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# Transcript of Tim A. Williams, Ph.D., Volume 2

**Date:** April 15, 2021

**Case:** Mediatek Inc., et al. -v- Nippon Telegraph and Telephone Corporation  
(PTAB)

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1 UNITED STATES PATENT AND TRADEMARK OFFICE

2 -----  
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD  
4 -----

5 MEDIATEK INC. and MEDIATEK USA, INC.,

6 Petitioner,

7 v.

8 NIPPON TELEGRAPH AND TELEPHONE CORPORATION,

9 Patent Owner.  
10 -----

11 Case No. IPR2020-01404  
12

13 VIDEOTAPED DEPOSITION OF TIM WILLIAMS, PH.D.

14 CONDUCTED REMOTELY

15 Thursday, April 15, 2021

16 9:07 a.m.  
17  
18  
19  
20

21 Job No.: 366194

22 Pages: 1 - 103

23 Reported By: Charlotte Lacey, RPR, CSR No. 14224  
24  
25

1           VIDEOTAPED DEPOSITION OF TIM WILLIAMS, PH.D.,  
2           CONDUCTED VIRTUALLY.

3  
4  
5  
6           Pursuant to notice, before Charlotte Lacey,  
7           Certified Shorthand Reporter, in and for the State of  
8           California.

A P P E A R A N C E S

ON BEHALF OF PETITIONER MEDIATEK INC. and MEDIATEK  
USA, INC.:

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ON BEHALF OF PATENT OWNER NIPPON TELEGRAPH AND  
TELEPHONE CORPORATION:

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ALSO PRESENT:

Drew Halton, Videographer  
Jillian Barricelli, AV Technician

## I N D E X

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## I N D E X O F E X H I B I T S

EXHIBITS	DESCRIPTION	PAGE
Exhibit 14	IPR2020-01404 Decision Granting Institution	33
Exhibit 1003	Declaration of Tim A. Williams, Ph.D.	6
Exhibit 1005	Publication No. US 2003/0206532 A1	33
Exhibit 1007	Publication No. US 2003/0220112 A1	92
Exhibit 1008	U.S. Patent No. 6,560,292	22

P R O C E E D I N G S

THE VIDEOGRAPHER: Here begins volume 2,  
tape number 1, in the videotaped deposition of Tim  
Williams, Ph.D., in the matter of MediaTek Inc.,  
et al., versus Nippon Telegraph and Telephone  
Corporation in the U.S. District Court for the  
Western District of Texas, Austin Division, Number  
IPR2020-01404.

Today's date is April 15, 2021. The  
time on the video monitor is 9:07 a.m. The  
videographer today is Drew Halton representing  
Planet Depos.

All participants are attending remotely.

Would counsel please voice identify  
themselves and state whom they represent.

MR. ATKINSON: Bryan Atkinson for patent  
owner Nippon Telegraph and Telephone.

MR. NIEBERG: Greg Nieberg from Wolf  
Greenfield, representing the MediaTek petitioners.  
And also joining me is Nathan Speed also of Wolf  
Greenfield.

THE VIDEOGRAPHER: The court reporter  
today is Charlotte Lacey, representing Planet  
Depos.

Would the reporter please swear in the

09:06:42

09:06:45

09:06:49

09:06:49

09:07:02

09:07:04

09:07:07

09:07:10

09:07:19

09:07:19

09:07:19

09:07:24

09:07:24

09:07:29

09:07:29

09:07:36

09:07:42

09:07:45

09:07:47

09:07:54

09:07:56

09:07:56

09:07:56

09:07:56

1 witness.

09:07:57

2 THE REPORTER: Will counsel please  
3 stipulate that in lieu of formally swearing in the  
4 witness, the reporter will instead ask the witness  
5 to acknowledge that their testimony will be true  
6 under the penalties of perjury, that counsel will  
7 not object to the admissibility of the transcript  
8 based on proceeding in this way, and that the  
9 witness has verified that he is, in fact, Tim  
10 Williams, Ph.D..

09:08:24

11 MR. NIEBERG: That is fine for the  
12 MediaTek petitioners.

09:08:24

09:08:26

13 MR. ATKINSON: That is fine for NTT.

09:08:28

14 THE REPORTER: Dr. Williams, do you  
15 hereby acknowledge that your testimony will be  
16 true under the penalties of perjury?

09:08:28

09:08:28

09:08:40

17 THE WITNESS: I do.

09:08:40

18 THE REPORTER: Thank you.

09:08:42

19 Proceed, Counsel.

09:08:43

20 EXAMINATION

09:08:45

21 BY MR. ATKINSON:

09:08:45

22 Q. Dr. Williams, I'd like to ask you to  
23 turn back to paragraph 52 of your declaration, if  
24 you wouldn't mind, which is Exhibit 1003, in case  
25 you need the number.

09:08:46

09:08:49

09:08:53

09:09:01

1	And if you're there, can -- do you see	09:09:20
2	your paragraph 52?	09:09:22
3	A. Just got there, paragraph 52.	09:09:22
4	Q. Yes. All right. Do you see, third line	09:09:28
5	down, where it says -- well, I guess beginning in	09:09:30
6	the second line, but "If channel 3 were the	09:09:34
7	mandatory channel, then the STA could not transmit	09:09:37
8	packets over idle channels 1 and 2 at time (1)	09:09:42
9	because mandatory channel is not also idle."	09:09:44
10	Do you see that?	09:09:48
11	A. Yes.	09:09:49
12	Q. Just to understand what you -- you're	09:09:52
13	meaning here. Is it fair to say that the method	09:09:57
14	shown in figures 1 and 2 of the patent results in	09:10:03
15	preventing transmission to otherwise idle channels	09:10:07
16	when the mandatory channel, i.e., channel 3, is	09:10:12
17	not idle?	09:10:19
18	A. From the same transmitter, that's true.	09:10:20
19	Q. Okay. And do you recall testifying that	09:10:23
20	the purpose of the '551 is to avoid the problem of	09:10:27
21	power leakage?	09:10:33
22	MR. NIEBERG: Object to the form.	09:10:35
23	A. Yes, that's one of the purposes.	09:10:36
24	Q. And how does preventing transmission on	09:10:39
25	otherwise idle channels, based on the status of	09:10:43



1 the mandatory channel, avoid the problem of power 09:10:46  
2 leakage, in your opinion? 09:10:50

3 A. In this example, channels 1 and 2 may be 09:10:53  
4 used by other stations. And so the ability to 09:10:59  
5 prevent transmission on channels 1 and 2 by 09:11:07  
6 inquiring whether channel 3 is idle or busy allows 09:11:11  
7 for -- for prevention of interference by some 09:11:16  
8 other transmitter talking to another station. 09:11:25

9 Q. And the interference you referenced, 09:11:29  
10 that's the power leakage that we talked about 09:11:33  
11 previously; is that correct? 09:11:36

12 A. Interference -- well, the patent calls 09:11:37  
13 it power leakage, but it's -- that's the form of 09:11:40  
14 interference. And interference can be caused by 09:11:44  
15 another transmitter transmitting on the channel 09:11:48  
16 that you're -- you intend to receive. 09:11:51

17 Q. Okay. All right. Would you mind 09:12:02  
18 turning to paragraph 120 of your declaration, 09:12:08  
19 please. 09:12:10

20 A. I'm there. 09:12:35

21 Q. Okay. All right. This -- this 09:12:36  
22 paragraph, and the subsequent paragraphs, are 09:12:44  
23 discussing the Lundby reference; is that correct? 09:12:54

24 A. Yes. 09:12:58

25 Q. Does the Lundby reference explicitly 09:12:59

1	discuss the problem of power leakage in -- in its	09:13:07
2	specification?	09:13:10
3	MR. NIEBERG: Objection; form.	09:13:18
4	A. The words "power leakage" don't appear	09:14:28
5	in Lundby. However, he is talking about	09:14:32
6	interference in terms of Eb over N0 ratio. So the	09:14:36
7	interference would appear as in the N0 term of	09:14:43
8	that Eb over N0, which is discussed in column 1,	09:14:49
9	line 14 on to line 25, setting up the basic	09:14:54
10	problems that are being addressed by Lundby --	09:15:00
11	Lundby.	09:15:06
12	Q. So is it fair to say that Lundby	09:15:06
13	discusses -- or let me strike that.	09:15:13
14	Is it your understanding that Lundby	09:15:15
15	does -- generally discusses interference but does	09:15:17
16	not discuss the specific problem of power leakage;	09:15:24
17	is that correct?	09:15:28
18	MR. NIEBERG: Objection; form.	09:15:28
19	A. Lundby determines -- Lundby deals with	09:15:50
20	whether it's desirable to transmit signals over	09:15:54
21	one channel or two channels. So it's making a	09:15:58
22	decision on how to organize the transmissions.	09:16:03
23	And part of that is the avoidance of interference	09:16:07
24	to other stations.	09:16:11
25	Q. At paragraph 120 of your -- your	09:16:25

1	declaration, refer to Lundby as teaching	09:16:29
2	transmission over a primary and secondary channel;	09:16:32
3	is that correct?	09:16:34
4	A. Sorry. You faded out when you talked	09:16:34
5	about the paragraph. Which paragraph?	09:16:36
6	Q. Paragraph 120, the same one, same	09:16:36
7	paragraph.	09:16:39
8	A. Yes. And your question is what?	09:16:40
9	Q. It -- Lundby discusses transmission over	09:16:41
10	a primary and secondary channel; is that correct?	09:16:46
11	A. It does.	09:16:49
12	Q. And what are the primary, secondary	09:16:51
13	channels referred to in Lundby?	09:16:54
14	A. In Lundby, that are different coded	09:16:57
15	channels.	09:17:01
16	Q. Okay. Do you regard the channels	09:17:03
17	discussed in Lundby as being distinct frequency	09:17:11
18	ranges?	09:17:17
19	A. Lundby --	09:17:18
20	MR. NIEBERG: Objection; form.	09:17:19
21	A. Lundby, again, as we discussed last	09:17:21
22	week, Lundby, in its paragraph -- column 1,	09:17:23
23	lines -- really, lines 5 to 35, discusses the	09:17:27
24	problem with communication systems and the	09:17:33
25	desirability of lowering the Eb over N0	09:17:36

1 requirements to deliver a particular bit error  
2 rate. So the teachings of Lundby apply to a broad  
3 number of channels. Lundby then goes into  
4 CDMA-based architectures and discusses a CDMA  
5 implementation of the concept that they are --  
6 they have invented.

7 Q. In the preferred embodiment of channels  
8 discussed in the preferred embodiment of Lundby,  
9 are those specific channels in the preferred  
10 embodiment distinct frequency ranges?

11 MR. NIEBERG: Objection; form.

12 A. No. They're CDMA-based separation  
13 between the channels in the primary embodiment.  
14 However, Lundby discusses broader applications of  
15 their invention.

16 Q. Do the primary and secondary channels  
17 described in the preferred embodiment of Lundby  
18 occupy the same frequency range or different  
19 frequency ranges?

20 MR. NIEBERG: Objection; form.

21 A. I believe Lundby is silent on that  
22 aspect.

23 Q. Do you have any understanding as to  
24 whether the channels described in Lundby occupy  
25 the same or different frequency ranges?

1	A. I believe Lundby teaches -- isn't -- is	09:19:45
2	silent on that particular point.	09:19:49
3	Q. Is it possible for there to be power	09:19:56
4	leakage between co-channels that occupy the same	09:19:59
5	frequency range?	09:20:05
6	MR. NIEBERG: Objection; form.	09:20:06
7	A. I don't understand the question.	09:20:08
8	Q. So if these co-channels that we're	09:20:09
9	discussing, if they were to occupy the same	09:20:15
10	frequency range -- do you follow that so far?	09:20:18
11	A. Yes.	09:20:21
12	Q. Is it possible to be -- for there to be	09:20:22
13	power leakage -- as you understand that term to be	09:20:25
14	used -- between those code-based channels that	09:20:27
15	occupy the same frequency range?	09:20:33
16	MR. NIEBERG: Objection; form.	09:20:36
17	A. Yes.	09:20:52
18	MR. NIEBERG: Outside the scope.	09:20:54
19	A. The Eb over N0, the noise floor for a	09:20:56
20	particular channel would be increased by the	09:21:00
21	second coded channel.	09:21:02
22	Q. How are codes assigned in CDMA systems	09:21:21
23	such as CDMA2000?	09:21:25
24	MR. NIEBERG: Objection; scope.	09:21:29
25	A. I don't recall the details.	09:21:35

1	Q.	You don't know how -- you don't know, as	09:21:38
2		you sit here today, how codes are assigned in a	09:21:43
3		CDMA2000?	09:21:45
4	MR. NIEBERG:	Objection; scope.	09:21:46
5	A.	I don't recall --	09:21:48
6	MR. NIEBERG:	Form.	09:21:49
7	A.	I don't recall the algorithm for	09:21:50
8		assigning codes.	09:21:57
9	Q.	Do you have any general understanding as	09:21:58
10		to how codes are assigned in CDMA2000?	09:22:00
11	A.	I don't recall.	09:22:04
12	MR. NIEBERG:	Objection; scope, form.	09:22:05
13	A.	I don't recall.	09:22:07
14	Q.	Do you recall, sitting here today,	09:22:10
15		whether Lundby describes how a primary channel --	09:22:14
16		how the primary channel's code is determined?	09:22:18
17	MR. NIEBERG:	Objection; form, scope.	09:22:22
18	A.	If you'd like to point me to a	09:22:34
19		reference, I'd be happy to discuss it.	09:22:38
20	Q.	Well, I don't -- I don't know that it	09:22:42
21		does, and I'm just asking whether you -- whether	09:22:45
22		you have any -- have you made any -- if you've	09:22:48
23		made any determination as to whether Lundby	09:22:50
24		describes how codes are assigned.	09:22:53
25	MR. NIEBERG:	Objection; form, scope.	09:22:58

1	A. I don't recall. It was not important to	09:23:00
2	the forming of my opinion.	09:23:04
3	Q. And why do you -- why do you feel it was	09:23:05
4	not important?	09:23:07
5	A. Because the code-based nature of the	09:23:09
6	disclosures in Lundby of the channels is not	09:23:13
7	important in my opinion.	09:23:17
8	Q. Do you recall whether Lundby describes	09:23:25
9	any modifications to how codes are assigned and	09:23:27
10	generated in CDMA systems?	09:23:33
11	MR. NIEBERG: Objection; form, scope.	09:23:35
12	A. I don't recall, and it was not important	09:23:39
13	to my opinion.	09:23:41
14	Q. When you say it's not important, would	09:23:52
15	it be fair to say that in Lundby, assigning the	09:23:55
16	code -- the -- a code to a primary channel would	09:23:58
17	happen as it normally would in conventional CDMA	09:24:06
18	systems?	09:24:12
19	MR. NIEBERG: Objection; scope form.	09:24:12
20	A. Don't understand the question.	09:24:17
21	Q. Well, when you say it was not important,	09:24:19
22	is that because you -- you don't regard how Lundby	09:24:21
23	would assign a code as being different from how	09:24:28
24	typical CDMA systems assign codes?	09:24:33
25	MR. NIEBERG: Objection; form, scope.	09:24:36

1	A.	I have not expressed that opinion.	09:24:39
2	Q.	What is your opinion as to why the	09:24:57
3		assignment of codes is -- why is the assignment of	09:25:01
4		codes unimportant in Lundby?	09:25:03
5	A.	Because of the teachings of Lundby are,	09:25:07
6		as I describe in -- starting in paragraph 120 of	09:25:10
7		my declaration, are fundamentally the decision to	09:25:14
8		transmit on a single channel or to involve	09:25:21
9		secondary channels and not with the CDMA nature of	09:25:25
10		Lundby -- the Lundby disclosure.	09:25:29
11	Q.	In the CDMA systems, do you have any	09:25:47
12		understanding as to how primary channels are	09:25:51
13		assigned codes?	09:25:55
14	MR. NIEBERG:	Objection; form, scope.	09:25:58
15	A.	Which CDMA system are we discussing?	09:26:01
16	Q.	To take it as an example, CDMA2000 -- or	09:26:05
17		if you're not familiar with CDMA2000, you can	09:26:08
18		propose a typical CDMA system.	09:26:17
19	MR. NIEBERG:	Objection; form.	09:26:21
20	Q.	For now, do you know as to CDMA2000?	09:26:21
21	MR. NIEBERG:	Object to form, scope.	09:26:26
22	A.	I don't recall how codes are assigned,	09:26:30
23		and it's not a topic that I opined on or important	09:26:34
24		to my -- in understanding my opinion.	09:26:38
25	Q.	Do you have any high-level understanding	09:26:41



1	as to how systems of -- a CDMA2000 system would	09:26:44
2	search for and assign codes?	09:26:49
3	MR. NIEBERG: Objection; form, scope.	09:26:51
4	A. Not that I've expressed an opinion on.	09:26:54
5	Q. Well, do you have an understanding, or	09:26:59
6	do you not -- or do you have no understanding as	09:27:01
7	to how --	09:27:03
8	MR. NIEBERG: Objection; form, scope --	09:27:04
9	sorry.	09:27:05
10	Q. -- are assigned?	09:27:06
11	A. I have expressed no opinion, and it's	09:27:09
12	not important to the understanding of my opinion	09:27:14
13	in this case.	09:27:16
14	Q. So is that a "No," you don't have an	09:27:17
15	understanding, or "Yes," you do have an	09:27:19
16	understanding?	09:27:21
17	MR. NIEBERG: Objection; form, scope.	09:27:21
18	A. That's a I have not expressed an opinion	09:27:22
19	in this case on that subject, and it's not	09:27:25
20	important to an understanding of my opinion on the	09:27:30
21	relevant topics of the subject.	09:27:32
22	Q. So I understand that you -- that you	09:27:35
23	have a -- that your position is you haven't	09:27:39
24	expressed any opinion. I'm asking if you have any	09:27:41
25	understanding as to how codes are assigned in	09:27:44

1	CDMA2000.	09:27:48
2	MR. NIEBERG: Objection; form, scope.	09:27:50
3	A. I don't recall.	09:27:52
4	Q. Do you know whether CDMA -- conventional	09:28:04
5	CDMA systems such as CDMA2000 check to see whether	09:28:08
6	codes are unavailable?	09:28:14
7	MR. NIEBERG: Objection; form, scope.	09:28:16
8	A. I don't recall.	09:28:18
9	Q. Prior to determining whether a code to	09:28:33
10	be -- strike that.	09:28:36
11	Prior to determining a code to be	09:28:36
12	assigned to a prior -- to a primary channel in	09:28:39
13	Lundby, is there any teaching in Lundby suggesting	09:28:41
14	that one particular code or particular codes could	09:28:45
15	be primary but others could not be?	09:28:49
16	MR. NIEBERG: Objection; form, scope.	09:28:52
17	Q. Do you have any understanding, as you're	09:30:29
18	sitting here today? This is taking a bit of time.	09:30:32
19	A. Can I have the question back, please.	09:30:39
20	MR. NIEBERG: Objection; form, scope.	09:30:41
21	Q. Sure. Prior to determining a code to be	09:30:42
22	assigned to a primary channel, is there any	09:30:45
23	teaching in Lundby suggesting that one particular	09:30:46
24	code or any particular codes could be primary but	09:30:49
25	others not?	09:30:52

1	MR. NIEBERG: Objection; form, scope.	09:30:54
2	A. Not that I recall, but if you point me	09:31:27
3	to a section, I'll be happy to discuss them.	09:31:29
4	Q. Suppose you have two codes in an	09:31:42
5	example; 1234, that's code 1, and 5678, that's	09:31:45
6	code 2. If, at the beginning of a transmission,	09:31:52
7	one of these codes must be assigned to Lundby's	09:31:56
8	primary channel, does Lundby teach or suggest any	09:31:59
9	reason for -- to prefer one of these example codes	09:32:03
10	over another?	09:32:06
11	MR. NIEBERG: Objection; form, scope.	09:32:07
12	A. Not that I recall, and it has nothing to	09:32:12
13	do with my opinion in this case.	09:32:16
14	Q. So you would regard either of these	09:32:18
15	codes -- of these example codes as being --	09:32:21
16	capable of being assigned to a primary channel; is	09:32:29
17	that correct?	09:32:33
18	MR. NIEBERG: Objection; form, scope.	09:32:33
19	A. I have not expressed that opinion.	09:32:35
20	Q. So do you know, sitting here today?	09:32:39
21	A. Do I know what?	09:32:43
22	Q. Whether one of those example codes could	09:32:45
23	be -- would be preferred to the other for	09:32:50
24	assignment to the primary channel -- to the	09:32:55
25	primary channel according to the teachings of	09:32:57

1	Lundby?	09:33:01
2	MR. NIEBERG: Objection; form, scope.	09:33:01
3	A. I have no opinion on this subject.	09:33:03
4	Q. After a code is assigned to a channel	09:33:14
5	for a particular user, is it possible for that	09:33:18
6	code to become unavailable to that same user in --	09:33:21
7	in conventional CDMA systems?	09:33:26
8	MR. NIEBERG: Objection; form, scope.	09:33:29
9	A. I don't recall.	09:33:32
10	MR. NIEBERG: Relevance.	09:33:33
11	Q. In the absence of anything going wrong	09:33:40
12	after a primary code has been assigned to a user,	09:33:44
13	would one expect that code to become unavailable	09:33:47
14	to that user?	09:33:50
15	MR. NIEBERG: Objection; form, scope.	09:33:52
16	A. I don't understand the question.	09:33:55
17	Q. So in the absence of any errors, once a	09:33:59
18	code is assigned to a user, i.e., there's a	09:34:03
19	channel code assigned to that user, would you	09:34:09
20	expect that code to become unavailable to that	09:34:13
21	user in a conventional CDMA system?	09:34:17
22	MR. NIEBERG: Objection; form, scope,	09:34:21
23	relevance.	09:34:25
24	A. I have no opinion on this matter, and it	09:34:26
25	has no relevance to my opinion in this case.	09:34:29

1 Q. Do you recall whether Lundby teaches  
2 anything regarding checking the availability of  
3 the primary code after it has already been  
4 assigned to a user?

5 MR. NIEBERG: Objection; form, scope.

6 A. I don't recall, and it has no relevance  
7 on my opinion.

8 Q. Does Lundby teach checking the  
9 availability of a secondary code to be assigned to  
10 a secondary channel?

11 MR. NIEBERG: Objection; form, scope.

12 A. I don't recall, and it has no relevance  
13 to my opinion in this case.

14 Q. In a system implementing the teachings  
15 of Lundby, if a code originally assigned to a  
16 primary channel becomes unavailable for some  
17 reason, would it be fair to say that, applying the  
18 teachings of Lundby, that another code's  
19 availability would be checked?

20 MR. NIEBERG: Objection; form, scope.

21 A. I have no opinion on this matter, and it  
22 doesn't have any relevance to my opinion in this  
23 case.

24 Q. Why do you regard the assignment of  
25 codes for the primary and/or secondary channel to

1 be unimportant for your opinions in this case?

09:36:37

2 A. Because the -- the teachings of Lundby  
3 apply regardless of whether there are coded  
4 transmissions or not. The teachings of Lundby in  
5 figure 2 apply to communication systems other than  
6 CDMA systems. And you're asking me about the  
7 details of assignments of particular  
8 channelization methods in CDMA which is in  
9 embodiments discussed in Lundby but is not  
10 important to my decision -- to my opinion in this  
11 case.

09:36:43

09:36:47

09:36:51

09:36:56

09:36:59

09:37:03

09:37:10

09:37:13

09:37:16

09:37:19

12 Q. You would agree that the -- that the  
13 preferred embodiment described in Lundby is a CDMA  
14 system, would you not?

09:37:27

09:37:31

09:37:35

15 A. Yes. We discussed that earlier.

09:37:38

16 Q. Is it your understanding that in CDMA  
17 systems, the assignment of codes is used in order  
18 to provide channels to such systems?

09:37:46

09:37:50

09:37:57

19 MR. NIEBERG: Objection; form, scope.

09:38:01

20 A. No. Not -- not entirely.

09:38:10

21 Q. You do not regard those assignment of  
22 codes as being part of the process of assigning  
23 channels in CDMA systems; is that -- is that  
24 correct?

09:38:21

09:38:24

09:38:28

09:38:33

25 A. I believe --

09:38:33

1	MR. NIEBERG: Objection; form, scope.	09:38:33
2	A. I believe you changed the question.	09:38:36
3	Could I have the question again, please.	09:38:38
4	MR. ATKINSON: Can I have the question	09:38:38
5	reread.	09:38:38
6	(The requested portion of the record was	09:38:38
7	read back by the reporter.)	09:39:03
8	A. In a CDMA system, the assignment of	09:39:03
9	codes is part of the provision of channels for	09:39:06
10	communications, yes. There are -- there are also	09:39:11
11	frequency-based channels utilized in CDMA systems.	09:39:18
12	Q. Turning to the Lundby reference, which	09:39:28
13	is Exhibit 1008. Would you mind opening that? Or	09:39:36
14	you may already have it open. Do you have that	09:39:47
15	open?	09:39:49
16	A. I do.	09:39:50
17	Q. And would you mind turning to column 2,	09:39:52
18	lines 53 to 61, please?	09:39:56
19	A. I'm there.	09:39:59
20	Q. Okay. Do you agree that Lundby -- this	09:39:59
21	describes two problems that its methods can solve,	09:40:08
22	specifically being code limited and power limited?	09:40:13
23	MR. NIEBERG: Objection; form.	09:40:19
24	A. I believe we discussed this on Friday.	09:40:31
25	So what Lundby said, and starting on line 57, is	09:40:33

1	what is desirable "is a way to increase the system	09:40:40
2	performance of a telecommunications system," and	09:40:43
3	primarily they mean the number of users in the	09:40:47
4	delivered bit error rate to the mobile devices.	09:40:52
5	Often measured in number of users. So	09:40:58
6	that's the number of users on the system that a	09:41:00
7	telecommunications system can simultaneously	09:41:04
8	support.	09:41:09
9	So the desire is -- as we discussed on	09:41:09
10	Friday, is, given an FCC allocation of a set of	09:41:11
11	channels, for an operator to provide	09:41:14
12	telecommunication service, that operator would	09:41:17
13	like to be able to service the largest number of	09:41:21
14	users that they possibly can.	09:41:25
15	And what Lundby teaches and what's known	09:41:28
16	in the art at the time of Lundby is that the Eb	09:41:31
17	over N0 transmission power relative to the noise	09:41:35
18	level in the system is important in determining	09:41:42
19	the delivered bit error rate.	09:41:46
20	So what Lundby teaches is that the	09:41:48
21	selection of codes is limited, as we discussed on	09:41:51
22	Friday. The ideal is to have one single channel	09:41:54
23	with an infinite number of codes that are all	09:41:59
24	mutually orthogonal, and that would service an	09:42:03
25	infinite number of users.	09:42:07



1           And the limited power, per the FCC,  
2           limits the amount of power that can be transmitted  
3           in a particular band.

4           So these are both constraints on the  
5           number of users that can actually be serviced by  
6           that frequency allocation from the FCC.

7           Q.    So what -- I'm not sure I understand  
8           your response. Is your response that Lundby  
9           describes problems other than being code limited  
10          or power limited? Or are those the problems that  
11          it -- that Lundby addresses?

12          MR. NIEBERG:  Objection; form.

13          A.    This paragraph in Lundby discusses the  
14          desirability of being able to serve the largest  
15          number of users. And what I talked about was the  
16          environment that Lundby is discussing.

17          Q.    So is that a yes or a no? I'm not sure  
18          I understand.

19          A.    Please ask your question.

20          Q.    So the question is does Lundby  
21          explicitly describe other specific problems other  
22          than being code limited or power limited?

23          MR. NIEBERG:  Objection; form.

24          A.    Well, yes. The -- as I just discussed,  
25          the environment that Lundby is teaching is, given

1	a frequency allocation, a set of channels by the	09:43:47
2	FCC with a limited power per the FCC and a limited	09:43:52
3	frequency range per the FCC, how do you service as	09:43:57
4	a -- as a service provider, the largest number of	09:44:03
5	users? That's the environment that Lundby is	09:44:08
6	discussing.	09:44:10
7	Q. But is that specifically discussed	09:44:13
8	within the -- Lundby itself, that environment?	09:44:16
9	A. Yes.	09:44:21
10	Q. Okay. Where is that?	09:44:21
11	A. In this sentence -- in this paragraph	09:44:26
12	starting on 50 -- column 2, line 53 to 61. That's	09:44:31
13	the environment that Lundby is describing for the	09:44:37
14	invention that Lundby is creating.	09:44:42
15	Q. All right. Would you mind turning to	09:44:46
16	figure 2 of Lundby?	09:44:50
17	A. Yes.	09:44:52
18	Q. Would you agree that the method shown in	09:44:55
19	figure 2 is a flowchart representative of Lundby's	09:44:58
20	methods?	09:45:03
21	A. Yes.	09:45:08
22	Q. How does the method shown in figure 2	09:45:14
23	revolve the issues of being power limited?	09:45:17
24	A. By being able to transmit --	09:45:24
25	THE WITNESS: Sorry.	09:45:27

1	MR. NIEBERG: Okay.	09:45:28
2	Objection; form.	09:45:29
3	Q. You can answer.	09:45:37
4	A. By being able to transmit in two	09:45:47
5	different streams, you can lower the required	09:45:50
6	power, so you can reduce the power leakage, per	09:45:54
7	the '551, caused by this transmission.	09:45:59
8	Q. Is there any point in the decision tree	09:46:19
9	of figure 2 or the text describing figure 2	09:46:22
10	describing checking of a channel's idle state?	09:46:28
11	MR. NIEBERG: Objection; form.	09:46:33
12	A. So the disclosure of Lundby applies to	09:48:08
13	the state 4 in figure 2 of the '551 process. So	09:48:13
14	Lundby applies after the -- the state 3 of	09:48:26
15	figure 2 in the '551 decision.	09:48:33
16	Q. Where is the term "idle" or "idle state"	09:48:39
17	used in Lundby?	09:48:43
18	A. As I said, Lundby applies to the S4	09:48:47
19	state in figure 2 of the '551. So it's post the	09:48:52
20	decision of whether there is a transmission to --	09:48:59
21	that will occur.	09:49:02
22	Q. Where does Lundby identify the '551	09:49:05
23	patent in this explicit text?	09:49:10
24	A. It doesn't.	09:49:13
25	Q. And is the term "idle" -- "idle" or	09:49:15

1	"idle state" used in Lundby?	09:49:18
2	A. The disclosures of Lundby apply after	09:49:22
3	state 3 in figure 2 of the '551.	09:49:25
4	Q. Is it fair to say that Lundby uses	09:49:31
5	neither of the terms "idle," "idle state," nor	09:49:36
6	identifies the '551 patent explicitly?	09:49:41
7	A. Yes, that's true. However, in my	09:49:47
8	opinion, the teachings of Lundby apply to S4 in	09:49:50
9	figure 2 of the '551.	09:49:55
10	Q. In the decision tree depicted in	09:49:58
11	figure 2 and the coming -- and the accompanying	09:50:02
12	text, is there any situation illustrated where	09:50:09
13	transmission would not occur at all?	09:50:14
14	MR. NIEBERG: Objection; form.	09:50:20
15	A. Well, as I just discussed, the teachings	09:50:22
16	of Lundby in this figure 2 apply after there's	09:50:29
17	been a decision to transmit. So there's no	09:50:35
18	determination of whether to transmit disclosed by	09:50:40
19	Lundby. It's the process of transmitting and	09:50:44
20	whether that process would be -- would occur on	09:50:47
21	one channel or multiple channels.	09:50:51
22	Q. But in both embodiments, there is	09:50:56
23	transmission on at least one channel; is that	09:50:59
24	correct? Both -- strike that.	09:51:06
25	In both branches of the decision tree,	09:51:06

1	there is transmission on at least one channel in	09:51:10
2	Lundby; is that correct?	09:51:13
3	A. The primary channel is present in both	09:51:19
4	element 1252 and element 1250 of figure 5 of	09:51:24
5	Lundby, correct.	09:51:33
6	Q. Turning to -- back to paragraph 120 of	09:51:42
7	your declaration?	09:51:46
8	A. Yes.	09:51:48
9	Q. Do you see about seven lines down	09:51:52
10	"Lundby teaches the transmitting device (e.g.,	09:51:57
11	base station) determines whether it is desirable	09:52:02
12	to transmit signals over one channel (a primary	09:52:05
13	signal) or two channels (a primary and a secondary	09:52:08
14	channel)."	09:52:12
15	Do you see that?	09:52:12
16	A. I do.	09:52:12
17	Q. Okay. Does this sentence in your	09:52:13
18	declaration describe the purpose of Lundby?	09:52:20
19	MR. NIEBERG: Object to form.	09:52:27
20	A. The purpose of Lundby. I don't	09:52:30
21	understand the question.	09:52:33
22	Q. So do you understand there -- Lundby as	09:52:34
23	providing a solution to a problem?	09:52:42
24	A. Yes, I discuss that in the previous	09:52:47
25	sentence. "Lundby discloses a method for	09:52:51

1 'improving the transmission of information signals 09:52:54  
2 in a communication system having a base station 09:52:56  
3 and a remote station.'" 09:53:00

4 Q. And does this sentence describe how 09:53:02  
5 Lundby achieves that purpose? 09:53:04

6 MR. NIEBERG: Objection; form. 09:53:08

7 A. No. 09:53:09

8 Q. Why or why -- why not? 09:53:09

9 A. I don't -- I don't understand the 09:53:13  
10 question. 09:53:17

11 Q. Well, so we're -- I'm trying to 09:53:18  
12 understand what you're trying to say when you say 09:53:22  
13 that Lundby -- "Lundby teaches" -- and, you know, 09:53:25  
14 the remainder of the sentence. Is that in 09:53:30  
15 connection with the purpose described in the prior 09:53:33  
16 sentence? 09:53:36

17 A. Yes. 09:53:41

18 Q. Okay. All right. If we can turn to 09:53:42  
19 paragraph 123. You state "The decision tree in 09:54:00  
20 figure 2 is independent of the type of wireless 09:54:09  
21 communication being used." 09:54:12

22 Do you see that? 09:54:14

23 A. Yes. 09:54:16

24 Q. What are you basing this upon in Lundby? 09:54:18

25 A. The statements that I've pointed out 09:54:26

1 many times in Lundby of discussing the multiple  
2 types of wireless communication systems that  
3 Lundby is addressing and my understanding of  
4 Lundby.

5 Q. Is there any specific statement from  
6 Lundby -- Lundby that you're relying upon for this  
7 statement?

8 A. Well, we've discussed this, you know,  
9 four or five times now. Lundby is not specific in  
10 terms of being applicable to a CDMA system until  
11 they get to an embodiment. So Lundby's abstract,  
12 as well as column 1, lines 5 to 22, describe  
13 general communication systems, and then they go  
14 into a specific with a CDMA-based system, which I  
15 would have expected, given that this is a Qualcomm  
16 author in the year 2000. And column 20, lines 20  
17 to 32, also show that Lundby is applicable to  
18 other types of communication systems other than  
19 CDMA.

20 Q. Would you mind turning, in the  
21 specification of Lundby, to column 4, lines 25,  
22 to, like, around 35?

23 A. Yes.

24 Q. Do you see a sentence starting around  
25 line 38 "Any parameter within a CDMA communication

1	system can be used as the basis of the decision in	09:56:46
2	decision block 246"?	09:58:54
3	A.    Sorry.  Somebody is rustling papers, and	09:56:57
4	you were breaking up there.  Can you repeat the	09:56:57
5	question, please?	09:57:00
6	Q.    I said, do you see the sentence at	09:57:00
7	line 30 "Any parameters within a CDMA	09:57:00
8	communication system can be used as the basis of	09:57:03
9	the decision in decision block 246"?	09:57:06
10	A.    I do.	09:57:13
11	Q.    Is it your opinion that the text here	09:57:13
12	describes -- is describing what is shown in	09:57:18
13	figure 2?	09:57:20
14	A.    An example -- an embodiment of figure 2,	09:57:24
15	yes.	09:57:33
16	Q.    Is it your opinion that this -- that	09:57:33
17	this sentence would inform a person of ordinary	09:57:35
18	skill -- of ordinary skill in the art's	09:57:39
19	understanding of figure 2?	09:57:42
20	A.    Don't understand the question.	09:57:46
21	Q.    Would a person of ordinary skill in the	09:57:47
22	art understand that the teachings of the sentence	09:57:50
23	would apply to figure 2 of Lundby?	09:57:54
24	A.    In an embodiment, yes.  However, a	09:57:59
25	POSITA would also understand that this disclosure	09:58:02



1	of any parameter would apply to communication	09:58:06
2	systems other than just CDMA systems.	09:58:13
3	Q. Does Lundby include instructions for --	09:58:32
4	for checking for the availability of a code?	09:58:41
5	A. I don't recall, and it's not important	09:58:49
6	to my decision in this case.	09:58:50
7	Q. Where in Lundby does it suggest using an	09:58:56
8	additional channel that does not rely upon coding?	09:59:00
9	MR. NIEBERG: Objection; form, scope.	09:59:05
10	A. Well, this entire discussion of	09:59:12
11	figure 2.	09:59:18
12	Q. And the discussion referred to	09:59:23
13	specifically refers to CDMA communication systems;	09:59:27
14	is that correct?	09:59:33
15	A. As an example, yes, as Lundby says, an	09:59:33
16	exemplary embodiment, he's talking about the -- a	09:59:39
17	code-based CDMA communication systems. But a	09:59:45
18	POSITA would understand that the teachings of	09:59:47
19	Lundby apply beyond the restrictions of a	09:59:50
20	code-based CDMA system.	09:59:55
21	Q. We can either take a break. I'm about	10:00:03
22	to start the -- with Shpak, or -- or I can go	10:00:06
23	ahead and -- and we can go ahead and move on to	10:00:10
24	Shpak, whichever you'd prefer.	10:00:15
25	A. Let's take a break.	10:00:18

1	MR. ATKINSON: Okay.	10:00:22
2	THE VIDEOGRAPHER: Off record,	10:00:22
3	10 o'clock.	10:00:24
4	(A recess ensued from 10:00 a.m. to	10:09:41
5	10:15 a.m.)	10:15:27
6	THE VIDEOGRAPHER: On record, 10:15.	10:15:28
7	BY MR. ATKINSON:	10:15:31
8	Q. All right. Dr. Williams, would you mind	10:15:32
9	turning to paper 14. And you may want to have	10:15:36
10	Exhibit 1005, which is the Shpak reference; you	10:15:40
11	know, you may want to have it handy as well. But	10:15:45
12	paper 14, if you want to get it. Let me know when	10:15:54
13	you have it.	10:15:56
14	A. Okay. I have them.	10:16:24
15	Q. All right. Would you turn to page --	10:16:25
16	hold on. I think it's 21 -- yes, 21 of paper 14.	10:16:27
17	A. 5-1?	10:16:35
18	Q. 21. Of paper 14.	10:16:39
19	A. Okay. Go ahead.	10:16:51
20	Q. All right. Do you see the sentence	10:16:53
21	starting with "On this record"?	10:16:56
22	Do you see that paragraph?	10:17:02
23	A. No. Maybe I have the wrong page number.	10:17:07
24	What's the page number?	10:17:10
25	Q. Page 21 of paper 14, the -- the board's	10:17:12

1	decision.	10:17:18
2	A. Yes. 21.	10:17:18
3	Q. 21.	10:17:20
4	A. Yes. Go ahead.	10:17:24
5	Q. And do you see the -- the first full	10:17:26
6	paragraph that starts with "On this record"?	10:17:30
7	Do you see that?	10:17:33
8	A. I do.	10:17:33
9	Q. And do you see where the board talks	10:17:36
10	about the mandatory channel?	10:17:45
11	Do you see that in this paragraph?	10:17:53
12	A. Yes.	10:17:53
13	Q. And do you see where it says that	10:17:53
14	mandatory channel means "one channel in a wireless	10:17:56
15	multichannel communication system over which	10:18:10
16	transmission must occur before transmission may	10:18:00
17	occur over the other wireless channels"?	10:18:02
18	Do you see that -- do you see that?	10:18:05
19	A. Yes. We discussed this on Friday.	10:18:11
20	Q. Under the PTAB's construction, does	10:18:14
21	Shpak -- the Shpak reference by itself, disclose a	10:18:19
22	mandatory channel?	10:18:26
23	MR. NIEBERG: Objection; form.	10:18:30
24	Objection; scope.	10:19:52
25	Q. Are you -- do you need anything from me	10:19:54

1	or...?	10:19:57
2	A. No, I'm just -- just considering your	10:19:59
3	question since I haven't opined on that before.	10:20:02
4	So, again, I'm forming a new opinion	10:21:50
5	here.	10:21:53
6	Q. Let me ask this. Do you have an opinion	10:22:24
7	on whether Shpak discloses a mandatory channel	10:22:28
8	according to the board's construction of that	10:22:32
9	term?	10:22:36
10	A. Sounds like the same question. I have	10:22:37
11	not considered that -- that question. If you'd	10:22:44
12	like me to, I will form a new opinion.	10:22:55
13	Q. Well, let's -- let me ask this. You are	10:22:58
14	aware of the -- of what Shpak calls the common	10:23:01
15	frequency channel? Are you aware of Shpak	10:23:06
16	discussing that?	10:23:09
17	A. You faded out there, but I think you	10:23:10
18	said common frequency channel.	10:23:13
19	Q. Yeah. I'm sorry. Let me try and get	10:23:14
20	the sound.	10:23:17
21	A. That's correct. He does discuss common	10:23:18
22	frequency channel.	10:23:21
23	Q. Would the common frequency channel meet	10:23:23
24	the language from the board of one channel in a	10:23:27
25	wireless multichannel communication system?	10:23:33

1	MR. NIEBERG: Objection; form, scope.	10:23:42
2	Q. Let me -- well, let me clarify. Does	10:23:54
3	the common frequency channel meet the language	10:23:57
4	quoted here from the -- from the board for	10:24:01
5	mandatory channel?	10:24:04
6	MR. NIEBERG: Objection; form, scope.	10:24:08
7	A. I think you're asking the same question.	10:24:10
8	This is a -- a opinion I have not formed yet since	10:24:12
9	the board's construction is different from what I	10:24:20
10	considered.	10:24:24
11	Q. So have you considered whether the --	10:24:27
12	the arguments presented in your declaration are	10:24:32
13	consistent with the board's construction?	10:24:36
14	MR. NIEBERG: Objection; form.	10:24:42
15	A. You're breaking up there, but I think	10:24:45
16	you said have I considered whether my opinion is	10:24:48
17	consistent with the board's construction?	10:24:52
18	Q. Well, the -- the opinions you've	10:24:54
19	presented in your declaration, have you considered	10:24:57
20	whether they are consistent with the board's	10:24:59
21	construction?	10:25:02
22	A. Again, I think you're asking --	10:25:05
23	MR. NIEBERG: Objection.	10:25:06
24	A. -- the same question. So we	10:25:07
25	discussed --	10:25:10

1	MR. NIEBERG: Objection; form, scope.	10:25:10
2	A. We discussed on Friday my opinion	10:25:12
3	regarding the board's construction. So that would	10:25:15
4	apply here. I believe that the board, with all	10:25:21
5	due respect, has incorrectly construed this term.	10:25:26
6	Q. Okay. And you don't know, sitting here	10:25:33
7	today, whether the common frequency channel in	10:25:38
8	Shpak meets the board's construction for mandatory	10:25:41
9	channel? Is that -- am I understanding that	10:25:48
10	correctly?	10:25:52
11	A. I have not formed an opinion on that.	10:25:52
12	Q. Give me just one second. All right.	10:26:14
13	Would you turn to page 35 of -- of paper 14,	10:26:33
14	please.	10:26:40
15	A. Yes.	10:26:47
16	Q. And you'll see at the paragraph at the	10:26:47
17	top of the page, wherein the board states "Based	10:26:50
18	on our preliminary construction of 'mandatory	10:26:55
19	channel,' multiple transmission channels are	10:27:00
20	required, which is not taught by Shpak."	10:27:00
21	Do you see that?	10:27:05
22	A. Yes.	10:27:06
23	Q. Do you agree with the PTAB's statement?	10:27:08
24	A. That Shpak doesn't teach the constructed	10:27:16
25	interpretation of mandatory channel?	10:27:23

1	Q. Yes, that's the question.	10:27:29
2	A. Is that your question?	10:27:30
3	Q. Yes.	10:27:32
4	MR. NIEBERG: Objection; form.	10:27:47
5	A. Well, I guess my question is whether	10:27:57
6	this sentence from the board means that Shpak	10:28:00
7	doesn't teach multiple transmission channels or	10:28:03
8	that Shpak doesn't teach the mandatory channel.	10:28:07
9	Q. Whether it -- whether you agree that it	10:28:12
10	does not teach multiple transmission channels	10:28:15
11	based on their construction of mandatory channel.	10:28:20
12	MR. NIEBERG: Objection; form.	10:28:26
13	Q. I'm asking whether you agree or disagree	10:28:32
14	with the board's statement.	10:28:35
15	A. I've not formed an opinion on that.	10:28:37
16	And, again, I refer you to our discussion on	10:28:45
17	Friday regarding my opinion about the board's	10:28:49
18	construction.	10:28:52
19	Q. Just to make sure -- you're -- you're	10:28:55
20	like -- just make clear -- your opinion that	10:28:59
21	the -- that -- with all due respect, that the --	10:29:05
22	that the board's construction for mandatory	10:29:08
23	channel is incorrect; is that correct?	10:29:12
24	A. Yes, the temporal nature of the	10:29:14
25	construction is not part of the disclosure is	10:29:19

1	one -- why I disagree with the board.	10:29:23
2	Q. Turning back to your declaration, if you	10:29:29
3	go to paragraph 126, which is on page --	10:29:37
4	A. I'm there.	10:29:41
5	Q. -- 78.	10:29:42
6	A. I'm there.	10:29:44
7	Q. In paragraph 126, you describe combining	10:29:52
8	Shpak with Lundby; is that fair?	10:29:59
9	A. Yes.	10:30:05
10	Q. Okay. To clarify, is it your opinion	10:30:05
11	that a person of ordinary skill would use Lundby's	10:30:07
12	teachings relating to the primary and secondary	10:30:12
13	channels to add a channel to Shpak in addition to	10:30:13
14	Shpak's common frequency channel?	10:30:17
15	A. You paraphrased that correctly.	10:30:23
16	Q. Okay. So I just want to make sure I	10:30:27
17	understand. Is it your view that if another	10:30:40
18	channel is added to Shpak and used in the manner	10:30:44
19	taught by Lundby with the primary and secondary	10:30:49
20	channels, that this would make Shpak's common	10:30:54
21	frequency channel a mandatory channel under the	10:30:57
22	PTAB's construction?	10:31:00
23	MR. NIEBERG: Objection; form.	10:31:02
24	A. One more time, I have not expressed an	10:31:05
25	opinion regarding the PTAB's construction on this	10:31:10



1 reference -- with regards to this reference. 10:31:12

2 Q. When you were forming your opinion, 10:31:22

3 based on your construction of mandatory channel, 10:31:26

4 is it your view that if another channel is added 10:31:30

5 to Shpak and used in a manner as taught by 10:31:34

6 Lundby -- 10:31:38

7 A. Sorry. You faded out right there at the 10:31:38

8 end. Another channel is added to Shpak. 10:31:41

9 Q. So if -- let me -- let me restart. 10:31:44

10 So to clarify, is it your view that 10:31:48

11 under your construction that if another channel 10:31:51

12 were to be added to Shpak and used in the manner 10:31:53

13 taught by Lundby for the primary and secondary 10:31:58

14 channels, that would make Shpak's common frequency 10:32:01

15 channel a mandatory channel under your 10:32:04

16 construction? 10:32:07

17 MR. NIEBERG: Objection; form. 10:32:12

18 A. Well, as I discuss in paragraph 125, a 10:32:30

19 person of ordinary skill in the art would have 10:32:34

20 readily seen a parallel between Lundby's primary 10:32:37

21 channel and Shpak's common frequency channel 10:32:41

22 because they serve similar roles as the default 10:32:43

23 channel used by the transmitting device. 10:32:50

24 Q. So is that a yes, it -- so is that a yes 10:32:53

25 or a -- or a no? 10:32:57

1	MR. NIEBERG: Objection to form.	10:33:06
2	Q. Do you want me to read the question	10:33:09
3	again?	10:33:10
4	A. Yes, please.	10:33:12
5	Q. Is it your view, applying your	10:33:14
6	construction, that if another channel is added to	10:33:17
7	Shpak and used in the manner taught by Lundby for	10:33:19
8	the primary and secondary channels, that this	10:33:24
9	would make Shpak's common frequency channel a	10:33:27
10	mandatory channel under your construction?	10:33:30
11	MR. NIEBERG: Objection; form.	10:33:35
12	A. So as we discussed, Lundby doesn't	10:35:45
13	disclose the decision to transmit based on the	10:35:53
14	idle nature of the -- what Lundby calls the	10:35:56
15	primary channel. And Shpak's disclosures relate	10:36:03
16	to Lundby's in terms of 802.11 implementations of	10:36:10
17	the channels. And the teaching of Lundby combined	10:36:15
18	with Shpak would allow for a POSITA to understand	10:36:21
19	the use of multiple channels.	10:36:28
20	Q. So just to I make sure I understand, it	10:36:38
21	is your opinion that Shpak combined with Lundby	10:36:41
22	would make the Shpak -- the common frequency	10:36:45
23	channel in Shpak a mandatory channel under your	10:36:49
24	construction? Do I have that correct or	10:36:53
25	incorrect?	10:36:56

1	MR. NIEBERG: Objection; form.	10:36:57
2	A. Well, I have not expressed the opinion	10:37:04
3	that either the primary channel or the common	10:37:06
4	frequency channel is the mandatory channel. What	10:37:10
5	I'm talking about is the applicability of Shpak in	10:37:17
6	the 802.11 context to incorporate the teachings of	10:37:22
7	Lundby with regards to incorporation of a second	10:37:28
8	channel in the transmissions.	10:37:31
9	Q. Have you formed an opinion as to whether	10:37:32
10	either the common frequency channel or the primary	10:37:34
11	channel -- the -- strike that.	10:37:39
12	Have you formed an opinion as to whether	10:37:43
13	either the common frequency channel taught in	10:37:46
14	Shpak or the primary channel taught in Lundby meet	10:37:50
15	your construction for mandatory channel?	10:37:56
16	A. I have not --	10:38:02
17	MR. NIEBERG: Objection; form.	10:38:03
18	A. -- expressed that opinion.	10:38:04
19	Q. Could you restate that? We kind of had	10:38:06
20	a talking over.	10:38:10
21	A. I have not expressed that opinion.	10:38:13
22	Q. So sitting here today, you don't have an	10:38:16
23	opinion as to whether either of those channels	10:38:21
24	meet your construction of mandatory channel?	10:38:23
25	A. That's correct.	10:38:31

1	Q.	And just to clarify, you also haven't --	10:38:31
2		have not formed an opinion as to whether either	10:38:34
3		meets the PTAB's construction for mandatory	10:38:38
4		channel?	10:38:40
5	A.	That's correct.	10:38:44
6	Q.	Okay.	10:38:45
7		Would you mind turning to paragraph 140	10:38:51
8		and 141 of your declaration, which is on -- I	10:38:54
9		passed it. Sorry. 140 is on page 87.	10:39:13
10	A.	Yes.	10:39:22
11	Q.	All right. Do you see about midway	10:39:22
12		through the paragraph where you have a statement,	10:39:25
13		"The Shpak-Lundby access point would have applied	10:39:27
14		Lundby's decision tree to select which channels to	10:39:32
15		use, A, the primary channel, or B, the primary	10:39:36
16		secondary channels when desirable."	10:39:39
17		Do you see that statement?	10:39:42
18	A.	I do.	10:39:44
19	Q.	All right. Which decision tree are you	10:39:44
20		referring to in Lundby? Is it figure 2 or	10:39:47
21		figure 5?	10:39:53
22	A.	Either figure would apply.	10:41:01
23	Q.	Did you have a particular one in mind	10:41:03
24		when you were -- when you were making -- or	10:41:07
25		whenever you were writing this paragraph? Or --	10:41:11

1	or did you not -- or did you have both in mind?	10:41:15
2	A. Either.	10:41:29
3	Q. Okay.	10:41:31
4	A. The only difference is whether -- where	10:41:37
5	the stream is encoded, pre decision or post	10:41:40
6	decision.	10:41:46
7	Q. Okay. Wait one second. If you'll -- if	10:41:47
8	you see in -- hold on -- the paragraph 141,	10:41:57
9	about -- about six lines from the bottom of	10:42:08
10	page 88, you'll see that there's a sentence	10:42:11
11	talking about using Lundby's decision tree to	10:42:17
12	transmit on the primary channel or the primary and	10:42:20
13	secondary channels --	10:42:24
14	A. Yes.	10:42:25
15	Q. -- and you reference figure 2?	10:42:26
16	A. Yes.	10:42:28
17	Q. Is that statement applicable only to	10:42:29
18	figure 2, or would it also be applicable to	10:42:32
19	figure 5 as well?	10:42:35
20	A. That statement would use either	10:43:14
21	flowchart. In other words, Lundby, as we	10:43:18
22	discussed before, is post the decision to	10:43:41
23	transmit.	10:43:45
24	Q. Taking figure 2 of Lundby as an example,	10:43:48
25	since you -- since you do reference that in your	10:43:56

1	declaration, how would the decision tree in -- in	10:44:00
2	Lundby be modified to -- to include the -- how	10:44:05
3	would you modify figure 2, if at all, to include	10:44:13
4	Shpak in the combination?	10:44:17
5	MR. NIEBERG: Objection; form.	10:44:22
6	A. I have not expressed this opinion.	10:44:24
7	Q. Do you have an opinion as to whether	10:44:32
8	figure 2 would be modified to include the	10:44:35
9	teachings of Shpak?	10:44:41
10	MR. NIEBERG: Objection; form.	10:44:45
11	Q. In forming your opinion?	10:44:47
12	MR. NIEBERG: Scope.	10:44:50
13	A. Well, Shpak -- Shpak's common frequency	10:44:56
14	channel is a mandatory channel because the CCA	10:45:01
15	algorithm inherent in 802.11 checks for the idle	10:45:09
16	nature of the channel before transmissions. So	10:45:14
17	that checking of -- of the decision to transmit or	10:45:17
18	not is -- occurs before figure 2 in Lundby.	10:45:22
19	So adding to figure 2 the decision to	10:45:29
20	transmit or not based on the CCA technology of	10:45:35
21	802.11 would include the key elements of the	10:45:41
22	mandatory channel definition per the plain and	10:45:48
23	ordinary meaning.	10:45:54
24	Q. So just so I understand, it's -- it's	10:45:54
25	your position that the -- the decision taught in	10:45:58

1	Shpak would precede the decision tree shown in	10:46:03
2	figure 2 of Lundby? Is that -- am I understanding	10:46:10
3	that correctly?	10:46:14
4	A. The decision shown in Shpak...	10:46:15
5	MR. NIEBERG: Objection; form.	10:46:20
6	A. Don't understand the question.	10:46:21
7	Q. Well, maybe I don't understand your	10:46:22
8	answer. So I believe you -- you mentioned a -- a	10:46:24
9	decision from Shpak. Did I -- did I misunderstand	10:46:28
10	that?	10:46:33
11	A. Yes.	10:46:35
12	Q. I did -- I did misunderstand it? Or	10:46:37
13	"No," the Shpak -- Shpak --	10:46:40
14	A. I believe that you misunderstood.	10:46:44
15	Q. Okay. Okay. Can you -- can you help me	10:46:46
16	clarify my misunderstanding?	10:46:50
17	A. So let's go up to Lundby, figure 2.	10:46:53
18	Q. Yes.	10:46:57
19	A. In Lundby figure 2, as we've discussed	10:46:58
20	before, there is no decision whether to transmit	10:47:01
21	or not, which is -- which is the decision of S3 in	10:47:03
22	the '551 patent, figure 2. Are you with me?	10:47:17
23	Q. Well, so I -- not -- not entirely,	10:47:25
24	'cause -- I'm not asking for the teachings of the	10:47:31
25	'551 patent. I'm asking about the Shpak combined	10:47:35

1 with Lundby and what -- and how Lundby would be 10:47:39  
2 modified to accommodate Shpak. 10:47:46  
3 A. So Shpak brings in the 802.11 10:47:53  
4 technology. And the 802.11 technology, while -- 10:47:59  
5 includes the CSMA processor, CCA. And that 10:48:06  
6 process allows a device to determine the idle/busy 10:48:14  
7 nature of the channel before transmission. And 10:48:20  
8 that decision is the decision of -- block of S3 in 10:48:24  
9 figure 2 of the '551. If you add the CSMA/CCA 10:48:29  
10 process to Shpak, the disclosure of Shpak's common 10:48:40  
11 frequency channel becomes a mandatory channel. 10:48:46  
12 And the use of the decision tree from Lundby, 10:48:48  
13 figure 2, does not include the decision to 10:48:56  
14 transmit or not. The decision's already made -- 10:49:00  
15 been made to transmit in Lundby figure 2. 10:49:04  
16 So modifying Lundby figure 2 to include 10:49:07  
17 a decision to transmit or not would include a 10:49:13  
18 block before block 242 in figure 2 of Lundby, 10:49:19  
19 which would decide whether to transmit or not. 10:49:25  
20 And the teachings of Shpak with regards 10:49:29  
21 to 802.11 systems would teach the determination of 10:49:33  
22 CSMA/CCA state of busy or idle is a process to 10:49:37  
23 determine whether the -- the channel is busy -- 10:49:44  
24 the mandatory channel is busy or idle. 10:49:48  
25 Q. So just so I understand, what specific 10:49:56



1	text would you add to figure 2 in making the --	10:50:03
2	the Shpak-Lundby combination?	10:50:10
3	MR. NIEBERG: Objection; form, scope.	10:50:15
4	A. Well, I think it's clearly laid out in	10:50:58
5	paragraph 141 of my report.	10:51:01
6	Q. So where do you discuss modifying	10:51:07
7	figure 2 other than the -- the reference to	10:51:10
8	figure 2? I see you're referring to figure 2, but	10:51:15
9	I don't see you discussing a modification to	10:51:21
10	figure 2 or what that modification is in	10:51:24
11	paragraph 141.	10:51:28
12	A. Why do I need to modify it?	10:51:28
13	Q. Well, maybe I'm misunderstanding. Do	10:51:32
14	you -- do you regard the -- the Shpak-Lundby	10:51:35
15	combination that -- that you've discussed in 141	10:51:41
16	as modifying any -- any part of figure 2 of	10:51:45
17	Lundby?	10:51:49
18	MR. NIEBERG: Objection; form.	10:51:53
19	A. Well, my opinion is that a POSITA	10:52:00
20	reading Lundby and a POSITA reading Shpak would be	10:52:03
21	taught to do the process described in 141, which	10:52:07
22	is a obviousness combination with regards to	10:52:12
23	element 1B of the patent -- of the '551 patent.	10:52:18
24	Q. And in making this obviousness	10:52:25
25	combination, would you modify figure 2 of Lundby	10:52:25

1	or not?	10:52:42
2	MR. NIEBERG: Objection; form.	10:52:42
3	A. To incorporate -- to anticipate element	10:52:43
4	1B? Is that your question?	10:52:46
5	Q. Well, so we're -- you're describing a	10:52:49
6	Shpak-Lundby combination in paragraph 141; is that	10:52:52
7	correct?	10:52:56
8	A. I am, with the addition of the	10:52:56
9	disclosure in Shpak of 802.11 which incorporates,	10:53:01
10	as was known to a POSITA, the CSMA/CCA algorithm.	10:53:05
11	Q. So is -- is that incorporation -- is	10:53:13
12	that happening prior to the steps described in	10:53:18
13	figure 2, or is it -- is -- in that combination,	10:53:22
14	would it add additional steps within the steps	10:53:27
15	described in figure 2?	10:53:32
16	MR. NIEBERG: Objection; form.	10:53:33
17	A. Well, again, we're talking about how a	10:53:41
18	POSITA would understand these teachings. And as	10:53:44
19	I've just discussed, Lundby figure 2 is a	10:53:46
20	flowchart post the decision to transmit on the	10:53:52
21	mandatory channel or what Lundby calls the primary	10:53:56
22	channel.	10:54:01
23	So to incorporate a decision to	10:54:02
24	transmit, a POSITA would be taught to include the	10:54:07
25	802.11 CSMA/CCA algorithm prior to entering the	10:54:13

1 flowchart of figure 2. 10:54:20

2 So prior to element 242, as I testified 10:54:24  
3 earlier, there would be a decision to transmit or 10:54:30  
4 not based on the state of the clear channel 10:54:34  
5 assessment in 802.11. 10:54:40

6 Q. Where in the combination of figure 2 10:54:45  
7 with the decision you described from Shpak, I 10:54:52  
8 believe, would idle state of the primary channel 10:54:59  
9 be checked? 10:55:04

10 MR. NIEBERG: Objection; form. 10:55:07

11 A. I just discussed the determination of 10:55:10  
12 the idle state of the primary channel, of a 10:55:14  
13 mandatory channel, which is the CSMA/CCA algorithm 10:55:18  
14 taught by the 802.11 standard. 10:55:25

15 Q. And just to be clear, that's -- that 10:55:28  
16 decision is happening before the blocks shown in 10:55:32  
17 figure 2; is that correct? 10:55:37

18 A. Yes. 10:55:41

19 MR. NIEBERG: Objection; form. 10:55:42

20 A. As I've said, the Lundby teaching is 10:55:44  
21 post decision to transmit. So Lundby figure 2 10:55:47  
22 occurs after the decision to transmit. 10:55:53

23 Q. Where would the idle state of the 10:56:02  
24 secondary channel be checked in this decision 10:56:05  
25 tree, as modified by Shpak? 10:56:08

1	MR. NIEBERG: Objection; form.	10:56:20
2	A. It's not necessary to check the idle	10:56:20
3	nature of the secondary channel, according to the	10:56:24
4	'551 patent.	10:56:27
5	Q. So just to make sure I understand, it's	10:56:28
6	your position that the idle state in modified	10:56:30
7	figure 2 would be checked before the box of -- 242	10:56:33
8	of figure 2; is that correct?	10:56:38
9	MR. NIEBERG: Objection; form.	10:56:45
10	A. Basically. If you look at Lundby	10:56:56
11	figure 2 with regards to '551 figure 2, Lundby	10:56:59
12	is -- the process taught by Lundby, Lundby would	10:57:07
13	be incorporated within S4, and then the process S2	10:57:12
14	and S3 would be before entering the Lundby	10:57:16
15	figure 2.	10:57:20
16	Q. So would one have to refer to the '551	10:57:21
17	in order to make the combination of Shpak and	10:57:26
18	Lundby; is that -- am I understanding that?	10:57:31
19	A. No.	10:57:35
20	Q. What are -- what is a person of ordinary	10:57:35
21	skill referring to in order to make the idle state	10:57:39
22	determination in Lundby as modified by Shpak?	10:57:47
23	A. The 802.11 standard.	10:57:50
24	Q. And, specifically, they -- they would	10:57:56
25	have to refer to the -- to the clear channel	10:57:59

1	assessment teachings of the -- of the 802.11	10:58:03
2	standard?	10:58:08
3	A. Correct. As I discuss in this	10:58:08
4	paragraph, paragraph 141.	10:58:20
5	Q. And how does -- how does Shpak get into	10:58:24
6	the scenario?	10:58:31
7	MR. NIEBERG: Objection; form.	10:58:37
8	A. Don't understand the question.	10:58:38
9	Q. Well, you refer to the 802.11 standard.	10:58:41
10	But the -- paragraph 141 appears to be discussing	10:58:46
11	Shpak-Lundby combination, correct?	10:58:53
12	A. Yes.	10:58:57
13	Q. So I understand you -- you were	10:58:58
14	referring to the 802.11 standard, the clear	10:59:03
15	channel assessment teachings of the 802.11	10:59:11
16	standard. How does Shpak fit into that	10:59:16
17	determination?	10:59:19
18	A. Because Shpak is directed to 802.11	10:59:19
19	systems and discloses, in paragraph 3, the use of	10:59:25
20	802.11 extensions to perform communications.	10:59:31
21	Q. So is the determination of idle state	10:59:39
22	from the primary channel, is that coming in	10:59:43
23	through the 802.11 standard, or is that coming in	10:59:47
24	from -- or is that coming in from Shpak?	10:59:51
25	MR. NIEBERG: Objection; form.	10:59:56



1	802.11 standard provides a mechanism for collision	11:01:48
2	avoidance known as CCA, which requires a station	11:01:54
3	to refrain from transmitting when it senses other	11:01:57
4	transmissions on its frequency channel." So this	11:02:01
5	is a decision to transmit disclosure specifically	11:02:04
6	within Shpak. However, the 802.11 provides	11:02:07
7	details of the algorithms used for CSMA/CCA.	11:02:10
8	Q. Okay. So just so I understand the --	11:02:18
9	your position, is it your position that -- that	11:02:22
10	the combination of Shpak plus Lundby alone	11:02:26
11	provides the teachings? Or is it the -- that you	11:02:30
12	describe in paragraph 141, or is it the teachings	11:02:35
13	of Shpak plus the 802.11 standard but Lundby that	11:02:38
14	makes the -- the combination you describe in	11:02:42
15	paragraph 141?	11:02:46
16	MR. NIEBERG: Objection; form.	11:02:48
17	A. Shpak-Lundby.	11:02:50
18	Q. Okay. And not -- not include -- not	11:02:58
19	include the 802.11?	11:03:00
20	A. A POSITA would have been directed to the	11:03:04
21	802.11 standard when reading Shpak. However,	11:03:08
22	Shpak has significant disclosure in it to disclose	11:03:11
23	the -- the determination of the idle/busy nature	11:03:15
24	of the channel prior to transmission.	11:03:18
25	Q. What happens in this combination if the	11:03:37

1	primary channel is determined to be busy?	11:03:43
2	A. If the mandatory channel is determined	11:03:56
3	to be busy? Then it's -- the transmission is	11:03:59
4	delayed until the mandatory channel is available.	11:04:03
5	Q. And when you say "the mandatory	11:04:07
6	channel," you're referring to the primary channel?	11:04:09
7	A. I'm referring to the mandatory channel	11:04:13
8	of claim element 1B.	11:04:15
9	Q. Well, so if you go to paragraph 141, you	11:04:22
10	say "Thus, the Shpak-Lundby access points would	11:04:25
11	have always sent packet transmissions using the	11:04:31
12	primary" -- and then you put in parenthesis --	11:04:34
13	"mandatory channel."	11:04:37
14	Do you see that?	11:04:38
15	A. Yes.	11:04:39
16	Q. So the combination -- in the	11:04:40
17	combination, you're referring to the -- when you	11:04:42
18	say "the mandatory channel," you're referring to	11:04:46
19	primary channel; is that correct?	11:04:48
20	MR. NIEBERG: Objection; form.	11:04:52
21	A. I'm referring to the claim term	11:04:57
22	"mandatory."	11:05:01
23	Q. Understand you're referring to the claim	11:05:01
24	term "mandatory." But I'm trying to understand	11:05:04
25	what you're pointing to as the mandatory channel.	11:05:07



1 And is that the primary channel in the 11:05:10  
2 Shpak-Lundby -- taught by Lundby in the 11:05:12  
3 Shpak-Lundby combination? 11:05:15  
4 A. Or Shpak's common frequency channel, 11:05:17  
5 yes. As I say at the first sentence of 141, 11:05:20  
6 "Shpak's 'common frequency channel' is a mandatory 11:05:24  
7 channel for the Shpak-Lundby access point." 11:05:27  
8 Q. So in either of the common frequency 11:05:30  
9 channel or the primary channel in this 11:05:37  
10 combination, what happens if the primary 11:05:40  
11 channel -- what happens if -- if the primary 11:05:44  
12 channel is busy? 11:05:47  
13 A. There is no transmission, and 11:05:52  
14 transmission waits until the mandatory channel is 11:05:55  
15 available for transmission. 11:06:00  
16 Q. Would the idle state of the secondary 11:06:07  
17 channel still be checked? 11:06:11  
18 A. I believe Shpak is silent on that. 11:07:09  
19 Q. What about the Shpak-Lundby combination 11:07:17  
20 you describe in paragraph 141? What does it do 11:07:22  
21 for a -- for a secondary channel -- to check the 11:07:28  
22 idle state of a secondary channel if the primary 11:07:32  
23 channel is busy? Well, strike that. 11:07:35  
24 In the combination, would the idle state 11:07:43  
25 of the secondary channel -- of the secondary 11:07:46

1	channel still be checked if the primary channel is	11:07:50
2	determined to be busy in the Shpak-Lundby	11:07:54
3	combination?	11:07:57
4	A. I've not expressed an opinion on this	11:10:04
5	point. This point is not important to my	11:10:08
6	determination of the disclosure of element 1B by	11:10:11
7	the Shpak-Lundby references. However, Lundby -- a	11:10:18
8	POSITA would understand that Lundby controls the	11:10:24
9	transmission on the second channel and that the	11:10:28
10	access points in Shpak, when arbitrating between	11:10:37
11	which access point will respond to the mobile's	11:10:42
12	request, will determine the available nature of	11:10:47
13	the second channel.	11:10:51
14	Q. So just to make sure I understand, in	11:10:55
15	the combination you describe in paragraph 141, the	11:11:01
16	idle state of the secondary channel is checked,	11:11:09
17	and that's taught by Shpak?	11:11:13
18	A. No.	11:11:17
19	Q. Okay. Where -- what did I miss?	11:11:18
20	A. You're understanding incorrectly.	11:11:21
21	Q. Can you clarify?	11:11:24
22	A. Not sure I can say it any clearer than	11:11:27
23	what I already said it.	11:11:30
24	Q. Well, I -- so I don't understand how --	11:11:31
25	how have I mischaracterized what you said?	11:11:37

1	MR. NIEBERG: Objection; form.	11:11:44
2	Q. Well, let me -- strike that.	11:11:57
3	Would -- in the combination you've	11:11:59
4	described, would the idle state of the secondary	11:12:02
5	channel be checked?	11:12:05
6	MR. NIEBERG: Objection; form.	11:12:10
7	A. So as I've testified before, Shpak is	11:12:12
8	silent on that. But, in my opinion, a POSITA	11:12:17
9	reading Lundby would understand that Lundby	11:12:22
10	controls the transmission facility of the second	11:12:26
11	channel due to system architecture. And that the	11:12:33
12	arbitration process described in Shpak would	11:12:40
13	provide for information regarding the idle/busy	11:12:43
14	nature of the second channel in the 802.11 system	11:12:46
15	for Shpak.	11:12:53
16	And the claim doesn't require	11:12:54
17	determining if the secondary channel is idle or	11:12:59
18	busy. The claim only determines the idle busy	11:13:04
19	nature of the mandatory channel. So the teachings	11:13:10
20	of Shpak and Lundby directly apply to the -- the	11:13:14
21	claim term 1B.	11:13:18
22	Q. What specifically are you relying upon	11:13:24
23	from Lundby in making this conclusion?	11:13:27
24	MR. NIEBERG: Object to form.	11:13:34
25	A. Lundby column 4, line 64 to 66.	11:15:37

1 Q. So you're referring to where it says -- 11:15:52

2 A. Actually, 62 to 66. "The first 11:15:55

3 threshold value is zero in one embodiment, meaning 11:16:01

4 that there must be at least one available 11:16:04

5 spreading code. This check is done because, 11:16:06

6 although it is desirable to reduce power by 11:16:10

7 transmitting data over two channels, a code needs 11:16:11

8 to be available to allocate to the secondary 11:16:14

9 channel." 11:16:17

10 So, again, in Lundby, a POSITA would 11:16:17

11 understand that the teachings of Lundby, that 11:16:20

12 system controls the access to the second channel 11:16:23

13 so knows the idle/busy nature of the second 11:16:30

14 channel. 11:16:33

15 Q. So just so I understand, it's your 11:16:34

16 position that the checking of whether there is an 11:16:37

17 available spreading code is performing the step of 11:16:41

18 determining whether the secondary channel is idle, 11:16:48

19 is that -- am I taking that correctly? 11:16:52

20 MR. NIEBERG: Objection; form. 11:16:55

21 A. That is the disclosure in one embodiment 11:16:56

22 in Lundby. And that would teach a POSITA that the 11:16:58

23 system would assign the availability of access to 11:17:06

24 those secondary channels. 11:17:09

25 Q. So just -- I hate to belabor the point, 11:17:17

1 but I want to make sure that we're not talking 11:17:23  
2 past each other. So you would agree that the -- 11:17:28  
3 that this -- that this disclosure you're pointing 11:17:30  
4 to in column 4, lines around 62 to 67, relates to 11:17:35  
5 checking whether there are spreading codes 11:17:45  
6 available for the secondary channel; is that 11:17:48  
7 correct? Have I stated that accurately? 11:17:51  
8 A. Well, the sentence says what it says. 11:17:53  
9 But my opinion is that a POSITA reading this would 11:17:56  
10 understand that the allocation of the availability 11:18:01  
11 to transmit on secondary channels would be 11:18:06  
12 controlled by the transmitter in Lundby. And 11:18:09  
13 since the transmitter has control of the channel, 11:18:12  
14 the transmitter would know the idle/busy nature of 11:18:15  
15 the channel. 11:18:18  
16 Q. And where does Lundby discuss the 11:18:22  
17 idle/busy nature of the secondary channel? 11:18:25  
18 A. Available for transmission. 11:18:30  
19 Q. Where are you seeing that? Or -- are 11:18:38  
20 you quoting Lundby? Or are those your words? 11:18:46  
21 A. Lundby column 4, line 62 to 66, in part 11:18:49  
22 reads "This check is done because, although it is 11:19:00  
23 desirable to reduce power by transmitting data 11:19:05  
24 over two channels, a code needs to be available to 11:19:08  
25 allocate to the secondary channel." That 11:19:11

1 availability of the code to allocate to the 11:19:13  
2 secondary channel is a determination of whether 11:19:15  
3 the secondary channel is idle or busy in this 11:19:17  
4 particular embodiment in Lundby. 11:19:21

5 Q. Okay. So the -- 11:19:25

6 A. I'd like to take a break. 11:19:27

7 Q. Sure. 11:19:30

8 THE VIDEOGRAPHER: Off record, 11:19. 11:19:33

9 (A recess ensued from 11:19 a.m. to 11:19:36  
10 11:31 a.m.) 11:31:28

11 THE VIDEOGRAPHER: On record, 11:31. 11:31:28

12 BY MR. ATKINSON: 11:31:32

13 Q. Dr. Williams, in the embodiment of 11:31:33  
14 Lundby that you point to at the bottom of 11:31:35  
15 column 4, is the primary channel busy or 11:31:41  
16 unavailable? 11:31:45

17 MR. NIEBERG: Objection; form. 11:31:50

18 Q. Well, strike that. 11:31:54

19 In the embodiment you point to at the 11:31:56  
20 bottom of column 4, is the primary channel busy? 11:31:59  
21 Or do you know? 11:33:14

22 A. The disclosures in Lundby, again, don't 11:33:15  
23 check whether the primary channel is idle or busy, 11:33:19  
24 as we've discussed in figure 2. The decision at 11:33:26  
25 246, figure 2, is whether there will be a 11:33:31

1 transmission on the primary channel or on the 11:33:36  
2 primary channel and secondary channels. And so 11:33:39  
3 there's already been a decision to transmit before 11:33:45  
4 entering figure 2, as we've discussed before. 11:33:50

5 And the availability of the -- of the 11:33:53  
6 channels in this particular example by the 11:33:57  
7 availability of the codes, determines whether you 11:34:01  
8 can transmit on just the primary channel or the 11:34:05  
9 primary channel and secondary channels. 11:34:09

10 Q. Is there any embodiment described in 11:34:15  
11 Lundby that describes a situation where the 11:34:24  
12 primary channel is not available? 11:34:26

13 A. Not that I recall. 11:34:50

14 Q. Likewise, is there any embodiment in 11:34:55  
15 Lundby where the availability of the secondary 11:34:58  
16 channel is checked, even though the primary 11:35:02  
17 channel is unavailable? 11:35:05

18 A. We just looked at a section that 11:35:09  
19 describes that. 11:35:11

20 Q. That describes the primary channel being 11:35:13  
21 unavailable? 11:35:17

22 A. Maybe I misunderstood your question. 11:35:21  
23 Could I have the question again, please? 11:35:24

24 Q. Yes. Is there any embodiment in Lundby 11:35:26  
25 where the availability of the secondary channel is 11:35:28

1	checked, even though the primary channel is	11:35:33
2	unavailable?	11:35:35
3	A. Not that I recall.	11:35:38
4	Q. In figure 2, as modified, you know, to	11:36:01
5	include the teachings of -- of Shpak, does it	11:36:08
6	indicate where there would be a transmission if	11:36:18
7	the primary channel is not idle?	11:36:22
8	MR. NIEBERG: Objection; form.	11:36:29
9	A. Well, again, Lundby, in figure 2, is	11:36:35
10	only discussing post -- the operations post the	11:36:40
11	decision to transmit. So that's analogous to the	11:36:45
12	S4 in figure 2 of the '551.	11:36:52
13	Q. So where would transmission where the	11:36:57
14	primary channel is not idle be indicated in	11:37:01
15	figure 2?	11:37:06
16	MR. NIEBERG: Objection; form.	11:37:10
17	A. Well, you're assuming that there is a	11:37:17
18	transmission if the primary channel is not idle.	11:37:19
19	So I don't understand your question.	11:37:25
20	Q. So in -- in figure 2, modified to	11:37:27
21	include the teachings of Shpak, as you've	11:37:32
22	discussed in your declaration, where would there	11:37:38
23	be a decision regarding transmission where the	11:37:47
24	primary channel is not idle?	11:37:50
25	MR. NIEBERG: Object to form.	11:37:56



1	A.	Where would there be a decision	11:37:59
2		regarding whether the primary channel is idle?	11:38:03
3	Q.	No. Let me -- let me clarify. Where	11:38:06
4		would there be a -- where would there be an	11:38:09
5		indication as to whether there would be a	11:38:12
6		transmission if the primary channel is not idle?	11:38:16
7	A.	That would be in the disclosure of Shpak	11:38:24
8		by incorporation of the CC -- the CSMA/CCA	11:38:27
9		algorithm from the 802.11 standards and the	11:38:33
10		disclosure in Shpak.	11:38:41
11	Q.	And the decision that you're referring	11:38:42
12		to from Shpak, you believe that would occur prior	11:38:45
13		to step 242 in Lundby in that combination?	11:38:50
14	A.	Yes.	11:38:57
15	Q.	Okay. Can you point to anything -- or	11:39:00
16		can you point me to Shpak, what you're relying	11:39:08
17		upon for that conclusion?	11:39:11
18	A.	We just discussed it.	11:39:14
19	Q.	Yeah, can you just point me to the	11:39:18
20		specific portion of Shpak that you're referring	11:39:21
21		to?	11:39:24
22	A.	Paragraph 5, for example, where it says	11:39:29
23		"The 802.11 standard provides a mechanism for	11:39:32
24		collision avoidance known as clear channel	11:39:36
25		assessment, which requires a station to refrain	11:39:36

1 from transmitting when it senses other

11:39:40

2 transmissions on its frequency channel."

11:39:43

3 Q. Okay. And so where is it referring to a  
4 determination of the primary channel as being not  
5 idle? Is it just the general disclosure of clear  
6 channel avoidance, or is there something more  
7 specific?

11:39:48

11:40:00

11:40:04

11:40:10

11:40:13

8 A. Well, in order to avoid a collision, you  
9 would not -- as the transmitter, you would not  
10 transmit on a channel that was busy. That's  
11 collision avoidance, as known by a POSITA.

11:40:14

11:40:17

11:40:19

11:40:26

12 Q. Okay.

11:40:31

13 A. And the details are in the 802.11 spec  
14 in terms of what happens if it's determined that  
15 that channel is busy, et cetera.

11:40:32

11:40:37

11:40:40

16 Q. So just so I understand, it's your  
17 position that the combination of Shpak and Lundby  
18 would perform this clear channel assessment prior  
19 to block 246 -- that's described in paragraph 5 of  
20 Shpak, that would occur prior to block 246 in  
21 figure 2 of Lundby in the combination? Do I have  
22 that accurately described?

11:40:42

11:40:46

11:40:55

11:40:59

11:41:05

11:41:11

11:41:15

23 MR. NIEBERG: Object to form.

11:41:19

24 A. Well, my opinion is, is that figure 2 of  
25 Lundby is equivalent to S4 in figure 2 of the

11:41:21

11:41:24

1 '551, and the addition of Shpak in the CCA process 11:41:30  
2 to determine the idle/busy nature of the channel 11:41:34  
3 to be transmitted on is MS3 of the figure 2 of the 11:41:39  
4 '551. And that loop back to S2 would be performed 11:41:44  
5 in a normal 802.11 CCA access point process. 11:41:49

6 Q. So is that a "Yes," I had it accurate, 11:41:59  
7 or, "No," I did not? 11:42:01

8 MR. NIEBERG: Object to form. 11:42:05

9 A. No, you did not. 11:42:05

10 Q. Okay. What -- what was inaccurate? 11:42:07

11 A. Well, the most accurate statement is the 11:42:13  
12 one I just gave. 11:42:15

13 Q. So I'm trying to understand what's the 11:42:17  
14 difference between what I said and what you said? 11:42:19  
15 What was the inaccuracy? 11:42:22

16 MR. NIEBERG: Object to form. 11:42:24

17 A. Well, figure 2 of -- figure 2 of Lundby 11:42:26  
18 is the process post decision to transmit. And the 11:42:31  
19 decision to transmit the disclosure in Shpak shows 11:42:39  
20 that the decision to transmit is based on the idle 11:42:46  
21 nature of the channel, the primary channel in 11:42:51  
22 Lundby. And that disclosure in Shpak would be 11:42:55  
23 equivalent to S3 and S2 in figure 2 of the '551, 11:43:04  
24 while the disclosure in Lundby figure 2 is 11:43:11  
25 equivalent to S4 in the '551 patent figure 2. 11:43:14

1           Q.    So just so I understand, where in           11:43:19  
2   figure 2 would the clear channel assessment           11:43:25  
3   described in paragraph 5 be done?           11:43:29  
4           A.    Okay.  Again, Lundby figure 2 does -- is           11:43:37  
5   post the decision to transmit.           11:43:42  
6           Q.    So it would be before block -- let me           11:43:47  
7   see -- I want to make sure.           11:43:51  
8                    So it would be before block 242 in           11:43:56  
9   Lundby?  Is that -- do I have that correct?           11:44:01  
10          A.    Well, the feedback loop from 252 and 250           11:44:04  
11   back to the top of 242 would have to be -- the           11:44:09  
12   decision to transmit would have to be included           11:44:17  
13   within that feedback loop.  So with that           11:44:19  
14   understanding.           11:44:22  
15          Q.    Okay.  Just to make sure I have it, the           11:44:25  
16   way you would modify figure 2 is to include a box           11:44:29  
17   above 242 that references a clear channel           11:44:34  
18   assessment from paragraph 5 of Shpak and that the           11:44:41  
19   arrow going from boxes 250 and 252 to the top           11:44:46  
20   would -- rather than going to 242, would go to           11:44:54  
21   this -- to this new block that includes the           11:44:59  
22   disclosure from Shpak in paragraph 5.  Is -- do I           11:45:02  
23   have that right?           11:45:08  
24          A.    Yes, and that's -- that's completely           11:45:09  
25   analogous to figure 2 in the '551.  That is the           11:45:12

1 teaching of figure 2 in '551. 11:45:17

2 Q. Okay. So in this modified figure 2 11:45:30

3 to -- to include the Shpak-Lundby combination, 11:45:39

4 what would happen if the primary channel is 11:45:45

5 determined to be busy but the secondary channel is 11:45:50

6 idle in the Shpak-Lundby combination? 11:45:56

7 MR. NIEBERG: Objection; form. 11:46:00

8 A. The mandatory channel idle determination 11:46:03

9 would fail, and there would be no transmission. 11:46:08

10 Q. So there would be no transmission on the 11:46:22

11 secondary channel? Do I have -- do I have that 11:46:26

12 right? 11:46:27

13 A. That's correct. 11:46:29

14 Q. And why would there be no transmission 11:46:34

15 on the secondary channel? 11:46:37

16 A. Because the mandatory channel was not 11:46:39

17 idle. 11:46:42

18 Q. And why -- why would there not be a 11:46:48

19 transmission on the secondary channel where the 11:46:52

20 primary channel is -- is determined to be not 11:46:55

21 idle? 11:47:01

22 A. Because Lundby teaches to transmit on 11:47:05

23 the primary and the secondary channels in block 11:47:08

24 250. So the determination is not -- the 11:47:11

25 determination to transmit is not based on the 11:47:17

1 state of the secondary channels. The 11:47:21  
2 transmission -- the decision to transmit is based 11:47:24  
3 on the state of the primary channel. 11:47:26  
4 Q. And we're adding the decision -- we're 11:47:34  
5 adding the decision to transmit on the -- whether 11:47:37  
6 or not to transmit on the primary channel, is that 11:47:41  
7 coming from Shpak? 11:47:43  
8 A. Yes. Again, figure 2 of Lundby, you've 11:47:47  
9 already decided to transmit before you enter 11:47:52  
10 figure 2 of Lundby, which is equivalent to S4 in 11:47:56  
11 figure 2 of the '551. 11:48:06  
12 Q. Where in Shpak is there discussions on 11:48:13  
13 multiple -- on more than -- on any channel other 11:48:20  
14 than the -- hold on. 11:48:24  
15 A. Sorry. Was that a question? 11:48:45  
16 Q. Hold on. I'm forming the question. 11:48:46  
17 Sorry. 11:48:49  
18 Where, in Shpak, is there any discussion 11:49:07  
19 of a channel other than the common frequency 11:49:12  
20 channel? 11:49:15  
21 A. So a POSITA reading Shpak and reading 11:49:46  
22 Lundby would be motivated to combine those two 11:49:50  
23 because Lundby teaches the advantages of including 11:50:00  
24 a second channel within the transmission decision 11:50:05  
25 process. 11:50:09

1	Q. So there is a no discussion of a -- of a	11:50:10
2	secondary channel in Shpak; is that correct?	11:50:13
3	MR. NIEBERG: Objection; form.	11:50:18
4	A. There's not a preclusion in Shpak of	11:50:32
5	multiple channel transmissions.	11:50:35
6	Q. But there's no discussion; is that	11:50:40
7	correct?	11:50:45
8	A. There's no preclusion of it.	11:50:45
9	Q. No preclusion, but also no discussion,	11:50:47
10	correct?	11:50:52
11	MR. NIEBERG: Object to form.	11:50:52
12	A. I don't see a preclusion of it.	11:50:53
13	Q. Well, so I'm not asking if there is a	11:50:56
14	preclusion. I understand that you -- that you're	11:51:01
15	saying there's no preclusion. I'm asking if there	11:51:02
16	is a discussion.	11:51:06
17	MR. NIEBERG: Object to form.	11:51:07
18	A. Only in the reference to 802.11.	11:51:08
19	Q. And the reference you're -- you're	11:51:19
20	referring to, is that -- is that the -- is that	11:51:22
21	the sentence in paragraph 5 that says "802.11	11:51:26
22	standard provides a mechanism for collision	11:51:30
23	avoidance known as clear channel assessment"?	11:51:34
24	That's the sentence you're referring to?	11:51:37
25	A. No.	11:51:38

1	Q.	No. What are you referring to?	11:51:38
2	A.	Paragraph 3.	11:51:40
3	Q.	Okay. Which portion of paragraph 3	11:51:45
4		specifically?	11:51:47
5	A.	The entire paragraph.	11:51:47
6	Q.	So I don't -- I don't see anything	11:51:54
7		discussing channels in paragraph 3. So what are	11:51:57
8		you specifically pointing to?	11:52:00
9	A.	Paragraph 3 refers to the 802.11	11:52:04
10		standards, which include multiple channels.	11:52:07
11	Q.	So I understand the 802.11 standards	11:52:12
12		include multiple channels. Is there any	11:52:16
13		discussion of these multiple channels in Shpak	11:52:18
14		itself?	11:52:25
15	A.	I don't see an explicit disclosure of	11:54:11
16		multiple -- multiple channels, but I don't see a	11:54:15
17		preclusion of it. So it's silent on that point,	11:54:20
18		only pointing to 802.11.	11:54:32
19	Q.	Okay. So since it's silent, how would	11:54:38
20		Shpak teach what to do in the event of multiple	11:54:42
21		channels is busy, given that there isn't an	11:54:46
22		explicit discussion of multiple channels in Shpak?	11:54:50
23	MR. NIEBERG:	Object to form.	11:54:53
24	A.	You're assuming that there -- that	11:54:55
25		multiple -- determination of multiple channels are	11:54:57



1	busy is a requirement.	11:55:00
2	Q. I -- maybe I mis -- I misspoke. How can	11:55:01
3	Shpak teach what to do when one of multiple	11:55:08
4	channels is busy, given that it does not teach --	11:55:13
5	or does -- given that there's no discussion of	11:55:17
6	multiple channels in Shpak?	11:55:20
7	A. The Shpak-Lundby access point would	11:55:23
8	include multiple channels, and Shpak teaches the	11:55:26
9	determination of the busy/idle nature of the	11:55:32
10	channel before transmission.	11:55:37
11	Q. Okay. So just so I understand, Shpak	11:55:44
12	teaches the determination -- it's your position	11:55:47
13	that Shpak teaches the determination of the busy	11:55:52
14	idle character of a single channel; is that	11:55:56
15	accurate?	11:56:00
16	A. Directly and multiple channels	11:56:00
17	indirectly.	11:56:04
18	Q. And multiple channels indirectly, what	11:56:05
19	are -- what are you relying upon for the multiple	11:56:08
20	channels indirectly?	11:56:11
21	A. Well, let me be clear. The availability	11:56:13
22	of multiple channels for use by the 802.11 access	11:56:17
23	point as specified in the 802.11 standards, not	11:56:22
24	the determination of busy/idle on multiple	11:56:30
25	channels.	11:56:34

1	Q.	So let me see if I understand. Is it	11:56:40
2		your position that the teaching of 802.11 clear	11:56:47
3		channel assessment for multiple channels provides	11:56:53
4		the disclosure in Shpak for multiple channels? Is	11:56:58
5		that what you're relying upon?	11:57:04
6	A.	Don't understand the question.	11:57:06
7	MR. NIEBERG:	Object to form.	11:57:07
8	Q.	What are you relying upon from Shpak for	11:57:09
9		the teaching of -- of determining whether multiple	11:57:12
10		channels are idle or not?	11:57:17
11	A.	There's no requirement in the claim to	11:57:23
12		determine whether multiple channels are available	11:57:26
13		or idle.	11:57:31
14	Q.	Is there a determination in the claim to	11:57:32
15		determine whether a mandatory channel is idle?	11:57:36
16	A.	I'm sorry. I didn't hear the entire	11:57:45
17		question.	11:57:49
18	Q.	You reference the requirements of the	11:57:49
19		claim. There is a requirement to determine if a	11:57:51
20		mandatory channel is idle in the claim; is that	11:57:57
21		correct?	11:58:00
22	A.	There's a requirement that says only	11:58:00
23		when the mandatory channel is idle in claim	11:58:02
24		element 1B of claim 1 of the '551 patent.	11:58:07
25	Q.	And is there -- is -- does the claim of	11:58:15

1	the '551 patent require determining whether any	11:58:20
2	other channels are idle?	11:58:24
3	A. No.	11:58:30
4	Q. So it's your position that claim 1 would	11:59:12
5	transmit without determining whether other	11:59:15
6	channels besides the mandatory channel are busy or	11:59:17
7	idle?	11:59:21
8	MR. NIEBERG: Objection; form.	11:59:24
9	A. A claim -- the '551 claim 1 infringing	11:59:39
10	device would transmit only when the mandatory	11:59:46
11	channel is idle.	11:59:48
12	Q. So you don't -- you don't believe there	11:59:51
13	would be any determination as to whether other	11:59:54
14	channels besides the mandatory channel are busy or	11:59:57
15	idle in claim 1; is that correct?	12:00:00
16	A. That could occur, but an infringing	12:00:04
17	device would transmit only when the mandatory	12:00:07
18	channel is idle.	12:00:11
19	Q. So turning back to Shpak, is it fair to	12:00:30
20	say that Shpak does not teach what to do in the	12:00:41
21	event one of multiple -- or teach what to do in	12:00:43
22	the event one of multiple channels is busy?	12:00:49
23	MR. NIEBERG: Objection; form.	12:00:55
24	A. One of multiple channels -- yes. It	12:01:01
25	says to test the -- use the CCA algorithm to	12:01:07

1	determine whether to transmit or not.	12:01:13
2	Q. But only as to a single channel, not as	12:01:15
3	multiple channels; is that correct?	12:01:19
4	MR. NIEBERG: Object to form.	12:01:21
5	A. Don't understand the question.	12:01:22
6	Q. So Shpak teaches -- teaches doing --	12:01:24
7	doing the clear channel assessment in relation to	12:01:29
8	the -- what was it -- the common frequency	12:01:40
9	channel, I believe, it was called; is that	12:01:40
10	correct?	12:01:42
11	A. Yes. Common channel.	12:01:42
12	Q. Right. The -- so it teaches doing clear	12:01:44
13	channel's assessment in relation to the common	12:01:47
14	channel. It does not teach the clear channel	12:01:50
15	assessment to multiple channels; is that correct?	12:01:54
16	A. Well, not exactly. In paragraph 5, the	12:01:59
17	author's pointing to 802.11 process of CCA to	12:02:02
18	determine whether to transmit or not and doesn't	12:02:07
19	restrict that determination just to the common	12:02:10
20	channel.	12:02:13
21	Q. Right. It -- your position is it	12:02:17
22	doesn't restrict it to only that channel, but the	12:02:20
23	only thing it's discussing is that channel; is	12:02:23
24	that correct?	12:02:28
25	MR. NIEBERG: Object to form.	12:02:28

1	A. The -- Shpak is primarily discussing the	12:02:31
2	common channel.	12:02:40
3	Q. Where is its discussion relating to	12:02:40
4	other channels?	12:02:45
5	A. As we discussed before, Shpak does not	12:02:46
6	discuss other channels except in its reference to	12:02:52
7	802.11.	12:02:56
8	Q. Okay.	12:02:56
9	So in the Shpak-Lundby combination, what	12:03:23
10	would happen if the clear channel assessment	12:03:27
11	determined that the primary channel was busy but	12:03:33
12	the secondary channel was idle? Would there be a	12:03:35
13	transmission on the secondary channel?	12:03:40
14	A. We've discussed this before. No. If	12:03:47
15	you look at figure 2 of Lundby, the primary	12:03:50
16	channel is included in both branches emanating	12:03:53
17	from decision block 246. So it would be against	12:04:00
18	the teachings of these disclosures to transmit on	12:04:07
19	the primary channel when the primary channel was	12:04:11
20	busy.	12:04:12
21	Q. Okay. So just -- just to break it	12:04:18
22	apart, so you've referenced Lundby and blocks --	12:04:21
23	the 246 decision tree. Is there anything that	12:04:31
24	you're relying upon for Shpak for your	12:04:37
25	determination that there would not be a	12:04:41

1	transmission on the secondary channel?	12:04:43
2	A. Yes. The CCA algorithm would prevent	12:04:53
3	transmission on the common frequency channel	12:04:57
4	based -- based on the understanding of a POSITA at	12:05:03
5	the time of that algorithm. And since Lundby	12:05:08
6	calls for the transmission of the common frequency	12:05:12
7	channel, a/k/a, the primary channel in figure 2,	12:05:17
8	in both branches, then a POSITA would understand	12:05:22
9	not to transmit in that case.	12:05:28
10	Q. Okay. So I understand that Shpak --	12:05:32
11	it's your position that Shpak teaches clear	12:05:36
12	channel assessment on the primary channel, which	12:05:40
13	in -- in this -- in the combined Shpak-Lundby	12:05:46
14	embodiment is the mandatory channel. Is that --	12:05:51
15	is that -- am I characterizing you correctly so	12:05:57
16	far?	12:06:01
17	A. You're close.	12:06:01
18	Q. Okay. What in Shpak teaches a clear	12:06:02
19	channel -- anything relating to a clear channel	12:06:12
20	assessment for the secondary channels?	12:06:15
21	A. Well, as we discussed, Shpak does not	12:06:18
22	discuss the secondary explicitly.	12:06:21
23	Q. So just to be clear, Shpak does not	12:06:30
24	describe using multiple channels between a mobile	12:06:35
25	device and an access point; is that correct?	12:06:39

1	A.	No.	12:06:41
2		MR. NIEBERG: Object to form.	12:06:42
3	Q.	So likewise, Shpak does not describe	12:06:49
4		what would happen if there were multiple channels	12:06:52
5		provided between a mobile device and an access	12:06:55
6		point and one of those channels was busy; is that	12:06:58
7		correct?	12:07:03
8		MR. NIEBERG: Object to form.	12:07:03
9	A.	Incorrect.	12:07:06
10	Q.	How is that incorrect?	12:07:08
11	A.	Well, the previous question was	12:07:10
12		incorrect, and this is incorrect. So you're	12:07:12
13		drawing --	12:07:17
14	Q.	I thought --	12:07:18
15	A.	You're drawing general conclusions from	12:07:19
16		our discussion, which are incorrect.	12:07:25
17	Q.	So let me go back. Let me make sure I	12:07:28
18		understand your -- your answers.	12:07:30
19		Does Shpak describe using multiple	12:07:32
20		channels between a mobile device and an access	12:07:35
21		point?	12:07:39
22		MR. NIEBERG: Object to form.	12:07:42
23	A.	Not specifically. But by reference to	12:07:44
24		the 802.11 standard, that is a possibility.	12:07:48
25	Q.	But Shpak itself does not specifically	12:07:54

1	describe multiple -- multiple channels, correct?	12:07:56
2	A. And this is something that a POSITA	12:08:00
3	would bring to the disclosure.	12:08:02
4	Q. So since Shpak does not describe	12:08:11
5	multiple channels, it is also fair to say it does	12:08:14
6	not describe what to -- what would happen if one	12:08:20
7	of a plurality of channels is busy; is that	12:08:23
8	correct?	12:08:29
9	A. Sorry.	12:08:29
10	MR. NIEBERG: Object to the form.	12:08:30
11	A. Somebody is typing on a keyboard. I	12:08:31
12	can't quite hear the question.	12:08:35
13	Q. Shpak -- since Shpak does not describe	12:08:36
14	multiple -- does not explicitly describe multiple	12:08:39
15	channels, it's also fair to say that it does not	12:08:42
16	describe what would happen if multiple channels --	12:08:45
17	if one of multiple channels provided between the	12:08:49
18	mobile device and access point was busy; is that	12:08:53
19	correct?	12:08:57
20	A. Incorrect.	12:08:57
21	MR. NIEBERG: Object to form.	12:08:58
22	A. Incorrect.	12:08:59
23	Q. And how is that incorrect?	12:09:00
24	A. 'Cause Shpak points to the CCA	12:09:02
25	algorithm, like we've discussed before, from	12:09:04



1 802.11, which determines whether a channel is 12:09:07  
2 available for transmission. 12:09:10  
3 Q. But it does not itself describe multiple 12:09:13  
4 channels, correct? Shpak itself does not describe 12:09:17  
5 multiple channels. It references 802.11. 12:09:20  
6 A. That's correct. 12:09:26  
7 Q. Okay. All right. Is -- is there 12:09:26  
8 anything in Lundby that supports your conclusion 12:09:43  
9 that there would not be a transmission on the 12:09:46  
10 secondary channel? 12:09:49  
11 A. In what circumstance? 12:09:54  
12 Q. In the circumstance where there is not a 12:10:01  
13 transmission of -- on a secondary channel where -- 12:10:07  
14 where the primary channel is idle. 12:10:11  
15 A. Well, to the extent I understand your 12:10:18  
16 question, block 252 discloses that -- 12:10:22  
17 Q. So .252 says -- 12:10:24  
18 A. -- in Lundby. 12:10:24  
19 Q. -- "transmit on primary channel." Is 12:10:27  
20 that -- is that correct? 12:10:28  
21 A. Right. 12:10:30  
22 Q. So is there a transmission on the 12:10:32  
23 primary channel when the primary channel is 12:10:35  
24 unavailable or not idle? 12:10:40  
25 A. Well, again, figure 2 in Lundby is 12:10:45

1 post -- occurs post the decision to transmit. 12:10:51

2 Q. So is it accurate to say that Lundby is 12:10:57

3 silent on the situation where the primary channel 12:11:01

4 is not idle? 12:11:07

5 MR. NIEBERG: Object to the form. 12:11:13

6 A. Incorrect. 12:11:25

7 Q. Why? 12:11:26

8 A. Well, about half an hour ago, we looked 12:11:28

9 at the clause in Lundby requiring the availability 12:11:32

10 of the codes to transmit. And if those codes are 12:11:35

11 not available, then there would be a busy nature 12:11:38

12 of the channels, and there would be no capacity in 12:11:41

13 the system to transmit on the primary channel in 12:11:48

14 Lundby. 12:11:51

15 Q. And where is Lundby discussing -- so 12:11:53

16 where is -- where is Lundby discussing the codes 12:12:00

17 being unavailable? 12:12:04

18 A. Well, we just looked at it. 12:12:07

19 Q. Well, can you point me to it or...? 12:12:11

20 A. Hang on. 12:12:14

21 So another disclosure -- well, we'll 12:12:34

22 come back to this. 12:12:37

23 So column 4, basically lines 55 to 67, 12:12:51

24 discuss the determination of the availability of 12:12:57

25 codes in order to transmit. Also in column 2, 12:13:02

1 line 46 to 52 discuss the limited amount of power 12:13:12  
2 that can be transmitted by a base station limiting 12:13:18  
3 the availability of channels if the base station 12:13:22  
4 cannot transmit to a particular user based on the 12:13:26  
5 limitations of the base station. So that would be 12:13:31  
6 a channel busy status. 12:13:34

7 Q. So the discussion in column 4 seems -- 12:13:39  
8 appears -- and correct me if I'm wrong. It 12:13:49  
9 appears to relate to whether there are any 12:13:54  
10 channels available for transmission; is that 12:13:56  
11 correct? 12:14:04

12 MR. NIEBERG: Object to form. 12:14:04

13 A. In this paragraph discussing the 12:14:32  
14 decision block in 246 at figure 2 of Lundby where 12:14:34  
15 it discloses determining whether the spreading 12:14:41  
16 codes are available to -- in order to allocate 12:14:46  
17 between a first and a second channel. 12:14:49

18 Q. So is this describing a situation where 12:14:58  
19 the code for the secondary channel is available 12:15:02  
20 but the code for the primary channel is not? Or 12:15:07  
21 is it instead describing a check to see whether 12:15:15  
22 there are any codes available? 12:15:20

23 MR. NIEBERG: Object to form. 12:15:22

24 A. Well, no. First of all, again, entering 12:15:22  
25 figure 2, there has been a decision to transmit. 12:15:31

1 And that decision to transmit is, according to 12:15:35  
2 Lundby, determined in part by the disclosures in 12:15:40  
3 column 2, lines 46 to 52, whether there can be a 12:15:50  
4 transmission from this base station at this time. 12:15:56

5 Also, the allocation of a code to the 12:15:59  
6 primary channel of Lundby is understood by a 12:16:03  
7 POSITA to be present if that primary channel must 12:16:08  
8 be transmitted based on the decision to transmit. 12:16:14  
9 And then the decision block of 246 is whether to 12:16:17  
10 allocate a second channel based on the 12:16:22  
11 availability of codes. 12:16:26

12 Q. Where does it describe the code for the 12:16:33  
13 secondary channel being available but the code for 12:16:35  
14 the primary channel being unavailable? 12:16:38

15 A. Well, again, before entering figure 2, 12:16:44  
16 the decision has already been made to transmit, 12:16:49  
17 which means that the code is available or the 12:16:52  
18 channel is available in the disclosure of Lundby. 12:16:54  
19 A situation in which that -- that channel would 12:16:58  
20 not be available is disclosed in figure 2 -- in 12:17:01  
21 column 2, lines 46 to 52. In that situation, 12:17:06  
22 there would not be an ability to transmit on the 12:17:13  
23 primary channel. And then column 4 disclosure 12:17:16  
24 regards the code -- the decision to transmit on a 12:17:18  
25 single channel or multiple channels based on the 12:17:23

1	availability of codes.	12:17:28
2	Q. But there's no discussion -- so is it	12:17:31
3	fair to say that it's describing whether or not	12:17:36
4	any code is available and not just whether the	12:17:39
5	code so saved to the primary or secondary channel	12:17:43
6	is available?	12:17:50
7	A. Don't understand the question.	12:17:51
8	Q. So where -- so I understand where --	12:17:56
9	that you're describing what happens when the	12:17:58
10	primary channel is available. Where does it	12:18:02
11	describe what happens when the secondary channel	12:18:06
12	is available but the primary channel is not	12:18:08
13	available?	12:18:11
14	MR. NIEBERG: Object to form.	12:18:14
15	A. Again, before entering figure 2 decision	12:18:18
16	process, you have already decided to transmit. So	12:18:22
17	you already know that the primary channel is	12:18:27
18	available to transmit on because both branches	12:18:30
19	coming out of the decision block 246 include	12:18:33
20	transmission on the primary channel, and it would	12:18:38
21	be against the teachings of the patent to transmit	12:18:40
22	on a channel that was currently being occupied,	12:18:43
23	which is a cause of power leakage or interference	12:18:48
24	to a receiver receiving information on that	12:18:52
25	particular channel.	12:18:55

1 Q. There's no -- there's no explicit 12:19:01  
2 discussion in Lundby, though, of -- of not 12:19:05  
3 transmitting other than in the situation where no 12:19:11  
4 codes are available; is that right? 12:19:15  
5 A. Incorrect. 12:19:19  
6 Q. Okay. How is that incorrect? 12:19:20  
7 A. Look at column 2, lines 46 to 52. 12:19:22  
8 Q. Column 2, lines 46 to 52. I don't see 12:19:31  
9 what you're referring to. 12:19:48  
10 A. Do you see column 2, lines 46 to 52, 12:19:50  
11 the -- this is a disclosure of the 12:19:54  
12 non-transmission on a primary channel due to the 12:20:00  
13 limits of the system being used in the 12:20:05  
14 communication system, which is a situation in 12:20:08  
15 which the primary channel is busy, is not 12:20:12  
16 available. So it -- it tells the user to not 12:20:19  
17 transmit, which is equivalent to S3 in figure 2 of 12:20:22  
18 the '551. 12:20:39  
19 Q. In this situation described in 12:20:41  
20 figures -- I mean on -- in figures -- on lines 46 12:20:44  
21 to 52 of column 2, where does it describe the 12:20:49  
22 secondary channels being available in the system? 12:20:54  
23 A. This is a decision on whether the 12:21:03  
24 primary channel would be available. 12:21:06  
25 Q. Correct. So it does not relate to the 12:21:09

1 situation which the primary channel is available 12:21:15  
2 but the secondary channels are unavailable; is 12:21:18  
3 that -- is that right? Because no spreading codes 12:21:21  
4 are available. 12:21:29  
5 A. Are you talking about column 4? 12:21:31  
6 Q. No. Column 2. 12:21:33  
7 A. No. Incorrect. 12:21:35  
8 Q. Why? 12:21:38  
9 A. Column -- column 2 doesn't talk about 12:21:39  
10 spreading codes. 12:21:43  
11 Q. Maybe I'm in the wrong spot. 12:21:47  
12 It says, "Therefore, even if there are 12:21:51  
13 additional spreading codes available"? 12:21:53  
14 A. You're reading from column 4. 12:21:56  
15 Q. I think this is in column 2. Column 2, 12:21:58  
16 line -- line 40 -- 12:22:02  
17 A. Yeah. Right. So even if there are 12:22:07  
18 additional spreading codes available, you're 12:22:09  
19 limited by the amount of power that can be 12:22:12  
20 transmitted by the base station. 12:22:14  
21 Q. Right. 12:22:15  
22 A. So that limits whether -- that 12:22:16  
23 determines whether you can transmit on any 12:22:19  
24 channel. It also limits whether you can transmit 12:22:24  
25 on a primary channel. 12:22:27

1           Q.    Right.  But it doesn't address the  
2           situation where the secondary channel is available  
3           but a primary channel is not available 'cause  
4           there are no spreading codes available at all.  Is  
5           that accurate?  I -- let me clarify.  They're  
6           available, but the system won't allow them to be  
7           used.

8           A.    Well, the situation in column 2 would  
9           shut down all transmission from the base station.  
10          When it comes out of that state, if the secondary  
11          channels become available, the -- the base station  
12          won't transmit until the primary channel is  
13          available, in your hypothetical.

14          Q.    Is there any discussion in Lundby  
15          regarding a situation where -- where transmission  
16          is possible on code -- on codes -- on secondary  
17          codes but not permitted because the primary code  
18          is unavailable?

19          A.    I believe your hypothetical is an  
20          inherency situation where the -- a communication  
21          system would inherently operate by prioritizing  
22          the primary channel over secondary channels in  
23          terms of transmission.

24          Q.    Let me ask it this way.  Is there  
25          anything in Lundby that teaches us -- that teaches



1	anything other than the system simply polling the	12:25:16
2	pool of codes until an available code is found?	12:25:22
3	MR. NIEBERG: Object to form, scope.	12:25:27
4	A. I don't see a disclosure of polling the	12:25:41
5	available pool of codes.	12:25:47
6	Q. So in column 2 where we were -- I guess	12:25:49
7	around lines 44 to the end, it's -- this is --	12:25:52
8	this is describing -- asking -- this is asking	12:26:00
9	whether a code is available in transmission being	12:26:03
10	allowed, is it not? Any -- any code.	12:26:07
11	A. No.	12:26:11
12	Q. Why?	12:26:18
13	A. This is limiting the transmit power of	12:26:18
14	the base station.	12:26:21
15	Q. Right.	12:26:22
16	A. Through the capabilities in the base	12:26:23
17	station.	12:26:25
18	Q. And so it's not allowing additional	12:26:27
19	transmissions on any code, is it not?	12:26:31
20	A. Depends what you mean by "it," but the	12:26:43
21	disclosure here is talking about not transmitting	12:26:46
22	on channels based on having -- the base station	12:26:50
23	having reached a power limited situation.	12:26:53
24	Q. But the power limited situation would	12:26:59
25	apply to all the codes; is that -- is that	12:27:03

1	correct?	12:27:06
2	A. All the codes available to that base	12:27:06
3	station?	12:27:09
4	Q. Yes.	12:27:10
5	A. Yes. True.	12:27:11
6	Q. In CDMA systems generally, if a first	12:27:22
7	code is checked as unavailable, wouldn't a typical	12:27:28
8	CDMA system proceed to check for the availability	12:27:35
9	of other codes until an available code is found?	12:27:39
10	MR. NIEBERG: Object to form, scope.	12:27:44
11	A. I don't recall.	12:27:46
12	Q. So you don't know one way or the other	12:27:48
13	in typical CDMA systems?	12:27:51
14	MR. NIEBERG: Object to form, scope.	12:27:56
15	A. I don't recall.	12:27:57
16	Q. In a CSMA carrier sent system where	12:28:12
17	multiple channels are available, if one channel is	12:28:19
18	available but another is idle, wouldn't there be a	12:28:22
19	transmission on the idle channel in typical CDMA	12:28:25
20	systems?	12:28:34
21	MR. NIEBERG: Object to form, scope.	12:28:34
22	A. Are you talking about a hypothetical	12:28:39
23	system?	12:28:41
24	Q. I'm talking about most -- typical	12:28:41
25	carrier sent systems.	12:28:44

1	A. They use CDMA.	12:28:52
2	Q. No, no, no, not necessarily CDMA. Just	12:28:55
3	CSMA systems generally.	12:28:58
4	A. I don't have your hypothetical in mind.	12:29:01
5	Q. So in a typical CSMA -- not CDMA, but	12:29:03
6	CSMA -- in a typical CSMA system where multiple	12:29:10
7	channels are available between a client and an	12:29:16
8	access point, if one channel is found to be busy	12:29:18
9	but another is idle, wouldn't there be an idle --	12:29:22
10	a transmission on the idle channel in a typical	12:29:27
11	CSMA system?	12:29:30
12	A. Depends on the system. Depends on the	12:29:31
13	programming of the system.	12:29:33
14	Q. So is there a typical behavior in CSMA	12:29:45
15	systems generally? Or do you -- or is that	12:29:50
16	something you don't know?	12:29:53
17	MR. NIEBERG: Object to form.	12:29:56
18	A. Well, that's like asking is there a	12:29:57
19	typical behavior in a TDMA system. Depends on the	12:30:01
20	system.	12:30:05
21	Q. Well, so what happens in most CSMA	12:30:06
22	systems, if you know?	12:30:10
23	A. What do you mean by "most"?	12:30:11
24	MR. NIEBERG: Object to form, scope.	12:30:13
25	Excuse me.	12:30:16

1	Q.	More -- more often than not.	12:30:17
2	A.	It depends on the system.	12:30:25
3	MR. NIEBERG:	Object to form, scope.	12:30:25
4	Q.	Do you have an opinion on whether -- on	12:30:28
5		whether CSMA systems generally determine whether	12:30:31
6		or not to -- how they behave?	12:30:35
7	MR. NIEBERG:	Object to form, scope.	12:30:40
8	A.	Depends on the system.	12:30:41
9	Q.	So is that a yes or a no?	12:30:43
10	A.	It's a I don't understand your question,	12:30:50
11		and the answer to your question depends on more	12:30:52
12		specifics regarding the nature and the system	12:30:55
13		we're discussing.	12:31:00
14	Q.	Well, so let me clarify. So if we were	12:31:01
15		talking about people, it would be fair to say that	12:31:06
16		most people have ten fingers and toes, would it	12:31:13
17		not?	12:31:17
18	A.	Statistically, I'd say that's true.	12:31:20
19	Q.	But there's some that don't, correct?	12:31:22
20	A.	Correct.	12:31:27
21	Q.	So in a typical CSMA system, where one	12:31:27
22		channel is found to be busy but another is idle,	12:31:34
23		would there be a transmission on the idle channel	12:31:37
24		in typical CSMA systems?	12:31:40
25	MR. NIEBERG:	Object to form, scope.	12:31:42

1	A.	Depends on the system.	12:31:44
2	Q.	Do you -- do you have an opinion on	12:31:49
3		whether there -- there is a behavior one way or	12:31:51
4		the other in most CSMA systems as implemented?	12:31:56
5	MR. NIEBERG:	Object to form, scope.	12:32:00
6	A.	I need more information in your	12:32:04
7		hypothetical.	12:32:07
8	Q.	Well, so in the universe of CSMA systems	12:32:07
9		actually implemented, you know, in the world,	12:32:12
10		where one channel is found to be busy but another	12:32:18
11		is idle, would there be a transmission on the idle	12:32:21
12		channel in those systems?	12:32:24
13	MR. NIEBERG:	Object to form, scope.	12:32:29
14	A.	I have not opined on this.	12:32:32
15	Q.	So you don't have a -- you don't have a	12:32:34
16		opinion, sitting here today, one way or the other?	12:32:37
17	A.	No.	12:32:43
18	Q.	All right.	12:33:04
19		I'd like to refer you to Exhibit 1007,	12:33:06
20		Bugeja.	12:33:17
21	MR. NIEBERG:	Counsel, I think we have	12:33:18
22		about 10 or 12 minutes left on the record.	12:33:20
23	MR. ATKINSON:	Oh. Why don't we --	12:33:23
24		well, can we go off the record and then check	12:33:24
25		time?	12:33:28

1	MR. NIEBERG: Sure.	12:33:29
2	THE VIDEOGRAPHER: Off record 12:33.	12:33:29
3	(A recess ensued from 12:33 p.m. to	12:33:32
4	12:34 p.m.)	12:34:00
5	THE VIDEOGRAPHER: On record. 12:34.	12:34:04
6	BY MR. ATKINSON:	12:34:07
7	Q. All right. Turning to the Bugeja	12:34:08
8	reference, 1007, do you have that?	12:34:12
9	A. Bugeja, yes.	12:34:15
10	Q. How did you -- how did you pronounce	12:34:16
11	it -- I think I remember. We have different	12:34:20
12	pronunciations. How -- how are you pronouncing	12:34:27
13	it?	12:34:29
14	A. I pronounce it Bugeja.	12:34:29
15	Q. Okay. I'll try -- I'll try to conform	12:34:31
16	with your --	12:34:32
17	A. Or we can just call it the '112 too.	12:34:32
18	Q. Okay. The '112.	12:34:35
19	So it describes -- the '112 reference	12:34:38
20	describes multichannel access points; is that	12:34:45
21	correct?	12:34:48
22	A. Yes.	12:34:48
23	Q. What's your understanding as to what a	12:34:48
24	multichannel access point is?	12:34:50
25	A. It's an access point that's capable of	12:34:53

1	transmitting and receiving on multiple	12:34:58
2	frequencies.	12:35:02
3	Q. Okay. And if you wouldn't mind turning	12:35:02
4	in your -- in your declaration to paragraph 166.	12:35:05
5	It's on page 103.	12:35:22
6	A. 166?	12:35:35
7	Q. Yeah. Page 103, PDF page 111, but	12:35:37
8	numbered page 103.	12:35:43
9	A. Sounds like somebody's having fun.	12:35:51
10	Q. Nobody here.	12:35:55
11	A. Nobody here.	12:35:57
12	Okay. I'm on 166.	12:35:59
13	Q. All right. So in paragraph 166 of your	12:36:02
14	declaration, you refer to figure 4 of Bugeja -- of	12:36:09
15	'112. Do you see that?	12:36:12
16	A. I do.	12:36:13
17	Q. And you describe client 410 in figure 4	12:36:13
18	which is assigned the primary channel or any of	12:36:17
19	the secondary channels. Do you -- do you see	12:36:19
20	that?	12:36:22
21	A. Yes.	12:36:23
22	Q. All right. Now, looking at	12:36:23
23	paragraph 166 of your declaration, at one point	12:36:32
24	you say, "Assigned the primary channel or any of	12:36:34
25	the secondary channels."	12:36:37

1 Do you see that? 12:36:39

2 A. Yes. 12:36:47

3 Q. Okay. Does this mean that client 410 in 12:36:48

4 the '112 is assigned only one channel for use? 12:36:55

5 A. So in the -- in the disclosure of the 12:38:38

6 '211 [sic], the -- the example in figure 4 is a 12:38:46

7 situation in which the available channels are -- 12:38:52

8 are down to one channel in the extended region, 12:38:56

9 physical geographic region. 12:39:02

10 However, if there were only two -- a 12:39:05

11 POSITA would understand that if there are only two 12:39:09

12 circles of -- in figure 4 and channel 6 were 12:39:11

13 available to be used in the extended region for 12:39:17

14 access point 402, there could be two 12:39:22

15 extended-range channels, in which case the access 12:39:31

16 point could assign two channels to a particular 12:39:35

17 access point, for example, 408 -- or particular 12:39:40

18 station, for example, 408. 12:39:44

19 Q. Okay. So let me see if I understand 12:39:46

20 your statement. So is -- or is device 408 12:39:55

21 assigned one channel, or is it assigned multiple 12:40:03

22 channels? 12:40:08

23 A. In the example of the 211, Bugeja, the 12:40:08

24 station 408 is assigned to a single channel, 12:40:16

25 channel 11, because it's in the extended region 12:40:21



1 for access point 402. However, a POSITA would 12:40:24  
2 understand that that could be extended to multiple 12:40:29  
3 channels if they -- those multiple channels were 12:40:32  
4 available. 12:40:35

5 Q. Right. But it only -- it only ascribes 12:40:37  
6 assigning one channel to that device; is that 12:40:43  
7 correct? 12:40:46

8 A. Correct. But it doesn't limit it to 12:40:46  
9 only a single channel. So if there were a 12:40:48  
10 channel -- in two cases. If there were a 12:40:54  
11 channel 13, 15, 17 available in this particular 12:40:56  
12 communication system, channels 11 and 13 could be 12:41:01  
13 assigned to station 408. Or if one of the three 12:41:07  
14 circles was not present, then you could also 12:41:12  
15 incorporate a second frequency in the extended 12:41:16  
16 geographic region. 12:41:21

17 Q. Okay. So just -- just so I'm -- to make 12:41:22  
18 sure I understand your position. Your position is 12:41:26  
19 that it isn't -- that it is not disclosed in the 12:41:29  
20 reference itself, but it would be within the 12:41:35  
21 knowledge of a person of ordinary skill in the 12:41:39  
22 art? Am I accurately describing your position? 12:41:42

23 A. Well, the -- yes, you are. The -- the 12:41:44  
24 embodiment described in the two -- in the '112 12:41:51  
25 is -- is limited to only three channels. But if 12:41:56

1     there were, for example, seven channels available     12:42:00  
2     in this architecture of figure 4, a POSITA would     12:42:03  
3     understand that multiple channels could be     12:42:07  
4     assigned to that extended region of access point     12:42:10  
5     402.     12:42:15

6             Q.     Okay.     12:42:20

7             All right.   Would you turn to     12:42:36  
8     paragraph 187 of your declaration, please?     12:42:38

9             A.     187?     12:42:41

10            Q.     Yes.   187.     12:42:43

11            A.     Yes.   Go ahead.     12:42:46

12            Q.     All right.   So here you describe     12:42:47  
13     channel 11.   Would the language requiring the     12:42:56  
14     mandatory channel to be one channel -- in a     12:43:07  
15     wireless multichannel communications system under     12:43:10  
16     the PTAB's construction, would channel 11 meet     12:43:13  
17     that construction?     12:43:18

18            MR. NIEBERG:   Object to form.     12:43:19

19            A.     Well, as we've discussed before, I have     12:43:24  
20     issues with the -- the construction mandatory     12:43:27  
21     channel per the PTAB.   So I have not expressed an     12:43:33  
22     opinion on that.     12:43:35

23            Q.     Do you have an opinion, sitting here     12:43:36  
24     today?     12:43:39

25            A.     Not at this time.   And I explained my     12:43:39

1	reasons for that on Friday.	12:43:48
2	Q. How could channel 11 be one channel in a	12:43:54
3	wireless multichannel system if it is the only	12:43:57
4	channel assigned to client 408?	12:44:01
5	MR. NIEBERG: Object to form.	12:44:05
6	A. Well, there are multiple channels in	12:44:12
7	this communication system.	12:44:14
8	Q. Correct. But for the -- as to the	12:44:18
9	device --	12:44:22
10	A. Can I have the question again, please.	12:44:29
11	Q. So given that device 408, I believe it	12:44:35
12	is --	12:44:39
13	A. Yes.	12:44:39
14	Q. -- is assigned only a single channel and	12:44:39
15	the example is channel 11, how can channel 11 be	12:44:46
16	one channel in a wireless multichannel system when	12:44:53
17	it's the only the -- when it is the only channel	12:44:59
18	assigned to device 408?	12:45:01
19	MR. NIEBERG: Object to form.	12:45:03
20	A. Well, there are multiple channels within	12:45:03
21	this system, so it's a multichannel system.	12:45:06
22	Q. But as -- as to device 408, how does	12:45:09
23	device 408 have access to multiple channels?	12:45:15
24	A. When device 408 moves to the right and	12:45:18
25	enters the 404 circle, device 408 will communicate	12:45:24

1	on channel 1. If device 408 -- if station 408	12:45:31
2	moves to the south, it will be captured by access	12:45:38
3	point 410 and communicated on channel 6.	12:45:43
4	MR. NIEBERG: Counsel, I think we're out	12:45:51
5	of time now.	12:45:55
6	MR. ATKINSON: All right. Yeah. That's	12:45:55
7	fine. Do you have any redirect or...	12:45:57
8	MR. NIEBERG: Yeah, I may have a few	12:46:00
9	minutes of.	12:46:03
10	So, Dr. Williams, do you want to take a	12:46:04
11	break, or do you want to get to that now?	12:46:06
12	THE WITNESS: Yes. Let's take a	12:46:09
13	ten-minute break, and then we can do whatever you	12:46:11
14	need.	12:46:13
15	MR. NIEBERG: Okay. So about ten	12:46:14
16	minutes?	12:46:15
17	THE WITNESS: Yes, please.	12:46:15
18	MR. ATKINSON: That's fine.	12:46:16
19	MR. NIEBERG: Okay. Great.	12:46:17
20	THE VIDEOGRAPHER: Off record. 12:46.	12:46:18
21	(A recess ensued from 12:46 p.m. to	12:46:20
22	12:53 p.m.)	12:54:01
23	THE VIDEOGRAPHER: On record, 12:53.	12:54:02
24	EXAMINATION	12:54:05
25	BY MR. NIEBERG:	12:54:05

1	Q. Hi, Dr. Williams. I have a few minutes	12:54:06
2	of redirect.	12:54:09
3	You testified earlier today regarding	12:54:10
4	the number of channels disclosed in Shpak,	12:54:12
5	Exhibit 1005. Do you recall that?	12:54:16
6	A. Yes.	12:54:19
7	Q. Can you turn to paragraph 67 of your	12:54:20
8	declaration, and read that paragraph.	12:54:24
9	A. I have.	12:54:54
10	Q. Okay. What are you explaining in	12:54:55
11	paragraph 67 of your declaration?	12:54:59
12	A. The availability in the United States of	12:55:01
13	three channels -- at least three channels for	12:55:05
14	the 2.4-gigahertz band in 802.11.	12:55:10
15	Q. And in paragraph 67, you cite to Shpak,	12:55:15
16	paragraph 0006, correct?	12:55:21
17	A. I do.	12:55:24
18	Q. Can you please turn to Shpak	12:55:26
19	paragraph 0006, and read that paragraph.	12:55:29
20	A. Okay. I have.	12:55:52
21	Q. And what is Shpak describing in	12:55:54
22	paragraph 0006?	12:55:59
23	A. The available of multiple frequencies to	12:56:00
24	be used in 802.11 wireless LANs throughout the --	12:56:04
25	in the United States and throughout the world.	12:56:08

1	Q. Are those multiple wireless channels	12:56:11
2	available to Shpak's access points?	12:56:14
3	MR. ATKINSON: Objection; form, leading.	12:56:17
4	A. Yes.	12:56:19
5	Q. I believe you testified earlier today	12:56:23
6	that a POSA would have known that the 802.11	12:56:25
7	standard offered multiple transmission channels to	12:56:30
8	Shpak's access points; is that correct?	12:56:34
9	A. Yes.	12:56:36
10	MR. ATKINSON: Objection; leading.	12:56:37
11	Q. Is Shpak paragraph 6 consistent with	12:56:38
12	your testimony that POSAs would have known that	12:56:42
13	the 802.11 standard offered multiple channels to	12:56:45
14	Shpak's access point?	12:56:48
15	MR. ATKINSON: Objection; leading.	12:56:51
16	A. Yes, it is.	12:56:52
17	Q. Okay. Has anything that you've heard or	12:56:53
18	testified to during your deposition today or your	12:56:55
19	first part, I believe, Friday changed any of your	12:56:59
20	opinions that you offered with respect to the '551	12:57:02
21	patent in your declaration?	12:57:09
22	MR. ATKINSON: Objection; leading.	12:57:11
23	A. No.	12:57:12
24	MR. NIEBERG: That's all I have.	12:57:13
25	MR. ATKINSON: Okay. Nothing here.	12:57:16

1 THE VIDEOGRAPHER: Anything else before 12:57:17

2 we close? 12:57:19

3 MR. NIEBERG: I believe that's all. 12:57:20

4 THE VIDEOGRAPHER: The time is 12:57. 12:57:22

5 This concludes the deposition of Tim 12:57:25

6 Williams, Ph.D. We're off the record. 12:57:28

7 (The deposition concluded at 12:57 p.m.) 12:57:30

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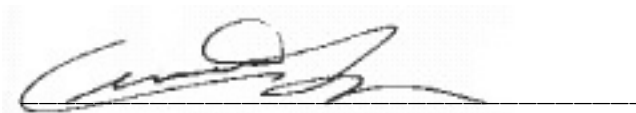
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CERTIFICATE OF SHORTHAND REPORTER

I, Charlotte Lacey, the officer before whom the foregoing deposition was taken, do hereby certify that the foregoing transcript is a true and correct record of the testimony given; that said testimony was taken by me stenographically and thereafter reduced to typewriting under my direction; that reading and signing was not requested; and that I am neither counsel for, related to, nor employed by any of the parties to this case and have no interest, financial or otherwise, in its outcome.

IN WITNESS WHEREOF, I have hereunto subscribed my hand this 3rd of May, 2021.

A handwritten signature in black ink, appearing to read 'Charlotte Lacey', is written over a horizontal line.

Charlotte Lacey, RPR, CSR #14224



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