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FEDERAL TRADE COMMISSION

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EXHIBITS

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UNITED STATES OF AMERICA

FEDERAL TRADE COMMISSION

In the Matter of:)

Rambus, Inc.) Docket No. 9302

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Tuesday, May 6, 2003

1:00 a.m.

TRIAL VOLUME 5

PART 1

PUBLIC RECORD

BEFORE THE HONORABLE STEPHEN J. McGUIRE

Chief Administrative Law Judge

Federal Trade Commission

600 Pennsylvania Avenue, N.W.

Washington, D.C.

Reported by: Sally Jo Bowling, RPR

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P R O C E E D I N G S

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JUDGE McGUIRE: This hearing is now in order and convened at 1:00 p.m. Before we continue the presentation of the case in chief by complaint counsel, are there any housekeeping chores we need to address today?

Mr. Oliver?

MR. OLIVER: Yes, Your Honor. I have here a copy of the demonstratives that we used in our opening statement, I have provided a copy to respondent. At this time we would like to have a copy of this marked as a demonstrative exhibit for the record, and I would also like to offer you a courtesy copy if you would like to have one.

JUDGE McGUIRE: That will be marked as DX-5?

MR. OLIVER: I believe we're up to 5 now.

JUDGE McGUIRE: Mr. Stone?

MR. STONE: Your Honor, if we could mark as DX-6 the demonstrative I marked yesterday and use that number, I will correct it consistent with the witness.

JUDGE McGUIRE: Just to be clear, tell us which one that was.

MR. STONE: That was the timeline of patents and

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meetings to discuss DDL.

MR. OLIVER: May I approach, Your Honor?

JUDGE McGUIRE: Yes. Thank you very much.

(DX Exhibit Number 5 was marked for identification.)

JUDGE McGUIRE: Is there anything else we need to discuss?

MR. OLIVER: I don't think so, Your Honor.

JUDGE McGUIRE: Then Mr. Oliver, you may call your next witness.

MR. OLIVER: Actually, Mr. Jerome Swindell will be handling the next witness.

JUDGE McGUIRE: Okay, Mr. Swindell.

MR. SWINDELL: Thank you, Your Honor.

JUDGE McGUIRE: Go ahead, Mr. Swindell.

MR. SWINDELL: At this time, Your Honor, complaint counsel calls Sam Calvin, formerly of Intel.

JUDGE McGUIRE: Mr. Calvin, if you would approach and be sworn by the court reporter.

Whereupon--

SAMUEL E. CALVIN

a witness, called for examination, having been first duly sworn, was examined and testified as follows:

JUDGE McGUIRE: Sir, if you would have a seat right over there. Go ahead, Mr. Swindell.

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DIRECT EXAMINATION

BY MR. SWINDELL:

Q. Thank you, Your Honor.

Good afternoon, Mr. Calvin. Could you please state your full name for the record.

A. My full legal name is Samuel Earnest Calvin.

Q. Are you employed at this time, Mr. Calvin?

A. I recently retired from Intel within the past several months.

Q. And how long did you work at Intel?

A. Twelve years.

Q. So, you started in about 1998?

A. 19 -- I started in --

Q. I mean 1988, I'm sorry.

A. Actually there's another catch to that. I started in 1991, a second time. I had a brief tenure with a joint company that Intel was involved with in 1988 to '89.

Q. What was the name of the joint company?

A. BIIN, B I I N, it's an acronym, I don't know what it stands for, but it was a joint venture, joint partnership.

Q. Who was the joint venture partner?

A. With Siemens of Germany.

Q. Well, when you started at BIIN is it?

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A. Yes, BIIN.

Q. When you started at BIIN, what were your responsibilities in that position?

A. At BIIN, I was hired specifically to develop a high-speed bus, a bus being a communication port between various cards that were plugged into main frames, that type of thing.

Q. And how long did you stay at that job? At BIIN?

A. Just over a year.

Q. And what did you do after that year?

A. I left because the partnership dissolved at the end of that year that I was there, so late in '89 to 1990, I was almost immediately hired by Sequent Computer Company.

Q. And how long did you stay at Sequent?

A. Two years.

Q. So that would bring us up to 1991?

A. 1991, that's correct.

Q. That would bring you back to Intel?

A. Yes, that was exactly when I went back.

Q. When you went back to Intel in 1991, what position did you take?

A. By title or by description?

Q. Well, let's go with the description of what your job functions were.

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A. Again, I was as one aspect of the job I was going to be working on high-speed bus development for a future line of products.

Q. A future line of products, what sort of products were they?

A. They were microprocessor-based products.

Q. When you say microprocessor-based products, what does that mean?

A. Depending on whether it's a PC like you have in your home or whether it's something like a server that you see in the industrial setting or even a workstation to a large mainframe, microprocessors are always involved, and handling the communications, in calculations and handling data transfers, that type of thing. So, there has to be a communication between one processor or many, depending on what's there, and also on other elements, like memory and so forth.

Q. And how long did you stay there at that position in Intel?

A. I was involved in some aspect of bus development until 1997.

Q. And what did you do in 1997?

A. I transferred by choice to the site at Chandler, Chandler, Arizona. And so in moving to that facility, I changed job descriptions.

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Q. Let me go back a little bit. The position you were at from '91 to '97, was there a particular organization within Intel that had a title that you could give us?

A. Yes. In the more global scheme, I was part of what was called MD-6, microprocessor division 6, later became known as that, or MPG in a more global level, and MPG was the microprocessor group that was the local group for all microprocessor developments.

Q. And then you moved to a position at Intel within Arizona?

A. That's correct.

Q. And was there a name of that group?

A. Yes, it's ATD, that's the assembly technology division. What I switched from was developing more at the microprocessor level to more of the final packaged part level.

Q. The final packaged part level. Could you explain that?

A. Yes, the thing that you would ship out the door or send to various computer users at -- or I should say manufacturers.

Q. So, this would be the final packaged CPU?

A. Yes, it's what goes out the door and can plug into the system. So, we had the responsibility for

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everything from shipping to testing a product out the door.

Q. How long did you stay in the ATD division?

A. I was part of ATD until January of this year when I finally retired.

Q. In your work at Intel, did you ever use the term "road map?"

A. Yes.

Q. When you were using that term, what did it mean to you?

A. Road map has always meant essentially the same thing to me, and I think it's pretty generic usage in Intel, that a road map tried to align technologies with expected performance needs and availabilities. I mean, in essence, that's a short form of the answer. So, road map would look at your future products, what their performance needs might be, and what technologies might line up with those road maps.

Q. Between the '91 to '97 time frame, did any of your responsibilities involve responsibilities for creating Intel's memory road map?

A. That was a portion of it. Not creating, I should say that I was a consultant or at least aware of that road map development.

Q. But you were aware of the process?

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A. Yes.

Q. Could you give us a description of what your involvement in that process was?

A. Several levels, I guess the two main levels, I had two responsibilities in the job assignment, two main responsibilities. One was for the development of a bus which would communicate, as I've already mentioned, between various processors and between other elements that had to communicate with the processors. So, that development of that bus was one of my main goals or tasks.

And the second aspect was similar to that, but that was to develop a bus which could communicate directly with some different types of memory.

Q. What types of memory?

A. Mostly SRAM.

Q. When you say mostly, were there other types?

A. Well, what I'm describing is my initial job, which actually took several years to fully complete, so SRAM was the main component in that initial investigation. There was another investigation which came up during the course, and that was to evaluate some other memory components in terms of their performance.

Q. And which memories were those?

A. Most specifically -- well, I'll start with DRAM

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and SDRAM, because that was part of my activities with the JEDEC organization, and also looking at their performance capabilities. The other aspect was to look at Rambus, or RDRAM I should say.

Q. You had mentioned a moment ago that with respect to DRAM and SDRAM that that was somehow related to your involvement in JEDEC. I want to turn to your involvement in JEDEC. And could you tell me what your understanding of what JEDEC is?

A. Yes. JEDEC is a recognized standardization body for the electronics industry most specifically looking at everything from form, fit and function, in other words, how are you going to define a standard package, how are you going to define a standard pin-out, so forth, down to the architectural aspects of the chip, how is that chip put together, how is it going to function properly, how are you going to have uniformity from one vendor to the next. Because the expectation is when you buy something in the industry and you plug it into your system, that it's supposed to work. And so that's the purpose of the standardization body to get agreement across the industry members in terms of what the aspects of that standard are going to be.

Q. Did you attend JEDEC meetings?

A. Starting in -- I actually joined Intel, again,

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late in '91, and I was mostly just in a reading mode on JEDEC, because that was one of my other activities as part of my assignment, but in early '92, I began regularly attending meetings, yes.

Q. In your work at Intel, did you ever have reason to use the term "open standards?"

A. Yes.

Q. When you used that term, what did it mean?

A. Open standards mean almost, I think, by definition, at least my interpretation of open standards, something which is open to use or to modification, if it is for the good of -- in other words, it's not a closed standard, you're not locked out from changing it, if it's for the good of the general user population.

Q. And when you say "user population," what do you mean?

A. By user population, the end user is always going to be whoever purchases the component and puts it into use. By open standard, if as a user I decided to purchase a particular item, and decided that I wanted to implement a change in it from my own particular use, even though maybe that was my own use, I could have availability of both the software and the coding and so forth to go in and do that.

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If it was something that was good for the general usage, it may actually be then brought into the software on a larger scale.

Q. And while you were participating in JEDEC, did you have an understanding that you were participating in the creation of open standards?

A. Yes.

Q. Now, are you aware of how JEDEC is organized into committees?

A. Yes.

Q. Were there particular committees that you attended?

A. Yes.

Q. Which ones were they?

A. Initially, and actually for the entire duration of my involvement with JC16, and also with JC42.

Q. Let's talk about JC16 for a moment. What did you understand to be the work of JC16?

A. JC16 was the voltage and bus standardization committee, and even though it was not always described that way, it was understood to be tightly aligned with the memory, JC42, which was for the RAM memory groups. Because whatever standard came out regarding buses and voltage, of course, affected that memory.

Q. Now, were you the official Intel representative

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to JC16?

A. I was officially the representative starting in 1992, that's correct.

Q. And how long did you continue as the official representative?

A. Until 1997.

Q. Now, what about JC42? You also mentioned that you attended those meetings. What did JC42 do?

A. JC42, and that was divided into subgroups. JC42 was concerned with the memory development, it was most specifically RAM, or random access memory. And there were various forms of that, I've already mentioned SRAM and there was DRAM and then later SDRAM. So, it would provide the standardization of memory, down to the chip level itself, and would also provide for the standardization of the packaged module going out, including modular forms of memory.

Q. Now, you mentioned that there were some subgroups, were those what were known as the point committees?

A. Yes.

Q. Now, were you involved or did you attend any particular point committees of JC42?

A. Yes, I did.

Q. Which ones did you attend?

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A. 42.3 and 42.5.

Q. And what sort of work was 42.5 concerned with?

A. Okay, 42.5 was the second thing I mentioned previously, it was the modularization and packaging standard body. So that while 42.3 developed the memory components themselves, and worked closely with what was required there, from the system point of view, 42.5 essentially created the modules that would go in the systems.

Q. Now, were you the official Intel representative for 42.5?

A. Yes. I -- to be frank, there was sort of a shared responsibility with my manager there. I was the recognized member for 42.5, but Konrad Lai was also a member.

Q. Could you spell Konrad Lai?

A. The first name is K O N R A D.

Q. And the last name is spelled?

A. L A I.

Q. Thank you.

A. Let me clarify on that. The actual way JEDEC is structured is there's only one member of each committee, and there is an alternate. And so, Konrad probably on both of those subgroups was the Intel official member. I was the associate, but for all practical purposes, I

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attended every meeting and was very active.

Q. I understand. Well, I guess before you -- was there ever a time when you were the official representative to either 42.5 or 42.3?

A. Yes, in about roughly '94, because of my heavy involvement and because Konrad was often unable to attend meetings, not always, but often unable to attend, I think we did a role reversion at that point and I became the official member.

Q. Are you still going to JEDEC meetings?

A. No.

Q. When did you stop?

A. 1997.

Q. So, did that coincide with your trip --

A. That coincided exactly with my transfer. I closed out my activities with JEDEC before leaving the Portland office.

Q. Now, did you during the time that you were participating in JEDEC, did you have an understanding of why Intel was a member of JEDEC?

A. Oh, yes.

Q. And why was that?

A. Well, because of the standardization effort there, obviously anything that we wanted to use or make use of in the future, we wanted to be able to influence

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the direction, as well as to be able to understand what we would be getting as the part involved. So, we had a strong interest in knowing and being part of that development activity.

Q. Now, does Intel make DRAM?

A. No.

Q. Are there products that Intel makes that would in any way be affected by JEDEC standards?

A. Oh, yes.

Q. What sort of products would that be?

A. By JEDEC globally, by the organization, or just these groups?

Q. Well, let's just talk about the committees that you were actively involved in.

A. Okay. Sure. We use DRAM, we use SRAM, we use other types of RAM. We use video RAM, we use graphic RAM. So, we are actually involved with all those different aspects. So, we had strong connection to understanding where the standards were going and to be able to participate in that level. So, yes, we use a lot of the products that are standardized by JEDEC.

Q. Now, was there -- well, why was it that you personally were selected by Intel to participate in JEDEC?

A. You're asking for my opinion?

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Q. Yeah, just basically your understanding of how it helped you do your job.

A. Oh, sure. For one thing, the particular group I was involved with was working on -- always working on products that were out in time. We weren't working on the next product into the marketplace necessarily. So, it was a great help to be involved in standardization products which might be some years out, both in terms of seeing what those standards were going to be, and in terms of making sure that they would meet our needs.

Q. When you say meet your needs, what do you mean?

A. Well, I mean by that, if something is being standardized, and you feel that there are problems, which is what all the companies were involved with, is trying to ferret out problems, you would want to make sure that you had those issues voiced and being discussed within the committee. In other words, you wouldn't want to wind up something at the end of the day you had standardized or the company had standardized or the industry had standardized that was going to cause you foreseen problems.

Q. Now, while you were participating in JEDEC meetings, did you understand that there was a JEDEC patent policy?

A. Yes, I did.

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Q. And did you have an understanding as to the purpose of the policy?

A. Yes.

Q. And what did you understand that to be?

A. The purpose of the policy is standardization you are again saying an open standard, in effect. Open standard in terms of the fact that until it's definitely decided upon by a large voting body of the organization. Patents, of course, have with them the possibility of royalties or licensing agreements. So, if you standardize on something and patents are involved, the JEDEC policy was to understand those patents. It didn't prohibit you from still pursuing that, but you at least needed to understand the affect of patents upon things that you were standardizing.

Q. One of the things you mentioned in your response was that there was a large voting body. Did you have a sense during the time that you were participating how many companies were involved in the committees that you took part in?

A. Yes.

Q. Can you give us sort of a rough estimate of what that number was?

A. When I started, roughly, I'm guessing, I don't remember the exact numbers, 60 companies. When I left,

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in 1997, I think the number was at 100 or just over 100.

Q. Do you know whether or not all of those 60 to 100 companies were manufacturers of DRAM?

A. No, I do know. Yeah, I'm sorry, yes, I do know.

Q. And were they all manufacturers of DRAM?

A. No.

Q. Do you have any sense of how many of those 60 to 100 were manufacturers were DRAM?

A. I would say probably, in truth, a high number were DRAM manufacturers, or RAM manufacturers, in whatever capacity, but if there was a breakdown within a favor, it might have been 60/40, the remainder being user.

Q. Now, what to your understanding was the JEDEC patent policy?

A. My understanding, and this has to go over a period of time, can I answer that in two parts?

Q. Certainly. You mentioned a period of time.

A. Yes. Because realizing that in '92, I was de facto a new member. I was just absorbing everything about the JEDEC environment and the companies necessarily, so I was becoming very actively involved, but I was absorbing a whole lot, including policies. But my initial understanding at that point, and maybe even into 1993, when I went into the RAM committees, was

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that anyone who was aware of patent -- patented items, that could affect policy, had an obligation to bring that awareness to the group.

Now, the reason I say two periods is I was not necessarily focused on patentable items as one of my intakes during that period of time, but I was aware, obviously, of the patent policies and so forth.

JUDGE McGUIRE: Okay, Mr. Calvin, I can't quite hear you. Could you pull that closer to you? I'm having a little difficulty. I can observe your testimony on the screen, but I want to hear it as well.

THE WITNESS: I can hear myself.

JUDGE McGUIRE: That's much better, thank you.

THE WITNESS: The reason I alluded to two different periods, and I can't tell you specific dates, is that I was aware initially that there was a policy that any applicable patents that might have effect on standard or development should be disclosed. I was also aware during that early period, and I don't know whether it was '92 or '93, but I was aware that the primary obligation was upon the presenting advocate of the standard, but the secondary obligation, or almost to the same extent, I shouldn't say almost, it was to the same extent, was to anyone within the body that knew of patents that might have effect upon the standard.

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So, that I was aware of relatively early.

BY MR. SWINDELL:

Q. Now, I just want to clarify a little bit of that. This early period, and you're not -- you said you weren't certain of whether it was '92 or '93?

A. Um-hmm.

Q. Is that a yes? That you weren't certain about whether it was 1992 or '93?

A. Yes, that's right.

Q. During that period, did you understand that presenters had a different obligation than nonpresenters?

A. It wasn't a different obligation, but it was direct to a presenter, because the reason being, as I understood it, as a presenter, and you were presenting for a company, which was advocating this, if you knew of something, you had done most of the prework and so forth, and should have direct knowledge if you held a patent that could affect the standard.

Q. And during this time period, what did you understand to be the obligation of nonpresenters?

A. Nonpresenters also had an obligation to make known of any existing patents, whether from their company or from some other company, that they were aware of, that might have an effect or an influence on the

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direction.

Q. So, then, is it fair to say that presenters and nonpresenters had the same obligation, but in your understanding, presenters just might have more knowledge?

A. Exactly. That's what I was trying to get to, yes. I should say, as an add-on, that it was not just for patents which existed within the JEDEC group of 100 companies, it was also for any patents they were aware of that existed outside as well.

Q. Now, you talked about the early period. Did your understanding change to something else at a later point?

A. I can't tell you when, because it's been a long time, it's over ten years now, I was aware that there was two things. There was -- and I don't know when it occurred or how early it occurred, but there was a concern about not only patents, but applications for patents. And I'm then real foggy on this, because I knew it was an issue, but when exactly it went from an issue to understanding that to be JEDEC policy is unclear in my mind.

Q. But -- well, was there a point in time, even though you can't remember the specific point in time, was there a point in time when you understood the patent

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policy to include a requirement to disclose applications?

A. Yes.

Q. And you're pretty clear about that?

A. Yes.

Q. Now, how did you learn of the requirements of the patent policy?

A. Well, the most straightforward way, I guess initially, it was from discussion with my manager, who had been a long-time JEDEC rep. Initially, I understood that right up front from him, but when I went into the meetings, at the front end of essentially -- well, at the beginning of each meeting, a statement of patent policy was read, or at least a foil representing the patent policy.

Q. Who did this reading or presented these foils?

A. During my time at JEDEC, I think it was always the same person and that was Jim Townsend.

Q. And who is Jim Townsend?

A. Jim Townsend was -- he had many roles in JEDEC, but one of his roles that I think remained unchanged was that he was the legal representative for JEDEC patent policy.

Q. And you said that at every meeting he made these presentations.

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A. Essentially every meeting, I can't speak to every meeting.

Q. Now, how were JEDEC meetings organized? Let me -- you mentioned earlier that you participated in a couple of different committees.

A. Um-hmm.

Q. Did the committees meet at the same time?

A. No.

Q. How were the meetings structured so that you could attend the meetings of the various committees?

A. It was always the same format, meetings would actually begin on Monday, if you could attend, but those were not -- those were more of specific issue meetings and so forth, and they were more of a prep for the meeting to follow during the week.

Tuesday was typically allocated, if you want it specifically it always followed the same format, JC16 would meet Tuesday, from early in the morning until whenever we finished. And if we finished early for any reason, typically there was some follow-on activity for maybe things that needed more resolution and so forth.

And then Wednesday was always the JC42 day, 42.3 and 5, I should say, and typically the way that that was broken up is that 42.3 would be -- let's see if I'm remembering this correctly, I take that back, I believe

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it was 42.3 was divided into two halves on Wednesday and then 42.5 on Thursday morning, if I remember correctly.

Q. And when you were talking about Mr. Townsend making these presentations at the meetings, did he make the presentation at each of the committee meetings during the week?

A. Yes. Well, yes with an exception.

Q. Sure, what's the exception?

A. The same general policy presentation was the same, and if there were any notes from newspapers or whatever that would affect general policy, those were the same, but there were specifics depending upon the committee. The patents applicable to one committee might not necessarily cross over, the ones that were listed might not necessarily cross over into the other committee. So, those differences did exist between each committee.

Q. And at what point during the meeting of any individual committee did Mr. Townsend make his presentations?

A. Following the chair's introduction of the meeting. The first point of every meeting was Jim Townsend.

Q. Now, in his presentations, do you recall him ever specifically mentioning patent applications?

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A. Specifically, no, I can't remember specifically an event. I'm pretty sure that that was talked about in some of the meetings. But I could not give you specifics.

Q. Now, the requirement that you discussed to disclose patent applications, when we're talking about a patent application, did you have an understanding of what information a participant would be required to disclose?

A. For applications?

Q. For applications, yes.

A. I -- the two areas that I know, they would have to basically tell the subject matter of the patent or patent applications, as the case may be. And there was a general ruling within JEDEC there would have to be a willingness to license under fair and nondiscriminatory policies. And those, my assumption would be the same, whether it was patent application or patent. I never saw a definition of difference in how you would handle the two.

Q. Well, did you ever, in your experience at JEDEC, see anyone bring a patent application and pass it out at the meeting?

A. And actually pass out information on it?

Q. Yes.

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A. I can't recall any specific time.

Q. Did you ever, in your experience at JEDEC, see a situation where the person who was disclosing talked about the specific claims in the patent application?

A. Yes. Oh, in a patent application, yes, yes.

Q. Did they actually show the claims?

A. No. You said application, let me take a step back.

Q. Okay.

A. I don't know that anyone actually showed it, I don't recall anyone actually showing claims on an application.

Q. So, your understanding, then, is that as long as they discussed the subject matter of the application, and then, of course, did the licensing, as you mentioned, that that would be sufficient?

MR. STONE: Objection, Your Honor, to leading.

MR. SWINDELL: Just a summary, Your Honor.

MR. STONE: That's exactly why it's leading, Your Honor, it's an effort to summarize the witness' testimony, it's inappropriate.

JUDGE McGUIRE: Sustained. You can restate, Counsel.

BY MR. SWINDELL:

Q. Sure. What did you mean by the subject matter

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of the patent application?

A. What my understanding is, is that JEDEC would have to understand more than just the title of the patent. So, if there was an initial revealing of the patent, use of an inclusive term, I believe the policy would be to follow up to understand those aspects of claims that might affect the patent, or might affect the development of the standard, I'm sorry.

Q. And when you say might affect, what do you mean by using that term, "might affect?"

A. Realize that standards are evolutionary things, I mean, down to the last vote, they're going to be tweaked and changed. So, even if you were aware of some particular potential aspect up front of a patent, it may not have a direct effect initially, but later in the evolution, as you're trying to do the final solution, it may have more of an effect. So, that's why I use the term "might."

Q. And so you would have to disclose those applications?

A. As you became -- as you began to realize that the direction the standard was going could be affected by those, you would have a similar obligation.

Q. And when you say when "you" begin to realize, who is the "you" in that sentence?

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A. The member. The member or the associate member is aware.

Q. I want to turn now to a specific issue that came up in a JEDEC meeting and ask you a couple of questions about it.

One moment. Your Honor, may I approach and provide the witness with some documents?

JUDGE McGUIRE: Please.

THE WITNESS: Your Honor, is the clarity of the speech better?

JUDGE McGUIRE: Yes, I can hear you better now, Mr. Calvin, thank you. Very often people tend to fall off from the microphone.

THE WITNESS: Yes, I will keep that in mind, I have that tendency.

JUDGE McGUIRE: Thank you.

MR. SWINDELL: Your Honor, would you like a copy now?

JUDGE McGUIRE: Is it going to be on the ELMO?

MR. SWINDELL: Yes.

JUDGE McGUIRE: Then I don't need it right now.

BY MR. SWINDELL:

Q. Now, Mr. Calvin, I have handed you some documents, and in the bottom right corner, there are numbers that start with either JX or CX. Do you see

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those?

A. Yes, I do.

Q. So, when I refer to I want you to pull out JX-26, it would be JX-0026.

A. Yes, I understand.

Q. Now, if you could, if you could pull out of your stack JX-26.

A. Okay. The entire stack appears to be JX-26. Oh, you mean the specific page 26?

Q. No, no, actually, it might be easier if you took off the binder clip, I'm sorry, I should have done that. And I just want to direct your attention at first to the first page of JX-26.

A. Okay.

Q. And can we bring that up for the judge?

Do you see about halfway, less than halfway down the page, your name there?

A. Yes, I do.

Q. Were you present at this meeting?

A. Yes, I was.

Q. Well, first, let me ask, how in your understanding does your name end up appearing on the attendee list? Does somebody take roll?

A. As members present? Oh, yes. Well, no, they don't take roll, per se, the policy is that there's a

1015

sign-up sheet that is sent around, and you sign in, either as a member, or as an associate. And that's how they track.

Q. Do you know what happens to that sign-in sheet?

A. Yes, it's kept, because it's a physical signature. You don't only print your name, you actually sign the document as well.

Q. Now, I want to direct your attention to page 28 of the -- of Exhibit JX-26.

A. Yes, I see it.

Q. Do you have that?

A. Yes.

Q. Why don't you take a moment and read that letter and let me know when you finish.

A. Yes, I have finished.

Q. First let me ask, do you see the handwriting sort of on the bottom right that says, "Intel patent pending?"

A. Yes.

Q. Do you recognize that handwriting?

A. No.

Q. That's not yours?

A. That's not my handwriting.

Q. Let me ask, do you remember there being concern at this JEDEC meeting with a potential Intel pending

1016

patent?

A. Yes. Actually, a previous meeting, I think. Yes.

Q. And what, to your recollection, was the issue that this letter was addressing?

A. The issue -- I'll read through it one more time to get the full intent. I think the major concern was that both Intel and HP felt that they were capable of detecting memory types through software.

Q. When you say memory types, what do you mean?

A. I mentioned the development of different types of memory to standardize, and the ones mentioned in this letter, they mention FFM, which is fast page mode, and EDO, which is extended data out, those were two memory types that were developed by JEDEC. And one of the issues is just as you want to be able to plug something into your system and have it work, if your system doesn't know what you plugged in, and it could be either one of these two types, you could have some problems.

So, the issue was, we had to have ways of recognizing what was plugged into the system. And this letter addresses the fact that HP and Intel knew how to do it, without having to add anything. And then the last paragraph, I think, alludes to the fact that there was a concern that at least one chip set manufacturer

1017

might be in the process of submitting a patent application. I believe that's the way it reads.

Q. Did you see this letter around the time of March 1995?

A. Yes.

Q. Did you do anything in response to this letter?

A. Yes.

Q. Did you provide JEDEC any information about an Intel pending patent in response to this letter?

A. This letter -- I'm trying to think through the process exactly. Why I'm hesitating is that it was not only this letter, but some other discussions of this same topic within the JEDEC meeting that I attended. So, whether it was that that triggered it or whether it was the letter that triggered it, I don't recall at this point. I did see this letter during that time, and my recollection is that the Intel patent pending note, and I don't know who the author was when I saw the letter, of the note, should have either had a question mark or if it didn't have a question mark, which wasn't copied, it should have had a question mark. Because there was not an Intel patent on this.

Q. Now, did you do any investigation to find out whether or not there was Intel patent?

A. Yes, I did.

1018

Q. And did you after that investigation inform JEDEC that there was no Intel pending patent?

A. After the investigation?

Q. Yes. Or at any time.

A. Yes, I did.

Q. Well, let me be a little bit more precise. Yes, after the investigation, did you tell JEDEC that there was no pending patent?

A. At the next meeting.

Q. I think that's all I have for that document for now. I would like to talk a little bit about your knowledge about Rambus patents. Now, while you were working at Intel, were you aware of any nondisclosure agreements between Intel and Rambus?

A. I was aware that they existed, yes.

Q. Did you have any role in negotiating them?

A. No.

Q. Did you have any understanding of the Rambus technology that was to be disclosed to Intel pursuant to the nondisclosure -- any nondisclosure agreement?

A. Some aspects of it, yes.

Q. What aspects of it?

A. I'm thinking through this to make sure I don't cross any proprietary boundaries here.

Q. And, you know, I'm not trying to get too far

1019

into that. So, let me just withdraw that question and let me ask, did you have any understanding of the -- that Rambus had applied for patents in certain aspects of its technology?

A. Yes.

Q. And what aspects were you aware of that Rambus was applying for patents?

A. Actually, there was only one, because of my specialization area.

Q. And what was that?

A. I understood that they had -- either had or had applied for patents related to their bus.

JUDGE McGUIRE: Okay, let me interject here so it's clear to me. Do we have a context here as to what point in time that that question is referring to?

BY MR. SWINDELL:

Q. Thank you, Your Honor, I will try to clear that up.

And the time I'm speaking of is the time that you were in JEDEC.

A. I made that assumption.

Q. Okay. So, your answer is the same?

A. The answer is the same.

JUDGE McGUIRE: But again, just for my edification, what are those dates again? I mean, it's

1020

helpful to the Court if we can say other than just the time that you were involved in this organization to say in early '92, late '93, I mean, if you can't do that, you can't do that, but to the extent you can, it's going to obviously help the Court.

MR. SWINDELL: Let me just try to rephrase to clear it up.

JUDGE McGUIRE: All right.

BY MR. SWINDELL:

Q. Any time prior to 1997.

A. Okay.

Q. Were you aware of any specific aspects of Rambus technology that you believe Rambus was seeking patents on?

A. Through the early period was what I was referring to, maybe 1993, '94 even. I was only aware of -- I was only aware of patents related to the bus and the bus development. So, they would have been very specific to my area.

Q. What about the time after -- between '93 or '97, were you aware of anything additionally?

A. I was aware that in some meetings, some issues were coming up, and I specifically with respect to SyncLink and -- which was another development type technology that was out there at the time. And that

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there was some contention -- there was some question of patent overlap or something of that sort. I was not aware specifically of what the issues were.

Q. And when you're talking about this contention, are you talking about contention in JEDEC? Or somewhere else?

A. There was -- there was questions within JEDEC that came up at least -- I can't recall if it was a discussion as part of a meeting, I think it was, during some of the presentations, but there was some discussion of patent or policy overlap.

Q. Now, during your -- prior to -- up to and including 1997, was there any time that you ever reviewed a Rambus patent application?

A. No.

Q. Up to that same time, up to 1997, was there -- did you ever have occasion to review an issued Rambus patent?

A. No.

Q. Did you at any time up to and including 1997 come to understand that Rambus claimed that it held patents or patent applications on programmable cast latency?

A. If -- I think that point may have just surfaced or been a discussion at some of the later JEDEC

1022

meetings, but I can't quantitatively state as to that.

Q. So, do you recall a specific discussion about Rambus patents with respect to programmable cast latency?

A. No, honestly, I don't, not on that particular aspect, no.

Q. Did anyone at Rambus ever tell you that Rambus believed it had patents or patent applications that would cover programmable cast latency?

A. Not to me directly, no.

Q. During your time at JEDEC, did you ever come to understand that Rambus held patents or patent applications relating to programmable burst length?

A. Actually, no. I didn't realize that.

Q. Did anyone at Rambus ever tell you that?

A. No.

Q. Up to and including 1997, did you come to understand that Rambus held patents or patent applications on on-chip PLL or on-chip DLL?

A. I believe -- and again, I'm going from memory, I believe I recall some discussion about concerns with potential patents on inclusion of DLL or PLL on memory. I don't recall any specific reference to Rambus.

Q. So, you recall a meeting or -- well, how did this -- how did this concern come up?

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A. Well, because it was a discuss, from what I -- again, I'm trying to put the pieces together from very complicated meetings a very long time ago. What I remember is that inclusion of either DLL or PLL was an implementation that was thought of as memory increasingly had to be at a faster clock rate. And that was one way of improving the performance of the memory. When you look at all the aspects of that, are there concerns, what does it mean, and then people discuss the pros and cons and try to come to a resolution, and you can visualize that the die size would increase because now you've got this area where you've added something to it and that was a concern, and there was other ways to do it, and that was a concern.

I can't recall specifically whether something was brought up about whether DLL and PLL on-chip might have outside patents against it that we were unaware of. It seems to me that that was discussed as one of the items. But I can't state that for a fact. It's just from recollection of what I remember from the meetings.

Q. During your time at JEDEC, up to '97, did you come to understand that Rambus held patents or patent applications on dual edge clock?

A. That was the one very late that I do remember some discussion of, at least -- I want to be careful

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here, there were a lot of discussions on dual edge clock. There were a number of discussions on dual edge clock. Can I specifically remember an allusion to potential conflict with the Rambus patent?

Q. Yes, that's the question.

A. No, I actually can't.

Q. And do you recall anyone at Rambus ever telling you that Rambus held patents or patent applications on dual edge clock?

A. No.

Q. I would like you to take a look at JX-26 again, if you could.

A. Okay.

Q. And if you could turn to page 11.

A. (Witness complied.)

Q. Do you see that?

A. Yes, I do.

Q. Do you have page 11?

A. Yes, I do.

Q. Do you see a reference to a presentation by Mitsubishi?

A. Yes, I do.

Q. Were you present when Mitsubishi made this presentation?

A. Yes, I was.

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Q. Are you familiar with what's called an item number at JEDEC?

A. Yes.

Q. And what are item numbers?

A. An item number is the tracking number that is assigned once a decision has been made to -- actually, once a first showing is made. So, once we start looking at a possible technology, an item number is immediately assigned. And that becomes the tracking number until such time as it is actually voted on.

Q. So, if an item or a presentation has an item number attached to it, would you consider that to be official JEDEC work?

A. No.

Q. I'm sorry?

A. Well, it's official in terms of being considered, yes. Yes, that's correct.

Q. Now, does the Mitsubishi presentation have an item number?

A. Yes.

Q. And what is that?

A. 704. Oh, I'm sorry, Mitsubishi's is 705.

Q. Well, it's a little hard to read.

A. It might be 785. I can't quite read it.

Q. Yeah, I think that's 705.

1026

A. 705, okay.

Q. Actually the one I'm asking you about is 13.9.

A. Oh, 13.9, okay, that's 704.

Q. And do you see that refers to an attachment AA?

A. Yes.

Q. I would like you to turn to that attachment which begins at page 111.

A. (Witness complied.)

Q. And the actual relevant page that I want to talk about is actually the next page, 112.

A. 112, okay.

Q. Now, do you see under the title, the first line, first couple of lines, it says, "Strobe in, reference clock, both edges for input, positive edge for output." Do you see that?

A. Yes.

Q. Do you know what that refers to?

A. Yes.

Q. What is that?

A. The strobe in is your gating signal coming to the device for all activity. So, it's what it references everything to from a timing relations perspective. So, it is your reference clock into the part. All activity is going to be related to that reference in strobe. For both edges for input, it means

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the input to the device is going to use both edges of that clock. In other words, if you look at a clock, it's got a rising edge, it's got a falling edge. And then it starts another cycle of the same.

Q. In your understanding, does that describe dual edge clock?

A. That does describe in my take a very direct dual edge clock.

Q. Now, based on your understanding of the JEDEC patent policy, was item 704, the Mitsubishi presentation, JEDEC work such that someone who was aware of patents or patent applications would be required to disclose?

A. Here we get into a clarification. I can't answer that yes or no.

Q. Okay.

A. The reason I made that statement is that during that time frame, I'm not sure exactly what position SyncLink was in within JEDEC. SyncLink was treated as a tracking item. It was not adopted initially by JEDEC for standardization until they had done sufficient work to demonstrate that it was going to be an improvement or be workable.

That's a long answer, but that's the reason I can't say yes or no in terms of JEDEC activity. Even

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though it was assigned an item number, at a good part of the time I was there, it was being tracked, not being openly discussed and standardized within the meeting.

Q. So, your understanding regarding SyncLink, then, was that it wasn't being proposed for standardization?

A. It was being proposed, but it was not accepted. Everything that's proposed does not get accepted. And what happened was, you know, I'm pretty clear on this, is that JEDEC in a sense said this looks very good, this is a totally new approach, go show us some more before we decide to standardize this.

This could happen with any technology, any proposal that's made, until you've essentially done enough work to show that it's going to work, or at least have a good promise of working, they wouldn't start the standardization.

Q. Let me -- Your Honor, may I approach the witness?

JUDGE McGUIRE: Yes.

BY MR. SWINDELL:

Q. Mr. Calvin, I have handed you what has been marked as JX-28, and if you could turn to page 2, sort of down the middle, do you see your name there?

A. Yes.

Q. Do you recall attending this meeting?

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A. Yes, I do.

Q. I would like you to turn to page 6.

A. (Witness complied.)

Q. And at paragraph 8.8, do you see the SDRAM Feature Survey Ballot Results?

A. Yes, I do.

Q. Do you recall this survey?

A. Yes, I do.

Q. What, in your understanding, was the purpose of this survey?

A. The purpose of the survey was to look at standardization -- what would be required for future enhancements of SDRAM. We were pretty far down the line of standardizing SDRAM as a new technology. The survey was to look at what would make that technology extendable out in time and what would give it the most benefit as you progressed. We had this natural evolution of frequencies.

Q. Now, you see in the first sentence it says, "MOSAID made a presentation of the results of the survey (see attachment G)."

A. Yes.

Q. I would like you to turn to attachment G, which I believe is at page 36.

A. Yes, okay.

1030

Q. Do you recognize attachment G?

A. Yes, I do.

Q. Now, if we look at the companies, do you see the top line, where it has "Company?"

A. Yes.

Q. And underneath there are names of the various companies?

A. Yes.

Q. Do you see Intel's name on the response log?

A. No.

Q. I would like to ask, did Intel receive the survey?

A. Yes.

Q. Did Intel vote on the survey?

A. No.

Q. Can you tell us why Intel did not vote?

A. Yes. There's two reasons, or actually one is procedural. No, strike that, the real reason that it comes down to, is we were very much involved in SDRAM development, we had strong feelings as to what would be required to extend SDRAM in terms of higher frequencies, and we had basically worked with most of these companies and more, or a good deal of them, in terms of trying to map out kind of a common set of goals.

So, what we wanted to do was without our

1031

influence to see what their responses would be. So, we purposely chose not to vote. Not that we didn't have input, because we had at least talked to these companies, or at least a good number of them, got their feedback, been aware of what their concerns were. But what would they say if we weren't in the mix?

Q. And you mentioned a procedural reason.

A. I was going to say, but no, I was wrong on that. At the particular meeting where this was all brought together which we may get to later, we had another attendee, who would not have been a voting member anyway, since none of them were member associates there, but actually the ballot was issued before that meeting, so that really doesn't play into this.

Q. Now, I would like to, if you could, turn to page 45.

A. (Witness complied.)

Q. Now, this may be -- the writing may be a little hard to read, but we'll try to get through it as much as we can. The questions at the top of the page.

A. Yes, I've read this fine print before.

Q. Okay. The first question, which is question 3.9.1, I believe, says, "Does your company believe that an on-chip PLL or DLL is important to reduce the access time from the clock for future generations of SDRAMs."

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Do you see that?

A. Yes, I do.

Q. Do you recall any discussion of this issue during the meeting when the survey results were discussed?

A. Well, there was some discussion, I can't recall specifics, when the survey results were discussed, but I also remember discussion before the survey was actually issued. Because this was an attempt to get a cross section from all the members.

Q. When you say discussions before the survey was issued, what discussions are you referring to?

A. Well, within the meetings, we were trying to -- this survey was a result of trying to capture the top most things that were necessary for SDRAM to continue to evolve. This had been discussed at numerous meetings before, and many inputs were coming in and, well, this seems to be a big problem area, we should do this. And PLL/DLL was one of those discussions.

So, this was just an attempt to say, how important is it, how would you rate it, in terms of need.

Q. Now, I would like to direct your attention to the fourth question on this page, question it looks like 3.9.4, and it reads, "Does your company believe that

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future generations of SDRAMs could benefit from using both edges of the clock for sampling inputs?" And the word "both" is in all caps.

A. Yes.

Q. Do you see that?

A. Yes, I do.

Q. Do you recall any discussion of this item at the meeting where the survey results were presented?

A. Again, I would have the same alluding, I can't remember whether it was specifically at this meeting or whether it was other meetings, but there was definitely discussions in terms of the need for something like a dual edge clock.

Q. So, in your understanding, this SDRAMs benefitting from both edges of the clock for sampling inputs, that's in your understanding dual edge clock?

A. I wouldn't know how to interpret both edges of a clock any other way. A clock only has two edges. Unless it's a -- well, I shouldn't say that, it could be a different form of clock.

Q. I understand. I think we're finished with that document.

A. We're not likely to refer back to this? I'm going to put it aside.

Q. No.

1034

May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. SWINDELL:

Q. Now, what I have handed you, Mr. Calvin, is marked as JX-31. And if I could direct your attention to page 2 again.

A. Okay.

Q. I guess a little less than halfway down the page, do you see your name?

A. Yes.

Q. Were you present at this meeting?

A. Yes, I was.

Q. Now, if you could, just turn to page 9.

A. (Witness complied.)

Q. And a little more than halfway down the page, do you see 13.2, "Samsung Future SDRAM Concepts?"

A. Yes.

Q. Were you present for this presentation?

A. Yes, I was.

Q. And does this presentation have an item number?

A. 764 it looks like.

Q. I think you may be the one --

A. 766, okay.

Q. Yeah.

A. Yes, I think I was off one.

1035

Q. And in the reference there, do you see the reference to attachment U? A presentation was made by Samsung.

A. Attachment U, um-hmm.

Q. I would like you to turn to attachment U, which begins at page 68. And more specifically, I would like you to turn to the part of the presentation that's at page 71. With the heading Future SDRAM Proposal, Proposed Clocking Scheme.

A. Yes.

Q. Do you have that page?

A. Yes.

Q. Now, I would like you to take a look at the fourth bullet down, where it says, "Data in sampled at both edge of clock into memory." Do you see that?

A. Yes.

Q. Did you understand at this time that what Samsung was proposing in this presentation was dual edge clock?

A. That was my understanding, although I don't know that they specifically said those terms.

MR. SWINDELL: Your Honor, at this time I pass the witness.

JUDGE McGUIRE: Okay, thank you, Mr. Swindell. Supposing we take a 10-minute break and then we can come

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back and go into cross.

MR. STONE: Fine, Your Honor, thank you.

JUDGE McGUIRE: Off the record.

(Whereupon, there was a recess in the proceedings.)

JUDGE McGUIRE: At this time we will entertain cross examination of the witness.

Mr. Stone?

CROSS EXAMINATION

BY MR. STONE:

Q. Thank you, Your Honor.

Good afternoon, Mr. Calvin.

A. Good afternoon.

Q. You were asked some questions a moment ago about a SyncLink presentation at a JEDEC meeting and then about a Samsung presentation and about a survey ballot. Do you recall those?

A. Yes, I do.

Q. And in each instance you were asked some questions by Mr. Swindell about dual edge cataloguing. Do you recall those questions?

A. Yes, I do.

Q. And is it correct that in each of those instances, the SyncLink presentation and the Samsung presentation and the survey ballot, the dual edge

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clocking being discussed simply related to data in and not data out of the memory device?

A. Without looking and going from recall, I believe it's also possible data out, but --

Q. Let's take a look, let's go back to the Samsung one first if we can, and if you can turn back to that one.

A. Okay.

Q. That, I believe, was in Exhibit 31.

A. Yeah, that's this one.

Q. I think it's page 71.

A. Page 71?

Q. Seventy-one. Do you have that page in front of you?

A. Yes, I do.

Q. And then if you see the fourth bullet point down, it says, "Data in sampled at both edge of clock into memory."

A. Yes.

Q. And does that mean to you that it's the data in that's being sampled on both edges of the clock?

A. That's correct.

Q. And would similar language, I'm not going to take you back to the survey ballots and the SyncLink, but would similar language, if we found it in those

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other two, indicate to you a distinction between whether we're talking about just data in or if we're also talking about data out?

A. Yes. The use of data in is pretty specific as an input to the device.

Q. This same document, while you have it in front of you, JX-31, was anybody from Rambus in attendance at this meeting?

A. If I look at members present, I don't see Rambus is listed. If I look at others present, I don't see Rambus is listed.

Q. If you would look at page 9 of that document.

A. Okay.

Q. There's a reference on page 9, just about where Mr. Swindell drew your attention earlier, to the phrase, "Backward incapability." Do you see that under 13.2? This is 31 at page 9, JX-31 at page 9. Did you see it says, "They concluded that performance upgrade without a PLL/DLL requires backward incapability?"

A. Yes.

Q. Okay. Was backward capability and incapability something that Intel was concerned about in this time frame?

A. Generally, it -- it's always a concern unless you decide to break that train.

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Q. And you mentioned in connection with the survey ballot that Intel had some strong views about the direction to go.

A. We generally have strong views, yes.

Q. Was one of the views about which Intel had a -- was one of the issues about which Intel had a particularly strong view that was future path for DRAM the one that had extendability?

A. Yes, and especially since SDRAM was a new technology, recently introduced or just about to be introduced. So, if you break the capability right in the middle of that stream, it would be a concern.

Q. And did you have concerns in this time frame of 1995 and 1996 that SDRAM might not be extendable?

A. Yes, and I think those were not just my concerns.

Q. Those were the concerns of others at Intel as well?

A. And beyond that, yes.

Q. Was it -- let me just we can put that exhibit away, if you don't mind. I don't think I need to go back to it. While we have those exhibits in front of you, if you would look at JX-26.

A. (Witness complied.)

Q. Do you have that one in front of you now?

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A. Yes, I do.

Q. And turn to page 4, if you would.

A. (Witness complied.)

Q. Do you recall Mr. Swindell asked you about the item 8 where it says, "Patent presentations."

A. Yes.

Q. Earlier.

A. Yes.

Q. Take a look right up above it, item 7, if you would, do you see where it says, "Members manual is available?"

A. Yes, I do.

Q. Did you ever avail yourself of the opportunity to take a look at that members manual?

A. That would be a difficult yes or no answer.

Q. Okay. Let me see if I can show you a members manual.

May I approach, Your Honor?

JUDGE McGUIRE: Yes.

BY MR. STONE:

Q. Let me show you what's previously been marked as JX- -- I'm sorry, as RX-507.

A. Okay.

Q. And you were shown this document at your deposition. Do you recall?

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A. Yes.

Q. Do you recall having seen this document while you were attending JEDEC meetings?

A. Actually, no.

Q. And you understand from the -- if you look at the second page of this document, that it has a letter as the second page that appears to be signed by Mr. Townsend?

MR. SWINDELL: Objection, Your Honor, no foundation for this witness with this document. He just testified that he hadn't seen it.

JUDGE McGUIRE: I'll sustain. You can restate.

BY MR. STONE:

Q. Yes. Earlier today you were asked questions about Mr. Townsend, correct?

A. Yes.

Q. And is he the person who at every meeting that you recall the patent policy being presented, he was the presenter of that patent policy?

A. In every meeting I can recall, unless there was some exception, illness or something, and then more than likely the chair would have presented it.

Q. And did you describe or is it your understanding that Mr. Townsend was JEDEC's expert on the patent policy?

1042

A. That's correct. That was my understanding.

Q. And if Mr. Townsend prepared a manual for members in which he described the patent policy, would you expect that would be a correct statement of the policy?

A. If it was distributed to members as a document, then that would be a statement of the policy. It doesn't mean that it can't be amended at a later time.

Q. I understand. But, back to the JX-26 minutes that we looked at earlier, on page 4, item number 7, you don't know, because you didn't get a copy, which members manual was available, at least according to the minutes, do you?

A. That's correct.

Q. And in fact, is it also correct that when you tried to learn the policies and procedures at JEDEC, you did not read any of the manuals that were available?

A. That's true.

Q. You just based your understanding on what you learned and heard from others? Orally?

A. Yes. There's probably two reasons for that. Initially, I was in learning mode, and so I depended upon those that were experts, because they had been at the organization longer. The second reason is I understood, because I did want to look at the manual,

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that it was in a state of revision, and they even discussed this at meetings. This would have been the '92 time frame, or '93. And that it would be best to wait until the actual new revision was released.

Q. And so, after this announcement was made at the meeting that you attended in May of '95, that the members manual was now available, why didn't you, if you had been waiting until the revisions were done, why didn't you then go get a copy of that manual so you could read it? If you recall.

MR. SWINDELL: Objection, Your Honor. I think this mischaracterizes the testimony, because Mr. Calvin was talking about the manual that was coming out in the early nineties, and this is talking about a manual that comes out in '95. I think he's talking about two different manuals.

JUDGE McGUIRE: Any response, Mr. Stone?

MR. STONE: I guess he will tell us if that's true.

JUDGE McGUIRE: No, that's sustained, I will have you restate it.

BY MR. STONE:

Q. Okay. You told us a moment ago about a manual being revised, correct?

A. Yes.

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Q. Was that manual finalized?

A. Yes.

Q. Did you get a copy?

A. No. Actually, the way it works is that because somewhere in this period Konrad Lai was still the noted member, and I was an associate, the manual would have been sent to him.

Q. And did he share it with you, if it was sent to him?

A. I do not recall reading it. I may have seen it, I cannot recall.

Q. And when you were at this meeting in May of '95, you were listed as the member. Is that right? Or were you listed as also present?

A. I think I was listed as the member.

Q. Yes.

A. What you're going to find, though, is that that occurred. If Konrad was present, he would be the member present.

Q. Did you at this meeting that occurred in May of '95 when the statement was made in the minutes in terms of the members manual was available, that you got a copy of that?

A. No.

Q. It's correct, is it not, that from time to time

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you attended SyncLink meetings?

A. Most specifically, I attended one.

Q. Is that all?

A. That's all.

Q. Okay. Let me go back for a moment to JEDEC. You were asked earlier about a letter that had been written about possible patent that HP might have and a question that was raised about whether Intel might have a patent. Do you recall that questioning?

A. Yes.

Q. Is that with respect to a feature known as serial presence detect?

A. It was related to that.

Q. Does Intel -- did you go back to them and see if Intel had any presence in the area of serial presence detect?

A. No, not serial presence detect, specifically.

Q. Because Intel does have patents on serial presence detect, doesn't it?

A. It has some similar -- it has some patents on serial screen data, but not that particular aspect.

Q. Before each JEDEC meeting, what did you do to familiarize yourself with patents that Intel might have that might come up or might be relevant to things that were discussed during the meeting?

1046

A. I did discuss both of my manager -- actually, there was a core group who had various aspects of the technology that were being developed as part of that group, and they were also my reference group, most of them were senior, and with no opening existing patents.

Q. And did you go back to them about the question about the memory -- the type of memory device detect or serial presence type that was discussed?

A. The one that was referenced in that letter?

Q. Yes.

A. Okay, yes, I did.

Q. And did you talk with them about every JEDEC meeting before you attended? That wasn't a very clear question. Let me ask you this way: Was it your understanding that as a JEDEC representative, you had an obligation to determine and know about all the patents that Intel had?

A. My answer would be the same as it was in my deposition, to the best of my ability, it's difficult with the large number of patents that Intel has, since the early 70s, to track every one of those and become aware of them.

Q. So, you went to the meetings armed with whatever knowledge you had?

A. And whatever knowledge I could glean from

1047

talking to the members who had issued patents in that particular area.

JUDGE McGUIRE: Now, sir, let me interject here again, from my understanding, is it important that you have an understanding of every patent that they held, or just every patent that may apply to whatever is going on during the time of 42.3 and the applications that are being discussed?

THE WITNESS: That was -- Your Honor, that was what I intended to address. It was important that you are aware of those, or any related patents that might come up as issues, like serial presence detect.

JUDGE McGUIRE: All right, Mr. Stone.

BY MR. STONE:

Q. Thank you, Your Honor.

Did JEDEC allow variation within the parts that might be manufactured in accordance with its specifications, so long as there was interoperability still preserved?

A. Could you repeat the question?

Q. Certainly. One of the key things about standardizing, I think you told us earlier, was to make sure that if you had a product that met the standard, regardless of the manufacturer, you would plug it in and it would work?

1048

A. Yes.

Q. And can we for shorthand refer to that feature as interoperability?

A. Yes, that would be helpful.

Q. Is variation within the products allowed so long as interoperability is preserved?

A. Yes.

Q. And JEDEC doesn't try to regulate aspects of the product that are not necessary for interoperability, does it?

A. No. They could all be handcrafted, as long as they meet the standards at the plug-in point.

Q. Thank you. You were asked earlier about the road map, the memory road map that Intel prepares. Do you recall that?

A. Yes.

Q. And does Intel, is it Intel's practice to prepare that road map in writing?

A. Most typically if they're going to be useful, a road map has to be committed to some form of documentation, yes.

Q. And is it often shared with others within the industry so that they understand the road map that Intel is following?

A. It may or may not be.

1049

Q. Let me show you one, if I can, and see whether this one was shared. Let's bring up RX-805, if we can. I've handed you what we have marked for identification as Exhibit RX-805. Do you recognize this as a copy of a road map for the PC Platform DRAM technology prepared at Intel?

A. Yes.

Q. And is this something that you would be consulted on in connection with the preparation of this?

A. More than likely, I would be at least a consultant or reviewer on this type of document.

Q. And were these types of documents such as we've shown you, RX-805, commonly prepared within Intel?

A. They might be in different formats, but documents of this type are not unusual.

Q. Turn, if you would, to page 6 of this document.

A. (Witness complied.)

Q. The one that says at the top, "Conclusion: Visual Computing Is Memory Intensive." Do you have that page in front of you? I'm sorry, they're numbered at the bottom, they should be numbered in the lower left corner.

A. I kept seeing five and now I see it, yes.

Q. It says there, "100 megahertz SDRAM is next step for '98."

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A. Yes.

Q. Do you recall in the latter part of '96 that there was a plan to develop a 100 megahertz SDRAM by some time in '98?

A. Yes.

Q. And beneath that it says, "Extending SDRAM beyond 100 megahertz breaks compatibility with DIMMs and increases platform cost." Do you see that?

A. Yes.

Q. What does that mean, if you could explain that to us.

A. What my understanding of the meaning is is that because of the difficulty of meeting all of the clock timings, which is critical at these frequencies, going beyond 100 megahertz with the existing technology the way it was done was likely to break capability. You would have to do something different. You would have to change pin-out, you would have to change number of clocks, you would have to change something to accomplish that.

Q. And so was one of the concerns about the extendability of SDRAM that you couldn't go beyond 100 megahertz without in some fashion changing things?

A. That was one of their concerns. Yes.

Q. Turn, if you would now, to page 11 of this

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document.

A. (Witness complied.) Okay.

Q. Take a moment to look at it. I want to ask you if this is consistent with your understanding of the Rambus technology as of December of 1996.

A. All of the diagram and all of the statements as well?

Q. All of the statements as well, if you would.

A. Yes.

Q. It says under the second bullet point, where it says, "Cost comparable to commodity DRAMs," it says, "Uses conventional DRAM core technology, fab processing." Could you explain to us what that means?

A. The explanation would be one of the critical elements there is the comment "conventional DRAM core technology." That means you do not have to create a new process in order to fabricate the devices. They could be built on the back of processes which existed for DRAM.

Q. And by processes, what do you mean? Do you mean the manufacturing process?

A. The manufacturing processes. And the tests, the test processes to some degree, although they may differ. Manufacturing is various as to what are a very expensive commodity to upgrade.

1052

Q. Yes. So, your understanding in December of '96 was that the processes then in use to manufacture DRAMs could be utilized to manufacture RDRAM?

A. That's correct.

Q. Then if you would look at the last page, which is page 13.

A. (Witness complied.)

Q. Under Summary, it says, the third bullet point says, "Next generation DRAM technology required in '99 time frame to extend beyond 100 megahertz SDRAM." Do you see that?

A. Yes.

Q. As of this time, December of '96, had Intel made a decision as to what the next generation DRAM technology was going to be from its perspective?

A. If they had made that decision, I was not aware of it.

Q. So, was that -- the process of making that decision something that took a period of time?

A. Yes.

Q. Did it take more than a year as you recall?

A. It may well have, yes. But you're saying, right, that the next step would be 100 megahertz technology.

Q. And where it says here, "Intel has signed

1053

contract with Rambus." Do you see that, the fourth bullet point down?

A. Yes.

Q. Were you the person who was in most frequent contact with Rambus in terms of understanding their technology and --

A. I'm sorry, I'm getting time frames mixed up a little bit.

Q. Let me step back, then. This document, I think, on its cover, says December of '96.

A. Yes.

Q. Does that help?

A. I'm still stuck there, okay.

Q. In the time period of December of '96, were you the person at Intel who was in most frequent contact with Rambus with respect to Rambus technology or contract negotiations?

A. No, I was not that person.

Q. Mr. Swindell asked you earlier if you -- if anybody at Rambus had disclosed to you whether they had patents or patent applications on certain features. Do you recall those questions?

A. Yes, I do.

Q. Were you in regular communication with them where you asked them about their intellectual property?

1054

A. In '96, I would probably have been making little to no contacts with Rambus.

Q. Let me show you another document, which I believe is slightly later in time, and this is RX-868. And directing your attention to the cover page of this document, Mr. Calvin, are you familiar with a Pete MacWilliams?

A. Yes, I am.

Q. And is he an executive at Intel, at least at the time, 1997?

A. Yes.

Q. And are you familiar with ISSCC?

A. Yes.

Q. And is that an organization that from time to time persons from Intel would make presentations at?

A. Yes.

Q. And if you would, my question is to ask you if you just look to the second page of this document, initially, and this shows a diagram entitled The Need for Bandwidth in PC.

A. Yes.

Q. And is this diagram or similar diagrams something that you're familiar with from the time frame of 1997?

A. Well, there's two parts to that question.

1055

You're talking about the time frame of 1997? Was that the question specifically?

Q. Yes. I mean, in this time frame, is this kind of a chart something that you had seen?

A. I've seen this type of chart before.

Q. And look, if you would, then, at the fourth page.

A. The fourth page?

Q. The fourth page, yes, page 4. The one that says, "PC Bandwidth Evolution."

A. Yes.

Q. And you'll see below the chart there's some notations that says, "Platform improvements and DRAM improvements." Do you see that?

A. Yes, I do.

Q. And look at that, if you would, with respect to the captioning, the A, B, C, D, E, F, G that is indicated and described in the table on the lower right-hand corner.

A. Yes.

Q. Does this chart accurately reflect your understanding of the progression of CPU performance and DRAM performance as it was understood at this time?

MR. SWINDELL: Your Honor, I'm going to object. There's no foundation that this particular chart, Mr.

1056

Calvin has generally indicated that he has seen similar charts to this, but nothing specific to this chart.

JUDGE McGUIRE: Can you answer that question, Mr. Calvin, either yes or no?

THE WITNESS: Yes. Well, I have not seen this specific chart. One of the issues is --

JUDGE McGUIRE: But before I rule on the objection, if you can answer it no, that it does not depict it, then I don't think there's any need for me to rule. If you can't answer it yes or no, then I am going to uphold the objection.

THE WITNESS: No, I have not seen this specific chart.

JUDGE McGUIRE: All right, then that is sustained, please restate, Counsel.

BY MR. STONE:

Q. Yes. Did you have an understanding in 1997 as to the Intel chip sets that could work with an SDRAM designed device?

A. Yes.

Q. And what were those?

A. That becomes difficult. We have several layers of encoding, and then the names change as they go out into the marketplace.

Q. Okay.

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A. The ones -- I could not give you a name of the particular chip set.

Q. Let me ask it this way: Intel had a chip set that was called the Intel 386, correct?

A. Um-hmm.

Q. And that's yes for the reporter?

A. Yes. I'm sorry.

Q. Thank you. And what memory devices worked with the 386?

A. Again, I didn't follow the naming contention. If that was the one that came out roughly in this time frame, then that's a question I would have. If that's the one you're referring to, then I was aware of that chip set.

Q. Let's ask it that way. The chip set that came out in 1997, regardless of the naming contention when it went to market, what DRAM device worked with that?

A. There was a version that would work with two types of DRAM.

Q. Okay. And what were the two types that would work?

A. One of those was provisions for SDRAM, the other of those was Rambus RDRAM. So, that actually had two different -- two different sectors.

Q. And is that the one that you recall coming to

1058

market some time in the time frame of '97?

A. It's got to be roughly in that time frame. It could have been within a year or so either way. I can't recall.

Q. Turn, if you would, to the sixth page of this document.

A. Okay.

Q. Using this simply as a guide, as of 1997, was it correct that Intel had worked with DRAM vendors for more than a year in trying to understand various alternative technologies that it might utilize going forward?

A. Yes. Now, you're referring to the second bullet?

Q. The first one really.

A. The first one, okay. Yes.

Q. And let me ask you, were you part of a process at Intel where you considered the future use, in terms of future products, of SDRAM, SyncLink and RDRAM?

A. Yes, I was part of that process.

Q. And was one of the SDRAM products that you considered something that was known as DDR SDRAM?

A. We looked at that.

Q. And was it your understanding at the time this consideration process was going on that ultimately Intel made a decision in the '97-'98 time frame as to what

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they preferred?

A. Now, here is where I get cloudy. I have to take a step back. I previously mentioned that I left my previous position in '97. By mid-year '97, I was transferred into a new job, with a new set of responsibilities. So, any tracking I did related to DRAM or RDRAM or Sync DRAM past that point would have been ancillary. It would have been through news media or through just pick up general information within the corporation.

Q. Right, and I want to limit myself if I can to the time period that you were still involved in this process. So, am I correct to understand that you were involved up until the midpoint of '97?

A. Actually, my involvement tapered very quickly after the March '97 meeting. I was heavily involved there, but I had already accepted a position at the Arizona site, at that time, and so I was in a wind-down phase past that point.

Q. Okay. Well, let me try one other document and see if this is still a period of time when you were involved. Let me show you RX-904. If I may approach, Your Honor.

A. Okay.

Q. And you'll notice that RX-904 is dated April 1,

1060

1997. Do you see that up at the top?

A. Yes, I do.

Q. And is this a time period when you were tapering down but were still involved in consideration of the future memory path or direction?

A. Yes, it would have been in the crossover activity, yes.

Q. And if you turn, do you know what these materials relate to, the cover page which says Rambus Program Review, April 1, 1997. Do you know what the purpose was for this or how this was used?

A. I would have to make assumptions, since I did not participate in the program review.

Q. Okay, so the program review was done by others?

A. Yes.

Q. Were you somebody who provided input to that process?

A. Yes, I would have -- not directly to any of this document, but as part of what built up to this, yes, I would have.

Q. Was your focus in the technical sense just on the bus architecture of the various DRAMs?

A. That was my focus. Now, obviously since I was part of committees which weren't directly attached to bus, I had the understanding enough to function well

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within these committees.

Q. Do you know what the process is at Intel for something called a program review?

A. Yes, I do.

Q. Explain that to us, if you could.

A. A program review is -- there's a lot of work that you go through in an evaluation process, technical work, cost analysis, the road map alignments, all those things we've talked about. Where it all comes together is in a program review. Now, it doesn't have to be the final review, but what it always means is, you've got enough of an answer, you've got it well documented, you've done all the homework, and you bring it before a group of personnel, typically with management well represented, so that you can present the findings.

Q. And is that done as a prelude to making a decision or is it done even after decisions are made just to bring management up to speed, or are there other purposes? If you know.

A. In most instances, it would be a -- I mean, you would like to think of it as a prereview, before a decision is made. That's not necessarily the case. You could actually look at the program review as what's the status of this program now that a decision has been made, what are the hitches that hadn't been considered,

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if any, where are we in the process. So, a program review could be on either side of that decision.

Q. And was it important in preparing a presentation for a program review to create documents that accurately reflected the current status?

A. Yes.

Q. But the particular exhibit, the exhibit that I have in front of you, is not one that you recall having seen before today?

A. Not this, no. Not this review.

Q. I'm going to save my questions, then, for others, I think, on the specifics of that document.

A. Okay.

Q. Do you recall being present -- let me strike that.

Do you recall hearing at a JEDEC meeting or otherwise that at a SyncLink meeting a question about Rambus's patents was brought up and discussed?

A. Yes, I recall hearing that discussion within JEDEC.

Q. And how did that discussion come to your attention?

JUDGE McGUIRE: And Counsel, again, let me interject and inquire, do we have for context purposes, a time frame under which you're asking?

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BY MR. STONE:

Q. Let me do that first, Your Honor.

Can you give us a time frame, Mr. Calvin, when this discussion came to your attention?

A. The most specific things I can recall have got to be in the '96 to '97 context, towards the end of my tenure.

Q. And I want to show you a document and see if this is something -- well, let me ask you this: Did anybody ever make available to you copies of SyncLink minutes?

A. Yes.

Q. And did you see SyncLink minutes for meetings other than just the one meeting you attended?

A. No.

Q. Weren't you mailed SyncLink minutes for a period of time?

A. Yes. Well, no, actually, just the one. I was asked by one of the head members of the SyncLink support group if we were going to continue in membership role, and I said no, not at this time, because we had decided to wait and watch it from the sidelines. And he said, well, should I continue to send you the minutes, and I said, no, I'll watch them through the JEDEC forum and I'll know when they're ready.

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Q. Okay, so your recollection is you only saw the one set of JEDEC?

A. I only saw the one set.

Q. Let me ask you about a JEDEC meeting, then. And I'm going to hand you a copy of Exhibit RX-888. And if you would take a look at the first page of Exhibit 888.

A. Yes.

Q. And can you determine from the first page of Exhibit RX-888 if you were in attendance?

A. Yes, I was.

Q. And do you recall specifically anything about this meeting?

A. Well, the first thing I observe is that you notice another version, you didn't ask me this question, but I'm shown as the member present for Intel.

Q. Yes.

A. And the other present, Konrad Lai is shown.

Q. Was he upset? I'm teasing.

A. No, I was noting this that at some point it switched over.

Q. It toggled over to you and you became the member?

A. Yes.

Q. And that's what's reflected in that portion of the minutes, correct?

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A. Yes.

Q. And turn, if you would, it's the fourth page of this document, because there's two pages per copy, you'll see it's page 7.

A. Um-hmm.

Q. And there's an item 6.6 on the lower left-hand corner where it says, "NEC DDR SDRAM." Do you see that heading?

A. Yes.

Q. And it says, "Some on the committee felt that Rambus had a patent on that type of clock design, others felt that the concept predated Rambus by decades," and it goes on from there. Do you see that?

A. Yes.

Q. Do you recall this discussion?

A. Yes, this was probably the one that I was recalling as maybe the first reference to some questions on the clock.

Q. And do you recall who it was at the meeting who commented that some on the committee felt that Rambus had a patent on that type of clock design?

A. I think I know.

Q. And what's your best recollection? I don't want you to guess, but if you have a recollection, I do want that.

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A. Actually, it would be a guess, as a partial recollection, but --

Q. Well, share with us your partial recollection and we'll understand its --

A. I would have thought maybe HP, but it could have been several other member companies.

Q. And who was the HP representative at this meeting, if you know? Who do you have in mind by name?

A. Hans Wiggers.

Q. And with respect to 42.3 on this subject, when did you start attending the 42.3 meetings?

A. I actually attended 42.3 as early as 1992, maybe mid-1992, June would have been a typical meeting. I was attending for information gathering. And later, it was only in '93 that I actually joined the committee.

Q. Do you recall any of the specifics at the meeting we just looked at, the Fort Lauderdale meeting, any of the specifics that was discussed regarding the extent of Rambus's patents?

A. What I recall, and I can't remember all of the discussion, I guess what I remember from discussions at the meeting was that there were potentially a number of patents or several, whatever the term used, that might be of a concern. And I don't know that it was -- whether clock, dual edge clocking was specifically

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mentioned. I don't recall the specifics.

Q. Do you recall anyone saying at that JEDEC meeting that they had looked at Rambus patents and had formed views one way or the other on those patents?

A. I don't remember that specifically. I guess what did stick in my mind was a generalized concern that patents may exist and had not been disclosed to the standards committee. That was the thrust of it.

Q. And you had been present, hadn't you, in earlier points in time when a question had been asked of Rambus as to whether they wanted to comment on intellectual property?

A. Yes, I had.

Q. And the Rambus representative, who was Mr. Crisp, correct?

A. Yes.

Q. Said he had no comment?

A. Generally no comment or that --

JUDGE McGUIRE: Wait a minute, that's not the question. Just answer the question, if you would.

THE WITNESS: I'm sorry. Okay, the question, please.

JUDGE McGUIRE: Well, restate the question, Mr. Stone.

BY MR. STONE:

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Q. Yes. Let me see how I can put it. Were you at a meeting where a Rambus representative was asked if he cared to comment on whether Rambus had patents or intellectual property that covered a particular subject?

A. Yes.

Q. And was the representative who was there from Rambus Mr. Crisp?

A. Yes.

Q. And at that meeting, did he either say no or shake his head no that he didn't want to comment?

A. From what I remember of the comment was not at this time.

Q. And were you later present at a meeting where a letter from Mr. Crisp was read?

A. Yes, I was.

Q. And a copy of that letter was then appended to the minutes, wasn't it?

A. Yes, I believe that's correct.

JUDGE McGUIRE: Wait a minute, I'm going back here. I'm not clear on your answer there as to whether you heard a comment or you did not hear a comment.

THE WITNESS: There was a comment, I cannot recall the specific comment.

JUDGE McGUIRE: So, you cannot recall the comment. Is that your testimony?

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THE WITNESS: Well, my testimony is that it was negative, that there would not be a presentation at that time, but I don't remember the specific wording.

JUDGE McGUIRE: Okay. All right, Mr. Stone, I'm sorry, I just wanted to clarify.

BY MR. STONE:

Q. No, that's quite all right. I want the record to be as clear as we can, Your Honor.

Let me go back to that conversation and just make sure, Mr. Calvin, we have all of your testimony on it.

A. Okay.

Q. Do you recall that that question of do you care to comment, or words to that effect, was put to Mr. Crisp at a meeting in May of '92 in New Orleans?

A. It could have been, I could not tie down the date.

Q. Was it in the time frame early when you started attending 42.3 meetings?

A. Relatively early, yes. Well, I could not tie down the time.

Q. And is your best recollection that when asked if he cared to comment, what Mr. Crisp indicated in some fashion was in the negative, either not at this time or in some other fashion in the negative?

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A. That was my impression, yes.

MR. SWINDELL: Your Honor, I'm going to object to the question as vague, in the negative is vague.

JUDGE McGUIRE: Well, that's overruled, I think I understand the context of the answer and you'll certainly have a chance to go into that again on redirect.

BY MR. STONE:

Q. And then was the letter that I had asked you about a moment ago, from Mr. Crisp, that was presented in a meeting, was that presented in September of 1995?

A. Probably, I remember it being in the '95 time frame, I don't remember which meeting.

Q. And was your understanding from that letter that was presented at that meeting, was it your understanding that a silence by Rambus at meetings should not be taken as an indication that it didn't have an intellectual property?

A. That was a general message that I recall from the letter, yes.

Q. And was it your understanding that when in the first instance, when Mr. Crisp responded in some fashion, either not at this time or what I referred to earlier as in the negative, that he was not providing information to the committee that the committee wanted?

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A. No, not at that time.

Q. Did you later come to that understanding?

A. Yes.

Q. And when was that that you later came to that understanding?

A. Again, I can't remember the specifics, but there were subsequent requests by the chair for Rambus as a member to make presentations regarding either their technology or their patents so that the group would have an understanding of the application to the standards. I can't remember when, but I do recall that.

Q. And is it your recollection that Rambus responded again in some fashion that they declined to do so or were not going to do so?

A. No, I can't really recall what the response was at that time.

Q. Do you ever recall Rambus giving a presentation?

A. No.

Q. Okay.

A. So, that would be my recollection, yes.

Q. Okay, thank you. Do you know an individual by the name of James Akiyama?

A. Yes, I do.

Q. And is he somebody who was involved, employed at Intel?

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A. Yes, he is.

Q. And is he somebody that's involved with the Intel/Rambus relationship?

A. Yes, he would have had involvement with that.

Q. And did you ever talk with him about his understanding as to the extent of intellectual property or patents that Rambus had?

A. Not directly, except that I did have some conversations, and this would have been -- this would have been relatively late in my alignment with the group in Oregon. I do remember James discussing a number of things about what I knew about the technology and from JEDEC and so forth. And that he had the intent at the end of this to give Rambus a direct call, I think it was, or to some -- maybe he went through another channel, but at any rate, he wanted some clarification on certain items. And we did not discuss and delineate each one of those items.

Q. Let me see if I can show you a document, see if that at all jogs your recollection. I will show you RX-920. Now, you won't have seen this document before, I don't think, Mr. Calvin, I'm not suggesting that you did. It's an email chain and it was produced to us by Micron, but I want to just see if it jogs your memory at all about conversations that you had with Mr. Akiyama or

1073

the time frame. I just want to draw your attention to the second email down, and see if I can refresh your recollection with this wording here.

Do you see where it says, "Rambus feels DDR for any memory is under their patent coverage. James says that Rambus has more IP than Intel has seen."

A. Yes, I see that.

Q. Do you recall, does this help you at all recall whether when you talked to Mr. Akiyama he told you that it was his understanding that Rambus felt that they had intellectual property or patents or something on DDR?

MR. SWINDELL: Your Honor, I'm going to object here. Mr. Calvin did not say that his recollection needed refreshing, I think what he said was we did not discuss and delineate each one of those items.

JUDGE McGUIRE: That is sustained. Let's lay a proper foundation here, Mr. Stone.

BY MR. STONE:

Q. Thank you, Your Honor.

Mr. Calvin, do you have a recollection, independent of Exhibit RX-920, of discussing with Mr. Akiyama whether he had an understanding that Rambus had intellectual property coverage of some sort, or patent coverage, over DDR?

A. No, I do not recall that specific discussion.

1074

Q. Okay. And does looking at this document at all refresh your recollection as to whether that conversation did or did not occur?

A. No, honestly, it doesn't.

JUDGE McGUIRE: I'm sorry, I couldn't hear your answer.

THE WITNESS: No, it doesn't.

BY MR. STONE:

Q. Independent of RX-920, did you have a conversation with Mr. Akiyama in which he described for you the number or extent or the scope of Rambus's intellectual property as he understood it?

A. We didn't get into that detail level in terms of specific patent coverage.

Q. Did you have a conversation with him about Rambus's patent coverage after he told you that he was going to give him a call?

A. No. Again, this April of 1997 was in the transition time. I was sort of getting more and more out of that loop.

Q. Okay. Were you at a -- I'm going to switch subjects with you, Mr. Calvin. Were you at a JEDEC meeting where Mr. Gordon Kelly of IBM stated to the committee that IBM was not going to make an effort to disclose all of their patents as they might be involved

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with standards then under consideration, or words to that effect? I don't mean to say that's a direct quote.

A. Yes. I remember that specific letter, yes.

Q. And that's a -- that was presented in writing at the meeting?

A. Yes, it was.

Q. And at that time, did anyone at the meeting say that Mr. Kelly's statement was inconsistent with their understanding of what JEDEC members should or should not be doing?

A. I remember that the letter was logged, it was presented by the chair, and comments to the effect of, well, this is an interesting twist, but not -- not specific wording, obviously.

Q. Is it consistent with your recollection that at that period of time, the way in which various JEDEC members were going to disclose or not disclose patents was evolving?

A. It was -- it was evolving to some degree. I think maybe even his letter touched on some of the points which maybe hadn't been -- I can't recall the specifics, but --

Q. You were still a JEDEC member in July of '96, weren't you?

A. Yes, I was.

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Q. Let me show you a document from that time frame. Let me show you what's been marked as RX-742. Directing your attention to RX-742, Mr. Calvin, can you identify this as a copy of a document that you received some time around July of 1996?

A. I did not directly receive it, no.

Q. Did you see a copy of it around that time?

A. I believe it was shown in the context of the initial overview at the first level meeting.

Q. And do you recall when this particular document was shown at the meeting, if anyone said that this document incorrectly described the patent policy of JEDEC?

A. I would think that if -- I don't recall those comments being made; however, that doesn't mean that they weren't.

Q. And was it shown at the meeting by Mr. Townsend as part of his introductory presentation?

A. That's what my recollection would be, yes.

Q. Thank you.

I have no further questions, Your Honor.

JUDGE McGUIRE: Okay, thank you. At this time, we will entertain the redirect by complaint counsel.

MR. SWINDELL: Can I have just a minute, Your Honor?

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JUDGE McGUIRE: Yeah, sure, go ahead. Do the parties want to take a break, just a short five-minute break?

MR. SWINDELL: I think five minutes would be more than sufficient.

JUDGE McGUIRE: Let's go off record for five minutes.

(Whereupon, there was a brief recess in the proceedings.)

JUDGE McGUIRE: On the record.

MR. SWINDELL: Complaint counsel does not have any further questions at this time.

JUDGE McGUIRE: Okay, thank you. Then do you intend at this hour to call your next witness?

MR. OLIVER: No, Your Honor, we do not. Mr. Calvin's testimony did not go as long as we anticipated.

JUDGE McGUIRE: All right, then, sir, Mr. Calvin, you are excused.

THE WITNESS: Thank you.

JUDGE McGUIRE: Thank you very much for your testimony today.

Can I inquire of the testimony tomorrow as to who you intend to call tomorrow?

MR. OLIVER: Yes, Your Honor. We intend to call Mr. Henry Becker of Infineon, and also Mr. Desi Rhoden

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for the completion of his testimony.

JUDGE McGUIRE: Anything you want to add to that, Mr. Stone?

MR. STONE: No, Your Honor.

JUDGE McGUIRE: Then this hearing is now adjourned until 9:30 tomorrow morning. Thank you.

(Whereupon, at 3:36 p.m., the hearing was adjourned.)

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C E R T I F I C A T E O F R E P O R T E R

DOCKET/FILE NUMBER: 9302

CASE TITLE: RAMBUS, INC.

HEARING DATE: MAY 6, 2003

I HEREBY CERTIFY that the transcript contained herein is a full and accurate transcript of the notes taken by me at the hearing on the above cause before the FEDERAL TRADE COMMISSION to the best of my knowledge and belief.

DATED: 5/7/03

Sally Jo Bowling

C E R T I F I C A T E O F P R O O F R E A D E R

I HEREBY CERTIFY that I proofread the transcript for accuracy in spelling, hyphenation, punctuation and format.

Sara J. Vance