Exhibit 1

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
TYLER DIVISION

MIRROR WORLDS, LLC Plaintiff, v. APPLE INC. Defendant.	Civil Action No. 6:08-CV-88 LED JURY TRIAL DEMANDED
APPLE INC. Counterclaim Plaintiff v. MIRROR WORLDS, LLC, MIRROR WORLDS TECHNOLOGIES, INC., Counterclaim Defendants.	

DECLARATION OF JOHN LEVY, Ph.D. IN SUPPORT OF MIRROR WORLDS' OPPOSITION TO APPLE'S MOTION FOR PARTIAL SUMMARY JUDGMENT OF INVALIDITY FOR INDEFINITENESS UNDER 35 U.S.C. § 112 ¶ 2

I, John Levy, hereby declare that:

1. I have been retained by Mirror Worlds, LLC ("Mirror Worlds") and Mirror Worlds Technologies, Inc. ("MWT") to serve as an expert in the above-captioned case.

2. I have reviewed Apple Inc.'s Motion for Partial Summary Judgment of Invalidity for Indefiniteness Under 35 U.S.C. § 112 ¶ 2 ("Apple's Brief").

3. In Apple's Brief, Apple asserts that certain limitations that include the term "timestamp to identify" are indefinite.

4. To support its indefiniteness argument, Apple cites my testimony on page 7, footnote 6 of Apple's Brief in a manner that I believe is misleading. In particular, Apple asserts that I "was unable to identify any real-world applications where such hypothetical additional information is actually employed." Apple's Brief at 7, fn. 6.

5. At my deposition, Apple's counsel questioned me about the meaning of the term "timestamp." Ex. 1 [Levy Tr.] 109:21-110:14. I explained that a timestamp includes a "date and time value" and would be understood by one of ordinary skill in the art as also including "further information." Ex. 1 [Levy Tr.] 112:1-3.

6. Subsequently, Apple's counsel requested that I provide an example of such further information, and I identified the use of a "32-bit number" as further information that could be used to create a unique timestamp as well as other examples. Ex. 1 [Levy Tr.] 112:1-3.

7. During the course of extensive questioning on this issue, Apple asked me to identify an application that utilized my exemplary method and further requested that I identify other specific applications that use specific methods to create unique timestamps. Ex. 1 [Levy Tr.] 112:23-24, 117:4-29.

8. In response, I clearly stated that there was "a classification of applications that involve managing messages being stored and forwarded where, in order to identify a message, one needs a unique identifier, and that may be constructed from a time and date plus additional information." Ex. 1 [Levy Tr.] 117:8-14. I further stated that "I could go on with examples and eventually I might recall an application I've worked on where one particular kind was used." Ex. 1 [Levy Tr.] 118:1-3.

9. Therefore, Apple's statement that I was "unable to identify any real-world applications" is in my view misleading. In fact, I identified a class of applications that require unique timestamps and utilize timestamps that include a "date and time value and additional information." Ex. 1 [Levy Tr.] 117:8-14.

10. I have reviewed portions of Dr. Feiner's testimony and note that Dr. Feiner agrees that the term "timestamp to identify," as used within the specification of the Mirror Worlds' patents, includes a "time-and-date value" and further additional information. I agree with that characterization of "timestamp to identify". Ex. 2 [Feiner Tr.] 197:4-9.

11. It is my opinion that a person of ordinary skill in the art would recognize the need for additional information that may be used to render each timestamp unique and would understand how to include such information in a timestamp.

12. I also note that Dr. Feiner agrees that a person of ordinary skill in the art could come up with methods of using additional information to make such a timestamp unique, and that such methods would not be novel or inventive. Ex. 2 [Feiner Tr.] 229:20-230:6. I agree with that characterization of such methods.

I swear under penalty of perjury that all statements made herein are of my own knowledge and are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: January 15, 2010

John Levy, Ph.D.

Exhibit 1

1 UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
2 TYLER DIVISION
3 ----------x
4 MIRROR WORLDS, LLC,
5 Plaintiff,
6 VS. No. 6:08 cv 88 LED
7 APPLE INC.,
8 Defendant.
9 ----------x
10
December 11, 2009
11
9:10 a.m.
12
13 Videotaped deposition of JOHN LEVY, Ph.D, at the offices of Weil, Gotshal & Manges,
14 767 Fifth Avenue, New York, New York, before Nancy Mahoney, a Certified Court Reporter,
15 Registered Professional Reporter, Certified LiveNote Reporter, and Notary Public within and
16 for the States of New York and New Jersey.
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12:13:30 1 claim, in Claim 1, does the unique -- is the
12:13:33 2 timestamp made unique for each data unit?
12:14:14 3 MR. STEIN: Objection to form.
12:14:16 4 A. Well, I don't know how to answer
12:14:19 5 that. I -- I'm not sure it is required in this
12:14:21 6 Claim 1.
12:14:22 7 Q. Well, didn't you just test -- I'm
12:14:22 8 sorry.
12:14:26 9 A. But, you know, I think it would be
12:14:30 10 best for timestamp to be defined as we propose.
12:14:35 11 Q. That it uniquely identify data --
12:14:37 12 wait, I'm sorry. I don't want to mis -- when
12:14:41 13 you say "defined as we propose," what did you
12:14:41 14 mean by that?
12:14:49 15 A. I meant that the -- the timestamp
12:14:51 16 to identify merely means the time-based
12:14:51 17 identifier.
12:14:54 18 Q. But you testified just a few
12:14:56 19 minutes ago that it was your opinion that the
12:15:04 20 computer system of Claim 1 required that there
12:15:09 21 be timestamps that uniquely identify each data
12:15:11 22 unit in the mainstream, correct?
12:15:13 23 A. Well, I'd like to retract that and
12:15:17 24 restate what I really mean.
25 Q. So what do you really mean?

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12:15:26 1 A. I mean that the timestamp of
12:15:32 2 Claim 1 need only be a time-based identifier.
12:15:34 3 Q. So there could be elements in the
12:15:36 4 mainstream -- I'm sorry.
12:15:39 5 There could be data units in the
12:15:40 6 mainstream -- strike that.
12:15:42 7 There can be multiple data units in
12:15:45 8 the mainstream that each have the same timestamp
12:15:47 9 in Claim 1.
12:15:48 10 Is that your --
12:15:49 11 A. I'm not saying that.
12:15:50 12 Q. Okay. Well --
12:15:53 13 A. I'm saying there may be multiple
12:15:55 14 data units in the mainstream which have the same
12:15:58 15 time and date value.
12:16:00 16 Q. But I'm asking about -- I'm not
12:16:02 17 asking about time and date values. I'm asking
12:16:04 18 about the timestamp.
12:16:05 19 So is there something in the
12:16:08 20 timestamp of Claim 1, in addition to time and
12:16:16 21 date values?
12:16:18 22 A. There may be and there may not be.
12:16:21 23 Q. Well, what -- what does Claim 1
12:16:27 24 require? Does Claim 1 require that timestamps
25 have something in addition to date and time

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12:16:30 1 information?
12:16:31 2 A. I'm sorry?
12:16:35 3 Q. Does Claim 1 require that the
12:16:37 4 timestamps of that claim include more than date
12:16:39 5 and time information?
12:16:42 6 A. Not necessarily.
12:16:46 7 Q. Well, it either requires it or it
12:16:48 8 doesn't, so which is it?
12:16:50 9 A. To the extent that the date and
12:16:55 10 time information produce unique values, then it
12:16:57 11 does not require additional information.
12:17:00 12 Q. Okay. And if the date and time
12:17:04 13 doesn't require additional -- I'm sorry.
12:17:06 14 If the -- if the timestamp requires
12:17:11 15 additional values beyond date and time, are
12:17:16 16 those additional values determined during -- by
12:17:23 17 the means for selecting of Claim 1?
12:17:24 18 MR. STEIN: Objection.
12:17:27 19 If you need time to look at your
12:17:31 20 report on the means for selecting information,
12:18:13 21 please do so.
12:18:15 22 Have you found that part?
12:18:30 23 THE WITNESS: Yes.
12:18:33 24 A. So, the claim limitation means for
25 selecting a timestamp to identify each data unit

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12:18:43 1 is -- does not include the generating the
12:18:43 2 timestamp.
12:18:46 3 And so the structure for selecting
12:18:51 4 a timestamp is user-oriented and has only to do
12:19:15 5 with date and time values.
12:19:17 6 MR. STEIN: I don't mean to
12:19:19 7 interrupt your line of questioning, but my
12:19:22 8 failure to eat breakfast this morning has made
12:19:25 9 me very hungry, so whenever you want to take a
12:19:27 10 break, I'd appreciate it.
12:19:28 11 MR. CHERENSKY: That's fine. We
12:19:30 12 can take a break.
12:19:32 13 THE VIDEOGRAPHER: We're off the
12:19:35 14 record. Time is 12:19 p.m.
12:19:36 15 (Luncheon recess.)
13:21:46 16 THE VIDEOGRAPHER: We're back on
13:21:49 17 the record. Time is 1:21 p.m.
13:21:50 18 BY MR. CHERENSKY:
13:21:52 19 Q. Good afternoon, Dr. Levy.
13:21:54 20 A. Good afternoon.
13:21:57 21 Q. When we broke for lunch, we were
13:22:00 22 discussing the timestamp to identify limitations
13:22:06 23 that's on Page 12 of your declaration,
13:22:10 24 Paragraphs 36 to 38. Why don't you turn back
25 there, if you would.

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13:22:17 A. Okay.
13:22:22 Q. In Paragraph 38 -- do you have
13:22:22 that?
13:22:23 A. Yes.
13:22:28 Q. -- about halfway through you talk
13:22:33 about the situation where a user might set the
13:22:35 date and time for the same value for more than
13:22:38 one document and, therefore, the date and time
13:22:44 alone cannot serve as a unique identifier.
13:22:49 And you agree that the timestamp
13:22:55 that's ultimately used to identify documents
13:22:58 needs to be unique for the documents to be
13:23:02 placed into a mainstream, correct?
13:23:03 A. Yes.
13:23:06 Q. Then you say that -- you continue
13:23:09 to say that, "In that case, further information
13:23:12 must used in addition to the date and time in
13:23:18 order to identify data units."
13:23:22 What -- what further information is
13:23:29 disclosed in the '227 specification to uniquely
13:23:46 identify data units?
13:23:47 MR. CHERENSKY: Off the record.
13:23:48 THE VIDEOGRAPHER: We're off the
13:23:50 record. Time is 1:23 p.m.
(Recess taken.)

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13:34:00 THE VIDEOGRAPHER: We're back on
13:34:04 the record. Time is 1:34 p.m.
13:34:06 BY MR. CHERENSKY:
13:34:07 Q. Okay. Dr. Levy, we were talking
13:34:10 about timestamp to identify in Paragraph 38, and
13:34:15 I was asking you about the -- the statement in
13:34:20 your declaration in Paragraph 38, a little bit
13:34:23 more than halfway through that paragraph where
13:34:28 you state, "In that case" -- in that case being
13:34:31 the case where the date and time alone cannot
13:34:35 serve as a unique identifier -- "further
13:34:38 information must be used in addition to the date
13:34:42 in time in order to identify data units."
13:34:44 And my question is: What further
13:34:50 information is disclosed in the '227
13:34:52 specification for further -- what further
13:34:55 information is disclosed for -- in addition to
13:34:59 date and time in order to uniquely identify data
13:35:00 units?
13:35:02 A. Okay. By the way, I didn't use the
13:35:06 word "uniquely" in my sentence, but,
13:35:06 nonetheless.
13:35:09 The specification taken as a whole
13:35:17 and the specifics about identifying simply leave
one of ordinary skill in the art to understand

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13:35:22 that when the date and time values are not
13:35:34 sufficient to create a unique identifier, that
13:35:36 something in addition will be needed.
13:35:39 Q. Okay. Is there any explicit
13:35:41 recognition in the '227 specification that date
13:35:45 and -- date and time may not be sufficient to
13:35:47 uniquely identify data units?
13:35:50 A. I don't believe that is explicit in
13:35:51 the specification.
13:35:53 Q. Also, there's no explicit
13:35:56 discussion in the specification regarding the
13:36:00 use of any additional information beyond date
13:36:04 and time in order to uniquely identify data
13:36:05 units.
13:36:06 Isn't that right?
13:36:08 MR. STEIN: Objection.
THE WITNESS: Could I hear that
13:36:32 one?
13:36:32 (Record read.)
13:36:35 A. Try to regard that as a simple
13:36:37 question. I think there is nothing that
13:36:39 identifies specific fields or values that would
13:36:43 be used that one of ordinary art -- skill in the
13:36:53 art would understand that needed to be used.
Q. You state in the last sentence in

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13:37:00 Paragraph 38 that, "One of ordinary skill in the
13:37:04 art would also understand that timestamps, as
13:37:07 frequently used in various software
13:37:12 applications, identify data items on the basis
13:37:14 of timestamps based on the date and time, plus
13:37:16 additional information."
13:37:20 What additional information would
13:37:23 one of ordinary skill in the art understand
13:37:26 might be used?
13:37:30 A. Anything that suffices to make the
13:37:32 timestamp unique.
13:37:36 Q. Can you provide any examples?
13:37:40 A. Sure, I'll offer an example.
13:37:45 When the resolution of the clock is
13:37:51 not sufficient, then one could append a pseudo
13:37:55 random number, let's say a 32-bit number, which
13:37:58 would then be used as part of the unique
13:37:58 identifier.
13:38:00 Q. And it's your opinion that one of
13:38:03 ordinary skill in the art would understand that
13:38:11 that could be -- I'm sorry, did you say could be
13:38:13 appended to the timestamp -- to the date and
13:38:13 time?
13:38:14 A. That is the word I used.
Q. Okay. So, and one of ordinary

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13:38:25 1 skill in the art would understand that this
13:38:29 2 32-bit pseudo random number could be appended to
13:38:31 3 the date and time specifically within the
13:38:36 4 context of the -- of Claim 1 of the '227 patent.
13:38:36 5 Is that right?
13:38:39 6 A. I'm not quite sure what you mean by
13:38:42 7 specifically to that claim.
13:38:42 8 Q. Sure.
13:38:44 9 So you testified that one of
13:38:45 10 ordinary skill in the art would understand that
13:38:51 11 if the resolution of the timestamp was
13:38:56 12 insufficient to uniquely identify, then a pseudo
13:39:00 13 random -- a 32-bit pseudo random number could be
13:39:02 14 appended to the date and time.
13:39:04 15 Would one of ordinary skill in the
13:39:08 16 art understand that that specific method could
13:39:10 17 be used in the context of Claim 1?
13:39:12 18 A. Well, I'm speaking of one of
13:39:15 19 ordinary skill in the art using timestamps in a
13:39:21 20 variety of software applications. And so, by
13:39:22 21 implication, that would include the type of
13:39:25 22 system referred to in Claim 1.
13:39:27 23 Q. Can you identify any specific
13:39:32 24 applications that append a 32-bit pseudo random
25 number to a date and time in order to uniquely

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13:39:36 1 identify data units?
13:39:38 2 A. No, I'm not prepared to do that
13:39:44 3 today.
13:39:46 4 Q. All right. So that's one method
13:39:50 5 that could be used to provide additional
13:39:53 6 information to date and time in order to
13:39:55 7 uniquely identify data units.
13:39:57 8 Can you provide any other examples
13:40:01 9 of methods that could be used to provide
13:40:03 10 additional information to date and time in order
13:40:06 11 to uniquely identify data units?
13:40:08 12 A. Yes.
13:40:12 13 One could use some other field that
13:40:20 14 already existed in the data unit that would,
13:40:23 15 when appended to the date and time, make it
16 unique --
13:40:24 17 Q. And --
13:40:27 18 A. -- make -- make a unique timestamp.
13:40:29 19 Q. Do you have any particular date --
13:40:31 20 any particular fields in mind that could be used
13:40:36 21 for that function?
13:40:38 22 A. Well, I haven't thought about it
13:40:44 23 very much, but the size of the data unit, if it
13:40:51 24 were there, might be a field one could use.
25 There could be others.

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13:40:55 1 Q. How would one of ordinary skill in
13:40:59 2 the art know that using the size of the data
13:41:05 3 unit appended to the date and time would
13:41:07 4 uniquely identify data units?
13:41:07 5 A. Well, it depends --
13:41:09 6 MR. STEIN: Objection.
13:41:12 7 A. -- it depends on what type of data
13:41:18 8 units we're talking about. If they were -- if
13:41:24 9 they were, say, text files, typically most text
13:41:27 10 files differ in length from each other; and,
13:41:29 11 therefore, for two text files that happen to
13:41:32 12 have the same date and time, it would be
13:41:35 13 unlikely for them to have the same length. But
13:41:37 14 that's just an example.
13:41:39 15 Q. It would be possible that two text
13:41:41 16 files have the same size and the same date and
13:41:42 17 time.
13:41:43 18 Isn't that right?
13:41:43 19 A. Yes.
13:41:47 20 Q. Okay. Can you -- I'm sorry. Did I
13:41:48 21 interrupt?
13:41:50 22 A. Yes. I -- I was only using that as
13:41:51 23 one example.
13:41:54 24 In fact, any field in which those
25 data units which have the same date and time,

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13:42:04 1 any field which would then distinguish between
13:42:07 2 those which have the same date and time would be
13:42:08 3 sufficient.
13:42:14 4 Q. Do you know of any applications
13:42:21 5 that use a field in the data unit in combination
13:42:25 6 with date and time in order to uniquely identify
13:42:31 7 data units?
13:42:33 8 A. Well, I'm not sure I can name an
13:42:35 9 application to you, but there's a classification
13:42:40 10 of applications that involve managing messages
13:42:44 11 being stored and forwarded where, in order to
13:42:48 12 identify a message, one needs a unique
13:42:55 13 identifier, and that may be constructed from a
13:43:03 14 time and date plus additional information.
13:43:05 15 Q. But you don't have any specific
13:43:08 16 applications in mind that use that method?
13:43:09 17 MR. STEIN: Objection.
13:43:13 18 A. I'm not prepared to name any today.
13:43:16 19 Q. Okay. And you don't know what
13:43:18 20 additional information might be used in any of
13:43:25 21 those unnamed applications in order to append to
13:43:28 22 date and time to uniquely identify data units,
13:43:29 23 do you?
13:43:34 24 MR. STEIN: Objection to form.
25 A. Well, I – I don't think that's

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13:43:39 1 quite fair. I believe I -- I could go on with
13:43:42 2 additional examples and eventually I might
13:43:45 3 recall an application I've worked on where one
13:43:48 4 particular kind was used.
13:43:55 5 Q. And this appending of the contents
13:43:57 6 of a field of the data unit to the date and time
13:44:02 7 information in order to uniquely identify data
13:44:05 8 units isn't discussed anywhere in the '227
13:44:07 9 specification, is it?
13:44:13 10 A. Only by implication.
13:44:15 11 Q. And by implication, are you
13:44:17 12 referring to your opinion that one of ordinary
13:44:21 13 skill in the art would know that date and time
13:44:24 14 alone might not be sufficient, so something else
13:44:27 15 might need to be done, or is there something
13:44:29 16 more specific that you have in mind?
13:44:37 17 A. No, I think that's generally it.
13:44:39 18 Q. Are there any other examples,
13:44:44 19 beyond the two that you've testified about, that
13:44:47 20 you're aware of for additional information to be
13:44:52 21 used along with date and time in order to
13:44:56 22 uniquely identify data units?
13:44:58 23 A. Yes.
13:45:00 24 In the case where the date and time
25 are set by a user -- or selected by a user, the

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13:45:13 1 system clock may well have additional time
13:45:18 2 resolution which could then be used at the time
13:45:26 3 of the creation of the stamp, in other words,
13:45:30 4 the low order bits of a realtime clock could be
13:45:37 5 used as the appended differentiating data field.
13:45:39 6 Q. Is that method of uniquely
13:45:43 7 identifying data units discussed anywhere in the
13:45:46 8 '227 specification?
13:45:49 9 A. I don't believe so.
13:45:54 10 Q. Anything else that you have in mind
13:45:56 11 as an example of additional information that
13:46:00 12 could be used in -- along with date and time to
13:46:05 13 uniquely identify data units?
13:46:11 14 A. Well, in the -- not an additional
13:46:14 15 type of -- of field, but in the case where an
13:46:19 16 agent or some software activity applies a
13:46:24 17 timestamp -- is generating a timestamp, when the
13:46:29 18 clock is sufficiently fine-grained, then it's
13:46:32 19 not even necessary to add another field to make
13:46:35 20 sure it's differentiated and unique.
13:46:40 21 Q. Does the '227 specification discuss
13:46:47 22 anywhere that a clock of finer resolution would
13:46:51 23 be used to set date and time by an agent versus
13:46:56 24 that that would be otherwise set?
25 A. No. This is merely something that

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13:47:00 1 would be understood by a person of ordinary
13:47:07 2 skill in the art.
13:47:13 3 Q. What -- if a document is received
13:47:20 4 by a system that meets Claim 1 of the '227
13:47:27 5 patent, what -- how is the date and time -- how
13:47:33 6 does the specification describe that a date and
13:47:38 7 time -- timestamp is selected for that document?
13:47:40 8 A. I'm sorry. You said both date and
13:47:42 9 time and timestamp, and I'm not sure if you
13:47:43 10 meant both.
13:47:44 11 Q. I meant -- well, I meant the
13:47:48 12 timestamp that is just date and time. So let me
13:47:51 13 re-ask the question in a hopefully less
13:47:52 14 confusing way.
13:47:55 15 How does the '227 specification
13:47:59 16 describe that a timestamp, consisting of just
13:48:02 17 date and time, is applied to a document received
13:48:09 18 by the system?
13:50:38 19 MR. STEIN: Objection to form.
13:50:43 20 A. I actually can't find the citation
13:50:45 21 right now, but there is a portion of the
13:50:48 22 specification that describes how a data unit,
13:50:53 23 which is generated or received, by default
13:50:57 24 receives the present time.
25 Q. Okay. So, by present time,

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13:51:03 1 you're -- you mean the time set by the system at
13:51:06 2 the time of receipt of the document?
13:51:08 3 A. Well, I wouldn't use the word
13:51:11 4 "set," but the time that the system clock
13:51:17 5 contains when the system goes about picking up a
6 date and time to apply --
13:51:20 7 Q. Okay.
13:51:21 8 A. -- to a timestamp.
13:51:26 9 Q. Do you recall a discussion in the
13:51:29 10 '227 specification regarding time tripping,
13:51:31 11 quote, time tripping, close quote?
13:51:33 12 A. In the context of going to a future
13:51:34 13 time --
13:51:35 14 Q. Yes.
13:51:37 15 A. -- or past time, yes.
13:51:40 16 Q. So if the user of the system is
13:51:43 17 time tripping into the future and a document is
13:51:47 18 received, what is the timestamp of the document?
13:51:49 19 A. That would depend on the policy of
13:51:52 20 the system and what kind of document was being
13:51:54 21 received.
13:51:58 22 Something like an email which the
13:52:01 23 user wouldn't be aware of receiving until some
13:52:04 24 moments later, the system would probably have an
25 agent which applies the current timestamp --

Exhibit 2

1 STEPHEN FEINER

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

4 ----------X
MIRROR WORLDS, LLC,
5
Plaintiff,
6
vs. No. 6:08 CV 88
7
APPLE, INC.,
8
Defendant.
9 ----------X
10
11 **CONTAINS CONFIDENTIAL PORTION**
12 DEPOSITION OF STEPHEN FEINER
13 New York, New York
14 Thursday, January 7, 2010
15
16 REPORTED BY: BARBARA R. ZELTMAN
Professional Stenographic Reporter
17
18 Job Number: 27001
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STEPHEN FEINER

and time that uniquely identifies each document."

And in my description of possible ways later on that one might implement a timestamp that uniquely identifies a document, I mentioned the use of additional data in the form, for example, of a counter, let's say, that could be used to be sure that something received a unique timestamp even if it was being created at the exact same time and the exact same date as something else.

Q So is it your opinion that a timestamp does not need to be a unique date and time value?

MR. BROWN: Objection.

A In the context of the patent?

Q Yes.

A I think that a timestamp, in the context of the patent, needs to, in some way, be unique for each document, so that one could not have two different documents that received the same timestamp.

STEPHEN FEINER

Q Does it have to be a unique date and time value?

A I think that the date and time, if you're referring to the actual clock date and time in a functioning of limitation in which two things could be done at the same time, that clearly would not uniquely identify a document.

And therefore, something would need to get done to create a timestamp that identifies documents uniquely to be able to make sure that that timestamp wasn't going to ambiguously be given to more than one document.

Q Then is the answer to my previous question "no"?

MR. BROWN: Objection.

A Could you ask the question again?

Q Does a stamp time need to be a unique date and time value?

MR. BROWN: Objection.

A It depends on what you mean by, "a unique date and time value." That's not what I said over here.

STEPHEN FEINER

One way to create a timestamp would be that either you make sure you could not somehow make two things or receive two things at the same time, in which case you should also make sure that a person having set the time into the future couldn't set it to the exact same time again.

And you could do that -- you know, I opined about this a little bit later on in my report, on various ways you could do things of that sort.

But I think that you could create a timestamp which, taking the date and time and adding additional information, would make that timestamp unique.

Q So when you stated in your report that, "A timestamp is a date and time" -- strike that.

When you stated in your report that, "A timestamp is a date and time value that uniquely identifies each document," you were including the

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possibility of additional information beyond the date and time?

A I was including the possibility of additional information beyond the date and time, and so I'm qualifying value with date and time. Because clearly, the timestamp needs to actually indicate time and date somehow.

But to make it unique, you would either have to ensure that you're never allowed to use that date and time again once you've used it, which it seems to me ...

For example, if I time tripped into the future and I set the date and time to a particular date and time, and then I went back in the past, or if I time tripped into the future and set the date and time to a particular date and time and then set it again to the same date and time, and I created one thing after setting it the first time and created a second document after setting it the second time, and the system then

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could, at the very beginning of time, so to speak, initialize U to zero and then just increment it with every single timestamp. That probably would make you have to have more bits associated with it independent of the value of C.

Q So those second two approaches would work to create a unique timestamp, correct?

A Those approaches would work.

Now, since I had not actually implemented streams and I had not actually implemented the software in the system, one of the things that we usually do in computer science is for people who are experimentalists, who are writing for conferences, for example, in which we have to actually -- we're talking about software.

Very rarely, except publications that are on so-called paper prototypes, ones in which a person waves their hands and says, "I could do this," or, "I could do that," precisely because it's very easy, when you wave your hands

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and describe something in the abstract, that you're going to not realize something that, if you actually tried implementing it, you would need to understand and that would keep you from doing it one way and make it better to do it another way.

And so here, I can give you a couple of suggestions on how to do this. I don't know if one of those would be much better than the other.

I think they would both work, but I haven't actually put this to the test by really running it.

I've speculated that the one in which U starts at zero and keeps on incrementing would certainly work because U would also be unique.

So it's guaranteed that the combination of C and U is going to be unique, except U can get bigger and bigger and bigger and bigger. And then I have to have a finite number of bits associated with U, in which case they

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could recycle.

And that's, you know, going to create a situation in which I could end up creating two documents that had the same timestamp.

And I would also need a lot more space. Or I could create a system in which I had a variable number of bits associated with U, and that would also let me create unique values of U.

And in fact, I could even implement it maybe having a more or less not unlimited number of bits, but I could have a potentially very large number of bits of U.

What I'm saying is that there's so many different ways to do it that I want to have some advice and some guidance, as an implementer, about which ways are better than others.

And it's my understanding certainly that in looking at a patent in which we're looking at things like this means-per-function claim, that I would

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want to see a description of how to do this at least one way in the patent, and I don't see it there.

Q Just looking at the second idea or the second method that I believe you testified would work, which is that you initialize U to zero and increment it with the creation of each timestamp, which would result in a unique value of U, how long did it take you to come up with that idea?

A I don't remember.

Q Is that a fairly straightforward solution?

A It depends what you mean by "straightforward."

I think a person of ordinary skill in the art would be able to come up with that solution.

Q What about the second method, in which you determine the values of U for each C to ensure that the U is unique for each C?

A I think a person of ordinary skill in the art would be able to come up with that. I don't think a person of ordinary

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skill in the art would look at that description and say, "Wow, that's incredibly inventive and novel, and I can't imagine anyone having thought about that without having incredible skill."

I'm not sure that I would imagine a person who was not of ordinary skill in the art would necessarily be able to come up with these.

And as I said, you know, there's tradeoffs. For each of those, I suggested what some of those tradeoffs may be in terms of the amount of time it takes to determine which values have already been used, which would even include issues of what happens if I delete a document, if I really delete a document as in the standard method of deletion of documents we have right now?

Do we not have holes, for example, in that sequence, the U sequence? Possibly.

Does it get reassigned? I don't know.

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So if I created, for example -- and I can. If I set the timestamp to a particular time and then I created many, many, many, many documents, received many, many e-mails, and then I deleted them, you know, if I wanted to save a little space, maybe my new ones would start again -- if I created one for time C, would start again at zero.

And maybe they would pick up where the last G left off, if I were doing this without having to take into account that the deletion got done.

(A brief recess was taken.)

BY MR. STEIN:

Q Can you please turn to Page 12 of your report?

In the second paragraph of Page 12, you posit a situation regarding how to assign timestamps to a document in connection with evolving work; is that correct?

A That is correct.

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Q By "evolving work," do you mean work in which the document has changed over time?

A I believe I used the phrase, "a document that is being modified."

Q Isn't one possibility for dealing with that situation that is described in the patents-in-suit to use a newly-created document and to have revisions to that document to the screen?

A One way in which one could deal with these very coarse-grain examples of this notion of evolving work is to make a copy of the document using Clone, and perhaps do that every time you wanted to make a clone of the document.

That's a rather heavy-handed approach, I think, because it also doesn't represent the differences in the explicit way between the cloned document, which is then presumably going to be modified, and the previous document.

So I think I was trying to get at the notion of a more fine-grain

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recording of evolving work in which a person makes changes.

It doesn't want to say that it's a new version of the document by explicitly going through the trouble of going to a menu and cloning it, but instead would perhaps like to have the system somehow indicate kind of the changed history of the document.

I guess the confusion I had here is, what is the date associated with a document if I have a document that starts off with a particular date and I make some modifications to it and I save it, which is something I do very often.

One of the most frequent commands I issue is Save, control S, all the time for things that control S does save.

And the question is: Does the document keep on changing its timestamp, or does it have the timestamp at which it was originally created? It's not