The patents at issue describe two techniques the inventors believed would allow even more users to access the wireless network than was possible under traditional CDMA and TDM techniques. First, as described and claimed in the '326 Patent, a hybrid approach applying both CDMA and TDM techniques is discussed. Second, as described in the '819 patent, another set of orthogonal codes called "overlay codes" are applied to CDMA channels to further divide those code channels into subchannels.

## B. Claims at Issue

The claims at issue here include means-plus-function limitations that describe means for determining whether and how to create TDM time slots and CDMA subchannels in the radio links between central terminals and subscriber terminals. Specifically:

- Claim 6 of the ’326 Patent claims: “A central terminal . . . comprising channelisation means for determining which of the orthogonal channels will be subject to TDM techniques, and for transmitting that information to a plurality of subscriber terminals within the wireless telecommunications system.”

- Claim 7 of the ’326 Patent claims: “A central terminal as claimed in claim 6, wherein the channelisation means also determines, for those orthogonal channels subject to TDM techniques, how many time slots will be provided within each orthogonal channel.”

- Claim 10 of the ’819 Patent claims: “A central terminal . . . comprising channelisation means for determining which of the orthogonal channels will be subject to overlay codes, and for transmitting that information to a plurality of subscriber terminals within the wireless telecommunications system.”

Wi-LAN has asserted each of these claims against Ericsson and Alcatel-Lucent. Ericsson and Alcatel-Lucent contend the claims are invalid as indefinite because the specification does not disclose structures that correspond to the channelization means.

## STATEMENT OF ISSUES TO BE DECIDED BY THE COURT

1. Whether the specification of the ’326 Patent discloses a structure for performing the functions of “determining which of the orthogonal channels will be subject to TDM techniques” and “transmitting that information to a plurality of subscriber terminals within the wireless telecommunications system.”

2. Whether the specification of the ’326 Patent discloses a structure for performing the function of “determining, for those orthogonal channels subject to TDM techniques, how many time slots will be provided within each orthogonal channel.”

3. Whether the specification of the ’819 Patent discloses a structure for performing the

function of "determining which of the orthogonal channels will be subject to overlay codes" and "transmitting that information to a plurality of subscriber terminals within the wireless telecommunications system."

## STATEMENT OF UNDISPUTED MATERIAL FACTS

The following facts are undisputed.

1. Wi-LAN is asserting claim 6 of the '326 Patent against Alcatel-Lucent and Ericsson.

2. Wi-LAN is asserting claim 7 of the '326 Patent against Alcatel-Lucent and Ericsson, and claim 7 is dependent from claim 6.

3. Wi-LAN is asserting claim 8 of the '326 Patent against Alcatel-Lucent and Ericsson, and claim 8 is dependent from claim 7.

4. Wi-LAN is asserting claim 10 of the '19 Patent against Alcatel-Lucent and Ericsson.

## ARGUMENTS AND AUTHORITIES

### A. Applicable Law

Patent specifications must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112. An applicant may express an element of a claim "as a means or step for performing a specified function . . . and such claim shall be construed to cover the corresponding structure . . . described in the specification and equivalents thereof." 35 U.S.C. § 112 ¶ 6. But in exchange for the ability to use a generic way to express a claim limitation, "the applicant must indicate in the specification what structure constitutes the means." *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 948 (Fed. Cir. 2007). Such structure "must be clearly linked or associated with the claimed function." *Med. Instrumentation & Diagnostics Corp. v. Elekta AB,* 344 F.3d 1205, 1219 (Fed. Cir. 2003). Failure to specify the corresponding structure in the specification amounts to impermissible purely functional claiming. *Id.* at 1211. Thus, if the specification does not disclose structure for a means-plus-function term, the claim is indefinite

under 35 U.S.C. § 112 ¶ 2. *Ergo Licensing, LLC v. Carefusion 303, Inc.*, – F.3d –, 2012 WL 987833, at *1 (Fed. Cir. 2012); *Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1338 (Fed. Cir. 2008).

For software means-plus-function limitations, the corresponding structure in the specification is the algorithm that performs the claimed function. *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1253 (Fed. Cir. 2005). "The usage 'algorithm' in computer systems has broad meaning, for it encompasses in essence a series of instructions for the computer to follow, whether in mathematical formula, or a word description of the procedure to be implemented by a suitably programmed computer." *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1384 (Fed. Cir. 2011) (internal quotes and citations omitted). But "[e]ven described 'in prose,' an algorithm is still a 'step-by-step procedure for accomplishing a given result.'" *Ergo Licensing*, 2012 WL 987833, at *4 (quoting *Typhoon Touch Techs.*, 659 F.3d at 1385). If a specification provides only functional language and does not contain such a step-by-step procedure for accomplishing the claimed means, the claim is indefinite. *Id.*

**A. The specification of the '326 Patent does not disclose a single structure that performs the functions of "determining which of the orthogonal channels will be subject to TDM techniques" and "transmitting that information to a plurality of subscriber terminals within the wireless telecommunications system."**

Claim 6 of the '326 Patent claims a "channelisation means for determining which of the orthogonal channels will be subject to TDM techniques, and for transmitting that information to a plurality of subscriber terminals within the wireless telecommunications system." Although the parties agreed this is the term at issue, Wi-LAN's Opening Claim Construction Brief divides it into parts, effectively asking the Court to construe two separate terms.[3] Specifically, Wi-LAN

[3] *See* Joint Claim Construction and Prehearing Statement (ECF No. 150), at 3 (entire phrase); Wi-LAN Inc.'s Opening Claim Construction Brief ("Opening Br."; ECF No. 167), at 25 and 29 (dividing the phrase into two terms).

now contends the claim describes two means-plus-function limitations: (1) means for determining which of the orthogonal channels will be subject to TDM techniques; and (2) means for transmitting that information to a plurality of subscriber terminals within the wireless communications system.[4] Wi-LAN further contends that the specification describes two *separate* structures corresponding to the two alleged channelization means.[5]

But according to the Federal Circuit, when two "for" function phrases are joined by the conjunction "and" — as here — such language "does not merely recite dual functions; it also requires **the same means** to perform them both." *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1115 (Fed. Cir. 2001) (holding claim indefinite because the specification did not disclose a single structure that performed both functions) (emphasis added); *see also Arbitron, Inc. v. Int'l Demographics Inc.*, No. 2:06-cv-434, 2009 WL 68875, at * (E.D. Tex. Jan. 8, 2009). Therefore, the '326 Patent specification must disclose a *single* structure that not only determines which of the orthogonal channels will be subject to TDM techniques, but also transmits that information to a plurality of subscriber terminals within the wireless communications system. The specification does not disclose such a structure, and Wi-LAN does not even argue that it does.

Simply stated, Wi-LAN has not, and cannot, identify a structure corresponding to the dual-function channelization means claimed in claim 6 of the '326 Patent. The Court should therefore hold that claim invalid as indefinite. *See Mirror Worlds, LLC v. Apple, Inc.*, 742 F. Supp. 2d 875, 882 (E.D. Tex. 2010) (holding claim indefinite because the patentee failed to identify corresponding structure in the specification). And since claims 7 and 8 are dependent from claim

[4] Opening Br. at 25 and 29.

[5] *Id.* at 25–27 and 29–30.

6, and thus incorporate all of the limitations of claim 6, the Court should hold those claims invalid as well.

### B. The specification of the ’819 Patent does not disclose a single structure that performs the functions of “determining which of the orthogonal channels will be subject to overlay codes” and “transmitting that information to a plurality of subscriber terminals within the wireless telecommunications system.”

The language of claim 10 of the ’819 Patent tracks the language of claim 6 of the ’326 Patent except that it substitutes “overlay codes” for “TDM techniques.” It claims “channelisation means for determining which of the orthogonal channels will be subject to *overlay codes*, and for transmitting that information to a plurality of subscriber terminals within the wireless telecommunications system.” Thus, Wi-LAN must again identify a single structure in the specification that performs two functions: (1) determine which of the orthogonal channels will be subject to overlay codes; and (2) transmit that information to a plurality of subscriber terminals within the wireless telecommunications system. But Wi-LAN again points to two *separate* structures that perform these functions.[6]

Accordingly, for the reasons explained above, Wi-LAN has not identified a corresponding structure for the channelization means of claim 10 of the ’819 Patent, and the Court should hold that claim invalid as well.

### C. Wi-LAN has not identified algorithms for performing the functions it alleges are required by the patent claims at issue.

Even if Wi-LAN were correct in assuming that claim 6 of the ’326 Patent and claim 10 of the ’819 Patent each claim two separate channelization means, it has still not identified corresponding structures for such means. Specifically, as explained below, it has not shown that

[6] Opening Br. at 29–30.

the specification discloses algorithms for performing the functions allegedly required by the claims.

**1. The specification of the '326 Patent does not disclose an algorithm for performing the function of "determining which of the orthogonal channels will be subject to TDM techniques."**

The first term at issue is "channelisation means for determining which of the orthogonal channels will be subject to TDM techniques," from claim 6 of the '326 Patent. According to Wi-LAN, the function and structure of this channelization means are:

| | |
|---|---|
| **Function** | Determining which of the orthogonal channels will be subject to TDM techniques. |
| **Structure** | A demand assignment engine connected to a network and one or more modems. The demand assignment engine determines which of the orthogonal channels will be subject to TDM techniques based on information regarding the capability of subscriber terminals to support TDM techniques and/or the type of data items to be transmitted. |

Assuming for the sake of argument that Wi-LAN is correct that: (1) the function of the channelization means is to determine which of the orthogonal channels will be subject to TDM techniques; and (2) a demand assignment engine (DA engine) carries out that function based on information from subscriber terminals or the type of data to be transmitted, claim 6 is indefinite as a matter of law. Indeed, given these assumptions, the channelization-means limitation is indefinite because the specification does not disclose an algorithm for performing the function of determining which channels will be subject to TDM techniques.

Wi-LAN acknowledges that simply identifying a DA engine as the structure is not enough and that an algorithm is necessary. In this regard, it contends:

> **The algorithm** the DA engine uses to determine which of the orthogonal channels will be subject to TDM techniques **is based upon one or both of two inputs**. . . . [T]he DA engine determines whether to use TDM techniques based on information regarding the capability of subscriber terminals to support TDM techniques and/or the type of data items to be

transmitted.[7]

But the fact that a DA engine may determine which channels will be subject to TDM techniques "based upon" inputs does not mean the specification discloses a step-by-step procedure for accomplishing that result, as it must do. *See Typhoon Touch Techs.*, 659 F.3d at 1385. Nor do the passages Wi-LAN cites from the specification describe the necessary algorithm.

Wi-LAN relies on the following, taken from the Summary of the Invention, to support its contention that the specification discloses an algorithm based on input from subscriber terminals.

> In preferred embodiments, the central terminal would further comprise channelisation means for determining which of the orthogonal channels will be subject to TDM techniques, and for transmitting that information to a plurality of subscriber terminals within the wireless telecommunications system. *This is useful since, for example, certain orthogonal channels can hence be designated as being reserved for communications with STs that do not incorporate the features necessary to support TDM techniques, and which hence required the full orthogonal channel for the whole frame period*.[8]

This clearly does not disclose an algorithm. It simply states the function performed by the channelization means and then explains why that function is allegedly useful.

The same is true for the passages Wi-LAN relies on to support its contention that the algorithm is based on the type of data to be transmitted. Those passages state, quite generally, that overlay codes will be used for certain channels:

- "Overlay codes will also be used to implement downlink control channels, these control channels being discussed in more detail later."[9]
- "It should be noted that, in both FIGS. 15A and 15B, the channels RW14 and RW15 are reserved as a call control channel and an [sic] link acquisition channel, respectively, and overlay codes are employed on these channels,

[7] Opening Br. at 26.

[8] '326 Patent at 3:44–55 (emphasis added).

[9] '326 Patent at 12:12–14.

irrespective of whether the path is a downlink or an uplink path."[10]

All this says is that some channels use overlay codes. It does not say the DA engine determines which channels those will be — it does not even mention the DA engine. And it certainly does not disclose an algorithm by which the DA engine would make such a determination.

In short, Wi-LAN has not shown that the specification sets forth, in any form, an algorithm for the function of "determining which of the orthogonal channels will be subject to TDM techniques." Simply stating that the DA engine *can* determine which channels will be subject to TDM techniques based on input from subscriber terminals or data type does not disclose *how* it does so.

Accordingly, the Court should hold that the "channelisation means" term in claim 6 of the '326 Patent is indefinite for failure to disclose corresponding structure. *See, e.g.*, *Ergo Licensing*, at *4 (holding the term "control means" invalid because the "specification merely provide[d] functional language and d[id] not contain any step-by-step process for [performing the claimed function]).

**2. The specification of the '326 Patent does not disclose an algorithm for performing the function of "determining, for those orthogonal channels subject to TDM techniques, how many time slots will be provided within each orthogonal channel."**

The second term at issue is "Channelisation means for determining, for those orthogonal channels subject to TDM techniques, how many time slots will be provided within each orthogonal channel," from claim 7 of the '326 Patent. According to Wi-LAN the function and structure of this channelization means are:

| | |
|---|---|
| **Function** | Determining, for those orthogonal channels subject to TDM techniques, how many |

[10] '326 Patent at 19:12–17.

| | |
|---|---|
| | time slots will be provided within each orthogonal channel. |
| **Structure** | A demand assignment engine connected to a network and one or more modems. The demand assignment engine determines how many time slots will be provided within each orthogonal channel based on information regarding the type of data items to be transmitted. |

Assuming again that Wi-LAN has correctly identified the function for this channelization means and that a DA engine carries out that function, as above, the specification does not disclose an algorithm for performing the function. According to Wi-LAN, the specification discloses an algorithm because it "teaches that the DA engine makes this determination based on information regarding the type of data items to be transmitted."[11] The passages Wi-LAN cites to support this contention, however, do not describe an algorithm:

> For instance, if an orthogonal channel operates at 160 kb/s, and four time slots are provided within that orthogonal channel in order to carry data items pertaining to four different wireless links during one frame period, then each ST receiving data from said orthogonal channel will receive data at a rate of 40 kb/s . . . . If, alternatively, two time slots are provided within the orthogonal channel, then data items pertaining to only two different wireless links will be transmitted per frame period, and the two STs receiving data will do so at a rate of 80 kb/s . . . . This flexibility is useful, since for some communications, eg. fax, a rate of 40 kb/s may not be acceptable, and hence the use of four time slots would not be suitable.[12]

and

> Alternatively, a user may have authority to utilize a whole RW channel, for example when sending a fax, as illustrated by RW12 in FIG. 15A.[13]

Neither of these passages sets forth an algorithm. The first says orthogonal channels *can* be divided into time slots depending on the type of information being transmitted and that the ability to do so is useful. But it does not explain *how* the time slots are allocated — it does not even say the DA engine is responsible for determining the allocation. Likewise, the second

[11] Opening Br. at 28.

[12] '326 Patent at 3:63–4:12.

[13] '326 Patent at 18:64–67.

passage simply says an end user may have authority to use an entire channel if the data being sent is large. It does not say how or why that authority would be granted in any particular circumstance. More to the point, it does not set forth a step-by-step process for performing the function of determining how many time slots will be provided within each orthogonal channel.

Thus, the specification "simply describes the function to be performed." *Aristocrat Techs.*, 521 F.3d at 1334. It does not describe the means or steps taken to accomplish the end result; the DA engine "is merely a black box that accomplishes the claimed function" (again, assuming the function is actually performed in the DA engine). *Function Media, L.L.C. v. Google, Inc.*, No. 2:07-cv-279, 2009 WL 3260566, at *6 (E.D. Tex. Oct. 9, 2009).

The Court should therefore hold that the "channelisation means" term in claim 7 of the '326 Patent is indefinite for failure to disclose corresponding structure. *See id.* (citing *Blackboard, Inc. v. Desire2Learn*, 574 F.3d 1371, 1382 (Fed. Cir. 2009) (holding language that simply described the function to be performed without explaining how the function was performed did not disclose an algorithm)). Because claim 8 is dependent from claim 7, which is in turn, dependent from claim 6, the Court should hold that claim 8 is also invalid as indefinite.

### 3. The specification of the '819 Patent does not disclose an algorithm for performing the function of "determining which of the orthogonal channels will be subject to overlay codes."

The final term at issue here, from claim 10 of the '819 Patent, is "channelisation means for determining which of the orthogonal channels will be subject to overlay codes." According to Wi-LAN, the function and structure of this channelization means are:

| | |
|---|---|
| **Function** | Determining which of the orthogonal channels will be subject to overlay codes. |
| **Structure** | A demand assignment engine connected to a network and one or more modems. The demand assignment engine determines which of the orthogonal channels will be subject to overlay codes based on information regarding the capability of subscriber terminals to support TDM techniques and/or the type of data items to be transmitted. |

Wi-LAN's arguments regarding this term are the same it offered in support of the first two terms. With respect to the algorithm, for example, Wi-LAN states:

> Because the overlay codes are applied to channels where TDM techniques are not applied, **the same algorithm for determining whether to apply TDM techniques** (i.e., basing the determination on information regarding the capability of subscriber terminals to support TDM techniques and/or the type of data items to be transmitted) **also determines whether to apply overlay codes to an orthogonal channel**.[14]

As set forth above, however, the "algorithm" Wi-LAN relies on does not describe a step-by-step process for performing the claimed function. Accordingly, the specification does not disclose a structure for performing the function of determining which orthogonal channels will be subject to overlay codes.

The Court should therefore hold that the "channelisation means" term in claim 10 of the '819 Patent is indefinite for failure to disclose corresponding structure.

## CONCLUSION

For the reasons stated above, Alcatel-Lucent and Ericsson respectfully request that the Court grant summary judgment that claims 6, 7, and 8 of the '326 Patent and claim 10 of the '819 Patent are invalid as indefinite. Alcatel-Lucent and Ericsson also request any further relief to which they may be entitled.

[14] Opening Br. at 29 (emphasis added).

Dated: March 30, 2012

Respectfully submitted,

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## CERTIFICATE OF SERVICE

I certify that the foregoing document was served electronically on all counsel of record on March 30, 2012.

/s/ Richard L. Wynne, Jr.
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