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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION

HONORABLE DAVID O. CARTER, JUDGE PRESIDING

- - - - -

ECHOSTAR SATELLITE CORP.,)	
et al.,)	
Plaintiffs,)	
))	
vs.)	No. SACV-03-950-DOC
))	DAY 12, Vol. IV
NDS GROUP PLC, et al.,)	
))	
Defendants.)	

REPORTER'S TRANSCRIPT OF PROCEEDINGS
Santa Ana, California
April 29, 2008

SHARON A. SEFFENS
Federal Official Court Reporter
United States District Court
411 West 4th Street, Room 1-053
Santa Ana, California 92701
(714) 543-0870

SHARON SEFFENS, U.S. COURT REPORTER

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5 BY: CHAD M. HAGAN
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ROSS WOOTEN
WADE WELCH

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(None)

PLAINTIFFS' EXHIBITS: MARKED RECEIVED

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DEFENSE WITNESSES: DIRECT CROSS REDIRECT RECROSS

NIGEL JONES
(Continued) 4 50 65
SUZANNE GUGGENHEIM 67 81 92

DEFENSE EXHIBITS: MARKED RECEIVED

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15 (None)
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14:39:13 1 SANTA ANA, CALIFORNIA; TUESDAY, APRIL 29, 2008; 3:00 P.M.
2 (Jury present.)
3 THE COURT: The jury is present. Counsel are
4 present. The parties are present.
5 This is cross-examination by Mr. Hagan on behalf
6 of EchoStar of Nigel Jones.
7 MR. HAGAN: Thank you, Your Honor.
8 NIGEL JONES, DEFENSE WITNESS, PREVIOUSLY SWORN
9 CROSS-EXAMINATION
10 BY MR. HAGAN:
11 Q Good afternoon, Mr. Jones.
12 A Good afternoon.
13 Q You testified earlier this morning about your
14 experience and involvement with designing scuba equipment
15 and cooking equipment; right? Do you recall that testimony?
16 A Yes, I do.
17 Q But we're not here today to talk about scuba equipment
18 or cooking equipment; correct, sir?
19 A You are correct in one sense, but technologically they
20 are both examples of embedded systems.
21 Q This is the first time that you have actually testified
22 as an expert; is that right?

23 A April 29, 2008 Volume 4 N. Jones S. Guggenheim.txt
Yes.

24 Q And to prepare for your deposition for the first time
25 to give expert testimony, you testified that you read a book

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14:39:33 1 and you watched a movie on how to be an expert; correct?

2 A Not how to be an expert. How to be an effective expert
3 at cross-examination and so on.

4 Q Do you recall the author of that book?

5 A No.

6 Q You do not have a Ph.D.; is that correct?

7 A That is correct.

8 Q Now, let's talk about some of the issues relevant to a
9 conditional access system. You have never reverse
10 engineered a conditional access Smart Card to try to
11 determine what code is embedded in the chip; correct?

12 A That is correct.

13 Q You have never written any programming code that would
14 reside on a Smart Card; correct?

15 A No.

16 Q That's not correct?

17 A That is incorrect.

18 Q Let's take a look at your -- well, let me ask you this:
19 Have you done that since your September 2007 deposition?

20 A No.

21 Q So if you testified in your September 2007 deposition
22 that you have never written programming code that would
23 reside on a Smart Card, that was incorrect?

24 A Oh, I see. Let me explain what I did do and maybe some
25 interpretation. When I first got involved with reverse

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14:39:33 1 engineering of DirecTV and so on, I obviously needed to

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2 learn about Smart Cards and Smart Card technology. I went
3 out. I got the book that you saw, the second edition, which
4 thankfully is a little thinner. I read most of that. I
5 also went out and bought what is called a Smart Card
6 Development System, and I played around with that, and that
7 allows you to write some example programs and generally play
8 around and understand what was going on.

9 So, Mr. Hagan, if I misunderstood your question, I
10 apologize.

11 Q Let me reask the question exactly the way it was done
12 in your September 2007 deposition.

13 A Okay.

14 Q Mr. Jones, have you ever written programming code that
15 would reside on a Smart Card?

16 A I believe the answer is, yes, I have.

17 Q So you were incorrect when you testified to that in the
18 negative in September of 2007; correct?

19 A That's where I misunderstood your question, yes.

20 Q Mr. Jones, you have never written any commercial
21 software application that could be executed by a Smart Card;
22 correct?

23 A That's correct.

24 Q And you have never designed a Conditional Access System
25 similar to that used by the plaintiff, EchoStar; correct?

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14:39:33 1 A Correct.

2 Q You have never designed a Conditional Access System
3 similar to that used by DirecTV; correct?

4 A Correct.

5 Q You have never designed a Conditional Access System
6 similar to that used by Canal+?

7 A Correct.

8 Q In fact, prior to this case, being hired in this case,
9 you have never assessed the strength of a Conditional Access
10 System for a pay-television provider?

11 A That's correct.

12 Q And other than your work in this case, you have never
13 analyzed any other source code for a Conditional Access
14 System?

15 A The answer is correct, but I don't understand the
16 relevance of it. I'm sorry.

17 Q Over the last five years, sir, isn't it true that less
18 than five percent of your work has even involved satellite
19 piracy? And this is from your September 2007 deposition.

20 A That is correct, yes.

21 Q And over the last half of a decade less than one
22 percent of your work has even concerned a Conditional Access
23 System?

24 A Correct.

25 Q I want to talk a little bit about your testimony of the

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14:39:33 1 vulnerabilities in EchoStar's system. The fact is, sir, you
2 have never been hired to examine programming code to
3 determine whether someone purposely left a vulnerability in
4 that code; correct?

5 A Correct.

6 Q And you have never been hired to investigate whether or
7 not programming code had been purposely hacked as part of
8 some inside job theory?

9 A Correct.

10 Q When I asked you at your deposition last month if you
11 were familiar with the terms ethical reverse engineering or
12 responsible disclosure, you told me that you were not?

13 A Correct.

14 Q Now, Mr. Jones, with no experience in those relevant
15 areas, let's talk a little bit about why you would agree to
16 testify as an expert in this case.

17 You were hired by the defendant's attorneys to testify
18 in this case and do work in this case; correct.

19 A It's more accurate to say that Neutrino was hired and
20 that I came along as part of Neutrino.

21 Q So the defendant's lawyers hired Neutrino, and you're a
22 representative of Neutrino; correct?

23 A Correct.

24 Q The purpose of hiring Neutrino and getting your
25 involvement in this case is for you to do work and to

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14:39:33 1 testify for the jury; correct?

2 A I'm sorry. Could you rephrase that or restate that.

3 Q The purpose as you understood it of being hired in this
4 case was so that you could perform analysis and possibly
5 testify in this trial; correct?

6 A Yes.

7 Q And you're paid for that analysis and testimony; is
8 that right, sir?

9 A No. I am actually paid for my time.

10 Q You are paid for your time here today?

11 A Yes.

12 Q Testifying on the stand; right?

13 A Well, maybe it's a subtle distinction, but I am also
14 paid when I'm doing nothing. For instance, when I am
15 sitting on an airplane traveling here, I am also paid for
16 that time.

17 Q And you're billed out by Neutrino at \$450 an hour for
18 your testimony here today; correct?

19 A My billing rate per hour while I'm on the stand is \$450
20 an hour, yes.

21 Q In fact, as of last month when I deposed you, your
22 billing from Neutrino in this case was over a quarter of a
23 million dollars?

24 A It was about a quarter million dollars, yes.

25 Q You think that that quarter of a million dollars for

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14:39:33 1 you to come in here and testify has any bearing on the
2 testimony that you are giving?
3 A No.
4 Q You also testified that more than 50 percent of your
5 income was coming from your work in this case; correct?
6 A Actually, I recollect the question being what
7 percentage of your income has come from work in this case,
8 and I said 50 percent, maybe a little more.
9 Q Do you still stand by that testimony?
10 A I think so, yes.
11 Q Now, you understand that you have been offered up as an
12 expert witness by the defendant's lawyers in this case;
13 correct?
14 A Yes.
15 Q And in the book that you read and the movie that you
16 watched about being an expert witness, do you recall there
17 being a section in there about experts appearing neutral and
18 unbiased?
19 A Yes.
20 Q And that's important. You would agree with that;
21 wouldn't you, Mr. Jones?
22 A I would say it's incredibly important.
23 Q Incredibly important because you're testifying about
24 complex issues; correct?
25 A well, it's not because I am testifying about complex

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14:39:33 1 issues. It's just because it's just important, period.
2 Q You're testifying about complex issues that most of us
3 in this room don't have day-to-day familiarity with, and so
4 you're asking this jury to trust you; correct?
5 A Yes, I am.
6 Q In fact, I think to use the phrase from your own mouth

7 during your earlier examination, you asked this jury to take
8 your word for it; correct? Do you recall that testimony?

9 A That was today?

10 Q However, your presentation in your testimony here today
11 has not been neutral or unbiased. You would agree with
12 that, sir?

13 A No, I would not.

14 MR. HAGAN: Let's take a look at a couple of
15 examples. If we could pull up slide 54 from his
16 presentation.

17 BY MR. HAGAN:

18 Q Before we get there, did any of the lawyers from the
19 defendants assist you in preparing this presentation?

20 A They worked with me to trim it down. It was about six
21 hours, and we trimmed it down to where it is. Does that
22 answer your question?

23 Q Absolutely. If you look at the top of this slide,
24 slide 54, was this prepared by you or prepared by the
25 lawyers?

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14:39:33 1 A By me.

2 Q And you have got xbr21, and then in parentheses you
3 have Nipper. Do you see that?

4 A Yes.

5 Q You are trying to make the inference that xbr21 was the
6 relevant Nipper posting; correct?

7 A No. I was trying to clarify which thing I was talking
8 about.

9 Q And you certainly aren't testifying that xbr21 was
10 Nipper; are you, sir?

11 A No.

12 Q In fact, the jury heard from him earlier in the trial,
13 and he said that he wasn't Nipper. He simply copied and
14 pasted the Nipper post that he saw on another website. Did

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15 you read that testimony, or were you present when he said
16 that?

17 A No.

18 Q Did you read his deposition?

19 A I read an excerpt of it.

20 Q You understood that he just reposted that Nipper file;
21 correct?

22 A Yes.

23 Q Let's take a look at slide N024 from your presentation.
24 Now, was this slide prepared by you, Mr. Jones, or was it
25 prepared by the attorneys?

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14:39:33 1 A By me.

2 Q And the title of this slide is: People who potentially
3 had access to the ROM code; is that correct?

4 A Yes.

5 Q You're referring to the ROM code used by the plaintiffs
6 in their security system; right?

7 A Yes.

8 Q And then you have got a long laundry list of people,
9 including the NagraVision cleaning staff --

10 A Yes.

11 Q -- Nagra Vision security personnel, Nagra Vision
12 computer backup staff. And those are people that you
13 believe potentially had access to the ROM code; correct?

14 A Yes.

15 Q And you were trying to convey by this slide that any
16 number of these people could have taken that ROM code and
17 leaked it out; correct?

18 A No. I was trying to show people who potentially had
19 access to the ROM code.

20 Q Why didn't you list in this particular slide David
21 Mordinson, Zvi Shkedy, Chaim Shen-Orr, Rubin Hassak, or any
22 other NDS employee?

23 A I was talking about the source code, sir.

24 Q You understood that the defendants as of 1998 had
25 EchoStar's ROM code; correct?

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14:39:33 1 A Yes.

2 Q You don't say source code on this exhibit; do you? You
3 say the ROM code?

4 A Correct.

5 Q Let's take a look at slide N096 of your presentation.
6 Is this a timeline that you created or you created with the
7 assistance of the lawyers?

8 A Let's see. I provided the information to them, but I
9 believe they created the slide.

10 Q Okay. And you see that there is a break between 1995
11 and 1999; correct?

12 A Yes, I do. Yes.

13 Q And in this timeline you were trying to convey a number
14 of relevant events that potentially had some impact on your
15 analysis; correct?

16 A No. Actually the -- in the analysis this was related
17 purely to when Nagra Vision knew about the vulnerabilities,
18 the buffer overflow vulnerability. So I am not sure that
19 means my analysis.

20 Q Now, you would agree with me, Mr. Jones, that you left
21 some significant events out of this timeline. For example,
22 you left out 1998 when the defendants created a hack for
23 EchoStar's security system. That's not in this slide; is
24 it, sir?

25 A It's not, and it's not for --

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14:39:33 1 Q Thank you, sir. I appreciate it. You also left out
2 the date of the Headend Report that the defendants drafted,

3 and that was November 1st, 1998, the final report. That's
4 not in this slide; is it, sir?

5 A No, it is not.

6 Q You also left out November 12th of 1998, which was the
7 first Nipper posting, 11 days after the defendants created
8 their report. That's not in this slide; is it, sir?

9 A No, it is not.

10 Q Now, continuing on with your duty of candor and your
11 duty to remain unbiased and trustworthy for the ladies and
12 gentlemen of this jury, you testified that you reviewed all
13 of Joel Conus's e-mails; correct?

14 A I did. I suppose I should clarify.

15 Q Let me back up for just a second. Is it fair for me to
16 assume that the Joel Conus e-mails that you reviewed were
17 just the e-mails that the defendant's lawyers provided you?

18 A Yes.

19 Q Okay. Well, let's take a look at one that you did not
20 include in your slide. This is Exhibit 2053. This is an
21 e-mail from Mr. Conus to a number of Nagra Vision employees
22 as well as Mr. Guggenheim and Mr. Gee, as well as Henri
23 Kudelski; correct?

24 A I'm sorry, I was reading it. Could you repeat the
25 question.

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14:39:33 1 Q This is an e-mail sent from Joel Conus to a number of
2 Nagra Vision employees; correct?

3 A That appears to be the case, yes.

4 Q Now, was this one of the e-mails that you reviewed in
5 preparing your presentation for this jury?

6 A May I take the time to read it?

7 Q Absolutely.

8 A Thank you.

9 MR. HAGAN: Your Honor, I would offer Exhibit 2053
10 into evidence.

11 THE COURT: Any objection?
12 MR. STONE: No objection.
13 THE COURT: Received.
14 (Exhibit 2053 received.)
15 THE WITNESS: I do not recollect seeing this.
16 BY MR. HAGAN:
17 Q Can you think of any particular reason why the
18 defendant's lawyers would not have shown you this one e-mail
19 from Mr. Conus?
20 A No.
21 Q Let's take a look at it and see if we can figure that
22 out. You were here this morning when Henri Kudelski
23 testified; correct?
24 A I was in the outside room, so I did not hear his
25 testimony.

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14:39:33 1 Q Well, without going through all of that testimony, I'll
2 represent to you that Mr. Conus was questioned by one of the
3 defendants' lawyers, David Eberhart, and Mr. Eberhart
4 repeatedly asked him if he had ever seen an e-mail after a
5 certain date in 2001 that showed the status of the ROM 3
6 card with the hole closed. He said that he thought there
7 was one out there, but he couldn't recollect. He wasn't
8 shown this e-mail.
9 why don't we take a look at the bottom section of this
10 e-mail under the word status. Do you see that?
11 A Yes, I do.
12 Q Okay. And the status for the DNASP-II card, it says
13 hole open. Some cards have blocker software. Do you agree
14 with that?
15 A Yes.
16 Q And for the DNASP-III card, it said hole can be
17 reopened. Some cards have blocker software. Do you see
18 that?
19 A Yes.

20 Q And this e-mail is dated January 8, 2002; is that
21 correct?

22 A Yes.

23 Q So you just forgot to include this one in your
24 presentation when you had the 2001 and 2003 e-mails that
25 said the hole was closed; correct?

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14:39:33 1 A Well, sir, I don't see how I can forget to include
2 something that I haven't seen.

3 Q After taking a look at this e-mail, can you think of
4 any particular reason why you would not have been shown it
5 in preparing your presentation for an unbiased and neutral
6 opinion?

7 A I have no idea why I wasn't shown this e-mail. If I
8 had been shown this e-mail, it would have made no difference
9 to my opinion because the facts show as you go through the
10 Conus e-mails, the DNASP-III card remained hole closed all
11 the way through the middle of 2003. There were a few
12 occasions in which the hole was opened temporarily.

13 I also note here that it says hole can be reopened. It
14 doesn't say the hole is reopened.

15 Q In your unbiased and neutral opinion this morning, you
16 testified that pirates attacked the DirectTV system as
17 opposed to EchoStar system because DirectTV had better
18 programming. Do you recall that testimony?

19 A Yes, I do.

20 Q Tell me, sir, after Q4 of 1996, what programming did
21 DirectTV have that EchoStar was not carrying at that time?

22 A I don't know. My statement is based on comments I have
23 seen from pirates on pirate websites concerning which system
24 is worth hacking.

25 Q So you have no idea what the differences in the

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14:39:33 1 programming was between the two companies; correct?
2 A Correct.
3 Q Now, let's take a look at a couple of the opinions that
4 you have in your presentation. The first opinion that you
5 spent a significant time on this morning is that Haifa was
6 not the source of the Nipper posting in your view; is that
7 correct?
8 A Yes.
9 Q And part of the quarter million dollars that you were
10 paid to come here and testify included you conducting an
11 analysis and reaching an opinion on whether Haifa was the
12 source of Nipper; correct?
13 A Yes.
14 Q You didn't talk to anyone within the defendant's
15 organization to determine whether or not they leaked that
16 code; correct?
17 A That's correct. I didn't interview anybody. I
18 understood my role to perform a forensic analysis of the
19 documents available in this case.
20 Q Your opinion, sir, is that Haifa was not the source of
21 the Nipper posting. I want to ask you a few questions about
22 what you did not do to reach that opinion.
23 A Okay.
24 Q You didn't speak with David Mordinson, the gentleman
25 that created the hack for EchoStar security system; correct?

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14:39:33 1 A I just said I didn't interview anybody, so that would
2 be correct.
3 Q You didn't speak with Zvi Shkedy who also assisted in
4 preparing the Headend Report that describes how to hack
5 EchoStar system; correct?
6 A Correct.

7 Q You didn't speak with Rubin Hassak, Dov Rubin, or Chaim
8 Shen-Orr; correct?
9 A Correct.
10 Q And you didn't even bother to ask Chris Tarnovsky if he
11 had posted that information on the internet or provided that
12 information to his friend, Allen Menard, to post it on his
13 website; isn't that right, sir?
14 A That's correct. But to be clear, when I got involved
15 in this case, Mr. Tarnovsky had already denied that fact.
16 So interviewing him would have been pointless.
17 Q Now, Mr. Jones, do you think that for a quarter million
18 dollars when you were asked to reach this conclusion that
19 Haifa was not the source of Nipper, you could have asked
20 some of the relevant employees within the defendants'
21 control?
22 A No. I spent my time investigating the documents that
23 were produced in this case.
24 Q Let's talk about some of your investigation efforts.
25 You testified in your March deposition that the best place

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14:39:33 1 to look for evidence linking Chris Tarnovsky or Al Menard to
2 the Nipper posting would be their computers. Do you recall
3 that testimony?
4 A Yes, I do.
5 Q And you understood that after this lawsuit was filed,
6 the defendants rushed out and hired Mr. Menard and made
7 copies of his computers. Is that your understanding?
8 A No, I don't understand that.
9 Q Well, did you ever ask if you could look at Mr.
10 Tarnovsky's computers or forensically image Mr. Tarnovsky's
11 computers or review Mr. Tarnovsky's computers?
12 A I didn't. But what I did do after the deposition was I
13 asked to see the documents that had been produced off Mr.
14 Tarnovsky's computers.
15 Q The selected documents that the defendant's counsel

16 produced in this case, that's what you asked for?

17 A I asked for the documents that were found to be
18 responsive to the request, and I examined them.

19 Q Let me reask my question, because it was a pretty
20 simple question.

21 Did you ask them if you could look at Mr. Tarnovsky's
22 hard drives?

23 A No.

24 Q Did you ask them if you could look at Mr. Menard's hard
25 drives?

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22

14:39:33 1 A No.

2 Q And despite the fact that you believe and testified
3 under oath that that would be the best place to look for
4 evidence linking either one of those gentlemen to this post
5 would be their computers, you didn't think it was a good
6 idea to ask to inspect those devices before reaching an
7 opinion that Haifa was not the source of the Nipper posting?

8 A Well, to answer your question, I inquired of counsel
9 actually about the Tarnovsky computers, and I was told that
10 the data on those went up to one terabyte. That is a
11 million gigabytes, ladies and gentlemen.

12 So the only possible way to analyze a terabyte of data
13 is to do a keyword search. Now, my understanding is the
14 plaintiffs had an agreement between themselves in terms of
15 how documents would be produced, and both parties agreed to
16 certain rules.

17 Q Mr. Jones, do you recall my question?

18 A I am answering it, sir.

19 Q My question was: You didn't think it was important
20 enough to ask to inspect these computers; correct?

21 A I am giving you an explanation, sir, as to why. Okay?
22 So to examine a terabyte worth of data, you have to do is
23 automatically via keyword search. Well, guess what? The

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24 method by which both sides produced documents that are
25 relevant to the case is by keyword search.

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14:39:33 1 I asked to look at the keyword search that was used to
2 search Tarnovsky's computers. It ran to about six pages,
3 and I was fully satisfied that all the keywords on that
4 search would have turned up anything remotely relevant to
5 this case and my opinions.

6 Q Were you as satisfied that those e-mails would have
7 shown up and been brought to your attention as you were as
8 satisfied that you should have received the January 8, 2002,
9 e-mail from Joel Conus?

10 A I'm sorry. Can you restate that question?

11 Q Did you analyze the stinger that Mr. Tarnovsky admitted
12 to creating?

13 A Yes, I did.

14 Q Did you prepare a report that showed similarities or
15 differences between Mr. Tarnovsky's stinger and the black
16 box?

17 A No, I did not.

18 Q Did you prepare a report that described the
19 similarities or differences between Mr. Tarnovsky's stinger
20 and how it communicated with an access card and the
21 methodology posted by Nipper?

22 A No, I didn't. Ladies and gentlemen --

23 Q Thank you, Mr. Jones. Now, just so that the jury is
24 clear on this point, you are not here to testify that Chris
25 Tarnovsky did not post the Nipper hack methodology developed

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14:39:33 1 by Haifa on Mr. Menard's website; correct?

2 A Correct.

3 Q You are not here to testify that Mr. Menard didn't have
4 any role in posting that information on his website;
5 correct?

6 A Correct.

7 Q In fact, you have no opinion, according to your
8 deposition testimony, on whether or not Chris Tarnovsky was
9 involved in that posting; correct?

10 A That's correct.

11 Q So for \$250,000, your opinion is just that Haifa wasn't
12 the source of that posting, at least in part; correct?

13 A Well, sir, I offered four major opinions today, and
14 that first opinion was arrived at through an incredible
15 amount of work analyzing hundreds, potentially thousands of
16 files.

17 Q Which did not include Mr. Tarnovsky's or Mr. Menard's
18 hard drives?

19 A Yes.

20 Q Now, you understand that there has also been
21 allegations that the defendants hacked the Canal+
22 Conditional Access System; correct?

23 A Yes.

24 Q You understand that there have been allegations that
25 the date and time stamp of that file extracted by the

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14:39:33 1 defendants in Haifa was the same as the file posted on Mr.
2 Menard's website; correct?

3 A No, I do not know that.

4 Q Did you engage in any efforts to analyze the files
5 extracted by the defendants for the Canal+ card and the
6 files posted on Mr. Menard's website to determine whether or
7 not those files were similar?

8 A No, I did not.

9 Q Now, part of your testimony as I understood it was that
10 the style of coding in the Nipper post in your view is
11 different than the style of coding that Mr. Mordinson

12 developed; correct?

13 A Yes.

14 Q But you don't have an opinion on whether or not that
15 style of coding in the Nipper posting was similar to the
16 style of coding that Chris Tarnovsky used to post
17 information on the internet; correct?

18 A Partially correct.

19 Q In fact, sir, didn't you testify that during your
20 investigation you never even looked at any codes or programs
21 or lines of code that Chris Tarnovsky had written?

22 A Yes, I did.

23 Q Okay. Now, your second opinion, as I understand it, is
24 that it was inevitable that EchoStar's security system was
25 going to be hacked at some point; correct?

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14:39:33 1 A Correct.

2 Q You are not saying that because it was inevitable it
3 would be hacked, that somehow made it okay for the
4 defendants to nudge that process along? That's not your
5 testimony; is it, Mr. Jones?

6 MR. STONE: Objection. Assumes facts not in
7 evidence.

8 THE COURT: Overruled.

9 THE WITNESS: It is not my testimony.

10 BY MR. HAGAN:

11 Q I mean, in fact, sir, it's inevitable that all of us at
12 one point or another are going to pass away; right?

13 A Yes.

14 Q But that certainly doesn't give someone the license to
15 speed that process along by using acid to dissolve their
16 flesh or using --

17 THE COURT: Counsel, thank you very much.

18 BY MR. HAGAN:

19 Q Let's look back at slide 54 of your presentation. This

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20 is a slide you testified that you prepared; is that correct?
21 A Yes.
22 Q And the language in this slide, is this all your
23 language or is this language that you were assisted with by
24 the lawyers?
25 A It's mine.

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14:39:33 1 Q If you could, read bullet point number four into the
2 record, please.
3 A Dr. Rubin's four pillars are characteristic of any
4 buffer overflow attack.
5 Q Any buffer overflow attack. Those are your words;
6 correct, sir?
7 A Yes.
8 Q Now, you're aware as an expert in this area that
9 Microsoft has scheduled monthly announcements for
10 vulnerabilities and patches of its software; correct?
11 A I am aware of that.
12 Q And you're aware that Microsoft software is the most
13 commonly used software around the world?
14 A Actually I am not sure that's a true statement, but I
15 will accept it.
16 Q You are aware that Microsoft also has new security
17 alerts for serious vulnerabilities that come out despite the
18 monthly announcements?
19 A Yes.
20 Q And you would agree, sir, would you not, that most of
21 those security alerts and monthly announcements relate to
22 buffer overflows?
23 A I don't know that. I assume they do based on the
24 percentages of attacks that are buffer overflow attacks.
25 Q You understand that the Microsoft operating system runs

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14:39:33 1 off of the Intel platform?

2 A Yes.

3 Q Now, does the Intel chipset that runs in the Microsoft
4 operating system, does that have the RAM ghosting where
5 large memory addresses wrap around to lower memory the way
6 that the NagraStar cam does?

7 A I don't know, but I assume not.

8 Q And even if Intel had that memory wrap-around feature,
9 you would agree that most of the vulnerabilities posted
10 about it, which you testified you've looked at, don't
11 involve information about memory wrap-around?

12 A I'm sorry. Give me a hypothetical.

13 Q Let me go about it a different way. That was a poorly
14 worded question.

15 A Okay.

16 Q You would agree, sir, that if the ghosting effect is
17 not part of the vulnerabilities of the Microsoft Intel chip,
18 that there wouldn't be a lot of announcements about it on
19 their publications?

20 A I'm sorry. You said the Microsoft Intel chip?

21 Q Correct.

22 A You mean the Intel chip that windows runs on?

23 Q Or the operating system.

24 A Okay. Your question again, please.

25 Q You would agree, sir, that that Intel chip doesn't

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14:39:33 1 suffer from RAM ghosting the same way that the NagraStar cam
2 does; correct?

3 A Well, I said I don't know that it does, but I assume
4 that it doesn't.

5 Q The RAM ghosting effect or the address aliasing, that
6 was one of the four pillars that Mr. Rubin relied upon in
7 conducting his analysis; correct?

8 A Yes, it is.

9 Q Now, you would agree, sir, that over 70 percent of the
10 tens of thousands of security vulnerabilities that are
11 discovered each year are due to buffer overflows? In fact,
12 I think you testified that it was one of the most common
13 mistakes that were made in software?

14 A I don't know about the 70 percent, but it certainly
15 sounds believable.

16 Q would it surprise you, sir, that less than one percent
17 of those involve an invalid checksum as an exception
18 handler?

19 A No.

20 Q Can you name a single buffer overflow vulnerability in
21 a commercial product that involved using an invalid checksum
22 to call an exception handler?

23 A No.

24 Q You agree that the most widely used public advisory
25 list of security vulnerabilities is the CERT advisory?

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14:39:33 1 A Yes.

2 Q What's the CERT advisory?

3 A CERT is an organization that, my understanding is,
4 keeps track of reported computer errors and provides some
5 sort of a distribution list to people so they can work from
6 it.

7 Q You're familiar with the CERT advisories as part of
8 your work in this field?

9 A Yes.

10 Q What fraction of these advisories do you think mention
11 an index variable like the one used in the NagraStar cam?

12 A Zero.

13 Q would it surprise you, sir, that in fact in the last
14 half of the decade not a single CERT advisory has mentioned
15 a buffer overflow attack that involved memory index

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16 variables?

17 A Well, the memory index variable is a notation that is
18 specific to this NagraStar card. So it would be truly
19 remarkable for another advisory to come out that used the
20 same terminology.

21 Q Would it surprise you if not a single CERT advisory in
22 the last five years mentions a buffer overflow attack due to
23 memory aliasing or memory wraps-around?

24 A No, that would not surprise me.

25 Q So going back to point number four on your slide, you

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14:39:33 1 would agree now, sir, that the four pillars relied upon by
2 Dr. Rubin are not characteristic of any buffer overflow
3 attack?

4 A I completely disagree. They are characteristic -- any
5 buffer overflow attack on this card, not buffer overflow
6 attacks in general. Just this card.

7 Q Where does it say on slide 54 any buffer overflow
8 attack for this specific NagraStar ROM 3 DNASP-II card?
9 That's not on there; is it, sir?

10 A It's not, but I think it was clear from the context.

11 Q Now, you're familiar with the most famous buffer
12 overflow attack in history; right?

13 A Are you talking about the Finger D one?

14 Q The Morris worm. Are you familiar with the Morris
15 worm?

16 A Yes.

17 Q 1988. Now, did the Morris worm involve the RAM
18 ghosting effect?

19 A No.

20 Q Did the Morris worm involve an exception handler that
21 used an invalid checksum?

22 A No.

23 Q And did the Morris worm involve an index variable like
24 the one used in the NagraStar cam?

25 A No.

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14:39:33 1 Q So that would fall out of the realm of any buffer
2 overflow attack that's depicted on slide 54?

3 A Also I think you're trying to mischaracterize what I
4 said. These four pillars are characteristic of any buffer
5 overflow attack on this card. If you thought that I
6 testified that they were characteristic of any buffer
7 overflow attack on any system, then you must have misheard
8 me.

9 Q I am just reading the words that you showed to the
10 jury, Mr. Jones.

11 A Well, sir, on slides I think it's fairly normal to
12 preserve what you've been telling people.

13 Q Now, you testified earlier that the Thompson chip used
14 in EchoStar security system for the ROM 3 card used a Von
15 Neumann architecture; correct?

16 A Correct.

17 Q You testified in your earlier deposition that that's
18 not an uncommon architecture though; right, sir?

19 A Right. Well, given that computers are divided into Von
20 Neumann or Harvard, by definition it can't be uncommon?

21 Q In fact, you also testified that using a Von Neumann
22 architecture added additional functionality for launching
23 ECMS and software patches. Do you recall that testimony?

24 A Yes, I do.

25 Q Do you still stand by that testimony?

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14:39:33 1 A Yes, I do.

2 Q You also mentioned proof of concept in your earlier
3 testimony. Do you recall that?

4 A Yes.

5 Q You would agree with me that Mr. Mordinson and Mr.
6 Shkedy went beyond proof of concept in this case?

7 A I would disagree with you.

8 Q You think that developing their hack and testing it in
9 a basement in Canada went beyond just establishing that it
10 was possible to hack the NagraStar system?

11 A No. They have to test it. They had an idea about how
12 to do it, but the only way to test it is to actually put it
13 in the stream.

14 Q Now, you also said that in your opinion reverse
15 engineering is totally legitimate, totally lawful; right?
16 Commonplace?

17 A I did not opine on its lawfulness. I certainly opined
18 that it's very common.

19 Q You would agree, sir, that reverse engineering can go
20 too far?

21 A I'm sorry. In what sense?

22 Q I believe your testimony was that as long as reverse
23 engineering is not secretive, there is nothing wrong with
24 it. Is that your testimony?

25 A I don't remember saying that, sir. Perhaps you could

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14:39:33 1 quote me.

2 Q It's in the transcript from earlier this morning, so
3 all I have is "reverse engineering is not secretive. Common
4 in the marketplace."

5 A Oh, is not secretive. I thought you said it was
6 secretive. Excuse me. Is not secretive, correct.

7 Q Now, were you here when Mr. Mordinson testified that he
8 was instructed by the defendants to keep his efforts to
9 reverse engineer EchoStar's security system secret?

10 A No, I was not.

11 Q Were you here when Mr. Mordinson testified that he was

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12 instructed to keep his efforts to log the data stream using
13 a sniffer secret?

14 A No, I was not.

15 Q Were you here when Mr. Mordinson testified that he was
16 supposed to keep his Headend Report and the hack methodology
17 that he developed for EchoStar security system secret?

18 A No, I was not.

19 Q well, let's talk about -- you spent quite a bit of time
20 discussing what you believe are technical differences in the
21 Nipper post and the Haifa hack and the black box. Let's
22 just make sure we are on the same page for similarities.
23 You do agree, sir, that all three of those hack
24 methodologies used an I/O buffer overflow technique?

25 A Yes.

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14:39:33 1 Q And you agree that all three of those hack
2 methodologies used a RAM ghosting effect for address
3 aliasing?

4 A Correct.

5 Q You would agree that each of those three hack
6 methodologies used unique knowledge of EchoStar's index
7 variables?

8 A There I am going to disagree with you, sir. All three
9 used knowledge of the index variable, but I am not sure that
10 -- it is certainly unique to that card, but knowledge of it,
11 per se, is not unique. If you have the ROM, you understand
12 it.

13 Q Let me rephrase my question, then. You would agree
14 that all three of the hack methodologies used knowledge of
15 the index variable for EchoStar's card?

16 A I would.

17 Q You would agree with me that all three of those hack
18 methodologies used an invalid checksum; correct?

19 A Yes.

20 Q And that's the same for the hack that the defendants

21 developed, as well as Nipper and the black box?

22 A Yes.

23 Q Now, you testified previously that you agree with Dr.
24 Rubin's description of the seven steps that were used in the
25 Haifa hack. Do you recall that testimony?

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14:39:33 1 A No, I don't. Perhaps you could refresh me.

2 Q Page 135 of your September 2007 deposition:

3 "Question: Do you agree with Dr. Rubin's statement
4 that these seven steps, that the seven steps are the method
5 for executing arbitrary code on the NagraStar cam from the
6 Headend Report?

7 "Answer: I do agree with it, yes."

8 Do you stand by that testimony?

9 A I think so. Could you tell me what the seven steps are
10 before I commit myself?

11 Q Sorry?

12 A Could you tell me what the seven steps are before I
13 commit myself?

14 Q Certainly. Let's go through them. You read Dr.
15 Rubin's report?

16 A Yes.

17 Q In his report he describes or identifies the seven
18 steps used by the defendants as follows:

19 Step one, create a valid message header.

20 Step two, append with an exploit payload, i.e., shell
21 code.

22 Step three, append with filler to overflow the buffer.

23 Step four, at a particular offset set the index
24 variable to a crafted value so that the stack index is
25 calculated to point to the spot just below the top of the

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14:39:33 1 stack.
2 Step five, append with address of exploit payload which
3 will now be stored at top of stack.
4 Step six, append with incorrect checksum.
5 Step seven, send message to cam.
6 A Okay.
7 Q Do you still agree with those?
8 A So those were the seven steps. Your question again
9 was, sir?
10 Q Let me read it from your deposition:
11 "Question: Do you agree with Dr. Rubin's statements
12 that there are seven steps that Nipper uses to dump the
13 contents of the EEPROM code?
14 "Answer: Yes, I do."
15 A I think if I was asked that today, I would qualify it
16 slightly. My answer implies that the seven steps have to be
17 done in that sequence. I think a more accurate statement is
18 those seven steps, yeah, they're necessary, but the order in
19 which they occur can be perhaps moved around a little bit.
20 Q And that's part of the differences that you found
21 between Haifa and Nipper; correct?
22 A Exactly.
23 Q You don't disagree that those seven steps are
24 necessary. It's just the ordering of them can be changed?
25 A Correct. I am just trying to think whether I think

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14:39:33 1 there's any additional steps as well, but I will go with it.
2 Q Now, you testified that the style of coding was
3 different in the Nipper hack and the Haifa hack. Do you
4 recall that testimony?
5 A Yes.
6 Q You also testified that you have never looked at any of
7 Chris Tarnovsky's coding, so you don't know what particular

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8 style he used. I want to focus you on this issue, though.

9 You would agree with me, sir, that someone with formal
10 academic engineering training typically has a different
11 style of coding than a self-taught hacker?

12 A For generalization, I would say yes.

13 Q As part of the defendant's Headend project, you
14 understand that they developed a 3M hack code to reprogram
15 EchoStar Smart Cards; correct?

16 A Yes.

17 Q And you understand that the 3M hack code that the
18 defendants developed would allow someone to steal
19 programming that's outside of their authorized subscription?

20 A I do.

21 Q Now, you also testified in your direct examination that
22 NagraVision's security system was badly flawed; is that
23 correct?

24 A Yes, I did.

25 Q Now, Mr. Jones, if the system was so badly flawed and

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14:39:33 1 it was a badly flawed mousetrap, as you claim, then why
2 would the defendants spend so much time, money, and
3 resources to hack that system, especially considering that
4 they weren't even using that particular architecture or
5 chip?

6 A well, it seems to to me that you only find out if
7 something is flawed once you have examined it.

8 Q You are not here to testify that the defendants hacked
9 EchoStar's security system to somehow improve their
10 technology? That wasn't anywhere in your report; correct?

11 A It was not in my reports.

12 Q Now, one of the ways that you said a person could
13 independently develop the Nipper hack was if they had
14 Nagra's ROM code?

15 A Correct.

16 Q In fact, one of the bases for your opinion that Nipper

17 and Haifa are different is that Nipper hack terminates with
18 a different sub routine; is that correct?

19 A I think you have got the spirit of it. The detail is
20 Mordinson's code ends in an infinite loop. Nipper code ends
21 with a jump to 7138.

22 Q And it's your opinion that an individual would have to
23 have had the ROM contents in order to terminate in the
24 particular manner used by Nipper?

25 A Yes.

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14:39:33 1 Q Were you aware, sir, that Chris Tarnovsky e-mailed
2 portions of the Nagra ROM code to an individual named Jan
3 Saggiori in 1999?

4 A I had seen some evidence to that effect, yes.

5 Q Now, if I understood your testimony this morning, you
6 said that the EEPROM image in the December 24th post was
7 modified and masked; is that correct?

8 A I don't think so, sir. What was the actual testimony?

9 Q I have written down that 12/24 post by Nipper 2000 had
10 modified EEPROM. Is that not your testimony?

11 A I would have to go to the transcript. I don't
12 recollect that.

13 Q Are you aware, sir, that Mr. Tarnovsky admitted using
14 spoofing techniques, proxies, and anonymizers to mask or
15 conceal his IP address when posting information on the
16 internet?

17 A No, I was not.

18 Q Now, let's take a look at Exhibit 1568 if we could.
19 Let me know if this is one of the documents that the
20 defendant's attorney showed you in preparation for your
21 testimony.

22 A (Witness reviewing document)

23 Q Mr. Jones, is this one of the documents that you
24 reviewed in preparation for your report or your testimony?

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- 14:39:33 1 Q Now, if you look at the -- well, first of all, let me
2 back up. I will represent to you that this is the text of
3 an e-mail exchange between Chaim Shen-Orr and John Norris,
4 and there's metadata on the back page that was produced by
5 the defendants. Do you see that?
6 A Yes, I do.
7 Q Now, turning back to the front page, I want to focus
8 your attention on the following language: They need to be
9 absolutely certain there is not the hidden possibility of
10 identifying the ID of the EchoStar card that their code
11 comes from -- some kind of a, quote, fingerprint or receiver
12 serial number if a card has been pared in the code that is
13 developed. They can do this if they have a code from a
14 second card.
15 Was that language that you had seen when preparing your
16 report?
17 A Yes, it is.
18 Q And that's language that you had seen in preparing your
19 PowerPoint presentation that you showed to the jury;
20 correct?
21 A Yes, it is.
22 Q That language was not included in either your report or
23 the PowerPoint presentation; correct, sir?
24 A Correct.
25 Q Now, you agreed with me in your deposition that

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- 14:39:33 1 individuals would mask or conceal portions of code postings
2 for their IP address to try to hide their involvement. Is
3 that still your testimony?

4 A Yes.

5 Q Now, Mr. Jones, based on your expertise and experience
6 in this field, do you think it was a good idea for the
7 defendants to share portions of the Headend Report with
8 Chris Tarnovsky?

9 A I am not sure actually. Mr. Tarnovsky was an employee
10 of the company; correct?

11 Q Given Mr. Tarnovsky's history in hacking the DirectTV
12 system, do you think it was a wise decision for the
13 defendants to share with him portions of a report that
14 described how to hack EchoStar's system?

15 MR. STONE: Objection. Assumes facts not in
16 evidence. Vague as to time.

17 THE COURT: Overruled.

18 THE WITNESS: I don't really have an opinion on
19 that. I could go either way.

20 BY MR. HAGAN:

21 Q Would you have shown portions of that report to Mr.
22 Tarnovsky, knowing he had a history of hacking, knowing that
23 the report described how to hack a competitor's system?

24 A I think it would be depend upon time.

25 Q I asked you in your deposition, and you said you had no

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14:39:33 1 opinion on that one way or the other.

2 A Okay.

3 Q Do you stand by that testimony?

4 A Yes.

5 Q Now, you also talked a little bit about the DirectTV
6 system going secure. Do you recall that testimony?

7 A Yes.

8 Q Let me see if I understand the timeline. You would
9 agree, sir, that DirectTV was compromised and hacked from the
10 1994 to 2004 time frame?

11 A That sounds about right, yes.

12 Q In fact, there was evidence that you reviewed, in

13 preparing your report that you reviewed in the course of
14 this case that showed there was hacking and compromising of
15 the DirecTV system up until 2004. Do you still stand by
16 that testimony?

17 A It seems reasonable. Quite frankly, I can't remember
18 all the dates on DirecTV anymore.

19 Q So when DirecTV was independently owned, there was a
20 piracy problem. Now, you understood that DirecTV filed a
21 lawsuit against the defendants; correct?

22 A Yes, I do.

23 Q And you understand that subsequent to that lawsuit the
24 defendant's parent company, News Corp., went out and bought
25 the controlling share of DirecTV; correct?

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14:39:33 1 A Yes, I think so.

2 Q And then after that purchase the lawsuit went away, and
3 once DirecTV and the defendants were under the same
4 corporate umbrella, piracy stopped. Is that your
5 understanding?

6 A My understanding that piracy stopped with the P4 card
7 being issued, and the P4 card has yet to be significantly
8 compromised. So my understanding is that that was the event
9 that stopped piracy.

10 Q So is it fair to say that you believe it's just a
11 coincidence that piracy stopped after DirecTV and NDS came
12 under the same corporate umbrella?

13 A I don't see a causal relationship. If you have a Smart
14 Card that is secure, then your system is secure. Anything
15 else is irrelevant.

16 Q Now, Mr. Jones, you were here when Dr. Rubin testified;
17 is that right?

18 A Yes, I was.

19 Q And you heard Dr. Rubin testify about some of the
20 reverse engineering that his company and that he does on

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21 behalf of Johns Hopkins; correct?

22 A Yes, I did.

23 Q And you heard Dr. Rubin testify that oftentimes they
24 will contact EFF attorneys before hacking into a system. Do
25 you recall that testimony?

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14:39:33 1 A I do.

2 Q And EFF stands for Electronic Frontier Foundation; is
3 that right?

4 A Yes.

5 Q In your opinion do you believe that the defendant
6 should have contacted the EFF attorneys before hacking
7 EchoStar's security system?

8 A No, I do not.

9 Q Now, in one of your reports I believe you state that
10 the Nipper posting was not a significant event for EchoStar
11 piracy; is that correct?

12 A Yes. Can you clarify which posting we are talking
13 about here?

14 Q Which one do you believe was not a significant event?

15 A The Nipper 2000 posting.

16 Q So you agree with me that the NipperClause posting was
17 a significant event in EchoStar piracy?

18 A Yes, it was significant.

19 Q And you would agree with Chris Tarnovsky's testimony
20 that that particular posting was significant; correct?

21 A Yes.

22 Q You would agree with Christophe Nicolas's and Marco
23 Pizzo's testimony that that particular posting was
24 significant for EchoStar piracy; correct?

25 A Correct.

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14:39:33 1 Q You reference the name StuntGuy, and he is going to be
2 here later in the trial to testify.

3 You have had an opportunity to review his deposition
4 testimony; correct?

5 A Yes, I have.

6 Q And did you see the portions of his deposition
7 testimony where he thanked Nipper for some of the particular
8 internet postings as reflected in the last version of his
9 Frequently Asked Questions?

10 A I don't recollect it from the deposition transcript. I
11 do recollect something in the StuntGuy FAQ where he thanks
12 Nipper, yes.

13 Q And that particular piece of evidence was not in your
14 presentation; was it, Mr. Jones?

15 A No, it was not.

16 Q Now, your expert theories on Nipper include an inside
17 job, the card being linked to Dawn Branton, numerous
18 possible pirates, including Swiss cheese group, fruitcake,
19 XG, or someone using the black box. Does it include anyone
20 else?

21 A I am sorry, sir, but I wasn't aware that I had offered
22 those opinions. My opinions related to the evidence that I
23 used to analyze them. I am not sure I tied it to any
24 particular individual.

25 Q well, let me understand your testimony. You are not

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14:39:33 1 testifying that Nipper could have been the result of an
2 inside job -- Carl Olson, Dawn Branton, Swiss cheese,
3 fruitcake, XG, or someone using the black box?

4 A I think the problem I'm having is Dawn Branton. That
5 is not a name I am familiar with.

6 Q So take that name out, all the rest of them are
7 possible suspects in your view?

8 A well, could we go through them one at a time, please,

9 and I'll give you my --
10 Q Sure. An inside-job theory, including Carl Olson?
11 A Yes.
12 Q Swiss cheese group?
13 A I'm sorry. What's the question with Swiss cheese
14 group?
15 Q Do you believe that the Swiss cheese group could have
16 been responsible for the Nipper posting?
17 A I think that's possible, yes.
18 Q Fruitcake?
19 A Yes.
20 Q XG?
21 A Yes, X man, all these people that had the ROM contents,
22 piper, macro. There was a very large number of people in
23 the pirating community.
24 Q And then whoever developed or used the black box?
25 A Correct.

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14:39:33 1 Q Nowhere on your list is Chris Tarnovsky or Al Menard;
2 correct?
3 A Correct.
4 Q But you're not here to testify that Nipper wasn't Chris
5 Tarnovsky; right?
6 A That's true.
7 Q So why wasn't he included in the list of individuals,
8 possible suspects in your neutral, unbiased, and trustworthy
9 report?
10 A Well, to the best of my knowledge, nowhere in the
11 report did I say I think this person did this. So the fact
12 that Mr. Tarnovsky's name was not in there either is
13 irrelevant.
14 Q Now, you looked at a number of internet postings in
15 preparation for your report and your testimony and your
16 PowerPoint presentation; is that correct?

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17 A Yes.

18 Q Did you look at the November 12, 1998, posting by
19 Nipper?

20 A Is that what I know as the Swiss cheese production
21 EEPROM portion?

22 Q I don't know. We can take a look at it. It's Exhibit
23 2008.

24 A Okay.

25 Q Let me know if this is one of the documents that the

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14:39:33 1 defendant's attorneys provided you with in doing your
2 analysis.

3 A (Witness reviewing document).

4 MR. HAGAN: If you could, just blow up the Nipper
5 portion and the date.

6 THE WITNESS: I think I have seen this or if not
7 exactly this something very similar to it.

8 BY MR. HAGAN:

9 Q Did you see any evidence in reviewing the hundreds of
10 thousands of pages of documents of a Nipper posting prior to
11 1998?

12 A I don't know.

13 Q Do you think that it's a coincidence that 11 days after
14 the defendants drafted their Headend Report that described
15 how to hack EchoStar's system and disclosed the secret key
16 in that system with Nipper, that 11 days after that there
17 was a post by someone using the alias Nipper? Do you
18 believe that was a coincidence?

19 A Are we talking now about what I know as the Swiss
20 cheese production of EEPROM portion?

21 Q I am talking about the November 1998 Nipper post that
22 you have in front of you.

23 A This one here. Oh, I see. Well, it's clear to me that
24 there are multiple people working on -- working out how to
25 hack this system. So whether it's coincidence or not, I

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14:39:33 1 don't know.

2 Q According to your testimony about building cards, it's
3 certainly possible that in November of 1998, two people in
4 two different parts of the world were developing a hack for
5 EchoStar's security system?

6 A Yes.

7 Q That's certainly possible under your theory; correct?

8 A Yes, I would say so.

9 Q It's not probable, though; is it, sir?

10 A I think I may disagree with you. What we have is the
11 pirates were making a tremendous amount of money from
12 DirectTV piracy in the 1990s. They could see NDS improving
13 their access card technology, so it makes perfect sense to
14 me that the pirates would start to turn their attention to
15 DISH or EchoStar.

16 Q The inferior system with worse programming?

17 A Yes.

18 MR. HAGAN: Pass the witness.

19 THE COURT: Redirect, Mr. Stone, on behalf of NDS.

20 MR. STONE: Thank you, Your Honor.

21 REDIRECT EXAMINATION

22 BY MR. STONE:

23 Q Okay, Mr. Jones. I want to backtrack a little bit and
24 we'll go through some of this. You seemed to have been
25 attacked for the amount of time and effort and billings you

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14:39:33 1 have had to generate in this case. Has the amount of work
2 that you have done in this case adversely affected your work
3 for other clients?

4 A Yes, dramatically.

5 Q Are you a professional expert witness?

6 A Absolutely not.

7 Q what is your day job, so to speak?

8 A My day job, I design products for people. And I can
9 tell you now I have got a couple of my clients who are very
10 upset with me. I have one client in Sweden -- this is the
11 scuba-diving stuff -- who literally demanded when I walk out
12 the door here tonight, that I get on a plane and fly to
13 Sweden.

14 Q Now, could you have saved a lot of time and effort if
15 you had had the source code when you requested it?

16 A Oh, it would have cut my billings by a very large
17 amount.

18 Q why would the source code have helped you, had you had
19 it when you requested it back in the spring of 2007?

20 A Multiple reasons. You have to understand, by looking
21 at what Haifa had done and postings on the internet, I knew
22 what had happened, but I didn't know why; nor did I know
23 what a lot of these bits and pieces were and how the puzzle
24 fits together.

25 So what I had to do was sift through huge quantities of

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14:39:33 1 information from pirates, for instance, trying to understand
2 various things. I looked at patch code and the pirates
3 commenting on stuff and all these things, trying to work out
4 how this all fit together.

5 Maybe a great example is -- remember I was talking
6 about the video key, the default video key? well, I spent
7 about two weeks going through all these files reconstructing
8 timelines and dates and how it all worked together before I
9 convinced myself that that was a default video key. When I
10 saw the source code a couple of weeks ago, it took me about
11 30 seconds.

12 Q Have you put in a lot of time and effort in reaching

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13 your opinions in this case?

14 A I have put in an inordinate amount of time, sir.

15 Q Are you aware that Dr. Rubin spent 19 hours total
16 before completing his report?

17 A I heard that, yes.

18 Q You spent a lot more time than that; correct?

19 A I spent hundreds and hundreds of hours on this.

20 Q Taking all the allegations thrown at you by the
21 plaintiffs and running them down through the evidence;
22 correct?

23 A Correct.

24 Q Now, let me -- speaking of evidence, if we could show
25 you Exhibit 2053 again, please. It's the one that you were

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14:39:33 1 handed first by Mr. Hagan.

2 A Oh, I beg your pardon.

3 Q It's the January 8, 2002, Conus e-mail.

4 A Yes, sir.

5 Q Now, sir, I meant to ask you: when you asked for the
6 source code, who had that source code?

7 A NagraVision.

8 Q And it wasn't provided until two weeks before trial?

9 A Correct.

10 Q And did you receive any inconsistent information about
11 the existence of that source code along the way that
12 increased the amount of time you had to put in?

13 A Yes, I did.

14 Q what was that?

15 A When I first started on this case, the first couple of
16 weeks I was just really muddling around trying to understand
17 this vast amount of documents. Once I got my head wrapped
18 around the case, I said, you know, to understand this, I
19 need the source code for the ROM 3 card so I can work out
20 what they did, why they did it, and how they did it.

21 So almost immediately I asked the attorneys can I

22 please see the source code. I proceeded to get several
23 stories. I forget the exact order, but I think it went
24 something like I am not entitled to see it because
25 NagraVision isn't a plaintiff in the case. Then I was told

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14:39:33 1 it wasn't available because it had been destroyed.

2 Then I think we pointed out that the code was available
3 in escrow, and then I was offered to go to Switzerland for a
4 day to look at it. I think that was my recollection.

5 Q It would have been extremely helpful to have had that
6 back in the spring when you were preparing your report?

7 A Absolutely.

8 Q How much time again would that have saved you?

9 A I will say 100 or 200 hours for sure.

10 Q Now, looking at Exhibit 2053, as you pointed out
11 before, it doesn't say the hole is open. It says the hole
12 can be reopened. But let's go to the first paragraph under
13 summary.

14 MR. STONE: If we could blow that up a little bit.
15 The first dash point is what I am focusing on. Can we blow
16 that up a little bit, the first dash point?

17 BY MR. STONE:

18 Q It says the hackers have found an EMM to reopen the
19 locked DNASP 003 cards. They have been using the brute
20 force method to find candidate EMMs to achieve this task for
21 over a week now. Do you see that?

22 A Yes, I do.

23 Q Now, that's completely different than a buffer overflow
24 attack; isn't it?

25 A Yes, it is.

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14:39:33 1 Q Is this another security flaw in the system?

2 A To call it a flaw would perhaps be uncharitable. To
3 say that it was a feature of the system that the pirates
4 exploited would be accurate.

5 Q Tell the folks on the jury what exactly is meant here
6 by found an EMM using the brute force method? What is an
7 EMM?

8 A Okay. EMM is an acronym for entitlement management
9 message. So you have heard about ECMs and all these various
10 things. So an EMM is a class of message that is sent down
11 to the card which is used for things like provisioning,
12 which channels you are allowed to watch and so on. Okay?

13 It's highly encrypted, so my take on this is where they
14 say they are using a brute force method to find a candidate
15 EMM, the interesting thing about EMMs is they are encrypted
16 using what is called asymmetric encryption. What that means
17 is they're encrypted with one key which is super, super
18 secret, and they are decrypted with another. Okay?

19 Now, why is this useful? Well, it's because if what's
20 really, really important is to prevent people from creating
21 their own messages, you just keep want to keep the
22 encryption key secret. If the decryption key gets out,
23 which is what happened here, it's not that terrible if they
24 can decrypt your message. But what they can't do is create
25 their own messages.

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14:39:33 1 So a brute force attack on EMM is an attempt to find
2 this secret key such that they can form their own EMM
3 messages. And I just mentioned that EMM is used for
4 provisioning. Well, if you can create your own message, you
5 can send down a message to the card saying, hey, he gets to
6 see all the channels for free. So if you can do it, it's a
7 great way of getting into the card.

8 Q What is a brute force attack?

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9 A A brute force attack is basically try value one, does
10 that work? Try value two, does that work? Try value three,
11 does that work? There is no intelligence. It's just try
12 every combination you can until you get one that works.

13 And the interesting thing is what the pirating
14 community did was they said, hey, we've all got computers.
15 Why don't we divvy up this task amongst ourselves? And
16 that's what they did.

17 Q Does this have anything to do with any information in
18 the Headend Report?

19 A Absolutely not.

20 Q Does it have anything to do with the buffer overflow
21 attack?

22 A No.

23 Q Down at the very last sentence of that same dash point
24 that we're looking at, can you read that into the record, on
25 Exhibit 2053?

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14:39:33 1 A Yes. "we already have a patch to counter this attack."

2 Q That's the last sentence of the first dash point under
3 summary on Exhibit 2053?

4 A I'm sorry?

5 Q Is that the last sentence?

6 A Yes, it is.

7 Q Okay. would having a patch ready to counter that
8 explain why every single report you saw after this showed
9 the hole still being closed?

10 A Yes, it would. It would also explain with the status
11 is shown as hole can be reopened as opposed to it is open.

12 Q Explain that.

13 A Well, my interpretation of this is NagraVision has
14 worked out that there is the potential for opening the card
15 using this EMM. They haven't seen the fact that anyone has
16 done it yet, but they have already worked out how to counter
17 it.

18 Q Let me show you Exhibit 1687 very quickly. It's in
19 evidence. Look at the first page. This is just one from
20 May of 2002. What does it show the status for the
21 DNASP-III?

22 A Hole closed. Some cards have blocker software.

23 Q And that's consistent with all of the reports that you
24 reviewed?

25 A Yes, it is.

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14:39:33 1 Q Did you ever see a single report that indicated that
2 the hole was permanently opened?

3 A I did not.

4 Q Did you see any evidence indicating that the patch and
5 ECM for the ROM 3 buffer overflow vulnerability was not
6 completely effective?

7 A Yes, I did. For a period of 11 days in June 2001, the
8 pirates managed to circumvent the patch, and the way they
9 did it was very clever. What they did was they worked out
10 that an EMM message that NagraVision had sent down several
11 months before, if they sent that same message to the card,
12 it would delete the patch.

13 So what they did is they took NagraVision's own EMM,
14 replayed it against them to delete the patch, and now they
15 had access to the card. Well, the thing is they knew when
16 they published it, it was more along the lines of isn't this
17 amusing that we're doing this. We are using their own code
18 to open their card.

19 But the pirates fully realized it would be very quickly
20 closed, and within 11 days they had closed it again. Other
21 than that, every report I ever saw showed ROM 3 hole closed.

22 Q Do you stand by your opinion that you saw no evidence
23 that a card swap was necessary because of the December 2000
24 postings?

25 A I do.

14:39:33 1 Q Now, you were cut off when you were describing your
2 analysis of the stinger. Do you recall that?

3 A I do.

4 Q What didn't you get to finish?

5 A Okay. I think you have heard about testimony about the
6 stinger device. Counsel agreed on a joint device inspection
7 in Denver that occurred sometime in November -- December, I
8 think. The ski season had just started.

9 So I went to Denver, and I was there to inspect pirate
10 devices that were being produced by both sides. The stinger
11 was also being produced, so because I am an engineer, I am
12 interested in those things. I examined the stinger as I
13 examined all the other pirate devices that were there.

14 When I looked at the stinger, it plainly was not a
15 black box -- by this time I knew about the black box --
16 because the stinger is an open printed circuitboard. It has
17 got components on it and so on. So nobody would describe
18 this printed circuitboard as a black box. Okay?

19 When I looked at it as well, it was very clear to me
20 that this was not designed for volume programming. What I
21 mean by volume programming is you want to put cards in and
22 out as quickly as possible. The reason was is because it
23 wasn't packaged. You know, there was stuff sort of hanging
24 off the things, so you could catch yourself on it and so on.

25 So I looked at that stinger and said, well, patently

14:39:33 1 it's not the black box, so there is not much point in going
2 any further with it.

3 Q Now, you were shown an Exhibit 1568 that is from August
4 of 1998. Do you recall when the proof of concept was tested

5
6 A Yes. I believe they made two trips -- June of '98, and
7 September of '98.

8 Q would this e-mail be consistent with the second trip
9 for the proof of concept that was in September?

10 A Let's see. It's August 23rd, so, yes, the timing is
11 correct.

12 Q To recap, did you see any evidence that you thought
13 connected the Headend Report to any information on the
14 internet, the Swiss cheese posting, the fruitcake posting,
15 the StuntGuy FAQ, or the December 2000 postings?

16 A I found nothing linking them.

17 Q Did you find evidence that was actually to the
18 contrary?

19 A Yes.

20 Q Taking the Nipper posting, the xbr21, so-called Nipper
21 posting?

22 A Yes. Just to reiterate, this is my famous 7381 jump
23 again. That information was not in the Headend Report. It
24 wasn't in there. They had to get that from somewhere else.
25 The black box, they did a similar jump, 7848, I believe.

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14:39:33 1 That isn't in the Headend Report. So those are just two
2 things that you can say, look, the pirates had additional
3 information that wasn't in that Headend Report.

4 Q And the 7381 jump and the other jump do not come from
5 the system ROM; do they?

6 A No. They are in the user ROM.

7 Q So if Mr. Saggiori were to claim that he got system ROM
8 from Chris Tarnovsky, that would not reveal those two jumps;
9 would it?

10 A It would not.

11 Q what you would need to derive the index variable and
12 the exception handling is the user ROM, not the system ROM;
13 correct?

14 A Correct.

15 Q And in your analysis did it appear to you that the
16 Nipper code was a further development of the black box code,
17 a different version, if you will?

18 A Yes. Remember the picture I put up with the three side
19 by side? well, when I did my analysis and I compared the
20 Nipper code to the black box code, I found quite a few
21 differences between them but also quite a few similarities,
22 including their basic architecture.

23 I think when you saw up there on the screen when I had
24 the three images side by side, the multi-colored thing, the
25 Nipper and black box, they look pretty simple.

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14:39:33 1 Q Let's go back to the Swiss cheese posting, which was in
2 October. I think it was October 23rd, approximately, of
3 1998.

4 A Okay.

5 Q You actually compared that to all the files in Haifa;
6 correct?

7 A Yes.

8 Q And you didn't find any match; is that correct?

9 A Correct.

10 Q And in that posting of the EEPROM portion, did it have
11 the phrase that uses the word Nipper in it on the internet?

12 A Yes, it did.

13 Q And that phrase being Nipper as such and such -- well,
14 Nipper?

15 A Yes.

16 Q And so anyone who was involved in piracy who was on the
17 internet in October of '98 would have seen that phrase from
18 the Swiss cheese posting; correct?

19 A Yes, they would.

20 Q Now, there is a question about hacking being
21 inevitable, and does that make hacking right. You

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22 testified, no, that doesn't excuse hacking. But I think the
23 point you were trying to make, if I understood it, was that
24 because there were so many defects and there were so many
25 pirates and hackers attacking it, it was inevitable those

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14:39:33 1 defects would be exploited. Is that a fair statement?
2 A That is a very fair statement, yes.
3 Q Was that the point you were trying to make?
4 A Yes.
5 Q And had the other ROM versions been pirated and hacked
6 that you're aware of?
7 A You're referring to the ROM 2, 10, 11, and so on?
8 Q Correct.
9 A Yes.
10 Q And you're aware that in this case plaintiffs don't
11 blame NDS for the hacks or piracy of those ROM versions;
12 correct?
13 A I am aware of that, yes.
14 Q Did you see evidence that the ROM code for ROM 2 was on
15 the internet well before these postings?
16 A Yes. If you remember, I actually showed you that
17 today. This is the ESROM2.zip file. I went through the
18 read-me file where the guys were talking about we, us,
19 multiple contributors and so on. So the ROM 2 code was out
20 there well before the Nipper postings.
21 Q And how similar was the ROM 2 code to the ROM 3 code?
22 A It was very similar. So what they basically did, they
23 had the ROM 2 code. They had so many bytes in that that
24 they had almost filled up the EEPROM, is where they put
25 their bug fixes.

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2 essentially took all the bug fixes, put them in, added just
3 a little bit more functionality, and called that a ROM 3
4 card.

5 Q Now, do you think it's appropriate following reverse
6 engineering to approach a high profile company and threaten
7 to publish the results of the reverse engineering if certain
8 steps are not taken?

9 A I don't find that appropriate, no.

10 Q Do you think it's appropriate to threaten to do that
11 whether a patch is available for those reverse engineering
12 results or not?

13 A No, I do not.

14 Q Now, if I understand correctly, a buffer overflow is
15 the most common attack on computers; correct?

16 A Yes.

17 Q For the ROM 3 card for such an attack, there is no
18 choice as to memory aliasing?

19 A That's correct.

20 Q There is no choices to using the index variable?

21 A That's correct.

22 Q There is no choices to an exception handling?

23 A Correct.

24 Q Those are structural to any buffer overflow attack on
25 this card; correct?

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A Correct.

2 Q And have you seen any credible evidence why the
3 NagraVision would not have patched and corrected that
4 vulnerability before these postings?

5 A I have not.

6 Q Have you heard anything here today that changes any of
7 your opinions?

8 A No, I have not.

9 Q Do you stand by each and every one of your opinions

10 that you have expressed here today?

11 A Yes, I do.

12 MR. STONE: Thank you. Nothing further.

13 THE COURT: Recross. Mr. Hagan on behalf of
14 EchoStar.

15 MR. HAGAN: Thank you, Your Honor.

16 RE CROSS-EXAMINATION

17 BY MR. HAGAN:

18 Q Mr. Jones, we've still got several witnesses to testify
19 in this trial, and I just want to make sure I understand
20 your opinion before we get to closing arguments.

21 Your opinion is not that Chris Tarnovsky was
22 responsible for posting the Nipper file; right? You don't
23 have an opinion on that; correct?

24 A Correct.

25 Q In fact, you don't have an opinion on whether or not

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14:39:33 1 any of the defendant's engineers or employees were
2 responsible for that posting; correct?

3 A I am not sure I agree with that. My opinions are very
4 clear. I have looked at the evidence. I have analyzed the
5 evidence in excruciating detail, and the evidence shows that
6 there is no linkage that I can find between Haifa and the
7 stuff that was put on the internet.

8 Q But you did not look at any image or any NDS computer,
9 whether it be Tarnovsky's, Mordinson's, or any other
10 engineer that was involved in creating the hack for
11 EchoStar's system; correct?

12 A Correct.

13 Q And you testified at your deposition and today that
14 that would be the place that you would want to look to
15 determine whether or not they were involved in that posting;
16 correct?

17 A I think you are mischaracterizing what I said there. I

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18 agreed that that would be useful, and then I believe I told
19 you that I went and asked to look at the production relevant
20 from Chris Tarnovsky's computer. I have looked at it.
21 There is nothing relevant, which explains why it was never
22 presented to me in the first place.
23 Q You never asked to look at images of his computer;
24 correct?
25 A Correct, as I have previously --

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14:39:33 1 MR. HAGAN: Thank you.
2 THE COURT: Sir, I am going to place you on call.
3 within 48 hours from the time that counsel notifies you, you
4 will be expected to be back in court. I don't know if you
5 will need to testify again, but you are to remain available.
6 Counsel, your next witness, please.
7 MR. EBERHART: Defendants call Suzanne Guggenheim,
8 Your Honor.
9 THE COURT: would you be kind enough to raise your
10 right hand. The clerk is going to administer an oath to
11 you.
12 SUZANNE GUGGENHEIM, DEFENSE WITNESS, SWORN
13 THE CLERK: Please be seated.
14 THE COURT: would you state your full name for the
15 jury, please.
16 THE WITNESS: Yes. My name is Suzanne Guggenheim.
17 THE COURT: would you spell your last name,
18 please.
19 THE WITNESS: G-u-g-g-e-n-h-e-i-m.
20 THE COURT: Thank you. This is direct examination
21 by Mr. Eberhart on behalf of NDS.
22 DIRECT EXAMINATION
23 BY MR. EBERHART:
24 Q Good afternoon, Ms. Guggenheim.
25 A Good afternoon.

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14:39:33 1 Q You are married to Alan Guggenheim; correct?
2 A That's correct.
3 Q And Alan Guggenheim is the former CEO of NagraStar;
4 correct?
5 A That's correct.
6 Q And you are trained as a lawyer; correct?
7 A At least I have a law degree. I was never a lawyer.
8 Q Okay. But you have a law degree from the University of
9 Paris; correct?
10 A That's correct.
11 Q And you worked for a company called CIS Technology at
12 least during the years 1998 through 2000?
13 A That's correct.
14 Q And you and your husband, Alan Guggenheim, were the
15 owners of CIS Technology during that time; correct?
16 A That's correct.
17 Q And during that period in 1998 through 2000, CIS
18 Technology provided services to NagraStar; correct?
19 A That's correct.
20 Q And CIS --
21 A No. Sorry. That's not correct.
22 Q What is not correct about that, ma'am?
23 A CIS did not provide services to NagraStar. CIS
24 provided service to Nagra Kudelski.
25 Q So your contract was between CIS Technology and Nagra

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14:39:33 1 Kudelski in Switzerland?
2 A That's correct.
3 Q Thank you. And that work for Nagra Kudelski in
4 Switzerland was mainly doing research on the satellite
5 industry; correct?

6 A That was part of it.
7 Q And as part of that work for Nagra Kudelski, you
8 researched competitors including NDS; correct?
9 A Define what you call researched.
10 Q You recall that your deposition was taken in this case;
11 correct?
12 A Yes, I do.
13 Q Do you recall being asked what your daily activities
14 were as a technology watch specialist for CIS Tech?
15 A I do.
16 Q Okay. And didn't you indicate that you were doing
17 research generally on the industry and the competition?
18 A That's correct.
19 Q And you said that the competition -- the obvious names
20 would be NDS or Irdeto; correct?
21 A That's correct.
22 Q So part of your work for Nagra Kudelski was doing
23 research on competitors such as NDS; correct?
24 A Yes, that's correct.
25 Q And your work for CIS Tech included anti-piracy

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14:39:33 1 research; correct?
2 A Yes, that's correct.
3 Q And the only employees of CIS Technology that worked on
4 anti-piracy during the 1999 and 2000 period were you and
5 your husband; correct?
6 A That's correct.
7 Q In the course of your anti-piracy investigations, did
8 you ever come across an individual using the name StuntGuy?
9 A I did see that name, yes, on the internet several
10 times.
11 Q And StuntGuy was someone who prepared a Frequently
12 Asked Questions document, the subject of which was hacking
13 EchoStar; correct?

14 A It was one of them, correct.
15 Q So StuntGuy actually prepared multiple FAQs about
16 hacking EchoStar; correct?
17 A That's correct. There were several.
18 Q And you knew that StuntGuy was working on hacking
19 EchoStar by at least the year 2000; correct?
20 A It's one of the names that I encountered.
21 Q And you don't remember ever being asked specifically to
22 attempt to investigate StuntGuy; correct?
23 A Correct.
24 Q You also don't remember ever being asked to investigate
25 a person who used the alias Nipper or NipperClause; correct?

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14:39:33 1 A Correct -- well, can you define what you call
2 investigate so that I am sure what you mean?
3 Q At your deposition weren't you asked the following
4 question:
5 "Question: Were you ever asked to investigate a person
6 who used the alias Nipper or NipperClause?
7 "Answer: I do not remember."
8 A Well, that's why I was asking you what you mean by
9 investigate. I was asked -- if I can rephrase what you are
10 asking me. What I was asked to do was to find everything I
11 could regarding the different pirates that would post
12 information on the internet.
13 So if that's what you mean by investigate, I did
14 investigate everybody I could find a name about. If you
15 mean anything else, no.
16 Q Using that definition, you don't remember ever being
17 asked to investigate a person who used the alias Nipper or
18 NipperClause; correct?
19 A Again, as I said, if it's finding what they were
20 posting and trying to find where they were posting it, yes,
21 I was doing that. If it is to find other ways anything
22 about them, I was not.

23 Q As part of your work for CIS Tech, you sometimes
24 purchased devices designed for piracy; correct?
25 A That's correct.

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14:39:33 1 Q And you then had those devices sent to Switzerland for
2 analysis by the Kudelski group; correct?

3 A That's correct. well -- yeah, that's correct.

4 Q And it is your testimony that you sent somewhere
5 between five and a dozen devices to Switzerland during your
6 work for CIS; correct?

7 A That's correct -- even though I don't remember the
8 number I sent.

9 Q Now, you also acquired pirate devices for use against
10 the DirectTV system; correct?

11 A I did but not always knowing what I was acquiring.
12 Whenever I would purchase items, it was rarely clear or sure
13 of what I was going to receive.

14 MR. EBERHART: Would you hand the witness Exhibit
15 1092, please.

16 BY MR. EBERHART:

17 Q Exhibit 1092 consists of documents that were produced
18 by your company, CIS. Do you see that indication on the
19 bottom of the page?

20 A Yes, I do.

21 Q Were these documents that you gathered during your work
22 for the Kudelski group in the 1999-2000 time period?

23 A Yes, they are.

24 MR. EBERHART: Your Honor, defendants move Exhibit
25 1092.

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14:39:33 1 THE COURT: Any objection:

2 MS. WILLETTS: No objection, Your Honor.

3 THE COURT: Received.

4 (Exhibit 1092 received.)

5 MR. EBERHART: If you could show the first page,
6 please.

7 BY MR. EBERHART:

8 Q There is a printout of a web page, and it's dated March
9 2, 1999; correct?

10 A That's correct.

11 Q This shows a pirate device called Blazer Next
12 Generation; correct?

13 A That's correct.

14 Q And this document has your handwriting on it that
15 indicates money order, \$350 times two, equals \$700; correct?

16 A Correct.

17 Q And that's an indication that you purchased the device
18 shown in Exhibit 1092; correct?

19 A That's certainly what it looks like, yes.

20 Q And this was a device for DirectTV piracy; correct?

21 A I do not remember, but I see that, yes, it looks like
22 it.

23 Q So you see on the document that it indicates that?

24 A Yes.

25 Q And turning to the fifth page of Exhibit 1092, it

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14:39:33 1 indicates that the business address for this company that's
2 selling pirate DirectTV devices is in Woodstock, New
3 Brunswick, Canada; correct?

4 A That's correct.

5 Q Did you ever test whether this device or reprogrammed
6 card that you purchased, as shown in Exhibit 1092, worked?

7 A I did not.

8 Q Do you know whether the Kudelski group ever tested
9 whether this device worked?

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10 A I hope.
11 Q It's your recollection that you sent it to Switzerland?
12 A Yes, it is.
13 Q How did the Kudelski group test a DirectTV device when
14 the DirectTV satellite signal is not available in
15 Switzerland?
16 A I don't know.
17 Q Did CIS have a DirectTV subscription during the '99-2000
18 time period?
19 A I know we did personally.
20 Q Do you know whether CIS billed Nagra Kudelski for the
21 cost of a DirectTV subscription?
22 A Yes, we did.
23 Q To your knowledge CIS never tested this pirate device
24 using the DirectTV system that you were billing Nagra
25 Kudelski for?

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14:39:33 1 A Excuse me. Can you repeat the question.
2 Q Certainly. To your recollection CIS never used that
3 DirectTV system that was being paid for by Nagra Kudelski to
4 test this DirectTV pirate device that you purchased?
5 A That's correct.
6 Q Now, you also acquired piracy devices from Ontario,
7 Canada; correct?
8 A That's one of the addresses of the outlets that was
9 selling devices. That's correct.
10 MR. EBERHART: Please show the witness Exhibit
11 521, Michael.
12 BY MR. EBERHART:
13 Q Ms. Guggenheim, Exhibit 521 is another document that
14 came from your company; correct?
15 A That's correct.
16 Q And this is another document that you generated during
17 the course of your work for Nagra Kudelski through CIS;
18 correct?

19 A That's correct.

20 MR. EBERHART: Your, Honor, defendants move
21 Exhibit 521.

22 THE COURT: Any objection?

23 MS. WILLETTS: No objection.

24 THE COURT: It's received.

25 (Exhibit 521 received.)

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14:39:33 1 BY MR. EBERHART:

2 Q Now, on the first page of Exhibit 521 it indicates that
3 it's a purchase order that you sent to someone in Richmond
4 Hill, Ontario; correct?

5 A I do see Richmond Hill. I don't know if it's Ontario.

6 Q Okay. Let's take a look at page 7 of Exhibit 521. And
7 page 7 of Exhibit 521 is an e-mail that you received that
8 indicates that the address for the person selling this
9 pirate device is 10909 Young Street, Suite 240, Richmond
10 Hill, Ontario, Canada; correct?

11 A That's correct.

12 Q And this device that you were purchasing in Exhibit
13 521, that was a device intended for EchoStar piracy;
14 correct?

15 A That's correct.

16 Q Are you aware that Richmond Hill, Ontario, is
17 approximately 60 miles from Barrie, Ontario?

18 A No, I am not.

19 MR. EBERHART: Michael, please hand the witness
20 Exhibit 1098.

21 BY MR. EBERHART:

22 Q Ms. Guggenheim, Exhibit 1098 is another set of
23 documents produced by your company that shows purchases of
24 piracy devices; correct?

25 A That's correct.

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14:39:33 1 Q And you generated these documents during the course of
2 your work for Nagra Kudelski through CIS; correct?

3 A Correct.

4 MR. EBERHART: Your Honor, defendants offer
5 Exhibit 1098.

6 THE COURT: Any objection?

7 MS. WILLETTS: No objection, Your Honor.

8 THE COURT: Received.

9 (Exhibit 1098 received.)

10 BY MR. EBERHART:

11 Q Exhibit 1098 is dated March 8, 1999; correct? Let me
12 be specific. Take a look at the second page of Exhibit
13 1098, which is the purchase order portion.

14 A Yes. Sorry. I found the date.

15 Q You were making a purchase from a company called Direct
16 Marketing in Oro, Ontario; correct?

17 A Correct.

18 Q And you're buying \$3,700 of materials for DISH Network
19 piracy; correct?

20 A That's what it looks like to me.

21 Q And you're buying multiple copies of many of the
22 devices; correct?

23 A Correct. 203.

24 Q And these were all sent on to Nagra Kudelski in
25 Switzerland; correct?

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14:39:33 1 A That's correct.

2 Q Are you aware that Oro, Ontario, is about 10 miles away
3 from Barrie, Ontario?

4 A No. I must say I did not specially ever look at where
5 they were on the map.

6 Q But the name of the company from which you were
7 purchasing these EchoStar piracy devices in the March '99
8 was Direct Marketing; correct?

9 A Correct.

10 MR. EBERHART: Michael, please show the witness
11 Exhibit 520-A.

12 BY MR. EBERHART:

13 Q Ms. Guggenheim, Exhibit 520-A is another document that
14 was produced by your company CIS; correct?

15 A Correct.

16 Q And this is another document that you generated during
17 the course of your work for Nagra Kudelski through CIS;
18 correct?

19 A Correct.

20 MR. EBERHART: Your Honor, defendants offer
21 Exhibit 520-A.

22 THE COURT: Any objection?

23 MS. WILLETTS: No objection.

24 THE COURT: Received.

25 (Exhibit 520-A received.)

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14:39:33 1 BY MR. EBERHART:

2 Q Ms. Guggenheim, this is a FedEx label from Direct
3 Marketing to you dated March 25, 1999; correct?

4 A Correct.

5 Q So Exhibit 520-A is a shipment to you from Direct
6 Marketing that comes 17 days after your purchase order to
7 Direct Marketing that we saw in Exhibit 1098; correct?

8 A I don't think it corresponds to the same order because
9 the amount is about half of what is on the other one. So I
10 have no proof they are related.

11 Q When you refer to the amount, Ms. Guggenheim, what are
12 you looking at?

13 A I am looking at payment was billed at \$1,878.50, and
14 the other purchase order was for \$3,700.

15 Q Ms. Guggenheim, isn't it a fact, looking back at
16 Exhibit 1098, shown on the first page of Exhibit 1098 it has
17 money orders that you were sending to Direct Marketing in
18 order to purchase the piracy devices?

19 A Two things. First, I don't know if those money orders
20 are related with that purchase order. I don't know. Maybe,
21 maybe not.

22 Q well, this is the way they were produced to us by your
23 company, and they are in sequential order in the production
24 with the purchase order that's in Exhibit 1098.

25 A Then I suppose they must be related.

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14:39:33 1 Q So you think you received two separate shipments from
2 Direct Marketing? Is that what you're testifying?

3 A It could have been, absolutely. And I don't say this.
4 I don't know. But I just see the amount does not
5 correspond.

6 Q well, let's focus on Exhibit 520-A. In Exhibit 520-A,
7 shipment is coming to you from Barrie, Ontario; correct?

8 A That's correct.

9 Q what analysis was done of these devices from Barrie?

10 A Are you meaning what was done with those devices? Is
11 that what you're asking me?

12 Q Yes, ma'am.

13 A we would send them to Switzerland. That's where my
14 knowledge stops, to be analyzed and checked.

15 Q On the bottom right of that shipping label in Exhibit
16 520-A, there is a signature there by the person shipping the
17 piracy devices to you from Barrie, Ontario; correct?

18 A That's correct.

19 Q Is that the signature of Jim Waters?

20 A I have no idea.

21 MR. EBERHART: Pass the witness.

22 THE COURT: Cross-examination.

23

24 plaintiffs EchoStar and NagraStar.

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CROSS-EXAMINATION

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14:39:33 1 BY MS. WILLETTS:

2 Q Good afternoon, Ms. Guggenheim.

3 A Good afternoon.

4 Q Can you tell us a little bit about yourself, your
5 family, your work, a little bit of background?

6 A Okay. I will try. My name is Suzanne Guggenheim. I
7 was born on the great day of June 6, 1944, in Hungary. My
8 mother was able in three years later to escape the Communist
9 regime that was there and went to France where I was raised.

10 I lived in France -- I was raised in France. I studied
11 law. I have a master's in law. I have a bachelor's in
12 political science and did a master's in English and then
13 French literature. I started working in 1968 and worked in
14 Paris until 1980, so for 12 years.

15 I then left Paris for the Caribbean where my husband
16 was nominated for his first job as a young engineer. I
17 became at the time in Martinique Chief of Staff,
18 Superintendent of Education, for the French Antilles. When
19 my husband was transferred to Guadeloupe, I began to
20 transfer to the University of the French Antilles and then
21 went into the private sector until we decided to move into
22 the United States in 1980 after the socialists were elected
23 in France.

24 Q Can you tell us a little bit about when you began your
25 work with CIS, when that began?

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14:39:33 1 A I began my work -- we created our company, CIS, around

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2 1984. That's when I began working for CIS, and I have been
3 working for CIS on and off since then, pretty much during
4 the last 24 years.

5 Q I want to focus your attention on the work that you did
6 with CIS during the '99 to 2000 time frame.

7 First of all, can you tell us a little bit about what
8 kind of business CIS is?

9 A Well, CIS was created to do business, trans-Atlantic
10 business, development of trans-Atlantic business, as we came
11 from the other side of the Atlantic. So we worked with
12 different companies doing marketing research and trying to
13 find partners either for American companies that were
14 looking for partners on the other side of the Atlantic or
15 the opposite.

16 Therefore, we did a lot of research at the time for all
17 of them, so it was a variety of companies. After a few
18 years -- around '96, I think -- we started also working for
19 the Kudelski group as our clients.

20 Q And your work for CIS related to Kudelski began in, was
21 it, the '98 time frame?

22 A No. In '96.

23 Q Can you tell us the type of work that you did for CIS?
24 What was your role?

25 A Well, my role was a little bit like marketing role and

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14:39:33 1 administrative and purchasing for a lot of our customers.
2 we would try to find often new activities to develop in the
3 United States, so we make research on who we would be a good
4 candidate for them to work with, or for purchasing, finding
5 better opportunities than what they had in Europe to do
6 their purchases.

7 Q At some point in time, Ms. Guggenheim, did you begin
8 performing piracy investigation for CIS?

9 A That's correct. During those research we found out
10 that there was an increasing activity on the internet of

11 piracy of the Kudelski system, so we became worried about it
12 and we convinced Kudelski group to allow us to do more
13 in-depth work into finding out what was going on.

14 Q What specifically were you tasked to do to investigate
15 the piracy?

16 A My job was to try to find through the internet every
17 information that was available. So I would go online and
18 try to follow the links from one to the other and find
19 everything that was available and forward it for analysis.

20 Q Now, defendant's counsel asked you some questions about
21 your purchases of certain devices relating to DirectTV
22 system.

23 During your investigation for CIS on behalf of
24 Kudelski, were you ever specifically tasked to go out and
25 buy items related only to DirectTV systems?

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14:39:33 1 A No. Clearly we would -- as the job was to try to
2 understand piracy network and find everything we could about
3 them, generally the pirates were the same for both systems.
4 The outlets that were selling devices were selling both
5 systems. And most of the time when you would look even on
6 the internet, it was not clear if the device was for one
7 system or the other. Sometimes it was even worse. They
8 would tell you they had a device for EchoStar, and it turned
9 out when we tried it that it was not working on EchoStar.

10 And sometime you would call and they would say, "We
11 don't have it yet, but why don't you buy it anyway and use
12 DirectTV?" So there was also bait and switch so that they
13 could sell their product. So, yes, we were going after
14 everything that we could find.

15 Q So it's fair to say you were just interested in
16 gathering as much possible information you could on piracy
17 at the time?

18 A Absolutely.

19 Q Now, defense counsel also asked you whether or not you
20 had a DirectTV system that was being paid for by Nagra.

21 Was that a system that was set up in your home?

22 A That's correct. And our business was also in our home,
23 not in the garage but on top of the garage. So, yes, it was
24 installed in our home. And, yes, we did install it in our
25 home because, among other things, the DirectTV account was

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14:39:33 1 also an account that was of interest for Kudelski, and there
2 was serious talk at the time that DirectTV would switch
3 systems. So, yes, it was important for us to also see what
4 was going on with both systems.

5 Q Were you paying for that programming that you were
6 receiving through DirectTV?

7 A Yes. It was a paid subscription. It was not a pirated
8 one.

9 Q Now, defendant's counsel asked you some questions about
10 Exhibit 520 and your purchase of DirectTV reprogrammed cards
11 made from a group called the Blazer group.

12 Did you ever learn through your investigations at CIS
13 that the Blazer group was involved in EchoStar piracy as
14 well as DirectTV piracy?

15 A Yes. That's correct.

16 Q Did you ever learn through your investigations that the
17 Blazer group was affiliated with a group known as the New
18 Frontier Group?

19 A Yes. We were oriented from one link to the other, so,
20 yes.

21 Q Did you ever learn that Blazer or New Frontier Group
22 were operated by a gentleman named Stanley Frost or Stan
23 Frost?

24 A That name does not ring a bell.

25 Q Did you ever learn that the New Frontier Group or

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14:39:33 1 Blazer group was a distributor for Allen Menard?

2 A Well, it is on Allen Menard's dr7 site that I had
3 originally found the links to their site. And, yes, they
4 were promoted quite heavily.

5 Q Ms. Guggenheim, I would like to show you what we have
6 labeled Exhibit 2052.

7 First, did you have occasion to ever visit the New
8 Frontier Group website?

9 A Sorry. I didn't hear the question.

10 Q You testified that the New Frontier website was
11 something available on Mr. Menard's website, or link?

12 A Yes.

13 Q Did you have occasion to actually visit the New
14 Frontier website?

15 A Absolutely. I would visit all the sites every day and
16 all the chats and all the IRCs and read the forums. For
17 sure for weeks I would read them and not understand a word
18 of what I was reading, but after a while you start
19 understanding the technology and see how things fall in
20 place. So, yes, I did go through each of them every day.

21 Q Can you tell us what Exhibit 2052 is?

22 A 2052 is a printout of the website of the Frontier Group
23 and patches, the E3M patches.

24 MS. WILLETTS: Your Honor, at this time plaintiffs
25 would offer Exhibit 2052 into evidence.

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14:39:33 1 THE COURT: Any objection?

2 MR. EBERHART: No objection.

3 THE COURT: Received.

4 (Exhibit 2052 received.)

5 MS. WILLETTS: If we can blow up the left-hand
6 portion at the very top, please.

7 BY MS. WILLETTS:

8 Q Ms. Guggenheim, can you read for the jury the section
9 on the left-hand portion to the left of the New Frontier
10 Group logo?

11 A Sure. "TNF, your best source for 3M test cards for
12 DirecTV and DISH Network. We are the unauthorized dealers
13 of frame support for Blazer BNG customers and the home of
14 the final Frontier Echo 3M test card."

15 Q Is that consistent with your recollection of what the
16 Blazer group was offering at the time that you were
17 purchasing devices from the Blazer group?

18 A Yes, it is.

19 Q Now, during the time frame that you were investigating
20 piracy on behalf of Nagra, did you at some point come to
21 learn of what the main source of EchoStar piracy was during
22 the '98 to 2000 time period?

23 A Well, my main source, I would start pretty much daily
24 my research with Al Menard, dr7 website, because that was
25 the richest source of information, because you could have

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14:39:33 1 the first update on what was going on on a daily basis.

2 Then you had a forum that was very active and very
3 instructive because the pirates would have the up and downs
4 together, so they would spill the beans on each other,
5 depending on the days. One day they liked it; one day they
6 hated it. So they would tell a lot of things that they
7 wouldn't like to be told, so that's how we try to gather the
8 information.

9 Then you had files that were always posted there on web
10 information they would acquire and then very useful links
11 towards charts and IRCs and the dealers that they were
12 promoting. And they are not always the same.

13 Sometimes obviously they were not getting along, so
14 some would disappear. But I had kept track of them anyway

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15 so I could go directly to those that were taking up their
16 page. Yes, that was certainly my main source.

17 Q So you found that the dr7 website was promoting dealers
18 of E3M or EchoStar reprogrammed cards?

19 A That's correct.

20 Q When you visited the dr7 website, did you ever come to
21 notice that Mr. Menard's website or dr7 was promoting a
22 dealer known as Discount Satellite?

23 A Yes. The name is familiar.

24 Q Did Mr. Menard's dr7 website also promote a website
25 www.coinvision.com?

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14:39:33 1 A Yes, he did.

2 Q How about High Tech Satellite?

3 A High Tech is also quite familiar.

4 Q And then we have also talked about New Frontier Group
5 or Blazer group being promoted?

6 A Yes.

7 Q Now, would it be fair to say that based on your
8 investigation in EchoStar piracy, that during that '98 to
9 2000 time frame, dr7 was the go-to website, the primary
10 website for pirating EchoStar's system?

11 A Sure. I am sure I was not the only one that used their
12 source extensively.

13 Q Now, defense counsel asked you some questions about a
14 piracy group in Ontario.

15 You became aware through your investigation that there
16 were actually groups in Ontario selling certain devices;
17 correct?

18 A That's correct.

19 Q What's your understanding of what devices were
20 available in Ontario?

21 A That I would really not remember because my goal was
22 was not pressuring somebody whether they were. It was
23 really to find out everything. And, yes, we would keep

24 track of names, addresses, everything we could find, e-mails
25 and whether it was physical addresses or electronic ones,

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14:39:33 1 and all the names we could find and all the aliases. But
2 whether it was Ontario or New Brunswick or whatever was not
3 most specifically relevant for my job.

4 Q would you say that the piracy occurring in Ontario or
5 the selling of piracy devices in Ontario was just a small
6 portion or a large portion of what you were researching?

7 MR. EBERHART: Objection. Calls for speculation.

8 THE COURT: Overruled. You may answer the
9 question.

10 THE WITNESS: Truly I could not really answer
11 because it was obviously a source that was rich, but I could
12 not say how much more that it was.

13 BY MS. WILLETTS:

14 Q Now, defense counsel also showed you 1092, which was
15 the exhibit relating to the Blazer devices?

16 A Yes.

17 Q And you looked at the last page, the fifth page, and
18 directed you to a shipping address in New Brunswick?

19 A Yes.

20 Q The top of that says Dan's business cards?

21 A That's correct.

22 Q Did you ever come to learn that a Dan Cavanaugh was
23 associated with the Blazer group or Stanley Frost?

24 A No, I did not.

25 Q Did there come a point in time where EchoStar just

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14:39:33 1 became unable to control the piracy on its system based on
2 your investigation and your involvement in that piracy?

3 MR. EBERHART: Objection. Calls for speculation.
4 Lacks foundation.

5 THE COURT: Overruled. She can testify as to her
6 opinion.

7 THE WITNESS: Well, my opinion is from what I was
8 told after I did this research and purchasing. It was after
9 December 2000, after my husband had started working at
10 NagraStar that there was a sudden change in the piracy
11 accessibility once it became openly feasible to hack the
12 EchoStar system.

13 THE COURT: Did you get this information from your
14 husband, or did you get this from monitoring the internet?

15 THE WITNESS: I got it from my husband. I was no
16 longer monitoring the internet at that time.

17 THE COURT: I will sustain the objection and
18 strike the answer. He will testify later. My apologies for
19 the interruption.

20 THE WITNESS: No problem.

21 BY MS. WILLETTS:

22 Q Ms. Guggenheim, during your investigation into
23 EchoStar's piracy, did you ever even come across the name
24 Jim Waters?

25 A I don't remember the name. I could have, but I don't

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14:39:33 1 remember. There were so many, it was eight years ago.

2 MS. WILLETTS: Thank you, Ms. Guggenheim.

3 THE COURT: Redirect.

4 MR. EBERHART: Yes.

5 THE COURT: Mr. Eberhart on behalf of NDS.

6 MR. EBERHART: Thank you, Your Honor.

7 REDIRECT EXAMINATION

8 BY MR. EBERHART:

9 Q Now, Ms. Guggenheim, you testified at your deposition
10 that Canada was obviously the main geographic location where

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11 EchoStar piracy devices were being sold?

12 A That's correct.

13 Q And you're not changing that testimony today; are you?

14 A I am not.

15 Q Counsel asked you about the New Frontier Group and
16 showed you Exhibit 2052. Does Exhibit 2052 come from the
17 files of CIS?

18 A I do not know where it comes, but I know I had that,
19 too. So that's all that I can tell you. I don't know where
20 you got it from.

21 Q At the bottom of the page it shows an ECS Bates number,
22 which means it was produced by EchoStar; correct?

23 A That's correct.

24 Q And Exhibit 1092 which you looked at earlier dealing
25 with the Blazer group bears a CIS Bates number; correct?

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14:39:33 1 A That's correct. But we very often, I know, had the
2 same information because we would look at the same sources.

3 Q And it's your testimony that the group that was
4 involved with operating the New Frontier Group shown in
5 Exhibit 2052 is the same as the group that was involved in
6 Blazer Next Generation shown in Exhibit 1092; is that
7 correct?

8 A I wouldn't say they were the same. I don't know. I
9 know they had links and they were links referring one to the
10 other. So I know they were linked. I could not say that
11 they were the same.

12 Q Exhibit 2052 doesn't show any business address for the
13 New Frontier; does it?

14 A Not on this specific page.

15 Q It doesn't show it anywhere in Exhibit 2052 --
16 withdrawn. Nowhere in Exhibit 2052 does it show a business
17 address for the New Frontier Group; isn't that correct?

18 A Not on any of those two pages, but I don't know from
19 the ordering page or in the FAQs or the news link it would.

20 Q well, this is the exhibit offered by your counsel. I
21 don't know what else they might have, ma'am.
22 A I don't either.
23 Q Okay. But Exhibit 1092 did show an address; correct?
24 A Correct, because that's what I used for my purchasing.
25 Q And that was in New Brunswick, Canada; correct?

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14:39:33 1 A Correct.
2 Q Did you ever register on dr7?
3 A I'm sorry. I am not understanding your question.
4 Q Did you ever create an account on dr7 so that you could
5 participate in the forums or review the forums?
6 A I don't think so. I think that forum was open and you
7 did not have to register for it. So whenever you did not
8 have to, I would not.
9 Q Okay. But on some of the pirate sites you had to
10 register to see the forums?
11 A That's correct. For some of them you had to, but most
12 of them you didn't.
13 Q And on the pirate sites where you needed to register,
14 you created a registration so that you could access those
15 forums; correct?
16 A That's correct.
17 Q So you did register on some pirate sites as a user;
18 correct?
19 A Those that needed to be registered to be accessed,
20 that's correct.
21 Q Did you know that Charles Perlman was an administrator
22 of dr7?
23 A I do not remember that name.
24 Q Did you know that Charles Perlman was an informant for
25 NagraStar?

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14:39:33 1 A I don't know that name, so I cannot answer you about
2 him.

3 MR. EBERHART: Nothing further.

4 THE COURT: Ms. Willetts.

5 MS. WILLETTS: Nothing further, Your Honor.

6 THE COURT: I doubt that you will be returning to
7 testify. I am going to be cautious, though. I am going to
8 ask you to remain on call no later than May 16. I think the
9 case will conclude much earlier than that. And we will
10 notify you right away. Where are you living now? What
11 city?

12 THE WITNESS: Houston.

13 THE COURT: Houston.

14 THE WITNESS: Texas, yes.

15 THE COURT: We will put you on 48 hours' call, but
16 we will be courteous. Okay?

17 THE WITNESS: Thank you very much.

18 THE COURT: Counsel, my thought is we send the
19 jury home. I think there is a 30-minute video?

20 MR. SNYDER: That's correct, Your Honor.

21 THE COURT: Okay, ladies and gentlemen, we will
22 see you tomorrow at 8:00. Please don't discuss the matter
23 amongst yourselves. Has anybody talked to anybody about the
24 case so I can start all over again?

25 (Jury not present)

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14:39:33 1 THE COURT: We are on the record. All counsel are
2 still present, and counsel just informally approached the
3 Court. Your name, sir?

4 MR. WALKER: Colin Walker from Denver, Colorado,
5 Your Honor, on behalf of Mr. Dov.

6 THE COURT: You represent Mr. Dov?

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THE COURT: And you're here to stand beside him when he testifies?

MR. WALKER: Yes, Your Honor, if you think that's the appropriate way to do it. I filed a motion, a motion to be admitted pro hac vice.

THE COURT: You are admitted pro hac vice. I will make that determination orally. I don't have the document in front of me, so that's fine.

MR. WALKER: Very good.

THE COURT: And Mr. Dov is to testify tomorrow. Do we expect him to assert the Fifth Amendment?

MR. WALKER: No, we do not.

THE COURT: But just in case?

MR. WALKER: Exactly.

THE COURT: It's always impressive to have counsel standing right beside you.

MR. WALKER: I don't know if it's impressive, but --

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THE COURT: You can just stand right up there.

MR. WALKER: Very good. Thank you, Your Honor.

THE COURT: Let's go off the record.

(Discussion off the record.)

(Thereupon, court was adjourned.)

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CERTIFICATE

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I hereby certify that pursuant to Section 753,
Title 28, United States Code, the foregoing is a true and
correct transcript of the stenographically reported
proceedings held in the above-entitled matter and that the
transcript page format is in conformance with the
regulations of the Judicial Conference of the United States.

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Date: April 29, 2008

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Sharon A. Seffens 4/29/08

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