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

ERICSSON, INC., ET AL	
	DOCKET NO. 6:10cv473
-vs-	
	Tyler, Texas
	9:00 a.m.
D-LINK CORPORATION, ET AL	June 5, 2013

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

A P P E A R A N C E S

FOR THE PLAINTIFFS:

MR. THEODORE STEVENSON, III
MR. DOUGLAS A. CAWLEY
McKOOL SMITH
300 Crescent Court, Ste. 1500
Dallas, Texas 75201

MR. JOHN B. CAMPBELL, JR.
McKOOL SMITH
300 W. 6th Street, Suite 1700
Austin, Texas 78701

COURT REPORTERS: MS. JUDITH WERLINGER
MS. SHEA SLOAN
shea_sloan@txed.uscourts.gov

Proceedings taken by Machine Stenotype; transcript was produced by a Computer.

FOR THE DEFENDANT:

MR. GREGORY S. AROVAS
KIRKLAND & ELLIS, LLP
601 Lexington Avenue
New York, New York 10022

MR. LUKE DAUCHOT
KIRKLAND & ELLIS, LLP
333 S. Hope Street
29th Floor
Los Angeles, California 90071

MR. ADAM ALPER
KIRKLAND & ELLIS, LLP
555 California St.
24th Floor
San Francisco, California 94104

MR. MICHAEL E. JONES
POTTER MINTON, PC
110 N. College, Ste. 500
P.O. Box 359
Tyler, Texas 75710-0359

MR. ROBERT A. VAN NEST
KEKER & VAN NEST, LLP
633 Sansome St.
San Francisco, California 94111

P R O C E E D I N G S

COURT SECURITY OFFICER: All rise for the jury.

(Jury in.)

THE COURT: Please be seated.

Good morning, Ladies and Gentleman of the Jury.

JURORS: Good morning.

THE COURT: Good to see you this morning. You look bright-eyed again. We'll see what you look like at the end of the day today.

Very well. Mr. Stevenson, you may proceed.

MR. STEVENSON: Thank you.

THE COURT: Oh, before you do, do either side have any exhibits they wish to offer today?

MS. MOORE: Yes, Your Honor.

At this time, Plaintiffs offer their exhibit list titled Plaintiff's Preadmitted Exhibit List for June 5th, 2013.

THE COURT: All right. They will be marked as Plaintiff's Exhibit List No. 3.

Do Defendants have any objections to the exhibits listed thereon?

MR. DE VRIES: We do not, Your Honor.

THE COURT: All right. They are admitted.

All right. Do Defendants have a similar list?

MR. DE VRIES: We do, Your Honor. Thank you.

At this time, Defendants offer Defendants' List of Preadmitted Exhibits for June 5th, 2013.

THE COURT: All right. Is there any objection to those?

MS. MOORE: No, Your Honor.

THE COURT: Those will be marked as Defendant's Exhibit List No. 3, and they are admitted.

All right, Mr. Stevenson. You may proceed.

MR. STEVENSON: Thank you, Your Honor.

SCOTT NETTLES, Ph.D., PLAINTIFFS' WITNESS,

PREVIOUSLY SWORN

DIRECT EXAMINATION (CONTINUED)

BY MR. STEVENSON:

Q. Dr. Nettles, are you ready?

A. Yes, sir, I am.

Q. All right. I'd like to get into the claims today, but before we embark upon that, I thought it

might be a little bit helpful to maybe spend a few minutes with a refresher of what we heard last night before we left.

A. Sounds good to me.

Q. So this is our diagram of the network.

A. Yes, sir.

Q. And the base station is what? Remind us again.

A. That's your router in your home in 802.11.

Q. And in 802.11, these terminals were what?

A. They would be laptops or desktops or tablets or all sorts of devices that would connect wirelessly.

Q. And remind us about what these blue dashed lines are that we saw yesterday, please.

A. The blue dashed lines are really rectangular boxes that carry the data that the user's actually interested in.

Q. Are these the things we will be talking about that are packets?

A. Yes, sir, they're packets.

Q. And are they carried on the radio waves along the wireless network?

A. Exactly.

Q. If people have their laptops on in this room right now with 802.11, are there packets flying around

in the air?

A. Yes, sir, there are.

Q. And what do the packets carry?

A. Well, they carry -- the blue ones carry user data, along with a bunch of fields with other information.

Q. And these packets would be where, if you were sending the picture to somebody, pieces of that picture might be torn up and put inside to be sent across the network?

A. Yes, sir, that's exactly correct.

Q. And are the inventions we're going to be talking about today dealing with the way packets are created and dealt with by the transmitters and receivers?

A. Yes, sir, they are.

Q. And do all the members of the network have to understand, have a common agreement, on what the form of the packets are going to be?

A. Yes, sir. That's an aspect of the standard.

Q. Yesterday we looked into some packets, I think we zoomed in on a packet, and we saw some compartments.

Remind us the word you used to describe what those compartments are.

A. I used the word field, but I'll probably use

that word and the word compartment today.

Q. Okay. And are those compartments important in a packet network such as this?

A. Oh, yes, sir. They're -- they're very important. Exactly how big they are, exactly where they are, exactly what their constants are, that's a lot of what the standard is about.

Q. And, again, does every member of the network need to agree on where the compartments are in the packets and what they do?

A. Yes, sir. Otherwise, they won't be able to communicate.

Q. And I think we'll be dealing with some inventions that talk about those fields or compartments, right?

A. Yes, sir, we will.

Q. Okay. Well, let's move on now to the '215 patent.

MR. STEVENSON: And I believe this is at Tab 6 in the jury notebook as Plaintiffs' Exhibit 10.

Q. (By Mr. Stevenson) When was this patent filed for?

A. This patent was filed on April 9th, 1999.

Q. How can you tell that?

A. Well, what we are seeing here is the front of

the packet -- of the patent. It's easy to get them mixed up. The front of the patent. And we -- there's some blowouts here that have some specific information.

So the first blowout says: Provisional application filed on April 9, 1999.

Q. And dates are important when it comes to patents, right?

A. Very important, yes, sir.

Q. The date the patent issued was?

A. August the 3rd, 2004.

Q. And can you explain to us, just in a nutshell, how we ought to think about this patent, and then we're going to obviously unpack that and talk about it in detail, but give us a headline for the patent.

A. Well, if you'll remember, we talked a little bit about block acknowledgements. That's the way that the receiver is going to tell the transmitter what information was successfully received and what information was not successfully received.

And this patent concerns providing flexibility in the standard to have different kinds of responses and specifically with a type identifier field, which is going to help provide that flexibility.

Q. Okay. What were the inventors working on when they came up with this invention?

A. They were working on 3G cellular standards.
Q. That's the 3G cellular standards that would be in one of these phones?
A. Yes, sir.
Q. Why would an invention for a 3G cellular standard be also applicable to Wi-Fi or 802.11n?
A. Well, these are all wireless networks, and especially when they're sending data, they work in very similar ways, and in particular, both 3G networks and 802.11 have these protocols that involve these acknowledgements. They're call ARQ protocols.
Q. Do both cellular and 802.11 networks use data -- excuse me -- use ARQ protocols?
A. Yes, sir, they both do.
Q. What does that stand for, ARQ?
A. That stands for automatic repeat request.
Q. Okay. And could you tell us what that means in lay terminology?
A. Well, it's really the protocol we've already been talking about. It's a protocol whereby, in our specific case, the transmitter is going to send a request to the receiver to tell it what it received, and the receiver's going to respond, and then the transmitter is going to, again, in our case, optionally retransmit.

And that whole process of sending and acknowledgement and the retransmitting and then maybe sending another acknowledgement, that's what an ARQ protocol is.

Q. Okay. And so cellular phones, as well as home Wi-Fi, do those things?

A. Yes, sir, they do.

Q. Do both use packets?

A. Yes, sir, they do.

Q. And do both have acknowledgements of packets?

A. Yes, sir. That's part of the ARQ protocol.

Q. Do both cellular networks and Wi-Fi have to deal with dropped packets and that sort of thing?

A. Yes, sir. Again, they're both wireless, so...

Q. And my phone can be on the cellular system, right, to make cellular calls, but, simultaneously, I think I can connect to Wi-Fi.

A. Yes, sir, that's correct.

Q. Are those using, like, you know, kind of different networks?

A. They're using different networks, yes, sir.

Q. At the same time?

A. At the same time.

Q. Okay. So you told us that this patent deals with that response that we saw on the animation

yesterday, which is when the base station says, did you get all my packets, and then the terminal says, yeah, I got 1, 2, 4, 9, dropped 3 and 6?

A. Yes, sir, that's correct.

Q. Okay. And so are we -- is this patent dealing with that response back to the base station?

A. Yes, sir, exactly.

Q. What triggers this response that we're talking about?

A. In this case, there's a request. So the response is called a block acknowledgement, and the request is called a block acknowledgement request.

Q. Okay. And does this patent deal with the format of the response of that acknowledgement?

A. Yes, sir, it does.

Q. And why is the response format important?

A. Well, we'd like to have a number of possible different formats as part of the standard so that we can have flexibility in the system.

Q. When can a transmitter send this acknowledgement -- excuse me -- send a request?

A. Well, typically, it's sent after it's sent a group of packets that it wants to know whether or not they've been received or not.

Q. Now, explain to me, please -- you mentioned

this invention gives flexibility. How does it do that?

A. Well, it allows the protocol to define a number of different possible responses and for the receiver to indicate which of those possible responses it's actually using in the block acknowledgement.

Q. Why not just have one?

A. Because really if we had one, we'd be saying that one size fits all; and one size, in this case, doesn't fit all.

Q. Is there in the patent an indication of different types of message formats and how the packets indicate which one is being used?

A. Oh, yes, sir, that's -- since that's the primary point of the invention, that's very clearly described in the patent.

Q. And what is that called in the patent?

A. That's called the type identifier.

Q. What does the type -- well, what is the type identifier? Is that one of the compartments that's in the packet going back?

A. Yes, sir, exactly.

Q. And we're talking here about the red packets rather than the orange ones?

A. Yes, sir. The red packets, they're going from the receiver to the transmitter.

Q. And do those have compartments in them as well?
A. Yes, sir, all packets do.
Q. So is this type identifier field located in a compartment in one of those red packets?
A. Exactly.
Q. Do you have a slide that shows visually for us how the type identifier would work?
A. Yes, sir, I do. I think it's the next slide.
Q. Okay. Do you want to go to that?
A. Yes, sir.
Q. All right. Let's orient everyone to what we're seeing.
A. So here we see the base station on the left and the terminal on the right.
Q. What we're seeing on your slide is sort of a zoom-in of the base station and one of the terminals?
A. And the base station in this case is going to act as the transmitter, and the terminal is going to act as the receiver.
Q. That's what the blue arrows indicate?
A. Yes, sir. And we'll see some packets getting sent as the animation proceeds.
MR. STEVENSON: Stop that there.
Q. (By Mr. Stevenson) Are we basically now seeing

these blue packets sent across?

A. That's exactly correct.

Q. And what happens next?

A. Well, next the receiver is going to send back a block acknowledgement. That's this orange packet that we see.

Q. And is this one of those control packets or those red packets?

A. Yes, sir, it is.

Q. And does this one correspond to that message we talked about earlier?

A. Yes, sir. This is the block acknowledgement message.

Q. Is this the one where the -- the terminal is saying, here's the packets I got from you, and here's the packets I didn't get?

A. Exactly.

Q. And -- and I'm going to forward -- I'm going to jump into the future a little bit here with the patents, but how is the transmitter going to use that information later on down the line on which packets got lost and which packets didn't get lost?

A. Well, obviously, if a packet was successfully received, there's no reason to retransmit it, so it's going to look at the ones that weren't successfully

received, and then later on, it's going to make a decision about whether or not to retransmit those packets or not.

Q. Okay. But that's in the future. Let's deal with now what we're talking about in the present.

Can we zoom in to that message and see it in a little more detail and look at the compartments?

A. Yes, sir, we can.

MR. STEVENSON: Would you zoom in to it?

Q. (By Mr. Stevenson) What's the dark orange and the light orange?

A. The dark orange is this type identifier field. It's the thing that's going to tell us what the rest of the packet means.

And the light orange is called a bitmap. It's a list of yeses and noes that explain which packets have been received and which packets haven't been received.

Q. So, for instance, the 1s and 0s that we see there --

MR. STEVENSON: And, Mr. Diaz, would you go back to the slide, please. Thank you.

Q. (By Mr. Stevenson) The 1s and 0s we're seeing there, 10, 11, 10, is that a code to indicate which packets have gotten through and which ones haven't?

A. It's really a list of yeses and noes. So it

says the first packet was received; the second packet wasn't, et cetera.

Q. 1 is a yes, and 0 is a no?

A. In this case, yes, sir.

Q. Okay. Now, there's a -- the -- the front field that's darker orange is identified as type identifier. What's that?

A. Well, that's the -- that's the field that lets us know what the format of the second field is. So what does it -- what does the second field mean? We have to look at the type identifier.

Q. When you say it lets us know --

A. Sorry. It lets the transmitter know.

Q. Okay. So the terminal is sending this group of 1s and 0s to the base station in the light yellow?

A. Right.

Q. And those are going to basically be the list or correspond to the -- which packets have been received and which haven't?

A. Exactly.

Q. And so what -- what is the type identifier doing to help out in that process?

A. Well, it's telling us basically the format of that list and what kind of exactly -- exact information that list is carrying.

Q. Okay. And does this type identifier key into another table --

A. Yes, sir.

Q. -- that we saw a second ago?

A. There's a table that says what the different -- so we see 10 here, but, obviously, there are four different values. And this is the table.

Q. Okay. Explain to us why 10 is four different values.

A. Well, it's -- 10 is one value, but there's two bits there, and so that field can have the value 00, 01, 10, or 11.

Q. Okay. You can't have any 2s or 3s or 4s in there?

A. No, sir.

Q. Its all --

A. It's all 1s and 0s.

Q. Is that how networks like this talk, just all 1s and 0s?

A. Yes, sir. That's how digital computers work.

Q. Okay. Okay. So if you have two spots for numbers, and they have to either be 1 or 0, that gives you four variations, basically, right?

A. Exactly four, yes, sir.

Q. 00, 01, 10, and 11.

A. Exactly.
Q. So this type of identifier field now, we look below it, and does that match up to a table that gives you what the identifiers would -- would correspond to?
A. That's exactly what this table is.
Q. So explain to us how the base station in this example would use that table to figure out the message type for the rest of the packet.
A. For example, in this example, the type identifier is 10, so the receiver, the base station in this case, would take the 10 and would look in the table and would see that it means that the rest of the information is a bitmap. And that's what we call this content field, is a bitmap, this list of 1s and 0s.
Q. So this is sort of matching up a number in a table and then going over and seeing what it is?
A. That's correct.
Q. All right. And there are other choices there, aren't there? No more list ACK?
A. Yes, sir.
Q. What do those mean?
A. Well, no more is a way of indicating that there's going to be no more indications of what things have been received or not received.
A list means that there's going to be a list,

so a list might actually say 1, 4, 7, instead of using a bitmap.

And then an ACK would just be a plain ACK that you would typically use if there was only one packet that you were trying to acknowledge.

Q. Okay. Let's say the rules of the system were such that we were just going to send a bitmap all the time.

A. Yes, sir.

Q. Never had in the rules a list or an ACK or anything else?

A. Right.

Q. Would you need a type identifier?

A. No, sir, you wouldn't.

Q. You could just send a bitmap over, and everyone would know how to decode it?

A. That's right. And, in fact, you wouldn't want to use a type identifier because it would take up space in that case.

Q. What's wrong with taking up space?

A. Well, it's overhead. It's something that you have to pay for sending.

Q. Okay. Now, I'd like to take this animation you did and relate it back to the patent we're looking at so we can tie it into what's in the patent.

A. Okay.
Q. Is this table that you've shown us, in the patent somewhere?
A. Yes, sir, exactly this table.
Q. And is that in the '215 patent?
A. Yes, sir.
So here we see the table.
MR. STEVENSON: And I'll invite everyone in their patents to turn to Column 9.
A. And in the background, we can see the actual patent, and it's by columns. And this part of the patent is called a written description, and it's where the inventors describe how to make or use -- how to make their invention.
Q. (By Mr. Stevenson) Wait a second and let everybody get there.
All right. Where do -- and we see this table that was in your animation at the top of Column 9?
A. Yes, sir. It's exactly the same table.
MR. STEVENSON: And, Mr. Diaz, could you pull up this patent, PX 10, on our exhibit display?
Q. (By Mr. Stevenson) I notice something in the next column, which is Column 10, I'd like to get you to look at.
A. Okay.

Q. And that's at Column 10, Line 10. I think the way the Court told us, you can look at the top line of the column and then go down on the left to the small numbers. Column 10, Line 10.

A. Yes, sir. That's how it works.

Q. What does -- what does this say? Could you read it to us, please?

A. This says: Although embodiments of the method and apparatus of the present invention have been illustrated in the accompanying drawings and described in the foregoing detailed description, it will be understand -- understood that the invention is not limited to the embodiments disclosed but is capable of numerous rearrangements, modifications, and substitutions without departing from the spirit of the invention as set forth and defined by the following claims.

Q. All right. What does that mean to you?

A. Well, it's explaining that, although they've given a specific description of how to build the invention, there could be lots of other different ways to build the invention that would still meet the claims and would be part of the claimed invention.

Q. All right. So the Court instructed us that that you can consider the patent in a couple of

different sections.

A. Yes, sir.

Q. One part is the claims, which start right there in Column 10, right under that paragraph you just read.

A. Yes, sir.

Q. What do you understand the claims to be?

A. Well, the claims are what really define the invention. In fact, actually, each individual claim is its own invention.

Q. Okay. So the claims are a legal description of the invention for purposes of figuring out if there's infringement?

A. Exactly.

Q. And everything before the claims, the tables -- and if you flip back, there's a lot of them -- and figures and a lot of diagrams. What are the -- what's the purpose of those in a patent?

A. Well, they're so that -- one of the requirements of a patent is that you have to actually be able to -- somebody has to be able to read the patent and build the thing that's been invented or use the method.

And so the purpose of the previous is really to explain to someone who, in this case, is a computer

programmer, a networking person, how to build this invention in a specific context.

Q. Okay. Did this invention get carried over into 802.11n, years later?

A. Oh, yes, sir.

Q. Let's look at the claim now. And we'll be looking at two claims from this patent, Claim 1 and Claim 2.

How did you go about determining if the claim was infringed?

A. I looked at each one of the limitations -- that's each one of the things that are set aside with a box beside it -- and I looked in the products, and I asked: Does the product do the thing that's in the limitation? So can I find this action in the product?

Q. And so the question is, if all the boxes check off, the claim is infringed?

A. That's exactly the question.

Q. Now, as part of doing the analysis, does it matter if the patent owner attended the standard meeting for the standard that was being accused?

A. No, sir. It only matters if the claim limitations are met.

Q. Okay. Does it matter if the alleged infringer attended the standard-setting meeting?

A. No, sir. It only matters if the limitations are met.

Q. Does it matter if anybody wrote up a paper and contributed it to the standard for voting to see if it got in as to whether that claim is infringed?

A. No, sir. It really only matters if the individual limitations are all met.

Q. Who have you found in your work infringes Claim 1?

A. The router Defendants, the computer Defendants, and Intel.

Q. Let's talk about this claim a little bit now in more detail.

Is a method for minimizing feedback responses in an ARQ protocol.

A. Yes, sir.

Q. And, again, ARQ protocol is something that's not just in cellular; it's also in Wi-Fi?

A. Yes, sir.

Q. And this is a method claim. Explain what a method claim is, please, as you understand it.

A. In -- for method claims to infringe, you have to do the method. So a method claim is like a recipe. It's a set of steps. And so to infringe, you have to do each one of the individual steps.

Q. And we see these three steps here?
A. That's right.
Q. So we should go through each three of the steps and see if those are met in the standard in the product.
A. That's right.
Q. Who have you found -- well, let me ask this: Does the programming that the Defendants put in their products perform this method automatically without user intervention?
A. Yes, sir, it does.
Q. And in addition to the Defendants, who else performs the method that you found?
A. The users of the devices the Defendants sell.
Q. Who's responsible for that?
A. The Defendants.
Q. Why is that?
A. The Defendants induce the users to practice this method by basically selling something that does the method and encouraging them to use it.
Q. And have you seen evidence that the Defendants intend that their devices be used for 802.11n?
A. Yes, sir. That -- that's -- that's the whole reason for selling them.
Q. And when 802.11n devices connect, do they

connect at the highest speed they can, as in 802.11n?

A. Yes, sir, they do.

Q. Let's look at the first two steps here. Let's take them together. The first is sending a plurality of first data units over a communication link. And the next is receiving said plurality of data units.

A. Yes, sir.

Q. What devices perform these steps on the network?

A. The transmitter will send the plurality of data units. That's really saying that the transmitter sends packets, and the receiver will receive those packets.

Q. And -- and, again, as a reminder, although in one of these networks you have a router and either laptops or other devices, all of them are capable of transmitting and receiving, right?

A. Oh, yes, sir, and all of them actually do transmit and receive in the normal process of using the network.

Q. What are the data units that are referred to here, the first data units?

A. Those are the packets we've been looking at.

Q. The blue packets?

A. Yes, sir.

Q. And are a plurality sent?
A. Yes, sir. It wouldn't be a very useful network if you only sent one packet.
Q. And would they be received after being sent at least --
A. Not always, but usually, yes, sir.
Q. Have you found these two elements met by the Defendants with regard to their accused products?
A. I have.
Q. I'm going to check those off as we go. Let's go to the next element. It says: Responsive to the receiving step, constructing a message field for a second data unit, said message field, including a type identifier field and at least one of a sequence number, field length, field, and content field.
A. Yes, sir.
Q. Let's parse this out.
This step has to be done responsive to the receiving step?
A. That's right.
Q. And have you found that is true in the Defendants' products?
A. Yes, sir, I have.
Q. Then it has to construct a message field for a second data unit?

A. Yes, sir.
Q. Now, let's stop there.
What's the second data unit?
A. The second data unit in this particular case is going to be the block acknowledgement that the receiver is going to send.
Q. And what does a block acknowledgement do?
A. It acknowledges a group of packets and which ones have been received and which ones haven't.
Q. Okay. And has the Court given us a construction for this particular term?
A. Yes, sir, it has.
Q. And is that construction contained in the jury notebook at Tab 1, as well as on the screen here?
A. Yes, sir.
Q. And I think we made -- it says definition here. We may use construction and definition interchangeably. Would you read the Court's construction or definition to us?
A. Responsive to the receiving step, generating a message field, including a field that identifies the message type of the feedback response message from a number of different message types.
Q. Okay. Did you apply that in your work here?
A. Yes, sir. I'm required to.

Q. Now, you called this a block acknowledgement, the --

A. Yes, sir.

Q. -- second data unit. What does a block acknowledgement do within the standard in the products?

A. Well, it's a way of acknowledging more than one packet at a time.

Q. Okay. This is the message in the tutorial you gave us about I received 1, 2, 5, and 9 and missed 3 and 6?

A. Exactly.

Q. Does the standard have rules about when receivers send block acknowledgements?

A. Yes, sir, it does.

Q. And when is that?

A. Well, when -- when it's -- the receiver is asked to send them, because it's gotten a block acknowledgement request.

Q. Okay. Does the receiver have to follow the rules?

A. Yes, sir, it does.

Q. How many different types of block acknowledgement requests are there?

A. There are two types of block acknowledgement requests.

Q. Okay. What are those called?
A. We call them explicit and implicit.
Q. Does the standard define the type of response message that can be sent?
A. Yes, sir, it does. It defines a set of types.
Q. Okay.
MR. STEVENSON: Can we go to the next slide, please?
Q. (By Mr. Stevenson) All right. Is this a copy, or at least a slide that has the first page of the standard?
A. Yes, sir. This is the amendment from 2009 that basically set up 802.11n.
Q. Is this Plaintiffs' Exhibit 286?
A. Yes, sir, it is.
Q. And can we go into this and see which -- where those definitions are?
A. We can.
Q. Okay. We had something pop up, and we're going to be seeing a lot of this in the slides. I want to make sure that we're all understanding what we're seeing.
And have you got a copy of your standard in front of you?
A. I do.

Q. Okay. And it may help you to look at that, whichever is better for you.

What are we seeing sort of pulled up on this slide as a call-out in front of the cover page of the standard?

A. Well, that's a figure that appears on Page 30 of the actual standard.

Q. Is this something you made up as an animation, or is this actually a -- a picture of the document?

A. This is -- this is a Xerox copy of the -- of the document.

Q. All right. And so this long rectangle with compartments is what -- can you relate it back to us on what we're -- what would be here?

A. It's the second data unit.

Q. The second data unit?

A. Yes, sir.

Q. And it would be one of these orange squares?

A. Yes, sir, one that's going from the receiver to the transmitter.

Q. So what we've done is we've -- we've zoomed in on the orange square now to look deep inside it, and this is -- this isn't an animation. This is really what's in the standard as to the compartments in that orange square?

A. Yes, sir. And this is really what's going to be transmitted over the radio waves eventually, as well.

Q. So we're going to look into the orange square. What are we looking for to see if there's infringement?

A. We're looking for this type identifier field.

Q. Okay. Will you show us -- can we zoom in on this -- on the standard and see where you found the type identifier field?

A. Yes, sir. If you'll -- if you'll notice, one of the compartments right in the middle is called BA control, and that's going to be where the type identifier field is.

Q. Okay. Is that a single compartment, or is it a -- compartments within a compartment?

A. So as we said, these are complicated systems, so often the compartments have compartments nested inside of them. So this is one of those kinds of compartments. So we should look inside to see the actual type identifier field.

Q. Okay. Sort of like those Russian gift-within-a-gift-within-a-gift things?

A. Yes, sir.

Q. All right. So we're now into now -- so what you've done is you've zoomed into what's inside that

control field?

A. That's right.

Q. Is that more compartments?

A. Yes, sir. These are the compartments that are inside of that -- that control field. And this is actually on Page 31 of the standard.

Q. And that's Figure 7-16?

A. Yes, sir, it is.

Q. Okay.

A. And what we see here is that there are two fields that are highlighted, the multi-TID field and the compressed bit map field. And those two fields taken together are the TID that's described in the claim.

Q. There's numbers that say bits under the bottom of that?

A. Yes, sir.

Q. What do those numbers refer to?

A. Well, that's telling us that the very first bit of this field is the BlockAck policy and that the next two bits are the multi-TID and compressed bitmap and that -- and those are the ones we've identified as the TID. And then there are 9 that are reserved.

That's so that later on, if we want to change the standard, we can add stuff there.

Q. Okay. You said TID a couple of times --

A. Type identifier.
Q. Type identifier?
A. Yes, sir.
Q. All right.
A. Sorry.
Q. Is that the type identifier that is called out in the claim?
A. Yes, sir, it is.
Q. The TID is the type identifier?
A. Yes, sir.
Q. And do you have to take these two compartments -- the multi-TID and the compressed bitmap together for your code?
A. You do.
Q. Okay. How many numbers go in that first compartment, the multi-TID?
A. Only a 0 or a 1.
Q. What about the next one, the compressed bitmap?
A. Only a 0 or a 1.
Q. So we have four variations of this, different types?
A. Yes, sir, exactly.
Q. In addition to a type identifier field, there has to be at least one of a sequence number, a blank

field, and a content field. Can you show us where those are in the standard?

A. Yes, sir. If you look just to the right of the BA control field, there's something called a BA information field on the top figure.

Q. Now, that's -- that's in yellow now.

A. Yes, sir. And so that's -- that's where -- that's where the -- there's actually going to be a sequence number and a content field in the BA information field.

Q. Okay. Can you zoom into the BA information field?

A. Yes, sir, we can.

Q. Okay. Let's see what's in there.

There's two compartments or sub compartments within that?

A. Yes, sir. This is a figure from Page 33, and the first sub compartment is starting sequence control. That's a sequence number. And the second field is the BlockAck bitmap. That's a kind of content field. In fact, it's a content field that is a bitmap.

Q. All right. So does that satisfy this requirement of the content field?

A. Yes, sir, it does.

Q. Now, let's -- let's put our English grammar

hats on for a minute.

It says -- the claim requires the message field include the type identifier field -- we've seen that?

A. Yes, sir.

Q. And at least one of them, a sequence number field, a length field, and a content field?

A. That's right.

Q. So for this part of the claim, at least one of, how many of these three selections need to be present for it to be met?

A. Just one.

Q. Why is that?

A. Well, because that's what "at least one of" means.

Q. So type identifier field, plus at least one of any of the following three selections, and this is true?

A. Yes, sir.

Q. Which one of the three selections does the standard use for the second part of that sentence?

A. The standard actually has two of them. It has a sequence number and a content field.

Q. Now, are there rules in the standard about what information has to go into each one of these slots?

A. Yes, sir. I mean, the rules are about what

are the possible things that can go there. But in particular, there's very specific things in the standard about what can be in that type identifier field.

Q. And is there some guidance given in there?

A. Oh, yes, sir. There's -- there's a table that explains what the possible values are and what they mean.

Q. Here's what I think might be helpful for all of us at this stage is if we take this information we've seen here now and put it back into the format of that first animation you showed us, maybe it would be a little more helpful to us?

A. Yes, sir. It won't be as abstract then.

Q. Right. Okay. So this is what we showed at the beginning to sort of introduce the patented idea. Now we have this for purposes of the claim comparison.

A. Exactly.

Q. Is this back to the base station and terminal that we're seeing?

A. Right, and -- and the transmitter and receiver.

Q. And now instead of trying to depict how the patent works, are you trying to depict how the standard works?

A. Yes, sir, I am, and -- and how the devices

work that follow the standard.

Q. So let's go ahead and roll forward with this.

All right. We've seen some blue packets?

A. Yes, sir.

Q. So those are the information packets that are being sent?

A. That's right.

Q. And we have a yellow packet after it, which is --

A. That's actually the BlockAck request. So that's saying I'd like to get a BlockAck.

Q. Block acknowledgement is a BlockAck?

A. Sorry. Block acknowledgement.

Q. Okay. All right. Then does the terminal respond?

A. Yes, sir, it does.

Q. And what is the BA?

A. That's a block acknowledgement.

Q. That's what we just looked at with all the fields that nest within each other from the standard?

A. Exactly.

Q. Let's see how that works now. Can we zoom into the block acknowledgement?

Is -- and this is compartments within it?

A. Yes, sir.

Q. And have you shown -- are you just showing now the compartments that matter to the claims and taking out the remainder from the standard to show what's important?

A. That's exactly right.

Q. What's the first compartment you're showing?

A. That's that type identifier that we talked about which is really two fields in that BA control field.

Q. All right.

A. So two bits.

Q. And is there something that that would correspond to that's in the standard?

A. Yes, sir. That particular value says that it's a compressed BlockAck or a compressed block acknowledgement.

Q. Okay. We just saw some things pop up on this, and I want to make sure everyone knows what they are.

The type identifier that you pointed to, 01, remember before when we were talking about the patent, we went and looked that up in a table?

A. Exactly.

Q. Now we're talking about how the standard works.

Does that type identifier you found in the

standard match up to a table in the standard?

A. It does.

Q. What's the number of that table?

A. That table is -- that table is Table 7-6K, and that's Page 32 of the 209 stand -- 2009 standard.

Q. In your example, you have the type identifier as 01. What would that match up to in the table?

A. That matches up to compressed BlockAck or compressed block acknowledgement.

Q. Are there other message types other than compressed BlockAck that are allowed by the standard?

A. Yes, sir, there are two other kinds, plus a reserved.

Q. Okay. And, again, those are identified on this chart, right?

A. Yes, sir, exactly. Those are the choices in the system.

Q. And is this chart on the bottom of your animation, is that, again, taken directly -- is that a picture from the standard itself?

A. Yes, sir. It's on Page 32.

Q. So if the jury later wanted to get Exhibit 286 and go to this page, they could see this lower half of the slide verbatim?

A. Oh, yes, sir. And on pages close to that,

they could see the other things we've been looking at.

Q. Tell me what the other message types are that are defined by the standard.

A. There's a basic block acknowledgement -- that's another kind of bitmap -- compressed BlockAcks or bitmaps. Reserved means sometime in the future we might want to use that value; but right now we don't have a use for it because standards need to evolve, and so you often have reserved things.

And then the last one is called a Multi-TID BlockAck.

Q. Okay. And what does that do?

A. It lets you acknowledge more than one TID. That's another aspect of the system we'll talk about later on. So what it really is, is a list of bitmaps.

Q. Now, the Court's definition states that responsive to the receiving step, generating a message field, including a field that identifies the message type of the feedback response from a number of different messages.

Are there a number of different messages here in the standard?

A. Yes, sir, absolutely.

Q. Does the type identifier that you've identified, the -- the two numbers identify the type of

feedback message response from one of the options in the standard?

A. Yes, sir. That's exactly its purpose.

Q. Is this element met by the Defendants?

A. Oh, yes, sir, it is.

Q. We checked off all three elements of Claim 1. And what does that allow you to conclude, Dr. Nettles?

A. That the claim is infringed and, therefore, that the patent is infringed.

Q. Do the Defendants' products send a type identifier in every block acknowledgement response?

A. Yes, sir, they do.

Q. And do the receivers construct them to respond to which packets they've received -- previously received?

A. Yes, sir, they do.

Q. Now, in addition to looking at the standard, did you do anything to double-check your analysis?

A. Yes, sir, I did.

Q. What did you do?

A. Well, I looked at documents. I looked at deposition testimony. I looked at the code. And I did testing.

Q. Did you test some representative models of the chipsets used by the Defendants to confirm they send a

type identifier?

A. Yes, sir, I did.

Q. And would this type identifier be necessary for interoperability with other devices?

A. Yes, sir, it is.

Q. Let's go on to Claim 2 now.

Claim 2 is in a little bit different format. Can you explain to us what kind of format it's in?

A. It's called a dependent claim, so that means it depends on a different -- another claim.

Q. What -- what does it mean to depend on another claim, Dr. Nettles?

A. It means that to show that that claim is infringed, we first have to show that the claim that it depends from is infringed. In this case, we have to show that Claim 1 is infringed, and then we also have to show that any additional limitations that have been added are met.

Q. Is one way we can think of Claim 2 requires for infringement the -- every element of Claim 1, plus whatever is added by Claim 2?

A. Yes, sir, that's exactly what it means.

Q. So is it fair that Claim 2 would be narrower in scope necessarily than Claim 1?

A. Yes, sir.

Q. Let's see what Claim 2 modifies. Again, we have to link up, I think, the -- the English here.

It says: The message type -- excuse me, I'm sorry, the message field comprises a bitmap message.

A. Yes, sir.

Q. So what -- what is this -- is this saying that when we get to this message field over here, that before -- in the -- in the main claim could be met by one of -- at least one of a sequence number, length filed, or content field, any one of these, is that narrowing this down for a particular selection?

A. Yes, sir, it's -- it's basically saying that the content field has to include a bitmap.

Q. And if the content field isn't a bitmap, is Claim 2 infringed?

A. No, sir, it's not.

Q. So this is basically saying that to perform this method, it has to be a bitmap every time, not something else?

A. That's right.

Q. Do the Defendants' devices that comply with the standard use a bitmap as the message type?

A. Yes, sir, they do.

Q. And we saw that compressed BlockAck in the prior slide. Is that a bitmap?

A. Yes, sir, it includes a bitmap.
Q. Do the Defendants use a bitmap every time?
A. Yes, sir, they do.
Q. So they -- they select a bitmap consistently in their products?
A. Yes, sir.
Q. Have you found this element to be met?
A. I have.
Q. Do the Defendants infringe Claims 1 and 2 of the '215 patent?
A. They do.
Q. And are these claims, Dr. Nettles, essential to compliance with the 802.11n standard?
A. They are.
Q. Anything else to add on this patent, or can we move on to the next one?
A. We can move on.
Q. The next patent I would like to discuss would be the '435 patent.
A. Yes, sir.
MR. STEVENSON: Mr. Diaz, would you go back one slide?
Q. (By Mr. Stevenson) And just to remind everyone where we are in the order or table of contents, we've talked about the '215. We've got two coordination

patents coming up, '435 and '625, and then two other patents. And I -- I may have called these the synchronization patents in opening. I call them coordination here, and that's just -- that's not a term in the claims. That's just my shorthand for it.

A. Yes, sir.

Q. All right. Let's go to the '435.

What is the filing date of this patent?

A. This was filed on March 18th, 1999.

Q. And what date did it issue?

A. December 11th, 2001.

Q. And we have the Examiners there. Who were those?

A. William Trost and Congvan Tran.

Q. So those are the people who work at the Patent Office as Examiners who reviewed these patents?

A. Yes, sir, that's exactly what it is.

Q. I think we have different Examiners on each one?

A. We do.

Q. What does this patent -- excuse me, what does this patent deal with?

A. We talked earlier about the idea that sometimes the transmitter needs to discard a packet.

And when the transmitter does that, it has to

inform the receiver of that so that they can stay in sync. And this patent involves what the receiver does to stay in sync with the transmitter.

Q. Okay. Let me go back to our example and hopefully it will be helpful and we can see where in the flow of packets this one fits in.

Now, we talked before about the message going back from the terminal to the base station. The patent just talked about saying here are the packets I didn't get?

A. That's right.

Q. Now, where does this patent pick up in that sequence of actions?

A. When the transmitter gets that block acknowledgement that says that some of the packets were missing, it has a choice. It can either retransmit those packets or it can decide to drop those packets.

But if it decides to drop the packets, the receiver is still waiting -- I mean, it told it -- the receiver told the transmitter, I haven't gotten this packet, so the receiver is waiting for that packet. So the transmitter needs to tell the receiver that it's not going to send that packet, and the receiver needs to forget about that packet.

Q. Why would the transmitter ever want to not try

to retransmit a lost packet?

A. Well, we talked about this specific example of a movie or a phone call.

Sometimes it's better to just drop information and not re-transmit it and avoid creating a pause than it is to try to re-transmit it over and over again and make a disruptive pause.

Q. And in these ARQ type systems, who decides when they're going to stop trying to retransmit lost packets?

A. The transmitter is going to make that decision.

Q. Now, does the transmitter need to stay coordinated or in sync with the receiver when it's making these decisions about not retransmitting lost packets?

A. Yes, sir, it does.

Q. What does the Ericsson invention teach that the receiver has to do?

A. Well, the receiver is going to have to -- so the transmitter's going to have to send some information to the receiver, and then the receiver's going to have to compute which packets are no longer going to be retransmitted. And then it has to release its expectations of ever receiving those packets. Basically

it has to forget about those packets.

Q. Okay. And then does it have it to keep some sort of record of this?

A. Well, yes, sir. So all the time it's keeping a record of which packets it expects, and then it has to update that record.

Q. Let's go through the claim on the foam board, and I think talk about it. I think the first couple will be quick, and then we have to dig into the details of the next few.

Is this another method claim?

A. Yes, sir, it is.

Q. And who performs, if you found this method?

A. The Defendants perform this method.

Q. And how do they perform the method?

A. Well, they program their systems to automatically perform this method without any user intervention.

Q. And in addition, do the Defendants, for the reasons you mentioned before, induce end users to do this, as well?

A. Oh, yes, sir.

Q. This is a method that's complementary to the selective repeat, automatic repeat request protocol.

And I know the preamble we don't have to check

off, but just so people don't get confused or lost in this and wonder what's going on, can you explain what that lead-in generally means?

A. Well, it's -- yeah, could -- could you turn it? I --

Q. I'm sorry.

A. I don't have a -- I haven't memorized the exact language.

So this is explaining that -- this is a method that involves the discarding of these packets, as we've been talking about, and the transmitter and receiver have to coordinate. And --

Q. It says it's complementary. What does that mean?

A. Well, that -- I think what it really means is -- is this is -- this is an additional way an ARQ protocol can work.

Q. Okay. And -- and Ericsson isn't claiming in this case they invented the block acknowledgement?

A. Oh, no, sir.

Q. Or the ARQ protocol?

A. Oh, no, sir.

Q. Rather, these are specific enhancements and improvements to those particular things that have been around?

A. Oh, yes, sir.

Q. The first element is transmitting a data packet discard notification message from the transmitter to the receiver, indicating data packets the transmitter has discarded.

And then the next step is receiving the data packet discard notification message?

A. Yes, sir.

Q. Tell us how that -- those two steps are met by the Defendants?

A. The transmitting step is met when the transmitter sends a block acknowledgement request, either an implicit one or an explicit one. And the receiving step is met when the receiver receives that block acknowledgement request.

Q. And, again, how many types of block acknowledgement requests are there?

A. There are two.

Q. And what are the two types of block acknowledgement requests?

A. Explicit and implicit.

Q. Now, did -- where did you get -- get the word implicit from?

A. It's in the standard.

Q. And can we show the -- the slide in the

standard just so we could verify where you got that terminology?

A. Yes, sir. I think there's a slide that shows Page 136.

MR. STEVENSON: Can you go to the next one, Mr. Diaz? Well, let's just -- we'll just move on up. Maybe we could look at the standard. Can you pull up 9.10.7.5 from the standard, which is PX 286?

A. And go to Page 136.

MR. STEVENSON: Okay. There we go. Can you zoom in on that, Mr. Diaz?

Q. (By Mr. Stevenson) And I just want to show where it is -- where it calls this an implicit BlockAck request.

A. So if we look at the second line of the second paragraph.

MR. STEVENSON: I think you were there, Mr. Diaz. Second paragraph.

THE WITNESS: Blow up the second paragraph.

A. Now, if we look at the second line, we see it says: i.e., implicit BlockAck request or implicit block acknowledgement request.

MR. STEVENSON: There we go. We found it.

Q. (By Mr. Stevenson) All right. What's the difference between an implicit and an explicit block acknowledgement request?

A. Could I -- could I give an example?

Q. Sure.

A. Suppose you're going to invite somebody to a party, so you send the party invitation; but you want to know whether or not they're going to attend the party. There's two ways that you could go about finding that out.

A few days after you send a party invitation, you could send them another piece of mail or you could call them on the phone and you could say, are you coming to the party? Let me know. That would be an explicit request, so that would be an explicit acknowledgement request for a party.

But the other way -- and probably the way you would do it first -- is you'd write RSVP on the invitation and then the person who got the invitation would know that they should send back an answer to tell you whether or not they're coming or not. So that would be an implicit request because it's part of the actual invitation, not a completely separate request.

Q. Does each of those two types of requests meet the claim elements?

A. Yes, sir, they do.
Q. Does the system have to have both to infringe or just one, in your view?
A. Just one.
THE COURT: All right. Mr. Stevenson, if you're at a breaking place, I believe we'll take our morning break at this time, and we will be on break until 10:15.
Be in recess.
COURT SECURITY OFFICER: All rise.
(Jury out.)
(Recess.)
COURT SECURITY OFFICER: All rise for the jury.
(Jury in.)
THE COURT: Please be seated.
All right. You may proceed, Mr. Stevenson.
Q. (By Mr. Stevenson) All right. We were talking about the implicit and explicit block acknowledgement requests when we left; and just to pick back up, the block acknowledgement request is the transmitter of packets asking the receiver, what did you get and not get. Right?
A. That's right.

Q. And we have two kinds of implicit and explicit, the RSVP and the regular?

A. That's correct.

Q. So let me ask about each one separately. And, again, does each one independently potentially infringe the claims?

A. Yes, sir, that's correct.

Q. Okay. So let me ask about each one separately, and we'll just go through them separately and discuss them as we go along.

How does the explicit block acknowledgement request indicate data packets the transmitter has discarded?

A. It's going to contain a sequence number, so a number that indicates someplace in the sequence of packets that we've been sending, and it's going to indicate that any packets below that sequence number are no longer being processed by the transmitter.

Q. And now let me ask the same question as to the implicit block acknowledgement request.

A. It's also going to contain sequence numbers, packets; and based on the sequence numbers in the packets in the implicit block acknowledgement request, the receiver is going to be able to compute which packets the transmitter is no longer going to transmit.

Q. And we're going to talk a little more in detail in the next patent about these implicit and explicit block acknowledgements, but could you just give us an idea of when this implicit one is used?

A. Well, the implicit one is part of something called an A-MPDU.

Q. Okay. And just say that out for us so we're not all wondering.

A. Yes, sir. Well, that stands for aggregated MPDU. MPDU is the, I guess, unfortunate name that the standard gives to the packets that we've been talking about. And the A part means aggregated. So what that means is, really, we're going to send a bunch of packets as a group rather than one at a time.

Q. Okay. We're going to have a bunch of acronyms as we go along. Let me get you to say them out, and then let's just give an explanation for it that we can all understand, a shorthand for it.

We have an A-MPDU we're going to talk about, right?

A. Yes, sir.

Q. And that's an aggregated MPDU.

A. Yes.

Q. The A is. Now, what's the MPDU part stand for?

A. Well, that stands for MAC protocol data unit, and that's the kind of packets that the MAC, which is what we're talking about, sends and receives.

Q. MAC protocol data unit. Okay. And that's a packet.

A. That's right.

Q. And what does MAC mean?

A. That means media access control.

Q. And that's another --

A. Yes, sir.

Q. What is a media access control?

A. The -- in these systems, you have to have some system for figuring who gets to talk when, who controls the floor, basically. And so that's media access, who gets to access the media. That's the radio waves.

Q. Is this --

A. And that's what the MAC does.

Q. Is this media access control, is this inside of each computer and router on the network?

A. Yes, sir. It's -- it's part of the 802.11 standard and its implementations.

Q. Is this how they decide who gets to talk when, so they don't talk over each other?

A. That's exactly what's it for.

Q. Okay. So now, having done all that, so nobody

is wondering what do these mean, can we just say that as a shorthand subject -- if we ever need to refine it more later, let's refine it, but just as a shorthand, so it's understandable, an implicit block acknowledgement gets sent out with a group of packets?

A. Yes, sir. That is completely correct.

Q. And then let's go back to the claim elements.

The first step is: Transmitting a data packet discard notification message from the transmitter to the receiver indicating data packets the transmitter has discarded.

A. That's right.

Q. Is that either the implicit or the explicit block acknowledgement request?

A. Yes, sir, it is.

Q. And then would you expect those to be received by the packet -- received by the receiver?

A. Yes, sir, barring some error.

Q. So let's talk about the next two elements, and let's talk about those together.

The next element -- and this is, again, Claim 1 of the '435 patent -- is: The computing which data packets have been discarded by the transmitter based on the data packet discard notification message and then removing entries from a first list indicating the data

packets expected to be received from the transmitter wherein the entries correspond to data packets identified in the computing step.

A. Yes, sir.

Q. Okay. I want -- that's a lot. I'd like to back up and talk about those in a little bit more explanatory detail.

Can you tell us generally what -- how this is done in the standard?

A. The standard defines something called a window, and the window involves which packets it's expecting to receive. And one of the manifestations of the window is in something called the scoreboard, and the scoreboard has a way of keeping track of actually a number of different windows all together.

Q. Okay. That's a lot of information. Let's see if we can --

A. I'm sorry.

Q. Oh, I know, and it's my job to try to unpack it.

Let's do this. Can we show in the standard the evidence that you relied on? And then what I want to do is, after showing all that, let's go back and look at an animation that you've put together so we can understand it a little more visually.

A. Yes, sir, we can do that.
Q. First, let's just get this out on the table, as far as the information goes.
The defense counsel said in opening that 802.11 -- 802.11n doesn't have to compute discard packets. I don't know if you remember that --
A. Yes, sir. I --
Q. -- in the transcript.
A. I saw that in the transcript, yes, sir.
Q. Is that correct?
A. No, sir, it's not.
Q. Is there a computation in the standard?
A. Yes, sir.
Q. Can we see that computation in the standard?
A. Yes, sir, we can.
MR. STEVENSON: Will you pull up the standard, Mr. Diaz?
Q. (By Mr. Stevenson) Where should we go to?
A. We should go to 9.10.7.3, which is on Page 30 -- Page 134.
Q. Okay.
A. And if we look at Section B. So Section B is talking about when you get the implicit block acknowledgement.
Q. Okay. Is that the computation you were

referring to that needs to be undertaken?

A. Yes, sir.

And then Section -- if we scroll down a little bit, Section C --

THE WITNESS: Yes, sir, on the right-hand page, Section C.

A. -- that's talking about the explicit block acknowledgement request.

Q. (By Mr. Stevenson) Is this the computation you're also referring to?

A. Yes, sir, it is.

Q. And these -- I think we're going to need your help, obviously, in understanding it; but how do these computations, which are in the standard, get imported into the accused devices in these cases?

A. Well, the Defendants and their suppliers implement these computations as part of their building of the systems. So these scoreboards, for example, are part of the implementations that we've looked at.

Q. So when you say part of the implementations, is that essentially meaning the persons and engineers who built the devices program into these devices this --

A. Yes, sir.

Q. -- these computational steps we're seeing here?

A. Yes, sir. And the reason that these steps are in such detail and sort of look like mathematics is, this is what we might call pseudocode. So this is just one step above the actual code. A programmer would read this and then would write, you know, probably several pages of code to do exactly the things that are described here.

Q. You also mentioned a scoreboard. Is that in the standard?

A. Yes, sir, it is.

Q. Where is that?

A. Well, actually, the section we're looking at, 9.10.7.3, it's all about the scoreboard.

MR. STEVENSON: Now let's zoom in on that first paragraph.

Q. (By Mr. Stevenson) And it says: Scoreboard context control during full-state operation.

A. Yes, sir.

Q. And please tell us, just at a real easy level, what a scoreboard is?

A. A scoreboard is really just a way to -- in this case, to keep track of a lot of complicated information about different possible flows of packets and which things have been received and which things haven't been received, just like a scoreboard in your

normal life presents a bunch of data about what is going on at a sporting event.

Q. Is the receiver keeping the scoreboard?

A. Yes, sir, it is.

Q. And, again, I'll keep mentioning this just to make sure we remember, all the devices on the network both transmit and receive.

A. Oh, yes, sir.

Q. So some day -- at one moment, the router may be the transmitter, and then the next moment, it may be the receiver as well.

A. Yes, sir. In fact, usually, they swap roles back and forth.

Q. Okay. So do all devices keep this scoreboard?

A. They keep their own each individual scoreboard, yes, sir.

Q. And do the scoreboards need to stay synchronized or coordinated somehow?

A. Well, the scoreboard and the receiver needs to be kept synchronized with what the transmitter is doing?

Q. Right. Better way to phrase my question, yes.

All right. So we've seen all this, and maybe one way you could explain it to us so we can understand it, without walking through the pseudocode, is to do another animation. Have you prepared one?

A. Yes, sir. I think that would be helpful.
Q. So what are we seeing here? Tell us -- zoom us in to what part of the network we're in right now and what we're looking at, please.
A. Well, suppose that terminal 4 is the receiver. We're looking at what's going in -- on inside of the receiver. You might describe it as the brain of the receiver.
Q. So is this a -- now, in the real world, there's not a blue and white board that says scoreboard with noes on it. This is all in computation logic, right?
A. Yes, sir. It's either going to be computer code and data that the computer code acts on; or in the case of the scoreboard, it might actually be electronic circuits that implement the scoreboard. Both of those are possible.
Q. But the transistors and bits and all that going on, is this at least a fair way to explain how the algorithm in the standard works?
A. Yes, sir, it is.
Q. Okay. What is the line of boxes that goes from left to right that's numbered 1 through 14?
A. Those are the places that we're going to store the packets as they come in. Remember, packets have

sequence numbers, and so we're going to store a packet with sequence number 1 in 1 and 2 in 2, et cetera.

Q. Can we show that?

A. Yes, sir, we can.

Q. And before we start, you put on there a dotted green box. What does that represent?

A. Well, I mentioned earlier that there was an idea of a window. So the window keeps track of, in the receiver, what packets it's currently expecting to receive. And so we see right now that the receiver's expecting to receive packets 1 through 6.

Q. Okay. Now, beneath it is our scoreboard?

A. Yes, sir.

Q. And explain what is shown on the scoreboard.

A. Well, the scoreboard is keeping track of which packets have actually been received and which packets haven't; and right now, we haven't received any packets, and so it says, no, for all of those packets.

Q. Now, can we put this into action and then see how packets show up and what happens to them?

A. We can.

Q. All right.

MR. STEVENSON: Let's start that.

Can you rewind that? That may have gone on a little bit fast. Carefully.

Q. (By Mr. Stevenson) We saw a blue box come in from the left and drop into 1 and X. What does that indicate?

A. Well, that indicates that that packet was actually lost for some reason and didn't actually arrive.

Q. So let's -- let's make sure we all understand what we're seeing with reference to this.

One of these packets is coming into the terminal; and before it got there, it got lost.

A. Yes, sir. Probably because it was interfered with somehow.

Q. Microwave?

A. Microwave oven would be a good example.

Q. So what you've shown is X, an "X" there, because there was a slot in the terminal waiting to get the packet, never showed up?

A. That's right.

Q. Okay. Maybe better luck with the next one. What happens, let's say, with the next one here?

A. So we see the 2 come in and it's actually received, so it goes into the slot. And we also see that the scoreboard now says, yes, to indicate it was received.

Q. And is the terminal doing computations to

update this scoreboard for the yeses that we're seeing here?

A. Oh, yes, sir.

Q. Okay. Let's show -- let's show what happens next.

A. So 3 is received. Again, it's updated in the scoreboard.

Q. Okay. What happens next?

A. 4 comes in. It's received. Again, it's updated in the scoreboard.

Q. Next slide.

A. 5 -- 5 is lost, also.

Q. Another microwave zap?

A. And then 6. It's received. So the scoreboard now indicates that the same information that we see in the -- in the actual buffers there, that 1 and 5 were not received.

Q. All right. So now our window is all taken into account. We have 2 missing packets?

A. That's right.

Q. Out of 6 possible packets?

A. That's right.

Q. What happens next?

A. Well, next we see an explicit block acknowledgement is going to come, and the first thing

that's going to happen --

Q. Okay. Let's back up a little bit.

MR. STEVENSON: Can we back up that -- that movement?

Q. (By Mr. Stevenson) So you said an explicit block acknowledgement comes.

A. Yes, sir. I think actually in this animation it's -- it's any kind of block acknowledgement.

Q. Okay. So it could be an explicit or an implicit?

A. Yes, sir.

Q. Okay. And that would be sent by the base station in this example, if that's who is transmitting?

A. That's right.

Q. And that would be sent down to the terminal. Is that the -- the block acknowledgement request -- excuse me, I may be confused. Is this the block acknowledgement request we're talking about?

A. Yes, sir.

Q. Okay. So that comes from the base station down to the terminal, and it's indicating or it's asking which packets didn't you get; is that right?

A. That's right.

Q. Okay. What does that do, that request to the window?

A. Well, that request is going to -- to shift the window. That's -- that's part of what it does.

Q. Why does the request shift the window?

A. Well, because either the request is additional packets arriving in the case of the implicit one and so it shifts the window, or an explicit BlockAck request, that's -- that's part of its role is to -- is to shift the window.

Q. Is that all defined and -- and required to be computed according to the standard?

A. Yes, sir.

Q. Is that all in the map we saw in the standard a minute ago?

A. Yes, sir, it is.

Q. Now, the window has moved over.

A. That's right.

Q. What happens next?

A. Well, the next thing that happens is the next step of the claim, we have to update the scoreboard to indicate that we are no longer waiting on 1 and 5.

Q. Well, before we leave this step of the claim, is the step of computing which data packets have been discarded by the transmitter, based on the data packet discard notification message, is that met in what you've seen in the standard and Defendants' products?

A. Yes, it is.
Q. And the computation, is that according to the rules that are set forth mathematically in that section of the standard you showed us?
A. Yes, sir, it is.
Q. And is that a computation?
A. Oh, yes, sir. I mean, computers have to always compute things.
Q. Thank you.
Now, let's go to the next element.
A. Okay.
Q. Removing entries from a first list indicating data packets expected to be received from the transmitter wherein the entries correspond to data packets identified in the computing step.
A. Yes, sir.
Q. How does that happen?
A. Well, we can -- if we re-run the animation, we can -- we can see it happening.
Q. Okay.
MR. STEVENSON: Back that up. We may not have all seen it, Mr. Diaz.
A. So --
Q. (By Mr. Stevenson) Tell us what we're looking for, and then show us.

A. So right now we see the scoreboard. That's the list that's keeping track of the packets that we expect with the noes. The noes are the ones that we're still expecting. And now we're going to -- based on how we move the window, we're going to change the scoreboard to be expecting the next setup of packets. And in the process, we're no longer expecting any of the packets -- you know, we're not expecting 1 and 5, and so that's what the next step is about.

Q. Okay. And in the animation we showed something flying into a garbage. Obviously, there aren't little garbage cans inside the computers. Is this all implemented in the processing of the computers that are within the accused devices?

A. Yes, sir. And actually the storage involved will be recycled. So they're -- there's recycling, if not garbage cans.

Q. And have you verified this operation by looking at the source code for the domestic chip manufacturers?

A. Yes, sir.

Q. Have you found this element to be met?

A. Yes, sir, I have.

Q. Let's go on to Dependent Claim No. 2.

A. Yes, sir.

Q. And, again, is looking at this dependent claim -- we do it the same way we looked at the prior one, which is to see if everything in 1 is met and then add 2 to 1?

A. That's exactly how it works.

Q. 2 requires that we add in, that the data packet discharge notification message contains a field indicating the format of the message?

A. Yes, sir, that's correct.

Q. Does -- is there a data packet -- is there an indication of the format of the message in the data packet discard notification?

A. Yes, sir, there is.

Q. All right. Can you show that on your slides?

A. Yes, sir. It comes actually from the 2007 standard, I believe.

Q. All right. Is this PX 283?

A. Yes, sir, it is. You can't see the date, but this is the -- this is the 2007 standard that the 2009 standard builds upon.

Q. Okay. And, again, is this a -- this isn't something you created. Is this verbatim direct out of the standard?

A. Exactly.

Q. If the jury wanted to see PX 283, go to

7.1.3.1. If you open that docket, you'll see exactly this?

A. Exactly that, yes.

Q. Tell us how what has been highlighted here corresponds to the final claim element.

A. Well, this says it's the frame control field. Frames are another word that we use in this standard to talk about packets. And the frame control field has a type field and a subtype field, and that's going to describe, as a code, what kind of packet it is; and what kind of packet it is includes its format.

And so the type and the subtype field are going to describe the format of the message. And both the explicit and the implicit block acknowledgement requests are going to have these type and subtype fields. This is a very basic picture of what the packets look like.

Q. Are those two fields, the type and subtype, required for interoperability between the Defendants' products?

A. Oh, yes, sir. I mean, these are -- the system would fail terribly without those fields.

Q. Is this element met?

A. Yes, sir.

Q. Are these claims essential to compliance with

the 802.11n standard?

A. Yes, sir, they are.

Q. And do you find Claims 1 and 2 of the '435 patent infringed by Defendants?

A. Yes, sir, I do.

Q. Is there anything more to discuss on this that we've left out, Dr. Nettles?

A. I don't -- no, sir, not that I can think of.

Q. Move on to the next one.

I believe the '625 patent that we'll be talking about next is in Tab 3 --

A. Yes, sir.

Q. -- of the jury notebook.

Tell us the date of filing of the '625 patent, please.

A. October 28th, 1998.

Q. And when did it issue?

A. July 23rd, 2002.

Q. And the Examiner was?

A. Kwang Yao.

Q. Can you tell us how this patent relates to the prior patent we talked about?

A. Yes, sir. The prior patent talked about -- it focused on what the receiver did when there was this packet discarding and when there was this packet discard

message.

In this patent, we're talking about what the transmitter does and how it commands the receiver to take certain steps.

Q. Okay. Do the transmitter and receiver have to follow the same set of rules in order to stay in coordination?

A. Yes, sir. They're -- they're a matched pair.

Q. And is there any place in the patent that you can point us to that describes visually how some of these rules work?

A. Yes, sir, there is.

Q. Where -- where can we look?

A. If we look in the figure part of the patent and we look at Figure 10B.

Q. Okay. So that's, I believe, sheet 9 of 12 at Tab 3 of the jury notebook.

A. Yes, sir.

Q. A lot to take in, Dr. Nettles. Let's start with what these boxes are.

A. Those boxes are another picture of the packets. In this case, they're in the transmitter. And this is where the transmitter is getting ready to send this group of packets.

Q. The boxes that say PL+ Comp. Header and SN,

those would be these blue packets that are being transmitted over the air?

A. Yes, sir, exactly.

Q. Okay. So we see engineers draw these a little bit differently, just depending on how much detail we need?

A. That's right.

Q. What are the empty dotted boxes on the left and the right of those?

A. Well, at the left-hand side, the dotted boxes are cells. That's another name for packets. I know we have lots of names for packets. Those are cells that have actually been discarded. And on the right-hand side, the dotted boxes or cells, that haven't been given to the transmitter to transmit yet.

Q. So how does this relate back to that window you showed us with the green dotted box?

A. The -- the various horizontal lines with double arrows, those are kinds of windows. And in particular, I think the most important window here is the top one that says =W.

Q. All right. So these windows -- you -- you simplified them for us in the animation, but in the patents, there's a more complicated depiction of windows.

A. Yes, sir. There's typically a number of different windows, and they indicate different -- different things.

So the labels here say something about what the windows -- these particular spaces in this buffer mean.

Q. Why do we need all this detail?

A. Well, remember the goal of the patent specification is actually to teach someone who -- who knows how to build these kinds of networking systems to actually build the invention. And these are very complicated systems, and they need to be very detailed. Otherwise, the system might break. I think we've heard deadlock referred to. Getting all the details right are part of how you avoid deadlock.

Q. Let's turn now to the claim. This is Claim 1 of the '625.

A. Yes, sir.

Q. I believe that's on the next to the last page of the patent.

A. Yes, sir.

Q. It's actually in Column 10.

Is this another method claim?

A. Yes, sir, it is.

Q. And what is the method that's being claimed?

A. It's a method for discarding packets in a data network. And then it goes on to explain that it's a packet transfer protocol. It includes an automatic repeat request scheme. That's ARQ scheme, and then it says what the steps are.

Q. Let's go through these steps. And maybe the best thing we can do is read these all the way through just so we know what we're going to be looking for, and then I may ask you a bunch of questions about how to understand them.

A. Okay.

Q. The first one is a transmitter in the data network commanding receiver in the data network to (a) receive at least one packet having a sequence number that is not consecutive with the sequence number of a previously received packet. And (b) release any expectation of receiving outstanding packets having sequence numbers prior to the at least one packet.

A. Yes, sir.

Q. Then the next one is the transmitter discarding all packets for which acknowledgement has not been received, and which have sequence numbers prior to the at least one packet.

A. Yes, sir.

Q. Which of the Defendants' devices practice this

method?

A. All of them.

Q. And, again, are the Defendants responsible for performance of the method?

A. Yes, sir, they program their devices to do these steps without human intervention.

Q. And do end users of the devices also perform these steps of the method?

A. Yes, sir. And they're induced by the Defendants, as we discussed before.

Q. So let's talk about now the elements.

What have you found to be the first command we talk about here?

A. The first command is when you send a packet which is not consecutive with a subsequent packet.

Q. Is that, again, the transmitter sending the packet?

A. Yes, sir, the transmitter is sending the packet.

Q. Do all accused devices have transmitters and capable of transmitting?

A. Yes, sir, they are.

Q. So we have a command -- or two things, receiving at least one packet out of sequence, and then (b) releasing expectation?

A. Yes, sir.
Q. Okay. Let's talk about those separately.
A. Okay.
Q. What have you found satisfies the receive at least one packet having a sequence number that is not consecutive with the sequence number of a previously received packet limitation?
A. That's met when you send an MPDU or an A-MPDU which is not consecutive with a previously delivered packet.
Q. Okay. And what makes that a command?
A. Well, the system doesn't have any choice about whether or not to accept that packet or not. It's -- it's required to do that, and that's what makes it a command.
Q. Okay. Can you tell us where that is in the standard?
A. Yes, sir. If we look at the 2009 standard -- I'm sorry, I don't know the Exhibit Number for that.
Q. I believe it's 286 -- PX 286.
A. If we look at Page 137, and if we look at Section 9.10.7.6.1 at the top, it actually has a discussion of 9.10.7.6.2 and 9.10.7.6.3, and 9.10.7.6.2, which is just below, is where we would find the commands to receive. And then part of the command -- part of the

next -- the next element -- the next subpart in B is going to be in 10.6.2 and part of it's going to be in 7.6.3, which is, again, below.

Q. Okay. That was a lot. Maybe what might be helpful -- and it's obviously -- we've got to get through this and explain it.

Maybe we could look at this and get a character or flavor for what kind of information we're seeing and then let the jury see how it's written and then we may have to, I think, go into an animation to explain this in a little more understandable format.

MR. STEVENSON: Mr. Diaz, can you go to one-page mode, please, and just take a look at that?

Can you go back -- I think we were -- maybe go to a single page so we can see a little bit.

A. And do you want to look at 6.2?

Q. (By Mr. Stevenson) Yes, let's scroll down and see what we're looking at. I mean, these are essentially detailed rules for conduct of the system, right?

A. Exactly.

Q. Okay.

MR. STEVENSON: Can we go to 6.2 and zoom in on that? And then let's go to the next page and take a look at that, please.

A. We want to keep this one, also.
Q. (By Mr. Stevenson) Okay.
A. If we -- if we can do that.
Q. I think we can. Which is -- which is the command here to receive an out-of-sequence packet?
A. Well, it's -- it's a combination of two spots. The top spot, which is in 6.2 (a) is saying what happens when you get a packet where the sequence number is inside of the window. And No. 1 says: Store the received MPDU in the buffer. And the (b) step that's just below it on the screen is what happens when the sequence number is outside of the window, above the window, and it also says: Store the received MPDU in the buffer.

And so together, those say whether or not it's in the window or out of the window. You have to store the MPDU, and that's the receive.

Q. And where's the command to release expectation?
A. If we look at the (b) part that's at the bottom for the implicit block acknowledgement request, it's Steps 2 and 3. That's basically changing the way the window works.

And now, if we look a little further down on that page, we'll see where the explicit block

acknowledgement request is.

So blow up the section which is 7.6.3.

Q. Okay.

A. And that's the explicit block acknowledgement request. And there it's in Section (a), 1 and 2. Those define how the -- the command about expectations.

Q. Okay. Are these commands?

A. Yes, sir. Again, you don't get to ignore them.

Q. And how are the commands communicated into the accused devices?

A. Well, the programmers build the devices to work this way.

Q. So if you're building a device that you want to be interoperable and work according to the standard, you have to basically program these commands into your device?

A. Yes, sir.

Q. Okay. Now, we've seen a lot of rules and window moves. I'd like to step back from the standard for a minute, and I know you prepared an animation where we can see visually how this works and maybe that will help us understand better.

A. Yes, sir, I think it will.

Q. All right. What are we seeing here?

A. Well, here, again, we're seeing part of the internals of the receiver with this buffer -- with these slots. That's just like in the previous animation, but now we're actually seeing the base station which is going to act as a transmitter.

Q. Okay. And it's transmitting packets?

A. Oh, yes, sir. That's how we can transmit in these systems.

Q. Okay. And is this what we're going to see, like, before the packets come and get slotted in?

A. That's right.

Q. Is there a window?

A. Yes, sir, there is. And we see it. It's the same window actually as we saw before.

Q. Okay. And this is, again, looking at the receivers?

A. That's right. This is inside the receiver's brain, if you -- if you will.

Q. All right. Can we start showing packets going in again to the window?

A. We can. Now we see they really come from the transmitter. Again, the first one's lost. The second one is received. And because the first one was lost, this one isn't consecutive with -- we don't see 0 in the picture, but 0 is the previous one. So this is actually

the command to receive something that's out of sequence.

Q. The number 2 is the command?

A. Right. The -- the -- the -- receiving that packet is a command to receive out of order.

Q. And explain one more time, why is receiving the packet a command to receive out of order?

A. Because since this particular packet is out of order and you're not allowed to not receive it, you're required to receive it, it's a command.

Q. Okay. Let's keep going.

A. 3 is received. 4 is received. These are in order, so they're not the command that the -- that the method requires.

Now, 5 is lost again, just like before. And 6 is received. And, again, it's a command to receive out of ordinary because 6 is not consecutive with 4.

Q. So this that you've described with the packets showing up, is this true for both the MPDU and the A-MPDU?

A. Yes, sir. The A-MPDU is really just a group of PDUs that are sent altogether at once.

Q. Now, let's move on. And before we do, have you satisfied yourself that the first part of the command, the (a) part, receive at least one packet having a sequence number that is not consecutive with

the sequence number of the previously received packet has been met?

A. Yes, sir.

Q. Okay. We're not done with this element yet because we now need to go to (b)?

A. Yes, sir.

Q. And that's release any expectation of receiving outstanding packets having sequence numbers prior to the at least one packet.

A. Yes, sir.

Q. Can you give us a more understandable explanation? I mean, we're not going to change the language. We're going to stick to that. But just help us understand what this is getting to.

A. Well, (a) defines what the at least one packet is.

So, for example, 6 is an example of those -- that at least one packet because it's out of sequence.

And now we have to do something to release expectation of receiving, in this particular example, 1 and 5. And in this system the way it works is the window defines what you're expecting to receive.

Q. And so -- let me ask you to explain that.

How --

A. Okay.

Q. -- does the window define what the receiver is expecting to receive?

A. Well, that's sort of the definition of the window is it's the -- the beginning of the window is the beginning of the things that you're expecting -- currently expecting. And the end is the end of the things that you're currently expecting. And things that are before, you're not -- you're not expecting. You're never going to ask for things that are earlier than the beginning of the window --

Q. So if the --

A. -- to be transmitted.

Q. Sorry.

If the window moves across, does that release expectation of receiving things before the window?

A. Yes, sir. That's kind of the whole reason for doing this windowing stuff.

Q. And -- and can you show that on your animation, please?

A. I can. I think the first one is going to show what happens when we get an explicit block acknowledgement request.

Q. So I'm going to stop here now just to slow us down. We talked about two kinds of block acknowledgement requests?

A. Yes, sir.
Q. Explicit and implicit?
A. Yes, sir.
Q. And, again, do both independently infringe the patent?
A. Yes, sir, they do.
Q. Either one could do it. You don't have to have both?
A. That's right.
Q. The first one comes across, is this the explicit or implicit version?
A. This is the explicit because you see it's -- it's labeled BAR. That's for block acknowledgement request.
Q. Why does it have 7 in parenthesis?
A. Because that says we're going to move the front of the window to Slot 7.
Q. Under the standard, when block acknowledgement requests are sent, do they have to have a number with them?
A. The explicit ones do, yes.
Q. And why do they need a number with them?
A. Because the number defines what data you actually care about, where you're going to move the window, what you're going to get an acknowledgement for.

Q. Okay. After the explicit block acknowledgement is received -- excuse me, after the explicit block acknowledgement request is received by the receiver, what does it do with its window and how does it release expectations?

A. It's going to move it to 7.

Q. The window his has now moved over --

A. That's right.

Q. -- and shifted. And then what happens to the expectations for the prior packets?

A. Well, anything that's below the left edge of the window is no longer being expected. You don't expect to receive anything below your window. And so all of those -- the 1 and the 5, in particular, you're no longer expect to receive those. You'll no longer -- you'll never ask the transmitter to send those to you.

Q. Okay. And the "you" in that being the receiver?

A. Sorry. Yes, sir.

Q. All right. And -- so now, can you show the same example for the other flavor of block acknowledgement request, the implicit block acknowledgement request?

A. I can. I think we show some packets coming in first, and then we'll -- and then we'll see the other

example.

Q. Okay. So this just -- after you move the window, it just keeps going on, filling up?

A. That's right.

Q. Is that how these things work? Do they -- do these windows just keeping moving along and packets keep coming in and just continually moving as more packets come in?

A. Yes --

Q. And --

A. -- repeat.

Q. Now, can we go to the implicit block acknowledgement request?

A. We can. So we're back in the same situation as we were in before. We've gotten the out-of-order -- the out-of-sequence packets, and we've got some drops. And now we're going to have an implicit block acknowledgement request.

Q. Okay. And this is the group of packets we talked about as being the other way of doing this?

A. That's right. This is this A-MPDU thing that we talked about.

Q. Again, is this a sender of the -- the transmitter of the packets deciding I don't want to try to keep redoing 1 and 5, I'm going to move on?

A. That's right.
Q. This is -- don't want a pause in the video time?
A. That's correct.
Q. So we're going to -- these -- so basically when we talked about that little block or that little glitch you'd see on your TV, is that because 1 and 5 are missing?
A. Exactly.
Q. Okay. So -- so basically the transmitter has decided I'm moving on, let's go ahead and release expectation. We saw that with the -- the yellow bar before.
A. That's correct.
Q. Now, this is a different -- an alternative way of doing it in the standard?
A. That's right.
Q. Okay. Let's -- let's go ahead and see that.
These all got sent as a group?
A. That's because they're A-MPDUs, and that's an aggregate group of packets.
Q. What does the IB mean?
A. That means that particular group is also an explicit block acknowledgement. That's the RSVP.
Q. Okay. And is there -- how does receipt of the

A-MPDU cause the window to shift?

A. Well, the window is going to shift, in this case, to the end of the A-MPDU. That's just the rules. We saw earlier actually how this works in the -- in the standard. So this is going to shift to the end.

Q. Okay. Does receipt of the A-MPDU and this window shift command the receiver to release expectation of receiving packets outside the window?

A. Yes, sir, it does.

Q. Have you found that (b) is met by both the implicit and explicit block acknowledgement requests because they release any expectation of receiving outstanding packets having sequence numbers prior to the at least one packet?

A. Yes, sir, it is.

Q. So have you found the commands in this -- in the -- excuse me, in the standard and in the Defendants' products to do both (a) and (b)?

A. Yes, sir, I have.

Q. Let's go to the next element.

The transmitter discarding all packets for which acknowledgement has not been received, and which have sequence numbers prior to the at least one packet.

A. Yes, sir.

Q. What does that refer to?

A. Well, now we're talking about -- again, this is a transmitter-sort-of-focused claim, and now what we're saying is that once the transmitter tells the receiver that it's no longer interested in retransmitting certain packets, it can just throw away the packets that are below the point that it said now I'm -- it's saying I'm -- now I'm interested in this spot, but nothing before it, and so the transmitter can discard everything that's before it.

Q. So once the window moves on and the packet isn't going to be transmitted ever again, what happens to it?

A. Well, the transmitter's going to discard it because it's going to re-use that space for other packets.

Q. Any point in keeping it?

A. No, sir, not at all.

Q. And is this element met by the accused devices?

A. Yes, sir, it is.

Q. I wanted to ask you some questions about the Defendants' products and their practices.

Do the Defendants use both in their products, implicit block acknowledgement requests and explicit block acknowledgement requests?

A. Yes, sir, they do.
Q. When are implicit block acknowledgement requests used?
A. When you send one of these A-MPDUs, one of these groups of packets together, my understanding is that those are almost always sent as implicit BlockAck requests.
Q. Okay. And do all the Defendants' products send A-MPDUs?
A. Oh, yes, sir. That's one of the important innovations of 802.11n is sending these packets in groups. It's more efficient.
Q. When are explicit block acknowledgement requests used in the Defendants' products?
A. Well, one of main times is when you send an implicit block acknowledgement request and then that causes a block acknowledgement to be sent, well, block acknowledgements can get lost, also. And so if the block acknowledgement gets lost, then you have to ask again and the systems ask again by sending an explicit block acknowledgement request.
Q. Have you checked the source code for the domestic chip manufacturers to verify the accused devices follow the standard as advertised?
A. Yes, sir.

Q. And have you seen implicit block acknowledgements sent during your testing of representative chipsets used in the Defendants' products.

A. Yes, sir.

Q. And same question for explicit block acknowledgement requests.

A. Yes, sir.

Q. Which one is more frequent, implicit or explicit?

A. Oh, the implicit, sir, are much more frequent.

Q. And -- and what's the order of magnitude or the ratio, approximately?

A. Well, it -- it really depends on the conditions, but a hundred times more frequent, a thousand times more frequent, 10,000 more -- times more frequent.

Q. Okay. And what about the conditions influences how many explicit block acknowledgement requests will be sent?

A. Well, if you have conditions where it's likely for the block acknowledgements to get lost, it makes it more likely that you're going to send an explicit block acknowledgement request to fix the fact that a block acknowledgement got lost.

Q. Can you give me a real-world example? When does that kind of thing happen?

A. Probably the easiest to understand case is if you're communicating at the edge of your transmission range. So it's very easy to lose packets at the edge of the transmission range. That's one of the places it's most likely to see explicit block acknowledgement requests.

Q. So if I have -- let's say I have a router.

A. Okay.

Q. And I had an Internet a connection, I'd plug it in right here at the podium.

A. Okay.

Q. Put it right here.

A. Okay.

Q. I guess this is where the radio is, right?

A. It's where one of them is, yes, sir.

Q. And then whatever I'm talking with, if it's a laptop or my phone is on Wi-Fi, if I'm real close, I have pretty good reception?

A. If you're real close, you have great reception.

Q. So I'm not going to get very many block acknowledgement requests that are explicit in that circumstance?

A. I wouldn't expect you to.
Q. Okay. Now let's say I was walking away and I go down the hall and further down the hall and further down the hall. I mean, sooner or later, I'm going to get out of range of this thing, right?
A. Right.
Q. And I'm going to have nothing.
A. Right.
Q. But if I get pretty far away, but I can still get some radio reception, then what happens to the frequency of block acknowledgement responses that are the explicit type?
A. I would expect to see it go up.
Q. Are these things essential to compliance with the 802.11n standard?
A. Yes, sir, they are.
Q. And, again, in the infringement analysis you've done, does it matter to you at all whether or not Ericsson was present or not present at 802.11 meetings when these were being put into the standard?
A. No, sir. Infringement analysis really is exactly what we've been doing: Looking to see if the products meet the claims.
Q. Let's now move on to the next patent. And this is going to be the '568 patent.

MR. STEVENSON: It's at Tab 4 in the jury notebook.

A. Thank you.

Q. (By Mr. Stevenson) When was this patent filed for, Dr. Nettles?

A. It was filed on October 15th, 1996.

Q. And what is the date this patent issued?

A. October 15th, 2002.

Q. And who are the Examiners on it?

A. Wellington Chin and Frank Duong.

Q. Can you give us a headline encapsulation of what this patent is about?

A. This packet -- this patent is about the fact that different kinds of data in the network need different treatment, and so there needs to be a way of identifying the kind or type of data that is in a packet so that it can be given a different treatment.

Q. And is this -- what type of data are you talking about, as far as different kinds?

A. Well, in the -- the claim construction examples, include video, voice, just regular data. Those are examples in the -- in the standard also.

Q. And I believe we can all turn to Tab 1 to look at the claim construction for the '568 patent. And the Court was construing the service type identifier, which

we're going to talk about in a minute, which identifies the type of payload information.

A. That's right.

Q. And how did the Court define that?

A. As an identifier that identifies the type of information conveyed in the payload. Examples of types of information include, but are not limited to, video, voice, data, and multimedia.

Q. Okay. Well, let's talk a little bit about the setting in which the inventors came up with the invention.

What is that?

A. They were working on cell phone standards. And remember, this patent was filed in 1996.

So at that time, cell phones really -- all they could do is voice. But they were looking forward to a time when cell phones would be able to do voice and video and web pages and e-mail, just -- just like cell phones do today.

Q. And what kind of issues can be created by sending different types of data over the same network?

A. Different kind of -- kinds of data in particular have different delay tolerances. And so if you want to take into account the tolerance for delay, there needs to be extra -- there needs to be new

functionality in the network to allow you to do that.

Q. Can you give us an example?

A. The example we've been talking about most frequently is with voice or video.

If your e-mail is delayed by a minute or two, it's not a big deal. If there's a one-second pause in a video that you're watching, then that's probably annoying.

If there's a one-second pause every minute in a phone conversation, that's -- probably makes it pretty hard to have a phone conversation. And if it's every few seconds, it's impossible to have a phone conversation.

Q. Can you have phone conversations over these wireless networks?

A. Yes, sir. I mean, that's one of the main things we do over them.

Q. How do you do that?

A. Well, that's -- I mean, that's what cell phones do. But you can also do that over the data network by using what we call Voice over IP technology. That's a way of doing phone calls over the Internet.

Q. Okay. And when I asked my question before, I was really referring -- and I didn't ask it well -- to the wireless Wi-Fi networks.

A. Oh. Oh, yes, sir.
Q. Can you do phone calls from your house over a Wi-Fi network over the Internet?
A. Oh, yes, sir. Again, using this Voice over IP Internet phone call technology.
Q. What are programs that do that?
A. The one that people have probably heard of the most is called Skype, but also a lot of -- you know, a lot of cable companies provide VoIP phones, and so those might go over wireless.
Q. Okay. I've -- I've heard of Skype before. I think I've seen it, like on TV, being used by families of servicemen to communicate with them overseas and that sort of thing. What's the advantage of using Skype as opposed to just making a long distance call?
A. Well, as long as the person that you want to talk to has Internet -- and, for example, service people in Afghanistan have the Internet -- you can make essentially free phone calls to them.
Q. Free long distance?
A. Yes, sir, and, in fact, video calls as well.
Q. Okay. So would that be an example of different types of traffic on the same network?
A. Yes, sir. If you were making a call like that and you were also receiving e-mail, those would be two

different kinds of data.

Q. So what is the solution of the patent for dealing with the complications or problems caused by having different types of data on the same network?

A. Well, they introduced something called a service type identifier. So they created another compartment or field where you could actually put an identification of what kind of data was in the packet.

Q. Have you prepared an animation that we can look at to see and understand a little better the service type identifier?

A. Yes, sir, I have.

Q. So it appears now that we are zooming in on the base station and one of the terminals, right?

A. Yes, sir.

Q. And just as a persistent reminder, we keep showing the base station in these animations transmitting to the terminal, but they can go both ways, can't they?

A. Yes, sir, and they do.

Q. I mean, if you were on a Skype call on your computer, you would be sometimes sending and sometimes receiving based on who's talking.

A. Exactly.

Q. Can we put this in motion?

A. We can.
Q. What is this group of multicolored packets?
A. Well, again, these are packets, but this time we've colored them different colors to indicate that they have different kinds of information in them.
Q. And can we zoom in on a packet?
A. We can.
Q. We zoomed in on the yellow one.
A. Yes, sir. And we see at the front, there's a 00.
Q. Are we again seeing these compartments we've been talking about?
A. Yes, sir.
Q. And was the invention here to create that compartment there on the left?
A. That's right.
Q. The one that says 00 on it?
A. Yes, sir. It can have other values, but that's the invention.
Q. Okay. And what is that called in the patent?
A. That's the service type identifier. And then the claim construction actually just calls it type identifier.
Q. Okay. And what is the -- in the -- in the rest of the packet, what are the squiggly things that

looks like a voice oscilloscope?

A. That's our graphical representation of voice.

Q. Now, in the real world, they're not sending scribbles. Are they sending --

A. 1s and 0s.

Q. I'm just kind of curious. I mean, just a ballpark. In one sentence, how many 1s and 0s would you need to capture -- not one of my long sentences but just a short sentence and turn it into a bunch of 1s and 0s?

A. Well, the -- the typical way voice is digitized for sending over the phone, you break every second of conversation into 8,000 pieces.

Q. And you're talking thousands and thousands of 1s and 0s just for a second of --

A. 8,000. Exactly 8,000 per second.

Q. Okay. What's the purpose of the service type identifier?

A. It's to identify the type of the payload.

Q. Okay. So in this case, can we -- is there a lookup chart in the standard?

A. Yes, sir, there is.

Q. And I asked about the standard. Let's start with the patent. Let me back up.

A. Sorry. I thought that's what you meant.

Q. I meant to ask about the patent.

Is there a description in the patent of what different types of service type identifiers can be?

A. Yes, sir, there is.

Q. So what are we seeing here?

A. We're seeing a table that's taken from the patent that says, for example, that if you want to send voice, you're going to label it 00 in the service time identifier.

Q. And with the -- would that then get looked up as to what 00 stands for?

A. Yes, sir.

Q. And where did you get your examples for voice and video and data and multimedia to put in this slide?

A. It's from the patent. I'm looking for the page number.

Q. Is it also from the claim construction we read?

A. Oh, yes, sir. Those -- those particular kinds of data are from the claim construction.

Q. Okay.

A. I guess maybe there's not an explicit picture.

Q. Well, let me ask you about the importance of the service type identifier.

A. Yes, sir.

Q. What does it allow the network to do?

A. Well, it allows it to treat the different kinds of data differently based on what kind of data it is.

Q. Okay. How could they be processed differently?

A. Well, in particular, you might give voice the highest priority, because it's the most sensitive to delay. You might give video the next highest priority because it's more sensitive than data. You might give data the lowest priority.

Q. All right. Well, let's look now at the claim and talk about that. And I believe the claim is located at the last page of the patent, Tab 4, Column 13.

This claim seems a little bit different than the ones we talked about before. The ones we talked about before were called a method. This one reads: A communication station comprising.

What kind of claim does that indicate to you that this is?

A. It's called an apparatus claim.

Q. Okay. And how do you go about determining infringement of an apparatus claim?

A. You look to see if the accused device is an apparatus or a machine that is capable of doing the things that are in the claim limitations.

Q. But like before, do we have to go through each element and make sure that that is met in the accused devices?

A. Oh, yes, sir, except for now we're looking for capability.

Q. Okay. Which Defendants infringe Claim 1?

A. All of them.

Q. And which products infringe? All their products?

A. Yes, sir.

Q. Let's read this together. This requires a processor for arranging information for transmission including providing at least one first field in which payload information is disposed and providing at least one second field, separate from said first field, which includes a service type identifier which identifies a type of payload information provided in said at least one first field.

So is the claim setting up essentially two fields, a first and a second?

A. That's exactly what it's doing.

Q. Are those the fields we looked at in the animation you just showed us?

A. Yes, sir.

MR. STEVENSON: Would you go back to

that, Mr. Diaz, please? Thank you.

Q. (By Mr. Stevenson) So what is being claimed here are the two fields, the first field and the second field.

A. Yes, sir.

Q. And then the next element is transmitter for transmitting. We talked about that.

Do the accused devices have a processor for arranging information for transmission?

A. Yes, sir, they do.

Q. And are they all capable of doing that?

A. Yes, sir. They are all capable of arranging things to be transmitted.

Q. Now I want to get into the first field and second field. Are we going to need to get into the standard to actually see visually those fields?

A. Yes, sir, we will.

Q. Okay. Do you have a slide that shows the standard?

A. I do.

Q. Okay. And, again, this is Plaintiff's Exhibit 286.

A. Yes, sir.

Q. What's the best place for us to look in this to find the -- the format?

A. If we look at Page 13, we see Figure 7-1. This is the MAC frame format. Again, frame is another word we use for packet.

Q. Let's all understand what we're seeing here. Let's make sure we're all on the same page, so to speak. This is one of the diagrams out of the actual standard?

A. Oh, yes, sir. It's on Page 13.

Q. And, again, this is a verbatim copy, right?

A. Yes, sir.

Q. Not something you created as a demonstrative; this is the actual evidence.

A. Yes. This was -- yes, sir. This was scanned from the -- from a copy of the standard.

Q. And this is called the MAC frame format.

A. Yes, sir.

Q. What's a MAC frame?

A. Well, again, MAC is the media access control layer. That's what -- essentially, everything we've been talking about so far, where all of that functionality resides.

And frame is just a different word for packet. And format just means how is the packet laid out into compartments.

Q. Is this one of those blue things or one of the orange things?

A. Well, actually, this is a general one, but this is basically one of the blue things.

Q. Okay. So this is the overall look at a blue packet?

A. Yes, sir.

Q. And this is actually not -- the control information, this has the data that's the video or video, right?

A. That's right.

Q. And does every one of these packets have the format that's defined there?

A. Yes, sir, the ones that carry data do.

Q. I mean, do they all have to be consistently the same?

A. Well, yes, sir, or otherwise, there's -- I mean, again, it's -- everything has to be consistent for people to be able to talk.

Q. Okay. So next -- can you show us where we can look into the compartments of the packet to find the first field and the second field that's recited in the claims?

A. Yes, sir. If you look at the field that says frame body, that's the payload. That's the first field.

Q. Okay. Why do you call that payload?

A. Well, that's the place in the -- in the frame

that you would deposit the data. And we call the data the payload. That's just the terminology.

Q. Okay. And can you tell from looking at this diagram -- the way it's drawn, they're all the same size box? In reality, are they all the same sizes in the real packets that fly around?

A. Oh, no, sir. In fact, that's an important part about this picture, is that it shows -- above it shows a number, and the number says how many bytes that compartment can be.

And, in fact, one of the reasons that it's clear that the frame body is the payload is because it says it can be from 0 bytes all the way up to 7,955 bytes.

So that's where -- remember, we talked about the packets being variable size? That's where the variable size happens.

Q. Okay. And bytes being a computer term for?

A. 8 bits.

Q. And bits being a computer for?

A. 1s and 0s.

Q. Okay. So this is -- this is a lot of 1s and 0s in the frame body, and those 1s and 0s are going to correspond to whatever content is being sent?

A. Exactly.

Q. So that -- that's your payload?
A. That's right.
Q. And is payload a pretty typical word that people who deal with these kind of packets use to describe the content?
A. Yes, sir. It's not the only word, but it would be typical. Everybody would understand that word.
Q. So we talked about the payload information in the first field. Now, what we need to know next is, is there a second field, separate from the first field?
A. Yes, sir.
Q. Have you identified that second field?
A. I have.
Q. And can we show it on here?
A. We look at the QoS control field.
Q. Is that separate from the payload field?
A. It is.
Q. Does that field include a service-type identifier which identifies a type of payload information provided in said at least one first field?
A. Yes, sir, it does.
Q. And we have "at least one" again. What does "at least one" mean?
A. "At least one" means -- sorry. I need to --
Q. Just in ordinary parlance, does that mean one

or more?

A. Yes, sir, it does.

Q. So you could have one payload -- or more important, two or three payloads and meet this claim?

A. Oh, yes, sir. It's just that in this case we only have one payload.

Q. But that -- that -- the payload and the -- and the -- the first and second field, payload and the other one, have at least one field?

A. Yes, sir.

Q. What is inside the QoS control field you've identified?

A. Well, it's another one of these nested compartments. We have to look inside.

Q. What does QoS stand for?

A. That stands for quality of service.

Q. What does quality of service generally mean?

A. It's the term we use when we want to distinguish between different kinds of data and we want to give them different qualities of service. Like we want to give very good quality of service to voice and pretty good quality of service to video and best effort quality of service to data.

Q. Okay. So now you zoomed in on what's inside the QoS control, and we have another format chart.

A. That's right.
Q. And that's from where in the standard?
A. That's Table 7-4. That is on Page 16 of the standard.
Q. Of the --
A. 2009 standard.
Q. PX 286?
A. Yes, sir.
And what that's showing is that in that field, the first four bits -- those are bits 0 through 3 -- are a TID.
Q. Okay. Let me -- let me stop you there, and ask you: You say bits 0 to 3?
A. Yes, sir.
Q. When it says bits, are you talking about data bits?
A. Yes, sir.
Q. And under that, then, there's a list of six rows.
A. Yes, sir.
Q. Each of them says TID in it.
A. That's right.
Q. What's that referring to?
A. Well, each of the rows is a different kind of packet that all have this same basic format inside of

them. So the column to the left of the TID column describes exactly what those different kinds of packets are.

Q. Okay. Does TID stand for something?

A. Type identifier.

Q. And does that type identifier correspond, in your opinion, to the service-type identifier that is required for the elements of the claim?

A. Yes, sir, it does.

Q. Do all 802.11n devices have to follow this packet format?

A. Yes, sir, they do.

Q. Is there anything in the standard that would map the TID value to the type of information it would contain?

A. Oh, yes, sir. There's a table.

Q. All right.

MR. STEVENSON: Can we show that table?

Q. (By Mr. Stevenson) We jumped to another slide here.

A. Yes, sir.

Q. Which exhibit is this from?

A. This is from PX 0283. That's the earlier 2007 standard.

Q. And explain how these 2009 and 2007 standard

books you have interrelate.

A. Well, the -- the 2007 standard stands on its own. It's complete. But the 2009 standard is basically a revision. So it says how to revise the 2007 standard to be the 2009 standard. So it has all the additions.

If there's a change, it will show the deletions. But if it's not an addition or a change, it's going to be in the 2007 standard.

Q. Okay. So this one is in the 2007, and it carries forward to the 2009?

A. That's right.

Q. And, again, is this -- this isn't something you created. Is this verbatim from the standard?

A. Yes, sir, it is.

Q. Explain what this chart is, please.

A. Well, this is a chart that's showing what the possible values for that TID field are. That's the UP, the user priority field, in this table. And we see highlighted at the bottom 4, 5, 6, and 7.

And if we look to the right, we'll see that 4, 5, 6, and 7 are AC VI, which is a designation for video, and then AC_VO, which is a designation for voice.

Q. Okay. Let me -- let me ask you to walk back through that with me just to make sure I've understood it. In the left - second to the left column, the one

I'm pointing to with the blue arrow -- that column.

A. Yes, sir.

Q. Where would those numbers go in the prior slide that we looked at?

A. They would go in the TID field that we saw.

Q. So the TID field is going to be a 0, 1, 2, 3, 4, 5, 6, or 7?

A. Yes, sir.

Q. And does that number -- would that go into the QoS control field that we looked at in the -- in the packet?

A. Yes, sir. The TID field that we looked at is a subfield of the QoS control field.

Q. Then in the AC field, we have AC_VI -- AC_VI, AC_VO, AC_VO.

A. Yes, sir.

Q. What do those refer to?

A. Those are the particular names the standard gives to the -- these particular priorities. So AC_VI are -- is priority 4 and 5, and AC_VO is priority 6 and 7.

Q. Now, defense counsel said in opening that this 802.11n doesn't identify what's in the payload. And I think we saw a slide of a milk truck in the fast lane.

Do you remember that?

A. I saw that slide, yes.
Q. Well, is that right?
A. Well, I mean, this table says voice and video, doesn't say milk truck, but it doesn't say fast lane?
Q. Okay. So what is the significance of the table saying voice or video within the standard?
A. Well, this table is telling someone who would use this capability that if they want to carry voice, they should give it a UP of 6 or 7. And if they want to carry video, they should give it a UP of 4 or 5.
Q. So if you wanted to take advantage of the quality of service capabilities, you could do that?
A. Yes, sir.
Q. Okay. Are all the -- excuse me. In what part of the computer is this performed, this element?
A. Well, this is -- this is performed in the MAC.
Q. That's the media access controller layer?
A. Yes, sir, it is.
Q. And is that one of the lower layers or lower levels of the -- what I'll call the transmission stack?
A. Yes, sir. We're going to see a picture of that in a few minutes, but it's the -- it's the second lowest layer.
Q. Do all the accused computers in this case have the capability of transmitting this TID field as part of

the packets they transmit?

A. Yes, sir, they do.

Q. Is the same true for the router?

A. Yes, sir, it is.

Q. How do the routers meet these functional limitations?

A. Well, they also have a processor that arranges these fields and creates these payload fields, puts payloads in them, creates this type identifier field, puts this value in them in really the same way as the computers and laptops do.

Q. Have you found the first element to be met in the Defendants' products?

A. Yes, sir.

Q. Let's talk about the second elements. A transmitter for transmitting information received from said processor, including said at least one first field and said at least one second field.

So you've got another one here that requires the first and second fields that we've defined up here to be transmitted -- well, at least a transmitter for transmitting them.

Do the accused devices have a transmitter?

A. Yes, sir. I mean, that's -- that's part of the main point of them, is to be a transmitter and a

receiver.

Q. And do they actually transmit the first field and second field along with every transmission?

A. Yes, sir, they do.

Q. Do you find that element to be met?

A. Yes, sir, I do.

Q. Let's move on to Claim 5. What kind of claim is Claim 5?

A. It's another one of these dependent claims. It's still an apparatus claim.

Q. Okay. So this -- is this the same thing we've done before where we go through and see if No. 1 and No. 2 are met and then we have to add on -- there's a next element -- what is in Claim 5?

A. Yes, sir, exactly.

Q. So the first two elements carry over and now we just need to see if 5 is true?

A. Yes, sir.

Q. In your opinion, which Defendants infringe Claim 5?

A. The router Defendants.

Q. Just the router Defendants?

A. Yes, sir.

Q. And why just the router Defendants?

A. Because this limitation requires a base

station, and the routers are base stations.

Q. What is a base station?

A. A base station is something which connects a wired network and a wireless network. So your router is an example. The things that you see on the cell towers are examples.

Q. I've heard of cellular base stations before.

A. Yes, sir.

Q. Are -- are these routers and access points we're dealing with in this case, these Defendants, are they fairly called base stations, also?

A. Yes, sir. I think the Defendants call them that.

Q. Is this term -- terminology equally applicable to cellular, as well as Wi-Fi?

A. Absolutely.

Q. Have you seen evidence that the Defendants actually refer to their routers and access points as base stations?

A. I have.

Q. Did you put it on the slide?

A. Yes, sir, I did.

So this is for NETGEAR.

Q. It is PX 0509?

A. Yes, sir. And it says: There are various

types of access points, also referred to as base stations, used in both wireless and wired networks.

Q. Do you find Claim 5 to be met in the accused devices?

A. In the router accused devices, yes, sir.

Q. Thank you.

Is the capability in these claims to transmit the first field and the second field essential to compliance with the 802.11 standard?

A. Yes, sir, it is.

Q. And how does this capability improve the performance of Wi-Fi networks?

A. The performance of Wi-Fi networks is -- this lets you do quality service. So this lets you prioritize voice and video, and that's going to improve the -- the performance in the sense that you'll get better performance for the things that you care about having a low delay, and the things that tolerate delay better will -- you'll be allowed to have a little bit more delay, so...

Q. Are there programs that actually use this capability that is within the routers and the computers?

A. Yes, sir, there are.

Q. And is this -- are these marketed as QoS devices? Is that how they're described in the market?

A. Yes, sir. They'll mention something about QoS, or there will be some QoS aspect that you'll have to -- that they'll tout.

Q. All right. Are there a lot of programs or applications currently in the market that take advantage of this capability?

A. No, sir. Really just a handful.

Q. Okay. Have you identified some, though?

A. Yes, sir, I have.

Q. Which ones have you identified that use this capability?

A. Well, one example would be a program called CSipSimple, which runs on Android phones.

Q. CSipSimple?

A. Yes, sir.

Q. And how do you get that if you have an Android phone?

A. It's a free application.

Q. What does it let you do?

A. Well, it lets you -- it's another one of these programs that lets you make the free foreign phone calls over the Internet.

Q. Okay. And that runs on Android?

A. That particular one does.

Q. And does that take advantage of this

capability?

A. It does.

Q. Are you aware of others that run on computers that take advantage of this capability?

A. Yes, sir. The Skype program I mentioned before and a program called Ekiga, when running on the Linux operating systems, takes advantage of these capabilities.

Q. Okay. And what does Ekiga do?

A. It's -- it's, again, another one of these Voice over IP phones, although I think it's more focused on making video calls.

Q. Okay. Like a video conference thing for your computer?

A. Yes, sir.

Q. Okay. And does Windows have any programs or applications that take advantage of this capability?

A. Yes, sir. Under Windows 7 and Windows 8, actually, there's a facility called QA that once you start it, Windows Media will take advantage of this quality of services to, for example, stream video to an XBox using quality of service.

Q. And does it do that the whole time, or does it do it adaptively?

A. It does it adaptively. So it won't always

take advantage of this facility. Only when it thinks it's advantageous to do so.

Q. And how did you determine that these programs are actually taking advantage of this capability?

A. I ran them.

Q. Okay. And did you see some testing done by Defendants' experts where they ran some of these programs as well?

A. Yes, sir, I did.

Q. And were they able -- were you able to see another test where they saw this capability being taken advantage of by the programs?

A. In certain cases, yes, sir.

Q. Okay. And let me ask you this: I know you said it's a handful of programs currently being offered; but does the fact that it is currently a handful of programs using this and taking advantage of this feature, affect your opinion on whether the computers and routers infringe this apparatus claim?

A. No, sir, not at all. This -- this claim is infringed because of the capability of doing this.

Q. Okay. Is there anything we need to talk about more on the '568 patent?

A. Not that I can think of.

Q. Let's go to the next patent.

THE COURT: How long do you anticipate this patent will take?

MR. STEVENSON: 25 or --

THE COURT: All right. I think we better break for lunch. We've been going a pretty long time now, so...

All right, Ladies and Gentleman of the Jury. I -- we will take our lunch break at this time.

Please remember my instructions. Don't discuss the case amongst yourselves or with anyone else. Enjoy your lunch, and we'll see you back here at 12:25.

We'll be in recess.

COURT SECURITY OFFICER: All rise.

(Jury out.)

(Lunch recess.)

CERTIFICATION

I HEREBY CERTIFY that the foregoing is a true and correct transcript from the stenographic notes of the proceedings in the above-entitled matter to the best of our abilities.

/s/ Shea Sloan
SHEA SLOAN, CSR
Official Court Reporter
State of Texas No.: 3081
Expiration Date: 12/31/14

/s/ Judith Werlinger
JUDITH WERLINGER, CSR
Deputy Official Court Reporter
State of Texas No.: 731
Expiration Date 12/31/14