

# Exhibit 1

STEPHEN FEINER

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

-----X  
MIRROR WORLDS, LLC,

Plaintiff,

vs. No. 6:08 CV 88

APPLE, INC.,

Defendant.  
-----X

\*\*CONTAINS CONFIDENTIAL PORTION\*\*

DEPOSITION OF STEPHEN FEINER

New York, New York

Thursday, January 7, 2010

REPORTED BY: BARBARA R. ZELTMAN  
Professional Stenographic Reporter

Job Number: 27001

1 STEPHEN FEINER  
 2 STEPHEN FEINER,  
 3 having been first duly sworn by  
 4 Barbara R. Zeltman, Notary Public, was  
 5 examined and testified as follows:  
 6 EXAMINATION BY MR. STEIN:  
 7 Q Good morning, Dr. Feiner.  
 8 My name is Ken Stein, and I'm  
 9 going to be asking you some questions  
 10 today.  
 11 Let me start by asking you if  
 12 you have ever been deposed before?  
 13 A Yes, I have.  
 14 Q How many times?  
 15 A Three times.  
 16 Q Three times?  
 17 And for each time, can you tell  
 18 me what it was in connection with?  
 19 A The first time was in connection  
 20 with a case that involved Adobe and  
 21 Macromedia.  
 22 The second time was in a case  
 23 that involved St. Clair Intellectual  
 24 Property and Canon.  
 25 And the third time was in a

1 STEPHEN FEINER  
 2 case that involved Skyline -- I don't  
 3 remember their full name -- and Google.  
 4 Q And in each of those cases, did you  
 5 submit an expert report?  
 6 A Yes, I did.  
 7 Q Did you give trial testimony in any  
 8 of those cases?  
 9 A I gave trial testimony in two of  
 10 those cases.  
 11 Q Which two?  
 12 A The first two.  
 13 Q And when was the first one?  
 14 A When was it? I don't remember. It  
 15 would have been on the list of prior  
 16 engagements that I gave to counsel.  
 17 Q Was it within the last five years?  
 18 A I do not think so.  
 19 Q And the second case, when was that?  
 20 A The Canon case may have been 2005,  
 21 '6, '7, something like that.  
 22 Again, I do not remember the  
 23 exact date. It could have been 2004. I  
 24 don't remember.  
 25 Q In the Skyline case --

1 STEPHEN FEINER  
 2 A I believe that was 2007.  
 3 Q 2007.  
 4 Are all those cases over at  
 5 this point?  
 6 A Those are all over, yes.  
 7 Q Were they all patent cases?  
 8 A They were all patent cases.  
 9 Q What was the subject matter of the  
 10 Adobe -- was that Adobe v. Macromedia?  
 11 A I don't remember if it was Adobe v.  
 12 Macromedia or Macromedia v. Adobe. This was  
 13 a situation where they were suing and  
 14 countersuing each other.  
 15 I know I was involved in two  
 16 cases, one of which they settled before  
 17 the second one reached the point at  
 18 which I was to be deposed. And I don't  
 19 remember whether the two of them were A  
 20 versus B and the second was B versus A,  
 21 or if they were both A versus B.  
 22 That case involved computer  
 23 software that embodied a Macromedia  
 24 patent.  
 25 Q And broadly, what was the subject

1 STEPHEN FEINER  
 2 matter of that patent?  
 3 A The subject matter of the patent  
 4 involved aspects of a drawing system.  
 5 Q So would it be fair to say that the  
 6 subject matter was broadly directed to  
 7 computer graphics?  
 8 A Computer graphics and graphical user  
 9 interfaces.  
 10 Q And what was the subject matter of  
 11 the St. Clair Intellectual Property v. Canon  
 12 case?  
 13 A A set of patents owned by St. Clair  
 14 that were being asserted against Canon.  
 15 Q And just broadly, what was the  
 16 subject matter of those patents?  
 17 A The patents involved certain ways of  
 18 storing images in digital cameras.  
 19 Q Would you broadly characterize the  
 20 subject matter of that case as related to  
 21 computer graphics?  
 22 A I think it could be characterized as  
 23 relating to computer image processing and  
 24 user interfaces for devices such as digital  
 25 cameras.

1 STEPHEN FEINER  
 2 Q So coming back to the first case,  
 3 which party did you represent in the  
 4 Adobe/Macromedia case?  
 5 A I was hired by Macromedia. I'm not  
 6 sure if I actually represented them.  
 7 Q And in the St. Clair v. Canon case,  
 8 which party --  
 9 A Canon.  
 10 Q Canon.  
 11 And the third case, Skyline,  
 12 was that Skyline v. Google?  
 13 A That was Skyline v. Google, yes.  
 14 Q And what was the subject matter of  
 15 that --  
 16 A I'm sorry. I --  
 17 MR. BROWN: Just let him finish  
 18 the question. That makes it easier for  
 19 the court reporter.  
 20 Q What party did you represent in the  
 21 Skyline v. Google case?  
 22 A Google.  
 23 Q And what was the subject matter of  
 24 that case?  
 25 A That case involved certain ways of

1 STEPHEN FEINER  
 2 representing and processing data in systems  
 3 such as -- certain ways of processing and  
 4 accessing data in systems that would  
 5 represent large geographical areas.  
 6 Q Would you characterize the subject  
 7 matter of that case as relating to computer  
 8 graphics?  
 9 A Yes, I would.  
 10 Q I'm sorry if I asked you this  
 11 before, but did you say you testified at  
 12 trial in the first two?  
 13 A I testified at trial in the first  
 14 two, yes.  
 15 Q I actually might have been better to  
 16 say this before. I just want to go over a  
 17 couple of the ground rules before we get  
 18 started with the questions.  
 19 You're probably familiar with  
 20 this from your prior deposition  
 21 testimony and probably from talking to  
 22 your counsel.  
 23 You are represented by counsel  
 24 today?  
 25 A I'm not sure whether I am or not.

1 STEPHEN FEINER  
 2 MR. BROWN: We're representing  
 3 Apple.  
 4 BY MR. STEIN:  
 5 Q You understand that today you will  
 6 be answering questions under oath, just as if  
 7 you were in court before a judge and a jury,  
 8 correct?  
 9 A Yes, I understand.  
 10 Q And you know, we need to get a clear  
 11 transcript. So any time I ask you a question  
 12 that you feel is unclear or needs  
 13 clarification, please let me know, and I'll  
 14 try to make it clear.  
 15 Okay?  
 16 A Yes, I will do that.  
 17 Q And if you answer a question, I will  
 18 assume you understood the question.  
 19 Do you understand that?  
 20 A I understand.  
 21 Q If at any time you need to take a  
 22 break, let me know, and I'll try to  
 23 accommodate your request as soon as I can.  
 24 If there's a question pending, you may want  
 25 to finish that first. But otherwise, I'll

1 STEPHEN FEINER  
 2 try to accommodate your request for a break.  
 3 Do you understand?  
 4 A Yes, I understand. Thank you.  
 5 Q Is there any reason that you can  
 6 think of that you would not be able to give  
 7 your best and most accurate testimony today?  
 8 A No reason that I can think of.  
 9 Q Can you please state your full name  
 10 and address for the record.  
 11 A Do you want my home address or my  
 12 work address?  
 13 Q Home address.  
 14 A My name is Stephen Keith Feiner, and  
 15 my home address is 90 Morningside Drive, New  
 16 York, New York.  
 17 Q You have been retained by Apple as  
 18 an expert in this case, correct?  
 19 A That is correct.  
 20 Q Are you being compensated for your  
 21 testimony today?  
 22 A Yes, I am.  
 23 Q How much is your compensation?  
 24 A \$600 per hour.  
 25 Q Are you being compensated at that

1 STEPHEN FEINER  
2 Q Can you tell me what classes you  
3 have taught at Columbia?

4 A Certainly.  
5 In my first semester at  
6 Columbia, I taught a course on digital  
7 logic, a graduate digital logic course,  
8 which is basic circuitry and principles  
9 that underlie, at a very low level,  
10 digital computers.

11 The second semester, I taught  
12 the graduate software engineering  
13 course.

14 The third semester that I was  
15 there -- I'm not sure I have this  
16 right -- I think I'm actually wrong  
17 about the second semester.

18 The second semester was  
19 probably the first semester that I  
20 taught my computer graphics course.

21 And I know that I taught the  
22 digital logic course only once, and that  
23 was then replaced with the software  
24 engineering course.

25 And I went for a while

1 STEPHEN FEINER  
2 They get course credit for  
3 that, but it's not a course that  
4 actually meets in a room on a regular  
5 basis with lectures.

6 Q Since starting working as an  
7 assistant professor in 1985, what areas of  
8 research focus did you have?

9 A The main foci of my research have  
10 been on various aspects of computer graphics  
11 and user interfaces, including the  
12 development of user interfaces that are  
13 intended to supplement or replace the  
14 interface that one might experience in a  
15 graphical user interface to an operating  
16 system.

17 In many cases, my research has  
18 addressed ones that take advantage of 3D  
19 interaction, although there have been a  
20 number of projects that we've worked on  
21 that have been more in the 2D realm.

22 My dissertation work was on the  
23 use of AI techniques to automatically  
24 design pictures, as I had mentioned  
25 before. One of the main themes of my

1 STEPHEN FEINER  
2 alternating semesters, teaching one  
3 course per semester, the graduate  
4 computer graphics course and the  
5 software engineering course.

6 And then there came a time, and  
7 I don't remember what that time was, at  
8 which I replaced the software  
9 engineering course with a user interface  
10 design course.

11 I later taught, at least twice,  
12 a graduate course on mobile and wearable  
13 computing. And now I pretty much  
14 alternate between a user interface  
15 design course and a course on 3D user  
16 interfaces and augmented reality.

17 In addition, I pretty much  
18 every semester teach project courses,  
19 which are ones in which individual  
20 students register, everywhere from  
21 undergraduates all the way up through  
22 graduate students, to work with me and  
23 my students on specific projects,  
24 sometimes on visual projects, sometimes  
25 group projects.

1 STEPHEN FEINER  
2 group has been in fact that research.

3 One of the first projects I  
4 worked on in fact at Columbia, and in  
5 fact one of the longest research  
6 collaborations I've had, was with a  
7 colleague of mine who does natural  
8 language generation. And we've done a  
9 number of projects together that  
10 automatically generate combinations of  
11 graphics and text to explain stuff in a  
12 variety of different domains.

13 I've also done work, both  
14 separately and as well together with  
15 some of the things I just mentioned, on  
16 mobile user interfaces to computer  
17 systems, including wearable ones.

18 A lot of that work has also  
19 concentrated on systems in which the  
20 displays are built into things that are  
21 more or less like a pair of glasses and  
22 that overlay graphics in conjunction, in  
23 some cases, with audio on top of what  
24 you see normally in the world around  
25 you.

1 STEPHEN FEINER  
 2 testifying, as I am right now, with  
 3 regard to this case.  
 4 So here I'm referring to the  
 5 notion of being able to see spread out,  
 6 in the kind of spread-out browsing  
 7 described in the Mander paper, the  
 8 contents of a stack of items.  
 9 Q Do you have a Mac OS X with Leopard?  
 10 A I have personally, although I do not  
 11 use it very much, although it is used by my  
 12 wife, a Mac. But I'm very sure that it does  
 13 not have Leopard.  
 14 Q Have you ever used this particular  
 15 feature shown in the figure at the bottom of  
 16 page Feiner 205?  
 17 A I have used -- I do not personally  
 18 own a Mac that has Leopard on it. I'm trying  
 19 to think if that machine is in my lab.  
 20 I have neither purchased nor  
 21 received in any way, personally or for  
 22 my lab, a machine that has Leopard on  
 23 it.  
 24 I have, however, used at times  
 25 machines owned by my students which I'm

1 STEPHEN FEINER  
 2 pretty sure have included machines that  
 3 are running Leopard. And I may well  
 4 have used this feature on one of those  
 5 machines.  
 6 Q Do you recall using it?  
 7 A I don't know.  
 8 I don't really use their  
 9 machines all that much. Sometimes I use  
 10 them in the process of working on a  
 11 paper, and I may well have played with  
 12 this, and I may well have not. I don't  
 13 remember.  
 14 Q Do you know the relationship between  
 15 the figure shown in the left-hand portion of  
 16 that slide labeled 20 on the bottom of page  
 17 Feiner 205 and the figure shown in the  
 18 right-hand portion?  
 19 A What do you mean by, "the  
 20 relationship"?  
 21 Q Do you understand that when I say  
 22 "slide," this looks like a slide from a  
 23 presentation? And the one at the bottom of  
 24 the page is labeled 20, correct?  
 25 A That is correct.

1 STEPHEN FEINER  
 2 Q And there's two figures at the  
 3 bottom, you know, within slide 20, in that  
 4 figure, correct?  
 5 A That is correct.  
 6 Q To your knowledge, is there a  
 7 relationship between the figure on the left  
 8 and the figure on the right?  
 9 A I believe that there is a  
 10 relationship between them, yes.  
 11 Q And what is the relationship?  
 12 A I believe that both of them show  
 13 different ways of displaying the items that  
 14 are in a stack in a doc.  
 15 Q Do you know if the user selects  
 16 which one of these ways it is displayed?  
 17 A I do not know.  
 18 Q Do you know how to display the one  
 19 on the right?  
 20 A No, I do not.  
 21 Q Do you know, when the stack on the  
 22 left gets too large, whether the system  
 23 automatically displays the one on the right?  
 24 A No, I do not.  
 25 Q Other than this particular feature,

1 STEPHEN FEINER  
 2 do you know of any -- strike that.  
 3 Other than this particular  
 4 feature shown in slide 20 on Feiner 205,  
 5 do you know if Apple has ever  
 6 implemented piles in any form, as  
 7 described in the Mander et al. paper, in  
 8 a commercial product?  
 9 MR. BROWN: Objection.  
 10 A I am not an expert on Apple  
 11 commercial products. So I haven't studied  
 12 Apple commercial products carefully to  
 13 determine whether or not they have actually  
 14 implemented piles in them. I don't know.  
 15 It would not be fair for me to  
 16 give you an answer on that without  
 17 carefully studying all of Apple's  
 18 commercial products.  
 19 Q Can you think of any -- strike that.  
 20 Can you think of any reason why  
 21 a company would not want to implement  
 22 piles as described in the Mander et al.  
 23 paper?  
 24 A There's many reasons that companies  
 25 don't implement things that they have

1 STEPHEN FEINER  
2 developed. They include issues of trying to  
3 incorporate them in a clear and consistent  
4 way within the user interface, if we're  
5 talking about a user interface facility or a  
6 facility that has some kind of user  
7 interface.

8 One reason would be that there  
9 might be issues that would need to be  
10 very carefully resolved to create an  
11 extension that would not break things  
12 that people were already familiar with.

13 So recalling the Mander paper,  
14 for example, there's a number of issues  
15 that are mentioned. I think I actually  
16 discuss some of those in this document  
17 here, which are ways about how one  
18 manipulates a pile.

19 Looking at Page 16, Bates  
20 number Feiner 203, I have some issues  
21 here, such as whether piles are  
22 distinctly manipulatable entities,  
23 whether you can move a pile by clicking  
24 and dragging, or whether you move the  
25 document by clicking and dragging.

1 STEPHEN FEINER  
2 There's other issues, again  
3 based on discussions in the paper, on  
4 slide 17 on Feiner 204. And these are  
5 all things that if one wanted to make a  
6 clean, consistent, understandable user  
7 interface, constrained by the fact that  
8 there already are products that your  
9 company makes whose users will be upset  
10 if you break things that they're used  
11 to.

12 One reason for not implementing  
13 something would be that you may feel the  
14 need to think more carefully about how  
15 to make sure it gets incorporated  
16 properly.

17 Another reason things don't get  
18 implemented could be that they may take  
19 so much code that it would make your  
20 operating system too big.

21 They may take code sufficiently  
22 complicated that you don't want to  
23 assign people to actually work on those  
24 aspects of the operating system when  
25 there are other things you may consider

1 STEPHEN FEINER  
2 to be more important.  
3 There are many, many reasons  
4 that companies, not just Apple, but  
5 other companies I can think of whose  
6 researchers I've spoken with in some  
7 cases, who have gotten the company --  
8 I'm not talking about Apple at this  
9 point, but another company -- to  
10 incorporate an early version of an  
11 operating system release functionality  
12 to do something that they really wanted  
13 to do, and then have that company, folks  
14 who actually worked on the released  
15 operating system, turn around and yank  
16 it out before the release because it  
17 just wasn't at the top of their stack of  
18 important things, and they wanted to  
19 spend their time on other things and  
20 didn't want to include something that  
21 would, for example, maybe not be as  
22 carefully tested as it would need to be  
23 to be put into an operating system,  
24 where things just couldn't afford to not  
25 work really well.

1 STEPHEN FEINER  
2 Q Apart from general considerations  
3 that might apply to a variety of different  
4 types of software, can you think of any  
5 specific reasons why a company would not want  
6 to implement piles in their operating system?  
7 A When you say "piles," do you mean  
8 piles as described in the Mander et al.  
9 paper?  
10 Q Yes.  
11 A And you said outside of which  
12 reasons?  
13 Q Outside of general reasons that may  
14 apply to any product or feature that may be  
15 implemented in a commercial product, can you  
16 think of any specific reasons why a company  
17 would not want to implement piles in  
18 particular in a commercial operating system?  
19 A I thought I gave a specific reason  
20 before. And in fact, on the two slides that  
21 I just mentioned, I mention a variety of  
22 issues that were not just, how do we make  
23 something generic seamlessly part of an  
24 existing product, but here I was discussing  
25 some particular issues having to do with

1           STEPHEN FEINER  
2 art that would make sense to anyone.  
3           The only use of the term  
4 "stream" that I'm familiar with in  
5 computer science would be, for example,  
6 "stream I/O" in UNIX, which I really  
7 don't think this has anything to do  
8 with.  
9       Q Does the term "diary" have a special  
10 meeting in computer science?  
11       A "Diary" does not have a special  
12 meaning in computer science.  
13       Q How about "electronic life"?  
14 Does that have a special  
15 meeting in computer science?  
16       A That does not have a special meaning  
17 in computer science, at least not one that I  
18 know of.  
19       Q Well, what does the phrase "diary of  
20 a person or entity's electronic life" mean?  
21       A If you'll permit me to elaborate a  
22 little bit, thinking in fact electronic life,  
23 there are folks doing artificial life in  
24 computer science -- it's not work that I do,  
25 but I know colleagues of mine who do -- which

1           STEPHEN FEINER  
2 sounds a little bit like it. But I don't  
3 think that has anything to do with that.  
4           I'm trying to think. If  
5 someone said, "electronic life," to a  
6 computer scientist, I suspect that  
7 without any context, some folks would  
8 say, "Are you referring to artificial  
9 life?" Because again, it's a  
10 similar-sounding term.  
11           And as I said, it has nothing  
12 to do, I think, with what's in the  
13 patents.  
14       Q What does the phrase "diary of a  
15 person or entity's electronic life" mean?  
16       A Looking at the specification of the  
17 patent, I think that this is referring to the  
18 things that happen to a person or an entity.  
19 An entity could be a corporation or it even  
20 could be a machine, for that matter. Entity  
21 is a thing.  
22           "Electronic life," I think, has  
23 to do with data. And I think this is  
24 basically talking about the notion of --  
25 because it is in the context of this

1           STEPHEN FEINER  
2 quote, I'm referring to things that are  
3 time ordered.  
4           I think it's talking about a  
5 set of things ordered in time that  
6 correspond to the history of a person  
7 who might be the user of a computer or  
8 an entity that could be the computer  
9 itself or it could be the corporation  
10 the computer was involved in.  
11           And we're talking about  
12 documents that, in this time-ordered  
13 sequence, document the history of that  
14 person or entity, as represented on the  
15 computer.  
16           As one of ordinary skill in the  
17 art who is also familiar with work like  
18 that done by William Newman and Mik  
19 Lamming and colleagues on systems like  
20 PEPYS, which is a rank EuroPARC system  
21 that uses what we call Active Badges,  
22 which could track a person's location as  
23 they went around their organization to  
24 the granularity of a room, for example,  
25 that was a system that created

1           STEPHEN FEINER  
2 automatically a diary of what that  
3 person did physically as they walked  
4 around.  
5           It wasn't really their  
6 electronic life. At least that part of  
7 it wasn't their electronic life. It was  
8 their physically moving-around life.  
9           And I'm trying to remember  
10 whether the PEPYS System, which again is  
11 something that people would think of  
12 when they heard the word "diary," also  
13 included documentation of things that  
14 people did when they were sitting at  
15 their computers. I don't remember  
16 offhand right now whether it did.  
17           But you asked me about the  
18 meaning of "diary of a person or an  
19 entity's electronic life." And I'm  
20 trying to think of things that, to a  
21 person of ordinary skill in the art,  
22 would resonate through that phrase.  
23       Q Did Mirror Worlds' patents relate to  
24 the PEPYS System?  
25       A I'm not sure what you mean by,



1                   STEPHEN FEINER  
2     "relate to."  
3                   The PEPYS System certainly  
4     created and, I believe, sent to the user  
5     by e-mail on a daily basis a diary of  
6     what that person did, time ordered  
7     chronologically.  
8                   So in some sense, I guess  
9     insofar as there's a lot of discussion  
10    of things that are ordered by time, you  
11    could argue that there was some  
12    relationship.  
13                  But "relationship" is a kind of  
14    loose, general word. I don't think it  
15    has a very specific meaning. So I'm not  
16    sure what you mean by, "relate to."  
17                  I'm just keying on that because  
18    you asked me about the word "diary."  
19    And one thing that pops into my mind  
20    when I hear "diary" is that particular  
21    system, which is designed to create kind  
22    of an electronic automatically-  
23    constructed diary of a person's life.  
24    Q   How do you know whether something is  
25    or is not functioning as a diary of a person

1                   STEPHEN FEINER  
2     or entity's electronic life?  
3                   A   If you told me something was a diary  
4     of a person's electronic life and it  
5     contained no information at all about that  
6     person and things that they did when they  
7     were doing stuff electronically, then I would  
8     claim it was a diary of their life, I guess,  
9     is an easy answer.  
10                  So this is not a diary of my  
11    life. This is not a dairy of my life.  
12                  MR. STEIN: Excuse me. He pointed  
13    to his can of Coke and a document  
14    sitting next to him.  
15                  A   A can of Coke is not a diary of my  
16    life.  
17                  The term "diary," in fact,  
18    comes from a group having to do with  
19    time. "Day," I believe, is part of the  
20    root.  
21                  And so a diary would usually be  
22    something that was time ordered. And so  
23    I would expect something that was a  
24    diary of my life, electronic or  
25    otherwise, would be time ordered.

1                   STEPHEN FEINER  
2     That's the conventional facts  
3     of a noncomputational diary where I  
4     allowed an entry, you know, possibly  
5     every day, maybe more often, maybe less  
6     often.  
7                   So I think a diary of an  
8     electronic life -- again, this is not a  
9     term of the art -- would probably be  
10    capitally ordered.  
11                  This is not something I've  
12    thought about very carefully. So you'll  
13    have to forgive me if I say things that  
14    I might, when retrospectively and more  
15    carefully, I would have to say were  
16    spoken too hastily.  
17                  But I think a diary of an  
18    electronic life would be something time  
19    ordered. It would probably be something  
20    complete.  
21                  But on the other hand, does a  
22    diary have to be complete? I think most  
23    people's diaries certainly aren't  
24    complete, unless the person or entity  
25    creating them is incredibly obsessive.

1                   STEPHEN FEINER  
2     And even then, it probably isn't totally  
3     complete.  
4                   I don't know if there are  
5     standards for something that would be  
6     complete.  
7                   I know that certainly within  
8     the context of the patents and the  
9     disagreements about the patents, that  
10    there is some notion of, you know, which  
11    items are actually part of a stream.  
12                  Q   Are there any other characteristics  
13    that you would look to to determine whether  
14    something is or is not functioning as an  
15    electronic diary? Strike that.  
16                  Are there any other  
17    characteristics that you would look to  
18    to determine whether something is or is  
19    not functioning as a diary of a person  
20    or entity's electronic life?  
21                  A   So I'd want to know about the things  
22    that were in that time-ordered sequence or  
23    things that were in the diary. Were they  
24    things about the entity, or were they things  
25    that were completely unrelated to the entity

1                   STEPHEN FEINER  
2       or person?  
3                So I would expect the things in  
4       there to be related to the thing that it  
5       is a diary of. If there were things  
6       that were not related, then I think they  
7       would not be the right things to have in  
8       a diary, per se.  
9                I'm trying to think of whether  
10       this would mean that the diary would  
11       have to be complete. I'm not sure about  
12       that.  
13                Because I'm also looking at the  
14       context in which the phrase appears, I  
15       was not asked to construe what "diary of  
16       a person or an entity's electronic life"  
17       by itself, meant.  
18                And as I said, I chose that  
19       phrase not because I invented it myself,  
20       but because it was actually found in the  
21       patent specification.  
22                And in fact, looking now at  
23       that portion of the specification or at  
24       least the portion I quoted of it, that  
25       is followed by additional writing in

1                   STEPHEN FEINER  
2       which it says, "A stream, according to  
3       the present invention, is a time-ordered  
4       sequence of documents that functions as  
5       a diary of a person or an entity's  
6       electronic life. Every document created  
7       and every document send," with a 'D,' to  
8       a person or entity is stored in the main  
9       stream."  
10       Q   And where are you reading from?  
11       A   I'm reading from the '227 Patent  
12       Specification, Column 4, starting on Line 6,  
13       although this is probably a little bit later  
14       than that, since the part that begins, "A  
15       stream, according to the present invention,"  
16       is at Line 6 Column 4."  
17                And you should turn to the copy  
18       that is appended to my --  
19       Q   Just so the record is clear, you  
20       were reading from your declaration at Page 5?  
21       A   I was reading from my declaration  
22       page 5. And now I'm about to actually turn  
23       to the specification of the '227 patent,  
24       Column 4, to make sure that I get the line  
25       numbers right.

1                   STEPHEN FEINER  
2       And looking at Column 4,  
3       beginning with Line 6, there is a chunk  
4       of that specification that I quoted in  
5       my report between Line 6 and Line 30  
6       that gives more information about that  
7       first sentence, part of which I used in  
8       the construction.  
9                So it is, in fact, that  
10       material following the part that I used  
11       in my construction that helps me  
12       understand what's meant by the terms  
13       that are used in the construction.  
14                And there it says, "Every  
15       document created and every document send  
16       to a person or entity is stored in the  
17       main stream," so it's indicating some  
18       notion of completeness.  
19                It's all documents created by  
20       the person or entity. All the documents  
21       that were sent to the person or entity  
22       are all in a main stream.  
23                And this, in part, also talking  
24       about the past, talking about the  
25       present, talking about the future,

1                   STEPHEN FEINER  
2       compounded and composed together with  
3       material from Columns 5 through 6 of the  
4       patent, which also talks about past,  
5       present and future, led me to conclude  
6       the portion of my definition of 'stream'  
7       that refers to the past, present and  
8       future.  
9                Q   You used the term "patents-in-suit"  
10       in Mirror Worlds' patents in the past  
11       testimony.  
12                Is your understanding of those  
13       terms the patents that are attached as  
14       Exhibits B, C, D and E of your  
15       declaration?  
16       A   When I use that term, I'm referring  
17       to the ones attached as B, C, D and E. And  
18       those are the ones, at the time of preparing  
19       the report, that I understood to be involved  
20       in the work that I am doing.  
21       Q   And are you familiar with the  
22       patents-in-suit?  
23       A   I'm not sure what you mean by  
24       "familiar."  
25       Q   Have you read them?

1                   STEPHEN FEINER  
2     the spec that I quote on my Page 5, it's  
3     talked about in the patent in Columns 5  
4     and 6 of the '227 patent specification.  
5             And if I look at those columns  
6     to refresh my memory, I'm now looking at  
7     Line 55 in Column 5, where it talks  
8     about "the timepoint in the stream where  
9     new documents are created and where  
10    incoming documents are placed." And so  
11    this is in the present portion.  
12            And looking a little bit later  
13    over here, in Column 6, starting at  
14    Line 2, it says, "The system allows you  
15    to dial to the future by selecting a  
16    future timepoint for a document. The  
17    present invention keeps the document  
18    until that future time occurs. When the  
19    time of a document's timepoint arrives,  
20    the reminder document is brought into  
21    view and the document enters the present  
22    portion of the stream."  
23            So there's this notion of a  
24    timepoint that the user can set -- they  
25    refer to it as dialing into the

1                   STEPHEN FEINER  
2     future -- at which a document can be  
3     placed that isn't the current time, but  
4     rather, a time into the future. And  
5     that is clearly a property of a stream.  
6            Q    Is there a notion in the term  
7    "stream" that the time ordering of the  
8    documents in the stream is maintained?  
9            A    I'm not sure what you mean by that.  
10           Q    Is the time ordering of the  
11   documents in the stream maintained?  
12           MR. BROWN: Objection.  
13           A    Did you mean, does the system  
14   maintain that time ordering? Does the system  
15   keep that time ordering or remember that time  
16   ordering; is that what you meant?  
17           Q    Yes.  
18           A    Looking at the specification on  
19   Column 6, Line 3, "The present invention  
20   keeps" -- I'm sorry, I think I have it wrong.  
21   One second.  
22            Looking at the specification on  
23   Column 4, Line 26, it says, "The stream  
24   preserves the order and method of  
25   document creation."

1                   STEPHEN FEINER  
2     So I think saying that the  
3     stream preserves the order of document  
4     creation would indicate that it  
5     maintains that order. They say pretty  
6     much the same thing.  
7            Q    And when a document is added to the  
8   stream at a particular timepoint, it is  
9   included in the time order at that timepoint?  
10           A    When a document is added at a  
11   particular timepoint, it is my understanding  
12   that it is included in the order at that  
13   timepoint because a stream is a time-ordered  
14   sequence.  
15            I think when it says "time,"  
16   it's referring to the time as either the  
17   actual time, as far as the computer  
18   knows it, or possibly the manipulated  
19   time, manipulated using the timepoint  
20   that the stream supports that allows a  
21   user to create a document with a future  
22   time.  
23            So if you created a document  
24   that was dated ten days from now, it  
25   would go into the stream with that

1                   STEPHEN FEINER  
2     ten-days-from-now timestamp at a future  
3     point in the stream, as opposed to at  
4     the point in the regular computer's  
5     clock time that's right now.  
6            Q    Is it your understanding that the  
7   software that implements a stream has or  
8   maintains three separate and distinct  
9   entities? One being the past portion of the  
10   stream, one being the current portion of the  
11   stream and one being the future portion of  
12   the stream?  
13            A    It depends on what you mean by  
14   "separate and distinct."  
15            I think there is a distinction  
16   between past, present and future. And I  
17   don't think that the system needs to use  
18   some mechanism which, as time changes,  
19   you need to actually move a document  
20   from one place to another. You move it  
21   from a present portion to a past  
22   portion, for example.  
23            Q    Are you saying that that's not  
24   required, or it is required?  
25            A    No, I don't think that -- I'm trying

1           STEPHEN FEINER  
 2 to describe a very heavy-handed, inefficient  
 3 way of doing something in which one could  
 4 have three different data structures where,  
 5 as time moved, something that was in the  
 6 future now is to be literally copied from one  
 7 place to another.

8           I think that one could perhaps  
 9 implement a stream that way. I don't  
 10 think it's required that you do that.  
 11 It probably would be advisable if you  
 12 were trying to do it efficiently.

13           So while I think that the  
 14 stream needs to have past, present and  
 15 future portions, I think that there are  
 16 ways that someone of ordinary skill in  
 17 the art could, by the use of pointers,  
 18 for example, be able to indicate where  
 19 the different portions begin and end in  
 20 a way that would be efficient, as  
 21 opposed to inefficient.

22           So I'm being a little careful.  
 23 When you say, "needs to be separate and  
 24 distinct," I'm wondering if you're  
 25 asking whether they need to do it in a

1           STEPHEN FEINER  
 2 very inefficient kind of way.

3           Q Can you describe for me how a user  
 4 would locate a particular document in the  
 5 stream?

6           A I would need to know something about  
 7 the document and what the user's task was.

8           Q Say a user would like to find a  
 9 document that it created two weeks ago. How  
 10 would a user go about finding that document  
 11 in the stream?

12           MR. BROWN: Objection.

13           A I'm trying to see if I can find a  
 14 picture that might help and a description of  
 15 it.

16           I'm looking at Figure 1 of the  
 17 patent, which includes a widget at the  
 18 lower left-hand corner of the screen.

19           One, looking at it right now,  
 20 which I believe to have a typo in it,  
 21 because I suspect that someone has mixed  
 22 up the years on the left and right,  
 23 since it purports to go from 12-4-96 to  
 24 12-6-95, and yet at the bottom, it goes  
 25 from 2-8-95 to 12-14-96, I believe,

1           STEPHEN FEINER  
 2 looking at this picture over here, I  
 3 think someone of ordinary skill would  
 4 see this as being a widget that might  
 5 let me control the number of things that  
 6 I'm actually seeing on the screen and  
 7 that I could either, depending upon my  
 8 knowledge of exactly when the document  
 9 was created -- I think you said two  
 10 weeks ago?

11           Q Yes.

12           A Which is kind of fuzzy. I mean two  
 13 weeks ago to the second, to the hour, to the  
 14 day, kind of a couple of days, give or take,  
 15 depending what I might know about that time,  
 16 it seems to me -- and again, I'm just  
 17 speculating right now, although I believe  
 18 there may be some discussion which I'll  
 19 certainly look for, if you'd like me to, here  
 20 in this figure, could use that widget to be  
 21 able to kind of narrow in.

22           And depending upon if, for  
 23 example, the user used this system only  
 24 once around two weeks ago and maybe made  
 25 a very small number of documents, he may

1           STEPHEN FEINER  
 2 be able to find it very quickly that  
 3 way.

4           However, if they made only one  
 5 document, let's say, because they were  
 6 on vacation and came back for a day and  
 7 quickly made a document and this  
 8 appeared again, then if they set the  
 9 dates to being right before and right  
 10 after the one document was created, then  
 11 you may see perhaps only one document  
 12 over here.

13           But if there were more  
 14 documents, then you can move your mouse  
 15 over the collection of icons, and the  
 16 picture is showing you dates off to the  
 17 side, dates at the top of the document  
 18 representation. And I could then, by  
 19 moving my cursor over the documents,  
 20 find one from that particular date.

21           It's not unlike, for example,  
 22 scrolling in a chronologically-ordered  
 23 window in a more classical operating  
 24 system, looking for something that was  
 25 done between one time or another,

1           STEPHEN FEINER  
 2       create new levels of hierarchy, creates a  
 3       folder within one of those folders and place  
 4       documents inside of it, can then move the  
 5       documents individually within and between  
 6       folders and also can move the folders  
 7       themselves both within and between folders.

8           And this is a venerable aspect  
 9       of operating systems both in terms of  
 10      the user interfaces that they present,  
 11      and as well in terms of the way in  
 12      which, at a low level, a program of the  
 13      operating system calls, the files are  
 14      represented and manipulated.

15      Q    Folders and directories are the same  
 16      thing, correct?

17      A    I'm using "folder" and "directory"  
 18      to mean the same thing.

19      Q    What does it mean to store a file in  
 20      a directory?

21      A    There are several different ways of  
 22      interpreting that term. If you said to  
 23      someone, for example, "Store that file in  
 24      that directory," pointing to a file, let's  
 25      say, that you see on the screen, and pointing

1           STEPHEN FEINER  
 2       location, so to speak, of a new way to  
 3       access that file.

4      Q    And you just mentioned, "a data  
 5      structure representing a directory."

6           What did you mean by that?

7      A    That in the operating system, there  
 8      are data structures at different parts of the  
 9      operating system, including ones that are  
 10     used to manipulate the graphical  
 11     representations on the screen, all the way  
 12     down to very low-level ones that are used to  
 13     represent what's actually on the disk and  
 14     ultimately where things are on the disks  
 15     whenever the place in which the file was  
 16     being stored. And indeed, there may be  
 17     places that aren't yet written to disk.

18           And this very potentially  
 19      complex set of data structures  
 20      determines where things are said to be  
 21      within the operating system.

22      Q    And what is a data structure?

23      A    "Data structure" is a fundamental  
 24      term of the art in computer science.

25           And it refers to a

1           STEPHEN FEINER  
 2       to a directory whose iconic representation  
 3       you see on the screen, that would mean that  
 4       that command could be satisfied in many  
 5       operating systems by selecting and dragging  
 6       that representation of that file into the  
 7       folder.

8           And that would make it so that  
 9       you would access it, if you were working  
 10      from the top of the directory hierarchy  
 11      down, by descending that qualified named  
 12      hierarchy to go from the very top down  
 13      to the place in which you had just put  
 14      it.

15      When you say, "What does it  
 16      mean to store it there," that doesn't  
 17      necessarily mean, in an efficient  
 18      implementation, that the actual bits  
 19      within the file were moved.

20           They may not be moved on the  
 21      disk. They may not be moved in a  
 22      variety other places in the software,  
 23      but some portion of the data structures  
 24      representing that directory hierarchy  
 25      would be modified to indicate the new

1           STEPHEN FEINER  
 2       representation of data, typically  
 3       represented as bits, sometimes organized  
 4       into bytes and words and strings, which  
 5       stores information and which typically  
 6       is created and manipulated by means of  
 7       software. And that software embodies  
 8       algorithms.

9           EVENING SESSION  
 10          (6:00 p.m.)

11          STEPHEN FEINER,  
 12          resumed, having been previously  
 13          duly sworn, was examined  
 14          and testified further as follows:

15          CONTINUED EXAMINATION BY MR. STEIN:

16          Q    Can there be two data structures  
 17          that point to the same document on disk?

18          A    It depends on what you mean by, "two  
 19          data structures point to go the same  
 20          document."

21           I can certainly write a piece  
 22      of code for you right now in which two  
 23      data structures point to the same  
 24      document.

25          Q    And on the bottom of Page 4, what

1 STEPHEN FEINER  
 2 A Yes, I could.  
 3 Q So why can't it treat the documents  
 4 stored in the stream the same way that a  
 5 conventional operating system creates  
 6 documents stored in a directory or a  
 7 subdirectory?  
 8 A I'm confused, because a conventional  
 9 operating system needs to store the documents  
 10 and not just the higher-level things that  
 11 kind of give you access to them.  
 12 I think I answered your  
 13 question correctly, but I'm not sure  
 14 what you're getting at.  
 15 MR. STEIN: Let's take a break.  
 16 (A brief recess was  
 17 taken.)  
 18 BY MR. STEIN:  
 19 Q Can you could turn to Page 6, under  
 20 subheading B?  
 21 A Are you talking about my report?  
 22 Q Of your report, yes.  
 23 You say in the last sentence of  
 24 the first paragraph that the term "main  
 25 stream" had a specific meaning in the

1 STEPHEN FEINER  
 2 context of the patents, as opposed to an  
 3 ordinary meaning in the context of  
 4 computer science, correct?  
 5 A That's correct.  
 6 Q What is the ordinary meaning of  
 7 "main stream" in the context of computer  
 8 science?  
 9 A Good point. I don't think there is  
 10 an ordinary meaning. So it says here that it  
 11 has a specific meaning, as opposed to an  
 12 ordinary meaning. It doesn't say, "the  
 13 ordinary meaning." I don't think there is an  
 14 ordinary meaning in the context of computer  
 15 science.  
 16 The only one I could possibly  
 17 think of -- and this is off the top of  
 18 my head -- is only that he was doing  
 19 main stream research.  
 20 I would think that he was not  
 21 doing anything particularly different  
 22 from other people who were doing it. So  
 23 it's not any different from the way in  
 24 which you would use the term "main  
 25 stream" in any other art.

1 STEPHEN FEINER  
 2 Q You were just handed Exhibit 6,  
 3 which is a copy of US Patent  
 4 Number 6,006,227. It's the same as Exhibit D  
 5 to your declaration or report.  
 6 A I'm looking for it right now and  
 7 making sure that all the pages are there.  
 8 It is a copy of the '227  
 9 patent.  
 10 Q So looking back at Page 6 of your  
 11 report and that sentence we just referred to,  
 12 you state that, "A person of ordinary skill  
 13 would understand that the phrase 'main  
 14 stream' in the Mirror Worlds patents refers  
 15 to 'a stream that stores every document  
 16 received by or generated by a computer  
 17 system."  
 18 Do you see that?  
 19 A Yes, I do.  
 20 Q If you look at Exhibit 6, Claim 1,  
 21 in Line 11, it says --  
 22 A Hold on one second, please.  
 23 Claim 1, Line 11, Column 15?  
 24 Q Correct.  
 25 It says, "A main stream of data

1 STEPHEN FEINER  
 2 units" -- sorry, strike that.  
 3 Exhibit 6, Column 15, Line 12  
 4 states, "The main stream for receiving  
 5 each data unit received by or generated  
 6 by the computer system" --  
 7 A Hold on a second. Which line again,  
 8 please?  
 9 Q Twelve. It starts, "The main stream  
 10 for receiving each data unit received by or  
 11 generated by the computer system," correct?  
 12 A Yes.  
 13 Q Why did you change the word "each"  
 14 to "every" in your report regarding the term  
 15 "main stream"?  
 16 A Because I looked not only at the  
 17 claims, but I also looked at the  
 18 specification, where there are a number of  
 19 places that talk about the main stream.  
 20 And looking, for example, at  
 21 Column 4, Line 8, I see, "Every document  
 22 created and every document send to a  
 23 person or entity is stored in a main  
 24 stream."  
 25 Q Is there a difference between using

1           STEPHEN FEINER  
2 the word "each" and the word "every"?

3       A It depends on the context in which  
4 the words are used.

5           I think people often use the  
6 words for connotations, as well as  
7 denotations. And I think that the  
8 statement made in Column 4 is a very  
9 strong one. It repeats the word  
10 "every."

11          And I believe that the reason  
12 that it did that, trying to look into  
13 the mind of the author or authors, is  
14 that they were trying to make very clear  
15 the inclusiveness that every document  
16 created and every document sent to a  
17 person was to be stored in the main  
18 stream.

19       Q So in your view, would that language  
20 in Claim 1 have a different connotation if  
21 the word "every" was used instead of "each"?

22       A I would need to look at it carefully  
23 to figure out how I feel about that.

24          So looking at it right now --  
25 and again, this is the first time I'm

1           STEPHEN FEINER  
2 actually trying to make that  
3 determination -- it seems to me that if  
4 I simply replace "each" in both places  
5 that it appears or in the first element  
6 or in only the first place --

7       Q Where it says, "The main stream for  
8 receiving each data unit received by or  
9 generated by the computer system," the "each"  
10 in that phrase.

11       A Right.

12          Again, just thinking about it  
13 right now and not having thought about  
14 it carefully before, I think it's less  
15 emphatic than "every." And clearly,  
16 it's the term used in the claim.

17          And so if it is for "receiving  
18 each data unit received by or generated  
19 by," I'm just trying to be careful,  
20 thinking about phrases like "each" and  
21 "every," which is really used to hammer  
22 home "all."

23          To be really careful, I would  
24 need to think a bit more about it.

25       Q So without thinking more about it,

1           STEPHEN FEINER  
2 you don't know right now if using "each"  
3 versus "every" in that phrase would have  
4 different connotations?

5       A I don't know.

6       Q If you look at the next term on  
7 Page 7, Section C, of your report, you state  
8 that, "A timestamp is a date and time value  
9 that uniquely identifies each document,"  
10 correct?

11       A Yes.

12       Q What is the basis for your opinion  
13 that the timestamp must be a unique date and  
14 time value?

15       A I said that the timestamp must  
16 uniquely identify each document.

17          And my basis for saying that it  
18 must uniquely identify each document is  
19 based on a variety of things, including  
20 parts of the file history, and as well  
21 also the specification, in which it  
22 tells us that file names are strictly  
23 optional.

24          And given that file names are  
25 strictly optional, there's none of the

1           STEPHEN FEINER  
2 normal ability to refer to a file  
3 specifically by a fully-qualified name  
4 starting at the group or by means of  
5 once it established a particular  
6 directory that its in by its unique name  
7 in that directory.

8          And given that, since it's the  
9 nature of the operating systems and the  
10 way in which one manipulates files that  
11 there needs to be some way of being able  
12 to refer unambiguously to a file, this  
13 seems to be the only thing left to do  
14 that.

15          And as I said, there are many  
16 places where the specification makes it  
17 very clear that that must be the case.

18          Let me find some of those  
19 places.

20       Q Is it your opinion that the  
21 timestamp must be a unique date and time  
22 value?

23       MR. BROWN: Objection.

24       A What do you mean by -- I don't think  
25 I actually said that. I said, "It's a date

1           STEPHEN FEINER  
2   and time that uniquely identifies each  
3   document."  
4           And in my description of  
5   possible ways later on that one might  
6   implement a timestamp that uniquely  
7   identifies a document, I mentioned the  
8   use of additional data in the form, for  
9   example, of a counter, let's say, that  
10   could be used to be sure that something  
11   received a unique timestamp even if it  
12   was being created at the exact same time  
13   and the exact same date as something  
14   else.  
15   Q   So is it your opinion that a  
16   timestamp does not need to be a unique date  
17   and time value?  
18           MR. BROWN: Objection.  
19   A   In the context of the patent?  
20   Q   Yes.  
21   A   I think that a timestamp, in the  
22   context of the patent, needs to, in some way,  
23   be unique for each document, so that one  
24   could not have two different documents that  
25   received the same timestamp.

1           STEPHEN FEINER  
2   Q   Does it have to be a unique date and  
3   time value?  
4   A   I think that the date and time, if  
5   you're referring to the actual clock date and  
6   time in a functioning of limitation in which  
7   two things could be done at the same time,  
8   that clearly would not uniquely identify a  
9   document.  
10           And therefore, something would  
11   need to get done to create a timestamp  
12   that identifies documents uniquely to be  
13   able to make sure that that timestamp  
14   wasn't going to ambiguously be given to  
15   more than one document.  
16   Q   Then is the answer to my previous  
17   question "no"?  
18           MR. BROWN: Objection.  
19   A   Could you ask the question again?  
20   Q   Does a stamp time need to be a  
21   unique date and time value?  
22           MR. BROWN: Objection.  
23   A   It depends on what you mean by, "a  
24   unique date and time value." That's not what  
25   I said over here.

1           STEPHEN FEINER  
2   One way to create a timestamp  
3   would be that either you make sure you  
4   could not somehow make two things or  
5   receive two things at the same time, in  
6   which case you should also make sure  
7   that a person having set the time into  
8   the future couldn't set it to the exact  
9   same time again.  
10           And you could do that -- you  
11   know, I opined about this a little bit  
12   later on in my report, on various ways  
13   you could do things of that sort.  
14           But I think that you could  
15   create a timestamp which, taking the  
16   date and time and adding additional  
17   information, would make that timestamp  
18   unique.  
19   Q   So when you stated in your report  
20   that, "A timestamp is a date and time" --  
21   strike that.  
22           When you stated in your report  
23   that, "A timestamp is a date and time  
24   value that uniquely identifies each  
25   document," you were including the

1           STEPHEN FEINER  
2   possibility of additional information  
3   beyond the date and time?  
4   A   I was including the possibility of  
5   additional information beyond the date and  
6   time, and so I'm qualifying value with date  
7   and time. Because clearly, the timestamp  
8   needs to actually indicate time and date  
9   somehow.  
10           But to make it unique, you  
11   would either have to ensure that you're  
12   never allowed to use that date and time  
13   again once you've used it, which it  
14   seems to me ...  
15           For example, if I time tripped  
16   into the future and I set the date and  
17   time to a particular date and time, and  
18   then I went back in the past, or if I  
19   time tripped into the future and set the  
20   date and time to a particular date and  
21   time and then set it again to the same  
22   date and time, and I created one thing  
23   after setting it the first time and  
24   created a second document after setting  
25   it the second time, and the system then



1           STEPHEN FEINER  
 2 proceeded to give both of those things  
 3 the exact same timestamp, that would be  
 4 problematic.

5           And so the date and time value  
 6 would need to have something else. For  
 7 example, maybe an artificial extension  
 8 of the time or maybe, as I discussed,  
 9 the use of some kind of counter in there  
 10 to be able to distinguish between the  
 11 two date and time values that, as a  
 12 user, I might have only specified the  
 13 exact same name in each case.

14           I might have said, "Tomorrow at  
 15 exactly 4:10 p.m. Eastern time," in both  
 16 cases, in one case before creating a  
 17 document, and in the second case before  
 18 creating another document. And the  
 19 system would need to make sure that  
 20 those two documents did not have the  
 21 same timestamp.

22           And you'll appreciate that I  
 23 spent some time later on in the document  
 24 talking about several different possible  
 25 approaches that someone might do

1           STEPHEN FEINER  
 2           And as I said, you could  
 3 imagine an example in which, because  
 4 there weren't a lot of documents created  
 5 over that time, if there were like, say,  
 6 only one document, for whatever reason,  
 7 created during that period of time,  
 8 they'd simply need to know both the  
 9 upper and lower bound on the time  
 10 period, and then maybe they would find  
 11 that single document.

12           If they found multiple ones,  
 13 then maybe they would position their  
 14 cursor over the objects that they saw on  
 15 the screen to be able to gain more  
 16 information about it and figure out  
 17 which one it was.

18           Q Moving to Section D, labeled  
 19 Archiving, or titled Archiving, do you  
 20 consider yourself an expert in archiving?

21           A I'm not sure what you mean by  
 22 "expert."

23           Q You've been retained as an expert in  
 24 connection with this case by Apple, correct?

25           A That is correct.

1           STEPHEN FEINER  
 2 something like this from the standpoint  
 3 of how it would be implemented, and that  
 4 there are a number of subtleties, which  
 5 I think I discussed in my report.

6           And as well, I of course wasn't  
 7 being exhaustive in describing some ways  
 8 in which this could be done.

9           Q In the example that we discussed  
 10 earlier in which you described how a user  
 11 would locate a particular document created  
 12 two weeks ago, does the user have to know the  
 13 timestamp assigned to that document in order  
 14 to locate the document?

15           A The user in that specific example?

16           Q Yes.

17           A The user needs to know what specific  
 18 example -- we're talking about a time-based  
 19 search. And I don't think the user needs to  
 20 know exact bits in the timestamp. I don't  
 21 see anything indicating that they would need  
 22 to know that.

23           I think in that case, they need  
 24 to know the time at which the document  
 25 was created.

1           STEPHEN FEINER  
 2           Q Do you have an understanding of what  
 3 it means to be an expert in this case?

4           A My understanding is that I need to  
 5 have at least ordinary skill in the art, as I  
 6 defined it. And I think I have ordinary  
 7 skill in the art with regard to the contents  
 8 of the patents.

9           Q Do you have ordinary skill in the  
 10 art with respect to archiving?

11           A As the term is used in the context  
 12 of the patents, yes, I believe I do.

13           Q Do you think you have more than  
 14 ordinary skill in the art with respect to  
 15 archiving?

16           MR. BROWN: Objection.

17           A I'm not quite sure what that means.

18           Q Have you done any work in archiving  
 19 or related to archiving?

20           A I have certainly archived stuff that  
 21 I owned, or I had stuff I owned archived for  
 22 me.

23           Q Have you done any research into  
 24 archiving techniques?

25           A It was not my understanding that a

1 STEPHEN FEINER

2 person needs to have done research to be  
3 considered of ordinary skill in the art in  
4 something.

5 But outside of research that I  
6 may have done to try to figure out what  
7 technology I might want to use for  
8 archiving something, no, I have not  
9 written papers, per se, on archiving.

10 Q Have you ever designed any software  
11 that implements archiving?

12 A No, I have not.

13 Q Can you name any commercially  
14 available archiving utilities or software  
15 that were available in the 1996 time frame?

16 A I can think of facilities that were  
17 used in the process of archiving, which can  
18 also be used for other purposes. And there's  
19 a range of ways in which the term is used.

20 For example, the tar program  
21 under UNIX is a program that was  
22 available well before the 1996 time  
23 frame that can be used to create an  
24 archive. It can be used for what people  
25 normally would think as being archived.

1 STEPHEN FEINER

2 remember. Tar archives are compressed. I'm  
3 trying to remember what options I have for  
4 doing the compression. And there are  
5 different implementations of tar, understand.

6 But I have usually used it in a  
7 way in which the file that was placed  
8 into the tar file created by tar can be,  
9 in its representation in tar, smaller  
10 than the file was represented on the  
11 disk originally.

12 And so there's this subtlety as  
13 to whether that's a copy or -- I mean  
14 certainly it's a loss list  
15 representation of the file, but it may  
16 not be a bit-for-bit copy of the file.

17 Q And the original file in that  
18 particular example remained on the disk?

19 A The original file remained on the  
20 disk.

21 I would say that usually, in  
22 those case, I wasn't thinking of myself  
23 as archiving, per se, even though the  
24 command is called tar, which technically  
25 stands for "tape archive," which is

1 STEPHEN FEINER

2 Q And you have used the tar command in  
3 UNIX?

4 A I have used the tar command in UNIX,  
5 yes.

6 Q When you use the tar command in UNIX  
7 to create an archive, does tar require that  
8 the original file that you're archiving be  
9 deleted?

10 A Tar was created, I think very  
11 wisely, not to require that the file that is  
12 being put into the tar file itself be  
13 deleted. Because if it did that, all sorts  
14 of really nasty stuff can happen if something  
15 went wrong.

16 Q Like what?

17 A Like if the file that you were  
18 creating using tar, the tar file, as I'm  
19 referring to it, overflowed the amount of  
20 surface that was available and it deleted the  
21 file that you were putting into it, you could  
22 perhaps even irrevocably lose the file.

23 Q So did tar copy the file that you  
24 were archiving into the archive?

25 A Tar archiving -- I'm trying to

1 STEPHEN FEINER

2 UNIX's abbreviation.

3 UNIX names a number of commands  
4 in rather confusing ways. One of the  
5 most well-known examples is the cat  
6 command, which is an abbreviation for  
7 catenate.

8 Typically, if you give multiple  
9 files to the cat commands, it catenates.  
10 It appends one file after another. And  
11 for those people who use cat -- and very  
12 few of them use it now -- it was very  
13 often used to print on the screen or  
14 into another file, just a single file.  
15 So it really didn't get used to  
16 catenate.

17 So tar I often used and I do  
18 use now to create a file that contains a  
19 set of files. I really wouldn't say I  
20 was archiving them.

21 I would often use this to  
22 create a file that was smaller than the  
23 files were individually that was just a  
24 single file and that then I could send  
25 to somebody else, for example, through

1           STEPHEN FEINER  
2 data unit.  
3       Q Can you think of any way of going  
4 from the main stream data structure to the  
5 data unit itself?  
6       A Again, I could imagine -- and we're  
7 talking about in implementation -- that you  
8 would have in the main stream structure --  
9 that one approach might be a link list, let's  
10 say.  
11           And then the link list would be  
12 a link-listed structure, and the  
13 structure might contain, say, a  
14 timestamp and some kind of pointer which  
15 would let me get actually at the data  
16 unit as it is stored in permanent  
17 memory, or perhaps even if it's stored  
18 in nonpermanent memory, if you can have  
19 that notion. I mean it's a very general  
20 notion. And that's how I would do it.  
21           I would do something in which I  
22 had some kind of structure that had the  
23 timestamp and that actually had some way  
24 of accessing, for example through a  
25 pointer or an address, the data unit.

1           STEPHEN FEINER  
2 that recites "means for generating a main  
3 stream of data units."  
4       Do you understand that a main  
5 stream is a data structure?  
6       A I understand that a main stream  
7 stores every document on the system that's  
8 relevant to the user or entity.  
9       "Data structure" is a word that  
10 it's easy to use it to refer to a very  
11 small entity, a very small structure.  
12       But sometimes you may have a  
13 data structure that points to another  
14 data structure that points to yet  
15 another data structure that together  
16 comprises some larger entity.  
17       So it's not clear to me that I  
18 would necessarily say the main stream  
19 was a data structure. I may say the  
20 main stream is comprised of a bunch of  
21 data structures.  
22       For example, since a main  
23 stream contains documents, the data  
24 structures for the documents may differ  
25 from one kind of document to another

1           STEPHEN FEINER  
2       And there are certainly other  
3 ways in which I might have a big array  
4 of data units, but that might not be  
5 very general. Maybe, in particular  
6 cases, I might have a big array of  
7 certain kind of data units.  
8       Q If you look at the bottom of  
9 Page 13, the next element, heading G, it  
10 relates to a claim element "means for  
11 associating each data unit with at least one  
12 chronological indicator having a respective  
13 timestamp which identifies the data unit."  
14       Do you see that?  
15       A Yes, I do.  
16       Q This element also doesn't recite a  
17 means for putting a timestamp into the  
18 chronological indicator, does it?  
19       A This claim does not cite a means for  
20 putting the timestamp into the chronological  
21 indicator, but it does more specifically  
22 refer to the timestamp as identifying the  
23 data unit.  
24       Q If you look at Page 14 at the  
25 bottom, heading H relates to claim element

1           STEPHEN FEINER  
2 kind of document.  
3       There may be some kind of other  
4 information, perhaps a link list of some  
5 sort, which is used in conjunction with  
6 the things that elements of that link  
7 list point to, which could ultimately be  
8 the documents that are part of that main  
9 stream.  
10       Q Do you know how to generate an  
11 instance of a data structure in software?  
12       A There is more than one way to  
13 generate an instance of a data structure in  
14 software.  
15       Q Can you name one?  
16       A Sure.  
17       One way to generate an instance  
18 of a data structure in software is to  
19 have some prototype of that data  
20 structure that, you know, would tell the  
21 computer how much space needs to be  
22 allocated and then make a call to some  
23 facility that generates that amount of  
24 space and returns the address of that  
25 space so I can then set a pointer to

1           STEPHEN FEINER  
2 that generated data structure.  
3       Q   And how many lines of software code  
4 would that take in typical high-level  
5 programming?  
6       A   If the code includes the definition  
7 of the data structure itself, the data  
8 structure might be extraordinarily large. It  
9 may have many, many pieces each, which, for  
10 clarity, might correspond to a single line.  
11       So I would need both a  
12 definition of the data structure,  
13 sometimes even literally stored in a  
14 completely different file, included as a  
15 header file, for example.  
16       And then I would need a line  
17 that would actually do the allocation if  
18 we're talking about something that  
19 involves a set of different data  
20 structures, a link list, let's say, that  
21 points to a variety of data structures,  
22 each of which represents a document and  
23 perhaps has a timestamp in it.  
24       I recall that a main stream, of  
25 course, each stream needs to have a

1           STEPHEN FEINER  
2 past, present and a future.  
3       I mentioned one way to do that  
4 would be to have pointers that pointed  
5 into where the past turned into the  
6 present and the present turned into the  
7 future. Those points would need to be  
8 set.  
9       And while you might have one  
10 single line of code in a nicely-written  
11 program that, at the top level, was  
12 called to create that set of data  
13 structures to create the main stream,  
14 the code that actually did the creating  
15 might have quite a large number of lines  
16 of coding, including ones for setting  
17 the pointers, let's say, if there were  
18 pointers being used to differentiate  
19 between past, present and future.  
20       Sometimes in situations like  
21 that you might have initially when you  
22 make a main stream, let's say, from  
23 scratch, there might be nothing in it at  
24 all.  
25       And then maybe you need to be

1           STEPHEN FEINER  
2 sure that things were properly nulled  
3 out. Maybe there's a token item that's  
4 kind of like the one thing that things  
5 point to, so that you don't have to have  
6 a special case of having nothing being  
7 pointed to at you all, so you'd have to  
8 create that.  
9       It really depends on the  
10 particular implementation.  
11       At the lowest level, I don't  
12 think we're talking about a single line  
13 of code, for example. I think we may be  
14 talking about many lines of code.  
15       Q   You said, "the lowest level." What  
16 do you mean by that?  
17       A   What I mean is that, for example,  
18 how many lines of code does it take to create  
19 an integer, an int?  
20       Well, I can declare something  
21 to be an int and say, "I've got it." Or  
22 I could malik, let's say, allocate an  
23 integer, and that's one line of code.  
24       But an integer is a very, very simple  
25 kind of data structure.

1           STEPHEN FEINER  
2       I could allocate a struct,  
3 let's say in C, that had a very small  
4 number of entries. Like probably to  
5 make things look very nice, I'd need a  
6 line for each member of the structure.  
7       And then I might make literally  
8 a single line of code that called the  
9 allocation procedure malik and assigned  
10 the address that it returned to a  
11 pointer to that data structure. So that  
12 would be a very simple example.  
13       I don't think in this case,  
14 given how much more complex the main  
15 stream is, that a very simple structure,  
16 a character or a floating-point number,  
17 that we're talking about just a single  
18 line of code. I think we're talking  
19 about potentially many, many lines of  
20 code.  
21       Like how many lines does it  
22 take to create a directory in an  
23 operating system?  
24       I would suspect that if one  
25 were to look at the source code for an

1 STEPHEN FEINER  
 2 Apple operating system, there would be  
 3 many, many lines of code involved in  
 4 creating a directory.  
 5 And I would suspect that if one  
 6 were to look at half of the code that  
 7 embodied one of these implementations of  
 8 streams, then we'd also find many lines  
 9 of code involved in creating a main  
 10 stream.  
 11 Q If you could turn to Page 18, and  
 12 referring to the paragraph in the middle, the  
 13 heading N, "Document Organizing Facility" --  
 14 A Hold on. I also want to take a look  
 15 at the '427 patent.  
 16 Okay.  
 17 Q You state in the middle the phrase,  
 18 "'Document organizing facility' encompasses  
 19 any possible means of performing the function  
 20 of 'document organizing.' It includes a  
 21 public library and the desk of an IRS worker  
 22 or just about any office worker in America."  
 23 Do you see that?  
 24 A Yes, I see it.  
 25 Q Do you believe that the term

1 STEPHEN FEINER  
 2 "facility" in the claims of the '427 patent  
 3 are referring to a public library?  
 4 A This is being a little bit facetious  
 5 over here. But the point is that I'm not  
 6 sure -- it says, "A document organizing  
 7 facility receiving documents automatically  
 8 associating respective selective  
 9 indicators" --  
 10 I'm trying to see other  
 11 occurrences of "document organizing  
 12 facility" in this claim.  
 13 So I think the point that's  
 14 being made here is that I don't think  
 15 that the term "document organizing  
 16 facility" by itself is really a  
 17 sufficient structure. And that, you  
 18 know, one needs to actually look into  
 19 the specification to see what is being  
 20 referred to.  
 21 Q But you don't believe the claim is  
 22 literally referring to the desk of an IRS  
 23 worker, correct?  
 24 A I agree, yes.  
 25 Q And you don't literally believe that

1 STEPHEN FEINER  
 2 the claim is referring to a document  
 3 organizing facility as a public library,  
 4 correct?  
 5 A That is correct.  
 6 Q And you go on to say that, "A  
 7 document organizing facility encompasses any  
 8 number of computer software processes and  
 9 programs running on computers, including, for  
 10 example, Windows Explorer and Mac OS Finder,"  
 11 correct?  
 12 A Correct.  
 13 Q How is Windows Explorer a document  
 14 organizing facility?  
 15 A In Windows Explorer, I can see a  
 16 list of documents. I actually can see a list  
 17 of documents. I can see a graphical  
 18 representation that isn't actually literally  
 19 a list.  
 20 I can change the way in which  
 21 the documents are organized. So I can  
 22 sort them by date from most recent to  
 23 least recent, from least recent to most  
 24 recent. I can sort them by type, I can  
 25 sort them by name, again in either

1 STEPHEN FEINER  
 2 direction.  
 3 And I can also use Windows  
 4 Explorer to change the name of a  
 5 document, to move it up and down inside  
 6 the hierarchy. I might cut a document  
 7 and then move up in the hierarchy in  
 8 Explorer and paste it somewhere else or  
 9 down in the hierarchy and place it  
 10 somewhere else or even into another copy  
 11 of Windows Explorer and place it  
 12 somewhere else.  
 13 I can do the same kind of thing  
 14 in Mac OS Finder.  
 15 Q How do you know if something is a  
 16 document organizing facility?  
 17 A Well, that's a good question.  
 18 Given that very general term,  
 19 "document organizing facility," it seems  
 20 to me that it's not a term of the art.  
 21 It's clearly being used in the patent,  
 22 and I would give it probably a kind of  
 23 ordinary interpretation that it referred  
 24 to something to organize documents.  
 25 And you kind of know what a