Apple Computer Inc. v. Burst.com, Inc.

APPLE COMPUTER, V. BURST.COM

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Doc. 75 Att. 3

SHEILA HEMAMI
November 14, 2006

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[1]
[2] he gets to the next piece, it's arrived, correct?
[3]   A: Yes.
[4]   Q: All right. Now, suppose he presses
[5] "rewind" on the video and he wants, after he's
[6] watched section number 3, he wants to go back and
[7] watch section number 2.
[8]   A: So now you're assuming that this is
[9] being stored.
[10]   Q: Well, let's suppose that only one of
[11] those pieces is stored at a time and that when
[12] he's finished watching, it's replaced by the next
[13] piece.
[14]   A: When he's finished watching it, the
[15] next piece already has to be there so —
[16]   Q: Right. This might not be — we're
[17] running low on time. This might not be worth it.
[18] I'm going to make one more effort to do this.
[19]   Suppose you've got two buffers on
[20] the client side. Does that make sense?
[21]   A: Okay.
[22]   Q: You fill one buffer in one second
[23] and it takes ten seconds to play it back, okay?
[24]   A: Okay.
[25]   Q: Before that ten seconds has elapsed,

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[1]
[2] you have to fill the next buffer so you can
[3] continue to watch continuously, right?
[4]   A: Okay.
[5]   Q: In that situation where you've only
[6] got two buffers and you've got only 20 seconds
[7] worth of video storage on the client side, if
[8] somebody presses "pause" or "rewind," you're going
[9] to have to — and wants to go back to a section
[10] that's more than 20 seconds away from where they
[11] are, you're going to have to send data all over
[12] again, right?
[13]   A: In the interpretation of what is
[14] written here that you have given me —
[15]   Q: Yes.
[16]   A: — the statement that you just ended
[17] with — what did you just end with — you would
[18] have to —
[19]   Q: Send the same data again?
[20]   A: Yes. I, I believe you have made an
[21] accurate statement.
[22]   Q: Okay. With that in mind, please
[23] reread this paragraph beginning with "however" and
[24] tell me if you think that's what it's talking
[25] about.

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[1]
[2]   A: I have no idea what this is talking
[3] about in that the Burst patents describe this stop
[4] watch starting and stopping, as I described, sort
[5] of the burst time period you can, the amount of
[6] time required to transmit the information is
[7] substantially less than the viewing time.
[8]   That discussion, in everything that
[9] I have read, pertains to transmitting not in what
[10] we say, in real time, this delineation that is
[11] given over Haskell, for example, on the previous
[12] page.
[13]   Reading this to me makes — I
[14] understand the "however" sentence. "System
[15] designers did not recognize that time compressed
[16] representations could be sent in a burst time
[17] period that is shorter than the time period needed
[18] for real-time viewing by a receiver."
[19]   Q: Well, let's stop there. If you
[20] understand that sentence, can you tell me what you
[21] understand that sentence to mean?
[22]   A: I understand that sentence to mean
[23] that at the time of these patents, people were
[24] focused on real-time delivery of digital
[25] audio/video source information, what we would

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[1]
[2] today call "streaming."
[3]   There was not a recognition of what
[4] we could call perhaps the fast download or the
[5] fast dump where the entire — rather than simply
[6] broadcasting in real time, that one could actually
[7] do a fast download.
[8]   I think I discuss this in my report
[9] so, which is probably written in a more eloquent
[10] fashion with better verbs.
[11]   Q: You may be referring to the section
[12] where you describe the Burst concept at the end of
[13] the section 2, which is pages 25 through 26.
[14]   A: I think, yes, 24 through 26.
[15]   Q: Oh, I'm sorry. 24.
[16]   A: Yes. And the Burst patents did not
[17] do this "streaming," to use a word from today, to
[18] describe what's going on. So I agree with that
[19] "However" sentence.
[20]   The next sentence, "Sending time
[21] compressed representations to a receiver can add a
[22] new variable consumption rate to the equation
[23] which indicates the maximum number of clients the
[24] system can service."
[25]   Now, the first time I read this

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[1] **Hemami**
[2] sentence, I said I have absolutely no idea what
[3] this is talking about and my reaction to the
[4] following sentence was similar in that pause or
[5] rewind, unless information may need to be sent,
[6] this, this already suggests two-way communication
[7] which is not described in what's going on.
[8]   **Q:** Given the hour and my heretofore
[9] failed attempt to explain to you what that meant,
[10] I think it's time to move on. If you don't
[11] understand it sitting here today, I don't want to
[12] spend more time on it.
[13]   I do want to talk about the section
[14] in your report that you just referred to about the
[15] Burst concept. And it appears to me that the
[16] first part of that two or three-page section
[17] titled "The Burst Concept," where you actually
[18] describe what you understand the Burst concept to
[19] be is on page 26 where you say, "The idea of a
[20] 'burst transmission' — one in which an entire
[21] program or portion thereof was quickly delivered
[22] to a user" —
[23]   **A:** Sorry. You said — oh, I'm sorry.
[24] I was on the wrong page. Yes, okay.
[25]   **Q:** Okay. You say there, "The idea of a

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[1] **Hemami**
[2] 'burst transmission.'" Do you see that sentence?
[3]   **A:** Yes.
[4]   **Q:** And you say that idea wherein an
[5] entire program or a portion thereof was quickly
[6] delivered to a user "was a significant departure
[7] from continuous delivery."
[8]   Do you see that?
[9]   **A:** Yes.
[10]   **Q:** And then in the final sentence, you
[11] say, "The Burst patents were the first to realize
[12] that the increasing, the increasing availability
[13] of large memories could be used to enable a new
[14] paradigm in transmission of audio/video source
[15] information, i.e., 'burst' transmission."
[16]   Do you see that?
[17]   **A:** Yes.
[18]   **Q:** Is that what your understanding of
[19] what the Burst concept is?
[20]   **A:** This is my understanding of the
[21] Burst concept.
[22]   I would like to clarify that when I
[23] say "entire program or portion thereof," here I am
[24] referring to the fact that the parties disagree on
[25] what constitutes a program and I made a disclaimer

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[1] **Hemami**
[2] earlier on in the reports saying this is a claim
[3] construction issue, I'm just going to talk about
[4] this thing generically.
[5]   **Q:** Sure.
[6]   **A:** So this is not meant to suggest, for
[7] example, that TDMA could be used to deliver a
[8] program in real time with a portion thereof. This
[9] is simply meant to generically refer to whatever
[10] program may be run.
[11]   **Q:** Understood. Let's focus on, just on
[12] that for a few minutes and then I want to come
[13] back to this because I want to get clearer your
[14] position on what has to be transmitted.
[15]   I believe, and I think it's actually
[16] on the next page, that the construction you're
[17] advancing requires that what is, that the
[18] audio/video source information be an audio and/or
[19] video work, correct?
[20]   **A:** Yes.
[21]   **Q:** What does "work" mean?
[22]   **A:** So first, I'll refer you to what I
[23] wrote on the next page and then I can provide more
[24] detail if you would like. Sorry. Where did I
[25] quote?

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[1] **Hemami**
[2]   (Pause)
[3]   **A:** I'm sorry. So we have at the top of
[4] page —
[5]   **Q:** Twenty-eight.
[6]   **A:** Twenty-eight where, and I guess the
[7] paragraph starts at the bottom of page 27. "The
[8] information has creative meaning; for example, the
[9] video is described as movies or television
[10] programs, rather than" some type of, for example,
[11] "video from a security system camera. Webster's
[12] dictionary definition of 'work' is 'something
[13] produced by the exercise of creative talent or
[14] expenditure of creative effort.'"
[15]   **Q:** Does — I'm sorry. Were you
[16] finished?
[17]   **A:** No, go ahead. I was finished.
[18]   **Q:** Does the word "work" appear in the
[19] Burst patents?
[20]   **A:** If it appears, it certainly doesn't
[21] appear in the context of the Webster's definition
[22] which I have. I don't know if the word actually
[23] appears or not.
[24]   **Q:** Right. The word the patents use to
[25] describe what is transmitted is "program," right?

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[1]   *Hemami*
[2]   **A:** "Program" with a long descriptive
[3] term, a long descriptive associated with it —
[4]   **Q:** Well, let's —
[5]   **A:** — which I think I refer to.
[6] Actually, also on page 28 in the first full
[7] paragraph.
[8]   **Q:** Okay.
[9]   **A:** So the, "Apple construes" paragraph
[10] about five lines down.
[11]   **Q:** So you refer there to lines 20
[12] through 24 in column 1 of the '839 patent. Is
[13] that right?
[14]   **A:** Yes. Let us hope that is the actual
[15] correct numbers.
[16]   **Q:** Let's go look at that.
[17]   **A:** And that is a direct quote as well.
[18]   **Q:** So they say there, "The term
[19] 'program' encompasses movies and other types of
[20] audio" — "of video and/or audio materials whether
[21] broadcast from a TV station or another source."
[22]   **A:** Yes.
[23]   **Q:** Do you understand the term "program"
[24] to include, for example, a 5 minute clip of a 30
[25] minute TV show?

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[1]   *Hemami*
[2]   **A:** Given this parenthetical, I do.
[3]   **Q:** So in your mind, does the
[4] audio/video source information in the claims of
[5] the Burst patents include, for example, a 5 minute
[6] clip of a 30 minute TV show?
[7]   **A:** I think it does. I think that
[8] it's — as opposed to the entire 30 minute
[9] television show that one could select sections.
[10]   **Q:** Okay. If you look at the '839
[11] patent, claim 1 which is column 13 —
[12]   **A:** Yes.
[13]   **Q:** — we've, as we've discussed before,
[14] what is transmitted at the end is the stored time
[15] compressed representation, right?
[16]   **A:** Yes.
[17]   **Q:** So I think we agreed that the time
[18] compressed representation, at some point, had to
[19] be stored in its entirety, correct?
[20]   **A:** Well, if we start our pointer — if
[21] we have limited memory, right — remember, our
[22] pointers just have to catch up at the end so it's
[23] possible that once we've sent this stuff, we can
[24] reuse this section of the memory in which case,
[25] obviously we're rewriting in memory the entire

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[1]   *Hemami*
[2] program.
[3]   While it has been stored at some
[4] point in its existence, at no point does it exist
[5] in the memory in its entirety.
[6]   **Q:** Okay.
[7]   **A:** And that would be a possibility.
[8]   **Q:** All right. So that's what I'm
[9] trying to clarify.
[10]   Do you believe — suppose that the
[11] audio/video source information is your 5 minute
[12] clip of a 30 minute program, okay?
[13]   **A:** Uh-huh.
[14]   **Q:** In claim 1, it says, "Storing said
[15] time compressed representation of the received
[16] audio/video source information," right?
[17]   Can that element be satisfied if no
[18] more than 1 minute of the 5 minute clip is ever
[19] stored at a single time?
[20]   **A:** Can the elements be satisfied?
[21]   **Q:** In other words, are you storing said
[22] time compressed representation if at no point you
[23] ever store more than 1/5th of it?
[24]   **A:** Well, we would like to edit the
[25] thing as in claim 2 and clearly we can't edit

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[1]   *Hemami*
[2] something that isn't there. So from the operation
[3] of the device, I think it certainly sounds like we
[4] do want the whole thing to be in memory.
[5]   **Q:** Would you also agree that you are
[6] not storing the time compressed representation if
[7] you're only storing 1/5th of it at a time?
[8]   **A:** If you're only storing — well, you
[9] are storing —
[10]   **Q:** At that point, you're storing a
[11] portion of the time compressed representation, not
[12] said time compressed representation, correct?
[13]   **A:** If — yes, I think we can say that.
[14]   **Q:** So to satisfy that storing element,
[15] you have to store the representation of the entire
[16] audio/video source information?
[17]   **A:** Whatever the entire information is.
[18]   **Q:** Right. And it's certainly your view
[19] that the audio/video source information doesn't
[20] have to be an entire 30 minute television program
[21] or an entire two hour movie, right?
[22]   **A:** Yes.
[23]   **Q:** It could be a 5 minute clip?
[24]   **A:** Yes.
[25]   **Q:** But whatever it is, that entire

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[1]   *Hemami*

[2] thing needs to be stored in the storing step. Is
[3] that right?
[4]   **A:** I think — that thing sits in memory
[5] 13, which is what the storing step pertains to.
[6]   **Q:** So the answer is "yes"?
[7]   **A:** Yes.
[8]   **Q:** Okay. Let's go back to page 26.
[9]   **A:** Yes.
[10]   **Q:** I think we can now replace your
[11] phrase here, "an entire program or a portion
[12] thereof" with the concept of the audio/video
[13] source information, right?
[14]   **A:** Whatever that may be, yes.
[15]   **Q:** Whatever that may be.
[16]   **A:** Yes.
[17]   **Q:** So is it true that your
[18] understanding of the Burst concept is that it is a
[19] transmission in which the audio/video source
[20] information is — well, I think the last sentence
[21] is actually a better sentence.
[22]   You wrote here, "The Burst patents
[23] were the first to realize that the increasing
[24] availability of large memories could be used to
[25] enable a new paradigm in transmission of

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[1]   *Hemami*

[2] audio/video source information, i.e., 'burst'
[3] transmission," right?
[4]   **A:** Yes.
[5]   **Q:** And that's because when you had
[6] memories big enough to store the complete
[7] audio/video source information on the receiving
[8] end, you could send the entire thing that you're
[9] transmitting faster than real time, right?
[10]   **A:** I think I would say "on the
[11] transmitting end," but it depends on your use of
[12] "receiving," whether you're talking about received
[13] from an input or — yes. In order to transmit the
[14] thing very speedily, the thing has to exist.
[15]   **Q:** And in order for that to be
[16] worthwhile on the user's end, you have to be able
[17] to watch it, right?
[18]   **A:** Yes.
[19]   **Q:** So if you transmitted it ten times
[20] faster than real time and you can only store
[21] 1/10th of it, you couldn't watch it, could you?
[22]   **A:** If the memory at the receiving end
[23] was not sufficiently large to accept what was
[24] coming in, clearly that person would only get
[25] whatever's in the memory, like when one's TiVo

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[1]   *Hemami*

[2] hard disk is full.
[3]   **Q:** Right. So in order to transmit the
[4] entire audio/video source information faster than
[5] real time and then view it in real time, you have
[6] to store it in its entirety on the user's end?
[7]   **A:** Because it's going to come in faster
[8] than you eat it, yes.
[9]   **Q:** So the answer is "yes," you need
[10] sufficient storage to store the complete audio or
[11] at least the complete time compressed
[12] representation on the user's end, correct?
[13]   **A:** The complete time representation.
[14] The receiving unit must be able to store what it
[15] is transmitted.
[16]   **Q:** And it's your view that the Burst
[17] concept or that the — let me just use the actual
[18] language.
[19]   It's your view that the Burst
[20] patents were the first to realize that the
[21] increasing availability of large memories enabled
[22] one to do faster than real-time transmission of a
[23] complete piece of audio/video source information?
[24]   **A:** Yes.
[25]   **Q:** Now, you understand that there is

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[1]   *Hemami*

[2] cited prior art which is discussed in the file
[3] history, Haskell being an example, which discloses
[4] sending pieces of a larger program, where each
[5] piece is sent faster than real time but the entire
[6] program is only sent in real time, correct?
[7]   **A:** Yes, the Haskell transmission is
[8] characterized in the file histories as real time.
[9] We were just opened to that page.
[10]   **Q:** And you understand that Haskell
[11] sends pieces of the program faster than real time,
[12] right?
[13]   Let's go back to Haskell. If you
[14] don't remember that, we ought to clarify it. I
[15] believe it's Exhibit 81.
[16]   Do you have it?
[17]   **A:** I do.
[18]   **Q:** Let's make sure that we get this
[19] right.
[20]   Do you see in the "Summary of the
[21] Invention" section where it describes a scan line
[22] with a predetermined time duration?
[23]   **A:** Can you give me a line number?
[24]   **Q:** Sure. Line 13.
[25]   **A:** Yes.

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[1]   *Hemami*
[2]   **Q:** And then it says, "The signal
[3] processor compresses in time the duration of each
[4] scan line of the video signal."
[5]   **A:** Yes.
[6]   **Q:** And then it says that that happens
[7] by a predetermined compression factor.
[8]   **A:** Yes.
[9]   **Q:** And then later on down at the bottom
[10] of the summary, it says that there's a receiver
[11] where the compressed signal is expanded and the
[12] "expanded video signal is extracted from
[13] therefrom." Do you see that?
[14]   **A:** Yes.
[15]   **Q:** So what Haskell is describing is
[16] compressing the amount of time it takes to send an
[17] individual scan line, right?
[18]   **A:** Yes.
[19]   **Q:** Which is only a very small portion
[20] of a video program, right?
[21]   **A:** It is.
[22]   **Q:** So a portion of a single frame of a
[23] video program, right?
[24]   **A:** Yes.
[25]   **Q:** So Haskell describes sending

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[1]   *Hemami*
[2] individual scan lines faster than they need to be
[3] displayed, right?
[4]   **A:** The time it takes to transmit a scan
[5] line is less than the time for the CRT to sweep
[6] the scan line.
[7]   **Q:** But because the only thing that's
[8] being sent faster than real time is one scan line
[9] as opposed to a complete program, the transmission
[10] is still happening in real time, right?
[11]   **A:** I'm sorry. Can you repeat the
[12] question?
[13]   **Q:** Sure. One thing — the thing that's
[14] being sent faster than real time in Haskell is a
[15] scan line, right?
[16]   **A:** Yes.
[17]   **Q:** That's being sent faster than the
[18] amount of time it takes to display the scan line?
[19]   **A:** Yes.
[20]   **Q:** So Haskell doesn't send the entire
[21] program in a time compressed form; it sends
[22] portions of the program in a time compressed form,
[23] right?
[24]   **A:** I'm not even sure I would call the
[25] scan line a portion but yes, an infinitesimally

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[1]   *Hemami*
[2] small analog signal.
[3]   **Q:** Right. If we go back to the '839
[4] patent, claim 1?
[5]   **A:** Yes.
[6]   **Q:** Under your interpretation of time
[7] compressed representation, that's a
[8] data-compressed version of the audio/video source
[9] information, correct?
[10]   **A:** Yes.
[11]   **Q:** And you explained that compressing
[12] an audio/video signal was known to a person of
[13] ordinary skill in 1988, right?
[14]   **A:** Yes.
[15]   **Q:** And certainly storing a compressed
[16] file was known to a person of ordinary skill in
[17] the art in 1988, right?
[18]   **A:** Yes.
[19]   **Q:** And we haven't discussed this but I
[20] believe you'd agree that receiving audio/video
[21] source information was known to a person of
[22] ordinary skill in the art in 1988, right?
[23]   **A:** Yes.
[24]   **Q:** So in your view, is it true that the
[25] novelty that the part of the Burst patent, claim 1

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[1]   *Hemami*
[2] of the Burst patent that was new as of 1988 is in
[3] the transmitting step?
[4]   **MR. PAYNE:** Objection.
[5] Nick, are you getting into
[6] areas outside of claim construction at
[7] this point?
[8]   **MR. BROWN:** I'm trying to
[9] understand what she said the Burst
[10] concept was. I think we're almost
[11] done and I think she's already said
[12] this.
[13]   **MR. PAYNE:** I just want to
[14] make clear that, you know, she's being
[15] tendered today as a claim construction
[16] expert and I don't think it's
[17] appropriate to get into patentability
[18] or validity issues so I'm not sure
[19] what you're asking her.
[20]   **MR. BROWN:** Sure. What I want
[21] to ask her about is the Burst concept
[22] that she described in her claim
[23] construction expert report.
[24]   **MR. PAYNE:** That's fair game.
[25]   **Q:** And maybe I'll put it this way.

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[1]   *Hemami*
[2] Do you agree that the Burst concept
[3] is not about the specifics of receiving the
[4] audio/video information, compressing it or storing
[5] it?
[6]   **MR. PAYNE:** Objection. Form.
[7]   **A:** The, this is sort of a wholistic
[8] thing.
[9]   Without the data compression, we
[10] have, we have discussed that the file sizes are
[11] exorbitantly large. That point is also made in
[12] the specifications. And I also mention in my
[13] report that these uncompressed files were
[14] extremely large and certainly in the case of
[15] video.
[16]   **Q:** Do you agree that the Burst concept
[17] is the concept of faster than real-time
[18] transmission of audio/video data?
[19]   **MR. PAYNE:** Objection. Form.
[20]   **A:** I believe that the Burst concept
[21] involves faster than real-time transmission of
[22] audio/video data but also requires some other —
[23] it must be — there must be things that occur to
[24] enable this, right? I would like to jump off the
[25] Empire State Building and land safely. Clearly, I

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[1]   *Hemami*
[2] need a parachute.
[3]   **Q:** Right. Well, let's talk about the
[4] concept of whether the data compression is
[5] required for the faster than real-time
[6] transmission.
[7]   Why don't you look at the '839
[8] patent at — I don't have it highlighted.
[9]   Do you have the '995 patent?
[10]   **A:** I do. I have both.
[11]   **Q:** Why don't you look at that at column
[12] 7. And do you have column 7?
[13]   **A:** I do.
[14]   **Q:** And at line 55, it describes the
[15] fiber optic line. Do you see that?
[16]   **A:** I do.
[17]   **Q:** And it describes the speed of the
[18] fiber optic line as 200 megabytes per second,
[19] correct?
[20]   **A:** Yes, about 200 megabytes per second.
[21]   **Q:** So that is about 1/5th of a gigabyte
[22] per second, correct?
[23]   **MR. PAYNE:** I'm going to
[24] object to form there because I think
[25] that's a typo.

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[1]   *Hemami*
[2]   **MR. BROWN:** You think what's a
[3] typo? "About" or the "200"?
[4]   **MR. PAYNE:** I think the
[5] "bytes" might be a typo but I'm not
[6] sure.
[7]   **MR. BROWN:** Okay.
[8]   **Q:** Well, in any event, the text there
[9] says, "about 200 megabytes per second," correct?
[10]   **A:** Yes.
[11]   **Q:** And that is 1/5th of a gigabyte per
[12] second, right?
[13]   **A:** Or 1.6 gigabits per second.
[14]   **Q:** Let's go to column 5 of the '995
[15] patent.
[16]   It says in column 5 at line 21 — or
[17] 20 and 21 that if no data compression is used, "it
[18] would take approximately 51.03 gigabytes to store
[19] a 2 hour movie." Do you see that?
[20]   **A:** Yes.
[21]   **Q:** If you're transmitting at .2
[22] gigabytes per second, it's going to take you much
[23] less than two hours to transmit that 51 gigabytes,
[24] correct?
[25]   **A:** And that's a giant "if" because in

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[1]   *Hemami*
[2] the context of this invention, we wouldn't be able
[3] to store the 51 gigabytes. This 51 gigabytes is
[4] described as precisely in the context of
[5] presenting the compression, to motivate and
[6] explain why data compression is part of the
[7] invention.
[8]   **Q:** So in your view, data compression is
[9] needed to store the 51 gigabytes, is that right?
[10]   **A:** In order to store it in a reasonable
[11] unit, yes.
[12]   **Q:** And that's, in fact, what the
[13] implication of the sentence here, which says that
[14] by using the compression, it's estimated that
[15] memory will require only 250 megabytes, right?
[16]   **A:** Yes.
[17]   **Q:** So here they expressly link the use
[18] of data compression to reducing the memory
[19] requirement?
[20]   **A:** That is right.
[21]   **Q:** But it's also true that the
[22] transmission rate that's described for the fiber
[23] optic line that's described in the '995 patent
[24] would transmit the uncompressed movie faster than
[25] real time, right?

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[1] **Hemami**

[2] **A:** But as we just discussed, we must

[3] store the movie prior to, I'm sorry, prior to

[4] transmission. And if we can't store it — as you

[5] pointed out, if we don't have enough memory to

[6] store or, say, on the receiving end to receive the

[7] whole thing, we're just not going to be able to

[8] transmit the audio/video source information

[9] because we don't, we can't keep it all.

[10] **Q:** But you do agree that the disclosed

[11] fiber optic line can transmit the uncompressed

[12] movie faster than real time, right?

[13] **A:** If we divide the numbers. If we ask

[14] how long it takes to transmit a 51 gigabyte file

[15] over a link of approximately, or sorry, about 200

[16] megabytes per second and if we were told that that

[17] 51 gigabyte file represented something that had a

[18] two hour duration, certainly we would conclude

[19] that that number is smaller than two hours, but in

[20] the context of these patents, that number is not

[21] meaningful.

[22] **Q:** Let's go to page 12 of your expert

[23] report.

[24] **A:** Yes.

[25] **Q:** In the second paragraph under "Audio

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[1] **Hemami**

[2] and Video Sources," in the third line you state

[3] that, "An audio signal in its entirety has an

[4] associated 'length.'" Do you see that?

[5] **A:** Yes.

[6] **Q:** And you say that length represents

[7] "the time required to play the signal from a

[8] recording or to listen to it," right?

[9] **A:** Yes. The implicit assumption being

[10] there that we're not going to chipmunk it, yes.

[11] **Q:** You said "we're not going to

[12] chipmunk it"?

[13] **A:** Yes.

[14] **Q:** By "chipmunk it," do you mean, for

[15] example, playing a 33 RPM LP record at 45?

[16] **A:** Yes.

[17] **Q:** But you — let's take the example of

[18] a three minute song. A three minute song has —

[19] **A:** An audio, an audio song?

[20] **Q:** Correct, a three minute audio song,

[21] right? That audio song has an associated time

[22] period of three minutes, right?

[23] **A:** Yes.

[24] **Q:** Okay. Now, let's suppose that we

[25] compress that song into an MP3 file, okay? And

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[1] **Hemami**

[2] the MP3 or there are many MP3 compression

[3] algorithms but they all involve data compression,

[4] correct?

[5] **A:** Yes.

[6] **Q:** So now we have a compressed MP3.

[7] That MP3 also has an associated time period, which

[8] is the length of the song, right?

[9] **A:** With respect to what we're calling

[10] associated time periods with the patents, yes.

[11] That MP3 file represents audio

[12] content, which when played back at a normal, at

[13] its normal rate, whatever that may be, is three

[14] minutes.

[15] **Q:** Right. So by compressing the file

[16] into an MP3, you aren't changing the time period

[17] associated with it, right?

[18] **A:** Yes.

[19] **Q:** The time period associated with the

[20] song is still the playback length of the song,

[21] right?

[22] **A:** Because it is still the

[23] representation of the content in the abstract

[24] form, the song.

[25] **Q:** Right. So the time period that is

Page 299

[1] **Hemami**

[2] associated with a compressed MP3 song is the

[3] length of the song, right?

[4] **A:** If we are talking about how long the

[5] song is, the answer to that question does not

[6] change whether we MP3 it, whether we DPCM it,

[7] whether we do something horrible to it such that

[8] we can't play it back, then it was a three minute

[9] song.

[10] **Q:** But if you have a, a representation

[11] of the song, doesn't that imply that something

[12] horrible wasn't done to it and you're going to be

[13] able to recreate the song?

[14] **A:** You would hope.

[15] **Q:** I understand we may not have

[16] discussed this expressly but it, do you agree that

[17] a person of ordinary skill in the art when seeing

[18] the word "representation" in the context of the

[19] Burst patents, the representation of an

[20] audio/video source information, would understand

[21] that that representation could be converted back

[22] into something that had meaning?

[23] **A:** Yes.

[24] **Q:** And if not a perfect representation

[25] of the original audio/video source information, at

Page 300

[1] *Hemami*

[2] least it would be a highly-correlated

[3] representation. Is that right?

[4] **A:** Good enough. Yes. A good enough

[5] representation.

[6] **Q:** Okay. And because of that, it's

[7] fair to say that when you compress the song,

[8] you're not changing the length of time associated

[9] with the song, right?

[10] **MR. PAYNE:** Objection. Form.

[11] **A:** You're not changing the length of

[12] time in which you would play back the song. With

[13] respect to the length of time associated with the

[14] song, the patent uses, the patents use burst time

[15] periods, they use time periods associated with the

[16] real-time representation and I think that there's

[17] another association which was discussed yesterday.

[18] So it's a little loose.

[19] **Q:** Let's shift gears for a second and

[20] can you get out the Gitlin reference, Exhibit 84,

[21] and go to page 609?

[22] **A:** 609, okay.

[23] **Q:** Do you have page 609?

[24] **A:** I do.

[25] **Q:** And do you recall that you testified

Page 301

[1] *Hemami*

[2] earlier about the top portion of the figure on

[3] page 609?

[4] **A:** Yes.

[5] **Q:** And I believe you said that the

[6] horizontal axis in those depictions represents

[7] time, right?

[8] **A:** Yes.

[9] **Q:** And you said that the signal — if

[10] you look at the left half of that picture, there

[11] are two images in the top portion, right? And one

[12] of them is a representation of the other that has

[13] a shorter time scale, correct?

[14] **A:** Yes.

[15] **Q:** So the one on the right, the, the

[16] time that's associated with that representation

[17] looks to be about half the time that's associated

[18] with the other representation, right?

[19] **A:** Well, I don't want to use

[20] "associated" with the representation in your

[21] question to correspond to the same "associated"

[22] when we were talking about the three minute with

[23] respect to the audio.

[24] **Q:** Fair enough. Let's use different

[25] language.

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[1] *Hemami*

[2]   There's a time period that is

[3] depicted in that figure for both of those signals,

[4] correct?

[5] **A:** Yes.

[6] **Q:** And it's hard to be exact but it

[7] seems that the figure on the right has a time

[8] period that is about half of the time period of

[9] the signal on the left. Is that right?

[10] **A:** I would say that the expanse of the

[11] X-axis on the right, yes, appears to be about half

[12] of the expanse of the X-axis on the left.

[13] **Q:** And you said before that the one on

[14] the right is a time compressed version of the one

[15] on the left, right?

[16] **A:** In the context of time-compression

[17] multiplexing, which is described here on page 609,

[18] which is a technique for full duplex

[19] communication, which means that both parties are

[20] communicating simultaneously, this block diagram

[21] pertains to time-compression multiplexing.

[22]   What we see at the top is simply a

[23] graphic representing clocking bits out at a faster

[24] rate than they were originally put in.

[25] **Q:** Or in other words, clocking the same

Page 303

[1] *Hemami*

[2] bits out in a shorter time period?

[3] **A:** I think that's more eloquent.

[4] **MR. PAYNE:** Nick, I haven't

[5] been keeping track of the exact time.

[6] I don't know where we are. Are you —

[7] **MR. BROWN:** I don't know

[8] either. Why don't we do this? Let me

[9] ask a couple more questions. Then

[10] we'll take a break and add up the

[11] time. How's that?

[12] **MR. PAYNE:** Sounds good.

[13] **MR. BROWN:** Can you read back

[14] the last question and answer?

[15]   (Record read as follows:

[16]   "Question: And you said

[17] before that the one on the right is a

[18] time compressed version of the one on

[19] the left, right?

[20]   "Answer: In the context of

[21] time-compression multiplexing, which

[22] is described here on page 609, which

[23] is a technique for full duplex

[24] communication, which means that both

[25] parties are communicating

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[1]   **Hemami**

[2] simultaneously, this block diagram

[3] pertains to the time-compression

[4] multiplexing.

[5]   "What we see at the top is

[6] simply a graphic representing clocking

[7] bits out at a faster rate than they

[8] were originally put in.

[9]   "Question: Or in other words,

[10] clocking the same bits out in a

[11] shorter time period?

[12]   "Answer: I think that's more

[13] eloquent."

[14]   **Q:** Is it true that the graphic at the

[15] top of the figure shows reading the same bits out

[16] in a shorter time period?

[17]   **A:** Yes.

[18]   **Q:** Which is another way of saying that

[19] they were read out at a higher rate?

[20]   **A:** Yes.

[21]   **Q:** And the text describes that process

[22] of reading the same bits out in a shorter time

[23] period as time compression, correct?

[24]   **A:** That I'm not sure. Let me read the

[25] text.

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[1]   **Hemami**

[2]   **Q:** Okay.

[3]   (Pause)

[4]   **A:** So the text does not use those

[5] words. The text describes that this technique

[6] alternates fast transmission bursts in each

[7] direction saving up data submitted to each

[8] transmitter at a lower rate in buffers so that

[9] each of the end terminals has the illusion of a

[10] continuously available channel.

[11]   **Q:** Okay. So the data that was read out

[12] at a faster rate is referred to in the text as the

[13] fast transmission burst, right?

[14]   **A:** I think the transmission of the data

[15] that was read out is the fast transmission burst.

[16]   **Q:** Okay. And the length of time that

[17] that fast transmission burst occupies is smaller

[18] than the length of time of the, occupied by the

[19] incoming signal?

[20]   **A:** If we clocked the data rate as in

[21] the rate at which data was being produced and we

[22] do not see the production mechanism here but this

[23] is described with respect to voice band

[24] communication, so it's reasonable to assume that

[25] this is either a modem signal or digitized voice,

Page 306

[1]   **Hemami**

[2] okay, those little square waves.

[3]   If we clock the rate at which the

[4] bits are produced in the digitized voice band

[5] signal, the rate at which those bits are clocked

[6] onto the channel is a higher rate than the rate at

[7] which they were produced.

[8]   **Q:** And that's accomplished using a

[9] buffer and reading the bits out of the buffer

[10] faster than they're read in, right?

[11]   **A:** In this diagram, that is what is

[12] done, yes. We have a buffer and then the buffer

[13] leads into the box which says burst transmission.

[14]   **MR. BROWN:** Okay. Let's go

[15] off the record to check the time.

[16]   **THE VIDEOGRAPHER:** The time is

[17] now 5:15. Off the record.

[18]   (Recess taken)

[19]   **THE VIDEOGRAPHER:** The time is

[20] now 5:19. On the record.

[21]   **BY MR. BROWN:**

[22]   **Q:** Let's look at the Izeki reference,

[23] Exhibit 88.

[24]   **A:** I had it handy and then — here it

[25] is. I have it.

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[1]   **Hemami**

[2]   **Q:** Okay. Specifically I'd like to have

[3] you look at Figure 1. Do you see that?

[4]   **A:** Yes.

[5]   **Q:** And you remember there's a comment

[6] in your expert report about the premastering unit?

[7]   **A:** Yes.

[8]   **Q:** And you see that that's at the

[9] bottom right of that figure?

[10]   **A:** I do.

[11]   **Q:** Do you also see in the figure

[12] display and keyboard, which are marked as 49 and

[13] 50?

[14]   **A:** Yes.

[15]   **Q:** And do you see how they have a

[16] dotted line around them?

[17]   **A:** I do.

[18]   **Q:** Does that indicate to you that those

[19] are separate from the interface they're connected

[20] to?

[21]   **A:** It does not.

[22]   **Q:** Why not?

[23]   **A:** Because I actually looked at that

[24] patent with respect to exactly that question and I

[25] concluded that the dashed line did not indicate

Page 308

[1]   *Hemami*
[2] that it was separate although that was my initial
[3] hypothesis. That's why I read the patent in that
[4] light.
[5]   **Q:** Okay. Are you familiar with the
[6] term "console"?
[7]   **A:** Yes.
[8]   **Q:** And what does a console mean to you?
[9]   **A:** Well, we have the term of furniture
[10] which, which we'll discount.
[11]   A console is a large unit — that
[12] makes a lot of sense. It's a mechanism by which
[13] equipment can be housed together.
[14]   **Q:** I've heard the term "console" used
[15] in the context of mainframe computing to refer to
[16] the device which is used to connect to the
[17] mainframe.
[18]   Have you heard the term used in that
[19] way?
[20]   **A:** No, I haven't used it — I have not
[21] heard it used in that way.
[22]   **Q:** You've heard "terminal" used in that
[23] way, correct?
[24]   **A:** I have.
[25]   **Q:** So in your mind "console" and

Page 309

[1]   *Hemami*
[2] "terminal" are not the same thing?
[3]   **A:** They are not.
[4]   **Q:** What's the difference?
[5]   **A:** Well, a console is — what was my
[6] previous definition? It was a —
[7]   **Q:** Something about a large unit.
[8]   **A:** Yes, and there was housing. Is it
[9] possible to —
[10]   **Q:** We can go back, sure.
[11]   (Record read)
[12]   **A:** So I would say a console is a unit
[13] which allows one to house equipment in a common
[14] housing.
[15]   **Q:** Okay. So if you look at Figure 1 —
[16] do you have Figure 1?
[17]   **A:** Yes.
[18]   **Q:** Forty-eight I will represent to you
[19] is described as a console. Do you see 48?
[20]   **A:** Okay.
[21]   **Q:** And 48 is pointing to the dashed
[22] line that surrounds the display and the keyboard.
[23] Do you see that?
[24]   **A:** Okay.
[25]   **Q:** So given what you just said about a

Page 310

[1]   *Hemami*
[2] console being something which houses things
[3] together, would you agree that console 48 houses
[4] the display and the keyboard?
[5]   **A:** Yes.
[6]   **Q:** And that indicates that that group,
[7] that console 48 is separate from the remainder of
[8] the device, correct, at least physically separate
[9] from the remainder of the device?
[10]   **A:** I don't think I would understand it
[11] that way, again, because I read this in the
[12] context of attempting to understand what the
[13] dashed lines meant and I concluded that the dashed
[14] lines were not separate physical entities.
[15]   Perhaps you can suggest — show me
[16] where the console —
[17]   **Q:** Sure. So the console is at page 2.
[18] I'm sorry, column 2, line 65 is the first place
[19] where I noticed console.
[20]   **A:** Okay.
[21]   **Q:** Do you see that?
[22]   **A:** Okay. I do.
[23]   **Q:** And so it says there that the
[24] console includes a display unit and a keyboard,
[25] right?

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[1]   *Hemami*
[2]   **A:** It does.
[3]   **Q:** Which is exactly what's pictured in
[4] the figure?
[5]   **A:** Yes.
[6]   **Q:** And then it talks about, in the
[7] sentence that spans column 2 and 3, it says, "The
[8] inputted instructions and character data are
[9] transferred from the console 48 to the system
[10] bus," right?
[11]   **A:** Yes.
[12]   **Q:** Which suggests that that data is
[13] moved out of the console and into the system,
[14] right?
[15]   **MR. PAYNE:** Objection to form.
[16]   **A:** Well, the data is — I don't know if
[17] we would say it is moved. It certainly travels
[18] via the interface to the system bus.
[19]   **Q:** But certainly that portion of the
[20] specification of Izeki suggests that, that console
[21] 48 is separate physically from the remainder of
[22] the system, correct?
[23]   **A:** I don't think I read it that way.
[24] Again, I just — that is not consistent with my
[25] understanding of console especially in the context

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Hemami

[1]
[2] of editing apparatus.
[3]   **Q:** Well, let's look at the other
[4] example of the dotted line. Do you see the other
[5] example of the dotted line in Figure 1?
[6]   **A:** Yes.
[7]   **Q:** And that's identified as 55?
[8]   **A:** Yes.
[9]   **Q:** And 55 is identified as a
[10] reproduction device. Do you see that?
[11]   **A:** Yes.
[12]   **Q:** And that device has a number of
[13] components, correct?
[14]   **A:** It does.
[15]   **Q:** Don't you — or do you agree that
[16] the fact that that is referred to as a
[17] reproduction device which has its own CPU and RAM
[18] shows that it is a separate device?
[19]   **A:** Separate from what?
[20]   **Q:** From the remainder of the system.
[21]   **A:** I —
[22]   **MR. PAYNE:** Objection to the
[23] form.
[24]   **A:** I still don't understand, "separate
[25] from the rest of the system."

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Hemami

[1]
[2]   **Q:** Well, sure. Let's —
[3]   **A:** It is something that is in the left
[4] column of units that is hanging off of the system
[5] bus.
[6]   **Q:** Right. What I mean is — let's look
[7] at another example of the word "device."
[8]   Look at column 3. We were just
[9] looking at this earlier. It says, "An image
[10] pickup device not shown, such as a television
[11] camera." Do you see that?
[12]   **A:** Yes.
[13]   **Q:** Okay. The camera is not shown in
[14] Figure 1, right?
[15]   **A:** Yes.
[16]   **Q:** And that is an image pickup device
[17] which is physically separate from the system shown
[18] in Figure 1, right?
[19]   **A:** I would say it is physically
[20] separate.
[21]   **Q:** So at least in that instance, Izeki
[22] is using the term "device" to refer to a device, a
[23] thing that is physically separate from the core of
[24] the system, right?
[25]   **A:** In that sentence, yes.

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Hemami

[1]
[2]   **Q:** Okay. And you agree that the dotted
[3] line that is referenced by number 55 is referred
[4] to as a reproduction device, correct?
[5]   **A:** It is referred to as a reproduction
[6] device.
[7]   **Q:** And that's the same word, "device,"
[8] that was later used to refer to something that was
[9] physically separate from the components of the
[10] system, right?
[11]   **A:** Yes.
[12]   **Q:** And you agree the reproduction
[13] device has inside it its own CPU and its own RAM
[14] and it's own data bus, right?
[15]   **A:** It does have those units.
[16]   **Q:** And the remainder of the system in
[17] Figure 1 has a CPU and RAM and a system bus,
[18] right?
[19]   **A:** It does.
[20]   **Q:** So taking those things together —
[21] well, let me — we'll throw in one more.
[22]   Do you see that there's a box
[23] labeled 102 that says "video repro"?
[24]   **A:** Yes.
[25]   **Q:** I'll represent to you that that is,

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Hemami

[1]
[2] means "video reproduction." In the patent that's
[3] described that way.
[4]   And do you see there's an audio
[5] repro number 106?
[6]   **A:** Yes.
[7]   **Q:** That's audio reproduction.
[8]   **A:** Yes.
[9]   **Q:** Taking all that together, including
[10] the fact that it's shrouded by a dotted line,
[11] would you agree that that shows that the
[12] reproduction device 55 is physically separate from
[13] the remainder of the system?
[14]   **A:** No, I wouldn't.
[15]   **Q:** Why not?
[16]   **A:** This could be a board that one would
[17] plug in. And in the context of this patent,
[18] again, I, I read this specifically to try and
[19] understand that and I reached the conclusion that
[20] it was not necessarily an external device, that
[21] this could just as easily be something internal
[22] that sits within the entire editing apparatus
[23] unit.
[24]   **Q:** How do you explain the presence of
[25] the dotted line around the reproduction device and

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Hemami

[1]
[2] the console but not the other components in Figure
[3] 1?
[4]   **A:** I think that the dotted line is
[5] there to very clearly delineate what item 55 is
[6] and what item 48 is in the description.
[7]   Everything else here is a
[8] singleton, right? Sometimes we see in patents
[9] that something is generally referred to as a
[10] single number and it has multiple components and
[11] it's not boxed off. These are boxed off as —
[12] what's the word I want — composite components.
[13]   **MR. PAYNE:** It's been over ten
[14] minutes.
[15]   **MR. BROWN:** Then why don't we
[16] stop.
[17]   **MR. PAYNE:** Let me — I've got
[18] a couple of follow-up questions.
[19]   **MR. BROWN:** Oh, go ahead.
[20]   **EXAMINATION BY**
[21]   **MR. PAYNE:**
[22]   **Q:** Dr. Hemami, as you know, my name is
[23] Les Payne and I represent Burst.
[24]   Can you turn to your report marked
[25] as Exhibit 78, please, specifically page 26,

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Hemami

[1]
[2] please?
[3]   **A:** Okay.
[4]   **Q:** Section 3 of your report deals with
[5] "The Level of Ordinary Skill in the Art," correct?
[6]   **A:** Yes.
[7]   **Q:** You say, "In general, a person of
[8] ordinary skill in the art would work in the area
[9] of digital communication of audio/video source
[10] information," correct?
[11]   **A:** Yes.
[12]   **MR. BROWN:** Les, you're
[13] leading. I don't mind if you're
[14] getting to the point, but it's not —
[15]   **MR. PAYNE:** I'm just laying a
[16] foundation.
[17]   **MR. BROWN:** But let's not do
[18] that too much more.
[19]   **MR. PAYNE:** I hear you.
[20]   **MR. BROWN:** Thanks.
[21]   **Q:** And earlier today, you recall that
[22] Apple's counsel asked you about that area,
[23] correct?
[24]   **A:** Yes.
[25]   **Q:** Can you turn to pages 42 and 43 of

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Hemami

[1]
[2] your report, please?
[3]   **A:** Okay.
[4]   **Q:** Do you recall earlier today that
[5] Apple's counsel asked you about the descriptions
[6] 1, 2, 3 and 4 on pages 42 and 43?
[7]   **A:** Yes.
[8]   **Q:** And what do those descriptions
[9] pertain to?
[10]   **A:** So as stated in the prior paragraph,
[11] these are descriptions of various operations for
[12] which the term "time compression" was used to
[13] describe.
[14]   The phrasing there is not very good
[15] but these were, these were operations that were
[16] called "time compression" in the 1988 time frame.
[17]   **Q:** What is the first sentence after the
[18] fourth category on page 43?
[19]   **A:** So after presenting these four
[20] descriptions, I state that none of these
[21] definitions is applicable to the Burst patents.
[22]   **Q:** So do you have an opinion as to
[23] whether those four definitions pertain, as to the
[24] Burst patents, to the area of digital
[25] communication of audio/video source information?

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Hemami

[1]
[2]   **A:** As that information is communicated
[3] in the Burst patents, neither — none of those
[4] descriptions is relevant.
[5]   **THE VIDEOGRAPHER:** Excuse me,
[6] Counsel. You have ten minutes of tape
[7] left.
[8]   **A:** And none of those descriptions is
[9] applicable.
[10]   **MR. PAYNE:** Pass the witness.
[11] Do you want to follow up?
[12]   **MR. BROWN:** I was thinking
[13] about that, Les.
[14]   **MR. PAYNE:** Sorry.
[15]   (Pause)
[16]   **MR. BROWN:** I do not. We're
[17] done.
[18]   **THE VIDEOGRAPHER:** The time is
[19] now 5:34. This marks the ending of
[20] tape number five. Off the record.
[21]   (Whereupon, at 5:34 p.m., the
[22] deposition was concluded.)
[23]
[24]
[25]

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[1]
[2]
[3]
[4]   I DO SOLEMNLY DECLARE UNDER
[5] PENALTY OF PERJURY THAT THE FOREGOING
[6] IS MY DEPOSITION UNDER OATH; THAT
[7] THESE ARE THE QUESTIONS ASKED OF ME
[8] AND MY ANSWERS THERETO; THAT I HAVE
[9] READ SAME AND HAVE MADE THE NECESSARY
[10] CORRECTIONS, ADDITIONS, OR CHANGES TO
[11] MY ANSWERS THAT I DEEM NECESSARY.
[12]   IN WITNESS THEREOF, I HEREBY
[13] SUBSCRIBE MY NAME THIS_____ DAY OF
[14] _____, 2006.
[15]
[16]
[17]
[18]   SHEILA HEMAMI, Ph. D.
[19]
[20]
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[22]
[23]
[24]
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[6]   EXHIBITS
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[8]
   79   Documents bearing Bates Nos.   44
[9]   APBU00159385 through 393
[10] 80   Documents bearing Bates Nos.   58
   APBU00414957 through 959
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   81   Document bearing Bates Nos.   165
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[13] 82   Document entitled "Time Compression   165
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[15] 83   Document entitled "The UK   172
   D-MAC/PACKET Standard for DBS" by
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[17] 84   Document bearing Bates Nos.   182
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   APBU00000726 through 730
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[4] For Ident.
[5] 101   U.S. Patent No. 4,963,995 with   3
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[8] APBU00000126 through 269
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[1]
[2]   CERTIFICATE
[3] STATE OF NEW YORK   )
[4]   ) ss.
[5] COUNTY OF NEW YORK)
[6]   I, Charleane M. Heading, a
[7]   Registered Professional Reporter and
[8]   Notary Public of the State of New
[9]   York, do hereby certify that the
[10]   foregoing Deposition, of the witness,
[11]   SHEILA S. HEMAMI, Ph. D., taken at
[12]   the time and place aforesaid, is a
[13]   true and correct transcription of my
[14]   shorthand notes.
[15]   I further certify that I am
[16]   neither counsel for nor related to any
[17]   party to said action, nor in any wise
[18]   interested in the result or outcome
[19]   thereof.
[20]   IN WITNESS WHEREOF, I have
[21]   hereunto set my hand this 20th day of
[22]   November, 2006.
[23]
[24]   Charleane M. Heading, RPR
[25]

Lawyer's Notes