

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

GENERAL ACCESS SOLUTIONS, LTD., (CAUSE NO. 2:22-CV-394-JRG
)
Plaintiff, ()
vs. ()
CELLCO PARTNERSHIP, d/b/a ()
VERIZON WIRELESS, et al., () MARSHALL, TEXAS
(JUNE 24, 2024
Defendants.) 9:00 A.M.

VOLUME 1

TRIAL ON THE MERITS
BEFORE THE HONORABLE RODNEY GILSTRAP
UNITED STATES CHIEF DISTRICT JUDGE
and a jury

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Verizon Exhibit 1023
Verizon v. GAS IPR2023-01147

1 witness, then you're required to remain outside the courtroom
2 until you're called to testify and otherwise you're to be
3 outside of the courtroom.

4 So I will count on both sides to monitor those persons in
5 the gallery. If there's anybody that's not in compliance with
6 this, please let me know.

7 But if you are a fact witness in this trial, you should
8 excuse yourself until you are called to testify.

9 All right. Plaintiff, are you prepared to call your
10 first witness?

11 MR. KNOBLOCH: Yes, Your Honor.

12 THE COURT: Call your first witness.

13 MR. KNOBLOCH: The Plaintiff calls Paul Struhsaker.

14 THE COURT: All right. Bring in the witness; we'll
15 have him sworn.

16 If you'll come forward, sir, and be sworn.

17 (Whereupon, the oath was administered by the Clerk.)

18 THE COURT: Please come around, Mr. Struhsaker, and
19 have a seat here on the witness stand.

20 MS. FAIR: Your Honor, may I approach the witness?

21 THE COURT: You may distribute binders.

22 All right, counsel. You may proceed with direct
23 examination.

24 MR. KNOBLOCH: Thank you, Your Honor.

25 PAUL STRUHSAKER,

1 having been duly sworn, testified under oath as follows:

2 DIRECT EXAMINATION

3 BY MR. KNOBLOCH:

4 Q. Good afternoon, Mr. Struhsaker.

5 A. Good afternoon.

6 Q. Can you please introduce yourself to the jury?

7 A. I am Paul Struhsaker.

8 Q. Mr. Struhsaker, what is your connection to this case?

9 A. I am the inventor of the patents in question.

10 Q. Before we talk about the patents, I'd like to talk a
11 little bit about you. Where do you live?

12 A. I live in Lago Vista. It's northwest of Austin in the
13 hill country.

14 Q. How long have you lived in Texas?

15 A. Thirty years.

16 Q. Can you tell the jury a little bit about your family?

17 A. I have a wife I've been married to for 30 years since
18 I've been in Texas, and two grown children who also live in
19 Texas.

20 Q. Now, Mr. Struhsaker, as the inventor, are you planning to
21 testify about Verizon's infringement in this case?

22 A. No.

23 Q. Why not?

24 A. Infringement is a very complicated subject, and it
25 involves having access to quite a bit of data that I have not

1 would be easily understood.

2 Q. So that was a long answer to a really simple question.

3 THE COURT: Whoa, counsel. You don't need to
4 characterize this. Those are sidebar comments that are
5 improper. You can ask another question or you can rephrase
6 your prior one, but you're not going to tell the jury what you
7 think about your question compared to his answer. All right?

8 MR. ROSENTHAL: I apologize, Your Honor.

9 Q. (BY MR. ROSENTHAL) Sir, very simply, you did not write
10 in this patent anything about the second transceiver
11 performing routing to the first and second mobile stations.
12 Correct?

13 A. It is not written like that.

14 Q. And it is not written like that -- it is not written in
15 any words. Correct? In words.

16 A. The concept is sitting there in the document as WLAN, as
17 any person skilled in the art at that time would know.

18 Q. Well, let me ask you this. The patent doesn't describe
19 at all the WLAN performing this function. Right?

20 A. Because all WLANs perform that function. Why would I
21 describe what you could look up in a textbook?

22 MR. ROSENTHAL: I object to that answer as
23 non-responsive.

24 THE COURT: Sustained.

25 Whether it's in a textbook or not, the question was did

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1 MR. KNOBLOCH: All right. Ms. Brunson, if I may
2 just have the blank slide for a second. I'm just going to
3 move on to the next topic.

4 Q. (BY MR. KNOBLOCH) Doctor Madisetti, in addition to
5 discussing the issue of infringement, were you also asked to
6 discuss -- to address and analyze another issue?

7 A. Yes.

8 Q. What is the other issue you were asked --

9 A. I was asked to analyze the technical benefits provided to
10 Verizon through the use of the '931 and '794 Patents, the
11 asserted claims.

12 Q. And did you conduct an analysis of the technical benefits
13 that Verizon enjoys from its infringement of the '931 -- of
14 the asserted claims?

15 A. Yes, I did.

16 Q. And, in summary, can you explain to the jury what those
17 benefits are?

18 A. Yes. With respect to the '931 Patent, asserted claims 28
19 and 29, the technical benefits are the '931 is a foundational
20 patent that allows efficient practical and synchronized use of
21 beamforming in a sectored TDD cellular network.

22 Q. And, in your opinion, could a TDD cellular network
23 practically incorporate beamforming and TDD without the '931
24 Patent?

25 A. No, it could not.

1 Q. Why not?

2 A. Because there is a problem with the coordination, and
3 there's a lot of interference and other issues that I will
4 discuss.

5 Q. And what is, in a summary, your opinion about the
6 technical benefits of the -- of Verizon's infringement of the
7 '794 Patent?

8 A. Yes. With respect to the '794, it allows a user of a
9 cellular WiFi hotspot that effectively serves more than one
10 device, so it provides nice portable cellular hotspot that
11 could work anywhere and efficiently with more than one device.
12 So these would be the sort of diagram of the benefits.

13 Q. In your opinion, could a cellular hotspot effectively
14 serve more than one device without using the '794 Patent?

15 A. No.

16 Q. All right. So let's start with the '931 Patent benefits.
17 What does this slide show?

18 A. This shows that -- assuming that this is the current
19 representation of the Verizon's base station -- TDD base
20 station network, the benefit that Verizon gets is that you
21 have a gain of downlink data throughput of 32 percent,
22 according to my analysis.

23 Q. What is downlink data throughput?

24 A. That means the amount of data that is sent on the
25 downlink as a part of the base station network of TDD base

1 stations for 5G.

2 Q. From your analysis, what is the average amount of
3 additional downlink data throughput that Verizon is able to
4 enjoy because of its infringement of the '931 Patent?

5 A. Of 32 percent. That's almost a third.

6 Q. Now, what sort of information did you analyze in order to
7 reach that conclusion?

8 A. I did a lot of analysis and I did analysis of the best
9 non-infringing alternatives. I analyzed three different
10 alternatives, and then apportioned the benefits. I looked at
11 non-infringing alternative 1, which is using 4G's LTE TM3,
12 which is non-beamforming option from 4G. I looked at
13 non-infringing alternative 2, which is a non-coordinated
14 beamforming where there's no use of common TDD frame schedule.
15 I also looked at FDD, which is a frequency division duplexing
16 as a non-infringing alternative 3.

17 Q. So just taking a step back, what is a non-infringing
18 alternative?

19 A. So the idea is that you will have to look at potential
20 alternatives that Verizon could use if it did not want to
21 infringe the patents, so I looked at what are the options it
22 has if it doesn't want to use the patents, so, therefore, you
23 can focus on the benefits it gets from using the patents.

24 Q. Now, before we talk about the non-infringing
25 alternatives, I just want to make one thing very clear. Are

1 the benefits that you're analyzing, are they attributable to
2 claims 28 and 29, or to claims 1 and 19?

3 A. Only to claims 28 and 29. I don't have -- in my opinion,
4 claims 1 and 19 do not have much value.

5 Q. And why is that?

6 A. Because they only address a point-to-point connection.
7 They don't address a practical use of beamforming; they are
8 only addressing a point-to-point connection between a base
9 station and device in one sector.

10 Q. And so what is shown here in this graphic?

11 A. So without the asserted claims you could not handle
12 -- you could only look at one sector. With asserted claims 28
13 and 29, you could not handle multiple sectors, multiple users,
14 and the interference that the inventors of the '931 recognized
15 can happen when you have uncoordinated beamforming.

16 Q. How about with the asserted claims 28 and 29?

17 A. With these claims you can have 32 percent more downlink
18 throughput.

19 Q. Okay. So turning to the analysis of non-infringing
20 alternatives, what was the first non-infringing alternative
21 that you considered?

22 A. Yes, I looked at, as I mentioned, LTE.

23 And if you go to the next slide.

24 I looked at 4G's LTE, something called transmission mode
25 3, that does not use beamforming in the base stations.

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VOLUME 4

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1 file history. It's called Scott.

2 Q. So turning to Scott -- sorry. This is the Scott patent
3 you referenced?

4 A. Yes. The Scott patent is the U.S. Patent 6,094,421.

5 Q. And does the Scott patent disclose beamforming?

6 A. Yes.

7 Q. And -- go ahead.

8 A. It discloses here that you have a selection of a
9 particular antenna beam or permitting minor adjustments to the
10 angle of a directional antenna at the base station 302. So
11 this confirms that it also discloses beamforming with
12 adjusting or adaptive.

13 Q. And are the specific -- does it disclose mobile
14 beamforming?

15 A. Yes. As you can see in this figure, you will see those
16 little things there that are drawn. They are disclosed as
17 automobiles, so cars. So they can drive at 70 miles an hour.
18 And you can have adaptive beamforming in figure 3A of Scott
19 that is part of the intrinsic record that tells one of
20 ordinary skill in the art that that mobile beamforming was
21 supported and provided written description with in the '931.

22 Q. In your opinion, Doctor Madisetti, are these disclosures
23 sufficient to support enablement even though they don't
24 include every detail of 5G?

25 A. Yes, because the patent claims, when combined with the

1 knowledge of one of ordinary skill in the art, provide you
2 then the standing so that you can without undue
3 experimentation understand what was enabled.

4 Q. All right. Now I'd like to move on to the written
5 description issue on the '794 Patent. Do you believe that the
6 '794 Patent provides written description support for
7 monitoring signal characteristics?

8 A. Yes.

9 Q. So I'd like to turn to the '794. Let me get there real
10 quick.

11 What does the '794 Patent teach about monitoring signal
12 characteristics?

13 A. Yes. In the -- I believe in the bottom of the column I
14 have excerpted this portion. It says that determination of
15 when you initiate hand over of communications is made
16 responsive to measurements of signal characteristics of
17 communication signals communicated between the WLAN
18 transceiver and the mobile station.

19 In one implementation, signal characteristics are
20 measured or otherwise determined at the mobile station and the
21 results of such measures or determinations are reported back
22 to the WLAN transceiver and appropriate control circuitry.
23 This discloses to one of ordinary skill in the art that the
24 measurements are at the mobile station of the downlink signal
25 and they are reported back as an example to the device that is

1 claimed, and that is an example of monitoring.

2 And, further, it says here that if appropriate, the
3 handover of the communications is effectuated. So that shows
4 that there is a decision that's made on those signal
5 characteristics that are reported back. So that goes to the
6 next limitation disputed which is routing.

7 Q. Now, Doctor Madisetti, I'd like to move on to the brief
8 time we have left to the issue of infringement. You were here
9 for Doctor Andrews' testimony. Do you agree with him about
10 the infringement issues?

11 A. With Doctor Andrews? No.

12 Q. And what specifically are the limitations that Doctor
13 Andrews says are not met?

14 A. He, again, says that, for example, that the broadcast
15 beam signal that I point to is not sent to more than one
16 sector.

17 Q. And that's element 19[d]?

18 A. Yes.

19 Q. And what's the other element that he says is not met?

20 A. I think he refers to the said TDD frame.

21 Q. And is that element 29[b]?

22 A. Yes.

23 Q. Okay. So turning to -- on element 19[d], what does the
24 claim actually require that the broadcast beam signal do?

25 A. The claim requires, as in the claim, it requires that it