

Volume 3

Pages 545 - 851

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

BEFORE THE HONORABLE MARILYN HALL PATEL

REALNETWORKS, INC., a)
Washington Corporation; et)
al.,)
)
Plaintiffs and)
Counter-Defendants,)

v.)

No. C 08-4548 MHP
C 08-4719 MHP

DVD COPY CONTROL ASSOCIATION,)
INC., a Delaware nonprofit)
corporation; et al.,)
)
Defendants and)
Counter-Complainants.)

San Francisco, California
Wednesday, April 29, 2009

TRANSCRIPT OF PROCEEDINGS

APPEARANCES:

**For Plaintiffs/
Counter-Defendants:** WILSON SONSINI GOODRICH & ROSATI
650 Page Mill Road
Palo Alto, California 94304-1050
**BY: LEO P. CUNNINGHAM, ESQUIRE
COLLEEN BAL, ESQUIRE
MICHAEL A. BERTA, ESQUIRE**

(Appearances continued on next page)

**Reported By: KATHERINE SULLIVAN, CSR, RPR, CRR
BELLE BALL, CSR, RMR, CRR
OFFICIAL REPORTERS**

*Katherine Sullivan, CRR and Belle Ball, CRR
Official Reporters - U.S. District Court
(415) 794-6659*

APPEARANCES (CONTINUED):

**For Plaintiffs/
Counter-Defendants:** BARTLIT BECK HERMAN PALENCHAR & SCOTT
1899 Wynkoop Street, 8th Floor
Denver, Colorado 80202
BY: DONALD E. SCOTT, ESQUIRE

BARTLIT BECK HERMAN PALENCHAR & SCOTT
54 West Hubbard Street
Chicago, Illinois 60610
**BY: MARK S. OUWELEEN, ESQUIRE
ALAN E. LITTMAN, ESQUIRE**

**For Studio Defendants/
Counter-Complainants:** MUNGER, TOLLES & OLSON
560 Mission Street, 27th Floor
San Francisco, California 94105-2907
**BY: BART WILLIAMS, ESQUIRE
ROHIT K. SINGLA, ESQUIRE
ASHLEY AULL, ESQUIRE**

MUNGER, TOLLES & OLSON
355 South Grand Avenue, 35th Floor
Los Angeles, California 90071-1560
BY: KELLY M. KLAUS, ESQUIRE

MITCHELL, SILBERBERG & KNUPP LLP
11377 West Olympic Boulevard
Los Angeles, California 90064
BY: ROBERT H. ROTSTEIN, ESQUIRE

**For Defendant/
Counter-Complainant
DVD CAA:** AKIN, GUMP, STRAUSS, HAUER & FELD, LLP
580 California Street, Suite 1500
San Francisco, California 94104-1036
BY: REGINALD D. STEER, ESQUIRE

AKIN, GUMP, STRAUSS, HAUER & FELD, LLP
2029 Century Park East, Suite 2400
Los Angeles, California 90067-3012
BY: STEPHEN R. MICK, ESQUIRE

WHITE & CASE LLP
3000 El Camino Real
Five Palo Alto Square, 9th Floor
Palo Alto, California 94306
BY: MARK F. LAMBERT, ESQUIRE

Also Present: Roger Myers, Esquire

PROCEEDINGS

P R O C E E D I N G S

1
2 **APRIL 29, 2009**

9:41 A.M.

3
4 **THE COURT:** Good morning.

5 (Counsel greet the Court.)

6 **MR. SINGLA:** Good morning. Rohit Singla. Could I
7 raise a point of procedure?

8 **THE COURT:** Yes, I suppose.

9 **MR. SINGLA:** We have an agreement with the other side
10 that the parties will exchange demonstratives the day before.

11 **THE COURT:** Yes.

12 **MR. SINGLA:** And this morning at about 2:00 in the
13 morning or 1:30 in the morning, we got a set of
14 demonstratives --

15 **THE COURT:** How do you know it was 2:00 in the
16 morning?

17 **MR. SINGLA:** It was by e-mail, Your Honor.

18 **THE COURT:** Oh, okay. So you weren't up at that hour
19 waiting for your mail?

20 **MR. SINGLA:** I was up at that hour, Your Honor, but
21 not waiting for mail. But it's demonstratives for Mr. --
22 Professor Bishop.

23 **THE COURT:** Yes.

24 **MR. SINGLA:** And we have a concern that the
25 demonstratives suggest strongly that Professor Bishop is going

1 to go outside the scope of his literature, two expert reports
2 at his deposition. And I don't know if the Court wants to hear
3 that issue now before Professor Bishop testifies or during his
4 testimony. So I want to just raise the issue with the Court.

5 **THE COURT:** Well, we'll deal with it after this
6 witness's testimony but before he's called.

7 **MR. SINGLA:** Thank you, Your Honor.

8 **THE COURT:** And I'll remind you that you're still
9 under oath and the oath will not be re-administered.

10 And we'll proceed, Mr. Williams.

11 **MR. WILLIAMS:** Thank you, Your Honor.

12 **ROBERT GLASER,**
13 called as a witness for the Plaintiffs herein, having been
14 previously duly sworn, resumed the stand and was examined and
15 testified further as follows:

16 **CROSS EXAMINATION**

17 **BY MR. WILLIAMS:**

18 **Q.** Good morning, sir.

19 **A.** Good morning.

20 **Q.** You testified yesterday, sir, on direct examination that
21 RealNetworks had never been sued for violating anyone's
22 copyrights. Do you recall that?

23 **A.** That's not -- that was not my testimony, sir.

24 **Q.** Okay. What was the testimony?

25 **A.** That, to my knowledge, we had never been sued by a major

1 media company, meaning such as the studios that are suing us or
2 a major record company for a copyright matter.

3 Q. To your knowledge, has the company ever been sued for
4 violation of the Digital Millennium Copyright Act?

5 A. I'm not sure.

6 Q. Now, it is a fact, though, that the company has sued
7 others for violation of the Digital Millennium Copyright Act,
8 true?

9 A. Yes, I believe so.

10 Q. And you recall that in early 2000 Real brought a claim
11 under the DMCA against a company called Streambox, right?

12 A. I recall the case. I don't remember the exact timing.
13 That sounds right.

14 Q. Now, the case against Streambox was extremely important to
15 RealNetworks at the time, right?

16 A. I would say it was important.

17 Q. You started the company in 1995, did you say, or '94?

18 A. We incorporated in '94 and shipped our first product in
19 '95.

20 Q. And one of the products that you developed fairly early in
21 the life of the company was something called the RealPlayer,
22 right?

23 A. Yes.

24 Q. Is it fair to say that the RealPlayer is one of the most
25 successful and important products in the history of your

1 company?

2 **A.** Yes, sure.

3 **Q.** And one of the things the RealPlayer did was it allowed
4 protected copyrighted content, like music or video files, to
5 travel over the Internet; is that true?

6 **A.** Yes, it is.

7 **Q.** And Real sent those files out in Real media format, right?

8 **A.** Among others, yes.

9 **Q.** You put protection measures, you, RealNetworks, put
10 protection measures on your service to make sure that people
11 could not access Real media files unless they did so with
12 RealPlayer; is that true?

13 **A.** RealPlayer or other products that were licensed by us to
14 play that content, yes, not necessarily the full RealPlayer.

15 **Q.** Real controlled access to those Real media files by using
16 a secret handshake, an authentication method between a user's
17 Real player device, on the one hand, and Real's service in
18 Seattle, on the other, right?

19 **A.** We used a variety of techniques and, yes, that was one of
20 them.

21 **Q.** And Real gave the content owners the right, the content
22 owners, to decide whether or not their material could be
23 downloaded, correct?

24 **A.** Uhm, whether materials could be downloaded versus
25 streamed? I'm not sure I understand the question.

1 Q. Downloaded or streamed.

2 A. Well, the person broadcasting the content, whether they
3 were the content holder or somebody else who was authorized to
4 do it, that was -- the person who was broadcasting it would
5 make the determination as to how the content would be
6 delivered.

7 Q. And the way the content owners controlled whether their
8 products could be downloaded was through using something called
9 the copy switch, true?

10 A. Yeah, I just wanted to clarify. It wasn't necessarily the
11 content holder. It was whoever the broadcaster was, whether
12 they were the content holder or whether they otherwise had the
13 right to do it.

14 Q. If the content owner or the broadcaster, as you say, put
15 the copy switch in the "off" position, then content could not
16 be copied, it could only be streamed, right?

17 A. That was the intended way that our product worked, yes.

18 Q. And in that lawsuit, the Streambox lawsuit, RealNetworks
19 claimed that Streambox product called the Streambox VCR
20 undermined this security system that we were just talking about
21 by circumventing that secret handshake and tricking Real
22 servers into streaming protected content even though RealPlayer
23 was not on the other end receiving it, true?

24 A. I don't remember the details of the technical issue or the
25 details of the lawsuit, but I certainly remember that we sued

1 them because they were violating our license and that they did
2 not have -- or they were violating our -- the way our products
3 were used and they did not have a specific license to do so.

4 **Q.** Let me see if I can refresh your memory about the
5 specifics of the claim, if I may.

6 You did have some involvement in that case in the
7 sense of allowing the legal department at your company to go
8 forward with that case, right?

9 **A.** Oh, yeah, sure. It was like nine years ago or something;
10 but, yes, I certainly -- definitely remember authorizing our
11 legal team to pursue the case.

12 **Q.** And you monitored the case as it was going on, right?

13 **A.** I imagine I did, yes.

14 **MR. WILLIAMS:** Your Honor, may I approach?

15 **THE COURT:** Yes.

16 **MR. WILLIAMS:** For the record, this is a document
17 that's in the record. It was filed as Exhibit 68 to Jonathan
18 Blavin's preliminary injunction motion declaration.

19 **BY MR. WILLIAMS:**

20 **Q.** Sir, if you would, turn to page 2 of that document.

21 **MR. WILLIAMS:** And, Your Honor, I would offer this
22 Exhibit 68.

23 **THE COURT:** Any objection?

24 **MR. CUNNINGHAM:** None, Your Honor.

25 **THE COURT:** It's Exhibit 68; is that correct?

1 **MR. WILLIAMS:** Yes.

2 **THE COURT:** It is admitted.

3 (Exhibit 68 received in evidence.)

4 **BY MR. WILLIAMS:**

5 **Q.** Sir, the second full paragraph on that page, on page 2 of
6 this document, which is a brief that was filed by the company's
7 counsel, a reply brief in support of a preliminary injunction,
8 that second paragraph says, "The VCR," that's the product by
9 Streambox, "undermines this security system by circumventing
10 the secret handshake and tricking Real servers into streaming
11 protected content even though a RealPlayer is not on the
12 receiving end, and it is precisely because a RealPlayer is not
13 on the receiving end that the user is able to copy the
14 streaming content even though the content owner has left the
15 copy switch off. Accordingly, the VCR circumvents both the
16 access control and copy protection measures that RealNetworks
17 affords to content owners."

18 Do you agree with that description of what was
19 happening in the RealNetworks versus Streambox case; that is,
20 that this was the claim that was made by your company?

21 **A.** Well, I haven't seen this document in nine years, so
22 I'm -- based on my recollection, this is consistent with my
23 recollections, but after nine years, they are a little bit
24 fuzzy.

25 **Q.** Now, Streambox, in this case, argued that what it was

1 doing did not violate the DMCA because end users, the people
2 who ultimately were using their VCR device, had a fair use
3 right to use Streambox to access and use the content. Do you
4 recall that?

5 **A.** I don't really recall the specifics of their argument as
6 to why it was legitimate. No, I don't.

7 **Q.** Please turn to page 14 of the same document, Exhibit 68.
8 Excuse me, page 3. Pardon me.

9 Do you see on page 3 there's a heading, subpoint B,
10 "There Is No Fair Use Defense For The VCR"? Do you see that,
11 sir?

12 **A.** Yes, I do.

13 **Q.** Your company took the position, as it says here on page 3,
14 lines 14 through 17, quote, "Streambox claims that it should be
15 permitted to resume the manufacture and distribution of the VCR
16 and ripper products because the use to which those products are
17 put is somehow," quote, "fair. However, the DMCA does not have
18 a fair use exception allowing individuals to circumvent access
19 and copy protection measures."

20 Do you see that?

21 **A.** Yes, I do.

22 **Q.** Now, that was the position -- you have no reason to doubt,
23 excuse me, that that was the position that was taken by your
24 company in 2000, when you were suing under the DMCA, right?

25 **A.** That looks right to me.

1 Q. Now, the result in that case was that Real won the case
2 against Streambox, correct?

3 A. As I recall, yes.

4 Q. And Real obtained a preliminary injunction as well as, of
5 course, a temporary restraining order, true?

6 A. I don't remember specifically how we won. I remember that
7 we won.

8 Q. Okay. Would it surprise you that the decision in that
9 case, the written decision in the Streambox case, particularly
10 set forth that fair use is not a defense under a claim brought
11 under the DMCA?

12 A. I wouldn't know either way.

13 THE COURT: You wouldn't know what?

14 THE WITNESS: Either way.

15 THE COURT: Oh, either way.

16 BY MR. WILLIAMS:

17 Q. You were aware that you won at the time, right?

18 A. Yes.

19 Q. And what you're saying now is you simply were unaware of
20 the specific grounds or multiple grounds upon which the Court
21 granted your company's preliminary injunction request, right?

22 A. Well, I may have known at the time but nine years later I
23 don't remember.

24 Q. Now, tell me, sir, you believe that when a court decides a
25 particular legal proposition and there -- that thereafter

1 companies should adjust their view of reality in accordance
2 with that rule of law? That's your view, right?

3 **A.** Of course, yes.

4 **Q.** Okay. And the reason that's your view, at least as you
5 stated in your deposition, is that you believe that if a court
6 sets forth -- strike that.

7 The reason that you said that that was your position
8 is that because in the Kaleidescape State court decision, a
9 court said that there was not a breach of the contract with the
10 DVD CCA, one could go forward with the Kaleidescape product,
11 right? That's the reason why you took that position in your
12 deposition?

13 **A.** I'm sorry. Would you please restate the question.

14 **Q.** Sure.

15 In your deposition you agreed with the proposition
16 that once a court has decided a particular rule of law,
17 companies should adjust their view in accordance with that
18 legal reality. That was what you said then, right?

19 **A.** That's correct.

20 **Q.** The reason you said that was because RealNetworks, in this
21 case, is pinning its hopes on the Kaleidescape decision by the
22 State court in that matter, right?

23 **A.** Not just because of that.

24 **Q.** Well, it was your view, as you expressed in your
25 deposition, that under Kaleidescape you would have thought that

1 the studios would have adjusted their sense of reality and not
2 tried to argue that there was something wrong with a product
3 like Real -- RealDVD because Kaleidescape was a product that
4 could go forward, right?

5 **A.** It would certainly be one of the reasons, yes.

6 **Q.** Now, let me ask you this: Nine years ago your company
7 took the position that fair use is not a defense to a claim
8 brought under the DMCA, and it won.

9 **A.** I don't know that that was our position.

10 **Q.** So now -- we showed you the brief that said that you took
11 that position.

12 **A.** What I --

13 **Q.** Are you disavowing that?

14 **A.** What I read, as it says here, the DMCA does not have a
15 fair use exception allowing individuals to circumvent access
16 and copy protection measures. It's my understanding that
17 that's not what we're doing with regard to RealDVD.

18 We're not circumventing measures at all. We're a
19 licensee who has a license to those measures. So, my view is
20 that our case here today is quite different than the Streambox
21 case.

22 **Q.** Let's be clear. Is it your understanding, Mr. Glaser,
23 that the license that your company obtained with the DVD CCA
24 was a license to make a DVD copier?

25 **A.** It is my position that we're fairly licensed to distribute

1 and to make and distribute RealDVD. The specific set of
2 licenses and rights that we have is something that I leave to
3 our attorneys to piece together. But it is my position, based
4 on many consultations with our attorneys, that in aggregate we
5 have the rights to deliver and market RealDVD.

6 **Q.** And in aggregate --

7 **THE COURT:** Mr. Williams --

8 **MR. WILLIAMS:** Yes.

9 **THE COURT:** -- was your question whether he believed
10 it was permissible then -- to shorten it up -- to make a DVD
11 copy or copier? Because I didn't quite catch that last word.

12 **MR. WILLIAMS:** Well, I'll rephrase, Your Honor.
13 Thank you.

14 **THE COURT:** Was it "copy" or "copier"?

15 **MR. WILLIAMS:** It was a DVD copier.

16 **THE COURT:** "Copier." That's what I want to know.

17 **MR. WILLIAMS:** Yes, that's right.

18 **THE COURT:** And the reason I say "I want to know"
19 after that is because -- and this is a rule I've observed over
20 all these years, and that is that after either sustaining an
21 objection, or something like that, that the next question that
22 follows is even more convoluted and longer than the preceding
23 one. So I understood the question. I just didn't understand
24 the word. Okay.

25 **MR. WILLIAMS:** Okay. Thank you, Your Honor.

1 **BY MR. WILLIAMS:**

2 **Q.** Is it your understanding, Mr. Glaser, that the license
3 that your company obtained from the DVD CCA was a license that
4 permits your company to make a device that copies DVDs?

5 **A.** I would say I don't have an understanding that's that
6 specific. I have an understanding that's more generic.

7 **Q.** Is it your belief that one of the reasons why it is okay
8 for your company to make a device that permits copying of DVDs
9 is that the ultimate end user is using that copy for a fair
10 use?

11 **A.** Again, I would say that you're asking me what I would
12 consider to be a fairly specific legal question and I'm not an
13 attorney. So my answer is more -- we have a set of rights that
14 are combined in the law and combined in the license that we
15 have with the DVD CCA.

16 And I don't know how to break down the pieces of that
17 equation. It's not my area of expertise. But I do have
18 confidence that in aggregate we have the rights to deliver
19 RealDVD.

20 **Q.** Now, we just went through one of the examples where Real
21 has taken a position in a legal proceeding regarding the DMCA.
22 Are you aware of any other positions that Real has taken in
23 legal proceedings regarding the DMCA?

24 **A.** None come to mind. It's been 15 years and we're very
25 active in the digital media space so there very well may be

1 others.

2 **Q.** Do you know Kelly Jo MacArthur?

3 **A.** Yes, I do.

4 **Q.** Ms. MacArthur was the general counsel of the company for a
5 period of years?

6 **A.** Yes, she was.

7 **Q.** Now, do you know, sir, one way or the other, whether
8 there's a statute that directs that the copyright office of the
9 United States conduct proceedings to decide whether certain
10 classes of works should be exempted from the Copyright Act?

11 **A.** I have no idea.

12 **Q.** And were you familiar with the fact that a few years ago
13 Ms. MacArthur -- in 2000, excuse me, not a few years ago -- in
14 the year 2000, Ms. MacArthur filed a pleading in front of the
15 United States Copyright Office describing the company's
16 position in the Streambox case that we just talked about?

17 **A.** I have no recollection of that. I may have known it at
18 the time, but, as you say, that was nine years ago.

19 **Q.** Can you imagine that Ms. MacArthur would have permitted
20 you -- your company to -- strike that.

21 Can you imagine that Ms. MacArthur would have made
22 such a filing with the Copyright Office without your knowledge?

23 **A.** I'm not sure. It would have depended on how important she
24 judged it to be.

25 **MR. WILLIAMS:** Your Honor, if I may show this --

1 **THE COURT:** Yes.

2 **MR. WILLIAMS:** We've marked this, Your Honor,
3 exhibit -- Hearing Exhibit 239.

4 **BY MR. WILLIAMS:**

5 **Q.** Sir, Exhibit 239 is a document that Real submitted to the
6 Copyright Office on March 31 of the year 2000. If you look at
7 the last page, you'll see Ms. MacArthur's name, the date,
8 March 31, 2000. We got this off of the Internet from the
9 Library of Congress Web site.

10 Does looking at this first paragraph -- I would just
11 like for you to read the first paragraph to yourself. Does --

12 **A.** First paragraph on which page?

13 **Q.** On the first page.

14 Does looking at that first paragraph on the first
15 page refresh your recollection that Real submitted this in
16 response to comments made by the MIT media laboratory
17 suggesting that works transmitted in protected Real media
18 formats should be exempted from the DMCA?

19 **A.** No, it does not.

20 **Q.** Does it trigger any memory in your mind at all that Real
21 took -- filed something in connection with that request by MIT?

22 **A.** No, it does not.

23 **Q.** Please turn to page 4. You see there in the first full
24 paragraph on the third line that the second sentence talks
25 about the following: It says, "RealNetworks demonstrates below

1 that there is no reason to effectively override the operation
2 of the market and the decisions of content owners to protect
3 their works by exempting their content from the provisions of
4 Section 1201(a). RealNetworks' experience and expertise
5 indicate that such a move would instead be very damaging to the
6 marketplace of available copyrighted works and contrary to the
7 intent of copyright laws to encourage and stimulate innovation
8 and creation."

9 Do you see that?

10 **A.** Yes, I do.

11 **Q.** Does that refresh your recollection that RealNetworks took
12 the position back in the year 2000 that even permitting MIT to
13 conduct some sort of a study would be a violation of the DMCA
14 and, therefore, should not be an exemption of the copyright
15 laws?

16 **A.** No, it does not.

17 **Q.** Sir, you testified yesterday that in August of the year
18 2008 you made some efforts to reach out to the movie studios in
19 good faith to try to reach some sort of business accommodation,
20 business arrangement related to your release of RealDVD. Do
21 you recall that testimony?

22 **A.** That's not my recollection of what I said.

23 **Q.** Okay. Is it true or is it not true that in August of the
24 year 2008 you reached out to the studios for some purpose?

25 **A.** Yes, that's correct.

1 Q. Okay. Now, isn't it a fact that many months before August
2 of 2008 Real approached other companies, separate and apart
3 from the movie studios, about trying to bring RealDVD to
4 market?

5 A. Uhm, I know we approached some companies, particularly
6 hardware companies that would make hardware that would be
7 compatible with the Facet design. But I certainly don't know
8 how many companies we reached out to.

9 Q. It's a fact that -- you've heard of Buffalo Technology,
10 right?

11 A. Yes, I have.

12 Q. And Real ultimately entered into a contract with that
13 company, Buffalo Technology, to provide hardware for the Facet
14 project, right?

15 A. We entered into negotiations. I don't know whether we
16 consummated or signed a final contract or not.

17 Q. Do you have any reason to doubt Mr. Barrett's testimony
18 that he met with Buffalo in the first quarter of the year 2008
19 to discuss their providing hardware for the product?

20 A. Makes sense. We need a hardware partner to bring Facet to
21 market.

22 Q. And you personally attended a meeting with TiVo before
23 that, in December of the year 2007, to see if they were
24 interested in partnering with Real on the Facet product, right?

25 A. Sounds like the right time. I remember the meeting. I

1 didn't remember exactly when it was.

2 **Q.** Let me ask you to look at Exhibit 602, which was marked in
3 your deposition.

4 Now, sir, Exhibit 602 is an e-mail recording a trip
5 visit -- or a trip report that was made regarding your trip in
6 December of 2007, right?

7 **A.** That's what it looks like, yeah.

8 **Q.** And you have no reason to doubt the authenticity of the
9 document?

10 **A.** It looks right to me.

11 **MR. WILLIAMS:** Your Honor, I would offer Exhibit 602.

12 **MR. CUNNINGHAM:** No objection.

13 **THE COURT:** 602 is admitted.

14 (Exhibit 602 received in evidence.)

15 **MR. WILLIAMS:** Excuse me, Your Honor.

16 **BY MR. WILLIAMS:**

17 **Q.** And Mr. Barrett writes an e-mail here to you, copying
18 Mr. Chasen and Mr. Wood. Do you see that?

19 **A.** Yes, I do.

20 **Q.** And it's a recap of the TiVo meeting?

21 **A.** Yes, it is.

22 **Q.** The first line says, "Rob G., Brent Wood and I met with
23 TiVo yesterday," September 12 of 2007.

24 Do you see that?

25 **A.** I think it's actually December 9th. I think he wrote it in

1 military sequence.

2 Q. Right. He did it in European or military sequence. So
3 it's December 9 of 2007, correct?

4 A. I think that's correct.

5 Q. Midway down this first page there's a sentence that begins
6 at the left border that says, "Many, if not most, of their
7 questions centered around legal issues. Bob was careful to say
8 that we didn't want to have that discussion" -- or, excuse me.
9 "Rob was careful to say that we didn't want to have that
10 discussion without respective counsels present."

11 Do you see that?

12 A. Yes, I do.

13 Q. Isn't it true that during your conversation with TiVo
14 most, many, if not most, of their questions centered around
15 legal issues?

16 A. My recollection is slightly different. I think it was
17 some of their questions, but I certainly wouldn't say it was
18 most. And it was about the percentage that I expected going to
19 the meeting.

20 Q. It was about the percentage that you expected? Is that
21 what you said?

22 A. Yeah. I figured they would have a range of things they
23 were interested in. And my recollection certainly now, and I
24 believe also at the time, was that the percentage of the
25 discussion around legal was about what I expected.

1 Q. So you knew going into the meeting that you would get some
2 questions about the issue of whether or not your proposed idea
3 was legal, right?

4 A. I didn't know for sure that we would get questions about
5 legal issues but I thought we might. And I thought we might
6 get questions about not whether it was legal but why it was
7 legal.

8 Q. You knew that there would be questions going into the
9 meeting about the legality of your product, true?

10 A. No, I wouldn't say I knew it. I guessed there would be.
11 I wouldn't say I could know it definitively.

12 Q. Let me ask you to look at what we've marked as Exhibit
13 557. This was to the Schwartz deposition.

14 You know who Martin Schwartz is, right?

15 A. Yes, I do.

16 Q. Mr. Schwartz was in charge of business development for the
17 Facet product?

18 A. Certainly certain parts of business development, yes.

19 Q. One of the things that he does in his job is to meet with
20 potential third parties to get them interested in partnering on
21 the product, right?

22 A. I think principally hardware manufacturers, yes.

23 Q. You were aware back in May of 2008, that Mr. Schwartz went
24 to have meetings with a number of companies in Japan and in
25 South Korea to get them interested in the product, right?

1 **A.** Not precisely. I knew that, generally, he was traveling
2 around, but I certainly didn't know when and where he was in a
3 general case.

4 **Q.** Take a look at this document.

5 **MR. WILLIAMS:** And I would offer it, Your Honor,
6 Exhibit 557.

7 **MR. CUNNINGHAM:** No objection.

8 **THE COURT:** 557 is admitted.

9 (Trial Exhibit 557 received in evidence.)

10 **BY MR. WILLIAMS:**

11 **Q.** This e-mail is from Mr. Barrett to Mr. Schwartz, Jay
12 Albertson, B. Wood and R. Wolpert (phonetic), right?

13 **A.** That's what it looks like.

14 **Q.** And it would have been your practice at the time for
15 Mr. Barrett or one of the individuals copied on this e-mail to
16 report back to you about how these trips went, right?

17 **A.** Not necessarily.

18 **Q.** Well, certainly if something significant happened they
19 would report back to you, wouldn't they?

20 **A.** They would report back to me on overall progress but not
21 necessarily meeting by meeting.

22 **Q.** Let's take a look at this report here. He writes a few
23 lines down, "Summary notes of Sharp and LGE meetings."

24 Do you see that?

25 **A.** Yes, I do.

1 Q. LGE is Lucky Gold Star?

2 A. I would guess they're called "LG" now days. I think they
3 used to be called Lucky GoldStar. I think that's an old name
4 there.

5 Q. The second dash there says, "Met with Roji Ohno-San,"
6 O-h-n-o hyphen s-a-n, "who's the divisional deputy general
7 manager and number two guy of Digital Recording systems
8 division."

9 Do you see that?

10 A. Yes, I do.

11 Q. And then a few lines down, a few dashes down, there's a
12 sentence that reads, "However, he felt that Sharp has a social
13 responsibility, at least in Japan, to protect copyright laws
14 and not create tension/friction with the studios."

15 Do you see that?

16 A. Yes, I do.

17 Q. And then a few dashes down below that, it says, "I
18 suggested that we engage our legal team to discuss, but he
19 specifically countered with if we had talked with Hollywood
20 Studios yet and have they accepted the product."

21 Do you see that?

22 A. No. Where is that?

23 Q. There's a dash about midway down the page just below the
24 center, over to the left. It begins with the word "I."

25 A. "I suggested."

1 Q. Yes. Do you see that?

2 A. Yes, I do.

3 Q. You have no reason to doubt that back in May of 2008, your
4 representatives were being told by companies with whom Real
5 wanted to partner that you should really check with the
6 studios, right?

7 A. Uhm, well, I see he asked if we had. And -- but I don't
8 have specific knowledge of this meeting. And I don't think
9 I've ever seen this report before.

10 Q. Are you suggesting that you were not made aware of the
11 fact that he had gone to meet with -- Mr. Barrett had gone to
12 meet with Sharp?

13 A. I would say at most there was a list of meetings that I
14 saw in a slide and Sharp would have been one of the names in
15 the meetings; so, no, they did not give me every meeting report
16 from every meeting, that is correct.

17 Q. Is it your testimony that you were not aware that legal
18 issues were raised by potential business partners back in the
19 spring of 2008?

20 A. Well, I'm not sure that I understand the question. I
21 certainly know that we were meeting with potential hardware
22 partners and that we were talking with them about a range of
23 different topics and that in some of those meetings, as I
24 testified, certainly, in the TiVo meeting, the questions of why
25 the product was legal might come up. But I didn't have

1 specific knowledge of the details that came up in, for
2 instance, the Sharp meeting.

3 Q. Now, you would agree with me that in May of 2008 it would
4 have been possible for you to go to the movie studios and ask
5 them whether this type of agreement would be -- whether this
6 type of product would be agreeable to them, right? You could
7 have done that?

8 A. Oh, sure.

9 Q. You chose not to at that time, right?

10 A. Not until August of 2008, as I recall.

11 Q. Right. And you were going out -- strike that.

12 Your representatives were going out into the
13 marketplace to try to find potential business partners and
14 signing nondisclosure agreements with those companies at the
15 time they would meet, right?

16 A. I assume they did most of their business under MDA. I
17 didn't specifically direct them to do anything specific around
18 that.

19 Q. It certainly would have been possible to go to the studios
20 under an NDA and say back to them, back in the spring of 2008,
21 We're thinking of coming out with this product RealDVD, right?

22 A. Sure.

23 Q. And you chose not to do that?

24 A. Not until August, that's right.

25 Q. It was mid-August when you went to the first studio that

1 you actually spoke to about this product, right?

2 **A.** It was the first one I was involved with, and I have no
3 knowledge of any other discussions. But that was the first one
4 that I was involved in, yes.

5 **Q.** And that was -- and mid-August was just a couple of weeks
6 before the product was actually released into the marketplace,
7 right, and when you planned to release it?

8 **A.** No, it was about six weeks before it was released, as I
9 recall.

10 **Q.** Wasn't it your plan to release the product in the first
11 week of September?

12 **A.** I think our original release date was September 8th, so it
13 would have been, whatever, three weeks before the initial
14 launch date -- the planned launch date, and six weeks before
15 the actual launch date.

16 **Q.** Right. Now, you said that it would have been relatively
17 easy, was the word that you used yesterday, for the studios to
18 enter into some sort of agreement whereby they could -- the
19 studios -- could differentiate rented product from sold
20 product. Do you remember saying that yesterday?

21 **A.** Yes, I do.

22 **Q.** Now, are you aware of any studio ever having undertaken to
23 mark DVDs separately, in the United States market, depending on
24 whether they were sold to Netflix, a rental outfit, as opposed
25 to Wal-Mart, a place that sells DVDs?

1 **A.** I'm aware of various technologies for marking discs. I'm
2 not fully aware of what markets they've been used in.

3 **Q.** That's not the question I asked you.

4 Are you aware of any studio ever having undertaken to
5 mark their DVDs "rental" versus "sold" DVDs?

6 **A.** Not "rental" versus "sold," no. Other marking methods.

7 **Q.** Say that again, please.

8 **A.** Other -- for other purposes I'm aware of activities, but
9 not for rental versus purchase.

10 **Q.** And leaving aside RealNetworks and the RealDVD product,
11 are you aware of any reason why the -- it would be in the
12 studios' business interest to do so?

13 **A.** Oh, absolutely.

14 **Q.** Really?

15 **A.** Sorry. The question was leaving aside RealDVD?

16 **Q.** Yes.

17 **A.** Why it would be in their interest to mark them
18 differently? Sure. I can think of a lot of reasons.

19 **Q.** Let me ask you this: Do you believe that the individuals
20 who are responsible at the movie studios for making the
21 decision about whether or not they want to mark their DVDs
22 "rented" or "sold" DVDs are sophisticated business people
23 capable of making their own decisions?

24 **A.** I believe some of them are very sophisticated business
25 people, yes.

1 Q. And you would agree with me that as of this moment you are
2 not aware of any effort on the part of the studios to mark the
3 DVDs "rental" versus "sold," right?

4 A. I'm aware of a set of general purpose approaches to
5 marking that can be used for that distinction, among others.

6 Q. Have you ever worked in the home video department of a
7 movie studio?

8 A. No, I have not.

9 Q. Have you ever had responsibility for the distribution of
10 movies on DVDs?

11 A. No, I have not.

12 Q. Do you have any idea, of your own knowledge; that is,
13 personal knowledge, how much extra inventory studios would have
14 to keep on hand for DVDs if they were to go down the road of
15 marking DVDs "rental" as opposed to "sale" copies?

16 A. Well, I know based on conversations that I had with
17 several studio executives that they -- none of the executives I
18 spoke with viewed marking as an issue.

19 In fact, in some of the studio cases -- and I'll
20 defer to counsel as to which ones I can and can't talk about --
21 they expressed a high level of enthusiasm for very
22 sophisticated marking programs.

23 Q. I'm talking about of your own personal knowledge based
24 upon some sort of study that you've done, do you have any
25 knowledge as to how much extra inventory or money it would cost

1 to mark the DVDs "rental" versus "sold"?

2 **A.** Yes, I do.

3 **Q.** Based on the studies you've done?

4 **A.** No. Based on knowledge, based on conversations directly
5 with several major studios during the months of August and
6 September of 2008, specifically about this topic.

7 We had very specific, practical conversations in some
8 cases about what it would take for them to do this. And I left
9 those discussions thinking it was imminently practical, if they
10 wanted to do it.

11 **Q.** You left the discussions believing it's imminently
12 practical, right?

13 **A.** That's correct.

14 **Q.** They left the discussions saying, No, we are not entering
15 into an agreement, at this point in time, to mark our DVDs
16 "rental" versus "sold," correct?

17 **A.** No, that's actually not quite correct. If I'm allowed to
18 talk about those discussions, I will be happy to do so.

19 **Q.** I'm not asking you about the content of the discussions.
20 What I'm asking you is whether or not it is a fact, so far as
21 you know, that no studio has, as of this date, marked its DVDs
22 "rental" versus "sold"?

23 **A.** To my knowledge, in the United States they have not done
24 that. But I think you also asked a different question which is
25 what I was trying to answer.

1 Q. Are you aware that the way things work now DVDs that are
2 sold by a studio to Wal-Mart for sale may later be returned to
3 the studio unsold?

4 A. I don't know specifically about how the supply chain
5 works, no.

6 Q. And are you aware of the fact that when Wal-Mart returns
7 the DVDs to a studio they often do so for a credit, receiving a
8 credit?

9 A. No. As I said, I'm not aware of all the supply chain
10 business relationships.

11 Q. Are you aware of the fact that the studio may turn around
12 and resell that DVD either to a company called Netflix, that
13 will then rent the DVD, or to some other outlet?

14 A. No, I'm not aware of the specific business practices of
15 the studios.

16 Q. Now, in -- with your suggestion that you suggested on
17 direct examination yesterday about marking the DVDs, the
18 studios couldn't do that, right? They could only sell a rental
19 DVD to a rental company and a sale DVD to some place like -- to
20 a retailer, correct?

21 A. They would just have to make a business decision about the
22 cost benefits between having two different kinds of inventory
23 versus the benefits of having inventory be distributed in a
24 target way.

25 Since studios have multiple SKUs anyway, they have

1 the regular version, they have the deluxe version, they have
2 the regular version, they have the Blu-ray version, I've seen
3 studios make decisions all the time as to the tradeoffs between
4 having multiple versions of a given movie and complexity versus
5 the extra sales and extra revenue that comes from that
6 complexity.

7 So I assume that this would just be another category
8 of decision that studios would make business decisions about if
9 they chose to go down this path.

10 **Q.** That's their decision to make, not yours, right?

11 **A.** About how many different SKUs they want to have,
12 absolutely, that's their decision.

13 **Q.** Do you have any idea, based upon your own personal
14 knowledge, how much the extra inventory management cost would
15 be if they were to go down that road?

16 **A.** Well, based on conversations that I had with studios in
17 August and September, I can think of at least one executive who
18 said the cost would be trivial and they would be happy to do it
19 under the right circumstances.

20 **Q.** Do you have any personal knowledge, sir, one way or the
21 other, as to how difficult -- let me back up.

22 If one were to mark with a serial number the DVDs
23 that were, say, rental DVDs so that RealNetworks would be able
24 to identify those DVDs as rental DVDs, would you agree with me
25 that the studios would have to enter into a scheme whereby your

1 competitors' programs would also be able to identify whether
2 the DVD was rental or sale?

3 **A.** Uhm, I -- do I think that they would have to have -- go
4 through our competitors in order to have us do it? No, I
5 don't.

6 **Q.** No, that wasn't my question. You understood that once
7 your product came onto the market, that there would be others
8 that would follow behind, right?

9 **A.** That's right.

10 **Q.** You would assume that they would come out with their own
11 players that could make a copy of DVDs, right?

12 **A.** I would assume that we would have competition in the
13 market, yes.

14 **Q.** Right. And each of those companies that came into the
15 marketplace would have to be able to identify rental versus
16 sold, right?

17 **A.** I don't know that they would have to, but I'm guessing if
18 they didn't want to be sued, they would probably want to follow
19 the emerging conventional norms.

20 **Q.** Right. And that would take some coordination and
21 management, would it not?

22 **A.** It would depend on how powerful the threat of a lawsuit
23 per se was versus the need to have specific coordination.

24 **Q.** Well, you'd agree that there would have to be some sort of
25 inventory control, there would have to be some sort of

1 computerized way to determine whether something was rental or
2 sold, right?

3 **A.** I think it would be no more difficult than having a
4 Blu-ray version of the disc versus a regular version of a disc.

5 **Q.** But there would have to be some way to monitor whether a
6 particular disc had changed during its life from being a sold
7 copy to a rental copy or vice versa, right?

8 **A.** No, that's not correct.

9 **Q.** Why is that not correct?

10 **A.** Because you could have -- just like you have a Blu-ray
11 version and a regular red laser version, you could have a red
12 laser purchased version and you could have a red laser rental
13 version, and that version, for its entire life cycle, would
14 only be rental version or that version would only be a purchase
15 version.

16 **Q.** And that would have impact on the inventory, right? You
17 would have to have inventory for all of those different
18 types --

19 **A.** Just like Blu-ray versus regular, right. That's correct.

20 **Q.** And, again, that decision about whether to do that or not
21 is a decision that the studios may make on their own, right?

22 **A.** Absolutely.

23 **Q.** To date, to your knowledge, they have not made the
24 decision to go down that path, true?

25 **A.** Specialty releases like Oscar-nominated DVDs they have

1 done special markings of discs. But for general market
2 release, to my knowledge, they have not done that yet.

3 **Q.** Now, all of this discussion about what could be done to
4 mark "rental" versus "sold" would do nothing to deal with the
5 billions of DVDs that currently are in the marketplace, right?

6 **A.** No, that's not correct.

7 **Q.** Okay. So if there is a DVD that I have in my home, and
8 I've had it for years, and I get the RealDVD device, I can make
9 a copy of that product on my device and then I can move that --
10 not move that copy, but I can play that copy on up to five
11 different -- four different devices, if I have the thing --

12 **A.** You're saying if it's one you had in your household which
13 reasonably means you own it, yes, that's right.

14 **Q.** Right. So all of those DVDs that are out in the world,
15 the legacy copies of movies that are out in the world could not
16 reasonably, for a reasonable cost, be marked as "rental" or
17 some other device, right?

18 **A.** That is not correct. Because rental inventory moves
19 around, it would be a fairly straightforward matter to replace
20 all the rental inventory in the Netflix warehouses and the
21 Blockbuster warehouses with rental or marked versions.

22 So, over a period of months, you could probably, very
23 economically get 80, 90 percent of the active rental inventory
24 of Netflix or Blockbuster switched over to specially-marked
25 rental discs.

1 Q. Sir, on discs that are owned discs, the billions of owned
2 discs in the world, you're not suggesting that those would be
3 marked "rental," are you?

4 A. That's right. The way you would do it is you would change
5 the markings on the rental discs, and the rental discs would
6 look different.

7 And the -- all the discs that are in inventory and
8 that are in people's homes would be purchased discs. So the
9 way I would do it is have the rental discs be marked
10 separately, and specially because that would be a much easier
11 inventory to change through the rental agencies.

12 Q. But the owned discs, sir, can also be copied on RealDVD
13 devices --

14 A. Absolutely.

15 Q. -- whether it's Facet or Vegas, correct?

16 A. Absolutely.

17 Q. And those could be passed around to individuals who have
18 the RealDVD device, whether it is Facet or Vegas, so that
19 they -- persons can make a copy of those DVDs, correct?

20 A. Yeah. Addressing the rental problem does not per se
21 address the pass-along problem. A different solution would be
22 needed to address the pass-along problem, if that was deemed to
23 be important.

24 Q. Let me ask you about the business plans that your company
25 has had. Is it true, sir, that your plan for the future and

1 for future versions of RealDVD includes network features?

2 **A.** Uhm, I would say that we are in the planning phases for
3 our potential network features but we have not implemented them
4 yet.

5 **Q.** Well, network-based product is something that you are
6 contemplating, currently, for future versions of the Vegas
7 product, true?

8 **A.** That's correct.

9 **Q.** And that's on a list of features for future versions of
10 the product, right?

11 **A.** I'm sorry. Are you asking about for Vegas or for Facet?

12 **Q.** For Vegas.

13 **A.** For Vegas, I believe it's in the plan, yes, in the
14 roadmap.

15 **Q.** All right. There's no doubt in your mind about that,
16 correct?

17 **A.** I'm more sure about it in the Facet case than I am in the
18 Vegas case.

19 **Q.** Have you ever studied the actual code on the Facet
20 product?

21 **A.** I would say no.

22 **Q.** Do you know whether that code is configured in such a way
23 such that modifications -- networking modifications could be
24 made in the future?

25 **A.** Well, I would hope it is, but I don't know it based on

1 having reviewed the source code.

2 **Q.** And you would hope it is because the future plan would be
3 to potentially have networking features on the Facet product,
4 correct?

5 **A.** If we felt that we could implement networking in a way
6 that was fully consistent with the law as described by our
7 rigorous legal team, yes, that's certainly something we would
8 want to do. Just like Kaleidescape has networking features.
9 But we would want to be very careful to make sure that we
10 implemented it the right way.

11 **Q.** Now, networking features could mean that the same copy of
12 the same movie could be viewed from multiple different
13 computers, right?

14 **A.** Presumably one of the ways we would implement networking
15 would be to restrict the number of computers to what would
16 reasonably be available in an in-house home network so that it
17 wouldn't be something that would work around a college dorm or
18 a full apartment building or something like that. So clearly
19 there would be multiple, but we would have to figure out a
20 method so that the multiple was constrained appropriately.

21 **Q.** And networking is not the only plan that you have for the
22 future of RealDVD, is it?

23 **A.** It's probably the thing that is most clearly sort of in
24 the process of being figured out, but there's probably other
25 ideas that various people on the team have.

1 Q. Let me show you what has been marked as Exhibit 3. And
2 this was Exhibit 3 to Mr. Barrett's deposition.

3 This is a set of slides, sir, for a presentation to
4 the board of directors of your company on August 16, 2008,
5 correct?

6 A. I don't see any dates on the presentation. The
7 presentation looks generally familiar to me, but I don't know
8 if this was the actual version presented to the board or a
9 version that was in development. So I don't know if the final
10 presentation was this one or a variation of it.

11 Q. Do you have any reason to doubt Mr. Barrett's testimony
12 that that is precisely what this set of slides is?

13 A. If Mr. Barrett said that this is a final presentation, I
14 would be perfectly happy to believe that it is.

15 Q. October 16, 2008 was after this lawsuit was filed,
16 correct?

17 A. Uhm, October 16th was after the -- I thought you said
18 August earlier in the discussion. Perhaps I misheard you.

19 Q. That was a different topic, sir.

20 October 16th, 2008, was after this lawsuit was filed,
21 correct?

22 A. Uhm, this lawsuit was filed, I guess, in early October.
23 That sounds right, yeah.

24 Q. And this was after, in fact, the Court had entered a TRO
25 prohibiting the sale of RealDVD, right?

1 **A.** I'm sorry. What was after?

2 **Q.** This set of slides, which were from October 16, 2008, was
3 after the Court had entered a TRO prohibiting the sale of
4 RealDVD, correct?

5 **A.** If you -- if you say that that's when this dec was
6 presented, I believe it. Again, it doesn't say it on here.

7 **Q.** Okay. Let me ask you to look at page 25.

8 Page 25 says at the top, "RealDVD, how do we make
9 money?"

10 Do you see that?

11 **A.** I do. Is this a slide that's in the appendix section?

12 **Q.** This is on page 25, slide 25. Yes, it is in the appendix
13 section of the slides.

14 **A.** Yes, I do.

15 **Q.** This says, "RealDVD, how do we make money?" And on the
16 first bullet point, it says, "It's the foot in the door. It's
17 the player you use for your movie/TV library. It is a format
18 that is protected and owned by Real."

19 Do you see that?

20 **A.** Yes, I do.

21 **Q.** This means that you use the product in order to get a user
22 base, right?

23 **A.** Uhm, I didn't write this slide and I'm not sure this slide
24 was presented in the meeting. That's why I asked, because in
25 the appendix we often don't present materials in the appendix,

1 and, oftentimes, don't even include the appendix material. So
2 I'm not fully sure what this slide says, but I'm pretty sure we
3 didn't discuss it in the meeting.

4 **Q.** Do you disagree with the notion, sir, that the RealDVD
5 product is a "foot in the door," as it says here on slide 25?

6 **A.** Uhm, I would not put it that way. My belief is, anytime
7 you create a large install base, you have an opportunity to
8 sell additional products and services in.

9 But my focus is always: How do we make a product
10 that people love and a lot of people want to use, rather than
11 jumping to the conclusion that you already will have a large
12 install base. Because if you don't -- you have got to have a
13 product people love, first, in order to get a large install
14 base.

15 So my direction to teams is, generally, focus on
16 creating products that people love, and then we will have lots
17 of opportunity to talk about what to do if we're successful.

18 **Q.** Let me try to clarify.

19 You made a point a few minutes ago saying that this
20 is in the appendix section, you're not sure if it was actually
21 presented to the board.

22 Is it your testimony, sir, that if something is in
23 the appendix section of the slides, for the presentation to the
24 board, that it is not made to the board?

25 **A.** Sometimes it is. Sometimes it isn't.

1 Q. Is it your testimony that if something is in the slides in
2 the appendix section that the statements contained therein are
3 somehow disavowed by the company?

4 A. Well, my statement is that I don't remember whether the
5 final board book had these slides in there. Oftentimes,
6 between the -- that's why I asked about the version of this.

7 Often, between the initial creation of the dec and
8 the time we approve the board book, we will cut material out,
9 typically cutting out appendix material.

10 Our board often complains that our board books are
11 too big. So, one of the ways we slim them down is to cut out
12 extraneous material.

13 Q. Let me represent to you, sir, that this is the only set of
14 slides for the October board meeting of RealDVD and their board
15 of directors that has been presented to the studios in this
16 case. Will you accept that representation, sir?

17 A. If you say that it's true, I certainly have no reason not
18 to believe you.

19 Q. Having made that representation to you, sir, do you have
20 any reason to believe that this set of slides was not provided
21 to the board?

22 A. I have no reason to believe that it wasn't, but I
23 certainly would think that this might have been in a board
24 book, and that we didn't actually go over the material that was
25 in the appendix. And, in theory, typically, when something is

1 in the appendix, we don't go through it unless there's some
2 specific question, even if it's in the materials that were sent
3 to the board.

4 **Q.** Let's go back to the slide for a second, if we could.

5 **THE COURT:** Now, does that mean, though, that it
6 would be in the board materials, and would be up to them
7 whether they were going to read it or not?

8 **THE WITNESS:** Yes, Your Honor.

9 **THE COURT:** But not necessarily delved into at the
10 board meeting?

11 **THE WITNESS:** That's correct, Your Honor.

12 **MR. WILLIAMS:** Thank you, Your Honor.

13 **BY MR. WILLIAMS:**

14 **Q.** It says here, in the first bullet point, "It's a foot in
15 the door. It's the player you use for your movie/TV library."

16 Do you see that?

17 **A.** Yes.

18 **Q.** The movie/TV library that that is referring to is the
19 library of movies that contain the studios' protected content,
20 correct?

21 **A.** I think "your," in that case, refers to movies that you,
22 as an individual, own and have purchased.

23 **Q.** And those movies that you, as an individual, own and have
24 purchased are movies containing the protected content of the
25 movie studios. Would you agree with that?

1 A. Or whoever made the content, that's correct.

2 Q. It says, "it's in a format that is protected by and owned
3 by Real." Do you see that?

4 A. Yes, I do.

5 Q. Now, what that means is that someone who wants to play the
6 movies using the RealDVD device -- strike that.

7 What that means is that someone who wants to play a
8 copy of a DVD using the RealDVD device may only play that copy
9 if it contains -- if it is a RealDVD device, right?

10 A. Uhm --

11 Q. Bad question. Let me rephrase it.

12 A. Yes. Thank you.

13 Q. What that means is that if a person makes a copy of a DVD,
14 they may only play that DVD copy that has been downloaded to
15 the hard drive if they are using a RealDVD device?

16 A. Because of the second layer of protection that we have
17 added in order to make it so the movie can't be copied, that's
18 correct.

19 Q. And you testified yesterday --

20 A. Well, it can't be copied and played.

21 Q. You testified yesterday as follows: You said, "We add the
22 second layer of encryption first and foremost because the
23 advice we got from our legal team, which made good sense to me
24 as a layperson, is that would prevent these files, very
25 effectively, from being sent over a peer-to-peer network."

1 Do you remember saying that?

2 **A.** Basically, yeah.

3 **Q.** Basically or --

4 **A.** I don't -- if you say it's verbatim, I agree with that. I
5 don't remember my exact words.

6 **Q.** Okay. Now, you would agree with me that the effect of
7 having the second layer of encryption that is unique to the
8 RealDVD device is that the only way that the person can play
9 their copy is if they are using the RealDVD device as opposed
10 to someone else's, right?

11 **A.** Absolutely.

12 **Q.** Okay. Now, that second layer of encryption does not
13 prevent someone from taking any DVD that they own or have
14 borrowed or have rented and making a copy using either the
15 Facet or the Vegas box, true?

16 **A.** I'm not sure I understand the question.

17 **Q.** The RealDVD device does not prevent an individual from
18 taking a DVD that they either own or have borrowed or have
19 rented and making a -- make a copy on the RealDVD device?

20 **A.** It's what it's intended to do.

21 **Q.** Precisely. It's intended to permit people to make a copy
22 so that the DVD does not have to be used, right?

23 **A.** So the DVD does not have to be in the drive at the time
24 they're playing it, that's correct.

25 **Q.** And, forevermore, once that copy has been made to the

1 drive, that individual will be able to play that movie only if
2 they have RealDVD's product as opposed to someone else's,
3 right?

4 **A.** Unless they go back to their original disc and put it in
5 one of our competitors' products, right.

6 **Q.** So the "foot in the door" that is described in slide
7 number 25, is, you use the DVDs that are part of someone's
8 collection to get a foot in the door with those customers so
9 that after you have those customers you can do all sorts of
10 other things and sell them your other products, right?

11 **A.** Are you asking me what the slide says, or are you asking
12 me what I think?

13 **Q.** I'm asking what you think.

14 **A.** I think that the person who wrote this slide, which was
15 not me, focused on a theoretical future benefit of having a
16 large install base.

17 And my focus is largely on: How do we create
18 products that consumers love? And then if we get a really
19 large install base, then it might be a useful thing to do with
20 it.

21 So the reason it was in the appendix is, it's not
22 central to the initial strategy of creating a popular product
23 or marketing that popular product. It's somebody's theorizing
24 as to what you can do if you succeeded and you had a very
25 popular product.

1 Q. Let me point you to the second major bullet point on this
2 line. It says, "Jujitsu Baby." Do you see that?

3 A. Yes, I do.

4 Q. It says, "We leverage the existing consumer's DVD
5 collection and the value they have in it and turn that into our
6 portal for delivering, selling, renting any video over both the
7 PC and IP enabled video device."

8 Do you see that?

9 A. Yes, I do.

10 Q. The idea behind that is Real trying to sell or rent things
11 to the people who have come to Real's site in order to get
12 metadata or updates to RealDVD, correct?

13 A. I'm not sure I understand. Again, I didn't write the
14 slide and I'm pretty sure we didn't present it.

15 Q. Sir, surely, you understand that what this is suggesting
16 is that the collection of the individual is used so that they
17 will have their information on a RealNetworks RealDVD device so
18 that in the future those people can receive advertising or
19 requests to use other services of RealNetworks, right?

20 A. That's what the person is saying, yes.

21 Q. Okay. You say that's what the other -- what the person is
22 saying. Are you disavowing the suggestion that appears on the
23 Jujitsu bullet point of slide 25? Are you saying that may be
24 some other person, that's not RealNetworks?

25 A. I would say I'm downplaying it, not disavowing it. It's

1 not crazy. It's logical and it's rational.

2 But my focus is, okay, how do we build a possible
3 product that consumers are going to love? And then if we have
4 a large install base of that product, surely, it would be
5 sensible to sell other products and services to that customer
6 base.

7 **Q.** Right. So what you just said is not inconsistent at all
8 with this bullet point, right?

9 **A.** I don't think it's inconsistent with. I just think it's a
10 different emphasis.

11 **Q.** Would you agree, sir, that the whole idea of RealDVD is to
12 give consumers something that they would love because it allows
13 them to make copies of their DVDs and to use that in order to
14 entice people to use other RealNetworks products?

15 **A.** No, I don't agree with that.

16 **Q.** You mentioned yesterday that the focus of the RealDVD
17 product, the market segment that you were going after, was to
18 go after business travelers, I think you said. Is that one of
19 them? You listed three, right?

20 **A.** Yes.

21 **Q.** One was business travelers, correct?

22 **A.** Yes.

23 **Q.** One was people with families so that their kids can watch
24 the DVDs, right?

25 **A.** Watch them without them being -- without them being

1 scratched or peanut butter on them, yes.

2 Q. I'm sorry. Can you say that --

3 A. Or have peanut butter on them.

4 Q. -- much more slowly. More slowly, if you would.

5 A. Yes.

6 So that families can watch DVDs. And kids tend to
7 watch movies over and over again, and, as a result, those discs
8 often get scratched. And the idea would be that if you have it
9 in RealDVD, the disc is safely off in a library and the disc
10 won't get scratched.

11 Q. Now, those are the markets that the product is focused
12 upon. Those markets and the market, the third one, I think you
13 said, is people who have thousands of DVDs, they are movie
14 lovers, et cetera.

15 A. Not necessarily thousands, but many dozens, a couple
16 hundred, yes.

17 Q. Okay. Now, do you think it's important that the Web site
18 try to appeal to those people, right?

19 A. Well, I think we use different marketing messages in
20 different places. And, so, like, a Web site is a general
21 purpose place. So I would guess that our team would probably
22 do a combination of targeted marketing around specific
23 segments, and then general-purpose marketing to educate
24 consumers on the basics of what RealDVD is.

25 Q. Now, you remember yesterday I asked you questions about

1 the focus groups that have been done, and I asked you about the
2 specific focus group document, and you said you were not made
3 aware of that particular focus group. Do you recall that?

4 **A.** I didn't say I wasn't made aware of it. I said I didn't
5 have a recollection of the details of it.

6 **Q.** Okay. And the questioning that I -- but my questioning
7 yesterday had to do with the issue of whether or not young
8 persons who use the Internet a lot might think it would be
9 interesting to copy their own DVDs as opposed to DVDs that they
10 did not own. Remember that?

11 **A.** Yeah. I'm not sure I understand the question.

12 **Q.** Well, I asked you questions showing you pages of the
13 slides that suggested that making copies of one's own DVDs is
14 less interesting, at least to the people who were part of that
15 focus group. Do you remember that?

16 **A.** That there was at least one person in the focus group who
17 made that comment, yes, I remember that.

18 **Q.** That's what you said, but the slide didn't say there was
19 at least one person, did it, sir?

20 **A.** The slide said these were comments that were made. And my
21 inference was that it was one person.

22 **Q.** In fact, yesterday you said that 1 in 50 people had that
23 view is not necessarily important. But the slide didn't say
24 that either --

25 **A.** I didn't say it was definitely 1 in 50 people. I said it

1 could be 1 in 50 people.

2 **Q.** Let me ask you this: You've looked at the cover page of
3 the RealDVD Web site, right?

4 **A.** In the past I have.

5 **Q.** Now, the cover page -- let me show it to you, a copy to
6 you.

7 **MR. WILLIAMS:** For the record, we'd like to mark this
8 as Hearing Exhibit 241.

9 (Exhibit 241 marked for identification.)

10 **BY MR. WILLIAMS:**

11 **Q.** You recognize this, sir, as the first page that one sees
12 when they go to the Web site?

13 **A.** I didn't go to the Web site in the last day or so, but
14 I've certainly seen this page.

15 **MR. WILLIAMS:** And, for the record, this photograph
16 advertisement depicts a young woman lying on a blanket with her
17 computer in a park, on some grass.

18 **BY MR. WILLIAMS:**

19 **Q.** You see that, sir, right?

20 **A.** I see the grass. I see the blanket. I see the laptop.
21 And I'm happy to believe it's a park.

22 **Q.** Okay. Now, you would agree that this isn't something that
23 focuses on the business traveler or families with kids, is it?

24 **A.** I certainly would not -- this person has a notebook
25 computer so they're -- they presumably are a traveler, but they

1 are not dressed in business attire, no.

2 **Q.** You conclude that this person is a traveler based upon the
3 computer that you see in the photograph?

4 **A.** The notebook computer is typically a computer you can
5 travel around with easily.

6 **Q.** You'd agree with me that there would be a lot easier ways
7 to depict someone as a business traveler than to show someone
8 in a park, on a blanket, right?

9 **A.** My sense is that given the three different --

10 **Q.** Answer my question, if you would.

11 **A.** I'm sorry. Your --

12 **Q.** You would agree that there are easier ways to depict a
13 business traveler than to depict someone who's lying on a
14 blanket in a park, with their computer, right?

15 **A.** Yeah, but that's only one of the three segments I
16 mentioned. And we are certainly trying to educate the general
17 consumer market about the product.

18 **Q.** Isn't it a fact, sir, that at the time that this product
19 was put into the market before the temporary restraining order
20 was obtained, you knew that consumers, many of them, would use
21 this device in order to make copies of DVDs that they did not
22 own?

23 **A.** I would say that I don't think that that's the primary
24 use. Look, if you want to -- if you don't care about
25 intellectual property rights and you want to save DVDs that you

1 don't own, there's a lot of products that do that much better
2 than us, products like HandBrake, that don't restrict you.

3 They don't only put it in a double protected format.
4 They let you transcode it and compress it. They let you put it
5 on your iPod. There's all these things we don't do because
6 we're a legitimately licensed product.

7 So, in my view, the restrictions on our product are
8 an important part of how we reinforce the marketing of it
9 because, at the end of the day, if you want to do illegitimate
10 things, we're not the product for you and there are much better
11 products out there to serve that part of the market. We don't
12 happen to think they are legitimate, probably not legal, but
13 that's not our focus.

14 **Q.** Last line of questioning. That first copy that the
15 consumer makes onto their device, the very first copy, putting
16 aside any notion of viral distribution or someone taking their
17 DVD and giving it to another person and so on and so on, that
18 very first copy that is made and downloaded onto their
19 computer, it is accurate, sir, that the sole basis of your
20 belief that making that first copy is a legal thing to do is
21 something that you were told by your lawyers, right?

22 **A.** No, I wouldn't say the "sole basis." I would say it's the
23 primary basis.

24 **Q.** How about this, sir: You are not aware of any other legal
25 device on the market that allows a consumer to take a DVD and

1 put it into their disk drive and make a copy that is a
2 permanent perfect copy of that DVD so that the DVD is no longer
3 needed to play the movie, are you?

4 **A.** Of course I am. I have a Kaleidescape. I've had a
5 Kaleidescape at home for three and a half years.

6 Kaleidescape does the same basic functions. And I
7 have been using it at home for three and a half years. And a
8 different court ruled that it was legal a year and a half,
9 almost two years ago.

10 **Q.** And your basis for believing that that is a legal device
11 is based upon the Kaleidescape decision alone, right?

12 **A.** My basis for believing Kaleidescape is a legal device is
13 based on the Kaleidescape ruling.

14 **Q.** Right. And you -- I think we covered this already, but
15 just so we're clear, do you know whether there was a DMCA claim
16 at all in that Kaleidescape case?

17 **A.** Well, I've learned in the last day or two that their
18 claims were more specific, or at least I inferred that from
19 what you're saying; but, no, I don't know all the specific
20 bases of their claim.

21 **Q.** And you don't know whether -- on that very first copy,
22 whether the license itself, the CSS license permits that copy
23 to be made? You are relying totally on experts and lawyers to
24 determine whether that first copy is legal or not; is that
25 true?

1 **A.** I would say my knowledge is based on a combination of
2 empirical experience using Kaleidescape, advice from our
3 attorneys, involvement with people such as Mr. Burger in our
4 process who are involved in the formation of the DVD CCA, and
5 my own common sense experience having been in the digital media
6 industry for 15 years. So my perspective on this is drawn from
7 an accumulation of activities.

8 **MR. WILLIAMS:** May I have a moment, Your Honor?

9 (Pause)

10 **MR. WILLIAMS:** Thank you, Your Honor. Pass the
11 witness.

12 **THE COURT:** Do you have all of the exhibits moved in
13 that you intended to have moved in?

14 **MR. WILLIAMS:** May I check that, Your Honor, and then
15 advise the Court?

16 **THE COURT:** Yes.

17 **MR. WILLIAMS:** I just don't want to take the time
18 now.

19 **THE COURT:** Fine. Fine.

20 **MR. WILLIAMS:** Thank you.

21 **THE COURT:** Mr. Steer, are you going to have some
22 examination of the witness?

23 **MR. STEER:** I have no questions for this witness,
24 Your Honor. Thank you.

25 **THE COURT:** Okay. Fine.

1 Mr. Cunningham?

2 **MR. CUNNINGHAM:** I have nothing.

3 **THE COURT:** Nothing?

4 **MR. CUNNINGHAM:** No.

5 **THE COURT:** Okay. So may the witness be excused
6 without being subject to being recalled?

7 **MR. WILLIAMS:** Yes, Your Honor.

8 **THE COURT:** You are excused but do not discuss your
9 testimony with any other persons who may be witnesses until the
10 proceeding is over.

11 **THE WITNESS:** Yes, Your Honor.

12 **THE COURT:** Thank you.

13 **THE WITNESS:** Thank you.

14 **THE COURT:** And now?

15 **MR. SCOTT:** Your Honor, the next witness for
16 RealNetworks will be Dr. Bishop. And I believe Mr. Singla had
17 an issue he wanted to raise --

18 **THE COURT:** Yes.

19 **MR. SCOTT:** -- about disclosure. And this is that
20 witness.

21 **THE COURT:** Yes.

22 **MR. SCOTT:** I asked him if that's what he had in
23 mind.

24 **THE COURT:** And you are saying that there are matters
25 that you believe that he's going to be questioned on, that go

1 beyond the report or reports that he has presented and been
2 deposed on, et cetera?

3 **MR. SINGLA:** Yes, Your Honor, I do. I believe
4 Mr. Mick is in agreement on that point.

5 **MR. MICK:** I am in agreement, Your Honor.

6 It's clear from the set of slides that we received
7 early this morning. I cannot tell from the set of slides the
8 full scope of how he will go beyond, but there are pages in the
9 slides citing specifications that he, in his reports, does not
10 mention at all that -- from sections of specifications which he
11 states in a single sentence have no relevance to the
12 proceeding.

13 **THE COURT:** Well, can you -- do you have a set of
14 those slides for me?

15 **MR. SINGLA:** Yes, Your Honor. I can pass them up to
16 you. Do you want the slides that we take issue with, or the
17 whole packet?

18 **THE COURT:** Why don't you give me the whole packet
19 and then tell me what it is in that packet that you take issue
20 with.

21 **MR. SINGLA:** Let me give the Court an example. I
22 believe Mr. Mick might have another example.

23 If the Court looks at slides 11, 12 and 13 --

24 **THE COURT:** Now, how do I determine what they are,
25 which --

1 **MR. SCOTT:** I think there are little page numbers in
2 the lower right, Your Honor.

3 **THE COURT:** Oh, wow, yes. Okay. Well, I guess I
4 need new glasses. Okay.

5 11, did you say?

6 **MR. SINGLA:** 11, 12 and 13.

7 **THE COURT:** Yes.

8 **MR. SINGLA:** There is a figure there, Your Honor,
9 Figure 1, that, as far as we can tell, is nowhere in any of
10 Professor Bishop's reports. I don't think it was discussed in
11 his deposition.

12 We have no notice that this is something that from
13 the specifications that he believes is relevant to this case
14 and should be discussed. I'm not exactly sure completely what
15 he's going to say, frankly, but this is something that when we
16 got it at 2:00 in the morning, 3:00 in the morning, we were
17 surprised about.

18 **THE COURT:** And that's -- that same figure in 11 is
19 carried over in page 12 and also in some fashion in -- with --
20 essentially, with the DVD itself. The picture of it in the
21 middle is the same on page 13, as well, right?

22 **MR. SINGLA:** Right, Your Honor.

23 **THE COURT:** Okay.

24 **MR. SINGLA:** And the whole idea of the DVD in the
25 middle, whatever that idea is exactly, is not, as far as we can

1 tell, in his report or in his deposition.

2 **THE COURT:** Well, but isn't the substance really --
3 more of the substance of it is that these depictions of
4 architecture are depictions of architecture you haven't seen
5 before?

6 **MR. SINGLA:** These depictions are in the
7 specifications. These are taken out of the specifications.
8 But these are portions of the specifications that --

9 **THE COURT:** That he did not address.

10 **MR. SINGLA:** -- that he did not address, to our
11 knowledge.

12 **MR. SCOTT:** Your Honor, I will respond to them as
13 they bring them up, of course.

14 **THE COURT:** Yes.

15 **MR. SCOTT:** In the first place, Professor Bishop was
16 asked in his deposition about the descrambler specification
17 that is depicted here. And this is a direct response to a
18 portion of Dr. Kelly's testimony last Friday that the arrows
19 used in an architectural diagram represent a direct path of
20 data going from one place to another, no departure, and we've
21 been disagreeing about whether or not that's what this kind of
22 diagram depicts at all. This is one example from the
23 specifications.

24 And let me say, generally, that Professor Bishop's
25 overall testimony in a broad sense and disclosed testimony is

1 that RealDVD complies with the CSS specifications. That's not
2 all he says, but that's a big part of it. And to reach that
3 opinion he needs to and has formed views on what the
4 specifications require and what they reflect.

5 When Dr. Kelly says, well, you're wrong because these
6 arrows, like in Figure 4 of the general specifications, mean
7 there's a direct path, no departure, nothing else happens,
8 which is his argument, Kelly's argument from Figure 4, that is
9 refuted on the face of these specifications.

10 These specifications are not -- not new. They
11 were -- they were a subject of his deposition. And we all know
12 the specifications, the entire set, are at issue. Now --

13 **THE COURT:** Were they shown to him -- excuse me.
14 Were they shown to him during his deposition?

15 **MR. SCOTT:** He was -- I was not there. I'm looking
16 at the transcript, which we had no forewarning on this. But
17 when he was asked at page 118 -- he was presented with the DVD
18 video descrambler, Version 1.10, and asked whether he had
19 reviewed that document in connection with his report. And he
20 answered, yes, he had reviewed that.

21 And then the -- and then the questioner went off to
22 something else. So he was just not -- he was presented with
23 the document, but not examined on it.

24 **THE COURT:** And were there rebuttal --

25 **MR. SINGLA:** Yes, Your Honor.

1 **THE COURT:** -- reports done?

2 **MR. SINGLA:** Yes, Your Honor. That's exactly my
3 point.

4 The argument that Dr. Kelly gave on Friday, without
5 getting into the substance -- I don't think it's appropriate
6 for Mr. Scott or myself to get into the substance of the
7 argument. The witness can do that. But the argument that
8 Dr. Kelly gave is clearly in his opening report.

9 Professor Bishop submitted a rebuttal report. He had
10 a full opportunity to respond to everything Dr. Kelly said.
11 His rebuttal report does not hide this concept. Certainly, the
12 video descrambler spec, which is -- you know, it's a thick
13 document. The Court has seen them. The Court has them in
14 front of it. These documents are mentioned. There's no
15 question.

16 But specific portions are mentioned with respect to
17 this whole direct path argument. Professor Bishop has
18 responses in his rebuttal report. We have no objection to him
19 going through his responses in his rebuttal report.

20 But as far as I can tell from what Mr. Scott is
21 saying, these are new ideas. I do not see Mr. Scott showing
22 the Court the reports and pointing to paragraphs in which this
23 is discussed.

24 **THE COURT:** Why don't we do this? I think when you
25 get to the point in the testimony where these objections are,

1 we'll stop. I'll let you voir dire him, if that's the point
2 where you have an objection, and see what he has to say about
3 whether this, you know, just comports with what he had already
4 said in his report and is just, essentially, the same thing, or
5 whether it's something new and different.

6 And you can go into it on cross-examination before he
7 goes into it in any depth. The substance in his direct
8 testimony, I'll let you voir dire on it.

9 **MR. MICK:** Thank you, Your Honor. That works for me.

10 **MR. SCOTT:** Can I just say, I understand the
11 direction, Your Honor, but it might be more efficient if I
12 first just respond to what Mr. Singla just said, because in the
13 rebuttal report -- may I, Your Honor?

14 **THE COURT:** Yes.

15 **MR. SCOTT:** In Professor Bishop's rebuttal report, in
16 the section dealing with Dr. Kelly, in particular, paragraph
17 12, 13 and on, he is responding to Dr. Kelly's contention that
18 these figures show a direct path, and providing examples.

19 Now, we have to parse through to see whether this
20 precise example is one of those examples. But the whole
21 concept is right there squarely in paragraph to paragraph of
22 Dr. Bishop's response to Dr. Kelly.

23 **THE COURT:** Okay. And am I going to have copies of
24 those reports, both his opening report and his rebuttal report?

25 **MR. SCOTT:** I'm sure we have them itemized. I did

1 not see this coming so --

2 **MR. SINGLA:** We can provide a copy, Your Honor.

3 **THE COURT:** So you can give us a heads up --

4 **MR. MICK:** (Indicating).

5 **THE COURT:** Oh, I can see. That's it, uhm?

6 **MR. MICK:** This is actually a copy of Professor
7 Bishop's deposition, Your Honor, which includes copies of both
8 his opening and his rebuttal report.

9 **THE COURT:** Okay. Fine. We're probably going to get
10 into that, as well, so --

11 **MR. MICK:** I figured I'd bring the whole enchilada.

12 **THE COURT:** Yes. Do you want to give us a heads up?
13 Is there some other area as well, or is that it?

14 **MR. SINGLA:** I'll defer to Mr. Mick on that.

15 **MR. MICK:** Again, I respect the Court's view on the
16 voir dire process, but as a heads up, it appears to me that
17 starting at slide 5 that Professor Bishop's presentation with
18 respect to certain portions of the procedural spec contain
19 material that we have not seen ever before in either of his
20 reports or in his deposition.

21 There is a cite here to 6.2.1.5 in the fifth slide.
22 He has not mentioned that section at all in either of his
23 reports. In fact, the overall piece of the procedural spec,
24 6.2, generally, he mentions in a single sentence, in which he
25 says it's not relevant here.

1 So the notion that this sort of pops up on the fifth
2 slide of his presentation takes us outside of his reports and
3 his testimony, in our view.

4 **THE COURT:** Well, again, why don't we just see where
5 this is going to go. And, then, at the appropriate time, if
6 you think, you know, he's getting into matters that were not
7 covered in his report, jump up and ask for voir dire, and we'll
8 let you do that.

9 **MR. SCOTT:** Thank you, Your Honor. Understood.

10 I think on a different but related point on
11 Dr. Bishop, having to do with the trade secret issue --

12 **THE COURT:** Yes.

13 **MR. SCOTT:** -- I would like to give the Court a
14 roadmap, and counsel, so that we understand. And I'm not the
15 one trying to draw the line as to what may happen, but I owe
16 you candor on exactly what I'm doing and when.

17 It's my belief that at least the first half of the
18 direct examination will not go into matters that have not
19 already -- in terms of subject matter and level of
20 confidentiality, beyond credentials will be talking about
21 specifications where we sometimes turned off the public display
22 but we have not cleared the courtroom. And that's true for
23 what I'll estimate to be the first half of the direct
24 examination.

25 Then Dr. Bishop will, because he must, address issues

1 of detailed compliance. And that will drill down somewhat
2 deeper. And I'd be happy to not just alert Mr. Mick, but to --
3 what level of detail we're going to. I believe he will have
4 concerns at that level. And I'm doing it because I have to in
5 order to respond to the issue of noncompliance.

6 **THE COURT:** That's fine.

7 **MR. SCOTT:** That's halfway into my examination.

8 **THE COURT:** And if it turns out that before that
9 there is a need to raise an issue with regard to trade secrets,
10 you will let us know, right?

11 **MR. MICK:** Absolutely, Your Honor.

12 I want to note for the Court and for Mr. Scott that
13 based on the package of slides that I received this morning,
14 that starting at slide 8 we see information almost on -- I'm
15 not sure even almost, on every single slide that is a verbatim
16 shot in whole or in part from the trade secret specifications.
17 And you can see it yourself, Your Honor.

18 **THE COURT:** Yes. And I don't know when we get into
19 that, whether we get into that in --

20 **MR. MYERS:** Your Honor, Roger Myers, from Holme,
21 Roberts & Owen, representing CNET News. May I briefly be heard
22 on the closure issue, either now or when it comes up when the
23 witness is on the stand?

24 **THE COURT:** Well, why don't you say what you have to
25 say now.

1 **MR. MYERS:** Your Honor, I wanted -- the Ninth Circuit
2 and the Supreme Court have said that people in the courtroom
3 have an opportunity to object to closure before it's ordered.

4 Rather than object per se, I want to propose an
5 alternative. I mean, one of the fundamental tenets of the
6 Constitutional right of access is that courtrooms shouldn't be
7 closed, even to protect a compelling interest, if there's any
8 other alternative way to protect that interest.

9 In this case, I think the Court yesterday suggested
10 an alternative, which is limit the testimony in the courtroom,
11 not just behind closed doors, but in the courtroom today, to
12 testimony that doesn't reveal any alleged trade secrets.

13 And, then, that testimony that would deal with that
14 issue, both direct and cross, could be done by video deposition
15 tomorrow or Friday and submitted under seal with an appropriate
16 motion to seal.

17 And that would accomplish three things. It would
18 prevent the Court from escorting the public and the press out
19 of the courtroom today and, thus, not infringe on the First
20 Amendment right of access to the courtroom.

21 It would require --

22 **THE COURT:** Well, I can take everybody back to
23 chambers also, I suppose, and accomplish the same thing.

24 **MR. MYERS:** But that raises the same issue, Your
25 Honor.

1 **THE COURT:** Look, I did it the other day. And I
2 think that it was narrowly tailored to where it was absolutely
3 necessary.

4 But it doesn't require that I open the courtroom to
5 the public when there are trade secrets that are in issue. And
6 to do that sort of a work-around distorts the process, ignores
7 the fact that we could go back in chambers and do it all in a
8 conference room, without anybody else.

9 But, also, to do it in the manner that you're
10 suggesting eliminates the possibility of the Court asking
11 questions, which is vital in a hearing like this.

12 So, I am doing it.

13 And I've heard you. I don't know what else you have
14 to say. You can say whatever you want to say, briefly. But I
15 think what we did the other day was to keep the courtroom open
16 as much as possible, and when it came time to get into the
17 trade secrets, that that was sufficiently narrowed or narrowly
18 tailored to meet the requirements, the Constitutional
19 requirements, as well.

20 **MR. MYERS:** I understand that, Your Honor. And I
21 appreciate that the Court did that on Friday. And the parties
22 yesterday did everything they could to avoid getting into trade
23 secret issues --

24 **THE COURT:** Right. But here we are with another
25 expert, and he has to counter what was said by the expert on

1 Friday.

2 **MR. MYERS:** I understand that, Your Honor.

3 The problem is that the reason the Ninth Circuit has
4 said that, whenever possible, motions to close should be filed
5 in advance of being ruled on is to allow opposing parties, the
6 press or the public, to submit briefs addressing the issue.

7 The problem here is, what we have is an asserted
8 trade secret in a situation where the code, the underlying
9 code, is admittedly public and, the California Court of Appeals
10 has ruled, is not entitled to trade secret protection.

11 They're arguing that the words, the specs, the
12 specific technical specs, are, nonetheless, a trade secret.
13 There hasn't been any showing of that. Not just that it's kept
14 confidential.

15 And I understand in the Kaleidescape case there was
16 arguments ready to be made by the defense that, in fact, the
17 technical specs are not a trade secret; that, in fact, either
18 they -- either they basically repeat the code that's public, or
19 they deal with contract terms that are largely public as part
20 of the procedural specs that are public.

21 That issue never came up in the Kaleidescape case
22 because the judge held a seven-week trial without ever closing
23 the courtroom. The technical specs that the parties thought
24 might reveal a trade secret were submitted under seal, very
25 similar to the alternative we're proposing.

1 I understand that doesn't address the Court's issue
2 of wanting to ask questions.

3 But the problem is, in this situation, because no
4 motion to close was filed, as should have been filed in
5 advance, so that somebody could respond to the arguments that
6 were made, we're in a situation now where, basically, they're
7 asserting a trade secret without ever making a showing that
8 they're entitled to trade secret protection under the Uniform
9 Trade Secret Act.

10 **THE COURT:** And is there any dispute by the parties
11 that the matters that we're talking about are, in fact, trade
12 secrets?

13 **MR. LAMBERT:** There's no dispute that the DVD CCA is
14 aware of.

15 **MR. SCOTT:** I believe if it were our fight to make,
16 Your Honor, yes, because this is public information and, I
17 mean, based upon and including -- I mean, I want to say -- I
18 don't want to exclude the media and I don't want to undermine
19 another party's claim -- but just in response to the Court,
20 that the source code is in the public domain. Master keys are
21 in the public domain.

22 You heard Mr. Schumann yesterday -- I'm sorry,
23 yesterday about their algorithm. That's all it takes to get
24 in.

25 The specifications, I understand from Mr. Lambert,

1 many of the specifications we are going into have not,
2 themselves, been publicly disclosed. And I'm not a trade
3 secret expert to stand here spontaneously and tell you where it
4 crosses the line and it's all out there.

5 Certainly, what I'll be discussing with Professor
6 Bishop are specifications -- and I accept Mr. Lambert's
7 statement that those are, themselves, not in the public domain,
8 even though CSS and the keys and the algorithm appear to be.
9 As far as I can go.

10 **MR. MYERS:** Well, just briefly on that. In addition
11 to being shown to be confidential, they also have to show that
12 they derive independent economic value from those technical
13 specs not being public, as opposed to the code itself, in order
14 for it to qualify as a trade secret.

15 It's a complicated fact-intensive analysis that's
16 hard to do on the fly on an oral motion in court to close.
17 That's why a motion to seal should -- or a motion to close
18 should have been filed in advance. And it wasn't. That's why
19 I'm proposing the alternative.

20 I'm proposing -- because if anybody wants to object
21 after the fact to the motion to seal the DVD -- of the video
22 testimony, they can do so, and then the Court can have briefing
23 on the issue and make a decision one way or the other. It
24 could still consider the testimony while it's deciding on how
25 it's going to rule on this hearing, while the administrative

1 motion to seal is pending.

2 And I don't know whether anyone is going to pose, or
3 not, an administrative motion to seal, but at least there you
4 would have the opportunity to brief the issue. And right now
5 there has been no showing that we really have a trade secret.

6 With that, I'll submit, Your Honor.

7 **THE COURT:** Well, I don't necessarily agree with you
8 on that last statement.

9 Yes.

10 **MR. LAMBERT:** Your Honor, if --

11 **THE COURT:** Come up here, please, and state your name
12 again so the reporter can get it down.

13 **MR. LAMBERT:** Mark Lambert for the DVD Copy Control
14 Association.

15 On Friday, when we discussed this, the Court asked us
16 to bring in a witness who could testify about the very issues
17 of trade secrecy that the representative of CBS is asking for.
18 And in a period of hours, we produced a witness.

19 She did not have to testify because I presented you
20 with a written motion, with a proposed written motion that we
21 would -- that, we would submit, that contained a declaration
22 filed by Mr. John Hoy, who is the former president of the DVD
23 CCA in the Kaleidescape action, in the one instance where
24 Kaleidescape, in that case, did try to unseal the very
25 documents that we're discussing in this case.

1 And that satisfied the Court that these -- that these
2 documents, which reflect processes and architectural diagrams,
3 one of which the Court asked -- if I recall correctly, asked
4 Dr. Kelly if that was something that was publicly known, and he
5 said that such an architecture is not publicly known.

6 These documents, the emphasis on the few keys and
7 other information about CSS, that allegedly have gotten into
8 the public through hacking activities of others, does not
9 address the contents, the process flow, the architecture, all
10 of these things that are in the slides that Dr. Bishop intends
11 to testify about today and that Dr. Kelly testified about on
12 Friday.

13 We're happy to file that motion. We thought that the
14 Court had resolved the issue with a narrowly tailored procedure
15 for addressing this. We can file the motion if they'd like to
16 contest it.

17 But the issue has been ruled on by the same Court of
18 Appeal for the State of California that has -- that saw the
19 Bunner case, that saw the previous DVD CCA cases involving
20 certain keys and algorithms. And it resolved it on the
21 technical -- on the technical documents completely the opposite
22 way.

23 And so we think there's a very good record to support
24 what we've asked for. We think the Court has narrowly tailored
25 its proceedings. We think the parties have done -- have done a

1 great deal to try to make as much of this hearing public as
2 could be possible. And so with that -- and the -- well, with
3 that, I'll submit the issue, unless the Court would like to
4 hear more.

5 **THE COURT:** Is there anything else you would want to
6 say?

7 **MR. MYERS:** Only that I wish the motion had been
8 filed so that we could respond to it. I mean, I -- with -- I
9 can't disagree or agree with some of his assertions because I
10 don't have the record before me to address those points.

11 All I know is that there were assertions made in the
12 Kaleidescape case that a lot of the technical specs are, in
13 fact, public.

14 I don't know that there's been a showing made that
15 there's any independent economic value derived from those parts
16 that may remain private. I don't know the state of the record
17 on that. I haven't been able to address it because no motion
18 was filed.

19 I'm not proposing and CNET is not proposing that
20 trade secrets be revealed in the courtroom today. I'm simply
21 suggesting an alternative, because there is at least an issue
22 about the scope of any trade secret protection for specs
23 related to a code that is entirely public and, the California
24 Court of Appeals held, is not a trade secret.

25 **THE COURT:** Well, but I think you misunderstand the

1 case law and the Court of Appeals case, as well.

2 But, in addition to that, I think it is very clear
3 from the licensing that is done with respect to the
4 specifications, the in-depth nature of those specifications,
5 that there are -- first of all, that they are trade secrets,
6 and that there is economic value derived from them and enures
7 to the benefit of the licensor, and that good money is paid for
8 those licenses.

9 So I don't see any need to take the time now to delve
10 into this when I have provided a very narrowly tailored way to
11 approach it.

12 And the fact that the document can be filed under
13 seal -- there have been sealing orders in this case all along,
14 and nobody has come in and complained about that.

15 But, in addition to that, I'm not going to stop the
16 court proceedings now, at this late hour, and particularly when
17 I am satisfied that, in fact, these are trade secrets.

18 And it gets into an interesting question. So, if
19 somebody hacks and does something illegal, thereby, you know,
20 the value of the trade secrets are lost?

21 But I don't think we even have to deal with that here
22 because the specifications are so much greater in detail. And,
23 certainly, from all the testimony we've had, there's no
24 evidence that those are out there in the public domain, or that
25 they have been leaked in any way and accessible to the public.

1 So with respect to that, the ruling that I made
2 before continues to hold. And at the appropriate time -- I
3 think Mr. Scott is being respectful of that, as are the
4 parties -- you know, we will only close the courtroom when, in
5 fact, there are, in fact, legitimate trade secrets that need to
6 be dealt with.

7 **MR. MYERS:** I appreciate that, Your Honor.

8 **THE COURT:** And that's what I'm going to do. And I'm
9 not going to sort of abandon the courtroom and go behind closed
10 doors to do it. I'm going to do it here, with the courtroom
11 closed.

12 **MR. MYERS:** I understand, Your Honor.

13 One quick point of clarification. On the narrowly
14 tailored aspect of that, I understand that the direct testimony
15 will stop, at some point, and people will be asked to leave the
16 courtroom, and then they'll get into the trade secret issues.

17 Will the courtroom then be opened up again, for the
18 cross-examination, the beginning of the cross-examination,
19 until such point as the cross-examination is getting back into
20 those trade secret issues?

21 **THE COURT:** Yes.

22 **MR. MYERS:** Thank you, Your Honor.

23 **THE COURT:** Yes.

24 **MR. LAMBERT:** Thank you, Your Honor.

25 **THE COURT:** We're not sending notices out as to when

1 that is.

2 **MR. SCOTT:** Your Honor, could I just request a
3 ten-minute break before we --

4 **THE COURT:** Maybe this is a good time. It's that
5 late.

6 **MR. SCOTT:** I've been drinking coffee since very
7 early today.

8 **THE COURT:** Well, I know. I've been doing the same
9 thing, so I'm with you.

10 **MR. SCOTT:** Thank you so much.

11 **THE COURT:** Let's take ten minutes.

12 **MR. SINGLA:** Thank you, Your Honor.

13 (Recess taken from 11:13 to 11:32 p.m.)

14 **THE COURT:** All set?

15 **MR. SCOTT:** With leave of the Court --

16 **THE COURT:** Yes.

17 **MR. SCOTT:** RealNetworks will call Professor Matt
18 Bishop.

19 **THE COURT:** Yes.

20 (Witness placed under oath)

21 **THE CLERK:** Please state your full name, spell your
22 last name for the Record.

23 **THE WITNESS:** Matthew Allen Bishop, B-I-S-H-O-P.

24 **THE COURT:** You may have a seat.

25 **MR. SCOTT:** Professor, that water is there for you,

1 and you may want to adjust that mic down.

2 Your Honor, I have do have a booklet. These
3 materials will include -- which I've given to Counsel -- his
4 resume, but then the remainder are the PowerPoint slides, which
5 I'll alert the Court when they're animations, so that you have
6 the option, viewing it either way.

7 **THE COURT:** Okay, fine. Thank you. Well, I have it
8 up here as well.

9 **MR. SCOTT:** Yes.

10 **THE COURT:** You may proceed.

11 **MR. SCOTT:** Thank you very much, Your Honor.

12 **MATTHEW ALLEN BISHOP,**

13 called as a witness for the Plaintiffs herein, having been
14 first duly sworn, was examined and testified as follows:

15 **DIRECT EXAMINATION**

16 **BY MR. SCOTT:**

17 **Q** Professor Bishop, first, please, what is your current job
18 and affiliation?

19 **A** I am a professor of computer science in the Department of
20 Computer Science, at the University of California, at Davis.

21 **THE COURT:** And, can you pull the mic right in front
22 of you, so we can hear you loud and clear.

23 **THE WITNESS:** I'm sorry.

24 **BY MR. SCOTT:**

25 **Q** That was a sound test. Now, would you please repeat your

1 answer for the people in the back?

2 What's your current job?

3 **A** I'm a professor of computer science in the department of
4 computer science at the University of California at Davis.

5 **Q** Thank you.

6 **MR. SCOTT:** How was that? Thank you.

7 **BY MR. SCOTT:**

8 **Q** And, have you been retained in this case as an expert by
9 RealNetworks?

10 **A** Yes, sir, I have.

11 **Q** In this case, and for that purpose, have you studied the
12 Facet and Vegas code in relation to the CSS specifications?

13 **A** Yes, sir, I have.

14 **Q** And have you studied the CSS specifications, themselves,
15 to be prepared to testify?

16 **A** I have, sir.

17 **Q** And, just in broad terms, what are the general areas of
18 your intended testimony?

19 **A** Whether or not the source code for Vegas and Facet comply
20 with the CSS specifications.

21 **Q** And as part of giving opinions in that area, will you be
22 speaking also on the subject of how you, as an engineer,
23 interpret those CSS specifications?

24 **A** Yes, sir, I will.

25 **Q** Before we begin, would you, just in a nutshell, tell the

1 Court what has been the primary focus of your work and
2 expertise in your years.

3 **A** I have been studying and working with computer security
4 since approximately 1978.

5 **Q** Computer security?

6 **A** Computer security. In the course of doing that, I've done
7 some cryptography, I've done a lot of systems work, and
8 analysis.

9 **Q** Okay, now, let's back up. You're currently a full
10 professor at the University of California in Davis?

11 **A** Yes, sir, I am.

12 **Q** And how long have you held that chair?

13 **A** I've been a full professor since 2004.

14 **Q** Where did you receive your undergraduate education, and in
15 what field?

16 **A** I got a bachelor's from the University of California at
17 Berkeley in 1976, in a double major, astronomy and applied
18 mathematics.

19 **Q** You went on to graduate work?

20 **A** Yes, sir.

21 **Q** Where, and in what field?

22 **A** I did graduate work, I got a master's in mathematics at
23 the University of California at Berkeley. Then I got a
24 master's degree in computer science at Purdue University, and
25 then a Ph.D. in the same field at Purdue.

1 Q Uh-huh. Now, after you finished your degrees, did you go
2 to work?

3 A Yes, sir, I did.

4 Q Doing what, and with whom?

5 A I worked for a time for a small company in Silicon Valley
6 called Megatest.

7 And, very shortly after getting my doctorate, I was
8 hired by the Research Institute for Advanced Computer Science
9 at the NASA Ames Research Center in Sunnyvale. I did some
10 computer graphics and a lot more computer security.

11 Q Now, you said the Ames Computer Research Center at
12 Sunnyvale, is that --

13 A It's the NASA Ames Research Center.

14 Q NASA Ames?

15 A Yes, sir.

16 Q I think you still need to slow down just a little bit for
17 the reporter. I think that last answer, you were picking it up
18 a little faster.

19 A Okay.

20 Q And what, what is the nature of the NASA Ames facility?

21 A The NASA Ames facility, when I was there, dealt primarily
22 with fluid flow -- with aircraft design or space shuttle
23 design.

24 They did human factors for people in space, and they
25 also set up a super-computing center. And, it was the latter

1 with which I was involved.

2 Q Are there issues of computer security at Ames?

3 A Yes, there are.

4 Q What was your role for them?

5 A I have helped write programs, I gave advice, I tested
6 things. And, I developed software protocols to help them keep
7 their center as secure as possible.

8 Q How long were you there?

9 A I was there for about three years.

10 Q And then where did you go?

11 A I became an assistant professor at Dartmouth College, in
12 the department of mathematics and computer science.

13 Q For six years?

14 A For six years.

15 Q And then?

16 A And then I went to University of California at Davis in
17 1993, and I have been there ever since.

18 Q Why did you go to Davis?

19 A The University of California at Davis had a reputation as
20 one of the top places for computer for computer security in the
21 academic world. I knew some of the people there, visited them,
22 they were quite interested in having me come.

23 And my wife and I are both Californians, and we
24 prefer California to New Hampshire.

25 Q You have been there since?

1 **A** I have been at Davis since -- University of California at
2 Davis since then, yes, sir.

3 **Q** And, I take it that you, among other things, you do teach
4 courses there?

5 **A** Yes, I do.

6 **Q** Would you give the Court a representative description of
7 the subjects that you teach at the University of California,
8 Davis, at the undergraduate and graduate level?

9 **A** At the undergraduate level, currently I'm teaching an
10 introductory programming class for people who have never
11 programmed. I have taught a second courses in programming,
12 software development, operating systems, and computer security
13 at the undergraduate level.

14 At the graduate level, I've taught operating systems,
15 and computer security.

16 And, computer architecture at the undergraduate
17 level, also.

18 **Q** While we are talking about your teaching duties, the
19 undergraduate and graduate students in your classes, what
20 careers do they typically take, upon leaving their studies?

21 **A** Most of the undergraduate students will go out into
22 industry. The graduate students at the master's level tend to
23 do the same. The ones at the doctorate level seem to be split
24 between industry or going into academia or research labs.

25 **Q** Do your students become engaged in writing software to

1 specifications?

2 **A** Yes, sir, they do.

3 **Q** Is that part of the course of study that you give to them?

4 **A** Yes, sir, it is.

5 **Q** We'll come back to that.

6 What are your principle publications?

7 **A** Principle publications, I have a book called *Computer*
8 *Security Art and Science*, it's a graduate-level textbook.

9 There's an undergraduate version of that as well.

10 I have written several book chapters; a very large
11 number of papers for academic journals and conferences.

12 **Q** Let's leave it at that for now, because the Court has your
13 resume.

14 Have you worked under financial grants from
15 government agencies?

16 **A** Yes, sir, I have.

17 **Q** National Security Agency?

18 **A** Yes, sir.

19 **Q** National Science Foundation?

20 **A** Yes, sir.

21 **Q** NASA, itself?

22 **A** NASA, itself.

23 **Q** And for private companies as well?

24 **A** Private companies have --

25 **Q** Including whom? Including which private companies?

1 A Oh --

2 Q As an consultant.

3 A As -- Intel has funded some of our research; Boeing has.
4 The SANS Institute funded a workshop that we held.

5 Let's see. A company called -- I'm sorry, I'm
6 blanking on the name. But there was a large research
7 project -- Promia, that was the company.

8 Q And I said "work for," but these are grants supporting
9 work by the University.

10 A Yes, sir.

11 Q Okay. And, have you served as an expert consultant for
12 any of the states of the republic?

13 A Yes, sir.

14 Q For whom, and in doing what?

15 A In 2004, I was part of a team that was brought on board to
16 analyze a voting machine for the state of Maryland. I was
17 working for the people who Maryland had hired.

18 And our job was to -- essentially, there were
19 questions about whether or not the machine would report
20 election results accurately. So they set up a mock precinct,
21 and asked us if we could rig the election, the mock election
22 that was going to be held.

23 In other words, come out, make it produce results
24 that it was not supposed to.

25 Q We don't have to go into the details of it, but you worked

1 for Maryland?

2 **A** Worked for Maryland. In Florida, we were analyzing a
3 problem with a voting machine that had occurred. And in
4 California, we also analyzed voting machines.

5 **Q** Would it be fair to say that in your work on security, and
6 including voting machines, one thing you do is investigate how
7 to break systems?

8 **A** Yes, sir.

9 **Q** Or how they can be broken by others?

10 **A** Yes, sir.

11 **Q** What kind of work did you do to prepare for your testimony
12 in this court in this matter?

13 **A** I examined the -- the Vegas and the Facet code. I
14 examined the specifications. And I compared the two to see
15 whether or not the code correctly implemented the
16 specifications.

17 **Q** Now, are you being paid for your time on the case?

18 **A** Yes, sir, I am.

19 **Q** At your ordinary rates?

20 **A** Yes, sir.

21 **Q** Have you ever written specifications for others to follow
22 in writing computer software?

23 **A** I do it for my classes.

24 **Q** Why?

25 **A** Because if you don't make the problems and specifications

1 of the programs that you want to write precise, then students
2 won't do what they're supposed to do.

3 Q Have you written specifications and written software to
4 specifications outside the University as well?

5 A Yes, sir, I have.

6 Q When writing specifications for the creation of software,
7 do you write statements of intention or purpose for the
8 implementer to follow?

9 A I write specific steps for the implementer to follow.

10 Q Why do you do that?

11 A Because if one has to guess at the specific steps, very
12 often what is produced won't interoperate or won't work with
13 other things the way it's supposed to. So you want to be as
14 precise as possible about what is to be done.

15 Q Do you teach your students how to deal with ambiguities or
16 general statements in specifications they are attempting to
17 implement?

18 A The way I teach them to handle that is look at the
19 specifications, and follow the steps that are in the
20 specifications.

21 If there's ambiguity, then the students don't know
22 what to do. And the implementer doesn't know what to do.

23 Q In the field of writing software programming to
24 specifications, would it be fair to say that the specifications
25 are a conversation between engineers on both sides?

1 **A** Yes, sir. I think that's very fair.

2 **Q** In what sense?

3 **A** In the sense that the writer of the specifications is
4 telling the implementer, the person who's writing the software
5 to the specifications, what he is or she is to do, in order to
6 write software that meets the specifications. Follow these
7 steps.

8 **Q** In a prior answer, you talked about -- when I was asking
9 you about ambiguity, and what you teach your students. And you
10 mentioned the concept of the interoperability.

11 Would you elaborate, please on the problem, if there
12 is one, of specifications with ambiguity, and how they relate
13 to the interoperability of systems?

14 **A** When two systems are talking to one another, they have to
15 follow a specified language. They have to know what each other
16 is saying.

17 If there's ambiguity, then one system may say
18 something that the other doesn't expect, because the writer of
19 the first piece of software interpreted something one way, and
20 the writer of the second piece of software interpreted it a
21 different way. And so, the two become disconnected.

22 **Q** Would writing software for implementation on a Windows
23 operating system provide an example of the problem,
24 interoperability from ambiguous specifications?

25 **A** Yes, it would.

1 Q Please explain.

2 A As an example, if the specifications did not describe how
3 certain things were to be done, then if I write some software
4 to save data, and somebody else is writing software to read
5 data, and there's an ambiguity, then what they read may not be
6 interpreted the same way that I wrote it, the way that I
7 intended it.

8 Q One subject of your work for this case has been to
9 evaluate Real DVD's compliance with the CSS specifications. Is
10 that right?

11 A Yes, sir. Yes, sir.

12 Q Have you done so?

13 A Yes, sir.

14 Q We'll come to this in greater detail, but if I may ask it
15 this way, you -- you do grade your students in your classes?

16 A Yes, sir, I do.

17 Q If it's possible to answer it this way for the Court, can
18 you assign a grade to the implementation of CSS specifications
19 done by the RealDVD software?

20 **MR. MICK:** Argumentative, and outside of the scope of
21 the report, Your Honor.

22 **THE COURT:** Objection is overruled at this stage.

23 **BY MR. SCOTT:**

24 Q How did they do?

25 A I would give them an A-minus.

1 Q What's the minus?

2 A The minus is because initially one part of the protocol
3 was implemented -- I'm sorry, I'm not sure how specific I can
4 be. I want to respect everyone's rights.

5 Q Hmm --

6 A Specifically, should I answer?

7 Q I think you should answer the question, yes.

8 A Okay. Specifically, the random number challenge in the
9 authentication mechanism --

10 Q Don't go any further on what that is, but just what --
11 what got the minus?

12 A It was implemented as a fixed string.

13 Q Say again?

14 A It was not implemented correctly.

15 (Reporter interruption)

16 **BY MR. SCOTT:**

17 Q Did you point that out to them?

18 A Yes, I did.

19 Q Do you know what's been done?

20 A It's been fixed.

21 Q Now, I want to turn at this point to the CSS
22 specifications.

23 **MR. SCOTT:** And we are still, Your Honor, at a point
24 before we go beyond what's already been covered in court. But
25 I believe this is a time we need to turn off the public

1 monitor.

2 **THE COURT:** Okay. We will turn off the public
3 monitor, but that's all we need to do.

4 **MR. SCOTT:** Based on the precedent, yes.

5 **THE COURT:** Yes.

6 **MR. SCOTT:** Because I'm going to Section 1.2 of the
7 general specifications, which has been discussed --

8 **THE COURT:** All right. Would you turn off the public
9 monitor, please.

10 **BY MR. SCOTT:**

11 **Q** I have here -- returning to the book now, and also to the
12 PowerPoint, I have in front of you our first slide after the
13 introductory, with language concerning copying that I wish to
14 ask you about.

15 Are you familiar, Professor, with the two objectives
16 stated in Section 1.2 of the general specifications of CSS?

17 **A** Yes, sir, I am.

18 **Q** And, in particular, the second one is "To prevent
19 digital-to-digital copying in a personal computer environment."

20 I would like to ask you about that. First, I want to
21 show you testimony from Dr. Kelly, to find out what you may
22 agree or disagree with.

23 **MR. SCOTT:** This will be very brief, Your Honor.

24 Not on the videotape. I'll come back to this.

25

1 **BY MR. SCOTT:**

2 **Q** In the record of the first day, Page 73, the Court asked
3 Dr. Kelly, in reference to the phrase digital-to-digital
4 copying (As read):

5 "What is meant by that? To a person
6 who would be then an engineer, whomever,
7 who would be using these specifications?"

8 And he responded:

9 "I think the notion is straightforward,
10 that this is digital content that can be
11 copied with 100 percent accuracy. And --
12 and so, unlike a VHS tape, where every time
13 you make a copy it degrades, this
14 digital-to-digital means that the copy you
15 produce is 100 percent exactly like the
16 original. In that sense, it's
17 digital-to-digital copying."

18 And we pause there.

19 **MR. SCOTT:** I'll go on to the next question and
20 answer in a moment, Your Honor, after a pause.

21 **BY MR. SCOTT:**

22 **Q** Do you agree so far with Dr. Kelly?

23 **A** Yes, I do.

24 **Q** I would like to back up to these slides.

25 Have you prepared slides to illustrate visually what

1 the phrase "digital-to-digital copying" conveys to you?

2 **A** Yes, there are slides.

3 **Q** Okay. First, what is in this slide, entitled
4 Analog-to-Analog Copying?

5 **A** Okay. When you make a VHS tape it uses analog, the
6 old-fashioned analog mechanisms. And so when you copy it from
7 one tape to another, some of the -- some of the image quality
8 degrades and becomes blurrier. That's what we talk about when
9 we say first-generation tape, second-generation tape, so forth.

10 So, when it comes to third and the fourth generation,
11 you lose image quality. And if you look across the bottom
12 there, you see the image degrading as you go from the first
13 generation to the fourth generation.

14 I'm not sure the degradation is actually that bad,
15 but it does degrade visibly.

16 **Q** Or, the degradation may not be quite that fast, as shown
17 in these three generations?

18 **A** Correct. But it does degrade visibly.

19 **Q** Now, turning to the next slide, Digital-to-digital
20 Copying, can you explain to the Court what is different in the
21 world of digital-to-digital copying?

22 **A** Well, unlike analog, digital data is simply 1s and 0s. So
23 when you copy the data, instead of losing image quality, you're
24 just making copies of 1s and 0s. So there's no loss of image
25 quality, no matter how many times you copy it.

1 So, for example, I can take the first DVD and make a
2 copy of it. And the image that the second-generation DVD
3 produces will be as good as the image on the first one?

4 Then the figure shows making a third generation. And
5 the image on the third-generation DVD is the same as on the,
6 first and so forth, because the 1s and the 0s don't go away.

7 Whereas, with analog, they use a different mechanism
8 which does degrade.

9 **Q** And advancing to the slide we already read, Dr. Kelly, I
10 notice, on Line 19, refers to "unlike a VHS tape." Is that a
11 reference to analog copying?

12 **A** Yes, sir, it is.

13 **Q** And you agree with him, to that point?

14 **A** Yes.

15 **Q** On digital-to-digital copying. On the next slide, the
16 Court asks followup questions, quote (As read):

17 "Does digital-to-digital copying
18 meaning copying to disc?"

19 And Dr. Kelly answers "Yes."

20 He's asked copying to hard drive, and the witness
21 answers, "Right," and he continues. And the whole thing is in
22 the book.

23 Do you agree with him, that this is what
24 "digital-to-digital copying" means?

25 **A** No, sir, I don't.

1 Q Why do you disagree?

2 A Because the -- the digital-to-digital copying is the
3 process that -- over which media is copied, over which the
4 media propagates. And in an analog world, the propagation
5 degrades rapidly. In the digital world, it does not degrade at
6 all.

7 Q So, if digital-to-digital copying in these general
8 specifications meant no digital copy of any kind, what words
9 would a spec writer use?

10 A I would have written it, "You're not allowed to make
11 digital copies," or "You're not allowed to -- to produce a
12 digital copy." Something along those lines.

13 Q Does digital-to-digital copying literally include copying
14 from a source like a DVD over to the computer memory?

15 A Yes.

16 Q Why?

17 A Because you are making a copy of the -- of the 1s and 0s
18 of the data, and you're simply making it in memory.

19 Q If I understand correctly, Professor, the phrase
20 "digital-to-digital copying" as you see it in these
21 specifications refers to this process or this problem of
22 generation after generation of perfect copies.

23 A Yes. That is correct.

24 Q If the specifications -- and you're a specification
25 writer, and a specification reader. If the specification's

1 meant to say "No digital copy to hard drive," what would they
2 say?

3 **A** "No digital copies to hard drive."

4 **MR. SINGLA:** Your Honor, we have gone on long enough.
5 I would ask for a proffer where this idea that Professor Bishop
6 has an interpretation of what "digital-to-digital copying"
7 means, his interpretation, where it is in the expert report.

8 **THE COURT:** It's not in the expert report.

9 **MR. SINGLA:** Yes, unless I missed it.

10 **THE COURT:** Is it in the expert report?

11 **MR. SCOTT:** Well, he talks about the phrase, what it
12 doesn't mean, in the expert reports. He talks about realizing
13 the objective of digital-to-digital copying in Paragraph 8 of
14 his rebuttal report. And other places. That's just one that
15 pops out.

16 He talks about, in his main report, Paragraph 72.
17 Right here, he's also clarifying where he agrees with Dr. Kelly
18 and where he does not.

19 But digital-to-digital copying within the
20 specifications has been a repeated subject in his report.

21 **MR. SINGLA:** Your Honor, do you have a copy --

22 **MR. SCOTT:** Would you like to have a copy --

23 **THE COURT:** That document that you were showing me,
24 but I don't think I ever got it.

25 Oh, it's right there. There it is. I know I saw it.

1 **MR. SINGLA:** Do you have a copy of his expert report?

2 **THE COURT:** I understand that's in here.

3 **MR. MICK:** That's correct.

4 **THE COURT:** So can you actually tell me where in the
5 report you are referring now?

6 **MR. SCOTT:** Yes.

7 **THE COURT:** And are you talking about the original
8 report? Or the rebuttal report?

9 **MR. SCOTT:** I'm going to show you both. And I
10 hope we don't --

11 **THE COURT:** I have it, here.

12 **MR. SCOTT:** Oh, you do.

13 **THE COURT:** Just refer to page and line, in one of
14 them.

15 **MR. SCOTT:** Okay. In the original -- which one do
16 you have first? The original one?

17 **THE COURT:** Yes. Uh-huh. I have both.

18 **MR. SCOTT:** Paragraph, according my notes -- wrong
19 report.

20 My notes say that at -- yes, Paragraph 72, Page 18.

21 **THE COURT:** Of which one? The original?

22 **MR. SCOTT:** Of the original report. Professor Bishop
23 is discussing the two objectives, digital-to-digital copying.
24 He identifies the mechanisms, which we are about to go into.

25 **MR. SINGLA:** Your Honor, what --

1 **MR. SCOTT:** Could we -- I would like to respond --

2 **THE COURT:** Hold on just one moment. May I just take
3 a look here and go through this?

4 (The Court examines document)

5 **THE COURT:** But it appears that what he is testifying
6 to is something a little more basic than this.

7 **MR. SCOTT:** It's more basic, Your Honor.

8 **THE COURT:** That probably was to respond to my
9 questions, you said those were my questions, that I asked.
10 See, you probably don't have a rebuttal to, you know,
11 report as to the questions I asked. Right?

12 **MR. MICK:** If I may, Your Honor, I think that Section
13 72 and Section 73 of his report is making a completely
14 different argument.

15 In 72, he identifies the -- the objective which we've
16 alluded to.

17 **THE COURT:** Yes, and I see that. And that's why I
18 don't think it necessarily addresses this.

19 But I had a reason for saying I think this is
20 something that's even a little more basic. And that is, if you
21 disagree with it, I think -- you know, what you can do is
22 cross-examine him. It's so basic, that you ought to be to
23 cross-examine him on it.

24 **MR. MICK:** I don't degree disagree that we can
25 cross-examine on it. We are objecting on a fundamental Rule 26

1 fairness issue, to the man coming forth and now proffering, for
2 the first time in the case, a new interpretation of a provision
3 of the specification that he has not identified in two reports
4 or in his deposition.

5 **THE COURT:** And what they are doing is they are
6 responding to a question I asked of your expert. Right?

7 **MR. SCOTT:** Exactly. Your Honor, I should say, the
8 discussion --

9 **THE COURT:** You've got to be able to fly better than
10 that. Okay?

11 **MR. SCOTT:** The reference to digital and digital
12 copying is so basic, it's all over these reports. I picked out
13 the first two.

14 **THE COURT:** You don't need to put it on automatic
15 pilot, right? You've got -- I mean, that's the whole idea of
16 being a lawyer. You've got to be ready to jump in there.

17 **MR. SINGLA:** Thank you, Your Honor.

18 **THE COURT:** I didn't have any of this, and I had to
19 ask questions. Okay? Now you want to know what to do.

20 Let's go.

21 **MR. SCOTT:** And they were very good questions, Your
22 Honor. That was --

23 **THE COURT:** Well, only if you like the answers.

24 **MR. SCOTT:** Actually, actually, I think what it did
25 was frame -- was frame the debate on the issue very well.

1 **BY MR. SCOTT:**

2 **Q** So, we're back, then, on what "digital-to-digital" means
3 to you, which is a statement meant to Dr. Kelly, but that if
4 the specification writer meant no digital copy to hard drive,
5 he would have written so.

6 Correct? Is that where we are?

7 **A** I think so, yes, sir.

8 **Q** And, if the specification writer says "no digital copies,"
9 or if "digital-to-digital copying" means "no digital copies,"
10 do you then start needing to carve out exceptions?

11 **A** The problem is that you have to put -- you have to bring
12 the thing into memory in order to play it. So you would have
13 to carve out an exception for -- except bringing into memory in
14 order to play, and there may well be other places that I
15 haven't identified.

16 **Q** In your review of the CSS specifications, have you seen
17 any words that carve out an exception for copying digital --
18 digital data to the memory or the cache?

19 **A** Not that I remember; no, sir. There were none.

20 **Q** I would like to continue on Section 1.2, but to provide
21 some context for the Court, who needs to understand these
22 provisions in context.

23 The second part of that phrase in the general
24 specifications 1.2, refers -- Let me read again:

25 "...to prevent digital-to-digital

1 copying in a personal computer

2 environment."

3 Is the personal computer environment the universe of
4 devices covered by these CSS specifications?

5 **A** No, sir.

6 **Q** What else is there?

7 **A** There are DVD players that are not personal computers, for
8 example.

9 **Q** In your review of the CSS specifications, have you ever
10 seen language that says, "To prevent digital-to-digital copying
11 in a DVD player environment"?

12 **A** I certainly don't remember any.

13 **Q** Are there differences between those two types of device
14 that might illuminate for us what this clause means?

15 **A** Yes, sir, there are. If --

16 **Q** Hold on one second. Before we get to those, let me ask
17 you first about hard drives. Do personal computers have hard
18 drives?

19 **A** In general, yes.

20 **Q** Can the DVD players, under the CSS specifications, have
21 hard drives?

22 **A** Yes, sir, they can.

23 **Q** Do all DVD players have hard drives?

24 **A** No, sir -- no, sir, I don't believe they do.

25 **Q** Do some?

1 **A** Yes, sir.

2 **Q** Do the makers of video players, DVD players with hard
3 drives, advertise their capabilities?

4 **A** I have seen advertisements for such video players, and
5 they certainly trumpet the use of a hard drive.

6 **MR. MICK:** Hearsay, Your Honor.

7 **THE COURT:** Objection is overruled.

8 **BY MR. SCOTT:**

9 **Q** They trumpet that they have hard drives?

10 **A** The ads I saw did.

11 **Q** Storage capacity?

12 **A** Yes, that was identified.

13 **Q** Now I would like to follow up on that, but also from the
14 standpoint of the hearsay objection, a specification writer, a
15 specification writer writing for software to implement CSS.

16 Knowing that PCs have hard drives, and many DVD
17 players also have hard drives, would the specification writer
18 say "no storage to hard drive" if it meant "no storage to hard
19 drive in either device"?

20 **A** Yes, sir.

21 **Q** Why?

22 **A** Because otherwise, there's no indication that you can't --
23 sorry. Because otherwise, the hard drive is another part of
24 memory, and there's -- it's common, so you would need to tell
25 people, don't do that.

1 When I'm reading these specifications I'm looking for
2 what's there and what I'm supposed to do. And, there's no
3 language in there about the hard drives.

4 **Q** Let me be clear. Of these two kinds -- classes of devices
5 covered by the CSS specs, the personal computer environment and
6 DVD players, is the presence or absence of a hard drive for
7 storage the distinguishing feature?

8 **A** No, sir. It is not.

9 **Q** What is the distinguishing feature between those two
10 classes of devices?

11 **A** If you could -- there's some language that follows this.
12 But, the gist of it is that there is a -- a PC bus over which
13 things will travel, and where -- between the DVD drive and the
14 software. And you have to use authentication and encryption on
15 that.

16 **Q** Now, you know, you're looking at this page on the screen.
17 You know that's going to appear lower on that page?

18 **A** Yes.

19 **Q** We'll come to that in just one moment. On this DVD
20 player, as a class of devices under CSS -- I'm showing you
21 Section 1.28 of the procedural specifications.

22 And, can you use that to explain to the Court in fact
23 how CSS defines the DVD player in relation to the PC?

24 **A** Yes, sir. The DVD player shall mean the DVD disc reader
25 that has the internal capability to play back content encrypted

1 on a DVD disc using -- and then it names some algorithms. And
2 that does not operate through the CSS authentication algorithm.

3 So, a personal computer in a personal computing
4 environment, it requires the use of those algorithms. So,
5 there's a difference between the DVD player as defined in this
6 and the personal computer.

7 **Q** Now here we have two diagrams from the general
8 specifications, and there are Figures 3 and 4.

9 **MR. SCOTT:** Your Honor, I showed them yesterday with
10 Mr. Schumann, and they're at, I think, about Pages 20-21 of
11 that document.

12 I see is the page number does not appear on here, of
13 the general specifications.

14 **BY MR. SCOTT:**

15 **Q** Would you just first tell us what's in the upper left,
16 which kind of device?

17 **A** Well, in the upper left, that's Figure 3. And it's
18 entitled "Architecture of the DVD-video player system." So
19 this is the DVD player.

20 **Q** That's the player. In the bottom right, one we have seen
21 a number of times here as Figure 4, that is the PC environment?

22 **A** That is the "Architecture of the DVD video playback system
23 on PC," so that would be the PC environment, yes, sir.

24 **Q** Again, focusing on the difference, since the CSS spec
25 writers applied different language to the different classes of

1 devices, can you summarize for the Court, using these two
2 diagrams, Figures 3 and 4 of the general specs, what is the
3 essential difference between these two defined classes of
4 devices under CSS?

5 **A** If you look on Figure 4, you see "DVD video disc drive"
6 and then above that you see "Authenticator on DVD video disc
7 drive." That is not present in Figure 3.

8 The PC digital IF, which is the interface, is also --

9 **MR. LAMBERT:** Your Honor, we object to -- while the
10 diagrams aren't apparent to the public in court, the nature,
11 depth and detail of the testimony is revealing, is -- if it
12 hasn't crossed the line, it's right there.

13 **MR. SCOTT:** I accede to that, Your Honor. We can
14 stop at that point, and I'll follow up on a more general level,
15 with the Court's permission.

16 **THE COURT:** Okay, fine. Thank you.

17 **MR. SCOTT:** Yes.

18 **BY MR. SCOTT:**

19 **Q** From what you've said already, and from looking at the
20 specification, is it fair to say that the PC environment has
21 bus authentication and bus encryption?

22 **A** Yes, sir, it is.

23 **Q** And that protective measure is not specified in the player
24 environment depicted by Figure 3?

25 **A** In the DVD player environment, no, sir, it is not.

1 Q Now, the Court has heard about user-accessible buses.

2 Is a user-accessible bus, does that pose some
3 security issue in protecting the encrypted data?

4 A Yes, it does.

5 Q Would you explain in that specific -- in relation to
6 user-accessible buses, how that ties in to -- not in too much
7 detail -- whether the two classes of device, players or PCs,
8 differ in that particular exposure.

9 A I'll try, but please stop me if I do get too detailed.

10 The basic fear is that as the data is moving across
11 the user-accessible bus, someone could read the data off the
12 bus, and copy it somewhere or make a record of it. That's
13 called interception.

14 Q Stop there. Now, does one class of device have
15 user-accessible buses, and the other not?

16 A Yes, sir.

17 Q In summary, for the Court, which does and which does not?

18 A The PC environment has user-accessible buses. The DVD
19 player does not.

20 Q Okay. Fair to say that the existence of user-accessible
21 buses in the PC environment is the difference between the
22 defined PC environment and the defined player environment?

23 A I would say so, yes, sir.

24 Q Not the presence of a hard drive.

25 A No, sir.

1 Q Not the potential for saving data to disc.

2 A No, sir.

3 Q Going back, then, to Section 1.2, in context, Objective
4 (2), To prevent digital-to-digital copying in a personal
5 computer environment, is there a threat of this generational or
6 propagational copying in the PC environment that's different
7 from the player environment?

8 A Since there's a user-accessible bus, somebody could record
9 the data off the media, and propagate that. So the answer is
10 yes, sir.

11 Q Down lower on the page, does this page of the
12 specifications continue --

13 MR. LAMBERT: Your Honor -- I'm sorry, I thought this
14 was on the public monitor. Pardon me.

15 THE COURT: No, it's not.

16 MR. LAMBERT: Okay, thank you.

17 THE COURT: Well, you could tell. Right behind you.

18 MR. LAMBERT: Yeah.

19 THE COURT: Blank screen.

20 MR. LAMBERT: I saw the one in front of me, and
21 reacted too quickly. I apologize.

22 MR. SCOTT: And Your Honor, I rudely turned this one
23 (Indicating) away from the public too, as well.

24 BY MR. SCOTT:

25 Q Does Page GEN-1, Page 1 of the general specifications,

1 tell you, as a person who writes specs and reads specs, how the
2 writers intended to implement the statement "Prevent
3 digital-to-digital copying in a PC environment"?

4 **A** What you have on the screen does --

5 **MR. MICK:** Calls for speculation, Your Honor.

6 **THE COURT:** Objection is overruled. You may answer.

7 **THE WITNESS:** What is on the screen does tell me
8 that. I can't see the page number, but --

9 **BY MR. SCOTT:**

10 **Q** It's GEN-1. Take my word for it.

11 **A** Yes. I believe you.

12 **Q** Does that tell the spec writers what to do? Tell the spec
13 implementers, the software writers?

14 **A** It tells the implementers what is necessary to do
15 Objective (2).

16 **Q** Looking at the difference between the PC environment
17 referred to higher on the page, and the DVD player which has no
18 such language in the specs, the physical difference between the
19 devices, are these two paragraphs of Page 1 responsive to that
20 problem of protecting user-accessible buses?

21 **A** Yes, sir.

22 **Q** They deal with the problem.

23 **A** They deal with the problem.

24 **Q** I have an illustration here, with a PC shown. Would you
25 please use this to -- if you can, to explain to the Court the

1 challenge faced in a PC environment with a user-accessible bus.

2 **A** All right. Let's ignore the "bus encryption and
3 authentication."

4 What happens is I load the data or the DVD or movie
5 into the -- into the DVD player, and then the computer starts
6 reading it.

7 Without bus authentication and encryption, what it
8 could do is simply intercept the data as goes over the wire,
9 and read it. And then I would get the -- the raw data.

10 **Q** And that feature is absent from the DVD player?

11 **A** That feature is absent, yes, sir.

12 **Q** I want to be clear, here. Is it your understanding that
13 both of the RealDVD products, Vegas and Facet, do comply with
14 bus authentication and bus encryption?

15 **A** Both perform it, yes, sir.

16 **Q** So, they are not designed as DVD players without going
17 through bus authentication and bus encryption.

18 **A** They -- based on the definition of "DVD player," no, they
19 are not.

20 **Q** So you are using the "DVD player" to help understand how
21 the specifications are constructed?

22 **A** I'm using the definition of "DVD player" to determine --
23 to answer your question, to determine whether or not something
24 is a DVD player or a --

25 **Q** Fair enough.

1 **A** -- personal computer environment.

2 **Q** Now, Dr. Kelly, last Friday, in looking at that language
3 on Page 1 of the general specifications --

4 **MR. SCOTT:** And this is Page 233, Your Honor, of Day
5 One. I believe actually I'm questioning him. But in any
6 event, at 16 he says (As read):

7 "No, this is something that you have to
8 do to support Objective (2).

9 **"QUESTION:** Uh-huh."

10 That does sound like me, Your Honor, saying "Uh-huh."

11 **"ANSWER:** This doesn't say if you do the
12 following, you're done. If you do this, and
13 you have prevented digital-to-digital
14 copying. It says in support of, in support
15 of, this is one of the things that you need
16 to do."

17 **BY MR. SCOTT:**

18 **Q** As a person who writes specifications for others and
19 implements specifications and software, is Page 1 of the
20 general specs on authentication and bus encryption just one of
21 the things that you do?

22 **A** To me, when I read Page 1, it tells me you must do this to
23 meet Objective (2).

24 **Q** And as you understand Objective (2), do those steps meet
25 the objective?

1 **A** That's what the specification says.

2 **Q** Now, does CSS contain provisions directed towards copy
3 protection?

4 **A** Yes, sir, it does.

5 **Q** Where might we find those?

6 **A** I don't remember whether they were in the general or
7 procedural specifications, but they're in one of those
8 documents.

9 The number 1.8 is coming to mind, but I would need to
10 see them.

11 **Q** I think I have that reference --

12 **MR. SINGLA:** Your Honor, once again, we would ask for
13 a proffer for where Section 1.8 is discussed in Mr. Bishop's
14 reports or in his deposition.

15 I looked at the slide, there's a lengthy discussion
16 of Section 1.8, suggesting that there's some implication that
17 Mr. Bishop wants to draw from Section 1.8.

18 We had no notice of this until 2:00 a.m. this
19 morning, as far as I can tell.

20 **THE COURT:** 1.8 from the general specifications?

21 **MR. SCOTT:** Procedural specifications, Your Honor.

22 **THE COURT:** Procedural specifications. I don't --
23 you know, I have one document that says "Procedural
24 Specifications." But I don't know that it's the right one. It
25 looks a little different.

1 But on the other hand, it does look like what was
2 there. So, that's headed "Copy Protection Functions"?

3 **MR. SCOTT:** Just give me one moment, Your Honor.

4 **MR. SINGLA:** And perhaps I misunderstood the report.
5 I'm happy if Mr. Scott could provide where it is.

6 **MR. SCOTT:** Yeah. In Professor Bishop's main report,
7 Page 41, Paragraph 203, there's a discussion specifically of
8 the copy protection functions in 1.8 of the spec, which
9 actually, Your Honor, is a -- 1.8 actually is kind of like an
10 outline that refers to Section 6.2, where these provisions are
11 laid out, these functions are laid out in detail.

12 **MR. SINGLA:** Your Honor, I'll withdraw my objection.
13 I did not see that.

14 **THE COURT:** Okay. Thank you.

15 **BY MR. SCOTT:**

16 **Q** Professor Bishop, to get back to where we were, there are
17 in fact specifications on the question of copy protection in
18 the specs.

19 **A** Yes, sir, there are.

20 **Q** Okay. Let's go back on the screen, then. We're in the
21 procedural specs, Section 1.8. And we are not going to spend
22 time in detail on the contents of these, but rather, address
23 what is included in the specs.

24 Section 1.8, "Copy protection functions," it says,
25 "shall mean" and then the first phrase, "regional playback

1 control." Right?

2 **A** Yes, sir.

3 **Q** And does it go on the list other, other functions that
4 need to be addressed?

5 **A** In this section, it lists recordable media playback
6 control and digital and analog output restrictions and
7 protections.

8 **Q** You don't need to read it all. We're going to come to
9 those.

10 **A** Okay. Yes, there are.

11 **Q** Is there a subsection of these specifications that deals
12 with each one of these functions?

13 **A** Yes, sir, there is.

14 **Q** We will take them one at a time. Regional playback
15 control, on the screen, in the book, is Section 6.2.1.4.

16 Without reading it, but just at a top level, what is
17 the subject matter of the regional code playback control as a
18 CSS protection feature?

19 **A** Well, the world is divided up to, I believe, six or seven
20 regions, and then there's an eighth for something else.

21 And, DVD players are set up to work with one region,
22 and DVDs are -- have on them codes that give -- identify one or
23 more regions in which they can be played.

24 **Q** Pause for one second. I'm going to advance a slide.

25 Can you use this slide to illustrate the point you

1 are making about the subject matter of this one protection?

2 **A** Yes, sir. Region 1 is the United States and Canada. And
3 so, if I have a player that works for Region 1, and I buy a
4 Region 1 disc, I can play it. That's what you get when you go
5 to Borders and buy a DVD.

6 However, if the disc were made for Region 2 or 3, and
7 I'm -- I'm not sure where they are, but they're somewhere here
8 -- if you took that DVD and tried to play it in Region 1, it
9 would not play. In a player designed for Region 1, only, it
10 would not play.

11 **Q** So if a -- if a DVD is out loose in a region like China,
12 it won't be playable back in the United States?

13 **A** If the region control is -- code is for China, and you
14 tried to play it on a player which will only play DVDs with
15 region control for the United States, then no, it will not play
16 that DVD. Excuse me.

17 **MR. SCOTT:** Your Honor, I pause for a technological
18 note. I guess we have some kind of green on our monitor.

19 **THE WITNESS:** Oh, yes. The little arrows are down
20 here. I've been ignoring them.

21 **MR. SCOTT:** Green arrows.

22 **THE COURT:** Do you know what those green arrows are?

23 **THE WITNESS:** I think when you tried to draw, they
24 appeared.

25 **THE COURT:** It's gone there.

1 **MR. SCOTT:** They're clear.

2 **THE COURT:** Okay. But which, which slide is this, or
3 page is this?

4 **MR. SCOTT:** This one --

5 **THE COURT:** Because I'm looking down on in the lower
6 right-hand corner on the slide.

7 **MR. SCOTT:** It says 18.

8 **THE COURT:** 18. But not on mine, unless I'm missing
9 something here.

10 **MR. SCOTT:** Really.

11 **THE COURT:** It's probably not the most -- it's one I
12 can really remember, without having to --

13 **MR. SCOTT:** Mine says 18.

14 **MR. MICK:** Your Honor, the problem here is that the
15 slide set that was delivered to me earlier this morning is not
16 the same slide set as Mr. Scott is using with the witness.

17 So, you may have the one that --

18 **THE COURT:** I may have the 2:00 a.m. version? Is
19 that it?

20 **MR. MICK:** Yes.

21 **MR. SCOTT:** Your Honor, we had -- we had folks
22 working all night. I was not one of them all night, but -- so
23 there may be some glitches. And I apologize.

24 **THE COURT:** I didn't see it, but that's all right.
25 That's one I can remember, without having to look at

1 architecture and things like that.

2 **MR. SCOTT:** Yes.

3 **MR. MICK:** Perhaps on the fourth page of the set in
4 front of you?

5 **THE COURT:** Oh, really?

6 Well, there you are, yes. Okay.

7 **MR. SCOTT:** What is the page?

8 **THE COURT:** It's Page 4 in ours, yes. It's a
9 revision, I guess. It's the same picture, but --

10 **MR. SCOTT:** Hmm.

11 **THE COURT:** Okay.

12 **MR. STEER:** Your Honor, perhaps I can clarify what's
13 happened here. Counsel has inserted some excerpts of text, and
14 that has changed the numbering from what we received at 2:30 in
15 the morning.

16 **MR. SCOTT:** We are in agreement that demonstratives
17 were exchanged, but not text, or specifications, or summaries
18 of testimony.

19 **THE COURT:** Okay. Fine.

20 (Off-the-Record discussion)

21 **MR. SCOTT:** Is that the binder, Your Honor, that I
22 gave you? Or is that --

23 **THE COURT:** No, no. This is -- this is a set.

24 **MR. SCOTT:** Oh, that's the problem. The complete set
25 is in the binder, I believe, may be below your copy of the

1 report up there.

2 **THE COURT:** Oh, okay. Maybe so.

3 **MR. SCOTT:** I should have been more observant, Your
4 Honor.

5 **THE COURT:** That's all right.

6 **MR. SCOTT:** This will be No. 18.

7 **THE COURT:** I have more sets than I need. Okay.

8 **MR. SCOTT:** Page 18. Thank you so much.

9 **BY MR. SCOTT:**

10 **Q** Professor Bishop, going on, in Section 1.8 of the
11 procedural specifications, there's a reference to Recordable
12 Media Playback Control.

13 Is there a subsection describing how to implement
14 that protective function?

15 **A** Yes, sir, there is.

16 **Q** And we look next, 6.2.1.5, can you just, in your own
17 words, in summary, describe what is the issue addressed by the
18 recordable media playback control?

19 **A** I should not be able to take a DVD that is protected with
20 CSS, burn a copy to a DVD -- another DVD that is write-once or
21 rewritable, and then expect that to be played.

22 **Q** In any CSS player?

23 **A** In any CSS-compliant player.

24 **Q** So this is the concern about burning DVD discs that can
25 just be, then, distributed like they're retail?

1 **A** Yes, sir.

2 **Q** In 1.8, there's a reference to Digital Output Restrictions
3 and Protections. Is there a subsection addressing that
4 function as well?

5 **A** Yes, sir, there is.

6 **Q** 6.2.1.2, what is this generally about?

7 **A** What this says is when you play a DVD, you have to honor
8 the specifications that control how the signals are to be sent
9 out to the TV or player.

10 **Q** Okay.

11 **MR. MICK:** With my apologies, Your Honor, can we ask
12 again for a proffer with respect to where any of this is in the
13 witness's report?

14 **THE COURT:** You -- you may, but let me just --

15 **MR. SCOTT:** Your Honor, I believe it's in the same
16 paragraph identified before. Section 1.8 is an outline for
17 Section 6.2.

18 That's exactly what I'm showing, is -- 1.8 leads to
19 6.2 in the subparagraphs. You know, we're -- here we're --

20 **THE COURT:** Now, is -- 6.2.1 is on Page 40 of his
21 report, there's reference to it. But I don't know about .2.

22 **MR. MICK:** Yes. And in Page 40. He says, "I
23 therefore understand that this section does not apply to the
24 RealNetworks code," and that's all that he says with respect to
25 6.2.1, Your Honor. And that's my point, exactly.

1 **MR. SCOTT:** Your Honor, I think the point Counsel is
2 actually making is that we needed to have every detail in the
3 report that's going to be covered, including responsive
4 testimony.

5 We had an agreement back when -- January, when the
6 expert reports were being provided, that they would state the
7 substantive testimony and the main support for them. Not every
8 little detail.

9 And I did not -- did not expect this kind of
10 challenge, or I would have gone through these lengthy reports
11 to find some reference to a section that's probably in there
12 someplace, if not in the deposition.

13 We are showing the structure of the CSS
14 specifications as they relate to the proper interpretation. We
15 are not delving into the technical meaning of these
16 subsections.

17 And, I think, I think that Counsel is asking too
18 much, that every illustration that I use in the direct
19 testimony that I think would be helpful to the Court needs to
20 be somewhere in the disclosures that were supposed to be much
21 more general.

22 **MR. MICK:** Your Honor, if I might respond, what's
23 happening here is they are using this witness to construct a
24 completely different argument with respect to interpreting the
25 specs, when this witness has not made that interpretation

1 argument, nor any of the cited subsection points in his report.

2 This is simply a new contract interpretation --
3 specification interpretation argument that they are putting in
4 through the otherwise able testimony of Professor Bishop.

5 **MR. SCOTT:** Well, I see now, Your Honor, what's
6 happening is we are getting substantive argument injected in
7 what is not a new argument. I am looking at the --

8 **THE COURT:** Okay, 6.2 -- hold on just a moment.

9 **MR. SCOTT:** Yes.

10 **THE COURT:** 6.2.1 discusses DVD players, generally.

11 **MR. SCOTT:** Uh-huh, yes.

12 **THE COURT:** And then, that references the analog
13 outputs. And then there are -- this 6.2 -- 6.2.1.2 is the
14 digital outputs.

15 Now, in some more specific way, does he reference
16 that in this testimony?

17 **MR. SCOTT:** I do not know that his testimony
18 references this specific subsections. I've not had time to go
19 through it, with that in mind.

20 I would state what my point is here, Your Honor,
21 which I think is compatible with -- with what is the substance
22 of his disclosed testimony. May I do so?

23 **THE COURT:** Well, how, how deeply is he going to go
24 into that?

25 **MR. SCOTT:** He's not going to. My whole point is, we

1 are talking about the interpretation of the CSS provisions,
2 we're all familiar with digital-to-digital copying, other
3 phrases, in light of how these are structured.

4 The point about these subsections is not the detailed
5 content of them, but rather, that the specifications address
6 these issues when they mean to address them. It has a whole
7 long section on copy protection controls.

8 And, the interpretation of the specs given by the
9 Defendants in this case is not consistent with the fact that
10 the spec writers knew how to put it in, if they meant to put it
11 in.

12 **MR. MICK:** Your Honor, the difficulty is that the
13 witness is now going to apparently say what these sections
14 mean, and why they were put in there. And he has given us no
15 notice that he was going to testify with respect to those
16 opinions. All he has said about these sections is they do not
17 apply to the RealNetworks code.

18 And if they don't apply, we should just move on and
19 skip all this. If they have some relevance that Mr. Scott
20 wishes to propose, then plainly, that relevance is outside the
21 scope of Professor Bishop's testimony.

22 **MR. SCOTT:** Your Honor, I'm noticing in the -- in the
23 main expert report --

24 **THE COURT:** Okay, yes?

25 **MR. SCOTT:** Paragraph 203 --

1 **THE COURT:** Yes.

2 **MR. SCOTT:** -- states that the copy protection
3 functions (As read):

4 "...are defined in Section 1.81 of this
5 specification, Part One of that definition
6 is the regional playback control" -- which
7 you already covered, in terms of
8 identifying it's there --

9 **THE COURT:** Uh-huh.

10 **MR. SCOTT:** (As read):

11 "...the portable media playback
12 control," which we have already covered,
13 "and digital and analog output instructions
14 and protections," and the sentence
15 continues.

16 The only point that we are making that is those are
17 not only included here, but they are covered in detail. This
18 section on the screen right now, 6.2.1.2, implements the
19 digital output restrictions and protections I just read from
20 that language of his report.

21 He is merely showing that it's addressed there in
22 detail. He is not going in the technical meaning of that
23 paragraph at all.

24 **THE COURT:** Well, but, but what he's saying here
25 on -- you know, with respect to -- can I just call it Point 2

1 right now, 6.2.1.2?

2 **MR. SCOTT:** Yes.

3 **MR. MICK:** Yes, Your Honor.

4 **THE COURT:** And he's referencing then Point 3 and
5 saying, you know, notwithstanding provisions of Point 3, only
6 to the following digital outputs, et cetera.

7 And it seems to me that that is somewhat different
8 from what is in the body of his report. At least the part that
9 you called my attention to.

10 **MR. SCOTT:** All right.

11 **THE COURT:** So --

12 **MR. SCOTT:** I may be able to just -- just cut to the
13 chase here, and --

14 **THE COURT:** If you can cut to the chase without -- so
15 long as the chase was in the report. Okay?

16 **MR. SCOTT:** You know, on the basis of the -- the
17 sentence I just read (Indicating), in Paragraph 2-point -- 203,
18 let me ask the following.

19 **THE COURT:** Uh-huh.

20 **BY MR. SCOTT:**

21 **Q** Paragraph 203 of your report referred to, quoting Section
22 1.8 of the procedural specifications, said there were
23 provisions concerning protected digital outputs.

24 Is there such a section in the specs?

25 **A** Yes, sir, there is.

1 Q Section 1.8, which you quoted in your report, Paragraph
2 203, refers to "protective functions for analog output
3 restrictions and protections."

4 Is there such a section in the specifications?

5 A Yes, sir, there is.

6 Q In detail?

7 A Yes, sir.

8 Q Part 2 refers to -- of Paragraph 1.8, refers to the
9 internal data and signal restrictions and protections required
10 by 6.2.4.2(2). Is there such a protection?

11 A Yes, sir, there is. That's it (Indicating).

12 Q Okay. It refers to data and signal restrictions and
13 protections under Section 6.2.5.2(b)(ii) and (iv). Is there
14 such a provision?

15 A Yes, sir, there is.

16 Q In detail?

17 A It has some detail, yes, sir.

18 Q And that's the licensee's hardware implementation,
19 correct?

20 A Yes, sir.

21 Q Going back to the top of Section 6.2, which is frequently
22 mentioned in your reports, you see there's a reference to "copy
23 protection with respect to access to, playback of, and
24 transmission of CSS data and/or analog signals."

25 Do you see that?

1 **A** Yes, sir.

2 **Q** And we've talked about some, now, related to access of
3 such data, and some related to transmission.

4 In terms of playback of CSS data, is there any
5 provision in Section 6 of the procedural specs related to a
6 requirement, for example, that the DVD disc be in the tray
7 during playback?

8 **A** No, sir.

9 **Q** Is that a requirement that you, as a spec writer, could
10 have implemented if it was your intent?

11 **A** Yes, sir.

12 **Q** How would you do it?

13 **A** When -- during playback, the DVD disc must be in the DVD
14 disc -- DVD video disc drive.

15 **Q** Implementing that kind of requirement, were there one,
16 would there be ways you could verify that in terms of writing
17 software?

18 **A** Yes.

19 **Q** What would you do?

20 **A** As an example, you could periodically query the disc drive
21 mechanism to see if the DVD were in there. There are a number
22 of different ways you could do it in software.

23 **Q** Is there any such provision or requirement in these
24 specifications?

25 **A** Not that I could find, sir.

1 Q In any of the CSS specifications, that you could find?

2 A No, sir.

3 Q I'm going to move on. I'm not going to spend time on the
4 proposed amendment, one of our exhibits.

5 I want to change subjects now to the question of
6 whether or not the RealDVD product complies with the CSS
7 specifications, as written.

8 Would you tell the Court, please --

9 MR. MICK: Have we reached the point, Mr. Scott,
10 where the issue of closing the courtroom needs to be addressed?

11 MR. SCOTT: I appreciate the reminder. Let me just
12 give the Court some background first, and then -- I'm trying to
13 make it as precise as I can.

14 THE COURT: Yes.

15 MR. SCOTT: Thank you for the reminder. We're
16 getting close. This exhibit is still our old friend, Figure 4.
17 And we have seen this before.

18 BY MR. SCOTT:

19 Q What did you actually do to determine whether or not
20 RealDVD, Vegas and Facet, complied with the CSS specs?

21 A I went through the code, and I went through the
22 specifications which describe the steps the code is to follow.
23 And then I checked that those steps were in the code. And then
24 followed them.

25 Q And in doing so, did you treat the Vegas and Facet

1 products as being subject to the PC requirements or the DVD
2 player requirements?

3 **A** The PC video requirements, the PC requirements.

4 **Q** Including authentication?

5 **A** Including authentication and bus encryption.

6 **Q** And, what was your overall conclusion?

7 **A** That they complied with the -- with the exception that I
8 mentioned earlier.

9 **Q** The minus on the A?

10 **A** The minus on the A.

11 **Q** At an overview level, we're looking at Figure 4 from the
12 general specifications the Court has seen before, called
13 Architecture.

14 By the way, is Figure 4, this architectural diagram,
15 something from which you can write code?

16 **A** No, sir, it's not.

17 **Q** What, what's the difference between this kind of diagram
18 and what you need to write code?

19 **A** Okay. Without going into detail, there are some boxes
20 here. But what's going on within the boxes is not described.

21 **Q** That's what you find --

22 **A** Not in this -- in this figure.

23 **Q** Okay.

24 **MR. SCOTT:** Your Honor, I'm pausing to make sure I
25 cover everything I can in open court first. I think there is

1 one more subject I can do first.

2 **THE COURT:** Fine.

3 **MR. SCOTT:** Just, make sure that these are in the
4 right order for doing that.

5 Okay.

6 **BY MR. SCOTT:**

7 **Q** In this case, Dr. Kelly has contended that the arrows
8 shown from one box to another in Figure 4 should tell us that
9 the specification intends a direct path along the line of the
10 arrow, with data going nowhere else in between.

11 Do you agree with that?

12 **A** No, sir, I do not.

13 **Q** At a general level, before we get into any kind of
14 examples, can you explain to the Court what it is about this
15 diagram that leads you to -- this type of diagram, leads you to
16 disagree with Dr. Kelly in saying that arrows here are direct
17 paths? No departure down -- down an ally? I mean, nothing.

18 **A** In a general architecture diagram like this, the arrows,
19 the end of the arrow without the arrowhead says that something
20 is coming out of the box. And after -- and will wind up as
21 being the input, or going into the box where the arrowhead is.

22 I'm not sure I'm saying this well, but --

23 **Q** I heard you say "input" and "output."

24 **A** Yes. It matches up inputs and outputs, basically.

25 **Q** Let me try it again. What do the arrows show. Let me ask

1 it that way. What do -- what do the arrows show?

2 **A** The arrows show that the box where the arrowhead hits has
3 to receive some information from the box where the arrow
4 originates.

5 **Q** So, it -- okay. The -- the receiving box is receiving an
6 input that's an output from the previous box.

7 **A** Exactly.

8 **Q** Does the arrow, itself, tell you whether that's all that
9 happens in between?

10 **A** No. It's possible that the data may be transformed in
11 some way, and then untransformed when it hits the arrowhead, so
12 to speak.

13 **Q** Do you have some examples within these specs, to show the
14 Court that?

15 **A** Yes.

16 **Q** Before do you that, will your discussion include some
17 references to different types of memory?

18 **A** I believe it will, yes.

19 **Q** We don't need to change the courtroom for that.

20 Would you just outline for the Court, what are the
21 kinds of memory that you will be referring to? What kinds of
22 memory are there?

23 **A** There are several different kinds of memory. There is
24 what's called RAM. If you have ever looked inside a computer,
25 there are these little black things stuck on a board. That's

1 one kind of memory.

2 Then there are DVD discs, hard drives, things like
3 that. That's another kind of memory.

4 And then there are -- there's still other media
5 that's a third type of memory, and then there's very fast
6 memory actually within the computer chip, itself. So, there
7 are many different kinds.

8 **THE COURT:** Excuse me. You said "other media." What
9 is --

10 **THE WITNESS:** Tape, for example. Computer tapes,
11 things like that.

12 **THE COURT:** I see. Okay.

13 **BY MR. SCOTT:**

14 **Q** If I can take it in a slightly different order, the very
15 fast memory inside a chip, that is sometimes called --

16 **A** Those are registers.

17 **Q** Called registers. And that's where operations are going
18 on, working on the data?

19 **A** Typically, yes.

20 **Q** And then you said "RAM." Is that also main memory?

21 **A** That would -- main memory is typically RAM.

22 **Q** And that's different from the hard drive.

23 **A** Yes, sir, it is.

24 **Q** And then, you refer to "drive," or I think you did, or
25 disc, hard disc?

1 **A** Hard disc, yes.

2 **Q** Okay. And, is there a relationship between these kinds of
3 memory and how the operating system moves data around?

4 **A** Yes. Conceptually, the memory is what -- forms what is
5 called a hierarchy. And, when you do operations, you want the
6 data in the memory that's easiest to access.

7 So, you will keep, for example, as much of the
8 program as you can in main memory, because that's fairly quick
9 to access.

10 When you start trying to access particular pieces of
11 data, you would move it into the registers because it's even
12 faster there.

13 If there are parts of the program or the thing that
14 you're running that aren't going -- that aren't being used for
15 a while, then the operating system can move it out and copy it
16 to the hard drive, and then use the memory for something else.
17 And then later on it can bring -- copy again from the hard
18 drive back into memory.

19 So, this sort of thing is under the control of the
20 operating system, and it's very common.

21 Was that clear?

22 **Q** Let's -- let's follow up a little bit.

23 Why does the operating system move things between the
24 different parts of memory, all kinds of memory?

25 **A** To make the computer -- to make sure that the programs can

1 execute as efficiently as possible.

2 And if you're not using a program, it's taking up
3 space and memory that something else could be using, so the
4 operating system would move it out.

5 The other thing, too, is there's an idea of what's
6 called virtual memory. If you only have a certain amount of
7 memory in the computer, basically the operating system can
8 trick whatever's running into thinking that there's a lot more
9 there. And in order to be able to use that extra memory, it
10 has to juggle between the disc and the memory.

11 And, that's the other reason the operating system
12 needs control.

13 **Q** We're not talking here about RealDVD as a software
14 program, are we?

15 **A** We're talking here about computers and operating systems
16 in general.

17 **Q** Like the Windows operating system?

18 **A** Yes.

19 **Q** Or the Linux operating system?

20 **A** Windows, Linux, FreeBSD, Mac, whatever you want.

21 **Q** And what software in a computer controls the allocation of
22 data between the different parts of memory?

23 **A** The operating system would control the arrangement of data
24 in memory.

25 **Q** Do software programs typically specify, "You may only put

1 my data in one kind of memory, but not the other"?

2 **A** No, sir. They don't.

3 **Q** Is that common at all?

4 **A** That's extremely rare.

5 **Q** What is the issue about doing that?

6 **A** The issue is if you try to -- if you do that, then you
7 begin to lock up what the -- you begin to reserve memory, so
8 the operating system can't use it, and it can't do this
9 rearranging as it needs to.

10 Essentially what you will do is cause the system to
11 slow down, you'll -- it will work much less efficiently. And,
12 basically, if that -- and basically, the systems would -- well,
13 the operating system wouldn't be able to make the decisions any
14 more. So, things would stop working.

15 **THE COURT:** Are there any operations at all -- or
16 maybe that's a term of art I shouldn't use. Are there any
17 circumstances at all when that kind of limitation is preferred
18 by a user?

19 **THE WITNESS:** I'm sorry, Your Honor. You mean when
20 you would want it in memory?

21 **THE COURT:** Essentially lock -- have the effect of
22 locking it up.

23 **THE WITNESS:** The only systems I've seen where that's
24 done is on what are called realtime systems, which are
25 monitoring physical phenomena. And the problem there is when

1 the phenomena occurs -- for example, if you're measuring
2 intensity of lightning, when the lightning bolt hits, you can't
3 have the system say "Okay, wait a minute, let me go ahead and
4 load the right program," because by the time it's hit, by the
5 time you're done, the measurement can't be made.

6 So in that case, you would use a special-purpose
7 system which was designed specifically to keep that in memory
8 at all times. But on a personal computer, no. It's extremely
9 unusual, to say the least.

10 **THE COURT:** So, for example, some of this software
11 for examining traffic patterns. You might want to use it for
12 that.

13 **THE WITNESS:** If the data had to be processed the
14 instant it hit the machine, then that's typically -- then you
15 might do that. But, you would normally use the special-purpose
16 computer to gather that sort of information specifically for
17 that reason.

18 **THE COURT:** Okay. It's another case.

19 **THE WITNESS:** Oh, dear.

20 **THE COURT:** You get information where you can.

21 Right?

22 **THE WITNESS:** You would make a good security person,
23 Your Honor.

24 **BY MR. SCOTT:**

25 **Q** Given the rarity of the -- I'm not going to say this

1 right. Let me back off.

2 You're just saying you don't often see operations
3 locked to one form of memory out in practice. Did I capture
4 that about right?

5 **A** It's highly unusual.

6 **Q** It's a bolt of lightning.

7 I'm sorry.

8 Given that that is unusual, if not extremely unusual
9 and rare, if that were the intent of a specification writer, do
10 you think it would or would not be stated explicitly in the
11 specs?

12 **A** It would be stated explicitly.

13 **Q** In the Real -- strike that.

14 In the CSS -- as you read the CSS specifications, do
15 they permit the operating system, whichever it may be, Linux or
16 Windows, to allocate memory without such a restriction or
17 lockdown?

18 **A** I'm sorry, I'm not sure I understand the question.

19 **Q** Do you see anything in the CSS specs to require a lockdown
20 that some -- any operation or data must stay in one part of
21 memory, and not go someplace else?

22 **A** No, sir, I don't.

23 **Q** For example, you referred to virtual memory. And that's
24 where the operating system might send information from the main
25 memory to the hard drive?

1 **A** Virtual memory is more the process, but it's a part of
2 doing that, yes. As a part of maintaining virtual memory, it
3 may very well do that.

4 **Q** Those are sometimes called page files?

5 **A** Yes, sir.

6 **Q** Is there anything in the CSS specs that you've seen that
7 addresses, one way or the other, the use of virtual memory or
8 page files?

9 **A** No, sir. There is not.

10 **Q** As a person who writes software to specification, and
11 teaches students how to write software to specification, would
12 you write a lockdown for any part of the DVD data, based upon
13 those specs?

14 **A** No, sir, I would not.

15 **Q** Why not?

16 **A** Because, number one, it is not in the specifications that
17 I must do so.

18 Number two, it is not something that would normally
19 occur to a programmer who is writing to specifications. And
20 number three, doing that would interfere with what -- the
21 operating system with Windows running normally.

22 So it's something that one wouldn't do, or at least I
23 wouldn't do.

24 **MR. SCOTT:** Your Honor, this is the point at which I
25 need to go into things a little more detail. My estimate right

1 now, I'm running a little behind, but about 30 minutes
2 remaining in direct. I'll be spanning lunch. And --

3 **THE COURT:** Maybe this is a good time to break for
4 lunch, because it is ten to 1:00, and things do tend to close
5 up around here a little early.

6 So, can we say that we will reconvene at 2:00? Is
7 that agreeable?

8 **MR. MICK:** Yes, Your Honor.

9 **THE COURT:** Okay. And you may step down. Do not
10 discuss your testimony with any other person who may be
11 witnesses until the proceedings are over.

12 **THE WITNESS:** Yes, Your Honor.

13 **THE COURT:** And then, you are immediately going to
14 proceed when we resume with matters for which we are going to
15 have to exclude those that are not entitled to be privy to
16 trade secrets?

17 **MR. SCOTT:** Yes, I will. And I fear that it will --
18 I don't fear -- it's likely to be the bulk of my remaining half
19 hour, if that helps people guide their schedules.

20 **THE COURT:** Okay.

21 **MR. SCOTT:** I make that estimate in good faith.

22 **THE COURT:** Fine. So come back around 1:30 -- or
23 2:30, rather. And, you have -- no, all of you come back at
24 2:00. But those people who otherwise may be excluded from the
25 courtroom, come back around 2:30 and check in.

1 And so, you are each conducting -- Mr. Mick and
2 Mr. Singla, conducting cross-examination?

3 **MR. MICK:** That's correct, Your Honor.

4 **MR. SINGLA:** Mr. Mick will be taking the lead.

5 **THE COURT:** I see. Fine.

6 **MR. MICK:** I'm going first, Your Honor.

7 **THE COURT:** Okay. Okay. So, we will see you then at
8 2:00.

9 **MR. SCOTT:** Thank you.

10 **MR. MICK:** Could we make a request, Your Honor? We
11 have this sort of misnumbering-of-the-slides issue because of
12 the difference between this morning's version --

13 **THE COURT:** Take the next five minutes or whatever to
14 get it straightened out.

15 **MR. SCOTT:** We will straighten it out. I apologize,
16 again. It was the wee hours, so --

17 **THE COURT:** Okay, thank you. Have a good lunch.
18 We'll see you at 2:00.

19 (Recess taken from 12:54 to 2:11 p.m.)

20 (Pages 682 through 734 under seal. Nothing omitted.

21 Nothing deleted.)

22

23

24

25

1 **THE COURT:** Mr. Mick.

2 **MR. MICK:** Thank you, Your Honor. It will just take
3 me a minute.

4 (Pause)

5 **THE COURT:** Now, is there some part of your
6 examination at the outset that does not need to be conducted in
7 a sealed courtroom?

8 **MR. MICK:** Give me a second, Your Honor. I'll see
9 how far I go. A lot of this has to do with the scope of the
10 witness's response, obviously. But I think probably -- I'm
11 probably two-thirds of the way through before I get to material
12 that I suspect the witness might respond in a confidential
13 manner. So how you treat that --

14 **THE COURT:** When you say "two-thirds," what are you
15 talking about in terms of time, approximately?

16 **MR. MICK:** 30 minutes.

17 **THE COURT:** 30 minutes.

18 Mr. Singla, do you have some examination that can be
19 done, you know, without the courtroom being sealed?

20 **MR. SINGLA:** Yes, Your Honor.

21 **THE COURT:** About how long will yours be?

22 **MR. SINGLA:** I would expect -- depends on what,
23 exactly, Mr. Mick asks. But I would expect less than half an
24 hour. And I don't think my questioning would require the
25 courtroom to be sealed.

1 **THE COURT:** At all?

2 **MR. SINGLA:** I don't think so.

3 **MR. MICK:** I actually think there's a decent chance
4 mine will not either.

5 **THE COURT:** Why don't we proceed with yours. When
6 you get to the point where we may need to seal the courtroom
7 you can let us know. And maybe what we could do -- I know it
8 does cut things up a bit -- we could proceed with Mr. Singla
9 and then finally close the courtroom for anything you have or
10 anything that he ends up having that has to be in a closed
11 courtroom, okay.

12 **MR. MICK:** That sounds fine, Your Honor.

13 **THE COURT:** Okay. Do you want to let people know
14 they can come back in. We have our own self-appointed marshal
15 back there. There you go.

16 **MR. MICK:** One of the things that I would like to do
17 to address that issue is, when we are dealing with issues from
18 the specification, I'm going to work off documents with the
19 specifications. And last week, at the outset of the hearing, I
20 presented the Court with a spiral-bound copy of the Pak
21 declaration which contained those specifications.

22 **THE COURT:** Yes, I have that. I've been referring to
23 that as we've been going through the specifications.

24 **MR. MICK:** I would like to give the witness another
25 copy of the Pak declaration, so we are all matched up with

1 respect to the documents. Make sure I've got the right one.

2 **THE COURT:** Fine.

3 **MR. MICK:** Let's make sure I've got the right one.

4 **THE COURT:** You may proceed.

5 **MR. MICK:** Thank you.

6 **CROSS EXAMINATION**

7 **BY MR. MICK:**

8 **Q** Good afternoon, Professor Bishop.

9 **A** Good afternoon.

10 **Q** I understand you teach computer security at UC Davis?

11 **A** Among other things, yes.

12 **Q** How long have you been a professor?

13 **A** I have been a full professor since 2004, and I have been
14 on the faculty of UC Davis since 1993.

15 **Q** Sixteen years at Davis, and some time before that?

16 **A** Six years at Dartmouth. And yes, I believe about 16 years
17 at Davis.

18 **Q** More than 20 years as a professor.

19 **A** Yes.

20 **Q** You're not a lawyer, though.

21 **A** Good Lord, no.

22 **Q** Putting aside career advice, you're not expressing any
23 opinions here today on copyright law, correct?

24 **A** Absolutely not.

25 **Q** And you're not expressing any opinions on the legal

1 interpretation of the license agreement that was signed by
2 RealNetworks, correct?

3 **A** Absolutely not.

4 **Q** Now, when I asked you whether you taught computer security
5 at UC Davis, you said, "amongst other things." What are the
6 scope of your academic specialties?

7 **A** My main academic specialty, of course, is computer
8 security. I also teach programming, a little bit of machine --
9 I've taught machine architecture and operating systems. And
10 software development. I'm sorry.

11 **Q** Would you consider cryptography to be your field, sir?

12 **A** Yes.

13 **Q** Would you consider yourself an expert in decryption, or
14 the means by which someone would attack an encryption scheme?

15 **A** I know a fair amount about it, yes, sir.

16 **Q** In the examination a few minutes ago, there was some
17 discussion of a page in your rebuttal report. Do you have your
18 rebuttal report up there, sir?

19 **A** No, I don't believe I do.

20 **Q** I can remedy that for you. This is a copy of your
21 deposition transcript, and I believe your rebuttal report is
22 marked as Exhibit 651 at the back of that.

23 (Witness examines document)

24 **A** Yes, sir.

25 **Q** Okay. Would you take a look at Paragraph 43, on Page 13

1 of your rebuttal report.

2 **A** Yes, sir.

3 **Q** There is a statement in quotes at the top, which is
4 derived from Mr. Schumann's report, do you see that?

5 **A** Yes, sir.

6 **Q** And, in his quotation he says (As read), "Real's
7 implementation of AES-128 can be attacked in a number of ways
8 to expose the keys and/or break the encryption."

9 Do you see that statement?

10 **A** Yes, sir.

11 **Q** Now, you respond to that statement with a couple of
12 sentences there. I want to ask you this much simpler question:
13 In your professional opinion, sir, is the statement correct or
14 incorrect?

15 **A** Mr. Schumann's statement?

16 **Q** Yes. That Real's implementation of AES-128 can be
17 attacked in a number of ways to expose to keys and/or break the
18 encryption.

19 **A** As stated that way, no, sir, I don't agree with it.
20 Anything can be attacked, but the likelihood of success is --
21 here is nonexistent.

22 **Q** You were asked on direct examination, is it a meaningful
23 question to take how long it would take to break AES-128. Do
24 you recall that?

25 **A** Yes, sir.

1 Q And your response was "The best answer I could give to
2 that is how long would it take to try the keys."

3 Do you recall that?

4 A Yes, sir.

5 Q When you say "how long would it take to try the keys,"
6 you're referring to what is, in effect, a brute-force attack on
7 the cipher, right?

8 A That in fact is the technical term.

9 Q But a brute-force attack on the cipher isn't the way
10 somebody would go about trying to get these keys, is it, sir?

11 A It's one way you would go about getting -- trying to get
12 them.

13 Q Mr. Schumann, in his testimony yesterday, I believe,
14 indicated that that would not be the way anybody would try it,
15 probably for the reason that you, yourself, identified, and
16 indicated that the way somebody would go about this would be to
17 attempt to find the keys through some other vehicle.

18 If you were engaged, professionally, to try to obtain
19 the keys to Real's AES-128 encryption, and you had available to
20 you the software that was performing the encryption on a system
21 that you were free to test as it performed it, how would you do
22 it?

23 A Having the software for an AES implementation doesn't help
24 in this context, because the -- the way AES works is known.
25 The only thing -- there are techniques, for example, that

1 would -- that with the DES have proved fruitful, where you
2 encrypt certain things in such a way that the encrypted
3 messages have specific differences. And from that, you can
4 work backwards. That's called differential cryptanalysis. The
5 AES was specifically designed to make that type of attack
6 useless.

7 If I were professionally engaged to get the keys --
8 well, first of all, I wouldn't do it. But assuming that I
9 would -- can we say an anonymous attacker is to do this?

10 Probably the direct approach would be to try to rig
11 the machine on which the software was actually running, try to
12 tamper with it in some way which would get you access to the
13 keys there.

14 The problem is that, since we're talking about
15 RealDVD specifically here, the software's protected. First of
16 all, it does a fair amount of scrambling, it's obfuscating
17 things.

18 But also, it's protected by a commercial-grade -- I
19 guess the right word is obfuscator, security mechanism,
20 whatever -- that first of all scrambles the instructions, so
21 that it's very difficult to follow them. It uses encryption
22 and a number of other techniques to do that.

23 When the program starts, it checks for running under
24 a debugger, which would allow me to examine memory. And if you
25 see that -- if it sees that, it immediately says, "Sorry, I'm

1 not going any further," and stops.

2 So, the only vector that would have any chance of
3 working would be somehow to get into that system, and access
4 the RealDVD process as it was running. And professionally, I
5 don't see any way that -- professionally, I would call that
6 extremely difficult.

7 **Q** Is there a name in the field, sir, for attacks that use
8 access to the hardware while the system is running in order to
9 analyze the physical characteristics of the memory or the
10 processor to challenge an encryption system?

11 **A** Are you thinking of a van Eyk device?

12 **Q** I'm thinking of the generic field of side-channel attacks.

13 **A** What -- okay --

14 **Q** Let me cut to the chase here, sir.

15 **A** Yes.

16 **Q** Are there published papers, more than one, in which people
17 have been able to crack AES-128 and obtain the keys on using
18 side channel timing and memory attacks?

19 **A** I know the type of channel you're talking about are power
20 differential or timing differential attacks. I do not know
21 whether or not those have been used against AES. They have
22 been used against others.

23 In order for those to work, you need access to the
24 device, and you also need the -- you also need to control the
25 device quite rigorously. So the examples that I've seen have

1 all been done in a laboratory, and in essence have been
2 working -- I haven't seen any papers on AES-style attacks.
3 They may be there, I don't know, but I have not seen them. I
4 have seen them on other crypto systems. Side channel attacks,
5 to call them difficult is to put it mildly.

6 **Q** Let me change topics. In your direct examination, you
7 indicated that in your experience, if the specifications for
8 software aren't precise, students won't know what they are
9 supposed to do. Do you recall that testimony?

10 **A** Yes.

11 **Q** Has that ever happened to you?

12 **A** Yes. Too often.

13 **Q** I'm -- you say "Too often."

14 **A** When I was learning to write homework exercises or other
15 types of specifications, I often fell into that trap until I
16 got more skilled.

17 **Q** So, notwithstanding the fact that you have been teaching
18 for more than 20 years, you have a degree in mathematics, two
19 degrees in computer science, you, yourself, have written
20 specifications that were ambiguous or imprecise in some way?

21 **A** In the early part of my teaching, yes. That's part of
22 learning.

23 **Q** When that happened to you, were you trying to confuse your
24 students? Or did you have something specific in mind that you
25 intended to do, and you just failed to get the words right in

1 the spec?

2 **A** I doubt that I was trying to confuse anyone. I -- so I
3 would suspect that it's the latter, but I don't remember my
4 thought processes at the time.

5 **Q** When that happened, did your students come to you and ask
6 you what you meant?

7 **A** Usually not.

8 **Q** If you told students what your intent was with respect to
9 your software specifications, would you expect them to then
10 implement the specification in a manner that was consistent
11 with your intent?

12 **A** I would expect them to follow the specification as
13 written. If it -- we're talking about a high-level intent
14 here, but if it communicated the high-level intent in the sense
15 of "I want you to do this, A, B, C and D and that will do it,"
16 then yes.

17 If there was ambiguity or if the specifications did
18 not describe that higher-level intent, then no. I mean, you go
19 to the specifications, and follow what they say.

20 **Q** Fair enough, sir. Let me talk about Vegas and Facet.
21 Vegas and Facet are terms that you understand to refer to
22 different versions of the RealDVD product that has been
23 designed by RealNetworks. Correct?

24 **A** I'm not sure whether they're different versions of the
25 same product or different products. But, they are two

1 programs, one of which works -- yeah. They're related.

2 Q Do they both bear the trade name RealDVD?

3 A To be honest, I don't know. They're both done by
4 RealNetworks. But I -- not familiar with how they're
5 trademarking or whatever.

6 Q Let's talk about Vegas first. Vegas is a software
7 application designed for the Windows operating system, right?

8 A Yes, sir.

9 Q How did you obtain a copy of it?

10 A Of the software or the hardware? I'm sorry, the software
11 or the source code?

12 Q The software.

13 A Real gave it to me.

14 Q In what form?

15 A It was -- I don't remember if it was a CD or a DVD, but it
16 was one of the two.

17 Q And what resided on the optical media?

18 A It was a Windows executable that you started up, and it
19 did the install.

20 Q A single executable file?

21 A It may have been multiple executable files triggered by a
22 single one and I just clicked, double-clicked on one and then
23 it ran.

24 There may have been others that were involved, but --

25 Q Did you examine how the program operates?

1 A Do you mean, did I try it?

2 Q Yes.

3 A Yes.

4 Q Are you familiar with how it works?

5 A Yes.

6 Q And, what it does?

7 A Yes.

8 Q Okay. You examined the source code, too, I presume.

9 A Yes.

10 Q How about Facet? Have you examined the prototype for

11 Facet?

12 A I was shown a prototype, yes, sir.

13 Q When were you shown a prototype?

14 A I believe it was in the middle of last week, but I

15 can't -- it was some time within the last two weeks. But I

16 can't swear to the exact date.

17 Q When you were deposed earlier in this case -- let me back

18 up. You remember your deposition, right?

19 A Yes, sir.

20 Q It's one of those experiences people tend to remember.

21 A (Nods head)

22 Q The testimony you gave was under oath, correct?

23 A Yes, sir.

24 Q And you, in fact, told the truth in your deposition,

25 correct?

1 **A** As far as I am aware. I certainly was trying to?

2 **Q** Was your testimony accurate, to your knowledge?

3 **A** Yes, sir.

4 **Q** At that point in time, you had not seen the Facet
5 prototype box, correct?

6 **A** That's correct.

7 **Q** At that point in time, you had studied only the software
8 for Facet. Right?

9 **A** Well, I had also been given some -- I think it was
10 marketing literature which showed a picture of the box, and had
11 some text on it that I don't remember.

12 But beyond that, I had not seen the box.

13 **Q** All of the functionality associated with the Facet product
14 is built into the software that you saw, though, right?

15 **A** Yes. I only analyzed the CSS-related components in depth,
16 but yes, I got the full source code, as far as I'm aware.

17 **Q** Is the user experience of how the products function
18 different between two products?

19 **A** Well, in one case I'm running it on my PC, and in another
20 case there's this dedicated box that is designed only to run
21 Facet.

22 I'm trying to remember differences in the user
23 interface, but I don't remember them offhand. I did not
24 explore that thoroughly.

25 **Q** Is it true that both products allow users to make copies

1 of DVDs to a hard drive?

2 **A** They allow users to make -- to take the keys and the A/V
3 data, and store that on the hard drive, properly encrypted, or
4 encrypted using AES.

5 **Q** And, to the average consumer user, that means he gets to
6 play back the movie from the hard drive. Right?

7 **A** I'm not sure what you mean, "to the average consumer."
8 You can play it back to the hard drive, yes, sir.

9 **Q** You've read the expert report prepared by Dr. Kelly in
10 this case, right?

11 **A** Yes, sir, I did.

12 **Q** Was Dr. Kelly's description of the operation and
13 functioning of the Vegas product accurate?

14 **A** I would have to refresh my memory on what he said.

15 **Q** Okay. Was his description of the operation and
16 functioning of the Facet product accurate?

17 **A** The same comment. I would have to refresh my -- I would
18 have to look at it to see what I -- to what he said. I don't
19 remember now.

20 **Q** When you were deposed a number of weeks back, you the
21 testified that you were unable to identify anything in his
22 report that was inaccurate with respect to the operation of
23 Vegas or Facet. Correct?

24 **A** If you tell me I did, yes. I don't remember those words,
25 but I believe you.

1 Q Well, you have your deposition in front of you, don't you,
2 sir?

3 A Oh. Yeah.

4 Q Let's take a look at Page 116.

5 Do you have 116 in front of you, sir?

6 A Yes, sir, I do.

7 Q You were asked (As read):

8 "QUESTION: When you prepared your rebuttal
9 report in this matter, were you able to
10 identify any inaccuracies in Dr. Kelly's
11 report with respect to how the Vegas product
12 functions?"

13 A Yes, sir.

14 Q And you responded:

15 "ANSWER: I don't recall seeing any. I would
16 need to go through in detail, but there,
17 quite frankly, was not that much time."

18 A Yes, sir.

19 Q You were then asked:

20 "What about with respect to the Facet
21 product? Can you recall any inaccuracies
22 in Dr. Kelly's report with respect to the
23 operation of the Facet product?"

24 And your response was:

25 "Again, I was focused very much on the

1 parts involving the code and the
2 specifications. I don't know. Let me
3 check my rebuttal report, because that
4 would be where I discussed them."

5 And then, you were told to go ahead.

6 **A** Yes.

7 **Q** And you responded:

8 **"ANSWER:** I did not notice any."

9 Did I read your response in your deposition
10 correctly?

11 **A** Absolutely, you did.

12 **Q** Okay. The next question was:

13 **"QUESTION:** Just to be clear, when you
14 prepared your rebuttal, you didn't identify
15 any inaccuracies in Dr. Kelly's report with
16 respect to the operation of the Vegas
17 product. Correct?"

18 And you responded:

19 **"ANSWER:** I did not put any in my report."

20 Did I read your response correctly, sir?

21 **A** Yes, sir.

22 **Q** Okay. Now, I believe on direct examination, you indicated
23 that you've reviewed a number of CSS specifications.

24 Is that correct?

25 **A** Yes, sir.

1 Q And you identify them in your reports, correct?

2 A Yes, sir.

3 Q You reviewed the CSS general specifications, right?

4 A Yes, sir.

5 Q You reviewed the authenticator module for CSS decryption
6 module, correct?

7 A Yes, sir.

8 Q You reviewed the authenticator module for DVD drive,
9 correct?

10 A Yes, sir.

11 Q You reviewed the procedural specifications, correct?

12 A Yes, sir.

13 Q And you reviewed the license agreement, which is marked as
14 Version 1.2, I believe, correct?

15 A I believe that was the right version.

16 Q And you reviewed all of those specifications in connection
17 with your work. Right?

18 A Yes, sir.

19 Q And if I understood your testimony a number of minutes
20 ago, your testimony is that the RealDVD products, both Vegas
21 and Facet, are consistent with the CSS specifications.

22 Correct?

23 A They are consistent with the technical specifications that
24 I reviewed, yes, sir.

25 Q What are the objectives of CSS, sir?

1 A The objectives of CSS are defined, to my mind, as a
2 technical -- a software engineer, by the specifications.

3 Q Do the specifications tell you explicitly what the
4 objectives of the Content Scramble System are, sir?

5 A May I look at the --

6 Q Sure. Why don't we start with --

7 A It's 1.2-something, I think.

8 Q It's -- that's exactly correct, sir. It's 1.2 of the CSS
9 general specifications.

10 A Oh.

11 Q You will find it in Exhibit L of the document that is the
12 Pak declaration, in front of you. And it is on the page marked
13 GEN-1. And there is Section 1.2, where it says, "Objectives."

14 So, let me ask again. The specifications tell you
15 directly what two objectives of the Content Scramble System
16 are, right?

17 A Yes, sir.

18 Q And Objective No. 2 is, quote, "To prevent
19 digital-to-digital copying in a personal computer environment,"
20 correct?

21 A Yes, sir.

22 Q Let's turn to Section 1.5 of this same document. It's on
23 page GEN-4.

24 A Yes, sir.

25 Q And here, the specifications tell you directly what CSS is

1 intended to do. Correct?

2 **MR. STEER:** Excuse me.

3 (Off-the-Record discussion)

4 **THE WITNESS:** These are general security requirements
5 for -- on CSS.

6 **BY MR. MICK:**

7 **Q** Well, directing your attention to Subsection 1 --

8 **A** 1.5.1?

9 **Q** Correct. It says explicitly that CSS, quote, "is intended
10 to prevent casual users from the unauthorized copying of
11 copyrighted materials recorded on DVD video/audio discs."

12 Correct?

13 **A** That's what it say, yes, sir.

14 **Q** And both of those objectives appear elsewhere in the
15 specifications, too, don't they?

16 **A** I have -- I believe they appear in a couple of others, of
17 these.

18 **Q** Okay. Based on all of the statements that appear in the
19 specifications, sir, is it fair to say that my client, the DVD
20 Copy Control Association, is trying to prevent copying of DVD
21 movies?

22 **A** I do not think so. At least, from the technical point of
23 view, looking at these technical specifications (Indicating),
24 that's not what I get out of them.

25 **Q** In reviewing all of these specifications, sir, was it your

1 conclusion that my client was trying to encourage copying of
2 DVDs?

3 **A** I drew no conclusions about anything, other than whether
4 or not the software did the steps required by the
5 specifications.

6 **Q** When you say you drew no conclusions, sir, are you saying
7 that you -- you were of the view that my client was indifferent
8 to or willing to encourage copying, or that you simply didn't
9 consider the matter at all?

10 **A** I did not -- what I considered was whether or not the
11 software correctly implemented the detailed specifications. I
12 did not consider the matter you spoke of.

13 **Q** Isn't it true, sir, that the purpose of CSS is to prevent
14 copying, and it says so right in the specifications?

15 **A** It's to prevent unauthorized copying.

16 **Q** Those -- that is the purpose of CSS. Correct?

17 **A** The general security requirements state that it is
18 intended to prevent casual users from the unauthorized copying.
19 And the -- yes. So -- well, that's what the general security
20 requirement says.

21 But, again, the -- when I go to look at whether or
22 not something complies, I look at the detailed specification.
23 So for No. 2, "To prevent digital-to-digital copying in a
24 personal environment," how do you implement that?

25 Well, you look at the bus authentication and bus

1 encryption and so forth, and you check to see whether or not
2 the code does that.

3 Q In your own book, sir, you wrote, and I quote, "The
4 Content Scramble System, CSS, is a cryptographic algorithm that
5 protects DVD movie discs from unauthorized copying."

6 Correct?

7 A Yes, I believe -- I believe so. That was -- the book was
8 from 2001. And, to put it mildly, I did not have access to the
9 specifications or any other information beyond what I could
10 find on the web.

11 So, in the context of that particular 2001 writing,
12 what I was specifically referring to was piracy.

13 Q CSS has a number of components that it uses to obtain --
14 achieve its objectives, correct?

15 A It consists of a number of components, yes, sir.

16 Q And one of those components is the scrambling of the
17 audio/visual data. Right?

18 A Yes, sir.

19 Q And another component of CSS is authentication, correct?

20 A Bus authentication, yes, sir.

21 Q And another component of CSS is bus encryption, correct?

22 A Yes, sir.

23 Q And bus decryption, correct?

24 A Yes, sir.

25 Q CSS requires that the disc keys and the title keys be

1 stored in a special part of the physical DVD disc. Correct?

2 **A** It's stored -- yes, sir.

3 **Q** And those areas are the lead-in area for the disc keys,
4 and the hidden sector area for the title keys, correct?

5 **A** Yes, sir.

6 **Q** And the storage of those keys in those special areas is a
7 component of CSS, right?

8 **A** The standards that I read refer to it that way, sir.

9 **Q** Now, in looking at the specifications, Mr. Scott asked you
10 a number of questions about the definitions of a DVD player, as
11 opposed to other types of devices.

12 Do you recall that testimony?

13 **A** Yes, sir.

14 **Q** Do the specifications define the Vegas product as a DVD
15 player?

16 **A** Well, let me see. The Vegas product does authentication,
17 but -- and bus authentication and bus encryption. And, the --
18 the procedural specifications say that a DVD player shall
19 mean -- and so on and so forth. And, that does not operate
20 through use of the CSS authentication algorithm.

21 So for that reason, I would say it is not a DVD
22 player.

23 **Q** And in fact, neither Facet nor Vegas are DVD players
24 within the meaning of the specifications, correct?

25 **A** Correct.

1 Q They are both what are called in the specification
2 decryption modules, correct?

3 A The software is, yes.

4 Q And there's a description of that kind of product in the
5 specifications. Right?

6 A There is a description of the steps that a product -- that
7 kind of product must follow.

8 Q In your opinion, sir, does the Vegas product conform to
9 the description of a decryption module set forth in the
10 specifications?

11 A I believe it does.

12 Q In your opinion, sir, does the Facet product conform to
13 the description of a decryption module set forth in the
14 specifications?

15 A I believe it does.

16 Q Let's take a look at some of the slides that you used
17 during your direct examination. And, I need to make sure I
18 have the right numbers here.

19 **MR. MICK:** Now, at this point, Your Honor, I'm going
20 to use a slide which contains an architectural diagram that
21 Mr. Scott put up during the sealed portion of the testimony.
22 But my questions on the diagram I don't believe will go into
23 the details of the algorithms or the processes.

24 So, my suggestion would be that to the extent that
25 the witness and you and I and Counsel are able to see the

1 diagram but that it is not exposed generally, that that will
2 probably be okay.

3 **THE COURT:** It doesn't need to be put up on the
4 screen, even, because it has an exhibit number, and we can look
5 at it on the exhibit number, correct?

6 **MR. MICK:** The copy that I'm going to use is
7 contained in the little slide notebook, in the three-ring
8 notebook that Mr. Scott circulated.

9 **THE COURT:** Yes, but it's in there.

10 **MR. MICK:** Yes, it's in there.

11 **THE COURT:** We don't need to show it on the screen?

12 **MR. MICK:** I don't think so.

13 **MR. SCOTT:** Yes, Your Honor. And for completeness of
14 the Record, I will be offering that as a demonstrative exhibit,
15 so we'll have that in the Record as well as some evidentiary
16 exhibits.

17 **THE COURT:** Fine. Which one are you now referring
18 to?

19 **MR. MICK:** I would like to turn to the one that has
20 Slide 43 on it.

21 **THE COURT:** Slide 43? Or Page 43?

22 **MR. MICK:** Well, it's the slide that's -- it has 43
23 in the lower right-hand corner, in really faint print.

24 **THE COURT:** Yes, yes, got it. Okay.

25 **BY MR. MICK:**

1 Q Do you have Slide 43 in front of you, sir?

2 A Yes, sir.

3 Q Okay. This diagram, as you have put it up on the slide
4 during your testimony earlier today, is not contained in the
5 CSS specifications. Correct, sir?

6 A Portions of it are.

7 Q But the specs contain no illustration showing the AES
8 encryption boxes that you have on this slide. Right?

9 A Correct.

10 Q And the specs contain no illustration showing the hard
11 drive that you have reproduced in the middle of this diagram.

12 Correct?

13 A No, sir. Yes, you're correct.

14 Q Let's take a look at Slide 31 in the set.

15 (Request complied with by the Witness)

16 Q Slide 31 is the actual Figure 4 from the specifications.
17 Correct, sir?

18 A There -- yes, they're minus the red line.

19 Q And there's no hard drive shown in this figure. Correct,
20 sir?

21 A There's no hard drive or memory shown in this figure.

22 Q Do the specifications describe the act of saving the
23 audio/visual data to the hard drive, sir?

24 A No, sir, they do not.

25 Q Do the specifications describe the act of saving the

1 secure disc key data to a hard drive, sir?

2 (Witness examines documents)

3 **A** No, sir, they do not.

4 **Q** Does the phrase "save to the hard drive" appear anywhere
5 in any of the specifications, Professor Bishop?

6 **A** I would have to do a search, but I don't recall seeing it
7 anywhere.

8 **Q** Now, the diagram that you have put up during your direct
9 examination, the one that we have as Slide 43, this is not
10 actually a document prepared by the engineers at RealDVD, is
11 it, sir?

12 **A** The engineers at RealDVD did not prepare this. No, sir.

13 **MR. MICK:** I would like to mark what has been
14 previously identified as Exhibit 51 to the Buzzard deposition,
15 and which is entitled *Vegas - Technical Review*.

16 It has production numbers real 1230 through Real
17 1233.

18 (Trial Exhibit 51 marked for identification)

19 **THE WITNESS:** Thank you very much, sir.

20 **THE COURT:** Do you have an extra copy?

21 **MR. MICK:** I have several.

22 **THE COURT:** Okay. Spread them around, then.

23 **BY MR. MICK:**

24 **Q** Mr. Bishop, do you have the document entitled *Vegas -*
25 *Technical Review* in front of you, sir?

1 **A** Yes, sir, I do.

2 **Q** This is a set of slides that have the date November 11,
3 2008 on them. And I would like you to turn to the second page,
4 where there is a slide entitled High-Level Data Flow. Have you
5 ever seen this document before, sir?

6 (Witness examines document)

7 **A** No, I have not.

8 **Q** This is not a document that anybody at Real shared with
9 you. Correct?

10 **A** That's correct.

11 **Q** Do you have any reason to believe that Real's own
12 depiction of the high-level data flow of the RealDVD product is
13 inaccurate in any way?

14 **A** All I can say is I would want more time to analyze whether
15 or not this matched what I have seen. I would need the context
16 to evaluate that in here as well.

17 I'm really not comfortable with looking at this and
18 trying to draw any conclusions from it. My -- what I did
19 simply was check the existing product -- sorry, the existing
20 code against the CSS specifications.

21 But, the answer to your question is I don't know.

22 **Q** Let's go back to Slide No. 43, then.

23 **A** All right.

24 **Q** Can you tell me when this particular document was created,
25 sir?

1 (Witness examines document)

2 **A** Oh. Probably over the course of the last couple of weeks,
3 I'm guessing. It may have been a little longer; things are
4 blurred.

5 **Q** All right. Let's turn to the slide that is numbered 61.

6 (Request complied with by the Witness)

7 **Q** Do you have 61 in front of you?

8 **A** Yes, sir, I do.

9 **Q** Now, you have testified about this slide on direct.
10 Correct?

11 **A** Yes, sir.

12 **Q** And, one of the things you said was that the little boxes
13 represented algorithms. Do you remember that?

14 **A** Yes, sequences of steps.

15 **Q** Okay. There is a box midway through the page, under the
16 capital letters BK, that has internally the words BUS-DEC.

17 Do you see that?

18 **A** Yes, I do.

19 **Q** Is that the bus decrypt algorithm, sir?

20 **A** That's my understanding, yes, sir.

21 **Q** Now, at the completion of the bus decrypt algorithm, the
22 output shown here goes to another box that is identified as AES
23 ENC. Do you see that?

24 **A** Yes, sir.

25 **Q** Does that represent an AES encryption algorithm?

1 A It does.

2 Q So the output of the bus decrypt algorithm goes to the AES
3 encryption algorithm. Right?

4 A The output of the bus decryption algorithm is the input to
5 the AES encrypt algorithm.

6 Q The output of the bus decryption algorithm in RealDVD is
7 not sent directly to the descrambler, it goes to the process
8 that's labeled AES encryption. Correct?

9 A Let me think. I would need to review the code to
10 determine whether it is simultaneously sent to the DecDKv and
11 to the AES, or whether it's AES and -- AES and then save to the
12 hard drive, and then that same copy is then given to the
13 DecDKv.

14 Q The output that's shown on Slide 61 goes directly to the
15 AES encryption process, is that right?

16 A Correct. Correct. This is what the slide shows.

17 Q Okay.

18 MR. MICK: I apologize, Your Honor. I thought the
19 witness had answered this question in his deposition.

20 BY MR. MICK:

21 Q All right, sir. Would you turn to Page 158 of your
22 deposition.

23 A 158, sir?

24 Q Correct.

25 (Request complied with by the Witness)

1 **A** Yes, sir.

2 **Q** The very last line, you were asked (As read):

3 "When Vegas receives the encrypted disc
4 keys from the DVD drive, they are bus
5 encrypted, correct?"

6 **A** Yes, sir.

7 **Q** And your answer was:

8 "**ANSWER:** When Vegas receives the secure disc
9 key data from the DVD drive -- I'm sorry,
10 yes, they are, indeed bus encrypted."
11 Did I read that accurately, sir?

12 **A** You did.

13 **Q** The next question was:

14 "**QUESTION:** And then Vegas removes the bus
15 encryption from the secure disc key data
16 before it stores it to the hard drive.
17 Correct?"

18 And you responded:

19 "**ANSWER:** It decrypts them, which is removing
20 the encryption, and stores it using a --
21 reencrypts it using AES, and stores that.

22 "**QUESTION:** Before the AES step, it does
23 remove the bus encryption from the secure
24 disc key data. Correct?"

25 And your answer was:

1 **"ANSWER:** Yes, sir, it does."

2 Is that accurate?

3 **A** Yes.

4 **Q** The next question was:

5 **"QUESTION:** And the secure disc key data is
6 what contains the encrypted disc keys,
7 correct?"

8 And your response was:

9 **"ANSWER:** Yes."

10 Is that true?

11 **A** That's true.

12 **Q** "And the same answer would apply to Facet as well,
13 correct?" And again you responded "Yes," is that right?

14 **A** Yes.

15 **Q** "And then with respect to the title keys" --

16 (Reporter interruption)

17 **MR. SCOTT:** Your Honor, I'm all for speeding things
18 up. But, I don't understand the foundational basis for using
19 the deposition this way, just to read.

20 There's been no -- it's not being used for prior
21 inconsistent statement, there's been no exhaustion of memory.
22 I think he should be asking questions and finding out what the
23 witness has to say, instead of reading deposition.

24 **THE COURT:** Well, he can read from the deposition.

25 He doesn't -- I'm not sure why he would want to refresh your

1 witness's recollection.

2 **MR. SCOTT:** Just, I would object. The deposition
3 usually is not read in cross-examination without a -- a
4 question being asked before it.

5 **MR. MICK:** Let me ask a much more straightforward
6 question.

7 **BY MR. MICK:**

8 **Q** In your deposition, sir, did you tell us, under oath, that
9 the output of the bus decrypt algorithm went to the hard drive?

10 Or did you say it went directly to the descrambler?

11 **A** I said that it bus-decrypts the keys and then reencrypts
12 them using the AES.

13 **Q** And then sent into the hard drive, right, sir?

14 **A** After they are encrypted with the AES, the encrypted keys
15 go to the -- the encrypted blob goes to the hard drive.

16 **Q** The word "blob" didn't appear in that deposition testimony
17 excerpt, did it, sir?

18 **A** No, it did not.

19 **Q** The copy of the movie that gets sent to the hard drive,
20 the audio/visual data, that's a digital copy, correct?

21 **A** It is an AES-encrypted digital copy, yes, sir.

22 **Q** Whether it is AES-encrypted or encrypted with any other
23 form of encryption, or no encryption at all, it's a digital
24 copy. Right, sir?

25 **A** It's not a copy of what is on the DVD. It is an

1 encrypted -- you can take the data you encrypted, and then you
2 store it on drive.

3 **Q** Are you -- is it your testimony, sir, that what is placed
4 on the hard drive is not a digital copy?

5 **A** It's digital, but it's not a copy. It's something from
6 which the movie can be reconstructed at a later time.

7 **MR. MICK:** With my apologies, Your Honor --

8 **BY MR. MICK:**

9 **Q** Would you turn to Page 157 of your deposition, sir.

10 **A** Yes, sir.

11 **Q** Let's start at 158, to speed things along. In your
12 deposition, you were asked (As read):

13 **"QUESTION:** The copy on the hard drive is a
14 digital copy, correct?"

15 Your response was:

16 **"ANSWER:** I'm not sure it could be anything
17 else."

18 Right?

19 **A** It -- yes. What I meant by that was it is an encrypted
20 copy.

21 **Q** The next question you were asked is:

22 **"QUESTION:** It's not an analog copy?"

23 And your response was, quote:

24 **"ANSWER:** Not using any technology I'm
25 familiar with."

1 **A** Right.

2 **Q** Once again, Mr. Weinstein asks, Question, quote, "It's a
3 digital copy," question mark, unquote.

4 And your response was, quote, "Digital copy, yes,"
5 unquote.

6 That was your testimony under oath in your
7 deposition, correct, sir?

8 **A** Yes, sir.

9 **Q** When the secure disc key data and the title keys are sent
10 to the hard drive, RealDVD does not use the CSS bus encryption
11 algorithm in that send over that bus. Right?

12 **A** No, sir. It's not required.

13 **Q** It doesn't use it, sir, whether or not it's required.
14 Correct?

15 **A** Correct. It does not use it.

16 **Q** And when it sends the secure disc key data and the title
17 keys to the hard drive, it doesn't use any time variable key in
18 its encryption. Correct?

19 **A** No, it does not use any key that varies with time.

20 **Q** RealDVD does not store the secure disc key data or the
21 title key information in a lead-in area on the hard drive, does
22 it, sir?

23 **A** I'm not sure what you mean by "lead-in on the" -- "lead-in
24 area on the hard drive." Could you clarify, please?

25 **Q** Well, that's probably an excellent remark. There is no

1 lead-in area, in the manner in which the specifications refer
2 to a lead-in area, on the hard drive that RealDVD uses. Right?

3 **A** Specifications refer to a lead-in area on the DVD drive,
4 yes.

5 **Q** On the --

6 **A** On the DVD drive.

7 **Q** On the DVD disc, correct, sir?

8 **A** I'm sorry. Absolutely correct. On the DVD disc.

9 **Q** The hidden area and the lead-in area, as those terms are
10 used in the CSS specifications, refers to specific areas on a
11 DVD disc. Correct?

12 **A** Yes, sir.

13 **Q** And, and neither a lead-in area nor a hidden area are used
14 on the hard drives that RealDVD stores movies on. Correct?

15 **A** As I understand use of the term "lead-in," there is no --
16 that is correct. In terms of hidden, it obfuscates the keys.
17 But the area, itself, is not hidden. It's accessible.

18 **Q** It stores it in a file. An EDF file, I think. Right?

19 **A** Yes, sir.

20 **Q** On playback from the hard drive, RealDVD takes the secure
21 disc key data and the title key information from the hard
22 drive, and not the DVD disc (Indicating). Correct?

23 **A** It reconstructs the information from what's stored on the
24 hard drive, correct.

25 **Q** And on playback from the hard drive, RealDVD does not

1 perform any CSS authentication algorithm on the hard drive,
2 does it?

3 **A** It authenticates the hard drive, but not using CSS.

4 **Q** On playback from the hard drive, the hard drive, itself,
5 doesn't perform any CSS authentication process on RealDVD,
6 either, does it?

7 **A** No, sir.

8 **Q** On playback from the hard drive, there is no bus
9 encryption of the secure disc key data or the title key
10 information when they're sent back from the hard drive to the
11 descrambler, is there, sir?

12 **A** I'm sorry. Could you repeat that, please?

13 **Q** On playback from the hard drive, RealDVD does not use CSS
14 bus encryption to send the information from the hard drive to
15 the descrambler, does it?

16 **A** It is encrypted, but not using CSS bus decryption.

17 **Q** And it's your testimony sir, that all of these operations
18 of RealDVD are consistent with the CSS specifications?

19 **A** Yes, sir.

20 **Q** Let me turn to the use and operation --

21 **THE COURT:** Excuse me. What -- what -- what do you
22 understand that to mean, when he asked you that all these
23 operations are consistent with CSS?

24 And let me ask you a specific question, because this
25 is -- and that is, is there anything in the CSS specifications

1 that teaches against or proscribes the use of additional
2 encryption, in addition to CSS?

3 **THE WITNESS:** No, Your Honor. There's not.

4 May I have a second here?

5 **THE COURT:** Yes.

6 (Witness examines document)

7 **THE WITNESS:** In fact, in one of the standards, the
8 DVD video Content Scramble System --

9 **THE COURT:** Okay, now, maybe you should just read
10 from Page and Line or whatever.

11 **THE WITNESS:** Oh, I'm sorry. DSR, in DSR -- why
12 don't I not read, Your Honor, but instead, --

13 **THE COURT:** Just point me to the place, because --
14 this is Exhibit M.

15 **THE WITNESS:** Exhibit M, yes, ma'am. Yes,
16 Your Honor.

17 **THE COURT:** And what page and line are you referring
18 to?

19 **THE WITNESS:** DSR-32.

20 **THE COURT:** 32?

21 **THE WITNESS:** 32. If you look at 5.1.2(1), six or
22 seven lines down, it's discussing how to --

23 **THE COURT:** Any method of achieving?

24 **THE WITNESS:** Yes, that sentence.

25 **THE COURT:** Okay. And, what you're saying is that

1 sentence suggests that -- that in fact you can add encryption
2 to whatever else may be required, pursuant to these
3 specifications.

4 **THE WITNESS:** It suggests that doing so does not
5 violate them.

6 **THE COURT:** Uh-huh.

7 **THE WITNESS:** At least to me, as a spec reader and
8 writer and technical person.

9 **BY MR. MICK:**

10 **Q** The specification that you are referring to, sir, is the
11 one that governs implementations of DVD video descramblers,
12 correct?

13 **A** Yes. I believe there is similar language elsewhere.
14 There's similar language on ADC29, and on ADR31.

15 **MR. MICK:** May I continue?

16 **THE COURT:** Yes, you may. Uh-huh.

17 **BY MR. MICK:**

18 **Q** Returning to Slide 61, Professor Bishop, this I think is
19 apparent from the slide, but for the sake of the Record, the
20 red-marked arrows represent user-accessible buses. Correct?

21 **A** Yes, sir, they do.

22 **Q** So the bus that goes between the algorithm box for AES
23 encryption and the hard drive and the bus between the hard
24 drive and the AES decryption algorithm box are user-accessible
25 boxes, right, sir?

1 A Yes, sir.

2 Q I would like to ask you a few questions about the
3 functionality of RealDVD. Okay?

4 A I'll try that -- I'll -- yes, sir.

5 Q Hopefully some of these will be easy.

6 A RealDVD user can play hard-drive copies of movies
7 without having the DVD drive -- the DVD in the drive.

8 Correct, sir?

9 A Assuming that it's the hard drive on which the movies were
10 saved, yes, sir.

11 Q The RealDVD user can play hard drive copies of movies
12 without even possessing the movie any more, right?

13 A They must have had it at one point to record it onto the
14 hard drive, to -- I'm going to quit saying "AES encrypt" and
15 all that, and just -- they must have had it at one time.

16 But if it's scratched, damaged or lost, they don't
17 need it to play back on the hard drive, from the hard drive.

18 Q Or given away?

19 A Or given away.

20 Q A RealDVD user can, in fact, rent or borrow DVDs, save
21 copies to the hard drive, return the original DVD, and then
22 play copies from the hard drive. Right?

23 A Play the recorded copy from the hard drive, yes, sir.

24 Q A RealDVD user can save copies of DVDs to external hard
25 drives, and even flash drives, right?

1 **A** Yes. There's a limit on how many machines can play it,
2 but yes.

3 **Q** Let's talk about that limit. So long as those copies of
4 RealDVD are registered to the same account, those portable
5 copies can be played on up to four other computers. Right?

6 **A** I believe the license limit is five, so yes, sir.

7 **Q** All right. So, let's suppose that my friend Mr. Singla
8 over there wants to view the copies of my movies that I have
9 stored on my portable hard drive. So he downloads a brand-new,
10 pristine copy of RealDVD, right now, and puts it on the laptop
11 that's sitting right there in front of him, and registers it to
12 my account.

13 He could play all of the movies on my portable hard
14 drive, because his copy of RealDVD is registered to the same
15 account as my copy of the program. Right?

16 **A** So, he is registering the copy as you. I haven't thought
17 about it, or worked that out in detail. The -- if everything
18 were identical, then it would be like doing that from Microsoft
19 Word or any other program. So -- but the bottom line is, I
20 don't know.

21 **Q** Well, isn't that how the multi-copy system works for
22 RealDVD? You can play copies stored on a single portable drive
23 on other versions of RealDVD that are registered to the same
24 account. Right?

25 **A** Yes.

1 Q So if Mr. Singla's copy -- brand-new, taken from one of
2 these boxes over here -- was registered to the same account as
3 mine, he could play all of the movies on my portable hard
4 drive. Right?

5 A The issue is I don't know whether or not his attempt to
6 register as you would be kicked back as too many copies of Real
7 extant. So --

8 Q Let's assume that there are no other registered users on
9 my account, so his would be the second. It would work then,
10 right?

11 A If the queue -- the best I can say is that if there -- if
12 the serial number you've got is the one for the five computers,
13 and you have your copy, and you store things on the hard drive,
14 and a Real -- another version of -- another instance of RealDVD
15 is playing with the same -- has the same serial number, the
16 same information --

17 Q Registered to same account. That was the way we asked the
18 previous question. Right?

19 A Yes. I'm just not 100 percent sure of exactly what that
20 means. But -- I didn't look at how things were registered. I
21 just looked at the code.

22 But if it's the same serial number, then yes, you
23 could take the hard drive from one, and put it into the other,
24 and play.

25 Q Okay. And, in that example, his copy of RealDVD, the

1 second copy, if you will, is obtaining the secure disc key data
2 and the title keys from the portable hard drive that I've given
3 him. Right?

4 **A** Yes, sir.

5 **Q** And in that example, his copy of RealDVD is using the CSS
6 specifications to descramble the movie content from the hard
7 drive. Right?

8 **A** It follows the CSS -- I'm sorry. Could you repeat the
9 question?

10 **Q** Mr. Singla's copy of RealDVD would be using the CSS
11 specifications to descramble and play the movie content that
12 was stored on the portable hard drive. Right?

13 **A** It would be using those portions of the CSS
14 specifications, yes, sir, plus the AES and all that.

15 **Q** And in my example, sir, Mr. Singla's copy of RealDVD, the
16 one that he's just installed, --

17 **A** Yes, sir.

18 **Q** That copy has never, ever, performed any drive
19 authentication or bus authentication, right?

20 **A** The just-installed copy of RealDVD?

21 **Q** Yeah.

22 **A** If it's just been installed, then there's been no DVD in
23 there, then no, it would not.

24 **Q** Let's take a different example. Let's suppose my son were
25 to take some portion of his DVD collection off to college with

1 him.

2 He could pass along all of his DVDs around his dorm
3 floor, and every person with RealDVD on their computer could
4 make a copy of all of his DVDs on their own hard drives, right?

5 **A** If they had his -- excuse me a second. If they had the
6 physical DVDs, they could certainly make a -- they could
7 certainly make the -- they could certainly use RealDVD to,
8 again, modulo all the encryption, all that, put it onto the
9 hard drive.

10 May I just say "copy" when -- and not go through all
11 the qualifications for that? Can we understand that? Is that
12 okay?

13 **Q** I certainly understand the testimony you've given, sir.

14 **A** Okay.

15 **Q** Because they have the physical DVDs, there isn't any
16 application of the five-user limit or the registered account
17 limit. They have the physical DVDs. If they've got RealDVD,
18 they can always copy it on their hard drive. Right?

19 **A** I've not looked into the matter -- excuse me. I've not
20 looked into the matter, sir.

21 **Q** Every student in the entire dorm could make a copy of the
22 DVD, if they have the physical DVD. Right?

23 **A** I believe so.

24 **Q** You have been a college professor for 20 years, right?

25 **A** At least.

1 Q Based on your knowledge of the way in which college
2 students today feel about copying entertainment and respecting
3 intellectual property, do you think it's a likely occurrence,
4 if RealDVD was widely available?

5 A I have absolutely no idea how students think. I know what
6 I pound into my students in classes. But, I am unwilling to
7 speculate on attitudes of other students.

8 Q In any event, sir, it's your testimony today that all of
9 this RealDVD functionality that we have just discussed is
10 consistent with the CSS specifications?

11 A Hmm, modulo the parts -- sorry, excluding the parts where
12 I said I don't know or I would need to check on it, then I
13 believe it is, yes.

14 Q And it is your testimony today that none of that --

15 A I'm sorry, could you repeat that, please?

16 Q And it's your testimony today, sir, that none of that
17 represents prohibited digital-to-digital copying in a personal
18 computer environment?

19 **MR. SCOTT:** Object to ambiguity, Your Honor. Now
20 there's "that," there's been a whole line of questions to which
21 the Professor indicated he had no opinion. It's just too broad
22 and too compound.

23 **THE COURT:** Well, it also seems that it's maybe
24 asking for a legal conclusion.

25 Do you want to rephrase that?

1 (Witness examines document)

2 **A** I believe that's what Mr. Schumann is saying.

3 **Q** Right.

4 **A** Yes.

5 **Q** And, the left column on that slide is what Mr. Schumann
6 says is provided by CSS by DVD drives and by physical DVDs
7 (Indicating).

8 **A** Yes.

9 **Q** Right?

10 **A** Yes.

11 **Q** Okay. And, I was listening to Mr. Scott ask you about
12 this slide. And for example, he asked you whether the RealDVD
13 hard drive locks (Indicating). Do you remember that, he asked
14 you that?

15 **A** Yes.

16 **Q** And, I thought you had said that RealDVD -- I think your
17 answer was locks the movie to the hard drive.

18 **A** Yes, sir.

19 **Q** Okay. And what you meant by that is that it uses its AES
20 encryption, right? Is that what you meant?

21 **A** What I meant was it uses AES encryption, and the key is
22 based on some data that's on the hard drive.

23 **Q** Right. And what the RealDVD software does is make sure --
24 the current version of RealDVD software makes sure that if it's
25 playing back the movie from one of these thumb drives, that's

1 where it was originally copied to.

2 **A** Correct, and the serial number of the RealDVD that's
3 playing it is --

4 **Q** Right. And then on the authentication one, what you were
5 saying is that there's sort of an implicit in your mind
6 authentication, because this is AES encrypted, this copy here
7 (Indicating).

8 **A** Well, the -- actually, sir, the implicit authentication is
9 because of the data that's on the hard drive pulling -- being
10 used to set -- being used as a component to setting up the key.

11 **Q** Right. By RealDVD?

12 **A** By RealDVD, yes.

13 **Q** And the software knows -- the RealDVD software knows, in
14 your terms, that there's been authentication because it's all
15 AES encrypted properly. Using RealDVD's system.

16 **A** It knows that there's authentication because the data
17 peculiar to that hard drive successfully enables the AES
18 decryption.

19 In other words, the AES encryption is not, itself,
20 the authenticator; the data used to open it is.

21 **MR. SCOTT:** One second. Your Honor, this is a --
22 we're now into how RealDVD is working with its encryption. And
23 I need to consult with my client for a moment about the
24 trade-secret issue, from our point of view.

25 I'm sorry to raise that, but I've been asked to.

1 **MR. SINGLA:** That's fine. I had been under the
2 impression that RealNetworks's position, that everything should
3 be open. So that's why I proceeded did. If there's an issue I
4 would leave it to you to --

5 **MR. SCOTT:** Your Honor, may I, for a moment?

6 **THE COURT:** Yes.

7 **MR. SINGLA:** I'm not going to get into any more
8 detail about this, by the way. I was moving on.

9 **MR. KIMBALL:** That's fine.

10 **MR. SINGLA:** Feel free to --

11 **MR. SCOTT:** Obviously we are getting into stuff
12 that's actually real security, so --

13 **MR. SINGLA:** I think some of us would say this is all
14 real security, Mr. Scott. The CSS.

15 **THE COURT:** The Court doesn't opine on any of that,
16 so --

17 **MR. SINGLA:** Fair enough, Your Honor.

18 **BY MR. SINGLA:**

19 **Q** Okay. And then on the bus encryption side, what I
20 understood you to say to Mr. Scott was, well, the keys as they
21 travel between the hard drive and the RealDVD software are
22 protected by AES.

23 **A** Yes, sir.

24 **Q** That was your response to Mr. Schumann's position here
25 (Indicating). Right?

1 A My response is that there is, indeed, encryption on the
2 bus.

3 Q It's AES encryption.

4 A Right, yes, sir.

5 Q It's not the CSS time variable encryption?

6 A No, sir.

7 Q And then, your response to Point No. 4 is that I think you
8 said the keys are obfuscated on this copy (Indicating), by AES.

9 A They're obfuscated, and then AES is applied on top of the
10 obfuscation.

11 Q The obfuscation is a Real -- the method in which Real
12 stores the keys?

13 A Basically it takes the keys --

14 Q I'm not asking for an explanation. I just want to make
15 sure you agree with me.

16 The obfuscation you're talking about is the way in
17 which Real stores the keys here (Indicating).

18 A The obfuscation, plus the AES. Yes, sir.

19 Q Okay. So, if I'm understanding correctly, what you're
20 saying is that what RealDVD does is takes these CSS protections
21 (Indicating), takes them off, and replaces them with its own
22 AES system (Indicating). Right?

23 A Well, it does the CSS provisions, provided security where
24 it's required by the standards. It --

25 Q I just want to make sure you understand my question. I

1 want to make sure you understand my question.

2 I'm asking about the copy.

3 **MR. SCOTT:** May we be allowed to have the witness
4 finish his sentence, please, before he's interrupted?

5 **THE COURT:** Well, let's -- go ahead and ask the
6 question again so it's clear.

7 **BY MR. SINGLA:**

8 **Q** My question is, simply, your testimony is just that on the
9 copy, itself, the physical copy that RealDVD has made of the
10 DVD content, your response to Mr. Schumann is that these
11 protections have been replaced by AES.

12 **A** I would quarrel with that these have been replaced with,
13 but they are not -- they are -- because they are done by
14 RealDVD earlier. But, the -- the content that is stored on
15 the -- on the thumb drive that you are holding up, indeed, it's
16 encrypted using AES.

17 And, as I said earlier, there's no requirement in the
18 specifications that you authenticate or anything else to the
19 hard drive, so those are not done.

20 **Q** Right, because the --

21 **THE COURT:** So there's no CSS authentication.

22 **THE WITNESS:** There is no CSS authentication done
23 between the hard drive and the system -- and the -- and
24 RealDVD. There is CSS authentication done between the DVD and
25 Real when you load the DVD.

1 **THE COURT:** Is that CSS encryption removed then?
2 When it makes a copy?

3 **THE WITNESS:** The -- the title keys and the A/V
4 content, the CSS -- I'm sorry, I'm sorry, Your Honor. No, it
5 is not. The authentication and bus encryption is not done.

6 But the CSS protections for the keys and for the A/V
7 content are still left there. And then, they are
8 superencrypted, using the AES. I'm sorry, then the CSS content
9 is, itself, is encrypted, using the AES.

10 **MR. SINGLA:** Your Honor, I think the Court asked the
11 right question.

12 **BY MR. SINGLA:**

13 **Q** So, let's go back to the answer you just gave, Professor
14 Bishop.

15 Now, what you're saying to the Court in plain English
16 is that when RealDVD makes this copy (Indicating), it
17 authenticates with a DVD drive. Right?

18 **A** Correct, yes, sir.

19 **Q** It has to, because that's the only way to get the movie
20 off the DVD.

21 **A** That's what the CSS specifications require.

22 **Q** Right.

23 **A** Exactly.

24 **Q** And when RealDVD reads the keys off, it engages in bus
25 encryption with the DVD drive, right.

1 A Yes, sir.

2 Q That's the only way to get the keys off the DVD.

3 A Yes, sir.

4 Q Okay. But when Real puts the movie on this (Indicating),
5 and then plays it back, no more DVD drive. This is gone
6 (Indicating). Now there's no bus encryption, no CSS bus
7 encryption. Right?

8 A It uses AES encryption instead of the -- rather than the
9 bus encryption. Sorry, rather than the CSS bus encryption,
10 encryption.

11 Q Right. And it uses AES encryption or whatever RealDVD's
12 security system is instead of CSS authentication.

13 A Again I would quarrel with the words "instead of," but it
14 does not use bus authentication -- sorry -- it does not use CSS
15 bus authentication between the DVD -- sorry.

16 It does not use CSS bus authentication between the
17 hard drive and the software.

18 Q Right. And, and, and this thing (Indicating) doesn't lock
19 the way a DVD drive locks. Right?

20 A Could you explain "lock"?

21 Q Sure. The Court saw yesterday that with a DVD drive,
22 until you authenticate, you cannot access the data at all, even
23 in encrypted form. You know that, right, sir?

24 A Yes, sir.

25 Q And this thing (Indicating) doesn't lock, does it?

1 **A** You can access the encrypted data on the thumb drive, on
2 the hard -- thumb drive, yes, sir.

3 **Q** It does not lock. Right sir?

4 **A** It does not lock in that sense, yes, sir.

5 **Q** Thank you. And the keys in the DVD CSS system are stored
6 in the hidden sectors and in the lead-in area. Right?

7 **A** Of the DVD, yes, sir.

8 **Q** And, on this (Indicating), there is no hidden sectors or
9 lead-in area, right?

10 **A** There are no hardware hidden sectors or lead-in areas on
11 the drive -- thumb drive like that.

12 **Q** Right. It just doesn't exist in this format. Right?

13 **A** Right.

14 **Q** Right. So what Real has done is taken the CSS protections
15 off the movie content when it makes this copy (Indicating), and
16 replaced it with its own digital rights management system.
17 Right?

18 **A** No, sir. It has left the CSS scrambled in the movie, it
19 has left the title keys encrypted by the disc key, and it has
20 left the secure disc key area encrypted by the master key.

21 **Q** You're right. So it's left the one level of content, CSS
22 content encryption down here below, but it's removed the other
23 four things we talked about earlier. Right?

24 **A** The other four things are not present on the -- they're
25 not -- do not occur in the interaction between the hard drive

1 and the software. You do have bus encryption, but it is not
2 CSS bus encryption.

3 Q Okay. And when you say "You do have bus encryption," now,
4 in the CSS system, bus encryption is a time variable key,
5 one-time key, negotiated between the driver (Indicating) and
6 the computer (Indicating). Right?

7 A You have a 40-bit one-time key.

8 Q Right?

9 A Yes, sir.

10 Q It's negotiated between the drive and the computer.
11 Right?

12 A Yes, sir.

13 Q The drive knows how to do that.

14 A Yes, sir.

15 Q The drive has built-in CSS intelligence.

16 A It has the algorithm to generate the bus key built into
17 it, yes, sir.

18 Q Right. This thing (Indicating) does not know how to
19 negotiate a key. Right?

20 A That is correct. It's a hard drive.

21 Q This is just a USB thumb drive.

22 A Yes.

23 Q Right?

24 A (Nods head)

25 Q So when you say there's bus encryption, what you're saying

1 is, as the keys are transmitted over the bus, they are
2 encrypted with AES. That's all you're saying, right?

3 **A** Yes, sir.

4 **Q** You're not saying that there's some sort of bus key
5 negotiated between RealDVD and this thumb drive (Indicating),
6 right?

7 **A** That's correct. That's why I said it's not CSS bus
8 encryption.

9 **Q** Well, it's not bus encryption at all, is it?

10 **A** It's encryption on a bus. That's how I would use the
11 term.

12 **Q** You're sending encrypted data on a bus. Right?

13 **A** Yes. It is bus-encrypted.

14 **Q** All right. Fair enough. Let me move on.

15 Now, you talked a bit about virtual memory with
16 Mr. Scott?

17 **A** Yes, sir.

18 **Q** Okay. I have one simple question. You would agree that
19 in the Windows operating system, software is capable of
20 requesting from the operating system nailed-down pages.

21 **A** The software is capable of requesting it, but whether or
22 not the operating system will honor it is an entirely different
23 matter.

24 **Q** Okay. Now, you would agree that security specifications
25 are different -- strike that.

1 You would agree that in the field of computer
2 science, there are many different kinds of specifications.

3 **A** Yes, sir.

4 **Q** Sure. There's interoperability specifications?

5 **A** Yes, sir.

6 **Q** For example, USB thumb drives. There's a specification
7 for how to talk to a USB thumb drive. Right?

8 **A** Yes, sir.

9 (Reporter interruption)

10 **BY MR. SINGLA:**

11 **Q** And then, there are security specifications. Right?

12 **A** There are specifications used for -- that describe
13 security issues or matters, software, yes, sir.

14 **Q** That's a kind of specification in computer science.

15 **A** That's one of the uses of them, yes, sir.

16 **Q** Now, in your testimony with Mr. Scott, you said that you
17 write specifications for your class.

18 **A** Yes, sir.

19 **Q** I think you said you are very careful to write down the
20 specific steps to follow.

21 **A** Yes, sir.

22 **Q** Right?

23 **A** Yes, sir.

24 **Q** You don't want your students to have to guess what they
25 need to do.

1 A That's what I would like to avoid, yes, sir.

2 Q You would like to have a complete specification that lays
3 out all of the steps. Right?

4 A Yes, sir.

5 Q Right?

6 A Uh-huh. Yes, sir.

7 Q Now, you have this textbook that you have written on
8 computer security (Indicating)?

9 A Yes, sir.

10 Q Right?

11 A Yes, sir.

12 Q It's called *Computer Security Art and Science*.

13 A Yes, sir.

14 Q It's a very well-known computer security textbook.

15 A I would like to think so.

16 Q I've heard of it.

17 Now, I want to turn to one of the first things in
18 your book. I'm not sure if it's going to show up on the ELMO,
19 but let's try. The magic of the ELMO.

20 Definition 1-4. One of your first definitions you
21 give the students, right, in this book?

22 A One I teach in the book, yes, sir.

23 Q It's one of the first definitions the book gives to a
24 student reading it?

25 A Yes, sir.

1 Q That is a more accurate way to say it. And the definition
2 is that:

3 "A system is said to satisfy a
4 specification if the specification
5 correctly states how the system will
6 function."

7 Right?

8 A Yes, sir.

9 Q Okay. And this is a security specification we're talking
10 about?

11 A This is a more general specification.

12 Q Well, your book is a --

13 A But the book is about security, so this would be true for
14 the specification about security, as well as other things.

15 Q Okay.

16 A This is actually more about what's called "assurance," how
17 you know something is going to work the way it's intended,
18 rather than pure security.

19 Q Right. And I found this definition very consistent with
20 the testimony you gave Mr. Scott about how you write
21 specifications, trying to be careful to write out all the
22 specific steps. It's consistent, right?

23 A Yes, sir.

24 Q Okay. And "satisfy" is a computer-sciencey term for
25 "conforming with" or "meeting." Something like that?

1 **A** Yes, it's -- this was intended in more of a mathematical
2 sense, but yes.

3 **Q** Okay. Now, and what you're saying here in this definition
4 is that a system satisfies a specification if the specification
5 lays out exactly the steps the system should follow. Right?

6 **A** What I'm saying is, given a specification, if the system
7 does that which the specification states or requires, and --
8 and, you know, then it satisfies or meets the specification.

9 **Q** What you actually say, sir -- this is an important
10 distinction, I think -- is you say, if the specification states
11 how the system functions. Right? That's what you say.

12 (Witness examines document)

13 **A** Yes.

14 **Q** Okay. Now, your opinion in this case is that RealDVD
15 literally does everything required by the CSS specifications.
16 That's your opinion.

17 **A** My opinion that is it conforms to the specifications, yes,
18 sir.

19 **Q** And without arguing for now whether this is true or false,
20 I can tell you we disagree, but for now let's just take that.
21 What you're saying is by "conforms," you mean that RealDVD, in
22 your view, does everything the specification says.

23 Right?

24 **A** Yes, sir.

25 **Q** Okay. Now, you also, when you were talking to Mr. Scott

1 about specifications, described them as a conversation.

2 **A** I'm not sure whether I did or he did, but that's exactly
3 right. They are a conversation.

4 **Q** They're a conversation between the engineers who wrote it
5 and the engineers reading it.

6 **A** A one-way conversation, yes.

7 **Q** Okay. I thought that was a very interesting analogy.

8 So, to have the conversation, you need to know where
9 each side is coming from. Right?

10 **A** No. You need to know the sequence of steps or the details
11 of the specification.

12 **Q** Don't you need to understand the context from which each
13 side is coming?

14 **A** No.

15 **Q** You don't need to know the context in which the
16 specifications were written?

17 **A** No.

18 **Q** And you can have things that aren't explicit in a security
19 policy, but are implicit from the larger context, can't you?

20 **A** A security policy -- okay. A security policy is a
21 statement of typically what is and is not allowed.

22 In the mathematical sense, you -- everything is
23 either allowed or disallowed. That's the mathematical view of
24 the world. In the real view of the world, there's a lot of
25 gray areas.

1 So, I would not call security policy a detail -- a
2 specification of the type that I'm talking about here.

3 **Q** That's not my question, sir. One thing at a time.

4 **A** Okay.

5 **Q** And by the way, Mr. Scott will have a chance to ask you
6 questions, too. Don't worry.

7 My question is that you can have things that are not
8 explicit in a security policy, but that are implicit from the
9 larger context. Right?

10 **A** Within a security policy, there are often things that by
11 custom are assumed to be secure, or violate the policy. And
12 the custom varies from place to place.

13 **Q** Well, let me show you something that we got off the
14 Internet. I believe these are slides that you use at some
15 point in your class.

16 Does it look familiar?

17 (Witness examines document)

18 **A** The bottom does, but the top is not mine.

19 **Q** This is not your slide (Indicating)?

20 **A** No. The bottom, it looks like these were slides that -- I
21 have slides from my book available, up on the Internet. It
22 looks like someone downloaded them, and was going to use them
23 in class, and put a different cover page on them.

24 **Q** Oh, this is a different cover page. Okay.

25 **A** I think -- I would have to see the rest of it before I

1 could say.

2 **Q** Does this look familiar (Indicating)?

3 **A** Yes, this looks familiar.

4 **Q** These are your slides.

5 **A** That one (Indicating) certainly is.

6 **Q** Okay. How about this one?

7 **A** Yes, sir.

8 **MR. SCOTT:** Your Honor, could I possible have a set,
9 at least?

10 **MR. SINGLA:** Your Honor, I apologize. We just got
11 them off the Internet. I only have one set.

12 (Off-the-Record discussion)

13 **MR. SINGLA:** Oh, we have another one? Apparently I
14 was wrong. We do have another set.

15 **MR. SCOTT:** Thank you so much.

16 **BY MR. SINGLA:**

17 **Q** And the next one, this is your slide?

18 (Witness examines document)

19 **A** Yes, sir.

20 **Q** Okay. So, what you're proposing here is a hypothetical of
21 sorts, right?

22 **A** You mean on the slides?

23 **Q** Well, what you're proposing is a situation in which there
24 is a university policy that disallows cheating.

25 **A** Right.

1 Q And then, a young woman, Anne, she forgets to read-protect
2 her homework file on her computer?

3 A Right.

4 Q So, she forgets to protect her computer file.

5 A Right.

6 Q And then another student copies it.

7 A Right.

8 Q And your conclusion --

9 MR. SCOTT: Can I give him a copy?

10 THE COURT: Yes, that's fine.

11 MR. SCOTT: Yes.

12 (Off-the-Record discussion)

13 BY MR. SINGLA:

14 Q And your conclusion is that Bill cheated. Right?

15 A In the realm of in this particular example, yes.

16 Q And even if that --

17 A In fact, in general -- I'm sorry. I shouldn't have cut
18 you off.

19 Q Thank you. I appreciate that. Even if it's not explicit
20 in the computer security policy that you shouldn't copy someone
21 else's files, you think it's certainly implicit there, right?

22 A The University policy is a general statement of rules of
23 community. And one of the key rules of any university is
24 you're not allowed to cheat.

25 In this context, copying homework was forbidden,

1 presumably by the professor of the class, or a fact -- general
2 knowledge. So the policy -- so bill copied it, and the
3 policy -- basically, Bill violated the policy.

4 **Q** Right. Because it's just not credible, you wrote, that if
5 the university as a whole forbids something, that the computer
6 security policy would permit it, unless the computer security
7 policy explicitly says so. Right?

8 **A** Yes. I think that's what -- I don't remember whether
9 that's what I wrote, but I'll take your word for it. It sounds
10 right.

11 **Q** Okay. And the point is that you have to look at the
12 larger context of security policies. Right?

13 **A** If you're dealing with security policies, yes. But those
14 are very different than specifications.

15 **Q** And, just because something can be done under a security
16 mechanism doesn't mean it's consistent with the overarching
17 policy. Right?

18 **A** Correct. Security mechanisms are different than the
19 policy.

20 **Q** Right. So, just because the mechanism literally didn't
21 stop Bill from taking her file, it doesn't mean that it's
22 consistent with the policy.

23 **A** The policy states what is and is not allowed. In this
24 case, Bill violated those rules, at a -- Bill violated those
25 rules.

1 Q Now, sir, we looked at, with Mister -- you looked at, with
2 Mr. Mick, an excerpt from this same book on CSS. Or at least
3 he read it to you, I think.

4 A I think he read it to me.

5 Q A little one-page blurb on CSS?

6 A Yes.

7 Q Now, prior to your work in this case, that is all you had
8 ever done with respect to CSS. Right?

9 A All I had done was look at some web pages, because I had
10 heard about the incident described there. And, wrote what was
11 based -- what I -- what I believed to be true, based on those
12 web pages and my understanding.

13 It was done in 2000. Actually, that section was
14 probably written in 2001, or right towards the beginning of the
15 book.

16 No, was that true? It would probably be around 2001
17 when I wrote that. That would be my best guess.

18 Q Okay. My question, sir, was prior to your work in this
19 case, the only thing you had done with respect to CSS was that
20 one little article, or that one little blurb.

21 A That one little example in the book, yes, sir.

22 Q Okay. Before this case, you had no other experience with
23 CSS. Correct?

24 A I had never seen the specifications. I had never done any
25 analysis involving it. Nothing other than that example.

1 Q You had never -- you had no experience with DVD software,
2 before this case. Right?

3 A Other than as a user, no.

4 Q And you had had no experience with DVD products before
5 this case.

6 A Again, other than as a user, no.

7 Q And you had never brought your computer science expertise
8 to bear on DVD technology before this case.

9 A That's correct.

10 Q And you don't know much about how the DVD or the CSS
11 systems were developed. Right?

12 A I merely know what the specification -- that the
13 specifications are there. I don't know how they were
14 developed.

15 Q And you don't know why the protections were developed.

16 A No, sir, I don't.

17 Q Now, in your view, the specifications do not state an
18 underlying policy. Right?

19 A The specif- -- the specifications state what is and is not
20 to be done, and -- I'm sorry, the specifications state, here
21 are the steps you have to do. That's what I checked for.

22 Q Right, so -- exactly. And you did not think that there
23 was any explicit other -- overarching policy stated in the
24 specifications, right?

25 A I did not examine the specifications for any overarching

1 policy. I simply looked at, does this comply with the steps.
2 That was my job, as the software reviewer.

3 **Q** Right. And when you interpreted these specifications, you
4 did not consider any overarching policy underlying
5 specifications. Right?

6 **A** I -- as I have said, I simply looked at what the -- what
7 each step of the specification said, and whether or not the
8 Real products followed them. That's it.

9 **Q** But you would agree, from your work in computer security,
10 that when looking at computer security specifications, or any
11 specification, it's important for the engineer to have a sense
12 of the context. No?

13 **A** No, sir.

14 **Q** Okay. Now, I want to show you one of the slides that you
15 spoke to Mr. Scott about. Actually, there was a whole series
16 of these slides. Much of your direct examination was a sort of
17 explication of these slides.

18 Do you recall that?

19 **THE COURT:** And, Mr. Singla --

20 **THE WITNESS:** Slide Figure 4?

21 **MR. SINGLA:** I have about five minutes.

22 **THE COURT:** Yeah. I have a phone conference I must
23 be on. And, I think they will be calling in momentarily, or I
24 have to call them in momentarily.

25 So I think -- obviously he's going to have to come

1 back for redirect, in any event. So, I think we need to stop
2 here.

3 **MR. SINGLA:** Okay.

4 **THE COURT:** And, --

5 (Off-the-Record discussion)

6 **MR. SCOTT:** I do have some short redirect, Your
7 Honor.

8 **THE COURT:** Yeah. Well, we will do it tomorrow.

9 **MR. SCOTT:** Well, Mr. Bishop is unable to come back
10 tomorrow. And we would -- we set -- we set the time, and also
11 in light of the fact that I need to be in another court
12 tomorrow, when we set this schedule time, through today.

13 **THE COURT:** I have no idea. But I have a phone
14 conference with the chief of the Ninth Circuit, and another
15 justice of the state -- one of the state courts.

16 **MR. SCOTT:** Is it possible to finish Professor Bishop
17 today?

18 **THE COURT:** Not -- not in -- not in the next -- not
19 for a while. And, I don't know about the court reporter coming
20 back, you know, in 45 minutes or half hour or something like
21 that.

22 **MR. SCOTT:** Your Honor, we will --

23 (Off-the-Record discussion)

24 **THE COURT:** You can. Okay.

25 **MR. SCOTT:** If that doesn't work, I'll forego

1 redirect, and I will --

2 **THE COURT:** Well, she says she can be back here. So,
3 I don't know how long this phone conference is going to take,
4 but at least until a quarter to 6:00. Or -- yeah, that is
5 quarter to 6:00, isn't it? Yeah.

6 **MR. SCOTT:** Well, --

7 **THE COURT:** Okay?

8 **MR. SCOTT:** We will, of course, wait for the Court,
9 and I appreciate it if you are able to do that. And the staff,
10 I appreciate it.

11 **THE COURT:** Okay. Go have a drink or something.
12 Chill out, chill out, and maybe you won't even care about the
13 rest of those questions.

14 **THE WITNESS:** Thank you very much, Your Honor.

15 **THE COURT:** It won't look so important. And by the
16 way, bring back one for me.

17 (Laughter)

18 (Recess taken from 5:17 to 6:22 p.m.)

19 **THE COURT:** Okay. You ready to continue?

20 **MR. SINGLA:** Of course, Your Honor.

21 **THE COURT:** Thank you. Go ahead.

22 **MR. SINGLA:** Thank you, Your Honor.

23 **THE COURT:** You ready, Belle?

24 **MR. SINGLA:** We very much appreciate the court
25 reporter and the staff staying late, and the Court's

1 indulgence.

2 **BY MR. SINGLA:**

3 **Q** Professor Bishop, I just want to ask you a few questions
4 about the animation that you showed the Court during your
5 direct examination.

6 **A** Yes, sir.

7 **Q** You recall it was a lengthy animation based on this slide?

8 **A** Yes, sir.

9 **Q** So, I don't have access to the animation, so I'm just
10 going to try to pretend with a pen. Bear with me.

11 So if I understood this diagram correctly, what you
12 were showing the Court is that you had taken something from the
13 CSS specifications, the left three columns of this Figure 4
14 from the specifications.

15 And for the Record, this is Slide 43 of the
16 submission or the slide packet from RealNetworks --

17 **THE COURT:** Is that in the binder that I have been
18 given?

19 **MR. SINGLA:** I believe it is in your binder, Your
20 Honor.

21 **MR. SCOTT:** Yes, it is, Your Honor. It is.

22 **THE COURT:** Yes, okay. I have it. Yeah. Fine.

23 **BY MR. SINGLA:**

24 **Q** And if I understand correctly, the left three columns
25 here, and then the right-most column, those are from a diagram

1 in the specifications?

2 **A** Yes, sir, they are.

3 **Q** Okay. And then, the middle part here, where there's some
4 hard drives and AES encryption and AES decryption boxes, that
5 you have added?

6 **A** Yes, sir.

7 **Q** And that is what RealDVD does.

8 **A** RealDVD does the -- everything in the -- from the DVD
9 video decoder, to the discs, to the DVD video descrambler. In
10 other words, everything in that left-most box -- or right-most
11 box, I'm sorry.

12 **Q** Okay. Now, at least in terms of looking at the
13 specifications --

14 **A** Yes, sir.

15 **Q** This is one of the principle areas of dispute between the
16 parties, whether RealNetworks is authorized to do this. Right?

17 **A** Yes, sir.

18 **Q** Okay. And if I understood your testimony correctly, and
19 your opinion correctly, what you're saying is nothing in the
20 specifications says you can't do this (Indicating).

21 **A** Nothing in the technical specifications that I reviewed
22 prohibits that.

23 **Q** And so, you concluded they could do it.

24 **A** I concluded that doing so did not violate the technical
25 specifications.

1 Q Okay. Now, again, I want to put aside our dispute over
2 whether the specifications forbid this. As you understand, we
3 take a different reading of the specification. We will put
4 that aside.

5 Your view is that because nothing in the
6 specifications as you read them forbids this, they can do it.
7 Right?

8 A Nothing -- it does not contradict anything in the
9 specifications. So, from a technical point of view, they can
10 do it.

11 Q Right. So the idea is that anything that's not prohibited
12 in the specifications expressly, they can do.

13 A Providing -- anything that is not prohibited by the -- by
14 all the specifications, they can do. And I want to emphasize
15 my evaluation is a technical one, not a legal one or a
16 contractual one or anything like that. I'm only speaking to
17 the technology.

18 Q That's a very fair interpretation, and I understand what
19 you are saying.

20 Your interpretation as a technologist, a computer
21 scientist, is that anything that's not expressly prohibited in
22 the specification, you concluded RealNetworks could do.

23 A Yes, sir.

24 Q And that's the basis for your opinion.

25 A The basis for my opinion is my checking the source code

1 against the specifications to see whether or not they do what
2 the specifications say.

3 **Q** And if there's anything in the specification that
4 expressly prohibits what they do.

5 **A** Right. First of all, do they do what is required, and do
6 they do anything that is not -- that is forbidden?

7 **Q** Okay. Now, as you interpret specifications -- again, we
8 are going to stick with your reading of the specifications --
9 nothing would prohibit RealNetworks from -- or anybody -- from
10 then copying this movie (Indicating), the DVD data, with the
11 keys, to a different hard drive.

12 Right? Nothing would prohibit that.

13 **A** When you do that, RealDVD will not function. That's not
14 how the product works.

15 **Q** I understand, sir. I'm not asking you how RealDVD
16 functions. Let me be clear. I'm asking about your
17 interpretation that you are presenting to the Court about the
18 specifications.

19 **A** Okay. To be honest, I did not consider that in any depth.
20 What I would need to do is go through the specifications, and
21 have more detail on the specific manner of things that you're
22 talking about, the constraints and the like, and then evaluate
23 it in that light.

24 I have not done so, because that's not how the
25 product works.

1 Q Uh-huh. But you've read the specifications carefully,
2 right?

3 A Yes, I've read them carefully.

4 Q You have studied them?

5 A I think so, yes, sir.

6 Q You know what they say.

7 A I would need to have them open and flip around in them,
8 but I know in a gen- -- I know what they say in particular, as
9 far as the real source -- DVD source -- sorry, as the real
10 source code goes. That's what I focused on.

11 Q Now, there's nothing that -- the way you're reading those
12 specifications, the way you're reading them -- there's nothing
13 that would prohibit the movie from then being copied to a
14 different hard drive (Indicating). Right?

15 A As I recall, there is a portion on copy protection. And
16 I'd need to review that in depth before I was able to say.

17 Also, I would need to know exactly what is being
18 copied, and how it is being copied. So, I can't answer your
19 question because I -- you know, when you check a specification
20 to see whether or not you comply, you have to look at all the
21 details. So I'm not comfortable -- I can't give an opinion one
22 way or the other. I have not looked at it, I have not thought
23 about it, and I don't have the product code for anything that
24 would do that.

25 Q You know Professor Felten, don't you?

1 A Yes, I do.

2 Q He is another expert for RealNetworks in this case?

3 A I believe he is.

4 Q He submitted a report?

5 A Yes, he did.

6 Q You spoke with him with respect to this case?

7 A I spoke with him once, yes.

8 Q And RealNetworks hasn't brought him to trial, or at least
9 to this hearing, right? To your knowledge?

10 A To my knowledge, no. He is not here now, certainly.

11 Q Did you read his deposition?

12 A If I did it was a while back, and I don't remember details
13 of it.

14 Q Do you remember that he opined -- at least as you read the
15 deposition, do you remember whether he opined that nothing in
16 the specifications, as you both were reading them, would stop
17 somebody from then copying this movie to another hard drive?

18 A Number one, I don't remember his deposition in that level
19 of detail. In fact, I barely remember it at all.

20 But more importantly, I -- did Professor Felten
21 really say that this would be Matt Bishop's reading of it?
22 Because --

23 Q No, no. He was saying the way he read it.

24 A Oh, the way he read it. The answer is I don't know.

25 Q Okay.

1 **THE COURT:** And what you said, Matthew Bishop's
2 reading of it.

3 **THE WITNESS:** Yes. I was asking whether or not in
4 the declaration --

5 **THE COURT:** His own. That's what I thought. Okay.

6 **THE WITNESS:** Yes.

7 **THE COURT:** I just wanted to make sure.

8 **BY MR. SINGLA:**

9 **Q** And, and then, if the movie could be copied to multiple
10 hard drives, over and over again -- and forgive my lack of
11 artistry here (Indicating).

12 **A** I failed kindergarten art, too, sir.

13 **Q** Then, nothing in the specifications, the way you're
14 reading them, would prohibit those copies from then being, you
15 know, put down into the same AES decryption box (Indicating)
16 and being watched. Right?

17 **A** I -- if you're talking about the existing RealNetworks
18 product, it doesn't do that.

19 If you're talking about some change to it, again, I
20 would need to know much more about the change, and then I would
21 need to evaluate this in light of the anti -- I'm sorry, in
22 light of the copy protection provisions and so forth, so -- the
23 technical ones. So, I can't say.

24 **Q** Those copy protection provisions are the ones you
25 discussed with the Court?

1 A Yes, sir.

2 Q The ones you showed the Court, today?

3 A Yes, sir.

4 Q Things like blocking the output of the analog, the analog
5 outputs?

6 A I would want to check the specifications to be sure those
7 were the only ones involved. But the ones I had in mind when I
8 answered your questions were the -- I believe it's 1.8 copy
9 protection that led to 6.2-something.

10 Q Right, right.

11 A But as I say, I would need to do an evaluation. I don't
12 know.

13 Q Uh-huh. Isn't it true, sir, that if your reading of these
14 specifications were true, there would be no limitations
15 whatsoever in CSS on making endless copies of movies on hard
16 disc and playing them all back on any machine?

17 Isn't that true, sir? If you -- the way you're
18 reading these specifications?

19 A I don't understand your question.

20 Q The way you are interpreting these specifications, isn't
21 it true that there would be no limitation, then, on copying of
22 movies on to various hard discs and playing them back on any
23 computer?

24 A Again, I can't say, I would need to evaluate the specifics
25 of what you are suggesting. And then, determine whether or not

1 the code that you are proposing meets the standard. I have not
2 done that, so I don't know.

3 Q Well, can you think of anything as we're talking about
4 this, that raises a concern to you in your reading of the
5 specifications? Can you think of something?

6 A The 1.8, 6.2, whatever it was, that part, would be
7 something that I would certainly check out very, very quickly.
8 There would also -- there may also be other issues. But, as I
9 say, I have not considered this.

10 Q Uh-huh.

11 A I don't know.

12 Q So it's your view of the specifications that RealNetworks
13 can copy the movie onto this hard disc, nothing stops that.
14 But there's something in the specification that's going to stop
15 them from copying it to a second hard disc. That's what you're
16 saying?

17 A No, sir. My view is simply that the RealDVD product,
18 copying it onto the hard drive the way it does, the specific
19 existing product does not violate the CSS standards.

20 Q Right.

21 A As far as other hypothetical discs and so forth I have no
22 opinion, because Real doesn't do that, so I did not evaluate
23 it.

24 Q But you're trying to suggest to the Court that there could
25 be something in the specification -- could be -- that would

1 prevent this onward copying, but permit this first copy
2 (Indicating).

3 Is that what you're saying?

4 **A** I'm saying I don't know.

5 **Q** Okay. Now, the other thing I wanted to ask you about the
6 animation that I didn't fully understand is the animation shows
7 these keys.

8 Do you see that blue key there (Indicating)?

9 **A** Yes, sir.

10 **Q** And if we look at the next page or some of these other
11 pages, like, oh, Slide 46, there are these orange keys and blue
12 keys (Indicating).

13 **A** Yes, sir.

14 **Q** Now, those represent the CSS keys?

15 **A** The blue key represents the video master key. And the two
16 orange keys represented the shared key that's generated during
17 the authentication -- CSS authentication.

18 **Q** So my question was, so these are the CSS keys?

19 **A** They are CSS keys, yes, sir.

20 **Q** Thank you. And then, sometimes the keys turn into these
21 orange boxes (Indicating). Do you see that, sir?

22 **A** Yes, sir.

23 **Q** This is on Slide 48. Right?

24 **A** Yes -- yes, sir. It's on the slide up there.

25 **Q** And then I saw in the animation, all these boxes were

1 flying around. Do you remember that?

2 **A** Yes, sir.

3 **Q** Looks like a blue box and a purple box, right?

4 **A** Yes, sir.

5 **Q** So the keys were turning into boxes and then turning back
6 into keys, right?

7 **A** The keys would lock -- would obscure -- I'm sorry. The
8 keys would encrypt the material in the boxes. And, that was
9 represented by the opaque boxes.

10 And then later on, the other keys would come in and
11 unlock the boxes and make what was in there -- make -- you
12 know, extract the key so it was no longer -- no longer was
13 opaque.

14 **Q** I want to make sure we all understand what you are saying
15 here.

16 What you were saying is that when the keys,
17 themselves, are encrypted, they turn into these boxes. That's
18 what you were displaying. Right?

19 **A** When the keys are -- when the secure disc key data is
20 encrypted, it turns into the -- I'm sorry -- it turns into the
21 dark rectangle there.

22 **Q** Okay. Actually, that's a touch screen there. This is
23 fancy technology --

24 **A** I just realized that.

25 **Q** -- in this courtroom. So, feel free to use that if you

1 would like.

2 **A** Thank you.

3 **THE COURT:** When you're talking about what you just
4 testified to, you actually say something about the dark
5 rectangle there. But you are referring to, for example, on
6 Page 48, this (Indicating) --

7 **THE WITNESS:** Yes, ma'am.

8 **THE COURT:** -- this particular box (Indicating), in
9 this particular area, for example.

10 **THE WITNESS:** Yes, Your Honor, for --

11 **THE COURT:** And that sort of moves around at various
12 times. Right?

13 **THE WITNESS:** Yes, Your Honor. I'm sorry --

14 **THE COURT:** And then you get over here a blue one
15 (Indicating), and then here, you get a purple one (Indicating).
16 But -- okay.

17 Whatever you want to do with that, but I just wanted
18 to clarify that for my -- make sure I understood what he was
19 talking about.

20 **MR. SINGLA:** I just was trying to clarify the exact
21 same thing, Your Honor.

22 **BY MR. SINGLA:**

23 **Q** So, what you are showing here is that these keys are
24 encrypted, either by CSS or by AES, you're showing the keys
25 turning into these boxes. Right?

1 A Yes, sir.

2 Q And if I understood earlier, the Judge asked you a
3 question -- the Court had asked you a question during your
4 direct. And you suggested that these keys were turning into
5 blobs.

6 A Yes, sir.

7 Q The blobs are these boxes.

8 A The colored boxes, yes, sir.

9 Q Okay. And what you're saying is once they're encrypted,
10 the keys are no longer keys, they're blobs.

11 A Well, what I'm saying is that the key -- it's not like you
12 take a key and wrap it up in something. You actually transform
13 it. And the opaque box is showing that -- the results of that
14 transformation.

15 Q The transformation, you mean the encryption?

16 A The encryption, yes, sir.

17 Q So when the movie on the DVD is encrypted, you would say
18 that's no longer a movie, it's some kind of a very large blob.

19 A It is -- what I'm saying is it's different than the -- the
20 bits in the blob are different than the bits in the movie.

21 Q Right. And so, if you copy the movie, and then encrypt
22 the copy, right, you would say you haven't copied the movie
23 because it's two different things. Right?

24 A I -- yes, sir.

25 Q Right. Because the first one is the original movie, and

1 the second one is the encrypted movie. Right?

2 **A** Yes, sir.

3 **Q** And so in your mind, the way you're testifying, those are
4 two different things.

5 **A** The encrypted -- they're different in the sense that the
6 encrypted movie cannot be played directly. You will have to
7 decrypt it to recover the original movie.

8 **Q** And they have different bits. In other words, the numbers
9 in the computer read differently for the original movie and the
10 encrypted movie. Right?

11 **A** Yes, sir. Yes, sir.

12 **Q** That's what you mean by this concept of blobs.

13 **A** Yes, sir.

14 **Q** Right?

15 **A** Yes, sir.

16 **Q** Okay. So --

17 **THE COURT:** But they're encrypted with what?

18 **THE WITNESS:** The blobs, the -- the one that's up
19 there now is encrypted with the AES. The orange ones were
20 encrypted with the shared bus key. The CSS bus key.

21 **BY MR. SINGLA:**

22 **Q** So if we look at Slide 49, just to follow up on the
23 Court's question, if I understand, the orange and the blue
24 (Indicating) are CSS encryptions. Correct?

25 **A** Yes, sir.

1 Q And the purple is RealNetworks's encryption.

2 A Yes, sir.

3 Q Okay. Now, the point of the blobs, as I understand, the
4 reason you are showing the Court these blobs, is that what
5 you're saying to the Court is that when the specifications say
6 keys may not go on buses, you're saying the keys don't go on
7 buses. Right?

8 A The unencrypted keys do not go on the buses. Correct.

9 Q What goes on the buses are these blobs.

10 A Yes.

11 Q And so, the basis for your opinion is the idea that
12 because the keys are encrypted, they're no longer the keys,
13 they're these blobs.

14 A The basis for the idea is that the CSS specifications
15 disallow unencrypted keys from going across the user-accessible
16 bus, but not encrypted keys from going across the
17 user-accessible bus.

18 Q Well, when the CSS specifications say the output of this
19 box (Indicating) which reads "Secure Disc Key Data" in the
20 authenticator, may not go -- must go to the box in the
21 descrambler, without appearing on a bus -- right? It does say
22 that, doesn't it?

23 A Hmm --

24 (Witness examines document)

25 A I believe it says user without --

1 Q Authenticator Section 2?

2 (Witness examines document)

3 A It says "user-accessible bus," but yes.

4 Q Right. It says --

5 MR. SINGLA: Your Honor, this is in the authenticator
6 module for DVD drive.

7 THE COURT: Yes, right.

8 MR. SINGLA: Page ADR-5 and ADR-6.

9 THE COURT: Uh-huh.

10 MR. SINGLA: It says that the output from the
11 authenticator --

12 MR. LAMBERT: Your Honor, I hate to interrupt this.

13 MR. SINGLA: Oh, I'm sorry.

14 MR. LAMBERT: But we're still in open court. And I
15 think we're reading --

16 THE COURT: Okay. Now, I --

17 MR. LAMBERT: -- processes.

18 THE COURT: Now, I have the bottom of Page 5, top of
19 Page 6 highlighted. Is that what we are referring to?

20 MR. SINGLA: Yes, Your Honor.

21 THE COURT: Okay. That makes it easy.

22 MR. SINGLA: Mr. Lambert, can I refer to the words
23 after "output"?

24 MR. LAMBERT: It's -- I'm not sure that's my decision
25 to make.

1 **MR. SINGLA:** Okay.

2 **MR. LAMBERT:** That's all.

3 **THE COURT:** Well, just refer Mr. Bishop to the --
4 Professor Bishop to the -- to the page and line, and --

5 **MR. SINGLA:** Thank Your Honor. I will do that.

6 **THE COURT:** And then answer, please try to answer
7 without exposing any kind of trade secrets that may be in this
8 document.

9 **THE WITNESS:** Yes, Your Honor.

10 **THE COURT:** And I think what you are really referring
11 to is what's at the very top of Page 6, right?

12 **MR. SINGLA:** Yes, Your Honor.

13 **THE COURT:** What do you want to ask him about that?

14 **MR. SINGLA:** The last few words -- okay.

15 **BY MR. SINGLA:**

16 **Q** And what you are saying is that that provision is not
17 violated because the keys, as they move over the bus, turn into
18 these purple blobs. Right?

19 **A** The keys are not on the user -- I'm sorry. The keys do
20 not satisfy the output condition. The blobs do not satisfy the
21 output condition.

22 **Q** Right. Because they're not keys any more. That's what
23 you are saying.

24 **A** In essence, yes.

25 **MR. SINGLA:** Nothing further, Your Honor.

1 **THE COURT:** Okay. Mr. Scott?

2 **MR. SCOTT:** I will be very brief, Your Honor.

3 **THE COURT:** Yes.

4 **MR. SCOTT:** I have one subject, and it relates to a
5 question that you asked.

6 **THE COURT:** I have to be careful about asking
7 questions. They use that as an excuse to ask more. I think
8 it's for my own edification, but I guess I don't know -- I may
9 be asking for trouble.

10 **MR. SCOTT:** Let me put back on the ELMO the same --

11 **THE COURT:** Same set of blobs?

12 **MR. SCOTT:** This doesn't get to the blobs yet, Your
13 Honor.

14 **THE COURT:** Which page are we talking about?

15 **MR. SCOTT:** This one is Page 43. Actually, the
16 blob's from Pages --

17 (Off-the-Record discussion)

18 **REDIRECT EXAMINATION**

19 **BY MR. SCOTT:**

20 **Q** During Mr. Singla's examination, the Court asked you a
21 question, Professor, is CSS encryption removed?

22 I may not have gotten all the words down, but I
23 wanted to just address that one issue, and just on the kinds of
24 encryption involved.

25 Actually, first, beginning with the scrambled A/V

1 data, on the slide -- why don't we use the touch feature right
2 there, and just go ahead and show where the scrambled A/V data
3 begins on the left.

4 **A.** Will this work? I'm not very good with this type of
5 technology, I'm afraid.

6 **Q.** There. We got it.

7 **A.** I think that's close.

8 **Q.** Now, on that lower left where you have the scrambled A/V
9 data --

10 **THE COURT:** Is that green circle supposed to be
11 around that last entry there on the far left, on the disc?

12 **THE WITNESS:** It is, Your Honor. I apologize for my
13 poor drawing.

14 **BY MR. SCOTT:**

15 **Q.** Is that scrambled disc A/V data?

16 **A.** Yes, sir, it is.

17 **Q.** Does RealDVD remove the CSS scrambling from the A/V data
18 anytime before the descrambler for playback?

19 **A.** No, sir.

20 **Q.** Can you just show where that is over on the right side?

21 **A.** Here is where it would be removed and here is where it
22 would be played.

23 **Q.** So that's not removed until the end?

24 **A.** Until just before it's to be played. Oh, that's how you
25 do it.

1 Q. How did you do it, with your fingernail?

2 A. Did it with my fingernail, that's right.

3 Q. All right. Now, going back to the left-hand side, there
4 is a reference to the encrypted video title keys. And can you
5 mark that. What is the -- what's referred to by the encrypted?

6 A. The encryption -- the encrypted video title key is the
7 video title key encrypted using the disc key.

8 Q. Is that CSS encrypted?

9 A. That is, indeed, CSS encrypted, sir.

10 Q. Does the title key -- is that also true with the so-called
11 secure disc key data?

12 A. Well, the secure disc key data contains the disc key
13 encrypted using the video master key. But that also is CSS
14 encrypted.

15 Q. Are there, in fact, two different levels of CSS encryption
16 for the keys?

17 A. Yes, there are.

18 Q. At different times?

19 A. Yes, sir.

20 Q. Now, with respect to the CSS encryption on the left, for
21 the title keys and disc key data, is that CSS protection
22 removed prior to playback, over on the right-hand side?

23 A. No, sir, it is not.

24 Q. Can you just mark where that comes in.

25 A. I'm sorry, where what comes in?

1 Q. Where the CSS encryption is removed from the disc and
2 title keys.

3 MR. MICK: Your Honor, with apologies, I need to note
4 for the record that we can't have Mr. Scott and Professor
5 Bishop identify the entirety of the specification diagram and
6 process piece by piece, like this, because we eventually come
7 to the point where we have crossed over and published the
8 document.

9 THE COURT: We're not going to spend that much time.

10 MR. SCOTT: Not going to any greater level of detail
11 but simply to identify these pieces.

12 BY MR. SCOTT:

13 Q. So that's not removed. There's a second level of CSS
14 encryption called the bus key encryption; is that right?

15 A. Yes, sir, there is.

16 Q. And is that level put on specifically for the keys already
17 encrypted, but for the keys to move across that user-accessible
18 bus from the DVD disc to the authenticator?

19 A. From the DVD disc drive to the authenticator, yes, sir.

20 Q. So these are the CSS bus key encryption encrypted keys?

21 A. Yes, sir.

22 Q. When we speak of removal of CSS encryption, what
23 encryption are you referring to?

24 A. The CSS bus key encryption.

25 Q. This is removed at what time?

1 **A.** As soon as the -- as soon as the keys are read from --
2 arrive at the software from the DVD video disc drive.

3 **Q.** Is the CSS bus key encryption removed from the keys when
4 specified by the CSS specs?

5 **A.** Yes, sir.

6 **Q.** Does the CSS encryption, the first level of encryption,
7 remain on the keys at all times before the playback?

8 **A.** Yes, sir.

9 **Q.** When the CSS bus key encryption is received, it's removed
10 as per specification. Is AES encryption added at that time?

11 **A.** Yes, sir.

12 **MR. SINGLA:** Your Honor, may I come a little closer?
13 I can't see from where I'm sitting.

14 **THE COURT:** Certainly.

15 **MR. SINGLA:** Is that all right?

16 **THE COURT:** Certainly.

17 **MR. SINGLA:** Thank you, Your Honor.

18 **THE COURT:** I think, at this point, all formality has
19 been abandoned.

20 (Laughter)

21 **MR. SINGLA:** I hope that's not true.

22 **MR. SCOTT:** Judge, I'm on my knees.

23 **THE COURT:** Well, about time.

24 **MR. SCOTT:** My wife has been saying that to me for a
25 long time.

1 (Laughter)

2 **BY MR. SCOTT:**

3 **Q.** When the bus key encryption is removed as per
4 specification, and AES encryption is added to the keys, does
5 that remain, the AES, on top of the original CSS encryption
6 until playback?

7 **A.** Yes, sir.

8 **Q.** Is AES encryption also added to the scrambled A/V data?

9 **A.** Yes, sir.

10 **THE COURT:** And, in fact, is that what's happening
11 when you look at the bottom of this and you see the scrambled
12 A/V data and then it goes over to AES?

13 **THE WITNESS:** Yes, Your Honor, it is.

14 **THE COURT:** And et cetera, et cetera?

15 **THE WITNESS:** Et cetera, et cetera, yes, Your Honor.

16 **BY MR. SCOTT:**

17 **Q.** Now, Professor Bishop, you had a discussion -- I forgot
18 who with, I know the court did participate, but it was about
19 the "any method" language. Do you remember that, the "any
20 method" language from the specifications? Let me --

21 **A.** If you could put me to the page.

22 **Q.** Yes. And you referred to several different papers. Let
23 me refer you -- you cited, for example, from the authenticator
24 module for the CSS decryption module, page ADC-29, I think from
25 memory, is -- I'm not sure how to get that -- leave all the

1 lines for later, Your Honor.

2 **MR. WILLIAMS:** Is that legible, Your Honor, to you on
3 the screen?

4 **THE COURT:** I'm going to pull it up. So this is from
5 the ADC, right?

6 **MR. SCOTT:** The ADC one, page 29. This is one
7 specifically the professor referred to.

8 **THE COURT:** Yes.

9 **MR. SCOTT:** It appeared several places. I won't go
10 to the other places.

11 **THE COURT:** Yes, I have it.

12 **BY MR. SCOTT:**

13 **Q.** What I want to call your attention to, Professor, and ask
14 if this is what you're referring to, from Section 6.1.2 of the
15 authenticator module specs, page ADC-29, sub paragraph 1,
16 quote --

17 **MR. STEER:** Your Honor, if we could not have that
18 highly confidential language read aloud in the courtroom.

19 **THE COURT:** Why don't you just refer -- are you
20 referring to the last sentence in that paragraph that was
21 testified to before?

22 **MR. SCOTT:** Your Honor, if you would just note --

23 **THE COURT:** "Any method"?

24 **MR. SCOTT:** I know it's kind of blurry. No. The
25 first sentence, may I just ask the Court to read and,

1 Professor, read to yourself, the subject of that sentence being
2 keys and algorithms.

3 **BY MR. SCOTT:**

4 **Q.** Do you see that subject?

5 **A.** Yes, sir.

6 **Q.** Do you recognize this section as dealing with the subject
7 of protecting keys and algorithms?

8 **A.** Yes, sir.

9 **Q.** And then going down further, about six -- and, again,
10 where I've highlighted on the screen, it refers to, "Any method
11 of achieving this result may be used."

12 And I won't read any further, for confidentiality.

13 **THE COURT:** Uh-huh.

14 **BY MR. SCOTT:**

15 **Q.** "Any method of achieving this result may be used,
16 including but not limited to," and I stop there.

17 Is that what you're referring to, Professor?

18 **A.** Yes, sir.

19 **Q.** Does that same language appear in the procedural
20 specifications?

21 **A.** I have to check. I don't --

22 **Q.** Let me call your attention to A-26, Section 6.2.4.2, sub
23 paragraph 1.

24 **MR. SCOTT:** I apologize, Your Honor. On the screen I
25 made pencil markings, but just to orient us.

1 **THE WITNESS:** Yes, sir.

2 **BY MR. SCOTT:**

3 **Q.** Same language? Beginning on page A-26?

4 **A.** Yes, sir, the same language. Excuse me.

5 **Q.** And I believe you mentioned, also during cross, that the
6 same language appears in the DVD video descrambler, page
7 DSR-32, Section 5.1.2, subparagraph 1.

8 **A.** Same language.

9 **Q.** All about protecting confidential keys and algorithms?

10 **A.** Yes, sir.

11 **Q.** All threes of these specs are talking about that?

12 **A.** All three of them contain that language, sir.

13 **Q.** And they use the identical language "any method to
14 protect"?

15 **A.** Yes, sir.

16 **Q.** Of the any methods to protect that you know of available
17 in the cryptography world, to protect those confidential keys,
18 can you think of any better than AES-128, that's available to
19 RealNetworks?

20 **A.** I would say AES is one of the best.

21 **MR. SCOTT:** Thank you. That's all, Your Honor.

22 **MR. SINGLA:** I apologize, Your Honor.

23 **THE COURT:** I understand. I understand.

24 Mr. Mick, do you have anything further?

25 **MR. MICK:** No, Your Honor. I'll defer to Mr. Singla.

1 on a first name basis with all these exhibits to Mr. Pak's
2 declaration.

3 **MR. SINGLA:** I apologize for that, Your Honor.

4 **BY MR. SINGLA:**

5 **Q.** Actually, let me ask you a different question, first, for
6 a second, Professor Bishop.

7 Do you know what Themida is?

8 (Reporter interrupts.)

9 Themida, T-h-e-m-i-d-a.

10 **A.** Yes, sir.

11 **Q.** What is Themida?

12 **A.** It is a commercial product designed to -- when you build a
13 program, it's designed to harden the program, to make it more
14 difficult to attack, to make it very difficult, for example, to
15 find out information about what's in there. That sort of
16 thing.

17 **Q.** And that's something that RealDVD uses in its product?

18 **A.** Yes, sir.

19 **Q.** RealNetworks uses in its product, right?

20 **A.** Yes, sir.

21 **Q.** It's used in RealDVD to obfuscate the algorithms and the
22 keys and the operation of the program?

23 **A.** Yes.

24 **Q.** And the way Themida works is it obfuscates the operation
25 and algorithms and keys while the program is running in memory?

1 A. I know it does that, yes, sir.

2 Q. And so the idea of Themida is that there are ways to
3 attack the security systems in which you try to attack the
4 running program, right?

5 A. I believe Themida also scrambles the executable file while
6 it's on disc, too. But, yes, that's the idea.

7 Q. And so when these programs are running, what hackers, for
8 want of a better word, are wont to do is to install other
9 programs on the computer that will try to figure out, let's
10 say, what RealDVD is doing, right?

11 A. Yes, sir. They'll try to monitor it and figure out what's
12 going on.

13 Q. So while the programming is running, they'll try to see if
14 they can get the algorithms?

15 A. They'll try to see if they can get whatever information
16 they're after.

17 Q. The keys?

18 A. The keys or the algorithms, yes, sir.

19 Q. Right?

20 A. Yes, sir.

21 Q. Do you know, in fact, when CSS was originally cracked or
22 hacked, or whatever you want to say, that that's how it
23 happened? Are you aware of that?

24 A. I have no idea. As I say, I did not know anything about
25 CSS, other than from the Web, until I started going through the

1 specifications. I have no knowledge of how it was cracked.

2 **Q.** Okay. But you are aware that there have been security
3 systems hacked in this way, in which while the program is
4 running an attacker tries to figure out how the program is
5 working or get at the keys?

6 **A.** I know that's one of the ways to do what's called reverse
7 engineering, yes, sir.

8 **Q.** Now, when we go to this Section 6.1.2, I notice it says
9 that one of the things that can be done is to -- trying to find
10 the language -- is to -- any method of achieving this result.
11 And one method they give is "implementation in ring zero or
12 supervisor mode." Do you see that?

13 **A.** Yes, sir.

14 **Q.** Now, ring zero or supervisor mode is the ability to set up
15 some programs in the computer so that while they're executing,
16 while they're running inside the computer, they have special
17 security status, right?

18 **A.** They have special status, period, including security.

19 **Q.** Right. Forgive my sort of layperson's effort to explain
20 this, but that's right?

21 **A.** Yes.

22 **Q.** Okay. And so it's actually not uncommon in security
23 systems to use encryption, obfuscation, ring zero, these kinds
24 of techniques, to protect programs running in memory?

25 **A.** When it is appropriate to do so, yes, sir.

1 Q. And that doesn't mean, necessarily, that you're protecting
2 what the program is sending out to a disc or to a screen or
3 over a bus, necessarily. It could mean you're just protecting
4 the program as it's running in memory, right?

5 A. It could mean both things.

6 Q. Could mean both things, right?

7 A. Yes, sir.

8 Q. And one of the things it could mean is protecting the
9 program while it's running in memory?

10 A. Yes, sir.

11 Q. Protecting the keys while they're operating in memory,
12 right?

13 A. Yes, sir.

14 Q. That's why you would put it in ring zero mode, for
15 example?

16 A. For example, yes, sir.

17 Q. And it mentions, for example, a debugger. Do you see
18 that?

19 A. Yes, sir.

20 Q. And that's one of the things that this provision instructs
21 CSS licensees to protect against, against the use of debuggers?

22 A. Yes. Yes.

23 Q. So one of the things this provision is targeted at is
24 making sure CSS licensees develop their products so they're
25 protected from debuggers?

1 A. Yes, sir.

2 Q. And a debugger is, again, one of these systems that
3 attacks a program or looks at a program as it is operating in
4 memory?

5 A. It looks at the program as it's operating in memory. It's
6 used, often, to figure out what problems are occurring. It's
7 not necessarily used for attacking.

8 Q. Right. A debugger is a tool that can be used for good
9 reasons or bad reasons, right?

10 A. Like any other tool, sir.

11 Q. Right. But a debugger, fundamentally, is something that
12 programmers use to analyze the operation of a program as it's
13 operating in the memory?

14 A. Yes, sir.

15 Q. So you would use that program to see where the keys in
16 memory -- what is being done to the keys in memory, right?

17 A. If you could. RealDVD as implemented will not run under a
18 debugger.

19 But, yes, if you were using a debugger on a program
20 which would run under a debugger, that would be one of the
21 things you could do. You could look at memory locations and
22 things like that.

23 Q. Right. So RealDVD, to meet this provision, implemented
24 Themida to make sure the debugger could not attack it while
25 it's running in memory?

1 **A.** They actually implemented an additional layer of
2 protection to that, as well.

3 **Q.** Okay. Great.

4 And a debugger is not necessarily something that
5 tries to attack the transmission of data over a bus, right?

6 **A.** Again, I would take issue with the word "attack" and
7 "debugger." But, no, it does not try to analyze.

8 You could use it to analyze things that are in
9 memory, but a standard software debugger would be able to look
10 at the results of what came over the bus.

11 Perhaps I should say I don't understand the question.
12 Could you --

13 **Q.** Fair enough.

14 Let me put it differently. The debugger has a
15 purpose that's independent of data traveling on and off a bus.
16 It has the purpose of analyzing the operational program in
17 memory?

18 **A.** It has the purpose of analyzing the operation of the
19 program, yes, sir.

20 **Q.** Regardless of whether data is going on and off a bus?

21 **A.** If it is going on or off a bus as part of the program,
22 yes. If it's not on the bus then there's no interaction.

23 By the way, when I say "bus" here, I assume we're
24 talking about a user-accessible bus.

25 **Q.** Yes. I think we have been using the word "bus" as a

1 shorthand for user-accessible bus.

2 **A.** Thank you.

3 **MR. SINGLA:** No further questions, Your Honor.

4 **THE COURT:** May this witness be excused?

5 **MR. SCOTT:** Yes, Your Honor.

6 **MR. MICK:** Yes.

7 **THE COURT:** Without being subject to being recalled?

8 **MR. SCOTT:** Yes, Your Honor.

9 **THE COURT:** Well, you made it through the whole day.

10 How about that?

11 **THE WITNESS:** Thank you, Your Honor.

12 **THE COURT:** Thank you.

13 You are excused, but do not discuss your testimony
14 with any other persons who may witnesses until the trial is
15 over.

16 **THE WITNESS:** Yes.

17 **THE COURT:** Thank you.

18 **MR. SCOTT:** One other, in terms of the evidence, is
19 the exhibits. It will just take a moment.

20 **THE COURT:** Except the court deputy is not here. So,
21 hold on just a minute. Make sure we get the numbers down.

22 Do you want to make a note of them, too, Kassie.
23 What have we got?

24 **MR. SCOTT:** First, I would offer as a demonstrative
25 exhibit the book of slides used in my direct examination of

1 Professor Bishop. And I promised that, as we were referring by
2 page numbers, that should part of the record as a
3 demonstrative.

4 **THE COURT:** Can we give this entire binder --

5 **MR. SCOTT:** Lori, do we have a number?

6 **THE COURT:** -- a number or a letter or --

7 **MS. BARNICKE:** It should be D.

8 **MR. SCOTT:** Exhibit D.

9 **THE COURT:** Exhibit D. But for demonstrative
10 purposes only, right?

11 **MR. SCOTT:** Yes. I believe that's how we've been
12 receiving similar exhibits on other witnesses.

13 **THE COURT:** Fine. So Exhibit D, demonstrative only.

14 **MR. SCOTT:** Then as evidence, Real offers, at this
15 time -- and this is going to be a list of the specifications
16 and license agreement. Chasen number 505 is the procedural
17 specs.

18 **THE COURT:** Can we just take the ones that are the
19 exhibits to Pak's declaration?

20 **MR. SCOTT:** I just do not think they've been offered
21 yet.

22 **THE COURT:** Well, how about offering them? It's the
23 same document.

24 **MR. SINGLA:** I think we believe them to be in
25 evidence, Your Honor.

PROCEEDINGS

1 **THE COURT:** So that procedural are easy. That's P.

2 **MR. SCOTT:** We'll conform our numbers, then. We just
3 want to make sure that we have in evidence the procedural
4 specs, the general specs --

5 **THE COURT:** That's Exhibit L.

6 **MR. SCOTT:** The license itself.

7 **THE COURT:** That's Exhibit J. Yes.

8 **MR. SCOTT:** The descrambler specs.

9 **THE COURT:** That's Exhibit M.

10 **MR. SCOTT:** That's the DVD video descrambler, to be
11 specific.

12 **THE COURT:** That's N.

13 **MR. SCOTT:** And, then, finally, the authenticator
14 module for decryption module.

15 **THE COURT:** And that's N?

16 **MR. SCOTT:** Yes. Real also offers --

17 **THE COURT:** Hold on. That's the authenticator module
18 for the CSS decryption module?

19 **MR. SCOTT:** That is correct, Your Honor.

20 **THE COURT:** That's N.

21 Then there's O, which is the authenticator module for
22 the DVD drive. That's not in.

23 **MR. SCOTT:** I offer that, too. We should have it all
24 in.

25 **THE COURT:** Have it all in?

1 **MR. MICK:** Your Honor, we have offered all of those
2 specifications as part of the evidence before the Court on the
3 motion. It is all part of the sealed Pak declaration.

4 **THE COURT:** Yes, okay.

5 **MR. MICK:** So I don't have any objection to it being
6 before the Court, but I don't want its status here to change
7 the notion that it is before the Court under seal.

8 **THE COURT:** Fine. It will come in as a sealed
9 document.

10 **MR. SCOTT:** Finally, Real offers the two proposed
11 amendments to the CSS specifications, which are identified as
12 Nelson declaration exhibits. Nelson Exhibits 47 and 48.

13 **THE COURT:** 47 and 48?

14 **MR. SCOTT:** Correct, Your Honor. The May 29, '07
15 proposed amendment, and the October 2007 proposed amendment.

16 **THE COURT:** Have those been used so far?

17 **MR. MICK:** No, Your Honor. And that was the point I
18 was about to raise. If they are part of somebody's submission
19 before the Court, then they're part of a filed piece of the
20 motion and they are what they are.

21 But if we're treating the admission of evidence
22 within the hearing as a separate thing, we haven't seen them
23 yet.

24 **MR. SCOTT:** They've not been discussed in open court,
25 Your Honor, but they are identified and attached to

1 declarations --

2 **THE COURT:** Are they stipulated to, to be admitted?
3 Or are we going to have to wait for some further testimony?

4 **MR. STEER:** Your Honor, I must say, I'm a little bit
5 puzzled by this because there has been extensive briefing and
6 there are many exhibits attached and filed, most of them under
7 seal, in connection with the briefs.

8 And I don't want us to be drawing the distinction for
9 purposes of what this Court could consider on this motion.

10 **MR. SCOTT:** Excellent point.

11 **MR. STEER:** That's things that --

12 (Simultaneous colloquy.)

13 **THE COURT:** Why don't you do this. Between now and
14 when we finish this case, come up with a stipulation as to what
15 exhibits come in and which ones are subject to being sealed,
16 and which ones are not.

17 **MR. SCOTT:** Excellent, Your Honor.

18 **MR. SINGLA:** Excellent point. And on that subject I
19 should note that the demonstrative, Exhibit D, offered by
20 Mr. Scott, needs to be sealed because it, in fact, contains
21 extensive provisions from the specifications.

22 **THE COURT:** Which -- oh, D.

23 **MR. SINGLA:** D.

24 **THE COURT:** Okay. Why don't you make a list of all
25 of those, and we'll put them on the record tomorrow when

1 Mr. Bowser is here, and we'll have all of that done.

2 What about this lovely thing? Is this supposed to be
3 admitted?

4 **MR. SCOTT:** I'm not sure that was offered or not.

5 **THE COURT:** I don't know if it was or not. I just
6 had it here. It's sitting on the top of all my others here.

7 **MR. WILLIAMS:** That was Exhibit 241, Your Honor --

8 **THE COURT:** Right, 241.

9 **MR. WILLIAMS:** -- during the cross-examination of
10 Mr. Glaser. And, yes, we would offer it.

11 **MR. CUNNINGHAM:** There was no objection.

12 **THE COURT:** 241 is admitted.

13 (Exhibit 241 received in evidence.)

14 **MR. WILLIAMS:** And there are four others I have from
15 this morning, Your Honor, if I may.

16 **THE COURT:** Yes.

17 **MR. WILLIAMS:** You asked me to list them. One is
18 Exhibit 3.

19 **THE COURT:** 3 I have. 3, you want that admitted?

20 **MR. WILLIAMS:** Yes, Your Honor.

21 **THE COURT:** Any objection?

22 **MR. CUNNINGHAM:** None.

23 **THE COURT:** 3 is admitted.

24 (Exhibit 3 received in evidence.)

25 **MR. WILLIAMS:** Exhibit 557.

PROCEEDINGS

1 **THE COURT:** 557, I think we admitted that already.

2 **MR. CUNNINGHAM:** I think we did, but no objection.

3 **THE COURT:** 557 is admitted.

4 (Exhibit 557 received in evidence.)

5 **MR. WILLIAMS:** 602.

6 **THE COURT:** 602. Let's see, what is that one?

7 **MR. WILLIAMS:** That is the TiVo trip report e-mail.

8 **THE COURT:** Any objection to that one?

9 **MR. CUNNINGHAM:** No.

10 **THE COURT:** 602 is admitted.

11 (Exhibit 602 received in evidence.)

12 **MR. WILLIAMS:** And, finally, Exhibit 68 to

13 Mr. Blavin's declaration.

14 **THE COURT:** I think that's been admitted.

15 **MR. WILLIAMS:** I thought it was, too, but it's on my

16 list.

17 **THE COURT:** 68, right?

18 (Exhibit 68 received in evidence.)

19 **MR. CUNNINGHAM:** Yes. And before the Court, anyways.

20 **MR. WILLIAMS:** Yes. Thank you.

21 **THE COURT:** Any others that you have, Mr. Cunningham,
22 from your examination earlier?

23 **MR. CUNNINGHAM:** I don't believe so.

24 **THE COURT:** Any others that you have, Mr. Scott?

25 **MR. SCOTT:** I do not, Your Honor.

1 **THE COURT:** And tomorrow we're hearing from?

2 **MR. SCOTT:** Could I address the scheduling issue?

3 **THE COURT:** Yes.

4 **MR. SCOTT:** In the first place, I thank you so much
5 for accommodating the late testimony by Professor Bishop. His
6 son is between deployments and leaves tomorrow. So that was
7 his difficulty. He didn't want to raise that, but that --

8 **THE COURT:** I'm sorry to hear that. Maybe something
9 will happen now --

10 **MR. SCOTT:** Coming from a bad place and going --

11 **THE COURT:** -- and deployments won't be necessary.

12 **MR. SCOTT:** I really am reluctant, but must, a matter
13 on which we once spoke, and Your Honor may not recall. Last
14 Friday and these two dates were set by the Court, graciously,
15 in accommodation to a schedule that I have in the court in
16 Delaware for hearings tomorrow and Friday. And I'm so sorry
17 Your Honor does not recall that.

18 I'm on the 10:30 flight to Philadelphia tonight, for
19 those hearings. And I -- I -- this was a constraint we talked,
20 as counsel and the Court, when these dates were set. I've been
21 ordered to appear, and that was all moving around when this
22 hearing date changed.

23 I -- I wonder if I could ask the Court to conclude
24 the hearing at, obviously, the time of your convenience that is
25 not tomorrow or Friday. Because of this --

1 **THE COURT:** Whom else do we have that we're going to
2 hear from?

3 **MR. SCOTT:** We have two more witnesses, Mr. Dixon and
4 Mr. Bielman.

5 **THE COURT:** And who is going to examine them? Your
6 witnesses?

7 **MR. SCOTT:** No. They're Mr. Berta's witnesses. I
8 also understand -- I don't know. Mr. Berta can speak to
9 Mr. Dixon's schedule.

10 **MR. CUNNINGHAM:** I can speak to that. Mr. Dixon has
11 flown back to his son's graduation and is unavailable until
12 Wednesday.

13 **THE COURT:** And so we have Dixon and who else?

14 **MR. CUNNINGHAM:** Bielman.

15 **MR. SCOTT:** Mr. Bielman.

16 **THE COURT:** Bielman. And when is --

17 **MR. SCOTT:** They are much shorter witnesses.

18 **THE COURT:** Whose witness is that?

19 **MR. CUNNINGHAM:** Mr. Berta, as well.

20 **THE COURT:** When is Bielman available?

21 **MR. CUNNINGHAM:** He's available.

22 **THE COURT:** And you say their testimony is going to
23 be brief, or how long?

24 **MR. CUNNINGHAM:** Well, perhaps Mr. Berta is best
25 equipped to speak to that.

1 **MR. BERTA:** I believe that Mr. Dixon, I anticipate
2 that he's going to go, perhaps, 45 minutes or an hour. I think
3 Mr. Bielman will be a little bit longer than that; perhaps two
4 hours.

5 **THE COURT:** And whose witnesses are those on over
6 here?

7 **MR. SINGLA:** They would be mine, Your Honor. And I
8 assume the Court is going to ask me my expectation for cross.

9 **THE COURT:** Yes.

10 **MR. SINGLA:** For Mr. Dixon, I would say 30, 45
11 minutes, something like that. Depends a little bit what he
12 says.

13 For Mr. Bielman, I was going to say very short, but
14 then I just heard that he may be on the stand for two hours.
15 So I need to go back and think about what he could possibly say
16 for two hours. I'm not prepared to say how long the cross
17 would be.

18 **THE COURT:** And then -- and who's going to be heard
19 on arguments? You have some examination of both witnesses, as
20 well?

21 **MR. MICK:** I have the examination of those witnesses.

22 **THE COURT:** There are no rebuttal witnesses on this
23 side.

24 **MR. WILLIAMS:** We don't know, Your Honor, one way or
25 the other on that.

1 **THE COURT:** Oh, boy.

2 **MR. WILLIAMS:** We were thinking that perhaps one of
3 the experts, Mr. Schumann, Dr. Kelly, for brief rebuttal. But
4 we have not made the decision to do that. We just wanted to
5 suggest that that's a possibility.

6 **THE COURT:** Okay. Where are we here?

7 Next Thursday or Friday?

8 **MR. WILLIAMS:** Your Honor, if I may, Bart Williams
9 for the studios. I have a trial that is supposed to start next
10 week. I have a hearing on that. Tomorrow morning is the final
11 pretrial hearing, in Los Angeles.

12 There is a motion to move the trial for one week,
13 from this coming Monday to the following Monday. That doesn't
14 matter for any of the witnesses that remain because I'm not
15 examining any of them. So, as far as we're concerned and our
16 clients are concerned, I wouldn't have to be here.

17 But to the extent we're doing closings, I am supposed
18 to do that. And so I just wanted to alert the Court to that.

19 **THE COURT:** I'm just looking at my calendar.

20 **MR. SCOTT:** Would next Thursday work?

21 **THE COURT:** Did you know that Monday, May the 11th,
22 postage is going to increase to 44 cents?

23 (Laughter)

24 **THE COURT:** My judicial assistant put it on my
25 calendar, at the top of the calendar.

1 What is happening here? Every few months they
2 increase the postage. I can't believe it. So, that's on my
3 calendar.

4 Look. We could take their testimony on Thursday
5 and/or Friday. Whatever we need to do. And then maybe set a
6 date for argument.

7 **MR. WILLIAMS:** With any luck, I could do that next
8 week.

9 **THE COURT:** Next week. Next week.

10 **MR. WILLIAMS:** If we get a continuance, Your Honor.

11 **THE COURT:** So why don't we just plan on Thursday,
12 and hopefully finish on Thursday, and, if not, Friday.

13 **MR. WILLIAMS:** Of next week, Your Honor?

14 **THE COURT:** Next week, the 7th and the 8th.

15 **MR. SCOTT:** Thank you, Your Honor. Thank you so
16 much.

17 **THE COURT:** Would that work?

18 **MR. SCOTT:** Yes.

19 **MR. CUNNINGHAM:** Thanks, Your Honor.

20 **MR. STEER:** That will work.

21 **THE COURT:** I'll tell Mr. Bowser. Does that work for
22 your witnesses, also? You have witnesses.

23 **MR. BERTA:** Yes, Your Honor, it will work for the
24 witnesses.

25 **MR. WILLIAMS:** Your Honor, subject to my trial

PROCEEDINGS

1 getting moved, subject to the motion being granted.

2 **THE COURT:** You were supposed to try to start next
3 Monday?

4 **MR. WILLIAMS:** Starting next Monday.

5 **THE COURT:** This doesn't have to be to be on the
6 record.

7 (Discussion held off the record.)

8 (At 7:12 p.m. the proceedings were adjourned, to
9 recommence on Thursday, May 7, 2009.)

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I N D E XPLAINTIFFS' WITNESSPAGEVOL.**GLASER, ROBERT**

Cross Examination by Mr. Williams

548

3

BISHOP, MATTHEW ALLEN

(SWORN)

621

3

Direct Examination by Mr. Scott

621

3

Direct Examination (under seal) by Mr. Scott

682

3

Cross Examination by Mr. Mick

737

3

Cross Examination by Mr. Singla

779

3

Redirect Examination by Mr. Scott

821

3

Recross Examination by Mr. Singla

830

3

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

E X H I B I T S

<u>TRIAL EXHIBITS</u>	<u>IDEN</u>	<u>VOL.</u>	<u>EVID</u>	<u>VOL.</u>
68			553	3
602			564	3
557			567	3
241	595	3	842	3
51	760	3		
3			842	3

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

CERTIFICATE OF REPORTERS

We, KATHERINE POWELL SULLIVAN and BELLE BALL, Official Reporters for the United States Court, Northern District of California, hereby certify that the foregoing proceedings in 08-4548 and 08-4719, RealNetworks, Inc., et al. vs. DVD Company Control Association, Inc., et al. were reported by us, certified shorthand reporters, and were thereafter transcribed under our direction into typewriting; that the foregoing is a full, complete and true record of said proceedings as bound by us at the time of filing.

s/b Katherine Powell Sullivan

Katherine Powell Sullivan, CSR #5812, RPR, CRR
U.S. Court Reporter

s/b Belle Ball

Belle Ball, CSR #8785, RPR, CRR
U.S. Court Reporter

Thursday, April 30, 2009