EXHIBIT 26

                UNITED STATES DISTRICT COURT
                  DISTRICT OF MASSACHUSETTS
                    EASTERN DIVISION
               Civil Action No. 09-cv-11813-DPW

RED BEND LTD., and   :
RED BEND SOFTWARE INC.,
                          :
          Plaintiff,
                          :
vs.   DEPOSITION OF:
                          :
GOOGLE INC.,   STEPHEN A. EDWARDS
                          :
          Defendant.
-------------------------:

        TRANSCRIPT of testimony as taken by and

before PATRICIA A. SANDS, a Shorthand Reporter

and Notary Public of the States of New York and

New Jersey, at the offices of BAKER BOTTS LLP,

30 Rockefeller Plaza, New York, New York, on

Tuesday, February 9, 2010, commencing at 9:21

in the forenoon.

1 A P P E A R A N C E S :
2
3 BAKER BOTTS LLP
30 Rockefeller Plaza
4 New York, New York 10112
BY: ROBERT C. SCHEINFELD, ESQ.
5 ELIOT D. WILLIAMS, ESQ.
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7
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BY: ROBERT C. BERTIN, ESQ.
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For the Defendant
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12
13
14
15 ALSO PRESENT:
16 Daniel McClutchy, Videographer
17 Martin Walker, Google consultant
18 Chester Day, Esq., Google
19
20
21
22
23
24
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1
2 I N D E X
3 WITNESS EXAMINATION
4 STEPHEN A. EDWARDS
5 Mr. Bertin 6, 265
6 Mr. Scheinfeld 239
7
8 E X H I B I T S
9 NUMBER DESCRIPTION PAGE
10 GOOGLE
11
24
25

1 E X H I B I T S, continued
2 NUMBER DESCRIPTION PAGE
3 RED BEND
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1 S T E P H E N A. E D W A R D S ,
2 90 Morningside Drive, #2F
New York, New York 10027,
3 having been sworn, was examined
and testified as follows:
4
5
6 THE VIDEO OPERATOR: One moment.
7 Good morning, my name is Daniel
8 McClutchy of Veritext Corporate Services.
9 The date today is February 9, 2010, and
10 the time is approximately 9:21 a.m. This
11 deposition is being held at the office of
12 Baker Botts, located at 30 Rockefeller
13 Plaza, New York, New York. The caption of
14 this case is Red Bend, LTD, and Red Bend
15 Software, Inc. versus Google, Inc. in the
16 United States District Court, District of
17 Massachusetts, Eastern Division, Civil
18 Action number 09-cv-11813-DPW.
19 The name of the witness is Stephen
20 Edwards.
21 At this time the attorneys will
22 identify themselves and the parties they
23 represent, after which our court reporter,
24 Patricia Sands of Veritext, will swear in
25 the witness and we can proceed.

2 (Pages 2 to 5)

	6

1   MR. BERTIN: Robert Bertin for
2   Google, and I'm with Bingham McCutchen.
3   MR. SCHEINFELD: You want to note the
4   other appearances on the record?
5   MR. BERTIN: Yes, everybody can just
6   state their own appearances.
7   MS. BERNSTEIN: Emily Bernstein,
8   paralegal, Bingham McCutchen.
9   MR. WALKER: Martin Walker, expert
10 for Google.
11   MR. DAY: Chester Day, Associate
12 Litigation Counsel for Google.
13   MR. SCHEINFELD: Okay, and I'm Rob
14 Scheinfeld, Baker Botts, for Red Bend
15 Software and Red Bend, LTD.
16   MR. WILLIAMS: Eliot Williams, also
17 of Baker Botts.
18   - - -
            Witness sworn
19   - - -
20 DIRECT EXAMINATION
21 BY MR. BERTIN:
22   Q   Okay, good morning, Dr. Edwards,
23 thank for attending today's deposition.
24   Have you ever had your deposition taken
25 before?

	7

1   A   I have not had a deposition taken,
2   no.
3   Q   Okay. So it's fairly, ah, fairly
4   simple. I'm going to ask you a series of
5   questions, and it's important for you to answer
6   fully and completely, and without gesturing,
7   because the court reporter has to transcribe
8   your verbal response to the, ah, to the
9   questions.
10   If you need a break at any time to use the
11 bathroom or anything else, just let me know and
12 we will go off the record so you can take care
13 of that. I would ask that we not take a break
14 while a question is pending.
15   Does that sound good?
16   A   Sure.
17   Q   Okay, great.
18   MR. BERTIN: Let's see, I'm going to
19 go ahead and mark your declaration as
20 Google Exhibit 1 and present that to you.
21   THE WITNESS: Okay.
22   (Exhibit 1 marked for
23 identification.)
24 BY MR. BERTIN:
25   Q   Okay, Doctor, does this document look

	8

1   familiar to you?
2   A   Yes.
3   Q   And, ah -- I'm sorry. Okay, and what
4   is this document?
5   A   As the title says, "Declaration of
6   Stephen A. Edwards in Support of Plaintiffs'
7   Motion for a Preliminary Injunction Enjoining
8   Google's Infringement".
9   Q   Okay. And I want to refer you to the
10 page marked SE39. That's probably about 12
11 pages in or so.
12   A   (Referring to document.) Okay.
13   Q   And this appears to be between pages
14 SE39 and roughly SE00061, your CV. And I just
15 want to have you confirm that this is a true
16 and accurate and current copy of your CV.
17   A   Let's see. It's certainly true and
18 accurate. I can't remember whether I have
19 updated it since November 5th.
20   Q   Okay.
21   A   Of 2009. There may have been one or
22 two little additions.
23   Q   Okay, let's see. And I see from your
24 background it looks like your experience begins
25 around 1990 working with Microsoft; is that

	9

1   correct?
2   A   Well, let's see. It depends on how
3   you define "experience". I have been
4   programming avidly since probably about 1982
5   or '83.
6   Q   Okay.
7   A   And was actually getting paid for it
8   as early as probably '84 or '85, something like
9   that.
10   Q   Okay.
11   A   But, yeah, I would say professional
12 experience starting in 1990 is a fair --
13   Q   Okay.
14   A   -- fair assessment.
15   Q   Okay. And why is it that the earlier
16 programming experience doesn't appear on here?
17 Is it because you decided to cut it off
18 somewhere?
19   A   Yeah. Yeah, exactly. At some point
20 when you're 40 years old it's not really worth
21 talking about what you were doing when you
22 were 12.
23   Q   All right, okay. And then in terms
24 of the Synopsys experience, which appears to
25 end around 2001 --

3 (Pages 6 to 9)

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 1      A   Uhm hmm.
 2      Q   Is that the last experience that you
 3   had working for a corporation?
 4      A   Yes, provided you define Columbia as
 5   not being a corporation.
 6      Q   Okay.  Okay, great.  And were you an
 7   employee of each of the companies listed
 8   between Microsoft and Synopsys?
 9      A   Ah, let's see.  Yes, things like
10   Microsoft, Vitesse, Interval and Simplex --
11   excuse me, not Simplex, Microsoft, Vitesse and
12   Interval, these were each summer internships
13   that lasted roughly three months.  Simplex I
14   was an employee for a year or so, and then
15   Synopsys, yes.
16      Q   Okay, can you describe sort of
17   briefly what you did for Synopsys?
18      A   Yeah, I was part of their advanced
19   research group.  And we were tasked with
20   developing new technology that would eventually
21   make its way into products, but we were also
22   asked to publish our findings in papers.  One
23   of the central things they worked on there was
24   developing a compiler for the Esterel language
25   that somebody else developed, and this compiler
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 1   eventually made its way into a product that
 2   Synopsys sold.
 3      Q   Okay, now Synopsys does a lot of sort
 4   of computer-aided design.
 5      A   Uhm hmm, yeah, they call themselves
 6   electronic design automation, or EDA.
 7      Q   Okay.  So was your work in the
 8   context of electronic design automation
 9   software?
10      A   Broadly, yes.  The compiler, in
11   particular, was just concerned with taking
12   essentially finite state machine
13   specifications, and synthesizing -- finite
14   state machine specifications and synthesizing
15   software for them.  And so this was relevant to
16   EDA, but did not involve directly, say,
17   transistors or gates.
18      Q   Okay, so your work did not directly
19   involve transistors or gates, although the
20   company's work does?
21      A   That, yeah, that particular work that
22   I described.  I can't recall, there may have
23   been one or two other little projects that were
24   more, you know, gate or transistor centric.
25      Q   Okay.  And what is Esterel?
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 1      A   It was a language developed by a man
 2   named GTrard Berry, from the south of France.
 3   It started -- it was a research project for
 4   many years, they eventually went and started a
 5   small company based around that idea.
 6      Q   When you say "a language", I assume
 7   you mean a programming language?
 8      A   Programming language, sorry.
 9      Q   Does it have any particular
10   application or usefulness?
11      A   It started off with applications
12   toward robotics, and most recently changed
13   into -- it became more and more concerned with
14   chip design.  Integrated circuit design.
15      Q   What was involved in creating a
16   compiler for Esterel?
17      A   Understanding the language and its
18   semantics at a very deep level, and devising
19   algorithms to translate those semantics into
20   other pieces of software, and then working on
21   optimizing that translation so that the new
22   software was fast.
23      Q   Okay.  Okay, do you have any
24   experience with writing software for hand-held
25   devices?
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 1          MR. SCHEINFELD:  Just, I'm not going
 2      to object to the question, the court
 3      reporter is not noting the times you're
 4      saying "okay, okay" and I just want to
 5      make sure the court reporter is noting
 6      everything that's said.  That's okay.
 7          (Discussion off the record.)
 8      A   I can't honestly recall.  I seem to
 9   remember writing a few little programs that
10   ended up on, say, a Palm PDA or a Zaurus PDA.
11   I can't recall necessarily.
12      Q   Okay.  How about GSM software
13   functionality, have you written any GSM type
14   code?
15      A   This is GSM as in the cell phone
16   network GSM?
17      Q   Whatever it means to you.
18      A   Okay, I guess not.
19      Q   Okay.  And how about CDMA software
20   code, have you written any?
21          MR. SCHEINFELD:  Objection,
22      ambiguous.  No foundation.
23          THE WITNESS:  No, I have not written
24      any CDMA specific.
25
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4 (Pages 10 to 13)

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1	BY MR. BERTIN:
2	Q Okay. And how about have you -- have
3	you written any software for realizing RF,
4	radio frequency type functionality, RF for
5	implementing radio frequency functionality in
6	any devices?
7	A No.
8	Q Okay, how about browser and browser
9	software, have you written any browser
10	software?
11	A Broadly construed, yes, I have looked
12	at parsing HTML. Parsing HTML. I have not
13	actively participated in a large browser
14	project.
15	Q Okay. And what was the point of
16	parsing the HTML in the application you were
17	working on?
18	A I can't recall. Probably extracting
19	data from a web page.
20	Q Okay, so I think we've established
21	that you have not testified before. I take it
22	you've never been an expert witness before?
23	A That's correct.
24	Q Have you ever been retained by a law
25	firm as a consulting expert in a patent case

	16
1	infringement analysis?
2	A No.
3	Q Okay.
4	A Aside from the current case, of
5	course.
6	Q Okay. Okay, and do you have an
7	understanding of what the doctrine of
8	equivalents is in the patent infringement
9	context, and how it's determined?
10	A Yes.
11	Q Okay, and can you explain -- explain
12	that to me.
13	A Certainly. It's in my declaration
14	here. (Referring to document.) This is on
15	page SE00125, it says:
16	"My understanding is that a claim is
17	infringed under the doctrine of equivalents if
18	the accused system of method contains only
19	insubstantial changes from the claims'
20	limitations and/or performs substantially the
21	same function, in substantially the same way,
22	to achieve substantially the same result."
23	Q Okay. Which paragraph are you
24	reading from?
25	A This is 21.

	15
1	before?
2	A I have not.
3	Q Have you ever construed the claims of
4	a patent before?
5	A Construed -- sorry, please explain.
6	Q Are you familiar with the term
7	"construed" in the context of the patent law?
8	A No, I am not.
9	Q Okay. So I take it you haven't been
10	involved in a claim construction project where
11	you construe claims; is that correct?
12	MR. SCHEINFELD: Talking about before
13	this case? Objection, ambiguous.
14	THE WITNESS: Okay, so I believe it's
15	listed on my CV here. I participated in a
16	patent application, and while the content
17	in the end, of course, was the
18	responsibility of the lawyer involved, he
19	was explaining to me issues about claims
20	and how they're -- how they typ -- are
21	typically constructed, and the intentions
22	behind them.
23	BY MR. BERTIN:
24	Q Okay. How about patents
25	infringement, have you participated in a patent

	17
1	Q Paragraph 21, okay. And how about
2	the claim construction process. Can you
3	describe to me the steps involved in construing
4	the claims of a patent?
5	A Started with making an estimation of
6	what a person of -- the sort of a person who is
7	of ordinary skill in the art would be. And
8	then from there, looking at certain relevant
9	terms in the claim and throughout the patent,
10	and deciding what appropriate interpretations
11	of those would be to a person of ordinary skill
12	in the context of the patent.
13	Q Okay. And did you look at anything
14	else, aside from the things you mentioned?
15	A I did not look at anything else, no.
16	Q Okay.
17	MR. BERTIN: Okay. Okay, I want to
18	mark another two exhibits, if that's okay.
19	(Exhibits 2 and 3 marked for
20	identification.)
21	BY MR. BERTIN:
22	Q Okay, so I want to refer you to what
23	should be marked Google Exhibit 2.
24	A Uh hum.
25	Q And have you seen this document

5 (Pages 14 to 17)

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                                                    18                                                        20
 1   before?                                              1   compensation that's mentioned toward the bottom
 2      A   I have not seen this particular               2   of the e-mail, it's a range of 200 to $250 per
 3   sheet, but I recognize the content of it.            3   hour.  Is this -- is this your normal billing
 4      Q   Okay.  And can you describe it for            4   rate?
 5   me?                                                  5       MR. SCHEINFELD:  Objection.
 6      A    This is the initial e-mail I received        6       No foundation.
 7   from Rob, inviting me to be an expert witness.       7   BY MR. BERTIN:
 8      Q   Okay, and is this the first e-mail            8      Q   Do you have a -- do you have a normal
 9   that you can recall getting?                         9   billing rate?
10      A   Yes.                                         10      A   I don't have a normal billing rate.
11      Q   Regarding the Red Bend versus Google        11      Q   Okay.  Okay.
12   litigation?                                         12      A   I do not.
13      A   Yes.                                         13      Q   So is this -- is this the first
14      Q   Okay.  And were you familiar with the       14   consulting project that you have undertaken as
15   litigation prior to getting this e-mail?            15   a, uhm -- since you've been employed at
16      A   This particular case, no.                    16   Columbia pursuant to which you are paid by the
17      Q   Had you ever -- had you ever heard of       17   hour?
18   the Baker Botts firm before getting this            18       MR. SCHEINFELD:  Objection.
19   e-mail?                                              19       No foundation.
20      A   I had not.                                    20       THE WITNESS:  No.
21      Q   Okay.  Had you ever heard of Red Bend       21   BY MR. BERTIN:
22   Software before getting this e-mail?                22      Q   Okay.  Can you give me some examples
23      A   I had not.                                    23   of other stuff that you have done where you
24      Q   Did you know anyone at Red Bend             24   have been paid by the hour, or have -- just
25   Software prior to getting this e-mail?              25   maybe just identify for me ones that come to

                                                    19                                                        21
 1      A   No.                                            1   mind.
 2      Q   Okay.  And have you subsequently come        2      A   Oh, I have done a number of book
 3   to learn that you actually know somebody at Red      3   reviews.  This was not by the hour, this was by
 4   Bend Software since getting this e-mail?             4   the job.  I have been working for a financial
 5       MR. SCHEINFELD:  Objection.                      5   services start-up company doing programming for
 6       Ambiguous.                                        6   them, some of that has been hourly.
 7       THE WITNESS:  Okay.                               7      Q   Okay.  All right, and then in terms
 8       MR. BERTIN:  Just asking the                      8   of this range, did you reach an agreement with
 9       question.                                         9   Baker & Botts on what your compensation --
10       THE WITNESS:  I have met the CEO at            10   compensation rate would be?
11       Baker Botts here.  I have not discovered       11      A   Yes.
12       that there was somebody who I did not know     12      Q   And what is that?
13       was part of Red Bend who later turned out     13      A   250 an hour.
14       to be part of Red Bend.                        14      Q   Okay.  Okay, I want to refer you to
15   BY MR. BERTIN:                                      15   Google Exhibit 3.
16      Q   Okay.  Okay, great.  And who is --         16      A   (Referring to document.)
17   there was a person mentioned in this e-mail,        17      Q   The first page of this exhibit is the
18   Angelos Keromytis.                                   18   same e-mail that we just looked at.
19      A   Yeah, Keromytis.                             19      A   Uh hum.
20      Q   Keromytis.  Who is that?                    20      Q   In terms of content.  Would you
21      A   He is a colleague of mine at               21   agree?
22   Columbia.  He and I started at Columbia in the      22      A   I would agree.
23   CS department at the same time in 2001, so we       23      Q   Okay.  I want to refer you to SE00012
24   know each other fairly well.                        24   also in Google 3.
25      Q   Okay.  And there is a rate of              25      A   Okay.
```

6 (Pages 18 to 21)

22

1   Q   And this e-mail purports to be from
2 an individual at Baker Botts to you, apparently
3 setting up a meeting on November 12th at the
4 Baker Botts office; is that correct?
5   A   Yes.
6   Q   Do you recall getting this e-mail?
7   A   Not specifically, but it seems
8 consistent.
9   Q   Okay. It also begins by saying:
10   "Hello Professor Edwards, thank you for
11 taking the time to speak with us today."
12   Do you recall a phone call that you had on
13 or around November 9th with this person, Joseph
14 Akalski?
15   A   Akalski.
16   Q   Thank you.
17   A   Actually, I don't remember if Joe was
18 on the phone. I believe I spoke mostly to Rob.
19   Q   Okay.
20   A   But yes, I do recall a phone call.
21   Q   Okay. About how long were you on the
22 phone?
23   A   I can't recall. It was not very
24 long, perhaps a half an hour.
25   Q   Okay. And did you, in fact, meet

23

1 with Baker Botts on November 12th?
2   A   I can't recall. There is a time
3 sheet that I have kept, I believe you have a
4 copy of it, that has details of all of the
5 meetings and the hours and so forth.
6   MR. BERTIN: Okay. Why don't we go
7   ahead and mark the timesheet, as well.
8   Mark this Google Exhibit 4.
9   (Exhibit 4 marked for
10   identification.)
11 BY MR. BERTIN:
12   Q   So I have just presented you with
13 Google Exhibit 4, it bears Bates number
14 SE00206. Do you recognize this document?
15   A   Yes, these are the notes that I have
16 taken about meetings and activities that I have
17 had with Baker Botts.
18   Q   Okay.
19   A   In regards to this case.
20   Q   And the document appears to bear a
21 heading "Timesheet"; is that correct?
22   A   That's right.
23   Q   Is this essentially your timesheet
24 for working as an expert witness in the context
25 of the Red Bend versus Google case?

24

1   A   That's correct. It's notes on what I
2 have done and when.
3   Q   Okay.
4   A   Largely for billing purposes.
5   Q   Okay. So on this timesheet there is
6 an entry at the top for Thursday,
7 November 12th, and there is an initial meeting
8 from 9 to 11.
9   A   Uh hum.
10   Q   And does that refresh your
11 recollection about whether or not you met with
12 Baker Botts on the 12th?
13   A   Yes.
14   Q   Of November?
15   A   That's consistent, yes.
16   Q   Okay. And did you go to their
17 offices on the 12th?
18   A   Yes.
19   Q   Okay, and were you engaged at that
20 point when you arrived on the 12th?
21   A   I cannot recall. I presume you're
22 referring to an engagement letter that went
23 back and forth, but I cannot remember the date
24 on which I signed that. It certainly would
25 have been discussed at that point, if not

25

1 actually signed.
2   Q   Okay.
3   A   I can't -- I can't recall.
4   MR. BERTIN: Let's go ahead and get
5   the engagement letter marked while we're
6   talking. Okay.
7   (Exhibit 5 marked for
8   identification.)
9 BY MR. BERTIN:
10   Q   Okay, so we've just marked as
11 Exhibit 5, Google Exhibit 5, ah, what appears
12 to be a letter from Baker Botts to you and
13 signed by you, and it bears Bates numbers
14 SE00067 and 68.
15   So do you recognize this letter?
16   A   I do.
17   Q   And do you understand this to be your
18 engagement letter?
19   A   I do.
20   Q   Okay. And is this something that you
21 brought with you in signed form to the meeting,
22 or is this something you signed at the initial
23 meeting with Baker Botts on November 12th?
24   A   I can't recall. I probably signed it
25 during the meeting, but I could be mistaken.

7 (Pages 22 to 25)

```
 1      Q   Okay.  And you characterize the work
 2   that you did on November 12th as "initial
 3   meeting".  Can you characterize roughly what,
 4   you know, what you did at that meeting?
 5      A   I discussed with the Red Bend counsel
 6   certain aspects of the case, what might be
 7   expected of me, how long it might last, what
 8   might be involved.  Just broadly what this
 9   might all involve.
10      Q   Okay, sort of the parameters of the
11   engagement?
12      A   Yeah, to get some idea.  I asked some
13   questions about Red Bend, like what do they do,
14   what are their products.
15      Q   Uh hum.
16      A   I believe --
17         MR. SCHEINFELD:  Objection.  Just
18      caution the witness to answer a question
19      if there's one pending.
20   BY MR. BERTIN:
21      Q   Anything else you want to add?
22      A   No.
23      Q   And had you ever met in person
24   anybody from Baker Botts prior to the meeting
25   on the 12th?
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 1      A   I had not.
 2      Q   Okay.  Okay, referring to your
 3   timesheet, there is another entry dated
 4   November 13th; is that correct?
 5      A   That's correct.
 6      Q   Okay.  And where did this -- did this
 7   meeting occur at Baker Botts as well?
 8      A   Yes.
 9      Q   Okay.  And there are a series of
10   e-mails that are dated November 12 that go
11   between SE00014 and SE00017.  And I just want
12   you to verify that you recall either getting or
13   sending these e-mails.
14      A   (Reviewing document.)  I don't recall
15   these specific ones, but I have no reason to
16   doubt that I did.
17      Q   Okay.  And it appears that you had a
18   meeting on Friday the 13th with Baker Botts
19   starting at around 9:30 from these e-mails; is
20   that correct?
21      A   From these e-mails, yes.  Although my
22   timesheet mentions that I actually arrived at
23   8:30, and the discrepancy came because it was
24   much easier to got -- to find the place than I
25   had feared it might be.
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 1      Q   Okay.  Okay, very good.  When was the
 2   first time you had seen the patent in this
 3   case?
 4      A   Probably on the 12th of November.
 5      Q   Okay.
 6      A   Again, I can't -- I can't recall.
 7      Q   Okay.
 8      A   Certainly I would have seen it by the
 9   13th.
10      Q   Okay, so you would have seen it by
11   the 13th, possibly you saw it on the 12th; is
12   that correct?
13      A   Yes.
14      Q   Okay, and I just want to refer you to
15   SE00017.
16      A   (Referring to document.)
17      Q   And ask you about this link which
18   appears in this e-mail, which is characterized
19   in the e-mail as a link to the code for
20   Google's Chrome Courgette which is being sent
21   to you from Baker Botts.
22      Is this the first time you had seen this
23   link to Courgette?
24      A   I can't recall.  I may have been
25   presented with it earlier on the 12th.  This
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 1   e-mail looks like it arrived in the afternoon
 2   after the meeting.  I may have seen it during
 3   the meeting.
 4      Q   Okay.  Do you have a specific
 5   recollection about receiving --
 6      A   I do not.
 7      Q   -- it during the meeting?
 8      A   I do not.
 9      Q   But you have a definite recollection
10   of receiving it at least after the meeting; is
11   that correct?
12      A   Actually no, I don't, but the e-mail,
13   which I am sure I would have read, suggests I
14   did.
15      Q   Okay, there is a date and a time
16   stamp.
17      A   Uh hum.  Yes.
18      Q   There at the top.  Do you have any
19   reason to believe that's not accurate?
20      A   No, no reason to believe.
21      Q   Okay.
22      A   Oh, let me amend that.  I did notice
23   that the times, the hourly times on, say, the
24   first e-mail actually differed from the one on,
25   ah, that was on Google Exhibit 2, by an hour or
```

1 something like that. I was trying to account
2 for that. I'm guessing that it had to do with
3 the time zones in which the mail was moving
4 around.
5   Q   Okay.
6   A   But, I --
7   Q   Is that potentially internal to the
8 Columbia system?
9   A   It could be internal to that, it
10 could be the program that I used to print out
11 the dates didn't correct it. I don't make
12 anything of it.
13   Q   Okay, all right. I noticed the same
14 sort of discrepancy yesterday, but, ah -- okay.
15   Can you describe -- well, let's see. So
16 by the 13th you had seen the patent; is that
17 correct? The '552 patent?
18   A   Yes.
19   Q   Okay. Okay, and essentially it looks
20 like you spent the day at Baker Botts; is that
21 correct?
22   A   That's correct.
23   Q   Okay. And you worked with various
24 Baker Botts attorneys during the course of the
25 day I take it?

1   A   That's correct.
2   Q   All right, and -- okay, I want to
3 refer you to SE00018.
4   A   (Referring to document.)
5   Q   So this purports to be an e-mail to
6 you from Baker Botts, and the e-mail states:
7   "Stephen, I am attaching your expert's
8 declaration and related exhibits, please review
9 and contact me to discuss. You can either send
10 me a signed scanned copy or fax a signed copy
11 to me at the fax number below. Best regards,
12 Joe."
13   Is this -- is this the e-mail pursuant to
14 which your, your expert declaration was given
15 to you?
16   A   I believe so.
17   Q   Okay. And was this the first time
18 you had seen the declaration?
19   A   No. No, that declaration I would
20 have seen -- I'll ask you a question. Which
21 declaration are you referring to?
22   Q   Well, I'm referring to the one that
23 was attached to this e-mail.
24   A   Ah. So the one that was attached to
25 this e-mail then, yes, the e-mail would have

1 been the first time I saw that version.
2   Q   Okay. Are there other versions that
3 you saw that you were --
4   A   There --
5   Q   -- you wanted clarification on?
6   A   There were a number of drafts
7 created, and certainly the document went
8 through a number of edit, editing phases.
9   So when you say "the declaration", I can't
10 recall if the one that was attached to this
11 e-mail is the exactly the one in Exhibit 1,
12 there may have been some small changes.
13   Q   Okay. Okay, so was -- did the
14 declaration exist prior to November 13th when
15 you met with Baker Botts?
16   MR. SCHEINFELD: Objection.
17   Ambiguous.
18   THE WITNESS: Which declaration?
19 BY MR. BERTIN:
20   Q   Well, your declaration, did it exist
21 in any form prior to November 13th, or were you
22 presented with it on the 13th?
23   A   Uhm, let me think. I saw -- I was
24 presented a draft of the declaration on the
25 13th, and then it was modified extensively on

1 the 13th. And probably in between then, also
2 to the 17th, and then I believe there were a
3 few more modifications before it was finally
4 filed.
5   Q   Okay, so can you -- I mean, it looks
6 to me like you were, you met the Baker Botts
7 attorneys on the 12th for the first time, you
8 had a two-hour meeting. You had a one-day
9 meeting on the 13th. And then you had a
10 one-hour checking and signing session on the
11 expert statement on the 17th. Is that -- is
12 that correct?
13   A   That's correct.
14   Q   Okay. So maybe you can characterize
15 what you did on the 13th.
16   MR. SCHEINFELD: Objection.
17   Asked and answered.
18   MR. BERTIN: I think I asked him
19   about the 12th, but I didn't ask him about
20   the 13th.
21   THE WITNESS: Okay, I spent the day
22   at Baker Botts working with counsel on the
23   expert statement. Or, excuse me, expert
24   declaration.
25

9 (Pages 30 to 33)

34

1 BY MR. BERTIN:
2   Q   Okay. And did you compile the, ah --
3 did you compile the source code for Courgette
4 on the 13th?
5   A   I did not.
6   Q   Did you compile the source code for
7 Courgette prior to signing the declaration on
8 the 17th?
9   A   I did not compile it before signing
10 the declaration.
11   Q   Okay. Did you use the Courgette code
12 prior to signing the declaration on the 17th?
13   A   What do you mean by "use"?
14   Q   Well, you're an expert on computer
15 software, maybe you can help me out here.
16   So if you have a, a source code for a
17 program, can you use the program in that form
18 to do anything that it's supposed to do?
19   A   Yes, you can examine the source code
20 to try to understand its purpose, its function,
21 and so forth. Could you use a source code
22 directly to create a patch, say? Probably not.
23   Q   Okay. So, yeah, I'm not looking for
24 any extra special definition of using software,
25 I really mean just the basic, you know, the

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1   Q   Okay. Is that how the open source
2 community typically operates when -- when
3 source code is published as open source source
4 code?
5   MR. SCHEINFELD: Objection.
6   No foundation.
7   THE WITNESS: Open source software is
8   distributed in a variety of forms,
9   including source, including executable.
10 BY MR. BERTIN:
11   Q   How about -- how about the Courgette
12 code?
13   MR. SCHEINFELD: Objection.
14   Ambiguous.
15   THE WITNESS: You're asking how that
16   is distributed?
17 BY MR. BERTIN:
18   Q   Well, I'm really just trying to get
19 at what an ordinary person would do to use the
20 Courgette code. How would they run it?
21   A   The easiest way would be to download
22 the executable distribution from the Google
23 website, install it, and then invoke it from
24 the command line.
25   Q   Okay, that sounds simple enough.

35

1 basic, ordinary definition of using a program.
2   A   I did not execute the program, I did
3 not cause it to be run, I did not apply it to a
4 piece of software to examine a patch.
5   Q   Okay. What steps would you have to
6 take to use -- to use the software in the sense
7 that people are familiar with using software?
8   A   There are a variety of steps. The
9 easiest probably would be to download an
10 executable distribution of the Chrome browser,
11 which I believe includes the Courgette tool,
12 and then run things from the command line to
13 actually cause the program to be executed.
14 That would be one way to use it.
15   Q   Okay.
16   A   And that would be one set of steps to
17 follow. There are others.
18   Q   Okay. Wouldn't you typically want to
19 compile the program into an object code version
20 or an executable code version in order to use
21 it?
22   A   In order to use it? No, most people
23 would refer not to have to compile a program,
24 they would much prefer just having the
25 executable given to them directly.

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1   A   Yeah.
2   Q   And is that something that you did
3 prior to signing your declaration on the 17th?
4   A   I did not.
5   Q   Okay, why not? Why didn't you -- why
6 didn't you use it before signing the
7 declaration and preparing your statement?
8   A   Because I saw a variety of documents,
9 including the Chromium developer blog, I
10 believe it was, chromium developer
11 documentation, blog entries, the source code
12 for Courgette, comments in the source code --
13 all of these were consistent with a set of
14 behavior. At that point, I did not feel it was
15 necessary to bother to check that the program
16 behaves as advertised, because everything else
17 I had seen, including the source, was
18 consistent with what was written in the
19 documentation.
20   Q   And when was the first time that you
21 saw this, the, quote, "source"?
22   A   I believe that was on the 13th, it
23 may have been the 12th.
24   Q   Okay. And where did you see the
25 source?

10 (Pages 34 to 37)

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1   A   I saw it in the Baker Botts -- one of
2   conference rooms here.
3   Q   And in what way did you experience
4   the source? Was it tangible paper, was it
5   electronically?
6   A   It was displayed on a video monitor
7   in a wall being brought up by a source code
8   browser. Or, excuse me, a web browser.
9   Q   Okay. And who was in the room at the
10 time?
11   A   I can't recall exactly. I believe
12 Eliot Williams was there, I believe Joe Akalski
13 was there. Rob was probably there, I'm not
14 sure. The set of people in the room changed as
15 I was examining the source code.
16   Q   Okay. Okay, and, ah, who was driving
17 the presentation of the source code?
18   A   It varied. Sometimes it was one of
19 the attorneys here. Other times I was using
20 the computer directly, searching through it
21 myself.
22   Q   Okay, when you say searching through
23 it yourself, can you elaborate what you mean by
24 that?
25   A   The source code consists of many

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1   separate files that often refer to each other.
2   And so to answer a question, what does this
3   piece of code do, often you need to look at
4   that file and then another file, and then
5   another file that refers to that first file,
6   and so forth.
7   Q   Does it get a little confusing to try
8   to track files that refer to files that refer
9   to files?
10   A   Yes, but that's what I've been
11 trained to do.
12   Q   In your training, in your ordinary
13 experience in, ah, creating software and doing
14 software design, do you typically, ah -- ah,
15 analyze code that you're trying to understand
16 simply by looking at source code and not
17 actually using it or compiling it in any way?
18   A   I don't think I have ever had an
19 ordinary experience working on source code.
20   In the experience that I have had, yes,
21 very frequently I look at source code to try to
22 understand its behavior. For example, I
23 frequently grade student assignments, and I do
24 this by looking at the code, deducing what it's
25 likely to do, rather than trying to make it

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1   work on a computer.
2   Q   Okay. And who successful is your
3   sometimes approach of deducing what software is
4   likely to do by looking at source code?
5   A   It depends on the program.
6   Q   Why does it depend on the program?
7   A   Code can be written in a very
8   obfuscated manner. There are even contests to
9   see who can write the most confusing code. And
10 then other code is written very deliberately,
11 very clearly, and communicates its intention
12 very well.
13   I found that the Courgette code, when I
14 looked at it, fell into the latter category.
15 The Courgette code.
16   I do have a question, how do you pronounce
17 that?
18   Q   Well, it's a French word, and I
19 believe it's "core-jshet".
20   A   "Core-jshet", okay.
21   Q   But that would probably be the French
22 pronunciation, but we will tolerate a wide
23 range of pronunciations of Courgette.
24   MR. SCHEINFELD: Appreciate it.
25   THE WITNESS: You will hear them.

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1   BY MR. BERTIN:
2   Q   Okay. So I gather that sometimes you
3   would not, according to you, compile or even
4   use software when trying to understand how it
5   works; is that correct?
6   A   That's correct. Sometimes.
7   Q   Okay. And in the instances where
8   you -- where you would actually use it and
9   compile it, why would you use it and compile it
10 in order to understand it?
11   A   There could be aspects of the
12 software that are very difficult to deduce by
13 looking at it, such as the speed at which it
14 will run.
15   Q   Anything else?
16   A   It could be difficult to predict what
17 a particular piece of software would do on a
18 very large input dataset.
19   Q   Anything else?
20   A   No.
21   Q   So those are the only reasons that
22 you would compile or use a program to
23 understand that you would want to --
24   A   That I could think of now.
25   Q   Okay. Anything else that you want to

11 (Pages 38 to 41)

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 1   add to that?
 2       A   I can't think of any now.
 3       Q   Okay.  And what is object-oriented
 4   programming?
 5       A   It is a style of programming language
 6   and coding that revolves around so called
 7   object data types.
 8       The idea is, is one of these objects can
 9   behave somewhat like a real world object.  The
10   examples we like to give are things like an
11   orange object.  An orange might have a color
12   attribute, a number of seed objects within it.
13   These sorts of concepts are actually embodied
14   in programming languages, such as C++, and it
15   has been found to simplify the process of
16   coding programming problems.
17       Q   Okay.  And there -- in
18   object-oriented programming, there are concepts
19   of methods and classes and data structures, for
20   example; is that correct?
21       A   That's correct.
22       Q   And there are concepts of objects
23   themselves; right?
24       A   As I mentioned, yes.
25       Q   And so how do you, how can you sort
```

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 1   of, uhm -- how -- how do you see data
 2   structures or objects within an object-oriented
 3   program?
 4       MR. SCHEINFELD:  Objection.
 5       Compound and ambiguous.
 6       THE WITNESS:  What do you mean by
 7   "see"?
 8   BY MR. BERTIN:
 9       Q   Well, how would you visualize the
10   data structure that's defined by source code in
11   an object-oriented programming language?
12       A   There are many different ways.  It
13   depends strongly on the particular program and
14   how it is written.
15       Q   Can you just name a few?
16       A   A standard one is a tree.  You have a
17   single class that consists of pointers to two
18   other objects of the same class, you connect
19   all of these together, you get a tree
20   structure.
21       But this is one of many, many, many sorts
22   of data structures that can be embodied in
23   these programs.  Many, many kinds of data
24   structures that could be embodied in these
25   programs.
```

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```
 1       Q   Okay.  What is a -- well, how many
 2   different kinds of data structures are used in
 3   the Courgette program?
 4       MR. SCHEINFELD:  Objection.
 5       No foundation.
 6       THE WITNESS:  I did not attempt to
 7       count.
 8   BY MR. BERTIN:
 9       Q   Okay.
10       A   Many.
11       Q   Does Courgette -- is Courgette an
12   object-oriented program?
13       A   I would say it is written in an
14   object-oriented style.
15       Q   So is it an object-oriented program?
16       Why would you -- you don't seem to want to
17   say that it is an object-oriented program.  If
18   not, why not?
19       A   I have not heard the term used.
20   Usually you speak of object-oriented
21   programming, or object-oriented languages, but
22   to say that a program is object oriented --
23   there are aspects of it that are written in an
24   object-oriented style, there are aspects of
25   Courgette that are written in an
```

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 1   object-oriented style, there are other aspects
 2   that are not.
 3       Q   Okay.  And is it written in an
 4   object-oriented language and an object-oriented
 5   style?
 6       A   It is written in an object-oriented
 7   language; namely, C++.  Parts of it are written
 8   in an object-oriented style.
 9       Q   And does it use object-oriented data
10   structures?
11       A   I'm not sure if there is such a thing
12   as an object-oriented data structure.  It uses
13   types that are written using the
14   object-oriented facilities of C++, and those
15   are written in an object-oriented style.
16       Q   Okay.  What is a -- what is a
17   debugger?
18       A   A debugger, in the sense that I think
19   of it as, is a program that you lets you
20   analyze and control the execution of another
21   program.
22       So typically if you have a program that is
23   behaving in a way you do not understand or do
24   not want, you run that under a debugger and
25   give it commands, such as "stop here, resume,
```

12 (Pages 42 to 45)

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1 tell me the value of this variable at this
2 point."
3   Q Did you use a debugger at any time to
4 understand the Courgette program?
5   A Ah, that would -- a debugger was one
6 of the tools that I used to examine the
7 Courgette executable that I later created.
8   Q Okay. And why -- why did you use a
9 debugger on an executable that you later
10 created?
11   A It's one of many standard tools that
12 can aid in understanding the exact behavior of
13 a program.
14   Q And when you say that you "later
15 created", I assume you mean after you signed
16 the declaration on November 17th; is that
17 correct?
18   A That's correct.
19   Q Okay. Why do programmers use
20 debuggers?
21   A As I mentioned, it's one of a variety
22 of programming aids that you can -- that
23 programmers can use to understand the execution
24 of a program.
25   Q Okay, does it, in addition -- let me

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1 just probe that a little bit.
2   Can't you just execute the program to see
3 how it executes?
4   A Yes.
5   Q So why is a debugger important to
6 help you understand how a program executes?
7   A When you say "see how it executes",
8 this could mean a variety of things.
9   To merely witness it executing, you can
10 simply execute it. If you want to see more
11 details of how it is executing, a debugger is
12 one possible tool that can you use for the
13 reasons I mentioned earlier.
14   Q Okay. Well, the reason I'm asking is
15 that it seems that there would be other uses
16 for a debugger, other than understanding the
17 execution of a program, particularly if you can
18 just execute a program to understand its
19 execution.
20   So can you elaborate on your earlier
21 response and let me know why else someone might
22 use a debugger program?
23   A Well, the question is what question
24 do you want to answer about the execution of a
25 program. You said broadly see the execution of

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1 a program, which could mean a variety of
2 things, such as does the program terminate,
3 does the program appear to do what it's asked
4 to do. These are all seeing the execution.
5   But in some cases you might ask questions
6 like what value has this variable taken, when
7 is this function called. A debugger is one
8 tool that can be used to help answer these
9 questions.
10   Q Why would you use -- let's just
11 follow-up on those two points.
12   Why would you use a debugger to see what
13 value a variable has taken?
14   A Perhaps you're concerned that the
15 code does not behave the way you want it to.
16 It's more typical to use debuggers when you're
17 developing code. And if something goes wrong
18 in the execution, you often want to know the
19 details of why.
20   Another very common technique is when
21 you're trying to understand the execution of a
22 program -- excuse me -- of a program you did
23 not write, running it in a debugger, stepping
24 through it slowly to see what code is actually
25 executed, is another technique to try to

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1 improve program understanding. To try to
2 improve your understanding of a program.
3   Q Okay, so on this last point it's
4 possible that you could be looking at a body of
5 source code, some of which is operational, and
6 some of which is not operational, for example,
7 and using a debugger would help you, in your
8 words, see what is, quote, "actually executed";
9 is that correct?
10   A That's correct.
11   Q Okay, and you said it's useful for
12 developing code as well?
13   A It can be.
14   Q Does it give you any insight into the
15 source code itself?
16   MR. SCHEINFELD: Objection.
17   Ambiguous.
18   THE WITNESS: One way it might do so,
19   it tells you, as you are running the
20   program, where the program counter is
21   within the source code. So you can then
22   relate detailed activity back to its
23   location in the source code.
24 BY MR. BERTIN:
25   Q Okay, so just to follow up on that --

13 (Pages 46 to 49)

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1 on that point and just elaborate on it a bit,
2 the program counter would be the spot in the
3 actual series of instructions, an
4 identification of the spot in the actual series
5 of instructions that the machine is running; is
6 that correct?
7   A   A program counter is more accurately
8 an entity, typically a collection of flip-flops
9 that contains a number that refers to the
10 points in the program that is being executed.
11   Q   Okay. And that's -- I think that's
12 another way of saying what I said, in fact.
13   A   It's close. I think the distinction
14 is between the program counter is the point
15 that's being executed. And the program counter
16 is the thing that holds the number that
17 explains where the place is being executed.
18   Q   Okay.
19   A   There's the distinction.
20   Q   Okay. Okay, so it identifies the
21 precise code that's being executed?
22   A   Right.
23   Q   And doesn't -- doesn't this help you
24 put a finger in the source code on what is
25 producing the, the -- the, uhm -- that which is

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1 executed?
2   In other words, doesn't a debugger and
3 this pointer concept allow you to correlate the
4 source code that's being run, and relate it to
5 the output of the execution that's occurring?
6   MR. SCHEINFELD: Objection as to the
7   form of the question.
8   MR. BERTIN: And I will -- if, if --
9   you can either agree with that, or you can
10   put it into your own words.
11   MR. SCHEINFELD: I prefer the latter.
12   THE WITNESS: I think what you're
13   asking is can a debugger help you find
14   what in the source is being executed.
15 BY MR. BERTIN:
16   Q   Yes.
17   A   And use the program, or it examines
18 the program counter, figures out the
19 relationship between the program counter and
20 the source code, and can tell you where in the
21 source code the instructions being executed
22 came from.
23   Q   Okay. And does this give you some
24 insight as to --
25   A   It can.

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1   Q   -- as to the source code?
2   MR. SCHEINFELD: I caution the
3   witness to let the questioner finish the
4   question before you attempt to answer the
5   question.
6   Q   I was referring to the source --
7   A   Okay.
8   Q   -- code, were you also referring to
9 the source code?
10   A   Please ask the question again.
11   Q   Okay. Does, does the -- does this
12 process give you some insight as to the source
13 code and its effect on program execution?
14   A   It can.
15   Q   You mentioned earlier that a debugger
16 can be used to help you understand software
17 that you did not, yourself, write; is that
18 correct?
19   A   It can be used, yes.
20   Q   And how -- how might you, as an
21 expert and a programmer, use a debugger to help
22 you understand source code that you did not
23 write?
24   A   That is a very complicated ques-- or
25 an appropriate answer to that is very

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1 complicated. I actually have a book on my
2 shelf in my office written by a friend of mine
3 that is nothing but answering that question.
4   So there are many, many, many, many
5 techniques that can be used for using a
6 debugger to help you understand the operation
7 of a program.
8   Q   Okay. Might we look at your activity
9 after November 17th as an expose on how one
10 might use a debugger to understand source code
11 that you didn't write?
12   A   I can't remember the details of all
13 of the techniques I used. There were many of
14 them. And, furthermore, using the debugger was
15 not the only technique I used.
16   Q   What other techniques did you use
17 after November 17th to understand the Courgette
18 source code?
19   A   Ah, let's see. There were a number
20 of debugging flags and code in the Courgette
21 source code clearly designed to explain what
22 the program was doing. I ran it in that mode,
23 and observed the output.
24   Ah, let's see. I tried a variety of tools
25 that would examine the source code, and the

14 (Pages 50 to 53)

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1 relationship of the functions among -- within
2 it.
3   Let's see. I may have inserted my own
4 debugging statements, at this point I can't
5 recall. I believe I used this gprof tool at
6 one point that can report the functions that
7 were actually executed and the frequency at
8 which they were executed.
9   Let's see. I have some notes here about
10 kcachegrind. I can't recall using that, but I
11 wouldn't be surprised.
12   Q   Okay. So you were referring to
13 Google Exhibit 4 from time to time in --
14   A   Yes.
15   Q   -- response to this question; is that
16 right?
17   A   Yes.
18   Q   And that's your timesheet?
19   A   Yes.
20   Q   Can you give me some -- I just want
21 to follow up on all of that. Can you give me
22 some examples of the debugging flags in
23 Courgette?
24   A   Like many programs, I believe it has
25 a so-called log level setting.

55

1   Q   Uh hum.
2   A   This is a number. And depending on
3 the setting, the program prints out more or
4 less information about what it's doing. This
5 is typically left in there by the programmer to
6 help him or her develop the code.
7   Q   Okay, so even the programmer would
8 use a debugger to help understand his or her
9 own code?
10   A   Very likely.
11   Q   Okay. You mentioned running in a
12 mode to observe the output. What output were
13 you trying to observe?
14   A   Where are you reading this?
15   Q   Well, this is -- I'm reading my own
16 notes on what you said earlier.
17   A   Ah, okay. Yes, one of the things I
18 checked after the 17th was whether, if I ran
19 the Courgette tool according to the
20 instructions that were in the source code in
21 the developer documentation, that it would
22 actually produce patch files and allow me to
23 reproduce new versions of programs. Basically
24 I was trying to check whether it worked as
25 advertised.

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1   Q   Uh hum.
2   A   And I found that it did.
3   Q   Okay. What types of things did you
4 look at, what output did you observe?
5   A   I would probably have to check the
6 Chromium developer documentation to remind me
7 of exactly the series of steps. But broadly,
8 the source code came with two sample executable
9 files, and I went through a series of steps
10 where I gave Courgette those two files, asked
11 it to create a small patch file, and then told
12 it to look at the original file and the patch
13 file, and synthesize the new file, and then
14 verify that the new file it produced was byte
15 for byte identical as the original new file.
16   Q   Okay. So, I mean that basically what
17 you described there is using the code to
18 generate a patch on two files, and then
19 implementing the patch or applying the patch
20 and then determining whether it produced the
21 updated code; is that --
22   A   I was --
23   Q   -- a fair summary?
24   A   I was following the instructions in
25 the source code and the developer documentation

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1 that was telling me how to create and apply
2 patches, and I just wanted to verify that the
3 code worked the way the documentation said it
4 did. Suggesting that nothing had gone wrong in
5 the compilation process, nothing had -- I
6 hadn't downloaded something incorrectly, that
7 it actually worked as advertised.
8   Q   Okay. Okay, I'm just trying to
9 summarize this, and maybe just tell me if this
10 is a fair summary.
11   You compiled and used the program on the
12 default files presented in order to verify that
13 it was working; is that correct?
14   A   That's correct.
15   Q   Okay.
16   MR. BERTIN: Okay, why don't we go
17 about another five minutes and then take a
18 break?
19   MR. SCHEINFELD: That's fine.
20 BY MR. BERTIN:
21   Q   Let's see. Why don't we go back to
22 your declaration.
23   A   Okay.
24   Q   And I want to --
25   A   This is Exhibit 1.

15 (Pages 54 to 57)

1   Q   Google Exhibit 1.
2   A   (Referring to document.)
3   Q   And I want to refer you to
4   paragraph 23. And, let's see, the third
5   sentence of this paragraph reads:
6   "Those Internet users, such as software
7   developers, would simply download the published
8   files and compile them into an executable."
9   And it says, it goes on:
10   "The documentation and comments in the
11   files describe how to make use of the tool."
12   Do you see that?
13   A   Yes.
14   Q   And what -- what software are you
15   referring to here?
16   A   Well, the whole paragraph talks about
17   the Courgette source code published by Google
18   at this big long URL. And so -- and throughout
19   the rest of that paragraph I'm referring to
20   taking that software --
21   Q   Okay.
22   A   -- downloading it and running it.
23   Q   Okay. So I guess my question is if
24   Internet users, such as software developers,
25   can simply download and, ah, download published

1   files and compile them into an executable, how
2   come you did not do that prior to signing your
3   declaration?
4   MR. SCHEINFELD: Objection.
5   Asked and answered.
6   THE WITNESS: I didn't think it was
7   necessary that early on, because there
8   were a multitude of consistent documents,
9   reports, files and so forth, all pointing
10   to that the Courgette tool behaves in a
11   particular way. And if all of those
12   documents were correct, what a particular
13   piece of source code, another piece of
14   software actually did, probably wouldn't
15   matter.
16   BY MR. BERTIN:
17   Q   Did you view your role at this time
18   on the 17th as someone who was being asked to
19   precisely state how the software worked, or did
20   you imagine a different goal for yourself?
21   MR. SCHEINFELD: Objection.
22   Ambiguous, compound.
23   THE WITNESS: State it again, was I?
24   MR. BERTIN: Can you read back the
25   question.

1   (The question is read back by the
2   court reporter.)
3   THE WITNESS: I imagined a different
4   goal.
5   BY MR. BERTIN:
6   Q   A different goal or role?
7   A   Role.
8   Q   Role. Okay, so you imagined a
9   different role.
10   What role did you imagine?
11   A   Well, I was being asked to write a
12   declaration. And this was arguments, you know,
13   as the title says in support of plaintiffs
14   motion for a preliminary injunction.
15   So at that point, I was not being asked
16   questions like what does line 37 do in this
17   file. And it did not seem relevant to me at
18   that point.
19   Q   Okay. Do you think there is an
20   element of precision between analyzing the
21   Courgette software and the patent?
22   MR. SCHEINFELD: Objection.
23   Ambiguous.
24   THE WITNESS: What do you mean by an
25   "element of precision"?

1   BY MR. BERTIN:
2   Q   Well, like, for example, what matters
3   what's actually in the program that was
4   actually being run --
5   For example, it matters what's actually in
6   the Courgette program and how it actually
7   works?
8   A   I'm not sure.
9   Q   And why are you not sure?
10   A   Part of this case, from what I
11   understand, involves the Courgette source code
12   published on the web, but that is certainly not
13   the only thing on which it depends. So, for
14   example, the Courgette source code does many
15   things that probably aren't related or aren't
16   directly relevant to the infringement claims,
17   such as printing out error messages.
18   So there are plenty of details that I
19   don't consider relevant. And knowing what
20   every single line of the Courgette source code
21   does also doesn't seem to be necessary.
22   Q   Did you feel rushed when you were
23   preparing the declaration to get it done on
24   time, or was there some time pressure to
25   getting it done?

16 (Pages 58 to 61)

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 1      A   Not particularly.  I'm accustomed to
 2  some things need to be done in months, other
 3  things need to be done in days.  This, it was
 4  clear that they preferred it to be done in
 5  days, and this is why we spent the whole day.
 6      Q   And just to be clear on your earlier
 7  answer:  In your view, there were two aspects,
 8  at least two aspects of the case:  One where
 9  less precision was required, and one where more
10  precision was required; is that correct?
11          MR. SCHEINFELD:  Objection.
12          Mischaracterization of the prior
13      testimony.
14          THE WITNESS:  No, that's not what I
15      meant at all.
16  BY MR. BERTIN:
17      Q   Okay.  What is the best -- what is
18  the best way to determine with precision the
19  relevant aspects of Courgette and how it
20  operates?
21      A   Probably by examining many aspects of
22  what's going on.  The source code is one,
23  documentation is another, there are a variety
24  of other documents.  To me, the best way to
25  understand is to consult many sources, combine
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 1  them, make sure they are consistent.
 2      Q   When analyzing the software for
 3  Courgette and in doing a rigorous, reliable
 4  analysis, wouldn't you want to spend a lot of
 5  time with the source code itself and compile it
 6  and actually use it like you did after the
 7  17th?
 8      A   Not necessarily.  I consider this, I
 9  consider detail examination of the executable,
10  which is what I was doing after the 17th, as
11  just additional evidence trying to demonstrate
12  something.
13          MR. BERTIN:  Okay, I'm done for now,
14      we can take a break.
15          THE VIDEO OPERATOR:  Going off the
16      record, the time is 10:43, this ends
17      tape 1.
18          (Recess.)
19          THE VIDEO OPERATOR:  We are back on
20      the record, the time is 10:56.  This is
21      tape number 2.
22  BY MR. BERTIN:
23      Q   Okay.  Okay, Doctor Edwards, I want
24  to refer you to paragraph 24 of your
25  declaration, which is marked as Google
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 1  Exhibit 1.
 2      A   (Referring to document.)
 3      Q   Okay.  And I'm just going to read
 4  this paragraph into the record, then I want to
 5  ask you some questions about it.
 6          So the paragraph reads:
 7          "The published source code currently
 8  supports generation of difference results for
 9  Microsoft Windows executables.  However, the
10  code is written such that it is easily
11  adaptable to processing executable files for
12  other platforms, such as those found in mobile
13  devices."
14          And do you recall this paragraph of your
15  declaration?
16      A   I do.
17      Q   And what is the basis for your
18  statement here that the code is easily
19  adaptable to processing executable files for
20  other platforms?
21      A   When I was looking at the code in
22  preparing this statement, I found a number of
23  places in the code where it was very clear that
24  the programmer had later intended for different
25  backends to be put in.  So at the moment as I
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 1  write, there is one for Windows executables,
 2  but the code is written in a very modular way
 3  such that the stuff that is Windows specific
 4  could be added to and made ARM specific, MIPS
 5  specific.  MIPS specific.  More jargon.
 6      Q   Okay, so it's your testimony that
 7  right now there are no other backends, in other
 8  words, other than a Microsoft Windows
 9  executable backend?
10      A   I cannot say definitively.  From the
11  code that I downloaded, it would have been
12  about November 25th, it appeared that there was
13  only that one backend in the code.  I cannot
14  say whether there are more.
15      Q   Okay, so on November 25th it appeared
16  that there was only one backend?
17      A   It appeared that on the website only
18  one backend was available.
19      Q   Okay.  Now on the 17th when you
20  actually signed this declaration, did you --
21  were you in a position to state definitively
22  how many backends were in the program?
23      A   There was at least one.  In fact,
24  there may have been more on that date that
25  could have been hiding in other files that I
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17 (Pages 62 to 65)

1 did not examine. I do not know this to be
2 true.
3   Q   Okay, but whether or not there were
4 more than one and whether or not some might be
5 hidden was not important for purposes of
6 paragraph 24 and your declaration on
7 November 17th; is that correct?
8   A   In paragraph 24, I was commenting on
9 the modular -- the modularity of the program
10 that I saw, and reasonably clear programmer
11 intent that there be other modules.
12   Q   Why do you refer to a module being a
13 backend in this context?
14   A   This is a compiler term. Typically a
15 backend refers to the part of the code that
16 deals with very low level details of file
17 formats and processors and so forth. The
18 corresponding code in the Courgette source
19 recognizes the format Windows executables,
20 recognizes Intel x86 instructions.
21   Q   And when did you realize that it
22 recognized x86 instructions?
23   A   I can't recall.
24   Q   Was it after November 17th?
25   A   I can't recall.

1   Q   Okay. Does paragraph 24 say anything
2 about x86?
3   A   It's implicit when I say Microsoft
4 Windows.
5   Q   Uhm -- okay. Okay, so when you say
6 "backend", you're talking about the portion of
7 a program that deals with the lowest level
8 details? What do you mean by that, can you
9 elaborate?
10   A   I have mentioned this before. Here
11 I'm referring to the parts of the program in
12 Courgette that directly deal with the stream of
13 bytes in the files that it is reading, that it
14 is comparing. And what I have seen, those are
15 specific to, as I write, Windows executable
16 files. And there is a particular file format,
17 it's documented.
18   Q   Okay, and why -- why does it deal
19 with these streams of bytes at the lowest
20 level?
21   A   Something must.
22   Q   Something must in order to -- to do
23 what?
24   A   The Courgette program takes pairs of
25 Windows executables, compares them, and

1 produces patch files. When I say "takes", it
2 means the program must read it, must try to
3 interpret the contents of that, of those files;
4 and, therefore, some part of the program must
5 be concerned with those details.
6   Q   Okay. And as far as -- as far as you
7 know, Courgette and its backend does not
8 recognize bytes from anything other than a
9 Windows executable; is that correct?
10   A   The code that I have seen so far does
11 not appear to.
12   Q   Okay, so you could only use Courgette
13 in its current form to handle updates to
14 Windows executables; is that correct?
15   MR. SCHEINFELD: Objection.
16   Mischaracterizes his testimony.
17   THE WITNESS: In the forms that I am
18   familiar with, it appears that's the only
19   thing -- that's the only type of file that
20   can be applied to.
21 BY MR. BERTIN:
22   Q   Okay, and prior to the 17th had you
23 tried to use Courgette to generate updates on
24 anything other than a Windows executable?
25   A   Prior to the 17th I did not use

1 Courgette at all.
2   Q   And after the 17th did you use
3 Courgette to try to create updates on any other
4 kind of executable?
5   A   I did not.
6   Q   Did you see anything in the Courgette
7 documentation that you testified about earlier
8 on the adaptability of Courgette?
9   MR. SCHEINFELD: Objection, vague.
10   THE WITNESS: I can't recall exactly
11   which documents I testified about earlier,
12   and I can't recall whether those had
13   references specifically to adaptability.
14 BY MR. BERTIN:
15   Q   So you don't recall seeing any Google
16 documents that you relied on for purposes of
17 this declaration that refer to adaptability?
18   MR. SCHEINFELD: Objection, vague.
19   THE WITNESS: The source code itself,
20   which I presume you could consider it
21   Google document, suggests itself that it
22   could be adapted.
23 BY MR. BERTIN:
24   Q   How specific is Courgette to the x86
25 instruction set to Windows executables?

18 (Pages 66 to 69)

1   A   Not especially. I think the -- like
2 it was something like one or two lines that
3 were purely x86 specific.
4   Q   Okay, so your testimony is that there
5 is only one or two lines of source code that
6 are x86 specific; correct?
7   MR. SCHEINFELD: Objection.
8   Mischaracterizes testimony.
9   THE WITNESS: I only recall seeing
10   one or two that screamed out to me this is
11   very specific to the x86.
12 BY MR. BERTIN:
13   Q   Okay, and is that -- is your
14 recollection for this question limited to prior
15 to November 17th, or is that up until today's
16 date?
17   A   That's up until today's date.
18   Q   Okay. And -- and how about the
19 specificity of Courgette to Windows executable
20 formats, how specific is it to a Windows
21 executable format?
22   MR. SCHEINFELD: Objection, vague.
23   THE WITNESS: Parts of the code that
24   I have seen are specific to Windows
25   executables formats. Much of it, what I

1   would consider the interesting part of it,
2   is not specific.
3 BY MR. BERTIN:
4   Q   Well, why -- why are the parts that
5 are specific to it specific to it, to get it to
6 work?
7   A   This gets back to the backend issue
8 we were talking about earlier. To understand
9 the Windows executable file, you need to have
10 some program or you need to have some code that
11 specifically tries to understand it. And there
12 is such code in the Courgette source -- there
13 is such code in the Courgette source that I
14 have seen.
15   Q   Okay. And notwithstanding the fact
16 that you're referring to it as a, quote,
17 "backend", isn't it the case that the software
18 needs to understand the format at the beginning
19 of the process, or at least closer to the
20 beginning of the back?
21   MR. SCHEINFELD: Objection, vague.
22   THE WITNESS: It needs to understand
23   the format when it is reading the file for
24   the first time. Whether that happens
25   early in the process or late in the

1   process I actually didn't observe.
2 BY MR. BERTIN:
3   Q   Okay, so you don't know when during
4 the process Courgette looks at a Windows and
5 x86 specific executable?
6   A   No, I did not attempt to determine
7 exactly when during the execution process,
8 whether it's the first 25 percent or the last
9 25 percent, say, that it was happening.
10   I did identify roughly what was calling
11 what in this Courgette source code, and
12 identified the points at which it actually was
13 reading these executable file formats. But
14 whether you would call that early in the
15 process or late in the process, I'm not sure
16 how to answer.
17   Q   What types of file formats are
18 involved in programs resident on mobile
19 devices?
20   MR. SCHEINFELD: Objection, vague.
21   THE WITNESS: I believe there are
22   many. There are file formats that would
23   closely resemble the Windows executable
24   format, there are others that aren't. The
25   rest is conjecture. The answer is many.

1 BY MR. BERTIN:
2   Q   So there -- in your opinion, there
3 would be many different formats?
4   A   Potentially.
5   Q   Potentially, okay. And are you an
6 expert on what each of those different formats
7 are for any particular mobile device, for
8 example, a GSM compliant device?
9   MR. SCHEINFELD: Objection, vague.
10   THE WITNESS: I wouldn't consider
11   myself an expert on any of these formats.
12   I'm sure if I wanted to understand one, I
13   could.
14 BY MR. BERTIN:
15   Q   Have you undertaken to do so prior to
16 today?
17   A   There have been many times when I
18 have undertaken, you know, for a variety of
19 reasons, to understand any particular file
20 format. I have not undertaken, as a part of
21 this action, understanding anything besides the
22 Windows -- the Microsoft Windows executable
23 format.
24   Q   Can you list for me other file
25 formats of programs that are found on a GSM

19 (Pages 70 to 73)

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1 device?
2   A   I would be speculating. I would
3 prefer not to guess.
4   Q   Okay. Can you -- can you estimate
5 how many different file formats there might be
6 on a GSM device?
7   A   It would be a guess, and not a very
8 informed one. Part of the problem is that
9 there are many, many, many different kinds of
10 GSM devices. And each of which probably has,
11 uses a different subset of possible file
12 formats.
13   Q   Might there be different chip sets
14 within different mobile devices that implement
15 GSM?
16   A   I would expect so.
17   Q   And might there be instruction sets
18 that are unique to each different chip set
19 within a GSM mobile device?
20   A   Rarely would you find an instruction
21 set unique to a specific chip set. Generally
22 you find a class of chip sets that would
23 implement one instruction set, another class
24 that would implement a different instruction
25 set.

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1   Q   Have you generated any kind of list
2 of all of the different instruction sets that
3 are out there for mobile devices?
4   A   I have not generated such a list.
5   Q   What within the Windows executable
6 does Courgette use to facilitate processing the
7 executable?
8   MR. SCHEINFELD: Objection.
9   Ambiguous.
10   THE WITNESS: Many possible answers,
11   including every single byte in the file.
12 BY MR. BERTIN:
13   Q   Every single byte in the Cour -- in
14 the Windows executable file?
15   A   Yes, is considered at some point by
16 Courgette. Or I have reason to believe every
17 one is considered.
18   Q   So Courgette is designed to analyze
19 every bit of a Windows executable; is that
20 correct?
21   MR. SCHEINFELD: Objection, vague.
22   THE WITNESS: No. Parts of
23   Courgette -- parts of the Courgette code
24   are designed to analyze a Windows
25   executable, other parts are not.

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1 BY MR. BERTIN:
2   Q   And what, what, ah -- what
3 specifically is it looking for within the
4 Windows executable format?
5   A   The series of bytes that eventually
6 become the executable itself, or the run time
7 image. There are, ah -- there is relocation
8 information in there that it appears to be
9 observing. I believe the file format has, is
10 broken into a series of regions or sections,
11 and I believe it treats each region
12 individually.
13   Q   Anything else?
14   A   That's all I can think of.
15   Q   Does Courgette work on every version
16 of a Microsoft Windows executable, or does it
17 only work on some Microsoft Windows
18 executables?
19   A   I don't know what constitutes all
20 Windows executables. There may indeed be
21 certain file formats that it does not support.
22 I did not explore that issue in great detail.
23   Q   Did you explore it in any detail?
24   A   I went so far as to look up
25 documentation on the particular file format

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1 that it, the source code claimed it supported.
2   Q   And what is that particular file
3 format?
4   A   I can't recall the name.
5   Q   Is that a Windows executable format?
6   A   Well, there are -- there are a
7 variety of Windows executable formats. And
8 which flavor was specifically supported by
9 Courgette, I can't recall. I would have to see
10 the source code.
11   Q   Okay, but just to characterize what
12 you do recall as you sit here today, you recall
13 that Courgette specifies a particular Windows
14 executable file format, and at the same time
15 there are several different Windows executable
16 file formats; is that correct?
17   A   I wouldn't use the word "specify", I
18 would say the embodiment that I saw accepts a
19 particular file format.
20   Q   Okay, just to go back to your earlier
21 language, I believe you said that there was a
22 flavor that was specifically supported by
23 Courgette, although you couldn't remember
24 which, quote, "flavor" of that, that was?
25   Okay, any, how many --

20 (Pages 74 to 77)

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1   A   That's correct.
2   Q   How many -- is it a spumoni type
3   thing, there are three flavors, or are there
4   you know, 20 flavors, or do you have any sense
5   of how many flavors we are talking about here
6   within the Windows executable family?
7   A   To continue your analogy, it's
8   probably like a melted ice cream shop where
9   there were many distinct flavors and they've
10 blurred together. And exactly which set of
11 flavors or collection of ice cream that
12 Courgette could consume wasn't a hundred
13 percent clear.
14   Q   Okay. Okay, so at least -- at least
15 in your mind it's somewhat ambiguous as to the,
16 as to what the program supports?
17   A   Yes.
18   Q   And you haven't taken steps to
19 precisely match what it supports to the
20 different -- the different flavors of Windows
21 executable that might be out there?
22   A   Yes, I have not considered that. I
23 did not consider it relevant.
24   Q   Okay. Have you -- have you tried to
25 run the program on any formats other than the

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1   formats that Courgette states specifically are
2   supported?
3   A   I have not attempted to.
4   MR. BERTIN: Okay. Can we just take
5   a one-minute break here?
6   THE VIDEO OPERATOR: Going off the
7   record, the time is 11:21.
8   (Off the record.)
9   THE VIDEO OPERATOR: One moment.
10   We're back on the record, the time is
11   11:25.
12 BY MR. BERTIN:
13   Q   Okay, let's see. I would like to
14 refer you, again within your declaration, to
15 paragraph -- paragraph 18.
16   A   (Referring to document.)
17   Q   And so paragraph 18 reads:
18 "Counsel for Red Bend has asked me to
19 offer my views on how one of ordinary skill in
20 the art would have understood certain terms and
21 phrases recited in the relevant claims. My
22 view about the meaning of these terms and
23 phrases are set forth in the claim construction
24 tables (Exhibit A.)"
25   Do you see that?

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1   A   Yes. You've left out "in 1998", but
2   yes.
3   Q   Okay, thank you. And my question is
4   what did you refer to when conducting the
5   particular exercise of creating Exhibit A?
6   A   Primarily the patent, the '552
7   patent. I had also seen the patent history
8   interaction with the patent office. We
9   consulted a dictionary at one point. And, of
10 course, I was relying on my history and
11 knowledge of certain terms.
12   Q   Did -- with respect to the patent
13 itself, when did you first read the patent?
14   A   I can't recall exactly, but I had
15 certainly read it by November 13th.
16   Q   Okay, and how about the prosecution
17 history, how did you -- did you -- did you read
18 the prosecution history?
19   A   I have looked through it a number of
20 times. I probably skipped a few words, but,
21 yes, I have seen the prosecution history.
22   Q   Did you, ah, did you receive a copy
23 of it prior to signing the declaration on the
24 17th?
25   A   Yes.

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1   Q   And when did you receive a copy of
2   it?
3   A   I can't recall, but I certainly had
4   it by the 13th.
5   Q   Okay. And when you read it, you
6   know, how did you read it? Was it on the
7   screen again, like certain other things or?
8   A   I had a packet of paper in front of
9   me and looked through it.
10   Q   Okay. By yourself?
11   A   I believe Red Bend counsel was
12 present at the time.
13   Q   Okay. Okay, and who compiled the
14 definitions in Exhibit A? Was this you or
15 counsel for Red Bend, or some other -- some
16 combination?
17   A   Every one of the definitions in
18 Exhibit A in the end are my words. Some of
19 them were -- versions of them were originally
20 proposed in some cases by counsel for Red Bend.
21   MR. BERTIN: Okay, let's go ahead and
22   mark the '552 patent as the next exhibit.
23   (Exhibit 6 marked for
24   identification.)
25

21 (Pages 78 to 81)

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1 BY MR. BERTIN:
2   Q   Okay, I want to refer you to the '552
3 patent. And, in particular, the page that's
4 marked -- well, we'll call it column 2 of the
5 patent. It's also Bates stamped SE00080.
6   A   Okay.
7   Q   And there is something in this column
8 that appears under the heading "Glossary".
9   Do you see that?
10   A   Yes.
11   Q   What is your understanding of the
12 glossary?
13   A   It appears that the person who wrote
14 the patent is trying to clarify the use of
15 certain terms that might have multiple
16 interpretations.
17   Q   Okay. And are there any
18 discrepancies between the glossary and your --
19 the table that's appended to your declaration
20 as Exhibit A?
21   A   Well, yes, of course. Many of the
22 words are the same, many are different. Are
23 you asking whether there is any substantial
24 difference in any of the definitions? What are
25 you asking?

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1   Q   I'm asking if there are any
2 differences.
3   A   Well, of course. Some definitions
4 have more words, other definitions have fewer
5 words. In many cases I was trying to
6 understand what was meant by the glossary, and
7 phrase it perhaps slightly differently. I
8 didn't necessarily always like the English
9 involved.
10   Do I believe that there is any substantial
11 difference in the meaning? Not particularly.
12   Q   Okay. Why -- why did you deviate in
13 your Exhibit A from the glossary in the patent?
14   A   In certain cases I thought the
15 glossary definition was perhaps insufficient.
16 And the way that the words were being used
17 throughout the patent, it could be explained a
18 little bit more clearly. I guess to figure out
19 all of these differences, I would have to step
20 through carefully and make arguments for, okay,
21 why did I choose this word, why did I choose
22 that word. I'm not sure if I could give you
23 that level of detail.
24   Q   Where you -- where you deviated from
25 the glossary, did you attempt to look at other

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1 areas in the patent where a word was used, and
2 insert some language from these other parts in
3 your definition?
4   MR. SCHEINFELD: Objection, vague.
5   THE WITNESS: I can't recall taking
6   language from elsewhere in the patent and
7   putting them into these, you know, into
8   these definitions.
9 BY MR. BERTIN:
10   Q   Can you look at the very first
11 definition of "data table".
12   A   Yes.
13   Q   Okay, do you see the second sentence
14 there?
15   A   In the patent or in my construction?
16   Q   In your table, not the one that's set
17 forth in the patent.
18   A   Yes.
19   MR. SCHEINFELD: I'm sorry, which
20   one? Oh, I'll read the transcript, I'm
21   sorry.
22   THE WITNESS: Okay.
23   Q   So I'm now referring to the second
24 sentence of your definition, Dr. Edwards, of
25 "data table". It reads: "An executable

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1 program is one example of a data table."
2   Do you see that?
3   A   Yes, I see that.
4   Q   Okay, do you see that language "an
5 executable program is one example of a data
6 table" anywhere in the glossary?
7   A   (Reviewing document.) Let me look.
8   So I am assuming the glossary starts on
9 column 2, line 30, and continues until the next
10 subheading, which is column 3, line 21. And
11 yes, it appears that around line 61, I write
12 "as an example, a data table can be an
13 executable program, either as a loaded program
14 in machine memory or as an executable file."
15   Q   Okay, so -- so you would characterize
16 that sentence as one that comes from the
17 glossary, because it appears between column 2,
18 line 30, and column 3, line 20; is that
19 correct?
20   A   Yes. And there is a question, since
21 that paragraph is not part of the specific
22 lists that were clearly definitions, but this
23 is additional information that the author
24 apparently felt should be included in the
25 glossary section.

22 (Pages 82 to 85)

1   Q   How about your definition of "compact
2 difference results", is that based on the
3 glossary?
4   A   (Reviewing document.) No, that
5 phrase does not appear to appear in the
6 glossary.
7   Q   And why did you choose to construe
8 that term?
9   A   Let me check. It features
10 prominently in the claim language of the
11 patent.
12   Q   So sometimes you looked outside of
13 the glossary for the meaning of terms that
14 appear in your table?
15   A   That's correct.
16   Q   Okay.
17   A   And certainly throughout the patent.
18   Q   Okay. How about the term "invariant
19 reference", why was that important for you to
20 construe?
21   A   (Reviewing document.) Because that
22 phrase appears in many claims and throughout
23 the patent.
24   Q   And did you construe that term with
25 reference to the glossary?

1   A   (Reviewing document.) Which term are
2 we referring to now? I'm sorry.
3   Q   That's okay. "Invariant reference".
4   A   "Invariant reference". Actually I
5 did not construe that term, I construed
6 "invariant references". And, in part, the
7 definition of that comes from the glossary in
8 that it refers to "references".
9   But the notion of invariance does not
10 appear to be in the glossary itself, but
11 appears in many places throughout the patent.
12   Q   Okay. You've identified one place in
13 particular; is that correct?
14   A   I can't recall. Are you referring to
15 use in the claims?
16   Q   I'm actually referring to your
17 Exhibit A, and your definition of "references"
18 where you have identified some support in the
19 patent for -- apparently some support for your
20 definition; is that correct?
21   MR. WILLIAMS: Just to clarify,
22   Robert: Did you say "references" or
23   "invariant references"?
24   Q   I'm referring to the term "invariant
25 references" on page 2 of Exhibit A of your

1 declaration.
2   A   Yes, so this column 10, lines 10
3 through 15, was some of the primary wording
4 that I used to create a definition for
5 "invariant references".
6   Q   Okay, I'm just going to read this
7 into the record and then ask you about it. So
8 this portion, if I start from the first full
9 sentence beginning at column 10, line 9, it
10 says:
11   "It is accordingly an object of the
12 invention to give rise to a situation where
13 modifications of this kind will be modified to
14 invariant references with the obvious
15 consequence that they are not reflected in the
16 difference result, thereby keeping the latter
17 relatively compact."
18   So I guess I will ask you first, what does
19 this -- why did you find this portion of the
20 patent significant in terms of defining
21 "invariant references"?
22   A   The claim language refers to
23 "invariant references" many times, and points
24 out that it is using invariant references.
25 Here is, in column 10, is an example of terms

1 that attempt to explain what invariant
2 references are and, in particular, why you
3 would be interested in them.
4   Q   Okay. And what is your understanding
5 of the role of invariant references?
6   MR. SCHEINFELD: Objection, vague.
7 BY MR. BERTIN:
8   Q   Within the claims.
9   A   The claims specifically refer to
10 invariant references as part of the invention.
11 That's my understanding. It depends on the
12 claim.
13   Q   Okay. What is the -- the section I
14 read mentions an obvious consequence here.
15 What is that all about?
16   A   Someone of ordinary skill in the art
17 would understand that any binary difference
18 utility, when encountering identical data,
19 would recognize it as such, and essentially not
20 have to say anything about it; thereby keeping
21 the difference result relatively compact, as in
22 the words of the patent.
23   Q   Okay, so is it your testimony that
24 this patent uses invariant references like
25 every binary difference utility that came

23 (Pages 86 to 89)

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1 before it?
2   A Not at all.
3   MR. SCHEINFELD: Objection, vague.
4   THE WITNESS: Not at all.
5 BY MR. BERTIN:
6   Q Well, then, how is -- if your answer
7 is "not at all", then how is it that the
8 invariant references are used, according to
9 this patent, to differentiate other difference
10 techniques in the prior art?
11   MR. SCHEINFELD: Objection.
12   No foundation, ambiguous.
13   THE WITNESS: It seems that invariant
14   references are a key component of the
15   invention, and is stated in the claims and
16   in the preferred embodiment. And as
17   suggested by the claims, techniques that
18   have not considered invariant references,
19   it would be different.
20 BY MR. BERTIN:
21   Q Okay. Just prior to the portion that
22 you cite, the patent appears to explain
23 invariant references. And I just want to ask
24 you to read column 10, line 3 to column 10,
25 line 15, and just let me know if you agree with

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1 this.
2   A (Reviewing document.)
3   Q While you're doing that, I will state
4 that this section begins "Before proceeding any
5 further, it should be noted", and then it goes
6 on to talk about conventional file difference
7 techniques --
8   A Okay.
9   Q -- and invariant references.
10   A So say again, you would like me to
11 start reading it before proceeding any further,
12 and continuing to --
13   MR. SCHEINFELD: Line 15.
14   MR. BERTIN: Of column 10.
15   A Okay, "Before proceeding any
16 further --"
17   MR. SCHEINFELD: I don't think he is
18   saying read it out loud. Just read it to
19   yourself.
20   THE WITNESS: Oh, read it to myself.
21 BY MR. BERTIN:
22   Q You can read it out loud if you want,
23 or you can read it to yourself.
24   A Okay.
25   Q It's up to you.

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1   A Okay. (Reviewing document.) Okay,
2 and say again your, the hypothesis you have
3 about this text.
4   Q I want to know if you agree with
5 this.
6   A Okay. State again what you're asking
7 me whether I agree with.
8   Q With this section of the patent, this
9 section of the description.
10   A (Reviewing document.) So, broadly,
11 yes, my understanding of it is that
12 conventional file difference utilities would
13 reflect changes in the file. And yes, it's a
14 fair assessment of file difference utilities.
15   Q So at one place in here, around
16 line 7, it says:
17   "Those versed in the art will readily
18 appreciate that according to the invention it
19 is desired to neutralize this change."
20   So a couple of questions on this. Do you
21 consider yourself someone versed in the art?
22   A I presume that the art that it is
23 referring to is the scope of the patent, which
24 is mentioned, column 1, field of the invention,
25 "Generally Updating Computer Programs". And

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1 so, yes, I consider myself versed in that art.
2   Q Okay. What are they -- can you
3 explain to me what they are referring to when
4 they refer to neutralizing this change in the
5 passage I just had you read? And you can feel
6 free to use the figures of the patent, and
7 anything at your disposal to explain this to
8 me.
9   A Broadly it is saying the more
10 differences that can be predicted
11 automatically, somehow, the fewer you will have
12 to communicate. Let's see. Let me try it
13 again.
14   The more differences can you predict, the
15 fewer differences you will have to communicate,
16 and that will lead to a compact difference
17 result.
18   Q Okay. I think I understand that.
19   Can you give me an example of differences
20 that you can predict?
21   A One of --
22   Q And you can refer to the patent
23 again, or this passage if you would like.
24   A One of the ideas in the patent is
25 that if a large segment of data is inserted and

24 (Pages 90 to 93)

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1 there are concrete references to things past
2 that data, those earlier references need to be
3 adjusted by the amount of data that was
4 inserted.
5   If you understand that is the cause of
6 those changes, you can represent that change
7 much more compactly than a series of
8 instructions like change 5 to 7, change 9 to 11
9 sort of thing. And this is a -- I consider
10 this one of the key ideas in the patent.
11   Q   Okay. So what if a small -- what if
12 a small segment of instructions is inserted at
13 the beginning of a program, might that cause
14 changes due to the insertion that can be
15 predicted according to the patent?
16   A   Let me think about that.
17   MR. SCHEINFELD: Let me, as well, I
18   would like to have the question read back.
19   (The pending question was read back
20   by the reporter.)
21   A   Yes, many changes that could be
22 caused by such an insertion would be predicted
23 by the invention described in the patent.
24   Q   And when changes are predicted, are
25 they quote, "neutralized"? And, again, my

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1 question is in the context of the passage that
2 we've just read.
3   A   Yes, this, by predicting a change,
4 you can essentially undo it, so that a less
5 wise algorithm, such as a standard binary
6 difference utility, would not see them.
7   Q   Okay. Okay, so -- and is it your
8 understanding that invariant references are
9 used to neutralize predictable changes?
10   MR. SCHEINFELD: Objection.
11   Vague, ambiguous. Lacking context.
12   THE WITNESS: Could you read it back
13   to me, repeat it.
14   (The pending question was read back
15   by the reporter.)
16   THE WITNESS: In some cases, yes.
17 BY MR. BERTIN:
18   Q   Are invariant references used to
19 neutralize predictable changes when they are
20 due to insert/delete modifications?
21   MR. SCHEINFELD: Same objection.
22   THE WITNESS: Within the same, within
23   the context of the patent and the
24   invention described there, yes, that --
25   those are examples of changes.

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1 BY MR. BERTIN:
2   Q   Okay. You've defined in your table
3 the term "reference entry"; is that correct?
4   A   That is correct.
5   Q   And what is a reference entry?
6   A   I'm sorry, can you repeat the
7 question.
8   Q   What is a reference entry?
9   A   Following my definition, an
10 addressable unit containing data includes a
11 reference.
12   Q   Okay, and can you give me some
13 examples of a reference entry from the patent?
14   A   From the patent? It will take me a
15 moment to find it.
16   MR. SCHEINFELD: I'm sorry, are you
17   directing the witness to look throughout
18   the patent?
19   MR. BERTIN: Yes.
20   A   (Reviewing document.) So one
21 instance appears in column 10, line 62, it's
22 "Create a translation table L1 between entry
23 reference in P1". Or, excuse me, "between
24 entry references in P1."
25   Q   Okay. How about column 1, between

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1 line 62 and 67.
2   MR. SCHEINFELD: Question?
3   MR. BERTIN: I'm just referring him
4   to this part of the --
5   A   Column 1, you said 62 between --
6   Q   62 and 67, roughly.
7   MR. SCHEINFELD: I'm sorry, is there
8   a pending question?
9   A   So I have located the text.
10   Q   Okay, so the question is: Does
11 this -- is this a portion of the document that
12 has a bearing on the definition of "reference
13 entry"?
14   A   It's giving a suggestion of what they
15 mean by "references". The way that this is
16 written strikes me as being fairly informal, so
17 yes and no.
18   Q   Well, give me the yes and the no.
19   A   Yes, it refers -- it uses the word
20 "entries", and it doesn't explain what it means
21 by "entries" before that. And it uses the word
22 reference to data and possibly others, referred
23 to collectively as "reference entries".
24   So this is giving us examples of things
25 that could be reference entries, but it's not a

25 (Pages 94 to 97)

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 1   definition.
 2      Q   Okay.  The glossary defines "entry",
 3   but you do not.  Any reason why you didn't?
 4      A   It's a sufficiently simple word, and
 5   the more interesting question is when it's
 6   combined with "entry", what's that referring
 7   to.
 8      Q   When what's combined with "entry"?
 9      A   "Reference entry" is more interesting
10   than "entry" by itself.
11      Q   And why is that?
12      A   It's used -- it's more specific.  Or
13   it has the -- the definition of "entry" in the
14   glossary, is straightforward, broad.  I didn't
15   feel a need to repeat it.
16      Q   Are reference entries affected by
17   insert/delete modifications in predictable ways
18   that can be neutralized, according to the
19   patent?
20      A   No.  Merely the act of inserting or
21   deleting won't modify reference entries in this
22   sense.  However, modifications to the source
23   code, that would then go through a compilation
24   process, will produce different reference
25   entries that would be predicted, in many cases,
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 1   by the invention.  So it is not accurate to say
 2   that insertions change reference entries.
 3      Q   Are you saying that a reference entry
 4   could be a source code instruction, according
 5   to the patent?
 6      A   No.
 7      Q   I want to refer you to column 2, line
 8   63 through 65, and I will just read this into
 9   the record.  This is part of the glossary, I
10   will represent.
11      "In this example, entries are individual
12   machine instructions of the program for the
13   individual data elements used by the program."
14      Do you see that?
15      A   Yes.
16      Q   So, in this example, an entry is
17   defined as including machine instructions.  I
18   don't see the concept of an instruction
19   anywhere in your glossary, nor do I see a
20   definition for "entry".  Why is that?
21      A   I already explained why I omitted
22   "entry".  Instructions are mentioned very
23   rarely throughout the patent, I did not feel it
24   was necessary to define the term.
25      Q   Do you believe that a reference
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 1   entry, within the meaning of the patent, can be
 2   a source code instruction?
 3      A   Say it again?  A reference entry
 4   within the scope of the instruction -- within
 5   the scope of the patent -- I'm sorry, I forgot.
 6      Q   We can read back the question.
 7      A   Please do.
 8      (The pending question was read back
 9   by the reporter.)
10      MR. SCHEINFELD:  Objection.
11      Asked and answered.
12      THE WITNESS:  No.  The definition I
13      have here, addressable unit containing
14      data includes a reference.  And here,
15      reference is very specifically an address
16      or a number used to compute an address.
17   BY MR. BERTIN:
18      Q   Okay, I don't think that answers my
19   question.
20      A   Oh.  I do not.
21      Q   I'm really looking for --
22      A   Okay.
23      Q   -- a binary yes or no, whether
24   reference entry excludes source code
25   instruction?
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 1      MR. SCHEINFELD:  Objection.
 2      Asked and answered, and he gave you a
 3      binary answer.  I'm looking at the
 4      transcript.
 5      THE WITNESS:  Source code generally
 6      is not an address or a number.  Or
 7      generally not considered as such, so no.
 8   BY MR. BERTIN:
 9      Q   Okay, so does a reference entry refer
10   to -- or can a reference entry refer to an
11   instruction?
12      A   (Reviewing document.)  It could --
13   reference entry could refer to an instruction.
14      Q   Okay, and doesn't a reference entry
15   refer to an instruction in column 1 between
16   lines 62 and 67 where we just looked?
17      A   (Reviewing document.)  It's a
18   complicated question, because of the way that
19   the language in the patent is using the word
20   "instruction".
21      In that parag -- in that sentence, it
22   appears to be blurring the distinction between
23   source code instructions and machine language
24   instructions.
25      Q   Does a jump instruction exist in all
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26 (Pages 98 to 101)

1 source code and machine code?
2   A   Not always.
3   Q   Can a jump instruction exist in both
4 source code and machine code?
5   A   There are many machine -- types of
6 machine code that have it, many types of source
7 code that has it, many types of source code
8 that do not have it.
9   Q   And is it your opinion that the '552
10 patent intends for jump instructions to exist
11 in machine code?
12   A   I believe that the '552 patent
13 assumes that jump instructions may exist within
14 machine code, but that that is not necessarily
15 its only interpretation.
16   Q   Is a -- is a jump instruction in
17 machine code format a reference entry,
18 according to your definition?
19   A   Provided you interpret the
20 instruction as including the destination for
21 the reference. So there are some jump
22 instructions that I would say do contain
23 reference entries, there are other jump
24 instructions that do not. That would not.
25   Q   So where a jump instruction includes

1 that's probably in the hundreds.
2   You could consider opcodes in addressing
3 modes, which are different ways that those
4 opcodes could be used, that would easily be in
5 the thousands.
6   Then you could enumerate all of the
7 numbers that would be interpreted by an x86 as
8 instructions, and that would probably be in the
9 billions.
10   Q   Well, I'm not going to ask you to
11 recite a billion instructions.
12   A   Thank you.
13   Q   No worry there. But -- but people
14 do, all the time, obviously, write x86 programs
15 using a variety of different instructions that
16 include reference addresses that you would
17 consider reference entries; is that correct?
18   MR. SCHEINFELD: Objection, vague.
19   THE WITNESS: There are certainly x86
20   programs that include instructions that I
21   would consider to be reference entries.
22 BY MR. BERTIN:
23   Q   Okay, so if I have a short program
24 that has lots of reference entries, and for
25 purposes of my example, let's take the

1 a reference and address where the program
2 should jump to in machine code format, would
3 that be considered a reference entry?
4   A   Yes, that would be considered a
5 reference entry.
6   Q   Can you list for me the x86
7 instructions that would be considered
8 reference, or that you consider reference
9 entries?
10   A   No, I could not. The x86 instruction
11 set is vast. I do not know every instruction
12 in that instruction set. It's actually
13 somewhat ill-defined what exactly that
14 instruction set is. Since different processors
15 have different, implements different subsets on
16 it, I would not be able to answer that question
17 without looking at a reference manual.
18   Q   When you say that the number is vast,
19 how many -- how vast is it? I mean, can you
20 estimate how many x86 instructions you would
21 consider reference entries?
22   A   It depends on how you want to count
23 instructions. You could count them using just
24 the opcodes, using the symbolic names that are
25 usually used to refer to groups of them. And

1 "instruction" definition of "reference
2 entries", where the reference entry is an
3 instruction that includes a reference address,
4 and into this program at the beginning I insert
5 a bunch of lines of programming code with the
6 result that in the updated program, where I
7 have inserted the instructions, the reference
8 addresses associated with each of the reference
9 entries change in a predictable way --
10   MR. SCHEINFELD: Objection.
11   Incomplete hypothetical and vague.
12   MR. BERTIN: I'm not done.
13 BY MR. BERTIN:
14   Q   -- how does the patent teach
15 addressing the changes to those reference
16 entries due solely to the insertion of code in
17 the updated program?
18   MR. SCHEINFELD: Same objection.
19   THE WITNESS: Wow.
20   MR. SCHEINFELD: Can we have the
21   question read back, please. Going back to
22   "okay".
23   (The pending question was read back
24 by the reporter.)
25   MR. BERTIN: I'll tell you what, I'll

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1   just rephrase the question.
2 BY MR. BERTIN:
3   Q   If I have an updated program where
4 the only changes to it are a few lines of
5 additional code at the beginning, and several
6 reference entries changing because the
7 reference address changes, how does
8 Courgette -- pardon me -- how does the patent
9 neutralize those changes in the references?
10   MR. SCHEINFELD: Objection.
11   Incomplete hypothetical and vague.
12   THE WITNESS: In the scenario you
13   describe, it can be the case that
14   reference entries will change in the
15   compiled code.
16   Now part of your question is
17   confusing in that you're talking about
18   inserting lines of code, which suggest to
19   me source files. But then referring to
20   changes in reference entries which, by my
21   definitions, are in the object code. And
22   so to talk about one causing the other is
23   complicated, because of the compilation
24   flow involved.
25   Secondly, the reference entries that

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1   you get even in a small program may be due
2   to internal references or references to
3   things outside. This all gets
4   complicated.
5   And then you're asking, if I
6   understand correctly, how the patent
7   teaches how it neutralizes those changes.
8   The process is complicated. And to
9   really answer the question precisely, I
10   would probably have to go through many of
11   the steps of the patent.
12   So we can -- we can do that if you
13   want, but I'm not sure if that's what
14   you're asking me to do.
15 BY MR. BERTIN:
16   Q   Well, what I'm -- what I'm really
17 asking you is if there is an old and a new
18 program, and the only differences between the
19 two -- in a machine code -- between the two is
20 address differences, how does the patent teach
21 neutralizing those address differences when
22 they are due to insert/delete modifications?
23   And you can refer to the patent, or I can
24 refer you to the patent where this is
25 described.

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1   A   Well, first let's be clear about what
2 we say when you're saying "the patent".
3   So there are the claims of the patent,
4 which suggest one thing. And then there is the
5 preferred embodiment, which suggests something
6 with much more detail.
7   Which one do you mean?
8   Q   Well, let's begin with the section
9 we've been talking about, column 10, lines 3 to
10 15.
11   A   (Reviewing document.) So I read that
12 section of text as saying we're going to try to
13 neutralize these changes. But it does not, at
14 that point, explain in detail how it's going to
15 do that.
16   Q   What are, quote, "these changes" that
17 are being neutralized in this portion?
18   A   So I believe that the description
19 starts -- oh, let's see. No, it actually
20 starts column 9, around line 25, 26 or so,
21 where it's describing, or it begins to describe
22 the example in Figure 2 of the patent. And so
23 it actually enumerates many changes, including
24 deletions, insertions.
25   Q   Isn't Figure 2 another example, and

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1 doesn't the passage that we've been referring
2 to begin by saying "Before proceeding any
3 further?"
4   A   Where are you seeing "Before
5 proceeding any further"?
6   Q   Column 10, line 3.
7   MR. SCHEINFELD: Objection.
8   THE WITNESS: Yes --
9   MR. SCHEINFELD: Compound question.
10   I just want the question, if I can have
11   it, please.
12   THE WITNESS: Well, let's see --
13   MR. SCHEINFELD: Wait, I'm sorry.
14   Could the court reporter read back
15   the question that's pending.
16   (The pending question was read back
17 by the reporter.)
18   MR. SCHEINFELD: Objection, compound.
19   MR. BERTIN: I'll take your answer.
20   THE WITNESS: Okay, so at this point
21   it's saying well, if we were to stop at
22   this point and run a conventional file
23   difference utility on the two files that
24   were -- on the two examples that we are
25   talking about in Figure 2, many changes

28 (Pages 106 to 109)

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1   would appear there.
2   And then it's saying okay, our goal
3   is to try to neutralize the effects of
4   some of these changes. And then proceeds
5   in great detail to go through all of that.
6   I'm thinking now would be a good time
7   to take a break. Can we do that now?
8   MR. SCHEINFELD: I think we have to.
9   MR. BERTIN: Yes.
10   THE VIDEO OPERATOR: Going off the
11   record, the time is 12:21. This ends tape
12   number 2.
13   (Lunch recess.)
14   THE VIDEO OPERATOR: One moment.
15   We're back on the record. The time
16   is 1:10. This is tape number 3.
17 BY MR. BERTIN:
18   Q   Okay, Dr. Edwards, before we broke
19 for lunch we were talking about Exhibit A to
20 your declaration and -- which is a table of
21 claim terms.
22   And I want to refer you again to
23 "Invariant references" on page 2 of Exhibit A.
24   A   (Referring to document.)
25   Q   And your proposed definition is:

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1 "References that are the same."
2   Is that correct?
3   A   That's correct.
4   Q   And what does that mean, what is "the
5 same"?
6   A   To references. I was hoping that
7 "same" would be a sufficiently well understood
8 word that wasn't worth discussing more.
9   Q   Uhm, so the word "invariant" suggests
10 to you "the same"?
11   A   Yes.
12   Q   Okay, and you've -- have you provided
13 a definition from Random House Dictionary to
14 that effect?
15   A   That "same" and "invariant" are the
16 same, no.
17   Q   Okay, so, where -- where does this
18 come from?
19   A   Oh, you asked my opinion of whether
20 "invariant" and "same" were similar, the same.
21 I'm running out of words here.
22   Q   Okay. So, well, the word "same" is
23 not found in your definition?
24   A   That's right.
25   Q   That's correct? So --

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1   MR. SCHEINFELD: I'm sorry.
2   Q   You know, so, I'm -- that the claim
3 could have read "identical references" if it
4 wanted to convey "the same"; isn't that
5 correct?
6   MR. SCHEINFELD: Objection to the
7   form.
8   THE WITNESS: The claim? I don't
9   know what you're referring.
10 BY MR. BERTIN:
11   Q   Well, the claim language that we're
12 referring to, or that you've referred to here,
13 "invariant references."
14   The word "invariant" could be replaced
15 with "identical" to convey the word "same";
16 isn't that correct?
17   MR. SCHEINFELD: Objection to the
18   form.
19   THE WITNESS: I think that conveys a
20   slightly, has a slightly different
21   connotation.
22 BY MR. BERTIN:
23   Q   And what's the difference in
24 connotation between "identical" and "invariant"
25 there?

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1   A   The notion of "invariant" carries
2 with it the idea of time and the potential for
3 modification over time. Whereas "identical"
4 just means two things that, when compared,
5 result in no differences. I'm thinking of the
6 differences between identical twins and variant
7 weight.
8   Q   In the context of the patent I doubt
9 you will find identical twins, but what is it
10 that are the same that you're referring to in
11 your definition?
12   A   References --
13   MR. SCHEINFELD: Objection to the
14   form of the question.
15   THE WITNESS: References. This is
16   the definition that I have: References
17   that are the same.
18 BY MR. BERTIN:
19   Q   Okay. All right, so, anything --
20 anything else that you want to add to the
21 context of that?
22   For example, you've referred to column 10,
23 lines 10 to 15. Anything in there that
24 informed your definition?
25   MR. SCHEINFELD: Of "invariant" or

29 (Pages 110 to 113)

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1   "invariant references"?
2   MR. BERTIN: Invariant references.
3   MR. SCHEINFELD: Objection.
4   THE WITNESS: The phrase "invariant
5   references" is used repeatedly in the
6   patent. And whether it's intended to
7   convey exactly, exactly the same thing
8   each time is not clear and, hence, my
9   choice of a relatively broad definition.
10 BY MR. BERTIN:
11   Q Okay. The part, the part that you
12 type -- that you recite, column 10, lines 10 to
13 15, states that:
14   "Modifications of this kind will be
15 modified to invariant references with the
16 obvious consequence that they are not reflected
17 in the difference result, thereby keeping the
18 latter relatively compact."
19   Is it your understanding that invariant
20 references are used to make modifications to
21 keep the difference result compact, as stated
22 here and cited by you?
23   A I would not say that invariant
24 references are used to make the difference
25 result small, but the notion of references

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1 being invariant is integral to the broad idea
2 of the patent, both in the claims and the
3 preferred embodiment, to keep the difference
4 result compact. But it --
5   Q The patent teaches making
6 modifications --
7   MR. SCHEINFELD: I'm sorry, were you
8   done with your answer?
9   THE WITNESS: Yeah.
10   MR. SCHEINFELD: Sorry.
11 BY MR. BERTIN:
12   Q The patent teaches making, quote,
13 "modifications" to invariant references; is
14 that correct?
15   A (Reviewing document.) I don't agree
16 with that. I don't see where you -- where you
17 find that.
18   Q I'm referring to the part that you
19 have identified specifically to define the term
20 "invariant references", that's column 10, lines
21 10 to 15.
22   A So I read this as: "Modifications of
23 this kind", and --
24   Q Keep going.
25   A And I believe that "this kind" refers

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1 to insertions and deletions "will be modified
2 to invariant references."
3   So that is not saying that the invariant
4 references would be modified.
5   Q No, but what I said was that it
6 teaches modifying to invariant references.
7   A Yes.
8   Q And then it goes on --
9   A Things --
10   Q I'm sorry.
11   A -- will be modified to invariant
12 references.
13   Q Okay. And then it goes on in the
14 part that you cite and rely on, to say:
15   "With the obvious consequence that they
16 are not reflected in the difference result,
17 thereby keeping the latter relatively compact."
18   A (Referring to document.)
19   Q Do you see that?
20   A Yes, I see the terms. I'm sorry,
21 what was the question?
22   Q So that the question here is: Isn't
23 that the obvious consequence of modifying to
24 invariant references; namely, that they will
25 not be reflected, the references will not be

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1 reflected in the difference result, thereby
2 keeping the latter relatively compact?
3   MR. SCHEINFELD: Objection.
4   Ambiguous.
5   THE WITNESS: That is the text of
6   what's being said. Although now that I
7   think of it in the greater context of the
8   patent, in fact, that's fairly abstract
9   and imprecise. That there -- that that
10   statement is so short and does not
11   consider many, many -- the many, many
12   details of the preferred embodiment of the
13   invention that I think that actually skips
14   important issues.
15 BY MR. BERTIN:
16   Q Are you saying you're no longer happy
17 with your reliance on this portion of the
18 patent for the definition of "invariant
19 reference"?
20   MR. SCHEINFELD: Objection to form.
21   THE WITNESS: No, I'm still happy
22   with my definition. This is an instance I
23   cited this particular text as being an
24   example of where it talks about invariant
25   references, and communicates the notion of

30 (Pages 114 to 117)

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1   them being the same. I'm not saying that
2   this is the definitive definition, or when
3   taken by itself.
4 BY MR. BERTIN:
5   Q   Okay, so if I -- if I replace the
6 words in this section, "invariant references",
7 with your definition, "references that are the
8 same," it will read: "Will be modified to
9 references that are the same with the obvious
10 consequence that they are not reflected in the
11 difference result, thereby keeping the latter
12 relatively compact."
13   And I take it you're satisfied with that
14 definition and its consistency with this aspect
15 of the patent or -- with this aspect of the
16 patent?
17   A   (Reviewing document.) Let me think.
18   I guess I'm not happy with a -- would not
19 be happy with a change like that, because the
20 definition I give is broad, deliberately so,
21 and I give examples. I try to relate it to
22 something that's already known, but I'm
23 probably omitting some details. And so just
24 changing that phrase to "modified to references
25 that are the same" somehow doesn't quite convey

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1 the same idea that that paragraph or that
2 sentence seems to be communicating.
3   Q   So you don't like -- you're not
4 satisfied with your definition of "invariant
5 references" as "references that are the same"?
6   MR. SCHEINFELD: Objection. Asked
7   and answered and mischaracterizes the
8   witness's testimony.
9   THE WITNESS: I'm still happy with my
10   definition. Any definition is incomplete,
11   including those in dictionaries.
12 BY MR. BERTIN:
13   Q   That's an awfully philosophical
14 answer.
15   A   You're asking a philosophical
16 question.
17   Q   You mentioned earlier that
18 "invariant" to you connotes time, or changes
19 over time. How have you captured that in your
20 five word definition?
21   A   I would say "invariant references"
22 have that connotation or can have that
23 connotation, but do not necessarily so. So my
24 definition covers that interpretation, but does
25 not single it out as being the only one.

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1   Q   Is there any example of your
2 definition capturing the concept of time, or a
3 change over time? How would you account for
4 that aspect of the definition or should -- of
5 "invariant" in your own words, or should we
6 just ignore that aspect of the definition?
7   A   One way that things could be the same
8 is over time; therefore, the word "same" can be
9 used to talk about -- can be used in the
10 context of when you're talking about changes
11 over time. But I considered talking just about
12 changes over time too narrow.
13   Q   Okay, let's go to your declaration
14 and paragraph 12.
15   A   (Referring to document.)
16   Q   So here you talked about: "For a
17 program to run on a computer, its source code
18 must be converted, 'compiled,' into an
19 executable program (or 'object code')."
20   What -- what is an executable program?
21   A   Well, one definition is a program
22 that can run on a computer. One particular
23 example of that is just a sequence of numbers
24 that can be interpreted by the processor on
25 a -- on a machine in order to perform some

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1 series of actions.
2   Q   Okay, so that both of them require
3 the computer or the processor to be able to
4 execute them; correct?
5   A   When one says "executable", the
6 implication is executable by a processor, so,
7 yes.
8   Q   Okay. Just a little bit further
9 down, the third sentence in paragraph 12 says:
10   "A reference could be the address of
11 another instruction in a, quote, 'jump'
12 instruction that directs the processor to begin
13 running instructions at another location."
14   Is this an example of a machine code jump
15 instruction?
16   A   Yes.
17   Q   Is this jump instruction an example
18 of a "reference entry" within the meaning of
19 the patent and your definitions?
20   A   Yes, a jump, in machine language,
21 jump instruction could be a reference entry.
22   Q   Okay. And what are you trying to
23 capture here in this sentence?
24   MR. SCHEINFELD: Objection.
25   Ambiguous.

31 (Pages 118 to 121)

1   THE WITNESS: The distinction between
2   source code and executables, the sorts of
3   things you would expect to find in these
4   executables, and what sorts of references
5   you might find.
6 BY MR. BERTIN:
7   Q   With respect to the latter, what type
8 of references you might find, can you elaborate
9 on the different types that you might find
10 within the context of the '552 patent?
11   A   The '552 patent speaks almost not at
12 all about what sort of instructions might
13 contain references.
14   For the most part it says: "Instructions
15 may contain references and we will consider
16 these references," but does not try to narrow
17 down what sorts of instructions absolutely do
18 or do not.
19   I -- (Reviewing document.) I remember
20 earlier it gives some examples of that.
21 (Reviewing document.)
22   Yeah, at the bottom of column 1, line 64:
23   "Those entries that jump, jump on
24 condition, call functions, reference to data
25 and possibly others (referred to, collectively,

1 as reference entries)."
2   So the patent gives examples, but does not
3 attempt to limit what those, what these entries
4 with references could be.
5   Q   Okay. So in other words they could
6 be types of instructions other than those
7 listed that you just read?
8   A   Yes.
9   Q   Okay. How about different addressing
10 modes, direct versus indirect addressing, is
11 that contemplated by the '552 patent?
12   A   I don't believe the '552 patent has a
13 reference to addressing modes anywhere in it.
14 And I don't see why it would need to.
15   Q   Just to refer you to the glossary for
16 a moment and the definition of "reference".
17   A   (Referring to document.)
18   Q   In the glossary definition of
19 reference at column 42 -- pardon me, column 2,
20 lines 42 to 46, the patent indicates:
21   "A reference can be either an address or a
22 number used to compute an address."
23   What's the difference between those two
24 types of references?
25   A   As it says, it could be a number that

1 you would interpret trivially as an address, or
2 you would have to take that number, apply some
3 function to it, do some computation on it to
4 obtain the intended -- the intended address.
5   Q   Would a relative address be an
6 example of a number used to compute an address?
7   A   Yes, a relative address would be a
8 number used to compute another address.
9   Q   And would an absolute address be a,
10 be an actual address?
11   MR. SCHEINFELD: Objection, vague.
12   THE WITNESS: Generally, although
13   depending on what kind of file in which
14   you are looking, that may or may not be
15   true. That may actually be a number used
16   to compute another address.
17 BY MR. BERTIN:
18   Q   Okay, so depending on how it's
19 implemented, it could fit either of these
20 definitions if it's absolute?
21   A   That's correct.
22   Q   And how about an indirect address, is
23 an indirect address the type of address where a
24 number is used to compute an address within the
25 meaning of the '552 patent?

1   MR. SCHEINFELD: Objection.
2   No foundation.
3   MR. BERTIN: Again, I'm referring to
4   the glossary --
5   THE WITNESS: I guess --
6   MR. BERTIN: -- definition.
7   MR. SCHEINFELD: Let him finish,
8   please.
9   THE WITNESS: I guess I don't have a
10   crisp idea in my mind what an indirect
11   address is. Can you be more precise?
12 BY MR. BERTIN:
13   Q   Well, I guess I would put the
14 question back on you and ask you, as an expert
15 in the field of compilers and software, what
16 the -- what your definition of "indirect
17 address" is?
18   A   So when I hear "indirect address",
19 nothing immediately springs to mind, except
20 indirect addressing modes. Now that may be
21 slightly different from what you have in mind,
22 but indirect addressing is typically when you
23 refer to a register whose contents are meant to
24 be interpreted as an address. So when you
25 speak of an indirect address, that may be one

32 (Pages 122 to 125)

1   interpretation.
2   Another one might possibly be a handle,
3   which I have not heard referred to as an
4   indirect address before, but could be thought
5   of such. A handle is an address that refers to
6   memory that itself has an address.
7   But none of those match up perfectly in my
8   mind with "indirect address".
9   Q   What type of address or addressing
10 mode are you referring to in the last sentence
11 of paragraph 12?
12   A   In the last paragraph of sentence 12
13 I am hinting at an absolute address.
14   Q   Okay, and what -- what -- how do we
15 know it's an absolute address?
16   A   So I write: "A reference could be
17 the address of another instruction in a 'jump'
18 instruction."
19   And implicit in that is the notion that
20 the address is within the instruction itself,
21 and my intention with those was to refer to an
22 absolute address.
23   Q   What is "the address of another
24 instruction at a 'jump' instruction"? I'm not
25 sure what that means. I'm just trying to

1   understand your definition.
2   A   So here a jump instruction consists
3   of a series of numbers that instruct a
4   processor to send control elsewhere. A typical
5   encoding of that consists of some number of
6   bits that say "jump", and then another number
7   of bits intended to be interpreted as a number
8   that should be taken as the new value for the
9   program counter.
10   Q   Okay. In paragraph 13 in your
11 declaration you state that:
12   "Minor source code changes, such as the
13 addition of a single line, can translate into
14 the addition of many machine code instructions
15 in the object code."
16   And you go on to state:
17   "The addition of instructions in the
18 object code shifts all the code after that
19 point, meaning that references to this code
20 would have to change (because they would be at
21 a new address)."
22   Do you see that?
23   A   Yes.
24   Q   Is this an example of a, of an insert
25 operation changing reference entries in object

1   code?
2   A   No, because in paragraph 13 I'm
3   distinguishing changes in the source code that
4   manifest themselves as changes in the machine
5   code.
6   So the insertion I'm talking about is
7   changing the source code. Whereas the
8   insertion, the insertions that the patent
9   considers are felt only in the object -- are
10 seen only in the object code.
11   Q   Isn't paragraph 13 an example of an
12 insertion to the source code which is felt in
13 the object code?
14   A   Yes.
15   Q   And the insertion in the source code
16 results in a modification of the object code;
17 is that correct?
18   A   In the context of paragraph 13, yes.
19   Q   And paragraph 15, you state that:
20   "The inventor of the '552 patent
21 recognized that 'the relatively large size of
22 the difference result stems from the
23 alterations of reference in reference entries
24 as a result of other newly inserted entries
25 (and/or entries that were deleted).'"

1   Do you still agree with that?
2   A   (Referring to document.) Yes, I
3   still agree.
4   Q   And do you agree that, as you state
5   in the last sentence there, that: "He
6   recognized that changed references typically
7   accounted for a large fraction of identified
8   differences, which produced needlessly large
9   diffs."? Diffs, D-I-F-F-S.
10   A   Yes, I agree.
11   Q   Okay. In paragraph 16 you talk
12 about: "Prior to comparing an old and new
13 program generating a diff," on a modified old
14 and a modified new program.
15   What are the modified old and modified new
16 programs?
17   A   Programs that have been modified from
18 their respective originals.
19   Q   Can you identify them in the figures
20 of the patent?
21   A   (Reviewing document.) So P1, which
22 is labeled as 40 in Figure 2A is the old
23 program.
24   (Reviewing document.) So P1 Double Prime,
25 labeled 100 in Figure 2A, and P1 Prime in 140

33 (Pages 126 to 129)

1 are both modified versions of the old program.
2   (Reviewing document.) I don't believe the
3 figures depict modified -- directly depict
4 modified versions of the new program, although
5 the text speaks of it.
6   Q   I just want -- I want to refer you to
7 Figure 1 of the patent.
8   A   (Referring to document.)
9   Q   And aren't the old program and the
10 new program depicted as P1 and P2 and,
11 respectively, elements 201 and 203 in Figure 1?
12   A   Yes, those are another depiction of
13 the old and new programs.
14   Q   Okay. And do you see element P1
15 Prime in Figure 1?
16   A   Yes, this is number 208.
17   Q   Yes, isn't that the modified old
18 program?
19   MR. SCHEINFELD: Objection, vague.
20   THE WITNESS: It is "a" modified old
21   program, not "the" modified old program.
22 BY MR. BERTIN:
23   Q   Is it the modified old program on
24 which the diff is run?
25   A   Let me consult the patent.

1 (Reviewing document.) No, because D1, labeled
2 206 in that figure, is also a difference
3 result. And in that diagram it is comparing P1
4 Double Prime and P2 Double Prime.
5   Q   I think you indicated earlier, or
6 testified earlier that the patent does not
7 disclose the modified new program, but I would
8 direct you to Figure 1 and the element labeled
9 P, Prime 2, also element 209, and ask you if
10 that is the modified new program?
11   MR. SCHEINFELD: Objection.
12   Mischaracterizes the witnesses's
13   prior testimony. And vague.
14   THE WITNESS: Earlier I -- earlier I
15   stated that I did not see in Figure 2 a
16   drawing corresponding to modified new
17   program. Again, I consider 204 and 209 in
18   Figure 1A to be examples of modified new
19   programs.
20 BY MR. BERTIN:
21   Q   Okay, and isn't the modified program
22 P Prime 2 the modified new program on which the
23 difference is determined?
24   MR. SCHEINFELD: Objection, vague.
25   THE WITNESS: There is no "the

1   difference", there are a number of
2   difference results depicted in this
3   figure.
4 BY MR. BERTIN:
5   Q   Isn't D2 the difference result that
6 is sent to the client computer, as shown in
7 Figure 1 as element 210, and the box is labeled
8 D2?
9   A   Yes, that is true.
10   Q   Isn't that the difference result?
11   MR. SCHEINFELD: Objection, vague.
12   THE WITNESS: Again, there are many
13   differences that are computed in the
14   algorithm. This particular one is the one
15   that is sent from server to client as
16   number 210, labeled D2.
17 BY MR. BERTIN:
18   Q   Isn't element D2 in Figure 1 the
19 compact difference result as you've construed
20 it in Exhibit A to your declaration?
21   A   (Reviewing document.) No, because in
22 my definition I just refer to compact
23 difference result being one of a smaller size
24 compared to a conventional difference result.
25   Q   For your opinions, do you analyze and

1 compare boxes P1 Double Prime, P2 Double Prime
2 and D1 to allegedly infringing products?
3   MR. SCHEINFELD: Objection, vague.
4   THE WITNESS: No, I followed the
5   language of particular claims when
6   considering infringement.
7 BY MR. BERTIN:
8   Q   Okay, and you consider the difference
9 result, D1, to be a compact difference result
10 that -- according to your definition?
11   A   Yes, I do.
12   Q   Okay. And how is D1 smaller in size
13 as compared to a conventional difference result
14 obtained by using techniques in existence prior
15 to the invention of the patent in suit? And
16 I'm quoting your definition.
17   A   P1 Double Prime and P2 Double Prime
18 are simplified versions of the old and new
19 program.
20   In this figure, according to the preferred
21 embodiment of the invention, the references in
22 these two representations have been zeroed out;
23 thus, changes in them would not be visible.
24 Thus, to look at the difference result in D1,
25 and compare it to a hypothetical difference

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1 result directly between P1 and P2, which is the
2 notion that I tried to get across in my
3 definition of compact difference result, I
4 would expect D1 to be smaller.
5   THE WITNESS: If this is a convenient
6 time, I would like to ask for a short
7 break.
8   MR. BERTIN: Okay, that's fine. Five
9 minutes, ten minutes?
10   THE WITNESS: Yeah.
11   THE VIDEO OPERATOR: Going off the
12 record, the time is 1:54.
13   (Off the record.)
14   THE VIDEO OPERATOR: One moment.
15   We're back on the record, the time is
16 2:05. This is tape number 4.
17 BY MR. BERTIN:
18   Q   Okay, Dr. Edwards, I invite you to
19 identify anywhere in the '552 patent where
20 the -- where the table, D1, is identified as
21 the difference result.
22   A   I would have to read through the
23 whole thing, but my recollection is, is that D1
24 was never specifically referred to as the
25 difference results in the patent.

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1   Q   Okay. And your analysis does not, as
2 I understand it, rely on D1 being the, quote,
3 "compact difference results" under your
4 definition; is that correct?
5   A   Which analysis?
6   Q   Your analysis of alleged
7 infringement.
8   A   Ah, when I was considering alleged
9 infringement, I did not -- I'm not looking to
10 match up the preferred embodiment exactly. So,
11 no.
12   Q   Okay. So you're not looking for a
13 correspondence between the written description
14 of the patent in any way, and the accused
15 product for purposes of your infringement
16 analysis?
17   A   I was looking at the claims, and then
18 also using the teachings of the preferred
19 embodiment to put the claims in context.
20   Q   You did analyze Claim 42 in your
21 infringement analysis.
22   Does the compact difference result
23 referred to in Claim 42 cover D1 being a
24 compact difference result?
25   MR. SCHEINFELD: Objection, vague.

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1   THE WITNESS: I was comparing the
2 claims with my understanding of the
3 Courgette code, and its behavior and its
4 description and so forth. I was not
5 trying to figure out whether the preferred
6 embodiment described in the patent
7 infringes.
8 BY MR. BERTIN:
9   Q   Well, when you interpret claims, you
10 typically will read them on either the prior
11 art, if you're doing an invalidity analysis, or
12 the accused product, if you're doing an
13 infringement analysis, or the patent, if you're
14 trying to interpret the patent. And so I'm
15 asking you to do latter.
16   And I'm asking you whether your definition
17 of "compact difference result" in Claim 42
18 covers D1 in Figure 1 as a compact difference
19 result?
20   MR. SCHEINFELD: Objection.
21   Vague and mischaracterizes the law.
22   THE WITNESS: I guess I'm confused by
23 the question once again. Phrase it again.
24 BY MR. BERTIN:
25   Q   I'm asking you if the -- if Claim 42

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1 and the compact difference result produced,
2 covers generating the result, D1, which you've
3 indicated is a compact difference result?
4   MR. SCHEINFELD: Objection, vague.
5   THE WITNESS: Whether the claim
6 covers D1 being a compact difference
7 result?
8 BY MR. BERTIN:
9   Q   Yes.
10   A   Let me read Claim 42. (Reviewing
11 document.) So if I understand the question,
12 you're asking for me to consider part of the
13 embodiment, in particular on figure P2, P1 and
14 P2, which are labeled 201 and 203, and P1
15 Double Prime, P2 Double Prime, labeled 202 and
16 204, and D1, labeled 206, whether that subset
17 of the preferred embodiment infringe, would
18 infringe on Claim 42? Is that what you're
19 asking?
20   Q   That's what I'm asking, yes.
21   A   Okay. Under my construction, yes.
22   Q   So --
23   A   I would say it does.
24   Q   Okay. So what element -- under your
25 constructions, what elements are modified old

35 (Pages 134 to 137)

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1 and modified new program? Referring to
2 Figure 1.
3   A   In the setting that I just described,
4 P1 Double Prime and P2 Double Prime would be
5 the modified old and new if you were to
6 consider D1 the compact difference result.
7   Q   And just to be clear, you do consider
8 D1 a compact difference result?
9   A   Yes, I consider it a compact
10 difference result.
11   Q   Under your definitions?
12   A   That's what I understood.
13   Q   Okay. And you consider P1 Double
14 Prime and P2 Double Prime to be the modified
15 old and new programs, respectively, required by
16 Claim 42?
17   A   When you are considering just that
18 subset of the preferred embodiment, yes, those
19 are modified old and new programs.
20   Q   Okay. What is the -- what is the
21 significance of, ah, small letter "c" in
22 Figure 1?
23   A   I will have to consult the patent.
24   Q   But without consulting the patent,
25 the rest of the patent, can you tell me the

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1 significance of the letters that you're looking
2 at on page -- Figure 1, the small lowercase
3 letters?
4   MR. SCHEINFELD: Objection, vague.
5   THE WITNESS: They look like they are
6   referring to -- or they are used to
7   distinguish steps described for the
8   algorithm later. So it looks like they
9   have as much meaning as the numbers, and
10   that they are merely labeling things so
11   that the text can refer to them.
12 BY MR. BERTIN:
13   Q   And on what are you relying for your
14 assertion that P1 Double Prime and P2 Double
15 Prime are modified old and new programs?
16   A   The text of the patent and the
17 figures. For example, the drawing of P1 Double
18 Prime is right next to the drawing of P1, and
19 clearly a number of modifications have been
20 made.
21   Q   What -- how does the patent describe
22 making modifications?
23   A   Making which modifications? Those
24 modifications?
25   Q   Those modifications, to start with,

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1 would be fine.
2   A   (Reviewing document.) It begins to
3 describe the modifications for creating P1
4 Double Prime and P2 Double Prime starting in
5 column 10, line 51. So it speaks of adding
6 label marks and replacing references and
7 entries with some fixed values.
8   Q   I'm sorry, where are you looking at?
9   A   Column 10, line -- starting at
10 line 51. That's element (a).
11   Q   Okay, so the modifications are
12 created, as described there, by replacing the
13 values?
14   A   No, it's describing a series of
15 actions, including placing labels and adding
16 this and replacing that, each of which I
17 consider a modification.
18   Q   Okay, so what parts of the program
19 remained the same?
20   A   In the modifications that it suggests
21 for P1 Double Prime and P2 Double Prime it is
22 not explicitly stated, but it is implied in
23 part by the figures that the remaining contents
24 of the entries are not modified.
25   Q   Okay, so -- okay. What parts are

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1 modified?
2   A   It describes them as modifying the
3 reference, or the references in the reference
4 entries and then also adding these label marks.
5   Q   Okay. And -- and is there anything
6 different about, ah, different modifications
7 described in the patent?
8   In other words, P1 and P2, the generation
9 of P1 and P2, is that -- are they done in a
10 similar fashion or are those modifications made
11 differently?
12   MR. SCHEINFELD: Objection, vague.
13   THE WITNESS: I don't think you mean
14   P1 and P2. These are the original
15   programs -- or the original and new
16   programs.
17 BY MR. BERTIN:
18   Q   You're correct.
19   A   Are you referring to P1 Double Prime?
20   Q   Yes, I'm referring -- you just
21 referred to P1 Double Prime and P2 Double
22 Prime, and I spoke incorrectly. I meant to
23 refer to P1 Prime and P2 Prime.
24   A   Yes, in the text of the patent, this
25 is column 10, line 59, it says:

36 (Pages 138 to 141)

1   "Although not shown Figure 2, P2 Double
2 Prime is generated in a similar manner."
3   Suggesting that the kind of modifications
4 are similar, but that the modifications
5 themselves are not identical.
6   Q   Okay. Can you find anywhere in the
7 patent where D1 is referred to as a difference
8 result, or have you identified anywhere in the
9 patent where D1 is referred to as a difference
10 result?
11   A   (Reviewing document.) The closest is
12 at the top of column 11. It describes:
13   "P1 Double Prime and P2 Double Prime are
14 compared, giving rise to difference table D1
15 using file difference utilities of the kind
16 specified above."
17   So it does not use the phrase "difference
18 result", it instead calls it a "difference
19 table", but it is clear that D1 is derived
20 using so-called "file difference utilities of
21 the kind specified above." And I believe
22 that's referring to the prior art binary
23 difference utilities.
24   Q   So I'm confused, because your
25 definition of compact difference result states:

1 "A difference result of a smaller size as
2 compared to a conventional difference result
3 obtained by using techniques in existence prior
4 to the invention of the patent in suit."
5   But what you've just described as D1,
6 which is nowhere referred to in the patent as a
7 "difference result", and apparently it only
8 uses difference utilities of the kind found in
9 the prior art.
10   So how do you reconcile that?
11   MR. SCHEINFELD: Objection, vague.
12   THE WITNESS: So to derive D1, the
13   patent does not say just use existing file
14   difference utilities, it has this
15   modification step before it. And the
16   patent does not refer to it as a compact
17   difference result. Yet, by my definition
18   of "compact difference result" it does
19   fall under that.
20 BY MR. BERTIN:
21   Q   We will have to agree to disagree on
22 this, because I just don't see it.
23   MR. SCHEINFELD: There is no
24   outstanding question, or is there?
25   MR. BERTIN: No, there is not.

1   MR. SCHEINFELD: Okay.
2 BY MR. BERTIN:
3   Q   Okay, so I want to refer you to
4 paragraph 16.
5   A   This is in my declaration?
6   Q   This is in your declaration, yes.
7   A   (Referring to document.)
8   Q   So the last sentence of this reads:
9   "The modified old and new programs are
10 then compared, producing a difference that no
11 longer depends on references, because
12 references in both programs were rendered
13 invariant, making this result file many times
14 smaller than one generated by techniques
15 available prior to the methods disclosed in the
16 '552 patent."
17   And -- okay. And I guess I want to refer
18 you to column 12, line 11.
19   A   (Referring to document.)
20   Q   And it's 11 through 14, and ask you
21 if this is the description in the patent that
22 corresponds to your sentence in paragraph 16?
23   A   (Reviewing document.)
24   MR. SCHEINFELD: Objection, vague.
25   THE WITNESS: This text in the patent

1   is another place where modified old and
2   new programs are being created, but it is
3   not to say that this is the only place
4   that such things are being created.
5   Additional modifications are happening.
6 BY MR. BERTIN:
7   Q   Okay, and then, just to be clear,
8 step e in Figure 1 is shown as a precursor, if
9 you will, to Elements P Prime 1 and P Prime 2
10 of Figure 1; is that correct?
11   A   Yes, so that the lowercase labels
12 that you mentioned earlier appear to be
13 referring to steps in this example, so -- and,
14 yes, step e is describing how P1 is used, along
15 with other things, to build P1 Prime and
16 similarly for P2 Prime.
17   Q   Okay. And again for clarification,
18 in column 12, lines, let's see, 29 and 30, the
19 patent indicates f, small f):
20   "Having generated P Prime 1 and P Prime 2,
21 the final difference result D2 is generated."
22   And is it your understanding that D2,
23 shown in Figure 1, is the final difference
24 result generated from P1 and P2 as described in
25 the passage I just read and as indicated in

37 (Pages 142 to 145)

1 Figure 1?
2   A   I believe that the text and the
3 figures suggest that D2 is generated from P1
4 Prime, P2 Prime, as well as D1.
5   Q   Yes, I think that's correct.
6   The patent goes on to indicate, starting
7 again, column 12, line 30, immediately after
8 the sentence I just read:
9   "To this end, D1 is analyzed to determine
10 the position of program fragments copied from
11 P1 to P2."
12   And, ah -- and, ah -- is this your
13 understanding of what D1 is used for in terms
14 of generating D2 in step f?
15   A   It's my understanding that that is
16 perhaps part of what D1 is being used for, to
17 generate D2. There may be other uses.
18   Q   Okay. And in your paragraph 17 you
19 talk about the generation of a final difference
20 result between the modified old and modified
21 new programs.
22   Can you identify both the final difference
23 results and the modified old and modified new
24 programs that you're referring to in paragraph
25 17 of your declaration?

1   A   Identify them where?
2   Q   Identify them in Figure 1, if you
3 wouldn't mind, please.
4   A   (Reviewing document.) Okay, so the
5 result of D2 is the final difference result.
6 The modified old and new programs are entering
7 that comparison in a variety of ways. So the
8 effect of P1 Prime and P2 Prime are directly
9 felt by D2. The P1 Double Prime and P2 Double
10 Prime modified programs are felt, let's see,
11 through the creation of D1, which instructs the
12 creation of D2, as well as through this
13 creation of L2, which feeds, modifies, helps to
14 modify P2 Prime.
15   Which -- I'm sorry, I probably -- back up
16 a little bit more, tell me what I was saying.
17   (A portion of the answer was read back
18 by the reporter.)
19   Oh, it's probably as well as the creation
20 of LS, which affects the creation of P2 Prime.
21   Q   Okay, and then at the end of
22 paragraph 17 you have a sentence that captures,
23 appears to capture some of the points that are
24 variously described in the patent as an obvious
25 consequence of using this technique and

1 neutralizing changes. And you indicate:
2   "Since corresponding reference entries are
3 assigned corresponding labels, changes in the
4 reference (or target) of a reference entry due
5 solely to insert and delete, deletions" --
6 "insertions and deletions will not be included
7 in the difference result."
8   Is that correct?
9   MR. SCHEINFELD: Objection, vague.
10   THE WITNESS: That's what I wrote.
11 Now that I think of it, "will not be" is
12 not quite precise. It should be something
13 like "will not be included as a standard
14 difference in the difference result."
15 Somehow the information that those things
16 are changing is making it into the
17 difference result.
18 BY MR. BERTIN:
19   Q   I'm sorry, if there is something
20 making it into the difference result that you
21 state is not in the difference result, could
22 you please tell me where that is?
23   MR. SCHEINFELD: Objection, vague.
24   THE WITNESS: So in paragraph 17 what
25 I'm trying to do is convey the notion of

1   once you have assigned reference entries
2   to the assigned corresponding labels, the
3   effect that that has to the program is
4   represented in a very small way. The
5   difference result.
6   So I was -- when I wrote this
7   originally, I was oversimplifying the
8   problem and just say, "will not be
9   included in the difference result" when,
10   in fact, what I should have said was "will
11   have a much smaller presence in the
12   difference result."
13 BY MR. BERTIN:
14   Q   So you no longer agree with your last
15 sentence of paragraph 17, is that what you are
16 now testifying?
17   A   I am thinking that it's, perhaps, a
18 bit of an oversimplification if read directly.
19   Q   Okay, and when that same language,
20 almost verbatim, appears in the patent at
21 column 10, lines 10 through -- well, lines 12
22 through 15, are you saying that the patent is
23 incorrect there?
24   A   That sentence, going from lines 10 to
25 15, is attempting to, in many respects,

38 (Pages 146 to 149)

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1 summarize the entire invention in a sentence.
2 And I believe it is also simplifying, to a
3 certain extent, or oversimplifying to a certain
4 extent. I believe it still communicates the
5 core idea of the patent pretty clearly.
6   Q   Are you saying it's erroneous?
7   MR. SCHEINFELD: Objection.
8   Asked and answered and
9   mischaracterizing the witness's testimony.
10   THE WITNESS: Not erroneous.
11   MR. BERTIN: Okay, why don't we take
12   a five-minute break.
13   THE VIDEO OPERATOR: Going off the
14   record, the time is 2:38.
15   (Recess.)
16   THE VIDEO OPERATOR: One moment.
17   We're back on the record. The time
18   is 2:52.
19 BY MR. BERTIN:
20   Q   Okay, uhm, Dr. Edwards, what is
21 enablement in the context of patent law?
22   A   If I understand correctly, and I
23 certainly don't have a law degree, it means
24 when one party makes it particularly easy for
25 another party to infringe. I presume that's

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1 roughly it.
2   Q   Okay, so enablement relates to how
3 easy it is to infringe a patent.
4   Is that what you're saying?
5   A   No, it's more about the act of making
6 it easy for others to infringe a patent, if I
7 understand.
8   Q   Okay. Did you consider the
9 enablement doctrine when coming up with your
10 definitions for the claim terms?
11   MR. SCHEINFELD: Objection.
12   Lacks foundation. Ambiguous.
13   THE WITNESS: When coming up with the
14   claim terms, I would have to say no.
15 BY MR. BERTIN:
16   Q   Okay, do you consider a label mark a
17 reference?
18   A   So, by "label mark", I am presuming
19 you mean the marks labeled 101 through 105 in
20 Figure 2A, for example. And no, those are not
21 references.
22   Q   So label marks are not references?
23   MR. SCHEINFELD: Objection.
24   Ambiguous and incomplete
25   hypothetical.

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1   THE WITNESS: Which label marks do
2   you mean?
3 BY MR. BERTIN:
4   Q   The label marks described in the
5 patent.
6   A   No, I do not consider the label marks
7 described in the patent by themselves to be
8 references.
9   Q   And I take it for the same reason,
10 then, you do not consider label marks to be
11 invariant references?
12   MR. SCHEINFELD: Same objection.
13   Ambiguous, incomplete hypothetical.
14   THE WITNESS: No, if label marks are
15   not references they would not be invariant
16   references.
17 BY MR. BERTIN:
18   Q   And I want to refer you to Figure 2B
19 and element 160, which is D2.
20   Do you see that?
21   A   Yes.
22   Q   What is element 161, which is labeled
23 "Inserted and Replaced Contents"?
24   A   The patent does not describe its
25 construction in great detail. My understanding

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1 in the preferred embodiment is that it contains
2 segments of code, or segments of data that need
3 to be copied back, inserted, or otherwise
4 placed into the old program to create the new
5 program.
6   Q   Isn't 161 the differences reflected
7 between the old and the new program as
8 communicated in the difference result?
9   A   They are part of the differences.
10 They are not by themselves sufficient to
11 reconstruct the program, but they are
12 differences.
13   Q   And how about the part of 161 --
14 pardon me -- of final D2, immediately above
15 161?
16   A   What about them?
17   Q   What is it? Just characterize it,
18 please.
19   A   A series of instructions of the form,
20 or it could be changing, replacement,
21 insertion, deletion, another set of differences
22 between the old and the new program. Or
23 another partial characterization of the
24 differences.
25   Q   So that the top part is a partial

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1 characterization of the differences and --
2 let's just take the first command there, "C,
3 5".
4 Wouldn't that refer to copying the first
5 five bytes, for example, of the old program?
6 MR. SCHEINFELD: Objection.
7 Ambiguous.
8 THE WITNESS: I believe it refers
9 copying the first five entries, which are
10 not necessarily bytes.
11 BY MR. BERTIN:
12 Q So it refers to copying the first
13 five entries from the old program; is that
14 correct?
15 A Yes.
16 Q Okay, and the next entry is "R, 1".
17 Do you see that?
18 A Yes.
19 Q And so it's saying replace,
20 effectively, the next entry with something
21 found in 161 below; is that correct?
22 A I believe that's correct.
23 Q Okay. So if we are interpreting D2
24 correctly, then, the actual contents that are
25 different between the old and the new program

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1 are reflected in 161, associated with D2.
2 And what's above it is really
3 characterizations of how to use that data
4 together with an old program in order to
5 generate the new program; is that correct?
6 MR. SCHEINFELD: Objection.
7 Ambiguous.
8 THE WITNESS: I would consider that
9 oversimplification.
10 BY MR. BERTIN:
11 Q Lawyers do that.
12 A So do people who write patents.
13 Q But if you're going to quibble with
14 that definition, then tell me how you quibble
15 with it.
16 A Taken as a whole, D2 is used in the
17 preferred embodiment to reconstruct the new
18 program given the old program.
19 Q And D1 is not?
20 A D1 does not have sufficient
21 information in it to construct -- reconstruct
22 the new program from the old program. The
23 additional information, D2, is needed plus, in
24 fact, some modifications along the way.
25 Q Okay. And what's missing from D1 is

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1 the actual differences, which are reflected in
2 161 associated with D2; isn't that correct?
3 A That's part of what's missing. If
4 you also notice C,6, beginning in D1, turned
5 into C,5 in D2, followed by R,1, by R comma 1
6 in D2.
7 And so, in fact, the effect -- excuse me,
8 the presence of a reference -- let's see. The
9 presence of a reference in that first block
10 caused C,6 to split in C,5 and R,1.
11 So it is not fair to say that the stuff
12 that changed is only in 161, it's a more
13 complicated relationship than that.
14 Q But the actual, the actual bits that
15 changed --
16 A No.
17 Q -- between the old and the new
18 program are reflected in 161, as I understand
19 it, and then the section -- and then the top
20 part that includes the copy "5 replace 1" are
21 the instructions in the difference result to
22 either refer to the old program for some
23 instructions or refer to 161 for the actual
24 differences; isn't that correct?
25 A No, because one of the central ideas

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1 of the patent is to change these references.
2 So these are genuine changes from the old to
3 the new program. If you look byte by byte,
4 number by number, you will find these changes.
5 However, most of those changes are not
6 represented explicitly in this block, 161.
7 So no, not all of the changes, the actual
8 changes in the contents of the program is
9 hiding in 161. They are also implied very
10 broadly by the top of D2, plus the old program
11 itself.
12 Q So that the top of D2 is what leads
13 to predictions of references that are affected
14 by insert and delete modifications?
15 A In part. The old program is also
16 considered.
17 Q And then the references that change
18 due to insert/delete modifications are not
19 included in 161; is that correct?
20 A Many of the references that change do
21 not have an explicit manifestation in 161.
22 Certain changed references might.
23 Q Do you address that anywhere in your
24 declaration, the so-called "certain changed
25 references"?

40 (Pages 154 to 157)

1   A   No, that's a -- I consider that a
2   subtle detail of the preferred embodiment and
3   it is not part of the claims.
4   Q   Can you show me where in D1 you would
5   find byte differences corresponding to a, to an
6   insert operation?
7   MR. SCHEINFELD: Objection, vague.
8   THE WITNESS: Byte differences due to
9   an insert operation. There are insert
10   operations referred to in D1.
11   BY MR. BERTIN:
12   Q   Right, so -- I agree. So if you look
13   at D1, there is an insert operation as the
14   second element of this chart, and it's "I,3",
15   which I take it means "insert three bytes". So
16   I'm asking you: Where do you find those three
17   bytes within D1?
18   MR. SCHEINFELD: Objection, vague.
19   THE WITNESS: I agree that that means
20   insert three entries, not necessarily
21   bytes.
22   BY MR. BERTIN:
23   Q   Uh hum.
24   A   And I agree that D1, as it's drawn in
25   Figure 2, does not explicitly say which bytes

1   are changing or what those new bytes might be.
2   Q   So that the actual bytes are not
3   included in D1. The actual bytes that are
4   different or entries that are different are not
5   actually included in D1 --
6   MR. SCHEINFELD: Objection.
7   BY MR. BERTIN:
8   Q   -- for an insert operation.
9   MR. SCHEINFELD: Objection.
10   Vague, compound.
11   THE WITNESS: They are not in this
12   drawing.
13   BY MR. BERTIN:
14   Q   And this drawing is, to be clear,
15   Figure 2B; is that correct?
16   A   Yes, 2B, yes. Number 120.
17   Q   Is that a subtlety or is that an
18   important difference between D1 and D2?
19   MR. SCHEINFELD: Objection, vague.
20   THE WITNESS: I think that's a
21   subtlety. In all cases these figures are
22   drawn to expose what the author considered
23   the most relevant details and suppress
24   subtle unimportant ones.
25

1   BY MR. BERTIN:
2   Q   And if you have any support for the
3   idea that the bytes for an insert are found in
4   the patent anywhere for D1, now is the time to
5   find it.
6   A   (Reviewing document.) At the top of
7   column 11, it says:
8   "P1 Double Prime and P2 Double Prime are
9   compared giving rise to difference table D1
10   using file difference utilities of the kind
11   specified above."
12   My understanding is that these file
13   difference utilities would, in fact, report
14   bytes that had to be inserted.
15   Q   Can you identify any place where it
16   actually says that they are created or --
17   A   No.
18   Q   -- anything is done with them?
19   A   I believe the expression is inherent.
20   Q   Why do you think they are shown in D2
21   and not in D1?
22   A   (Reviewing document.) I don't know.
23   Q   Is there anything else that you can
24   identify that -- that you want to identify?
25   A   No.

1   Q   Okay, let's go to Exhibit C to your
2   declaration.
3   A   (Referring to document.)
4   Q   Okay, what is Exhibit C?
5   A   This is the infringement chart.
6   Q   Okay, and who prepared this chart?
7   A   Who prepared this chart?
8   Q   Yes.
9   A   I did, with the assistance of Red
10   Bend counsel.
11   Q   Okay, and across the top of the chart
12   there are three columns and three headings
13   corresponding. One is "Claim 42", the middle
14   column is headed "Infringement Analysis", and
15   the right column is headed "Infringement by
16   Software Developers using Courgette Code."
17   Do you see that?
18   A   Yes.
19   Q   Who are the software developers using
20   that Courgette code that you relied on for
21   purposes of preparing column 3?
22   A   Let me check. (Reviewing document.)
23   These are the ones I name in paragraph 23,
24   or apply in paragraph 23, because the Courgette
25   source code was posted on the web and marked as

41 (Pages 158 to 161)

1 open source. That, plus seeing a number of
2 blog entries and e-mails that went across, it
3 seems likely that users outside of Google were
4 also using the Courgette code. And so
5 counselors asked me to consider whether they
6 would be infringing.
7   Q   Okay, but you did not identify any
8 specific software developer using Courgette
9 code, nor were you, at the time that you did
10 your declaration, a software developer using
11 Courgette code; is that correct?
12   MR. SCHEINFELD: Objection, compound.
13   THE WITNESS: Let me answer the
14   first. I have seen e-mails that strongly
15   suggest that there are others using the
16   Courgette code. Could these e-mails be
17   fabrications or lies on their part? It's
18   possible. I have no reason to believe
19   that.
20 BY MR. BERTIN:
21   Q   Did you see any of these e-mails
22 prior to making your declaration?
23   A   No, I did not.
24   Q   And did you, yourself, use the
25 software prior to making your declaration on

1 November 17th?
2   A   I did not.
3   Q   And have you produced any e-mails
4 that you're relying on --
5   A   Have I?
6   Q   -- for your current testimony?
7   A   Have I produced -- I'm not sure where
8 they came from, they were shown to me by Red
9 Bend counsel and I believe they've been given
10 to you as well.
11   MR. BERTIN: To the extent they
12   weren't produced --
13   MR. SCHEINFELD: They've been
14   produced.
15   MR. BERTIN: Okay.
16 BY MR. BERTIN:
17   Q   Okay, the -- in column 2 you refer
18 almost immediately to the chromium developer
19 documentation, hereinafter CDD.
20   What is that document?
21   A   It was a document that was shown to
22 me by Red Bend counsel at this URL. It talks
23 about the Courgette tool, what its intentions
24 are and what it's used for.
25   Q   Okay.

1   MR. BERTIN: I'm going to mark two
2   additional exhibits.
3   (Exhibits 7 and 8 marked for
4   identification.)
5 BY MR. BERTIN:
6   Q   So first we've marked two exhibits,
7 Google 7 and Google Exhibit 8. Google
8 Exhibit 7 bears Bates number GOOG-00027268, and
9 Google 8 bears Bates number GOOG-00026259 and
10 both are multi-page documents.
11   Referring to Google Exhibit 7, is this the
12 document that you're referring to in the top
13 central box on page 1 of Exhibit C?
14   A   It is.
15   Q   And is this a document that you
16 relied upon for making your infringement
17 determination?
18   A   This is one of the documents I relied
19 on.
20   Q   Okay. And this -- this is a, roughly
21 a four-page document; is that correct?
22   A   The way it's been printed out here,
23 yes.
24   Q   Okay. And is it -- well, let me
25 point to, also, Google Exhibit 8.

1   Is this another document that you relied
2 upon?
3   A   (Reviewing document.) I can't recall
4 whether I have seen this document or not. I
5 would guess yes, but I don't have any specific
6 recollection.
7   Q   And with respect to Google Exhibit 7,
8 does this document perfectly capture the
9 operations of the Courgette code?
10   MR. SCHEINFELD: Objection, vague.
11   THE WITNESS: I'm not quite sure what
12   you mean by "perfectly".
13 BY MR. BERTIN:
14   Q   Well, does it capture all of the
15 relevant aspects of the Courgette program where
16 the patent is concerned?
17   MR. SCHEINFELD: Objection.
18   No foundation, vague.
19   THE WITNESS: It has a very large
20   number of comments in it that are, that
21   appear to be directly relevant to the '552
22   patent.
23 BY MR. BERTIN:
24   Q   In the second row of your chart there
25 it says: "Each data table, including reference

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1 entries that contain reference, that refer to
2 other entries in the data table."
3   And you write in the infringement
4 analysis:
5   "The compiled code is full of internal
6 references where some instruction or data
7 contains the address or offset of another
8 instruction or data."
9   Is that correct?
10   MR. SCHEINFELD: I'm sorry, the
11   witness was not following you. He's
12   reading from --
13   A   Yeah, sure. So what you read sounds
14 like a fair assessment, a fair reading of what
15 is written on the chart, yes.
16 BY MR. BERTIN:
17   Q   Okay. Can you describe the types of
18 addresses that are actually used by Courgette?
19   A   So in the source code there are
20 probably a variety of definitions for addresses
21 and labels and things. I can't recall exactly
22 the full set of exactly what the source code
23 considers a reference and what it does not.
24   Q   Okay, so you don't know what the
25 Courgette source code considers a reference and

1 what it does not?
2   MR. SCHEINFELD: Objection to the
3   form of the question.
4   THE WITNESS: I feel I have a pretty
5   good understanding of many of the forms
6   that it understands, but that's not
7   necessarily all.
8 BY MR. BERTIN:
9   Q   Well, can you characterize the types
10 of references that Courgette is equipped to
11 parse and handle as part of its operation?
12   A   Are you asking me to characterize
13 them?
14   Q   Ah --
15   A   Describe that. I didn't quite
16 understand the beginning of the question.
17   Q   Well, I am asking if you could.
18   A   Ah, can I?
19   Q   Yes.
20   A   I can characterize some of them.
21   Q   Okay, well, why don't you
22 characterize the ones that you can.
23   A   Okay. There are two that I recall.
24 One form of reference seemed to be coming from
25 the object file itself. There was relocation

1 in the windows executable file format that
2 actually has explicit information: There is a
3 reference here. There is a reference here.
4   And part of what Courgette does very early
5 in the processing is extract those from the
6 executable file.
7   I believe it also identifies a second form
8 of reference by stepping through the executable
9 code looking for bytes that are likely to be
10 part of instructions that have relative
11 addresses in them.
12   Only those two come to mind.
13   Q   Okay, and then it goes on to element
14 A here and the claim says:
15   "Generating a modified old data using at
16 least said old data table."
17   Do you see that?
18   A   Yes.
19   Q   In terms of your infringement
20 analysis, what are you reading that element on
21 within Courgette in this table?
22   A   Well, as I write in column 2, I'm
23 quoting this developer documentation. This is
24 on the second page of that document, it says:
25   "Courgette transforms the program into a

1 primitive assembly language and does the
2 diffing at the assembly level."
3   Q   Okay. So, so far on page 1 you
4 haven't yet referred to the actual Courgette
5 source code; is that correct -- in the table?
6   A   I'm basing my infringement analysis
7 on the assumption that this developer
8 documentation describes what the source code
9 does, or when executed what it does.
10   So when I had written this declaration, I
11 had looked at the source code somewhat, not in
12 great detail, and what I found was the
13 statements in the developer documentation were
14 consistent with what the Courgette software was
15 doing.
16   Q   But at the time that you prepared
17 this chart that we're now looking at, you
18 obviously had not compare, compiled or used the
19 Courgette code; is that correct?
20   A   That is correct.
21   Q   Okay. And when you say, or when you
22 quote this document saying, "does the diffing
23 at the assembly level," what diffing are you
24 referring to?
25   A   Well, whatever the developer

43 (Pages 166 to 169)

1 documentation was referring to. Let me look
2 through the document. (Reviewing document.)
3   So immediately after that paragraph it
4 writes, "server", and then has a series of
5 instructions that I take as being what should
6 be executed on the server. And one of those
7 instructions says:
8   "ASM diff equals bsdiff of ASM old and ASM
9 new, adjusted."
10   Q   Just to be clear, you're referring to
11 Google Exhibit 7; is that correct?
12   A   That's correct.
13   Q   And which, which -- and where exactly
14 in this document?
15   A   And so this is at the bottom of the
16 page numbered 27269.
17   Q   Um hum.
18   A   And then right at the beginning of
19 27270.
20   Q   Okay. So this is -- how does this
21 tell you what's going on inside of Courgette?
22 There are very few words that even appear in
23 this development document that you're using to
24 describe this function.
25   MR. SCHEINFELD: Objection, vague.

1 BY MR. BERTIN:
2   Q   How did this give you some certainty
3 that there was infringement and that this
4 element was met?
5   A   Claim 42, part A, says: "Generating
6 a modified old date table utilizing at least
7 said old data table."
8   So the question I asked myself was: Is
9 there something that suggests that Courgette
10 takes the old executable and modifies it at
11 some point?
12   Q   Okay, and it modifies, according to
13 your reading, you're saying that it's creating
14 a primitive assembly language, and that that's
15 modifying the old data table; is that correct?
16   A   No, as soon as I saw "transforms" in
17 the text, I considered that equivalent to
18 modifying.
19   Q   Okay. So as soon as you saw
20 "transforms" in the text of this five-page
21 document you immediately thought that that
22 meant creating a modified old data table within
23 the meaning of the '522 patent?
24   A   I thought "transforms" is tantamount
25 to modifying.

1   Q   Okay, and so if transforms is
2 tantamount to modifying, I guess, "transforms
3 the program into a primitive assembly
4 language," completes your impression and your
5 chart here that the modified old date table
6 equals or is the primitive assembly language
7 that's apparently transformed here; is that
8 correct?
9   A   No. From what I understand, the
10 infringement question is: Can I find the
11 limitations of the claims in the suspected
12 infringing object?
13   And my understanding is, for something to
14 infringe Claim 42 part A, and of course you
15 need additional consideration, all I need to
16 show was that Courgette at some point generated
17 a modified version of the old program.
18   Q   Okay, well, where is the modified
19 version of the old program? That's what I'm
20 asking you. If you're generating it in step a,
21 and that's what you're looking for, where is
22 the modified old program or data table? Just
23 point it out.
24   A   Okay.
25   Q   You have got language in this box,

1 tell me where it is.
2   A   So one possible interpretation is the
3 primitive assembly language, but that's not the
4 only interpretation. Or that doesn't
5 necessarily need to be the only interpretation.
6   Courgette makes a variety of modifications
7 to the old program. And from what I
8 understand, for infringement, it is sufficient
9 if any of those constitutes a modified old data
10 table, or is equivalent to a modified old data
11 table.
12   Q   In your declaration I only see one
13 thing that could be the modified old data
14 table. Maybe I'm missing something, but the
15 only thing that appears here is "a primitive
16 assembly language version of a program."
17   If there's something else that's here,
18 tell me, but that's the only see I see that
19 you've identified in this chart.
20   A   Oh, I see. My understanding was to
21 show infringement all I had to do was find a
22 modified data table. And so one candidate
23 modified data table is indeed this primitive
24 assembly language.
25   Q   Okay. And that's the only one that

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1 you identified in this declaration; is that
2 correct?
3   A   It was not necessary to identify any
4 others. Finding one, I was told, was enough.
5   Q   Okay, well, this is the one that
6 you're relying on for purposes of your
7 infringement analysis; is that correct?
8   A   That's correct.
9   Q   If there are any others, please tell
10 me what they are.
11   A   A wide number of modifications are
12 made, including this primitive assembly
13 language. And even that, from my reading of
14 the Courgette source code, is actually somewhat
15 broad, in that there are many iterations of
16 this.
17   And so you're asking me to say, okay, at
18 exactly what point in the execution of this
19 program is the modified data table in
20 existence. And, you know, implying that it
21 didn't exist before then and might not exist
22 after that, I find that an ill posed question.
23   Q   I'm not implying anything. The code
24 has been in existence and available to the
25 public to easily compile and use, according to

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1 your own testimony, since July.
2   A   Okay.
3   Q   It's February. And you were engaged
4 in November. If you have any basis for
5 comparing element (a) of Claim 42 to anything
6 Courgette, please tell me now what it is, other
7 than this "primitive assembly language".
8   MR. SCHEINFELD: Objection.
9   Asked and answered, and
10   argumentative.
11   THE WITNESS: There is a primitive
12   assembly language representation. There
13   are additional tables generated from that
14   assembly language representation. Those
15   tables are then modified in a variety of
16   ways and other tables along the side are
17   also generated.
18   My feeling is that any of those could
19   be characterized as a modified old data
20   table.
21 BY MR. BERTIN:
22   Q   So -- so you are identifying the
23 primitive assembly language and any tables that
24 are derived from the primitive assembly
25 language; is that correct -- if I understood

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1 you correctly?
2   A   Those would potentially qualify as
3 modified data tables.
4   Q   Okay. Anything else that would
5 potentially qualify, other than the primitive
6 assembly language and tables that are derived
7 from the primitive assembly language?
8   A   There are many data structures that
9 Courgette builds as part of its execution that
10 come from the old data table and, in my mind,
11 represent modifications thereof.
12   Q   Okay, but you haven't identified any
13 of those in your declaration or anything that
14 you produced prior to this deposition; is that
15 correct?
16   A   I only identified one in the
17 declaration, as I understood that one was
18 enough.
19   MR. SCHEINFELD: I mean, you have the
20   source code.
21   MR. BERTIN: Okay.
22   MR. SCHEINFELD: It's there in front
23   of him.
24 BY MR. BERTIN:
25   Q   Okay, so element (b) of Claim 42 --

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1   A   Uh hum. (Referring to document.)
2   Q   Element (b) talks about generating a
3 modified new data table utilizing at least said
4 new data table. And you identify similar
5 language from the Courgette developer document;
6 is that correct?
7   A   That's correct.
8   Q   Okay, so am I correct in stating that
9 you have identified element (b) is met again by
10 primitive assembly language that Courgette
11 creates from, this time, a new -- the, ah, the
12 new program; is that correct?
13   A   Yes. So, again, all I was looking
14 for, one -- all I was looking for was one such
15 modified new data table. And from my reading
16 of the developer documentation, the primitive
17 assembly language generated from the new
18 executable satisfied, ah, fell into that part
19 of the claim.
20   Q   So the primitive assembly language is
21 the modified new data table?
22   A   Could be the modified new data table.
23   Q   Okay, and even though it could be,
24 you haven't identified anything else that could
25 also be, this is the only thing you've

45 (Pages 174 to 177)

1 identified in your declaration or before your
2 deposition?
3   A   I was told one was enough.
4   MR. BERTIN: We need to change the
5   tape.
6   THE VIDEO OPERATOR: Going off the
7   record, the time is 3:38. This ends
8   tape 4.
9   (Recess.)
10   THE VIDEO OPERATOR: One moment.
11   We're back on the record, the time is
12   3:57. This is tape number 5.
13 BY MR. BERTIN:
14   Q   Okay, I want to move on to the chart.
15 There is a -- that's part of element (b), it
16 says:
17   "Said modified old data table and modified
18 new data table having at least the following
19 characteristics." And then there are two blank
20 entries in that row.
21   And then just below that there is a
22 Romanette 1 in the left-most column. And this
23 element, it appears that you have compared in
24 the second and third columns, to that claim
25 element.

1   And there is a -- the element begins:
2   "Substantially, each reference in an entry
3 in said old data table that is different than
4 the corresponding entry in said new data table
5 due to insert/delete modifications --"
6   Actually it's delete slash insert
7 modifications.
8   "-- that form part of the transition
9 between said old data table and new data table
10 are reflected as invariant references." And it
11 goes on.
12   My question is: Where in column 2 do you
13 account for the language that I just read,
14 beginning with, "Substantially, each
15 reference"?
16   A   Okay. So, I interpret
17 "Substantially, each reference" to mean,
18 somehow, most references. And I was
19 observing -- this is now referring to source
20 code that I found on the Courgette website and
21 looked at. This method, default assigned
22 index, is going through and doing something to
23 each reference. Assigning indices to labels --
24 (Reviewing document.)
25   And then the "invariant references" part

1 is somehow how this method is copying one set
2 of references to the new data table. Let's
3 see. (Reviewing document.) Yeah, so it's
4 going from the old data table to the new data
5 table.
6   And so my belief was that, at that point,
7 it was making those references invariant as
8 required by the language.
9   Q   Okay, I -- I can't find anywhere in
10 your infringement analysis where you talk about
11 most versus all or anything else references,
12 nor do I find anything at all that talks about
13 delete/insert modifications.
14   Why did you not address those portions of
15 this claim element?
16   MR. SCHEINFELD: Objection. No
17   foundation, vague. And mischaracterizes
18   his chart and testimony. Lacks foundation
19   is another way to say it.
20 BY MR. BERTIN:
21   Q   Well, you have plenty of opportunity
22 to give me the foundation.
23   A   So a number of these terms, such as
24 "due to delete/insert modifications" it is
25 implicit somehow these delete/insert

1 modifications have occurred already. And then
2 this code was assumed to be playing with those
3 references.
4   Do you have additional questions about
5 that?
6   Q   Well, I heard you use the words
7 "implicit" and "the code is assumed to be
8 playing with", but I would like you to point to
9 something that you said or something that you
10 can find that says anything at all about
11 delete/insert modifications and doing anything
12 based on them.
13   A   (Reviewing document.) So these
14 references referred to in the second column are
15 coming from -- are discussing, both in the old
16 data table and the new data table. It is
17 assumed by the discussion of Courgette and
18 where it was meant to be used, that there were
19 insert/delete modifications. And the patent
20 points out that such insert/delete
21 modifications modify references.
22   So it then follows that the references
23 that are being addressed by this code are quite
24 likely to have come from insert and delete
25 modifications.

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 1     Q   Yeah, I still haven't heard you
 2  identify any code within Courgette, or anything
 3  that you've seen anywhere for that matter, that
 4  looks for delete/insert modifications and then
 5  makes any modifications based on delete/insert
 6  modifications in any way.
 7     But I would be happy for you to point me
 8  to exactly where you see that or where you have
 9  said that somewhere.
10        MR. SCHEINFELD:  Objection, vague.
11        THE WITNESS:  I felt, when reading
12     the text of Claim 42 that said, "new data
13     table due to insert modifications", it
14     wasn't really necessary.
15  BY MR. BERTIN:
16     Q   Okay, so, if I understand you
17  correctly, this part of the claim is not
18  necessary.  Is that what you're saying?
19     A   No.
20        MR. SCHEINFELD:  No -- sorry.
21     Objection, vague.
22        THE WITNESS:  That the additional
23     constraint, saying "due to delete/insert
24     modifications" wasn't really a constraint,
25     as all such modifications were likely due
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 1     to delete/insert.  The embodiment doesn't
 2     particularly distinguish and I saw no
 3     particular need to mention that.
 4  BY MR. BERTIN:
 5     Q   Okay, and yet in paragraph 17 of the
 6  declaration, your concluding remarks on the
 7  patent itself, in the very last sentence, you
 8  conclusively state:
 9     "Since corresponding reference entries are
10  assigned corresponding labels, changes in the
11  reference or target of a reference entry due
12  solely to insert and delete modifications will
13  not be included in the difference result."
14     That's the whole point of the patent;
15  isn't it?
16        MR. SCHEINFELD:  Objection, vague.
17        THE WITNESS:  Well, no.  We've had
18     this discussion earlier, that that is a
19     point of the patent, but not the whole
20     point.
21  BY MR. BERTIN:
22     Q   Well, why did you think to mention
23  it, but not only mention it, but include it
24  prominently in your discussion of the patent,
25  and yet when it comes to applying Claim 42, and
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 1  the other claims for that matter on the
 2  Courgette product, you treat this language as
 3  unnecessary?
 4        MR. SCHEINFELD:  Objection.
 5     Mischaracterizes his testimony and
 6     the declaration.
 7        THE WITNESS:  I felt the statement
 8     and that additional mention in Claim 42
 9     was a bit like saying, "Dogs with four
10     legs."  If you just said "dogs", we would
11     know what you're referring to because all
12     of them do happen to have four legs.
13        And so, similarly, the difference due
14     to delete/insert modifications, well,
15     almost all of them are due to delete and
16     insert modifications.
17  BY MR. BERTIN:
18     Q   How do you account for the patent
19  saying, quote, "The present invention is based
20  on the observation that the relatively large
21  size of the difference result stems from the
22  alteration of reference in reference entries as
23  a result of other newly inserted entries and/or
24  entries that were deleted"?
25     And this is in column 3, lines 31 through
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 1  35.
 2     A   (Reviewing document.)  So, again, I
 3  find that language a bit of an over
 4  simplification, because it's actually not
 5  mathematically possible, what it's describing,
 6  but if taken as part of the behavior, instead
 7  of a complete and entire description of
 8  behavior, it is -- it is accurate.
 9     Q   So are you --
10        MR. SCHEINFELD:  I'm sorry.  Were you
11     done?
12        THE WITNESS:  Yes.
13  BY MR. BERTIN:
14     Q   Are you disagreeing with the
15  inventor?  Because the inventor seems to pretty
16  clearly state that his invention is based on
17  this very thing that you have ignored in the
18  claims.
19        MR. SCHEINFELD:  Objection.
20     Mischaracterizing the document and
21     his testimony.
22        THE WITNESS:  I'm not ignoring that
23     part of the claim.  And did I think the
24     inventor was wrong when this was written
25     into the patent?  No.  Would I have
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1   written it a little bit differently?
2   Perhaps. Do I think it's misleading? No.
3 BY MR. BERTIN:
4   Q   Isn't there another possibility that
5 this is the essence of the invention? I mean,
6 when the inventor comes out and says, "the
7 invention is based on this," should that be a
8 signal that maybe this is an important part of
9 the patent?
10   A   Well, and I do agree that this
11 observation about the big differences usually
12 coming from these reference changes is one of
13 the central ideas of the patent.
14   Q   Okay. And the patent continues on in
15 column 3, and it says:
16   "On the basis of this observation, the
17 invention aims at generating a modified old
18 program and a modified new program wherein the
19 difference in references in corresponding
20 entries in said old and new programs, as
21 explained above, will be reflected as invariant
22 entries in the modified old and new programs.
23 The net effect is that the invariant reference
24 entries between the modified old program and
25 the modified new program will not appear in the

1 difference result, thereby reducing its size as
2 compared to a conventional difference result
3 obtained by hitherto known techniques."
4   Again, this is all referring to
5 insert/delete modifications and how to handle
6 references that change as a result. How much
7 prominence did you give this language in your
8 analysis?
9   A   So, this notion of invariant
10 reference entries, and the effect of
11 essentially hiding them from traditional diffs,
12 I do agree is central to the patent. So in
13 this infringement analysis, I went looking for
14 something that looked like it was making
15 references invariant.
16   Now, honestly, the contents of my
17 infringement analysis in that particular box is
18 not very precise. And it's -- that's probably
19 not the best argument for it at the time. This
20 was one discussion of it.
21   And the Chrome developer documentation,
22 which I had consulted, it's at the top of the
23 page 27270, it said:
24   "Addresses in the two symbol tables are
25 matched on their statistical properties which

1 ensure the index lists of many long common
2 substrings."
3   And so, to me that is equivalent to trying
4 to identify invariant references. So what I
5 probably should have done is include some of
6 that text in that box under "Infringement
7 Analysis" as well.
8   Q   Okay, I still haven't heard you
9 identify anything relating to insert and delete
10 modifications and doing anything based on
11 insert and delete modifications.
12   And I believe you testified earlier that
13 it wasn't the language, you didn't believe it
14 was necessary.
15   A   Um hum.
16   Q   But if you think it is necessary,
17 then please identify where Courgette is doing
18 this.
19   MR. SCHEINFELD: Objection to the
20 extent it mischaracterizes the witness's
21 testimony.
22   THE WITNESS: Again, I believe saying
23 "delete/insert modifications" explicitly
24 is not necessary there, since it is
25 implicit somehow.

1   However, again, in the Courgette
2 developer documentation it actually says:
3   "When you add a few lines of code,
4 for example, a range check to
5 prevent buffer overrun, all the subsequent
6 code gets moved to make room for the new
7 instructions."
8   And then it goes on to say:
9   "The compiled code is full of
10 internal references where some instruction
11 or datum contains the address of another
12 instruction or datum."
13   So based on also looking at the
14 developer documentation, it seemed clear
15 to me that the developer of Courgette had
16 also recognized that these insert/delete
17 modifications changed things, and to sort
18 of, somehow, counteract those changes, to
19 predict those changes, would greatly
20 reduce the size of the diff.
21 BY MR. BERTIN:
22   Q   So where -- where in Courgette is the
23 developer actually recognizing insert and
24 delete modifications and then treating them as
25 a class in any way different than anything

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1 else?
2   MR. SCHEINFELD: Objection.
3   Vague and mischaracterizes his
4   testimony.
5   THE WITNESS: My understanding is
6   that it is sufficient to infringe if --
7   for, in this case, the references that
8   arise due to delete/insert modifications
9   are considered. So provided you consider
10   them, you infringe.
11 BY MR. BERTIN:
12   Q   All right, are you saying that
13 Courgette does not include in the difference
14 result references that are changed due to
15 insert/delete modifications?
16   MR. SCHEINFELD: Objection, vague.
17   THE WITNESS: Can you read that back
18   to me.
19   (The pending question was read back
20   by the reporter.)
21   MR. SCHEINFELD: And I will add
22   incomplete hypothetical. No foundation.
23   THE WITNESS: I do not believe that,
24   no.
25   MR. BERTIN: I just want to note for

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1   the record that -- I'm sorry.
2   I just want to note for the record
3   that counsel for Red Bend also identified
4   on page 6 of its motion for preliminary
5   injunction the very important quotations
6   that I just read into the record from
7   column 3 of the patent at lines 31 through
8   46, quoted in full.
9 BY MR. BERTIN:
10   Q   Have you read the motion for
11 preliminary injunction?
12   A   I believe I have.
13   Q   Okay, in terms of -- well, we'll come
14 back to this element. I want to continue on to
15 element (c) for the time being.
16   A   (Referring to document.)
17   Q   "Generating said compact difference
18 result utilizing said modified new data table
19 and modified old data table."
20   And -- and you, in the chart, read this on
21 the assembly language in some way; is that
22 correct? Maybe you can elaborate on what
23 you've done here.
24   A   You're referring to the paragraphs
25 that quoting Courgette transforms the

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1   program --
2   Q   Yes.
3   A   -- at the bottom of that?
4   My understanding of the claim is that a
5   step in the program must involve taking a
6   modified version of the old program, a modified
7   version of the new program, and from the
8   observation of those two, produce some
9   difference result.
10   And so what I looked for in the Courgette
11 developer documentation was whether I can
12 identify a modified new data table and a
13 modified old data table being passed to
14 something that was generating a difference
15 result.
16   And I found that at the bottom of this
17 page in Exhibit 7, labeled 272269, where it was
18 giving the instructions for the server. And
19 near the end -- and that's actually the
20 beginning of the next page, bsdiff, which is
21 explained earlier in this document as being a
22 difference utility, has been given a modified
23 version of the old program and a modified
24 version of the new program.
25   Q   Okay, and so your testimony is that

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1   the language of the claim generating said
2   compact difference result utilizing at least
3   said modified new data table and modified old
4   data table is bsdiff generating difference
5   result from the assembly language version, or
6   assembly level version of the old and the new
7   programs; is that correct?
8   A   Not quite. In the Courgette
9   developer documentation it mentions this adjust
10 method that also looks at the new and the old
11 to produce the new adjusted, and that's
12 actually what's fed to bsdiff.
13   Q   Okay. So, it's an adjust -- for the
14 new program at least, there is an adjusted
15 version of the assembly level representation;
16 is that correct?
17   A   That's correct.
18   Q   And then element (d), you read on the
19 transmission of the output of bsdiff, in
20 effect; is that correct?
21   MR. SCHEINFELD: I'm sorry, can I
22   have that question read back?
23   (The pending question was read back
24   by the reporter.)
25   MR. SCHEINFELD: Just so the record

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 1      is clear, we are talking about a new claim
 2      now, 43, I believe.
 3          MR. BERTIN:  Oh, oh, I'm sorry.
 4          THE WITNESS:  Yes.
 5          MR. BERTIN:  Did I bleed into the
 6      next thing?
 7          THE WITNESS:  Yeah, so it's odd that
 8      the patent uses D, but also clearly marks
 9      it as 43.
10          MR. BERTIN:  Well, you're correct.
11      Sorry about that.
12  BY MR. BERTIN:
13      Q   To be clear, element (d) is part of
14  Claim 43, and for some reason in your chart I
15  don't see any of the typical preamble language
16  that would be associated with a dependent
17  claim, Claim 43.
18      A   Yes.
19          MR. SCHEINFELD:  Is there a question
20      pending?  I'm sorry.
21          MR. BERTIN:  So I guess, just to
22      clarify the record, really, it appears
23      that page 4 of Exhibit C begins a new
24      claim, 43, but for whatever reason the
25      preamble of Claim 43 was omitted.
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 1  BY MR. BERTIN:
 2      Q   And I guess that the question -- I
 3  would ask the witness to just confirm that
 4  that's the case.
 5      A   That looks -- that looks correct, we
 6  did not copy it.  On the other hand, as soon as
 7  you said, "said compact difference result," it
 8  begs the question of, well, what was said.
 9  Well, clearly it was what's described above.
10  But, yeah, I consider that a typo.
11      Q   Okay.  And to be clear, element (d)
12  you believe is met by Courgette's output of a
13  difference result from the bsdiff portion of
14  the program; is that correct?
15      A   Actually, in this analysis, I don't
16  particularly link it directly to the output of
17  bsdiff.
18      Q   I believe you testified a moment ago
19  about element (c) and you mentioned bsdiff; is
20  that correct?
21      A   That is correct.  It is clear that it
22  runs bsdiff.
23      Q   And so I agree with you that bsdiff
24  does not appear in your chart on page 4.  So
25  I'm really asking you whether your testimony is
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 1  that the compact difference result is output by
 2  the bsdiff portion of Courgette?
 3      A   If I remember in the source code,
 4  effectively it is transmitted directly from
 5  bsdiff.  In practice, there are probably a
 6  number of copies made in-between, but not any
 7  material difference.  In any case, it's clear
 8  that the output is derived in some sense,
 9  perhaps very simply, from the output of bsdiff.
10      Q   Okay.  Going back to page 3 of
11  Exhibit C and the top central box.
12      A   (Referring to document.)  I'm sorry,
13  which page of which?
14      Q   Page 3 of Exhibit C to your
15  declaration.
16      A   (Referring to document.)
17      Q   You appear to refer to program "m"
18  and program "p", and AssignOne of
19  adjustment_method.cc.
20          And as far as we can tell, there is no
21  source code actually used by Courgette that
22  refers to a program "m" or "p", or that
23  embodies a method AssignOne of
24  adjustment_method.cc.
25          So the question is:  Is that a mistake,
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 1  are these mistakes in your analysis?
 2      A   To answer that I would want to
 3  consult the source code to do that.  I'm pretty
 4  sure I saw these names and these file names and
 5  copied them down directly at one point.
 6      Q   And how about the method AssignOne of
 7  adjustment_method.cc, as you sit here today do
 8  you know if this is correct that Courgette
 9  actually runs that method?
10      A   Let's see.  (Reviewing document.)  So
11  to answer that, I would want to consult the
12  notes that I had taken as I was --
13      Q   Okay.
14      A   -- watching the program run.
15      Q   Are these what you produced today or
16  the stuff that you produced earlier on?
17      A   The stuff that I produced earlier on,
18  I would have it.  The stuff that I produced
19  today was that, plus some additional stuff not
20  relevant to that in particular.
21          MR. BERTIN:  Okay.  Let's go ahead
22      and mark an additional exhibit.
23          (Exhibit 9 marked for
24      identification.)
25          MR. SCHEINFELD:  Just, while the
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50 (Pages 194 to 197)

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1   witness is looking at the code, we haven't
2   designated any portion of this transcript
3   as confidential, or highly confidential or
4   attorneys' eyes only. I'm just wondering
5   what category, if any, you would like to
6   classify this transcript.
7   MR. BERTIN: Yeah, I think so far, as
8   least from our perspective, nothing has
9   been confidential, because the source code
10   is open source.
11   MR. SCHEINFELD: We agree.
12   MR. BERTIN: But if you think that
13   there's something that should be
14   confidential, we would be happy to talk
15   about it. Counselor, do you have a
16   different view?
17   MR. SCHEINFELD: Nothing at the
18   moment.
19   MR. BERTIN: Nothing yet. We can
20   both reserve the right to designate
21   portions. And there may be some stuff
22   coming at the end that arguably could be
23   considered confidential.
24   MR. SCHEINFELD: Okay.
25   MR. BERTIN: But again, not a big

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1   volume.
2   A   So in my notes I have evidence that
3   this program, assembly program is, file
4   assembly_program.cc does exist. I downloaded
5   it, found it had 371 lines.
6   Q   You're looking at the --
7   A   On the front page here.
8   Q   On the front page of what we have
9   marked Google 9. And where, which method are
10   you referring to?
11   A   Well, the first question would be, I
12   mentioned two -- I mentioned a file, or two
13   files, in this infringement analysis.
14   Assembly_program.cc and adjustment_method.cc.
15   And so a first question is whether those
16   files exist, or did I get that wrong, and both
17   of those files are listed here on the front.
18   The numbers to the left are the number of lines
19   that were counted in each one of them, and both
20   of them are present in the source code.
21   Q   Okay. Well, I mean, now you
22   testified earlier that source code can include
23   portions that are never actually used in an
24   executable program. And just from looking at
25   the source code, you may not know whether

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1   something is actually used or not; is that
2   correct?
3   A   That's correct. And, in fact, I'm
4   going to concede this point now. I now know,
5   after detailed looking at the Courgette code,
6   that most likely this adjustment_method file is
7   not used in the standard distribution. That
8   the code is effectively dead. But instead, I
9   believe it's adjustment_method_2 that's
10   actually being used.
11   Q   Okay, and so the declaration is wrong
12   to the extent that you relied on method
13   AssignOne, because that's not used; is that
14   correct?
15   MR. SCHEINFELD: Objection.
16   Mischaracterizes the testimony and
17   vague.
18   MR. BERTIN: I will take your answer.
19   THE WITNESS: Okay. Now that
20   particular box I don't consider a very
21   good argument for infringement.
22   BY MR. BERTIN:
23   Q   Okay. Okay, and did you discover
24   this mistake just sitting here now, or is this
25   something that you discovered in the work that

Page 201

1   you did after November 17th?
2   A   That this declaration was wrong in
3   this box, I just discovered now. Some of the
4   evidence that would lead it to be wrong, I
5   definitely discovered after November 17th.
6   Q   Okay, and so did referring to your
7   notes in Exhibit 9 help you make that
8   determination?
9   A   In part, yes.
10   Q   And can you explain how?
11   A   Okay. So on the fourth page, this is
12   SE0004, roughly ten lines from the bottom,
13   there is a line -- let's see. "1125/230009:
14   INFO: adjustment_method_2.cc."
15   Q   Okay.
16   A   And I'm recalling now that there were
17   two, at least two so-called adjustment methods
18   in the Courgette source code. And only one of
19   them, adjustment_method_2, was enabled by
20   default.
21   Q   Okay.
22   A   And now I realize that the code that
23   I cited in the infringement analysis referred
24   to adjustment_method_1, or just
25   adjustment_method, which in all likelihood was

51 (Pages 198 to 201)

 1 not used.
 2   Q   Okay. And in terms of reading this
 3 document, there are several dates that appear
 4 on the document, including 11/25. And it
 5 appears from this document that you ran
 6 Courgette for the first time on 11/25,
 7 November 25th.
 8   Can you comment on that and on the date
 9 that appear in this document?
10   A   So by "this document" you're
11 referring to the Google Exhibit 9.
12   Q   Yeah.
13   A   And when I look at Exhibit 4, which
14 is my timesheet, I have the first comments
15 about examining the Courgette code on
16 November 25th. And, in fact, I have not
17 previously noticed that the 1125 number at the
18 beginning of these lines is a date, but that
19 seems a reasonable interpretation of it.
20   That particular output was generated
21 directly by the Courgette program, and I did
22 not attempt to understand every single
23 character produced.
24   Q   Okay.
25   A   But it's -- certainly that section of

 1 the document I had created on November 25th.
 2   MR. BERTIN: Okay. I'll tell you
 3   what, why don't we do a five-minute break
 4   or so, and I want to check my notes and
 5   then maybe we can do a final push and be
 6   done.
 7   MR. SCHEINFELD: Okay.
 8   THE VIDEO OPERATOR: Going off the
 9   record, the time is 4:40.
10   (Recess.)
11   THE VIDEO OPERATOR: One moment.
12   We're back on the record, the time is
13   4:54. This is tape 6.
14   MR. BERTIN: Okay, I want to mark a
15   new exhibit.
16   (Exhibit 10 marked for
17   identification.)
18   MR. BERTIN: This is Google
19   Exhibit 10, it bears Bates numbers SE02490
20   to SE02509.
21 BY MR. BERTIN:
22   Q   And I'm going to ask you,
23 Dr. Edwards, what is this document?
24   A   I am not sure. So it looks like it's
25 a disassembly of one of the sample files that

 1 was distributed with Courgette. I may have
 2 looked at it. I'm not sure that I did.
 3   Q   Okay. Is this --
 4   A   Do you know the -- do you know the
 5 original file name of this?
 6   Q   I don't, but this was something that
 7 was produced along with the documents that you
 8 relied upon.
 9   A   Okay.
10   Q   Pursuant to the subpoena.
11   A   Uh hum.
12   Q   Do you know who generated this
13 document?
14   A   I don't, but I probably did.
15   Q   Okay.
16   A   Again, I can't recall with certainty
17 generating this particular document.
18   Q   Okay.
19   A   But I'm not going to argue with you
20 about it.
21   Q   Okay, well, that's fine. Would it
22 help you to refer to your timesheet, Google
23 Exhibit 4, to determine whether or not you
24 created it?
25   A   No, because I don't have comments in

 1 my timesheet at the level of I created this
 2 file, I created that file. I may very well
 3 have generated this at one point during my
 4 analysis.
 5   Q   Okay, what do you think this document
 6 is?
 7   A   My best guess is that this is the
 8 output from a variant of objdump,
 9 O-B-J-D-U-M-P, that in my notes -- (Reviewing
10 document.) Ah, yes. On Exhibit 9, this is the
11 bottom -- this is page 00008, I have notes that
12 I installed a variant of this objdump utility.
13 And in all likelihood this file was generated
14 by that utility.
15   Q   Okay, and the document you referred
16 to to figure that out is your notes document
17 that we were just looking at?
18   A   That's correct, Exhibit 9, Google
19 Exhibit 9.
20   Q   What is objdump? By the way, can the
21 court reporter spell that?
22   A   I spelled it. It's a standard
23 program on Unix machines, primarily, that dumps
24 the contents of object files and will report
25 various information about them.

52 (Pages 202 to 205)

1 Q Okay. And when it dumps them, does
2 it disassemble them at the same time or in some
3 way assign mnemonic codes to them?
4 A It can.
5 Q Okay.
6 A And in certain settings it does do a
7 form of disassembly and that's what I suspect
8 Exhibit 10 is. In other form -- sorry. It can
9 disassemble programs. If you ask it to, it
10 will. In other modes it just reports numbers
11 or statistics.
12 Q Okay. And does it appear that you or
13 somebody asked it to disassemble?
14 A Yes, this document looks like a
15 disassembly.
16 Q Okay, and how can you tell?
17 A My familiarity with x86 instruction
18 codes, things like "mov" and "ret" and "test"
19 and "push" are all parts of x86 assembly
20 language. The fact that it says "Disassembly"
21 at the top is also a strong hint.
22 Q Okay. At the top left-hand corner of
23 Google 10 appears setup1.exe. So is it your
24 understanding that this is a disassembled
25 version of setup1.exe?

1 A I expect that's the case.
2 Q And setup1.exe is the program that's
3 included within Courgette to use as the old
4 program within a test case to see if Courgette
5 is working, for example; is that correct?
6 A It's the old file. I never tried to
7 execute it, but I presume that's what it is.
8 Q Okay. And, and what is its purpose?
9 A What is the purpose of setup1.exe?
10 Q Yeah.
11 A It's presence in the Courgette source
12 tree is mostly one, I imagine, to be used as a
13 demonstration of whether Courgette operates or
14 not. So a test case.
15 Q Okay, let's look at the very -- well,
16 let's look at the line near the top that, going
17 from left to right, reads, "401000:", and then
18 "8b 41 04, and then "mov", M-O-V, followed by
19 "0x4" and a bunch of other stuff.
20 A I know the line you mean.
21 Q Okay. What is going on here, what is
22 "mov"?
23 A Most likely this instruct -- this is
24 an x86 machine instruction that is saying move
25 some data in memory whose address is given by

1 taking the contents of the ecx register, adding
2 4 to it, and moving it into eax -- or,
3 actually, it might be the reverse. One is the
4 source, one is the destination. I can never
5 remember which.
6 Q Okay, so the idea is that you're
7 moving data from memory into a register?
8 A Or vice versa.
9 Q Or vice versa. And the address of
10 the data in memory is determined by the value
11 in the ecx register plus 4; is that correct?
12 A I believe that's the correct -- I
13 believe that's the correct interpretation of
14 the addressing for this instruction.
15 Q Okay. And is this, is this a -- in
16 terms of the reference to memory, is this a
17 relative or an absolute addressing example?
18 A I would say this is register
19 relative. So the address is computed through
20 both a constant, the 4, and a variable, the
21 contents of the register.
22 Q Okay, so it's relative and not
23 absolute; is that correct?
24 A Yes.
25 Q Okay. And would this also be an

1 example of an indirect address?
2 A Yes, if I remember, indirect usually
3 refers to using a register along the way.
4 Q What determines whether you add 4 or
5 some other number like 8 or 2 or 12 or 36?
6 A It's presence as the third byte in
7 that line. So it's the 04 after 8b 41, I
8 expect.
9 Q Okay. And the 8b 41 04, is that a
10 machine code?
11 A Yes.
12 Q Okay, and does the machine code
13 correspond to the move instruction we just
14 looked at?
15 A I believe so.
16 Q Okay, and then what is the "401000:"?
17 A So that is an address for that
18 instruction. I actually don't know how to
19 interpret the output of objdump, whether that
20 is really truly the only address it could end
21 up in memory, or whether that is one possible
22 address.
23 To me, the interesting part are the least
24 significant digits, which are just telling me
25 how far along we are in the file.

1   Q   Okay, so to that point, the machine
2 code 8b 41 and 04 would appear to occupy three
3 byte address positions; is that correct?
4   A   That's correct.
5   Q   And then just beneath 401000, the
6 next entry is 401003 and there is another
7 machine code instruction, "c3"; is that
8 correct?
9   A   Yes.
10   Q   And the increment, you find the
11 increment 3 to be interesting or significant
12 because it's the next, it's the next one in the
13 series after the three bytes; is that correct?
14   A   It's essentially reminding me that
15 three bytes were used in the first instruction
16 there. The first instruction was three bytes
17 long, so that the next one starts at an address
18 ending in 3.
19   Q   And then the next several
20 instructions are one byte long each?
21   A   Yes.
22   Q   Okay. What is -- what is the mov
23 instruction doing at the address 401010?
24   A   It's probably moving that long
25 constant, 4c4814 into the register eax.

1   Q   Okay, do you know that for certain or
2 is it possible that it could be doing something
3 else?
4   A   It's possible that it could be doing
5 something else.
6   Q   Is the possibly something else, or
7 another possibility moving a value at the
8 address indicated by 0x4c4814 into or out of
9 the register eax?
10   A   Yes. Come to think of it, I'm seeing
11 the dollar signs on later instructions. So
12 it's probably not moving the literal value, it
13 probably is reading from memory.
14   However, I question whether 4c4814 is
15 actually the ultimate address from which it
16 will be fetching eventually.
17   Q   Okay, and why is that?
18   A   We are looking at the disassembly of
19 an object file. We are not looking at the
20 contents of a running machine, we are not
21 looking at the contents of memory of a running
22 machine.
23   Q   Um hum.
24   A   So, in fact, the loader, or whatever
25 program decides to execute this, may change

1 that number. And at this point I can't tell.
2   Q   Okay. Are the two "mov" instructions
3 that we've just looked at examples of reference
4 entries?
5   A   Let me reconsider my definition.
6 (Reviewing document.) Yes, by my definition
7 both of those instructions are reference
8 entries.
9   Q   Okay. Do you see any other reference
10 entries on page SE02490?
11   A   The "je" instruction in line labeled
12 401a -- excuse me, 40101a.
13   Q   Okay.
14   A   Also, there is a "call". This is at
15 the line starting with 40102c.
16   Q   How about the one, the "call" that
17 precedes that one at 40101d?
18   A   Probably not, but that's subtle.
19 Embedded somewhere in that up code is something
20 that's telling it to use the register "dx"
21 instead of say "bx" or "cx".
22   So, in fact, there is deeply in there a
23 number that is being used to compute an address
24 eventually. So I'm not sure whether that
25 should or should not fall under the

1 classification of reference entry.
2   Q   Okay, what is the significance of the
3 star in front of %eax?
4   A   I suspect that means -- I'm not sure.
5 My best guess is it means fetch the address in
6 the memory whose address is edx and jump to it.
7   Q   When you say edx, do you mean eax?
8   A   In 401029?
9   Q   I'm sorry, I was looking at 40101d.
10   A   Ah. Oh, okay, I'm sorry. Yes, in
11 that one it's probably look at the contents of
12 register eax, treat that as an address, fetch
13 another address from that data, and then call
14 the function at that address.
15   Q   Okay. And how about the "add"
16 instruction just below it at 40101f, is that a
17 reference entry?
18   A   It could potentially be. It's hard
19 to say in isolation whether that's being used
20 as an address or not.
21   Q   What is --
22   A   No, I --
23   Q   Go ahead.
24   A   I'm sorry. Yes, that is a reference
25 entry, because esp almost certainly contains an

54 (Pages 210 to 213)

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1 address. We are adding something to that
2 address. So the 4 is a reference in that
3 sense, and that makes 40101f a reference entry.
4   Q   Okay. And what is the significance
5 of the dollar sign there in front of 0x4?
6   A   I believe that indicates the 4 is a
7 constant to be added directly.
8   Q   Okay, as opposed to an address or
9 something else?
10   A   Yes, as -- as opposed to an address
11 or something else. Well, as opposed to telling
12 the processor to go and fetch something from
13 location 4 to then add to esp, that's not what
14 I believe it is doing.
15   Q   Okay. How about the next instruction
16 at 401022, the "mov" instruction there, is that
17 a reference entry?
18   A   I'm going to say probably not.
19 However, again, something subtle is happening
20 within the bits of this instruction. It is
21 saying move esi to eax, mov the data pointed to
22 by esi to eax, but within the coding of that
23 instruction it is distinguishing between that
24 and, I'm sure there is another variant that
25 says move esi to ebx. So probably not, but

215

1 maybe.
2   Q   Okay, how about the next "mov"
3 instruction?
4   A   I say that is a reference entry. The
5 8 is being used to compute an address. The 0x8
6 is being used to compute an address.
7   Q   Okay. And then how about the "mov"
8 instruction right after that?
9   A   Probably not, for the same reason I
10 mentioned in 401022, there are bits within the
11 op codes, within the bytes, that represent the
12 instruction that are describing which registers
13 to use. And in some sense, what a register is
14 is a form of address.
15   Q   Okay, and how about the one right
16 below it, the call *%edx at 029?
17   A   Yeah, similar case as before,
18 probably not. But again, there is something
19 that's choosing which register to use that
20 could be a -- could be construed as a
21 reference.
22   Q   Okay. And then I believe you said
23 earlier that 40102c is a reference?
24   A   That is correct. I believe that to
25 be a reference entry.

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1   Q   Okay, and then how about the one
2 right after that, the add instruction?
3   A   Yes, for the same reason I said for
4 40101f. Esp almost certainly holds an address,
5 and the 4 is being added to it to create
6 another address.
7   Q   Okay. Any others on this page?
8   A   None that come to mind.
9   Q   Okay. Okay, so at least as far as
10 this page is concerned, there are several
11 different types of instructions that -- that
12 could or should be considered reference
13 entries; is that right?
14   A   That's right.
15   Q   What is je instruction at 40101a?
16   A   That's probably "jump if equal", and
17 so it probably looks at the contents of the
18 status register that was calculated, perhaps by
19 the "mov" instruction immediately before it,
20 I'm not sure. And it's probably giving us --
21 yes. The 06 is probably a relative address.
22 So that is a reference. So this is.
23   Q   Okay. Okay, and then would you,
24 would you characterize the je instruction as a
25 conditional jump?

217

1   A   Yes.
2   Q   Are there other examples of
3 conditional jumps?
4   A   There typically are many. For
5 example, there might be "jump not equal".
6   Q   Okay, and are there still other
7 flavors or types of conditional jumps?
8   A   Many, many more.
9   Q   Okay. Okay, uhm, so in terms of
10 Courgette, have you determined which reference
11 entries Courgette handles and which it does
12 not?
13   MR. SCHEINFELD: Objection, vague.
14   THE WITNESS: Not entirely. I have
15   some suspicions. I would not be
16   comfortable saying it absolutely finds
17   these and absolutely does not find those.
18 BY MR. BERTIN:
19   Q   Okay. Is the answer -- well, is this
20 something that you looked into at all prior to
21 the 17th of November?
22   A   I did not consider that detail before
23 November 17th, no.
24   Q   Okay, and could you determine that
25 detail from the Courgette code itself?

55 (Pages 214 to 217)

218

1   A   Yes.
2   Q   Okay, but, to date anyway, you have
3 not done so; is that correct?
4   MR. SCHEINFELD: Objection.
5   Mischaracterizes testimony.
6   THE WITNESS: To date I have done
7   some analysis of the code. I have not
8   specifically tried to answer that
9   particular question.
10 BY MR. BERTIN:
11   Q   Okay. So just to be specific on this
12 point, you don't know which reference entries
13 Courgette handles within the x86 instruction
14 set and which it does not; is that correct?
15   MR. SCHEINFELD: Objection, vague.
16   THE WITNESS: I don't know exactly,
17   in that if I were to -- I don't know
18   exactly. I have strong suspicions, but if
19   I picked a particular one, I think it's
20   entirely possible that you, that somebody
21   could convince me that, no, it does not
22   check that.
23 BY MR. BERTIN:
24   Q   Well, we're very interested in your
25 strong suspicions, so what are they?

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1   A   From my recollection of the source
2 code, one of the things Courgette does to begin
3 with is look at relocation information in the
4 Windows executable. It is my understanding
5 that these are addresses that have to be
6 updated when the program is relocated, which
7 would be one form of reference entries.
8   I believe also Courgette scans the object
9 code looking for bytes that are likely to start
10 branch instructions, other instructions that
11 directly refer to memory. And I believe it
12 also captures those references as well.
13   Q   Okay, on what do you base your belief
14 that it also captures those references as well?
15   A   I remember a single line in the
16 Courgette source code with a comment above it
17 saying something like, "are we at a branch,"
18 "are we at a conditional instruction".
19   Q   Okay. Have you done any kind of
20 rigorous analysis, though, of reference entries
21 and determining how many Courgette handles
22 versus how many it doesn't handle?
23   MR. SCHEINFELD: Objection, vague.
24   THE WITNESS: I have not tried to
25   answer that specific question. I have

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1   seen substantial evidence in the source
2   code, in comments, in the developer blog,
3   and others that one of the goals is to try
4   to capture as many references as possible.
5 BY MR. BERTIN:
6   Q   But you don't know as of -- well,
7 could you say, as a percentage, how many it
8 handles versus how many it does not handle?
9   MR. SCHEINFELD: Objection, vague.
10   THE WITNESS: Definitely not a
11   percentage. Of course, it's also a strong
12   function of the program you submit to it.
13   And so, to answer that question with a
14   concrete number, I am sure you could find
15   a program that had exhibited more than
16   that number or less than that number. So
17   there is no -- there is no simple answer
18   like 70 percent. Any such answer is
19   wrong.
20 BY MR. BERTIN:
21   Q   I suppose it depends on what the
22 percentage is; right? I mean, if it's a
23 percentage of instructions within, you know,
24 thousands of various programs, I agree. You
25 could also look at it as a percentage of the

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1 x86 instruction set.
2   Out of the instructions within the x86
3 instruction set that would be considered
4 reference entries, what percentage does
5 Courgette handle versus what percent it does
6 not and that would be a more -- that's a
7 knowable figure?
8   A   I disagree for the reasons we just
9 discussed earlier. For that to be well
10 defined, you have to tell me what all of the
11 x86 instructions are. And this is subject to
12 argument.
13   Q   And you, I understand from your
14 background, that you have written programs that
15 parse; is that correct?
16   A   Yes.
17   Q   And programs are nothing more than
18 discrete, ah, than instructions to a processor
19 to do discreet tasks; is that right?
20   A   Programs include instructions to a
21 processor -- instructions to perform concrete
22 tasks. But programs usually consist of many
23 more things.
24   Q   But Courgette would have to have a
25 discrete of set of instructions that it

56 (Pages 218 to 221)

1 operates on in order to parse them out; is that
2 correct?
3   It's not just going to magically handle
4 reference entries unless some programmer sat
5 down and said, okay, now handle this reference
6 entry as part of the program; isn't that
7 correct?
8   MR. SCHEINFELD: Objection, vague.
9   THE WITNESS: No. What is in
10   Courgette are a series of rules for
11   identifying references in a program. How
12   those rules behave on different programs
13   can be predicted.
14 BY MR. BERTIN:
15   Q   So you could have, but did not,
16 examine those rules to determine what reference
17 entries Courgette operates on and what
18 reference entries it does not; correct?
19   A   I examined that in part. I know that
20 my knowledge of it is incomplete.
21   Q   When Courgette does not recognize a
22 reference entry as being a reference entry, how
23 does it treat the reference entry?
24   A   Your question doesn't quite make
25 sense, because you're saying it is a reference

1 entry, but then it isn't, but then it is.
2   I think you're asking if something should
3 be considered a reference entry and Courgette
4 does not treat it as such, how does it treat
5 it?
6   Q   If you would like to answer that
7 question I will take your answer to that
8 question.
9   A   Okay. My understanding is that it
10 would treat the data in the mismatched
11 reference entry as raw bytes. And the process
12 in Courgette is complicated, but eventually the
13 effect, if that reference entry had changed,
14 will finally make its way into the final
15 difference result.
16   Q   Okay.
17   MR. BERTIN: Okay, let me quickly
18   mark a couple of more references and I
19   will try to move through these quickly.
20   (Exhibit 11 marked for
21   identification.)
22   MR. BERTIN: Okay, so we've just
23   marked and I have handed the witness
24   Google Exhibit 11, which is a multi-page
25   document beginning at RedBend0002931.

1 BY MR. BERTIN:
2   Q   And I just ask the witness if he's
3 ever seen this document before?
4   A   I don't recall, but I suspect I did.
5   Q   Okay. So I just want to refer you to
6 page -- well, the first page of this and the
7 last paragraph.
8   A   (Referring to document.)
9   Q   And it says: "The performance of
10 FOTA -- of the FOTA solution," and FOTA, do you
11 know and what that refers to?
12   A   I'm following the definition of the
13 beginning of this document, Firmware
14 Over-The-Air.
15   Q   Okay, and where you just read at the
16 top of the page it goes on to say, "Updating of
17 Mobile Phones."
18   Is it your understanding that FOTA refers
19 to a technology for updating mobile phones?
20   MR. SCHEINFELD: Objection to the
21   question. It's vague and incomplete.
22   THE WITNESS: It looks like a primary
23   intent of FOTA is meant for mobile phones,
24   but there may be other applications. This
25   is the first time I've seen the acronym.

1 BY MR. BERTIN:
2   Q   Okay. This document suggests in the
3 last paragraph that there are -- that the
4 performance of the FOTA update is determined,
5 in large part, by the underlying technology
6 used to generate and install updates. And then
7 it goes on to talk about memory requirements
8 and bill of materials and bandwidth demands and
9 reliability and development process, user
10 satisfaction, etcetera.
11   And I guess my question is: Do you have
12 any expert knowledge on such FOTA update
13 technology and, sort of, all of these specific
14 factors and how they would affect designing a
15 FOTA update solution?
16   MR. SCHEINFELD: Objection, leading.
17   THE WITNESS: I'm positive there are
18   many aspects of selling FOTA solutions
19   that I'm not particularly expert or
20   familiar with. I do believe that I
21   understand the key technical constraints
22   on the problem.
23 BY MR. BERTIN:
24   Q   And what are the key technical
25 constraints?

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1   A   As it says here, the underlying
2 technology to generate and install updates and
3 memory requirements are one, bandwidth demands
4 are another. Those are, I would probably
5 consider the two mains ones. Primarily
6 bandwidth demands.
7   Q   On page 3 it goes on, under
8 "Reliability", the second paragraph under
9 "Reliability", on the third page of this
10 exhibit, to say, "Given the limited memory of
11 mobile handsets, it is not possible --"
12   MR. SCHEINFELD: I'm sorry, I'm not
13   with you.
14   A   Which page?
15   Q   So, RedBend 2935. And there is --
16 there are two headings on the page, and I'm
17 referring to text under the second one,
18 "Reliability".
19   And I'm looking at the first two sentences
20 of the second paragraph under "Reliability".
21   Do you see that?
22   A   Yes.
23   Q   I will just read that for the record,
24 it says:
25   "Given the limited memory of mobile

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1 handsets, it is not possible to build the new
2 version side-by-side with the existing version.
3 Instead, updating must occur in place."
4   What is -- is this an important aspect of
5 FOTA technology as well?
6   MR. SCHEINFELD: Objection.
7   No foundation.
8   THE WITNESS: I can't evaluate that.
9 BY MR. BERTIN:
10   Q   But do you have any understanding of
11 what the problem is that they're describing
12 here?
13   A   I understand the problem that they
14 are describing. What I can't speak on is how
15 crucial that is to someone potentially buying a
16 FOTA solution.
17   Q   Okay, but does your expertise lie in
18 this particular area?
19   MR. SCHEINFELD: Objection, vague.
20 BY MR. BERTIN:
21   Q   In terms of advising people on FOTA
22 solutions?
23   A   I would say no. I do not advise
24 people and have not advised people on FOTA
25 solutions.

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1   Q   Okay. Okay, I just want to go back
2 to Google 4 for a moment, which is your
3 timesheet.
4   A   Yes.
5   Q   And I just want to refer to your
6 entries on December 6th. And, in particular,
7 you indicate with respect to the time period
8 4:15 to 5:45 -- hopefully that's p.m.
9   "Figured out enough about the PE file
10 format to understand what the disassembler is
11 doing to it."
12   And I guess my question is that it's not
13 the first time you figured out enough about the
14 PE file format to understand what the
15 disassembler is doing to it?
16   A   I believe my comment is correct, yes.
17   Q   So, prior to this you didn't --
18 anyway I'm not going to repeat it a third time.
19 Okay.
20   Then the next question on this is toward
21 the bottom, on February 1 and February 2 you
22 mention the '713 patent.
23   A   Yes.
24   Q   And I guess my question is -- maybe
25 you just describe the stuff that you did on

229

1 February 1 and 2 with respect to the '713
2 patent?
3   A   Well, I can't recall the rest of the
4 digits in the number on the '713 patent, but it
5 was the one I believe you had produced and
6 brought to the attention of counsel for Red
7 Bend, who then passed it to me and they asked
8 me to read it.
9   MR. BERTIN: Okay. We'll go ahead
10   and mark that as the next exhibit.
11   (Exhibit 12 marked for
12   identification.)
13 BY MR. BERTIN:
14   Q   Okay, we've just marked Google 12 and
15 this should afford you the rest of the digits
16 associated with the '713 patent.
17   Is this, is this what -- is Google 12 what
18 you recall as the '713 patent?
19   A   It is.
20   Q   Okay, uhm -- okay, and this, on its
21 face, appears to be a patent that issued on
22 what date?
23   A   I'm assuming the date of patent is
24 the issue date, January 2nd, 1996.
25   Q   Okay. And have you done any analysis

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1 of this patent and its relationship to the '552
2 Red Bend patent?
3   A I have read it through, tried to
4 understand what it's describing, what sorts of
5 things it teaches, what things it teaches away
6 from.
7   Q Have you done any kind of claim chart
8 or any other kind of invalidity analysis
9 comparing the '713 patent to the '552 patent?
10   MR. SCHEINFELD: Objection, vague.
11   THE WITNESS: I talked about it at
12   length with counsel for Red Bend. We did
13   not create a document like the declaration
14   with any of these grids or anything. It's
15   not been that formal.
16 BY MR. BERTIN:
17   Q Okay. Care to share any of the
18 conversations with your counsel about the '713
19 patent?
20   A I would say the most pertinent is
21 they have not asked me to undertake an
22 invalidity analysis of the '552 patent with
23 respect to the '713 patent.
24   Q Okay.
25   A The obvious question comes up, would

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1 this invalidate '552?
2   Q Right.
3   A And at this point I do not have a
4 definitive answer and certainly have not
5 created document around this.
6   Q Okay. I notice in your expert report
7 you've indicated, or reserved the right to
8 comment on invalidity if it's raised by Google.
9   Indeed, do you have that recollection?
10   A I remember putting that in the
11 report, yes.
12   Q And so is your understanding that
13 your role will be to comment on invalidity at
14 that time, or that you will be instructed to
15 undertake an invalidity or validity analysis at
16 that time?
17   A My understanding is that it is a
18 possibility, but not a foregone conclusion.
19   MR. BERTIN: Okay. Hang on just a
20   moment. I want to collect thoughts and
21   see if we're done.
22   THE VIDEO OPERATOR: Go off the
23   record?
24   MR. BERTIN: Why don't we stay on the
25   record just for a minute.

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1   Okay, Dr. Edwards, I'm pleased to
2 report that at least I'm done, but your
3 counsel has indicated he has some
4 questions for you.
5   MR. SCHEINFELD: I do, I'm just going
6 to wait for documents.
7   MR. BERTIN: You guys want to go off
8 the record for a bit?
9   THE WITNESS: Let's take a break.
10   THE VIDEO OPERATOR: Going off the
11 record, the time is 5:43.
12   (Recess.)
13   THE VIDEO OPERATOR: One moment.
14   We're back on the record, the time is
15 6:03. This is tape 7.
16   MR. SCHEINFELD: Thank you very much,
17 Dr. Edwards, I have a few questions for
18 you.
19   * * *
20   This marks the beginning of the
21 transcript marked Confidential Attorneys'
22 Eyes Only.
23   * * *
24
25

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1   JURAT
2   I, _____,
3 do hereby certify that I have read the
4 foregoing transcript of my testimony taken on
5 _____, 2010, and have signed it subject
6 to the following changes:
7

PAGE LINE   CHANGE   REASON

8
9
10
11
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18
19
20   _____
21
    Sworn and subscribed to before me on this
22
    _____ day of _____, 2010
23
24
25

Veritext Corporate Services

```
                                              234
 1              C E R T I F I C A T E
 2
 3        I, PATRICIA A. SANDS, a Shorthand Reporter
 4    and Notary Public of the States of New York and
 5    New Jersey, do hereby certify that prior to the
 6    commencement of the examination the witness was
 7    sworn by me to testify the truth, the whole
 8    truth and nothing but the truth.
 9
10        I do further certify that the foregoing is
11    a true and accurate transcript of the testimony
12    as taken stenographically by and before me at
13    the time, place, and on the date hereinbefore
14    set forth.
15
16        I do further certify that I am neither of
17    counsel nor attorney for any party in this
18    action, and that I am not interested in the
19    event nor outcome of this litigation.
20
21
22    _____
23    New York certificate No.:  01SA4974309
24    New Jersey certificate No.:  2109345
25
```

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