

Exhibit F

WI-LAN, INC.)
DOCKET NO. 6:10cv521
-vs-)
Tyler, Texas
ALCATEL-LUCENT USA, INC.,)
1:19 p.m.
ET AL) July 8, 2013

WI-LAN, INC.)
-vs-) DOCKET NO. 6:13cv252
HTC CORPORATION,
ET AL)

TRANSCRIPT OF TRIAL
AFTERNOON SESSION
BEFORE THE HONORABLE LEONARD DAVIS,
UNITED STATES CHIEF DISTRICT JUDGE, AND A JURY

COURT REPORTERS: MS. SHEA SLOAN
MS. JUDY WERLINGER
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1 station that's associated with that phone, up to the
2 cell tower. Then it will be beamed down to the cell
3 phone that needs to make -- that it's -- that it's
4 intended for.

5 So you can see that way you've got a
6 communication between the two phones. I've shown this
7 going in one direction, but, of course, it's two
8 directions.

9 Q. Now, Dr. Wells, you talked earlier about all
10 the different types of data that we can get and send
11 today on our phones.

12 Is it true of -- my children, my teenagers
13 seem to think that bandwidth is unlimited?

14 A. Unfortunately not, no. Now, one of the -- one
15 of the problems that we have in the cellular industry is
16 this limited bandwidth problem.

17 Basically what happens, when you make that
18 call from your cell phone up to a cell tower, the
19 traffic is carried on a radio wave, and that has a
20 particular frequency, and there's only a certain number
21 of those frequencies that are really available.

22 So what happens is, as Mr. Struhsaker said
23 earlier, that -- those frequencies are very jealously
24 guarded, and it's limited the number that you can use.

25 And what that does is that places a limit on

1 how many cell phones can actually be used within a cell.

2 So we call that the limited bandwidth problem.

3 Q. And so how do cell systems deal with this
4 limited bandwidth problem if everybody wants to use all
5 of these different types of data?

6 A. Well, there's various ways. The first way is
7 time division multiple access. So forgive me showing a
8 similar slide, but let me try and explain again how the
9 TDMA system works.

10 What I have shown here is on the left-hand
11 side is a base station with a cell tower, and it's going
12 to be transmitting these signals to these cell phones on
13 the right. And you saw that earlier. You saw about how
14 the -- the different time slots are allocated for
15 different phones.

16 The blue data goes to the blue phone; the red
17 data goes to the red phone; the green data goes to the
18 green phone. That's time division multiple access.

19 Q. All right. And did that solve the problem?

20 A. Well, no, it didn't. As we talked about
21 earlier and as you can see here, there are
22 inefficiencies with these systems. As we -- if you were
23 transmitting voice, there's actually periods of time
24 where we stop, where information is not being exchanged.

25 So if you use a rigid system like this, there

1 A. So this is -- at the very top, you can see
2 code 14 and code 15. Now, they're treated a little bit
3 differently. They've been reserved here for control
4 data.

5 Now, when you have a cell phone system, you
6 obviously have to send the data down to the cell phone,
7 you know, the -- the voice and the web traffic, but you
8 also have to have control data.

9 That's data that serves a particular purpose.
10 It tells the phone, for example, what's coming; it tells
11 the phone particular information about how to work
12 within the system.

13 And so what they've done at the top in this
14 invention here is, they've taken two of those codes, two
15 of those orthogonal codes; and they've further
16 subdivided those into those white streams which are used
17 to carry control data.

18 Q. And those are subdivided how?

19 A. They're subdivided because each one of those
20 codes, each one of those orthogonal channels has been
21 further subdivided; and we use what we call an overlay
22 code to carry that traffic.

23 Q. All right. Now, a moment ago, I had asked you
24 if there were some benefits to this invention over the
25 prior CDMA and TDMA system.

1 A. Right. So there -- there are. Can we clean
2 this screen?

3 Q. You should be able to just touch one of the
4 corners that says erase.

5 A. Oh, I see. Excuse me.

6 MR. WEAVER: Bottom left corner on the
7 monitor.

8 THE WITNESS: Oh. Thank you. I
9 apologize.

10 A. Benefits of the invention. So the real
11 benefit of this invention is that it maximizes the
12 bandwidth.

13 As you can see, because you're looking at the
14 characteristics of the data that you're going to send,
15 you can make intelligent decisions about how to fill up
16 that space, that matrix.

17 And it does that because of this dynamic
18 allocation of time slots that's based on the data
19 characteristics. And what that means is, is that
20 enables you to use the resources far more efficiently.

21 Q. All right. Now, earlier we had heard about
22 the '327 Wi-LAN patent. Remember that?

23 A. Yes.

24 Q. Can you summarize what the invention was for
25 the '327 patent?

1 say, there's a primary common pilot channel.

2 This is basically a control channel that comes
3 to the phone. It's emitted from the base station.
4 It's a -- it's a signature, if you like, a known
5 signature that the phone can listen for.

6 And when it receives that signature, because
7 it knows in advance what it's going to be, it can make
8 certain deductions about the -- the environment which
9 it's -- which it's in.

10 Q. All right. So does that do it for the
11 channels that we need to know about?

12 A. No. We're going to talk about one more as
13 well, and that's the P-CCPCH, the primary common control
14 physical channel.

15 Now, this is another one of these Release 99
16 channels, and this carries the timing for the system.
17 Of course, timing is an important thing within a --
18 within a cellular network. We need to make sure the
19 phones are synchronized.

20 Q. All right. So now at a high level, how do the
21 Wi-LAN patents relate to this HSDPA standard?

22 A. Well, at a high level, I've said that
23 there's -- the introduction of HSDPA, in my opinion,
24 there's four pillars. There's -- there's four main
25 areas where the HSDPA is advantageous over technologies

1 that have come before.

2 And I've called that the four pillars, and

3 they're the four bullet points here.

4 The first one is the addition of the new

5 high-speed channels. That's that high-speed data

6 channel that carries the streaming video, for example,

7 down to your cell phone. That's covered by the '326,

8 '819, '211, and also the '327 patent uses those channels

9 in an efficient way.

10 The next one is what we call faster scheduling

11 with reduced radio frame lengths. What that means is,

12 is that the base station is able to schedule data

13 faster; in other words, it's able to send out data

14 faster with reduced frame lengths. It can get it to the

15 phones faster.

16 That's covered by the '326, the '819, the

17 '211, and, again, the '327 uses that technology in an

18 efficient way.

19 Q. All right. Doctor, let me stop you there for

20 a moment.

21 Again, I think I asked you before about the

22 radio frames, and here you're talking about radio frame

23 lengths. What's the difference there?

24 A. So we have the radio frame. We have -- within

25 a system, we have a radio frame. We're able to divide

1 that into subframes. And what this is saying really is,
2 we're able to use those subframes.

3 Q. All right. Now, in one of the video
4 deposition clips, there was a reference to something
5 called a TTI.

6 A. Yeah.

7 Q. Do you remember that?

8 A. Yes.

9 Q. Okay. So what is that?

10 A. TTI is transmission time interval. And TTI is
11 the term used within 3GPP to define one of those
12 subframes. It's actually a 2-millisecond timeframe.

13 Q. All right. I'm sorry. I interrupted you.

14 Can you hit the third bullet point here for
15 us?

16 A. Okay. The third bullet point is, HSDPA
17 brought in more efficient modulation and coding schemes.
18 And it does that through having this feedback path, the
19 cell phone being able to feed back to the base station
20 the conditions of the environment in which its within.
21 And that enables the base station to use its -- allocate
22 its resource far more efficiently, and that's addressed
23 in -- by the '327 patent.

24 Q. And do -- have you seen any evidence that
25 other people agree that these are advantages and

1 features that are achieved with HSDPA?

2 A. Yes, I think -- I think so. There's --
3 there's -- this list is my list of four things. There's
4 a fourth one on there as well, which we -- is not
5 addressed in the patents.

6 But other people have come up with lists like
7 this. Some have come up with three. Some have come up
8 with ten. But they -- I've boiled them down into --
9 into what I think here is the -- a good way of
10 describing four -- the four main points within HSDPA.

11 Q. All right. And have you seen other documents
12 that list similar points?

13 A. Yes, I have.

14 For example, there's -- there's this document
15 here. This is document PX 29, DX 145 from
16 Alcatel-Lucent. This is a -- this is a -- one of the
17 documents. And if I can pull out a couple of cutouts
18 from this.

19 The first one talks about optimally and fully
20 assigns all base station resources to data users
21 achieving peak overall capacity. That's basically
22 saying that the base station optimally and fully assigns
23 all its resources.

24 The other one talks about dynamic and rapid
25 assignment of resources across users. That's saying the

1 users of cell phones can receive this -- these dynamic
2 allocations much better.

3 These are advantages of HSDPA. I should have
4 prefaced this. But, of course, that's -- that's what's
5 covered in the '326, the '819, and the '211 patents.

6 Q. All right. Any other advantages of HSDPA that
7 you've seen in the documents?

8 A. Yes. This is another one from the same
9 document, and this talks about assigning optimal
10 resources to users with the best instantaneous channel
11 conditions.

12 Q. Can you explain that a little bit to us?

13 A. Yes.

14 So what that's saying is, is that the --
15 you're looking at the channel conditions, what is the
16 environment within that cell; and you're going to
17 optimally assign resources given that environment within
18 the cell. And that's this intercell interference that
19 the '327 talks about.

20 Q. All right. Now, Alcatel-Lucent makes base
21 stations, right?

22 A. They do.

23 Q. What about everyone in the courtroom who uses
24 a cell phone, for example? Do we get any benefits from
25 HSDPA?