FEDERAL TRADE COMMISSION

I N D E X (PUBLIC RECORD)

EXHIBITS	FOR ID	IN EVID	WITHDRAWN
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UNITED STATES OF AMERICA

FEDERAL TRADE COMMISSION

In the Matter of:	)
Rambus, Inc.	) Docket No. 9302
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Monday, May 5, 2003

9:30 a.m.

TRIAL VOLUME 4

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.

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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 order, convened at 9:30 a.m.

Counsel, how is everyone this morning? I trust everyone had a peaceful weekend, a quiet weekend.

Before we get started today, are there any housekeeping chores that we should take up before the start of the testimony?

MR. STONE: I can just report, Your Honor, that I think we have agreed on the form of a stipulation and that the lists are being processed, and we should be able to file everything with you tomorrow afternoon.

JUDGE McGUIRE: Is there anything that you want to add to that, Mr. Oliver?

⌂MR. OLIVER: No, I agree with that statement. I simply want to mention that over the weekend, we have been considering trying to work on some changes to our schedule in light of the discussions late Friday, and I hope I will be in a position to report by the end of the day today or tomorrow morning about some changes in our schedule.

JUDGE McGUIRE: Okay, all right, very good.

Then if there are no other issues to be brought to the Court's attention at this time, then the

complaint counsel can call its next witness.

MR. OLIVER: Your Honor, Ms. Cary Zuk will be handling the next witness on behalf of complaint counsel.

JUDGE McGUIRE: How is that spelled, Counsel?

MS. ZUK: Z like in zebra, U, K like in kite.

JUDGE McGUIRE: Thank you very much.

Sir, could you please come this way and then you will be sworn by the court reporter.

Whereupon--

BRETT WILLIAMS

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

DIRECT EXAMINATION

BY MS. ZUK:

Q. Good morning, Mr. Williams.

A. Good morning.

Q. Could you please state your name for the record?

A. Brett Williams.

Q. And where do you work, Mr. Williams?

A. I work at Micron Technology.

Q. And what kind of company is Micron Technology?

A. It's a company that manufactures memory products.

Q. And what is your job there?

A. I am the strategic marketing manager in charge of desktop systems.

Q. And could you briefly describe what your job responsibilities are as strategic marketing manager?

A. My main job responsibilities are to interface with customers and try to determine the requirements for the next generation memory products as well as help them designing in the current memory problems.

Q. What kinds of products are you responsible for as strategic marketing manager at Micron Technology?

A. Mainly DRAM.

Q. And how long have you been strategic marketing manager at Micron Technology?

A. For about three years.

Q. Can you briefly describe your educational background to the Court?

A. Yes, I graduated with a Bachelor of Science in electrical engineering from Brigham Young University in 1981.

Q. And what did you do after you graduated from BYU?

A. I joined Intel Corporation and worked with them as an application engineer.

Q. And how long were you at Intel?

A. Until 1989.

Q. And could you please briefly describe your job responsibilities at -- while you were at Intel?

A. Yeah, I started initially as an application engineer in the board division, then moved from there to the field as an application engineer in the field, and then got promoted as a regional architecture specialist in the field also.

Q. And when you were at Intel, what kinds of customers were you involved with?

A. Mainly customers that would build computer systems, AST, ALi, and my territory was the Southern California area. So, people that build motherboards or build computer systems, worked a lot with military accounts down there also.

Q. And when you were at Intel, what products were you primarily responsible for?

A. Microprocessor products.

Q. At Micron, have you held several different positions?

A. Yes, I have. I started as an application engineer and after two years there became the application engineering manager; held that position for a couple years and then was asked to go start up a couple ventures, one with after-market memory called

Crucial Technology, and then another one called the Integrated Platform Group, which was making motherboards.

Q. And in general terms, what did you do as an applications engineer manager in the 1991 to 1994 time frame?

A. In that time, again, interfaced with customers to try to design in our current products, also trying to understand their needs for the next generation products.

Q. And as an applications engineer manager in 1991 to 1994, did you have a focus in any particular DRAM products?

A. Yeah, at that point, since I had people working for me that had focus on specific DRAM, SRAM and flash products, I was focused more on leading edge products, and at that time it was SDRAM and burst EDO.

Q. And in your role as applications engineering manager in 1991 to 1994, what kinds of customers did you work with?

A. The typical computer customers, HP, Dell, Compaq, Sun, Unysis, DEC.

Q. Have you ever published any technical articles?

A. Yes, I have published several.

Q. And what subjects did these technical articles

cover?

A. Typically memory products and how to use memory -- specific memory products or the advantages of one memory product over another.

Q. And where were these technical articles published?

A. In trade publications.

Q. Are you familiar an organization called JEDEC?

A. Yes, I am.

Q. What is JEDEC?

A. JEDEC is a committee of industry people who set standards based upon an open standard that everybody can use.

Q. Have you had any personal involvement with JEDEC?

A. Yes, I have. I was actually the JEDEC representative for Micron from the '91 to '93 time frame.

Q. And when you said you were the JEDEC representative for Micron, what did you mean by that?

A. JEDEC requires that each member company select a -- what they call a representative, and they can also have several alternates. The representative's duty is to attend the meetings. They get the official minutes of the meetings. They are really chartered to do the

voting at the JEDEC meetings and in essence be the liaison between JEDEC and the member company.

Q. Would you say between the 1991 to 1993 time frame you were the official JEDEC representative for Micron?

A. Yes.

Q. As far as you know, has Micron always had a JEDEC representative?

A. As long as I've been there, yes, they have.

Q. Do you think it's important for Micron to have a JEDEC representative?

MR. STONE: Objection, Your Honor, lacks foundation, calls for speculation.

JUDGE McGUIRE: Sustained.

BY MS. ZUK:

Q. Do you have an understanding of why it was important for Micron to have a JEDEC representative?

MR. STONE: Same objection, and now assumes facts which are not in evidence, namely, assuming that there is an importance. This witness has simply no basis to express an opinion as to whether it is or is not important for Micron to have a representative, or if he has such a foundation, one has not been laid.

JUDGE McGUIRE: Overruled, but I will insist on a better foundation on that, Ms. Zuk.

MS. ZUK: Okay.

BY MS. ZUK:

Q. Do you have an understanding as to why Micron had a JEDEC representative?

A. Yes, for Micron, they make memory products that are used in the industry. Their customers are mainly computer customers who require that they are able to buy products from multiple sources and that these products interoperate, and JEDEC is the body that sets those standards by which there are interoperability and everybody has, in essence, the same part based upon the JEDEC standard. So, it was very important for Micron to be a member of JEDEC to ensure that we know what those standards are and we help formulate those standards.

Q. How long were you personally Micron's official JEDEC representative?

A. For between two and three years, '91 to '93.

Q. And between 1991 to 1993, what JEDEC committees did you participate in?

A. The memory committees primarily. JC-42, and of JC-42, there's several subcommittees; JC-42.3, which is the RAM committee; JC-42.5, which is the module committee; attended several meetings on JC-16, which is the low voltage committee; and I believe I even

attended JC-11, which is really the packaging committee.

Q. In the 1991 to 1993 time period, did you attend JEDEC meetings regularly?

A. Yes, I did.

Q. And in that same time period, was there a Rambus representative who attended those meetings?

A. Yes.

Q. Do you remember who represented Rambus at JEDEC meetings in the 1991 to 1993 time frame?

A. Yes, Richard Crisp I believe was the one that attended most of the meetings that I remember. I remember seeing Dave Mooring there also from time to time, but in essence, it was Richard Crisp.

Q. Why do you remember Richard Crisp and David Mooring attending meetings in the 1991 to 1993 time frame?

A. I saw Richard Crisp there quite often. I also knew Mr. Crisp previously. He was at a company that when I was at Intel in Southern California, I had some interaction with him.

As far as Mr. Mooring, I actually worked with him at Intel. I was a field application engineer at Intel, and he was a salesman in the Southern California area.

Q. Okay. Now, you mentioned that you participated in the JC-42.3 subcommittee of JEDEC.

A. Yes.

Q. What types of companies participate in that subcommittee?

A. Almost all of the DRAM memory companies, SRAM memory companies, logic companies, customers of memory, as well as interconnect companies, such as socket manufacturers.

Q. Between late 1991 and 1993, what are some of the names of the DRAM manufacturers who participated in JC-42.3?

A. They would be companies like Toshiba, OKI, Mitsubishi, Panasonic. Those are some that I remember.

Q. And in that same time frame, what are the names of some of the DRAM customers who participated in JC-42.3?

A. HP, Compaq, IBM, Unysis, DEC, Sun.

Q. And you mentioned there were other companies besides DRAM manufacturers and DRAM customers who participated in JEDEC.

A. That's correct.

Q. What are the names of some of those companies?

A. Those are the test companies, like Teradyne would be there. There's interconnect companies like

AMP.

Q. Why are customers, suppliers, tester companies and interconnect companies working together in JC-42.3?

A. They all make products based upon the DRAM and have an interest in ensuring they know what the next standard is going to be so that their interests can be incorporated into this standard, as well as they know that they can use that standard.

Q. Okay. Do you have an understanding of why these companies -- all of these companies were interested in an open standard?

A. That's because their business is based upon the standard. They have a direct relationship to the standard based upon their businesses.

Q. Do you have an understanding of why their business is based on the standard?

A. Because --

MR. STONE: Your Honor, I don't really think this witness can testify as to why a tester company's business is based on a standard. I don't think he's ever worked at any tester company, for example. So, I think there's just no foundation for him to testify as to what other companies -- why their business is based on a standard or not.

JUDGE McGUIRE: Then Ms. Zuk, in response?

MS. ZUK: Well, I'm happy to try to lay the foundation. I believe we have established that Mr. Williams has worked with DRAM customers, has worked for a DRAM customer in the past and also has involvement with JEDEC where all of these companies get together.

JUDGE McGUIRE: Okay, the objection is sustained. I am going to ask you if you want to go into that inquiry that you lay a proper foundation to that inquiry.

MS. ZUK: Okay.

BY MS. ZUK:

Q. You worked with many DRAM customers in the 1991 to 1993 time frame. Is that true?

A. Again, repeat the question.

Q. Did you work with several DRAM companies in the 1991 to 1993 time frame?

A. In a cooperative effort, yes.

Q. And would any of that work entail a discussion about standards?

A. At the JEDEC meetings, that is correct, they would.

Q. And the JEDEC meetings would involve DRAM customers as well?

A. Yes, they were there.

Q. And would JEDEC meetings also involve DRAM

suppliers or manufacturers?

A. Yes, the manufacturers were there, and they were in the discussions.

Q. Okay. Based on that understanding that you developed in exchanging with DRAM customers and DRAM suppliers, did you have an understanding as to why these companies based their business on the standard?

MR. STONE: Your Honor, I don't mean to interrupt, but there is no testimony that they based their business on these standards. This witness can't testify as to whether they based their business on a standard. He -- I know they all attended the meetings, I don't dispute that, I think that's clear from the minutes, but whether a tester company based their business on a standard or not is not something that there's any foundation for this witness to testify to.

He never worked at a tester company, doesn't know whether they based it on a standard or based it on something else, and it's presumed in the question, the way the question is framed, that that is a fact, and there's no showing it's a fact, and this witness has no foundation.

JUDGE McGUIRE: All right, I think they have laid at this point some foundation, and Counselor, I think that's something you can properly take up on

cross examination --

MR. STONE: That's fine. Thank you, Your Honor.

JUDGE McGUIRE: -- of the witness. Overruled.

You may proceed.

BY MS. ZUK:

Q. Do you have my question in mind?

A. No.

Q. Okay, I'll try to paraphrase.

Do you have an understanding -- you testified earlier that companies you worked with based their business on the standard. Do you have an understanding of why that was so?

A. Yes, the computer companies need to keep the costs of their systems as low as possible. If they use a standard device, they know it's going to be manufactured by everybody in the industry, and they require that, and they ensure that -- even when we were trying to bring out new products, they wanted to make sure that JEDEC was going to be the -- the standards body that would grant the standard to the device, and so it was very important to them.

And they reiterated over and over when I would talk to them, where's JEDEC on this device? And before JEDEC had a standard, they wanted to make sure it was

well down the road before they would actually adopt it for their systems.

Q. Now, turning back to JEDEC meetings themselves, does Micron compete for the same business as the other DRAM manufacturers who participated in JEDEC?

A. Yes, we do.

Q. Given that companies are ultimately competing for business with at least a few other JEDEC members during the time you attended JEDEC, can everyone work together to formulate a standard?

MR. STONE: Objection, Your Honor, leading and assumes facts not in evidence.

JUDGE McGUIRE: Sustained.

BY MS. ZUK:

Q. Do you have an understanding that everyone can work together at JEDEC?

A. Yes, because we have.

Q. Okay. And can you explain a little bit further about why -- what your understanding was based on?

A. I sat in many, many meetings where we would try to formulate a standard based upon the discussions and the proposals that various member companies would bring to the committee, and we had long discussions of the pros and cons of various options and tried to determine what was the best standard that everybody could

produce.

Q. Are you familiar with JEDEC's patent policy between late 1991 and 1993?

A. Yes.

Q. Between late 1991 through 1993, how did you learn about JEDEC's patent policy?

A. Mainly by the presentations that were given at every meeting by Mr. Townsend.

Q. And in that time period between late 1991 and 1993, what was your understanding of JEDEC's patent policy?

A. That if somebody had a patent or pending patent based upon the work that was being discussed at JEDEC, that there needed to be disclosure of sufficient information so that the council or the committee could determine whether or not what was being discussed was actually implied in the patent.

Q. Did you have an understanding of how close a connection there needed to be between the discussion that was taking place in JEDEC and patents and pending patents that a company might have?

A. Just needed to know -- just needed to have sufficient information to ensure that -- and none of us were lawyers there, so we couldn't determine if it was -- if it infringed or not. I mean, that wasn't the

purpose.

The purpose was to bring the information to the committee so that based upon the information that was given we could determine if the actual aspect that was being discussed at JEDEC was included in the patent. And it was incumbent upon the member committee -- I mean the member -- the member to bring that information to the committee.

Q. Between late 1991 through 1993, did you have an understanding of when a company had to disclose a patent?

A. Yes, it was determined that we didn't want to waste time at JEDEC, so it was encouraged to bring that information forward as soon as you knew. As soon as you knew that there was a possible patent that could apply to what was being discussed, you were to bring that forward to get it out of the way and determine whether or not -- you were going to see if you needed to use that patent and what the terms of use of that patent would be or you tried to design around it.

Q. Now, you used the phrase "waste time." Do you have an understanding of why it would waste time to not disclose a patent or pending patent as soon as possible?

A. Yes, at that time, JEDEC was meeting about

every three months, and in order to get a point or feature to ballot, it required a first showing, which would happen at one meeting. You would then go to a second showing at the second meeting. You could then at the end of the second showing request that the item or the ballot -- the item be sent to ballot. The ballots would be issued. They would count the ballots at the third showing, and then based upon if it passed, then it would go to the board, which would then ratify it or -- and it typically got ratified if it got that far.

So, you're talking about nine months from the time that you introduced an item to the earliest time that it typically could be sent to ballot and voted on.

Q. Okay. Between late 1991 through 1993, if you thought you had a relevant patent or patent application, what, if anything, did you need to inform the committee about?

MR. STONE: Your Honor, just so I understand, is this based on his understanding when she says -- or something else? Because the question as phrased is, what did you need to inform the committee about? Is this just his understanding as to what you needed to inform the committee about or some other source of opinion?

JUDGE McGUIRE: Is that his understanding? Is that the import of your inquiry, Ms. Zuk?

MS. ZUK: I certainly wouldn't ask him to answer anything beyond his understanding, so --

JUDGE McGUIRE: All right, does that satisfy you, Counsel?

MR. STONE: Absolutely, thank you.

JUDGE McGUIRE: All right, proceed.

BY MS. ZUK:

Q. Do you have my question in mind?

A. Repeat it if you would, just to make sure.

Q. Between late 1991 through 1993, if you thought you had a relevant patent or patent application, what, if anything, did you have to inform the committee about?

A. Based upon my understanding, it would be that you had to bring sufficient information, whatever that meant, so the committee could make a determination, and I think it was a -- it was a case-by-case basis what that actually meant, but you -- the committee, if they didn't think it was sufficient information so that they could make an informed decision, they would then ask for more definite information.

Q. In the case of a patent application, did companies provide a copy of their patent applications

to the committee?

A. I don't ever remember that happening.

Q. Do you know whether they were required to give the committee a copy of their patent application?

A. No, I don't think so.

Q. Now, we've just gone over the -- your understanding of the patent policy at JEDEC, and I'd like to draw on your memory of particular applications of the patent policy, if I could.

Do you remember any examples of companies between late 1991 and 1993 who disclosed patents or patent applications during a JC-42.3 meeting?

A. Yes, there were several.

Q. In the late 1991 to 1993 time frame, do you remember an example where Micron disclosed a patent?

A. Yeah, I remember specifically we disclosed a patent on the VPAK package.

Q. Can you tell us what you remember about Micron's disclosure of the VPAK patent in the 1991 to 1993 time frame?

A. Yes, we disclosed to the committee that we had a patent that possibly applied and that -- at that time gave the patent number and submitted a letter as to -- that we would license that at a reasonable and nondiscriminatory rate, which is what was required by

the committee.

Q. In general terms, how did the committee react to Micron's disclosure of the VPAK patent?

A. They wrote it down on the patent tracking list so that other people, if they wanted to delve more in detail, could look at that and determine whether or not it was applicable to what was being discussed.

Q. In the 1991 to 1993 time frame, do you remember an example where a company failed to disclose a patent?

A. Yes, I do.

Q. Could you tell us what you remember?

A. Yeah, this was a case where it was found out that TI had -- and it could have been Micron I believe that brought it to the committee -- had a patent on the quad CAS device that had just been standardized or was in the process of being standardized, and it did pass, became a standard, and the council -- so, here we are, we had just either made a standard or it was past the voting stage of council, I can't remember exactly where it was, but I remember a great uproar in the committee based upon it.

I mean, they were very irate that it had gotten this far and they had a patent based upon what was being standardized. So -- in fact, I remember Ernest Powell, who was the committee member for TI, just

getting pummeled in that meeting for his failure to disclose.

Q. Do you remember --

JUDGE McGUIRE: Now, who was Ernest Powell?

THE WITNESS: Ernest Powell was the JEDEC committee member from TI.

JUDGE McGUIRE: Okay, thank you.

Go ahead, Ms. Zuk.

BY MS. ZUK:

Q. Do you remember how the committee responded to the disclosure of the TI patent on quad CAS?

A. Yes, I believe that standard was actually rescinded.

Q. And was that because of the patent issues surrounding the quad CAS standard?

A. Yes.

MS. ZUK: I would like to now introduce my first exhibit, but I thought, Your Honor, perhaps it would be more efficient if I just handed the witness and opposing counsel a copy -- and if you would like a copy -- copies of the documents I intend to use today at this time.

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

MS. ZUK: Yes, it is going to be.

JUDGE McGUIRE: Then I don't need a hard copy.

MS. ZUK: May I approach the witness?

JUDGE McGUIRE: That will be fine. Just make sure you give a copy to opposing counsel.

MS. ZUK: Okay.

BY MS. ZUK:

Q. Mr. Williams, I have just handed you a set of exhibits, and I'd like you to look at the first in the set. It's JX-10. Do you have that document in front of you?

A. Yes, I do.

Q. Are you familiar with JX-10?

A. Yes, I am.

Q. What is it?

A. These are committee minutes of the JC-42.3 committee for December '91.

Q. And I see your name on the attendance roster of this set of minutes. Did you attend this meeting?

A. Yes, I did.

Q. Where did this meeting take place?

A. In Maui, Hawaii.

Q. Did you attend the entire December 1991 JC-42.3 meeting?

A. Yes, I did.

Q. Okay. And if I can refer you to the next page, which is page 2 of JX-10, I see a name next to Rambus

of Billy Garrett. Do you see that?

A. Yes, I do.

Q. Does this indicate that someone from Rambus attended the December 1991 JC-42.3 meeting?

A. Yes, it does.

Q. And who does it indicate attended on behalf of Rambus?

A. Billy Garrett.

Q. And if you could turn to page 8 of JX-10, which is also JEDEC 14188. Do you see that?

A. Yes, I do.

Q. Okay. At the middle of the page, Section 6.2, it appears that a ballot on V-Pack is mentioned. Do you see that?

A. Yes.

Q. Does this indicate that a V-Pack ballot was discussed during the December 1991 meeting?

A. Yes, it does.

Q. Did you observe the discussion of the V-Pack ballot during the December 1991 meeting?

A. Yes.

Q. And below the mention of the VPAK ballot, there appears a statement from Micron, and it says, "Possible Micron patent may or may not apply. Copies of the patent were handed out at the Philadelphia meeting."

Do you see that?

A. Yes.

Q. Does this passage in the December 1991 minutes relate to the VPAK disclosure that you made to JEDEC on Micron's behalf just a moment -- that you mentioned just a moment ago?

A. Actually, I believe the disclosure was made at the Philadelphia meeting, and this was just a follow-up stating that we didn't know whether it applied or not, but we disclosed it.

Q. And next I'd like to focus your attention towards the bottom of the page. It states, "TI responded the mechanical issues and packaging viability were already proves. TI felt patent issue was resolved by disclosure." (Sic)

Do you see that?

A. Yes.

Q. Does this indicate that TI felt the patent issue was resolved by disclosure?

MR. STONE: Objection, Your Honor, the document speaks for itself, and unless he has independent knowledge as to what TI felt, this witness has no basis for testifying to what TI felt.

JUDGE McGUIRE: Sustained.

MS. ZUK: I -- if I -- could I respond to that?

JUDGE McGUIRE: Well, you can, but it's already been -- what you can do at this point is restate the question.

MS. ZUK: Okay.

BY MS. ZUK:

Q. Do you have an understanding of what TI stated during this discussion of the VPAK ballot at the December 1991 meeting?

A. Yeah, they stated that they believed that the patent issue was resolved during -- due to their disclosure.

Q. And I'd like to focus your attention at the very bottom of the page, it states, "Committee felt there were at least two patent owners that we know of and a royalty would have to be paid to each and this inhibited the standard. Other patents might also cover this part."

Do you see that?

A. Yes.

Q. Do you have an understanding about what the committee decided to do with respect to the VPAK ballot given these patent issues?

A. Yeah, I believe that it -- it actually failed, the ballot failed.

Q. Okay. Do you have an understanding of why the

ballot failed at the committee?

A. I think it failed due to the possible patent problems.

Q. Did you ever reach an understanding about whether or not the Micron patent you disclosed actually applied to the VPAK ballot?

A. I believe that it actually did not. I think it was determined that it did not apply.

Q. And how did you reach your understanding that the patent you disclosed during the meeting or during the discussion of the VPAK standard actually didn't apply?

A. I believe that committee members -- I'm trying to recall. I think I recall that committee members decided that it didn't apply.

Q. Okay. I'd like to direct your attention to the second exhibit in this stack that I handed you earlier, and this is Respondent's Exhibit 356. Do you have that exhibit?

A. Yes, I do.

Q. Can you tell me what this exhibit is?

A. Yeah, these are some draft minutes from the JC-42.5 committee that was held on December 8th of '92 in Fort Lauderdale.

Q. How can you tell that this is -- that this

exhibit is a set of draft minutes?

A. They're not in the final form that would be issued from the JEDEC office.

Q. Okay. Between late 1991 and 1993, was it typical for you to receive draft minutes?

A. Yes. Every meeting -- after every meeting, we got a set of draft minutes.

Q. Okay. Do you have an understanding of why you received -- it was typical for you to receive draft minutes?

A. It's because it took the JEDEC office so long to get to the final draft minutes -- I mean to the final version of the minutes, and people wanted to ensure that they got something to take back to start discussing with their companies as soon as possible.

Also, it gave the members a time to review the minutes and make sure that everything was included that was discussed.

Q. Okay.

Your Honor, I don't believe that this exhibit has been introduced yet, so I would ask to offer it into evidence at this time.

JUDGE McGUIRE: Mr. Stone, any response?

MR. STONE: Yes, Your Honor. I don't know that this witness has testified he received this document,

so I don't know that -- what the basis is for his testimony. If he received it, then I think his description of the document may indeed be correct, but I don't know if he has any basis for describing what the document is or not.

JUDGE McGUIRE: Can you answer that inquiry, Mr. Williams?

THE WITNESS: Yes, I did receive a copy.

JUDGE McGUIRE: Go ahead. Okay, I'm sorry, you did receive it.

Does that satisfy the objection, Mr. Stone?

MR. STONE: Yes, Your Honor.

JUDGE McGUIRE: All right, then we will enter it at this time.

(RX Exhibit Number 356 was admitted into evidence.)

BY MS. ZUK:

Q. If you could turn to page 2 of Respondent's Exhibit 356. In the middle of the page it reads, "Call to Order - Jim Townsend. Review of Patent Items - Members are cautioned to disclose their relevant patent applications. Those believed to be in violation of this policy will be identified to the committee at the next meeting."

Do you see that?

A. Yes.

Q. What does "call to order" mean?

A. This was just a call to the members that were around to sit down, we are going to start the meeting and get going.

Q. Who would typically call to order the meetings between late 1991 and 1993?

A. It would have been the committee chair, in this case for this committee it was Jim Townsend.

Q. Between late 1991 and 1993, was Chairman -- what would Chairman Townsend typically do after he called JC-42.3 meetings to order?

A. He would take care of some logistical issues, and then he would go through the -- he would pass out a sign-in sheet to make sure everybody that was there would get their name on the sign-in sheet so we could say who and who was not present, make sure we have a quorum, and then he would pass out -- he would go through the patent issue presentation that he would present at each one of these meetings.

Q. And between late -- and what would he do after he passed out the sign-in sheet to the committee?

A. He would then start his presentation on the patent policy.

Q. Okay. Between late 1991 and 1993, how long did

Chairman Townsend's patent presentations last?

A. It actually varied. Early on it was quite lengthy, because he would ask for discussion. He would put up a foil set and go through it point by point, ensuring that everybody understood that -- what the patent policy covered, that it covered patents issued, that it would cover pending patents, that it covered -- and what the obligation of each member was, that they had an obligation to bring that information to the committee so that they can make an informed choice of what's being discussed, whether or not it applied to the patent that's being disclosed.

So, early on it was quite lengthy. Towards the end of my -- my stay as a patent -- I mean as a committee representative, it got short, because everybody was quite tired of hearing it every time, beating into you what your responsibility was.

Q. In that -- in the time frame when the presentations were quite lengthy, as you testified -- just testified to, what was your understanding, if any, about why Chairman Townsend devoted time at JC-42.3 meetings to give these presentations on the patent policy?

MR. STONE: Objection, Your Honor, lacks foundation as to this witness having any knowledge as

to why Jim Townsend did or didn't spend a long or a short period of time on things. He just can't know --

JUDGE McGUIRE: That's overruled.

If you have an understanding as to why, sir, you may answer, and if not, you may not answer.

THE WITNESS: As to why he had spent longer time versus shorter time on it? Is that the question?

BY MS. ZUK:

Q. Yes.

A. Well, I think from the beginning, because of what had happened just prior to this time period with the WANG case where they were part of the committee, they had helped set a standard, and then they went out and enforced their patents against everybody in the industry who used a SIMM module. That's what Chairman Townsend and the rest of the board wanted to ensure never happened again, and so that's why there was so much emphasis placed upon why the policy was where it was and why there was discussion upon it and why it was at length discussed that this was so important, so that the industry was not held hostage again like it was under the WANG case.

Q. And how did you -- you testified that you -- you just mentioned the WANG case. How did you develop an understanding about what happened in the WANG case?

A. Well, being in the industry, I heard about what happened prior to my joining the JEDEC, but it was brought up during Chairman Townsend's discussions.

Q. Now, this statement on page 2 of RX-356 uses the word "cautioned." Between late 1991 and 1993, did Chairman Townsend typically caution members to disclose relevant patent applications?

A. I can't remember how often he used the word "caution," but he did explain to the members the importance of disclosure, the importance of making sure that the work that's being done there is -- remains an open standard and tried to emphasize the importance for each member there, their duty to ensure that patents were disclosed.

Q. And what is your understanding, if any, of what Chairman Townsend meant when he used the term "relevant patent applications"?

A. I think he -- here -- well, what he was trying to state, based upon my knowledge in hearing him, was that it didn't mean -- it means all patented items, no matter what stage of process it was in. If you believe you have some invention that is covered -- that applies to what is being discussed at JEDEC, if there's a reasonable possibility that it applies, then you need to bring that up to the committee so that they can

determine whether or not it does apply.

Q. I'd like to direct your attention to the next exhibit in the set of documents I handed to you earlier, and it's JX-14.

Now, we just looked at the draft minutes of the December 1992 JC-42.3 meeting. Can you tell the Court what this exhibit is?

A. Yes, these are the meeting minutes from the JC-42.3 committee of December '92 that was held in Fort Lauderdale, Florida.

Q. Okay. And the first page of JX-14 appears to be an attendance roster, and I see about midway down the page your name appears on the list. Did you attend the December 1992 JC-42.3 meeting?

A. Yes, I did.

Q. Okay. And if you could turn to the next page -- or I'm sorry, stay on that page, my apologies.

I see a Richard Crisp next to Rambus on the attendance roster. Do you see that?

A. Yes.

Q. Does this indicate that Mr. Crisp attended the December 1992 JC-42.3 meeting?

A. Yes, it does.

Q. And if you could turn to the next page, about halfway down the list again, there is a Dave Mooring

next to Rambus on the attendance roster. Do you see that?

A. Yes.

Q. Does this indicate that Mr. Mooring attended the December 1992 JC-42.3 meeting?

A. Yes, it does.

Q. Now, I'd like to refer you to the next page. Section 5 refers to patent policy, and it reads, "A presentation was made on the EIA patent policies by Mr. Townsend. The tracking list was shown and also the draft of Appendix F of JEP-21H policy manual."

Do you see that?

A. Yes.

Q. Does this passage indicate that Mr. -- Chairman Townsend showed the draft of Appendix F of JEP-21H at this meeting?

A. Yes.

Q. Do you know what JEP-21H stands for?

A. Not specifically, but it is a JEDEC manual. I don't know exactly what the JEP stands for, but it is a manual that guides the policies of JEDEC, how the JEDEC ought to operate.

Q. Okay. And is one of the policies the patent policy?

A. Yes.

Q. Between late 1991 and 1993, did you observe discussions about how to revise portions of the patent policy?

A. Yes, there were several discussions over several meetings.

Q. Okay. And who typically led those discussions about how to revise the patent policy?

A. Mr. Townsend.

Q. And in general terms, between late 1991 to 1993, what was discussed about how to revise portions of the patent policy?

A. It was discussed how to revise the wording to ensure that the patent policy was clear so that new members, when they came on board, would know exactly the spirit of the patent policy; that being that you're able -- that the -- no matter what stage a patent might be, whether it's been applied for or granted or whatever, that if you believe that there is information being discussed at JEDEC that might be -- apply to your patent that you have or the invention that you have, then you need to make disclosure.

Q. Okay. Now, I've been using the term "revise" the policy. Were these revisions placed in the draft JEP-21H manual?

A. Yes, actually, the policy wasn't what was being

revised; only the manual was being revised. The policy, even from my very first time at JEDEC, was always the same, and that is you needed to disclose if you felt that you had IP that was -- on something that was being discussed at JEDEC. The whole point here was to ensure that the manual reflected the spirit of the policy.

Q. Okay. Now, if I could direct your attention to page 25 of JX-14, which is JEDEC 15111. Can you tell me what this page of the JEDEC minutes from December 1991 is?

A. Yes, this looks like a page from the policy manual that was being discussed and revised.

Q. If I could direct your attention to the first underlined portion of the page, it -- where it starts, "While there is no objection in principle to drafting a proposed Standard in terms that include the use of an existing or pending patented item, if it is considered that technical reasons justify this approach, committees should ensure that no program of standardization shall refer to a product on which there is a known patent unless all the relevant technical information covered by the patent is known to the formulating committee, subcommittee, or working group."

Do you see that?

A. Yes.

Q. Do you have an understanding of what this portion of the revised manual meant to communicate?

A. Yeah, what it was trying to say here is that, first of all, the committee had an obligation to try to avoid patents to ensure an open standard, because that's the whole goal of the committee.

However, if for some reason there is some technology or some item, some aspect, some feature that needed to be included in the standard that was covered by a patent, that that was okay as long as the information of that patent was known and that beyond that, that the committee or the working group, whoever was making the decision, knew what the terms were for usage of that patent.

Q. And do you have an understanding of what the committee needed to know about the terms for the use of a patent that happened to be needed for JEDEC standards?

A. It was kind of broad there. You needed to know sufficient information to make an informed decision whether or not it applied, and that was really different on a case-by-case basis and was left quite open based upon that, but that's one thing you needed to know. You needed to know sufficient information so

that you could make a decision.

Also, if you were going to use the patent, you also needed to know -- and it was described up front -- that you needed a letter from the company stating their position on the patent in order to use it, the license requirement.

Q. Did the JEDEC policy require anything about the terms of that license?

A. Yeah, they stated that they -- it needed to be licensed on a reasonable and nondiscriminatory basis to ensure that it's an under -- that it's an open standard and everybody was treated the same.

Q. Now, if I could direct your attention to the last sentence of this paragraph on page 25 of JX-14, "The term 'patented' as used in this policy, also includes pending patents on items and processes under discussion -- under consideration by a committee, subcommittee, or working group."

Do you see that?

A. Yes.

Q. Do you have an understanding of what this sentence in the revised -- or the manual under revision meant in the late 1991 to 1993 time frame?

A. Yes, it meant that it not only applied to patents granted but applied to patents that were

pending, really any patented -- and by "patented," I mean any IP that was in the process of being patented, whatever stage of the process that might be.

Q. And lastly I'll refer you to the first paragraph of Section 8.3.1 of the manual under revision that was shown at the December 1992 JC-42.3 meeting. It reads, "The Chairperson must call to the attention of the members present the requirements contained in EIA Legal Guides, and call attention to the obligation of all participants to inform the Committee of any knowledge they may have of any patents, or pending patents that might be involved in the work they are undertaking."

Do you see that?

A. Yes.

Q. Do you have an understanding of what this passage of the manual under revision meant?

A. Yes, it was -- and this is actually what was taking place at all the meetings, is that the chairperson of the committee, prior to starting the work, would let everybody know of their requirement to disclose patents, whether the patents are granted or whether they're pending, as stated here. Again, the patented work, regardless of the stage that it's in, to ensure really more than anything that the committee can

do its work, that it can progress with a standard and not get down the road like happened, you know, with the quad CAS device, that you get to the final throes of getting a standard, and then in the standard there's some patent road blocks.

Q. Now, when you attended JEDEC meetings as Micron's official representative in 1991 to 1993, was the JC-42.3 subcommittee working towards an SDRAM standard?

A. Yes, they were.

Q. What data rate was the JC-42.3 subcommittee striving to achieve with an SDRAM standard?

A. Initially, it was 66 megahertz.

Q. And afterwards, did that target change?

A. That got extended to 100 megahertz.

Q. And when did the target get extended to 100 megahertz?

A. I'm not sure exactly when. Later in the -- in the development process.

Q. Do you have an understanding as to why JC-42.3 was striving to achieve those data rates in the early 1990s?

A. Yes, that was the data rates of the front side bus of the processor, and the customers were requiring to get -- to get the best utilization of the processor,

so the customers were demanding that -- and this was the view of the customers -- were demanding that the memory be at the same rate to utilize the processor.

Q. Are you familiar with how a JEDEC SDRAM operates?

A. In general, yes.

Q. How did you become familiar with how a JEDEC SDRAM operates?

A. Through the discussions at JEDEC, through the ballots that were issued and through our data sheet as well as competitor data sheets.

Q. Are you aware that the JEDEC SDRAM standard calls for programmable CAS latency and burst length?

A. Yes, I am.

Q. What is your understanding of the term "CAS latency"?

A. CAS latency is the time in the DRAM from when a read is registered at the DRAM to the time that data is guaranteed to be valid on the output.

Q. What is your understanding of the term "programmable CAS latency"?

A. That means that that time, that CAS latency time, might be of one or multiple items -- it can be one or multiple values, and that those values can be programmed on the DRAM.

Q. How does the JEDEC standard require programmable CAS latency to be implemented?

A. It uses a mode register where it stores the data, stores the CAS latency item.

Q. In the early 1990s, did JC-42.3 consider different ways to determine CAS latency?

A. Yes, there were discussions on various ways to program it.

Q. What were the different ways that were proposed within JC-42.3 to determine CAS latency in the early 1990s?

A. Either to have a fixed CAS latency, use a combination of signal levels, of various signals, a programming pin were some that were discussed.

Q. Now, switching gears to burst length, what is your understanding of the term "burst length"?

A. This is the amount of data items that would come out of the DRAM based upon giving a column address.

Q. Okay. And what do you mean when you say giving the DRAM a column address?

A. When you address the DRAM, you give it a row address and then a column address, and after you give it a column address, then it gives it the information that it needs with the control signals in order to get

so many data items out, and those data items are called the burst length, and the typical ones at that time were either four or eight data items would appear at the output.

Q. What is your understanding of the term "programmable burst length"?

A. Very similar to programmable CAS latency. You could have multiple versions -- not versions, but you could have multiple lengths of those bursts. Like I say, the typical one was four and eight. There were others being discussed as a burst length of one, a burst length of two, and actually that -- you actually stream out the whole page were being discussed, but I think finally the standard stated four or eight.

Q. How does the JEDEC standard require programmable burst length to be implemented?

A. The same way it does in the CAS latency. It uses a mode register and stores that length information in the mode register.

Q. In the early 1990s, did JC-42.3 consider different ways to determine burst length?

A. Yes, the same type of discussion for CAS latency applied to burst length, whether to use a multiplicity of signals and signal levels, whether to use a programming pin or do you fix it. All those

options were really discussed for all of the programmability portions of the DRAM.

Q. I'd like to direct your attention to JX-56, which is the next -- what should be the next exhibit in your stack. It looks like it's below those documents.

A. CX-56 or -- oh, J.

Q. JX-56.

A. Okay.

Q. Are you familiar --

MR. STONE: Give me just a minute to get it, Your Honor. It was not in our stack.

JUDGE McGUIRE: All right, just a moment.

MS. ZUK: It's probably at the bottom. I took it out of order.

JUDGE McGUIRE: Off the record.

(Discussion off the record.)

JUDGE McGUIRE: On the record.

You may proceed, Ms. Zuk.

MS. ZUK: Okay.

BY MS. ZUK:

Q. Are you familiar with this document?

A. Yes, I am.

Q. Can you tell me what this document -- what this exhibit is?

A. This is the -- the actual JEDEC standard,

printed standard, in which all of the RAM standards are incorporated. After they've passed the council and passed the board of directors, they are actually printed from time to time in the actual standard. This is that standard.

Q. And when was this version of the standard published?

A. This was November of '93.

Q. And is the title of this particular standard JEDEC Standard Number 21-C, Release 4?

A. Yes, it is.

Q. Does Release 4 of Standard 21-C contain the first publication of JEDEC's SDRAM standard?

A. Yes, it does.

Q. Can you turn to page 114 of this exhibit, which is also JEDEC 7793.

A. Okay.

Q. Now, this page is titled SDRAM Mode Register. Do you see that?

A. Yes.

Q. Would you please explain what this page titled SDRAM Mode Register shows?

A. Yeah, what this is showing is that the SDRAM contains a register of bits zero through 11 and that different fields of those bits have been defined to

contain the burst length, the burst type and the CAS latency or what they are calling latency mode. Both are the same. So that this is the actual register in the DRAM you would program in order to gain the specific burst length and specific burst type and CAS latency.

Q. Okay. Can you enlarge the mode register part of this page at the top?

Do you see this part of page 114 --

A. Yes.

Q. -- of Exhibit 56?

A. Yes.

Q. Is this element of the page an illustration of a mode register?

A. Yes, it is.

Q. Can you enlarge the bottom half of the page, the rest of the page?

I'd like you to walk us through each element of this page, if possible, and I will try to take them one by one. If you could explain the burst length portion of this mode register depiction for us.

A. The lower bits, bits zero, one and two, actually contain the burst length information, and in the table, it shows that the burst length of one and the burst length of two are -- and the burst length of

full page are actually in parentheses, meaning they are optional but not really used. The main ones are the burst length of four and the burst length of eight, as is the descriptor in the table.

Q. And where in the mode register is the burst length information that is programmed stored?

A. In bits zero, one and two.

Q. Okay. And if I could direct your attention to the burst type portion of the mode register as illustrated on this page.

A. Yes.

Q. Could you please explain that?

A. The burst type allows for two options, which is a sequential option or an interleaved option, and that information is stored in bit three of the mode register.

Q. And lastly, the latency mode table on this page, could you please explain what that illustrates?

A. Yes, the latency mode is described or actually held in bits four, five and six, and it gives -- the table gives options for one, two and three, and in parentheses, there is also an option for four, but because it's in parentheses, all DRAM do not have to contain that option. That is an optional option, but you had to contain options for one, two and three.

Q. Okay. I'd now like to show the witness a demonstrative, and we've provided respondent with a copy of the demonstrative I think Friday, and I have copies.

May I approach?

JUDGE McGUIRE: All right, you may approach.

MS. ZUK: Would you like a copy?

JUDGE McGUIRE: Yes, I'll take one. Thank you.

BY MS. ZUK:

Q. Mr. Williams, I've just handed you a demonstrative. Do you feel comfortable explaining what this demonstrative shows?

A. Yes.

Q. Okay. And again, I'd like to go through each element of this demonstrative like we did with the mode register page.

On the left-hand corner of the demonstrative, there is a block representation of a memory controller. Can you explain what a memory controller does in a JEDEC style SDRAM memory system?

A. Yes, the memory controller would give to the memory the commands required, as well as the address required and control signals required, in order to get data to the DRAM, to be contained in the DRAM, as well as get data out of the DRAM, which then would go to and

from other parts of the system.

Q. Okay. And the arrow with the words address and command bus, do you see that?

A. Yes.

Q. Could you explain what this arrow with address and command bus illustrates?

A. Yeah, the memory controller would issue a specific address to the DRAM as well as the command signals in order to tell the DRAM which location to go to and what it ought to do with that location, whether it's going to read to it, write from it, do a refresh or other commands.

Q. Okay. And below the address and command bus, there is a multi-directional arrow that is titled data bus. Do you see that?

A. Yes.

Q. Do you have an understanding of what this illustrates?

A. Yes, unlike the address and command bus, which are signals that go only from the memory controller to the DRAM, the data actually is bi-directional, which means that you actually get data going to the DRAM to be stored within the DRAM or you've got data from the DRAM to go to other parts of the system.

Q. Okay. And there are two -- two arrows below

the data bus, one that is labeled chip select1, and another that is labeled chip select2. Do you see that?

A. Yes.

Q. What does a chip -- chip select signals do in a JEDEC style SDRAM memory system?

A. The chip select actually selects which DRAMs in the system -- and in this case, as they go to all chips on the actual module -- which module you're going to do the operation on that is included in the command bus, and so if you select chip select1, you're going to do the operation read, write, et cetera, on module one. If you generate chip select2 -- and you would only select one or the other, not both, at a specific command -- if you select chip select2, then you would read and write to module two.

Q. Okay. Now, there are two modules in this system. What does this -- or in this demonstrative. What does this illustrate about a typical SDRAM memory system?

A. It shows that you have multiple modules in a typical system. You can have just one. You can have several. And based upon the architecture and the amount of connectors in the system would tell you how many modules you're able to plug in, again, each module being accessed independently. They are not accessed

together. They are only given the command -- even though they might all say the same command and address bus and all the same data bus, they are only active when the chip selects are given to those specific modules.

Q. And each module has a DRAM 1 and DRAM N. Do you have an understanding of what these components of each module are intended to illustrate?

A. This shows that you can have a number of DRAM chips, and typically, in a typical SDRAM system, based upon the organization of the DRAM, you would have from four to 18 chips on a specific module to get a specific bus width.

Q. Okay. And there is a block on each DRAM chip that is labeled mode register.

Do you see that?

A. Yes.

Q. What does this illustrate about a JEDEC style SDRAM memory system?

A. Each DRAM has its own individual mode register that needs to be programmed individually, and what happens is that you actually give a mode register set command, and by selecting all the DRAMs, they are all programmed at the same time. So, they are programmed for the specific CAS latency, burst length and burst

type.

Q. Okay. And the top hand portion of this demonstrative enlarges one of the DRAM chips on the module. Do you see that?

A. Yes.

Q. What does this illustration of a larger scale DRAM chip illustrate about a typical SDRAM memory system?

A. It's showing that the mode register affects really the SDRAM logic and how it's going to operate, specifically what the CAS latency will be and what the burst length is going to be.

Q. Okay. And is the mode register represented in this portion of the demonstrative?

A. Yes, it's represented by the block that contains the BL, BT and LM, with the numbers above it zero to 11, that represents the mode register.

Q. And what does BL stand for?

A. That is the burst length.

Q. And how about BT?

A. That is the burst type.

Q. And lastly, what does LM stand for?

A. That would be the CAS latency or latency mode.

Q. Is this demonstrative a fair representation of the use of a mode register in a JEDEC Release 4 style

SDRAM memory system?

A. Yes, I believe so.

MS. ZUK: Your Honor, I would like to now introduce this demonstrative -- offer this demonstrative into evidence, if that's possible.

JUDGE McGUIRE: Is it RX-7, did you say? Or I don't think it's RX -- it's about RX-4 by now, isn't it?

MR. STONE: It's a DX. It's going to be a DX I think since it's a demonstrative.

JUDGE McGUIRE: You're exactly right, Mr. Stone, DX.

MR. STONE: And I don't think demonstratives are admitted; they are just marked.

JUDGE McGUIRE: That's right, they are just marked.

MS. ZUK: I would like to mark this as DX-4.

JUDGE McGUIRE: All right, so marked.

(DX Exhibit Number 4 was marked for identification.)

BY MS. ZUK:

Q. I'd like to direct your attention now, Mr. Williams, to four documents, CX-255, CX-252A, CX-253 and CX-254.

A. Okay.

Q. Do you have those in front of you?
A. Yes.
Q. Are you familiar with these exhibits?
A. Yes, I am.
Q. Can you tell me what CX-253 is?
A. Yes, CX-253 is a committee ballot of JC-42.3 that is titled JC-42.3-92-83.
Q. Okay. And what subject is the ballot covering?
A. This is the proposed standard for by eight/by nine II DRAM package, the TSOP package.
Q. And is this an SDRAM ballot?
A. Yes.
Q. I'd like to direct -- before we move on to the next exhibit, when was this ballot distributed to JEDEC members?
A. June 11th, '92.
Q. Now I'd like to direct your attention to CX-254. Do you have that exhibit?
A. Yes.
Q. Can you tell me what CX-254 is?
A. Yes, this is a committee ballot, JC-42.3-92-84, for the by four Sync DRAM TSOP package.
Q. And when was this ballot distributed to JEDEC members?
A. In June of '92 also.

Q. Okay. And now I'd like to direct your attention to CX-252A. Do you have that exhibit in front of you?

A. Yes, I do.

Q. Can you tell me what that exhibit is?

A. This is another JC-42.3 committee ballot, JC-42.3-92-85, which is the proposed standard for Sync DRAM mode register.

Q. And when was this ballot distributed to JC-42.3 members?

A. This, again, was on June 11 of '92.

Q. Would you please explain how this ballot on a Sync DRAM mode register relates to the SDRAM mode register that we just looked at in Release 4 of Standard 21-C?

A. Sync DRAM is just another name for SDRAM. This is the same.

Q. Okay. And if you could turn to page 3 of CX-252A, it's entitled Mode Register.

A. Yes, I have that.

Q. Does this page of CX-252A indicate that members were being asked to vote on programmable CAS latency via a mode register in June 1992?

A. Yes, it does.

Q. Does this page also indicate that JC-42.3

members were being asked to vote on programmable burst length via a mode register in June 1992?

A. Yes, it does. They call it wrap length, but wrap length is the same as burst length.

Q. Okay. And if you could just flip back to page 2 of CX-252A, in the middle of the page, it reads, "If anyone receiving this ballot is aware of patents involving this ballot, please alert the Committee accordingly during your voting response."

Do you see that?

A. Yes, I do.

Q. Do you have an understanding of what this statement required of members who received the ballot to do?

A. Yes, what this is stating is that if, up to this point, if you knew that you had an IP, if you had some IP that applied to this specific item which was being voted on here, the mode register, and it had not been disclosed to the committee before now, that it needs to be disclosed at this time. This is like a last ditch effort to get a disclosure and to remind people that they have that obligation even when voting.

JUDGE McGUIRE: All right, now, does this mean that if only -- I guess if your company had IP, that you had the obligation to disclose, or if you knew that

other companies had the IP, you still had the obligation to disclose?

THE WITNESS: Both.

JUDGE McGUIRE: All right, proceed, Ms. Zuk.

MS. ZUK: Okay.

BY MS. ZUK:

Q. Now, was it typical for ballots between late 1991 through 1993 to include a statement of this kind that requires members to indicate whether there were patents involving a ballot?

A. Yes, it was standard practice that all ballots included that verbiage.

Q. And between late 1991 to 1993, was it typical for ballots to be distributed to all JC-42.3 members?

A. Yes, they were.

Q. And lastly, I would like to direct your attention to CX-255.

A. Okay.

Q. Are you familiar with this exhibit?

A. Yes.

Q. Can you tell me what this exhibit is?

A. This is another committee ballot for the JC-42 committee, this one JC-42.3-92-86, which is the proposed standard for the DRAM function truth table.

Q. Okay. And when was this ballot distributed to

JC-42.3 members?

A. In June of '92, the same as the others.

Q. Now, you just described this as a truth table or a ballot involving a truth -- an SDRAM truth table. Can you briefly explain what an SDRAM truth table is?

A. Yes, if you go to page 3, it is a good description of what it is. What a truth table is is a combination of signals, and based upon the levels of those signals, a specific operation would occur, and the truth table outlines all the possible combinations of those signals and what associated operation would occur when that combination of signals was received by the DRAM.

Q. And actually, if I could direct your attention to page 3 that you just directed us to, the first line or the second line of the truth table reads, "Mode register set."

Do you see that?

A. Yes.

Q. Do you have an understanding of what "mode register set" means?

A. Yes, this means that you would have to have this specific -- this specific -- you would have to have this specific sequence of these signals, meaning that chip select, RAS, CAS and write-enable, were all

low in order to program the mode register.

Q. Now, as I understood your testimony on these ballots, and if I could paraphrase, there was a package ballot -- two package ballots on SDRAM?

A. That's correct.

Q. A mode register ballot --

A. That's correct.

Q. -- on SDRAM?

A. Yes.

Q. And a truth table ballot on SDRAM that were distributed to members of the JC-42.3 committee in June -- on June 11th, 1992?

A. That's correct.

Q. I'd like to move on to JX-13.

A. Okay.

Q. Do you have that document?

A. Yes, I do.

Q. Are you familiar with this document?

A. Yes, this is committee minutes of the JC-42.3 committee from July of '93 in Denver, Colorado.

Q. And I see that your name is on the attendance roster of the July 21st, 1992 JC-42.3 --

MR. STONE: Your Honor, I think the witness probably misspoke when he identified it as 1993.

THE WITNESS: That's correct, it is '92. I had

a hard time reading that.

JUDGE McGUIRE: Thank you, Mr. Stone.

BY MS. ZUK:

Q. Did you attend the July 1992 JC-42.3 meeting?

A. Yes, I did.

Q. Okay. And just down the list on this -- on page 1 of JX-13 appears Rod Crisp from Rambus. Do you see that?

A. Yes, I do.

Q. Does that indicate that a Mr. Crisp attended the July 1992 JC-42.3 meeting on behalf of Rambus?

A. Yes, it does. It also indicates that they probably misspelled his name. I think his name was Richard, not Rod.

Q. And if you could turn to page 2 of JX-13, about halfway down the page, there is a Dave Mooring next to Rambus that appears on the attendance sheet on this page.

Do you see that?

A. Yes.

Q. Does this -- does this indicate that Mr. Mooring attended this meeting on behalf of Rambus?

A. Yes, it does.

Q. If you could turn next to page 9 of JX-13, which is JEDEC 14776.

A. Okay.

Q. And Section 16.1 appears to refer to the package ballot that we just looked at. Is that -- do you see that?

A. Yes, I do.

Q. Does this indicate that the JC-42.3 committee voted on the package ballot at this meeting?

A. The voting had already taken place. We are tallying the votes here.

Q. And midway down the page, there appear to be comments from Rambus. Do you see that?

A. Yes, I do.

Q. Do the minutes indicate that a representative from Rambus voted on this package ballot for SDRAM?

A. Yes, it does.

Q. How did the representative from Rambus vote on this SDRAM packaging ballot?

A. They voted no.

Q. Do the minutes indicate why the representative from Rambus voted no on the package ballot for SDRAM?

A. Yes, his -- when you typically vote no, you have to give a reason for your no vote, and those reasons are typically captured in the minutes here, and here it was stated that they felt like there were some issues with the location of Vcc and Vss, that was their

reason for voting no.

Q. Do you have a recollection that Rambus disclosed a patent or patent application in connection with this SDRAM packaging ballot?

A. They did not.

Q. If you could turn to the next page, which is page 10 of JX-13, also labeled as JEDEC 14777.

A. Okay.

Q. And a little bit more than midway down the page, the Section 16.3, which appears to refer to the mode register ballot that we just looked at.

Do you see that?

A. Yes.

Q. Does this indicate that the mode register ballot for SDRAM was tallied at the JC-42.3 meeting on July 1992?

A. Yes, it does.

Q. Did anyone vote no on the SDRAM mode register ballot?

A. Yes, there were "no" votes.

Q. Who voted no on the SDRAM mode register ballot?

A. Compaq, Hitachi, IBM, Rambus and TI.

Q. Did the representative from Rambus indicate why he voted no on the SDRAM mode register ballot on July 1992?

A. There would be comments, but from here, I'm not seeing the comment.

Q. If I could direct your attention to the -- well, strike that, actually.

Do you have a recollection that in connection with Rambus' "no" vote on this ballot whether Rambus also disclosed a patent or patent application in connection with the mode register ballot?

A. No, they didn't disclose any patents.

Q. Okay. And if you could turn to the next page, which is page 111 of JX-13, and it's also JEDEC 14778.

A. Okay.

Q. Section 16.4 appears to refer to the SDRAM truth table ballot that we just took a look at.

A. Yes.

Q. Does this indicate that the JC-42.3 committee tallied the votes on the SDRAM truth table ballot at this meeting?

A. Yes, it does.

Q. Did anyone vote no on the SDRAM truth table ballot during the July 1992 meeting?

A. Yes.

Q. Who voted no on the SDRAM truth table ballot?

A. Compaq, Hitachi, Rambus, Samsung and TI.

Q. And at the bottom of this page, it reads,

"Rambus: Mode register not readable; bad for testing."

Do you see that?

A. Yes, I do.

Q. Does this indicate that the representative of Rambus who voted no on this SDRAM truth table ballot provided a comment about why he voted no?

A. Yes, and these were his exact comments.

Q. Do you have a recollection that the representative of Rambus disclosed a patent or patent application in connection with the SDRAM truth table ballot?

A. They did not.

Q. Okay. Earlier you testified that Release 4, which contained the first publication of the SDRAM standard, was published in late 1993.

A. Correct.

Q. After the JEDEC -- after JEDEC published that standard, what work did it move on to next?

A. It took up several different options, mainly looking at the next standard, the next generation of memory.

Q. Now, earlier you testified that you were the official representative from Micron at JEDEC in -- starting in 1991 to 1993.

A. Yes.

Q. Were you no longer the official representative of Micron after 1993?

A. That's correct. Sometime in '93, I -- Bob Fusco I think initially was made the official JEDEC rep, and then after him, it was Terry Walther.

Q. Are you familiar with burst EDO DRAM?

A. Yes, I am.

Q. What is burst EDO DRAM?

A. It's an asynchronous DRAM based upon a page mode DRAM that allows multiple data items to be able to be presented at the outputs when you toggle CAS, meaning that you don't have to give it a column address for every data item that comes out.

Q. Now, you mentioned page mode DRAM. Can you briefly describe what that means?

A. What page mode DRAM is is that the DRAM is architected into what's called pages of a specific page size, and if you continue to access the DRAM within the page, you're able to get data out faster than if you moved from page to page. So, page mode DRAM was the typical DRAM architecture at this specific point in time.

Q. Okay. Were you responsible for managing burst EDO DRAM products at Micron?

A. I was the application manager. I didn't manage

the products, but I managed a group of application engineers in the '91 to '94 time frame, '95 time frame.

Q. What were you trying to do at Micron with burst EDO DRAM?

A. It started with our meetings with some customers who wanted to get faster access out of the DRAM in order to meet the requirements of the processor as the processor speeds were increasing, and it was clear that past page mode DRAMs were not able to keep up, so with some meetings with customers, we came up with the idea to make burst EDO DRAM, and it allowed data to stream out of the device faster than it would with a page mode DRAM.

So, the goal was to get better speed out of the DRAM, get more data items out quicker than were -- at that time was available in page mode DRAMs.

Q. What are the names of some of the DRAM customers you met with about burst EDO DRAM?

A. It would have been almost all of the prevalent computer customers at that time. It would have been like Compaq, HP, Dell, IBM, DEC, most of them, Sun.

Q. And what would typically happen at these meetings that you had with customers about burst EDO DRAM?

A. I'd have a presentation that would explain the

differences between burst EDO and EDO, and then -- DRAMs, and then going to how we believe its cost would compare to an EDO DRAM, and when we thought we would be able to bring it to market, and then try to see what their requirements were, just see if there was a match between what we thought we could do and what they were going to require in their next systems.

Q. Did the topic of intellectual property ever come up during these meetings that you had with customers on burst EDO DRAM?

A. Not specifically with customers; however, the customers were very concerned, like they always are, to ensure that you've got multiple sources and that they're not locked into a proprietary product where then you can charge whatever you want. They want to make sure that there's a plentiful supply and that you're able to -- they can get it from everybody. Keeping the cost low of the DRAM was the goal.

So, I was working mostly with a lot of the other memory manufacturers and chipset makers to ensure that there was broad support for the product, both with other memory manufacturers as well as chipset makers, and definitely with the memory manufacturers, there was some concern about intellectual property, and at that time, I let them know that, yeah, we have patents on

burst EDO -- we don't have patents, we were filing patents on burst EDO but assured them that they would have a free use of those patents if they decided to support it.

Q. And just so we get the time period that this is happening clear, when were you actively meeting with DRAM customers to talk about burst EDO?

A. This is in the '9 -- late '93, '94, early '95 time frame.

Q. Okay. Now, you testified just a moment ago that after 1993, you were not an official JEDEC representative for Micron; however, did you attend any meetings of JC-42.3 or other committees after 1993?

A. After I was no longer the JEDEC rep, I attended a couple meetings to talk about burst EDO, at least one that I remember.

Q. Okay. I'd like to direct your attention to JX-23. Do you have that in front of you?

A. Yes, I do.

Q. Are you familiar with this exhibit?

A. Yes, I am.

Q. Can you explain what this exhibit is?

A. Yeah, these are meeting minutes of the JC-42.3 committee that was held on January of '95 in San Jose.

Q. Okay. And I see that there are two Micron

individuals listed on the attendance roster at this meeting. I see that you're there and also an R. C. -- I'm sorry, a Bob Fusco.

Do you see that?

A. Yes.

Q. Does this indicate that you attended the January 17th, 1995 JC-42.3 meeting?

A. Yes.

Q. Did Bob Fusco -- or Bob Fusco also attend the JC-42.3 meeting in January 1995?

A. Yes, he did.

Q. And just down the page, there appears a Craig Hampel next to Rambus. Do you see that?

A. Yes.

Q. Does this indicate that a representative from Rambus attended the January 1995 JC-42.3 meeting?

A. Yes, it does.

Q. Okay. If you could turn to page 68, which is also JEDEC 16293.

A. Okay.

Q. Are you familiar with this page of Exhibit 23?

A. Yes.

Q. Can you tell the Court what this page is?

A. Yes, this is a presentation that I put together for the -- for various reasons, but this was also shown

to the committee as a description of burst EDO operation.

Q. Okay. What, if anything, did you propose with respect to how CAS latency would be determined in burst EDO DRAM at this meeting?

A. Actually, that's described on the next page where CAS latency is fixed, not programmable.

Q. Okay. And what, if anything, did you propose with respect to the burst length and how that would be determined in burst EDO DRAM?

A. The burst was also fixed to a four-cycle burst.

Q. Okay. At the time of your presentation at the January 1995 JC-42.3 meeting, had you analyzed how the performance of a burst EDO part would compare with an SDRAM part?

A. I don't know if I made the comparison specifically prior to this meeting, but at some time, yes, I did do that comparison.

Q. And what did you do to analyze the performance of a burst EDO DRAM as compared to an SDRAM?

A. Took a look at their access cycles and compared that in a typical system to see what the comparative performance would be.

Q. Okay. And based on that and your analysis, how did you expect the performance of a burst EDO DRAM part

to compare with an SDRAM part?

A. At this point in time, at 66 megahertz, which was the prevalent data rate at that time, it would be equal or better than SDRAM based upon its lower latency.

Q. What was your understanding of the potential performance of a burst EDO DRAM?

A. At this time, as we were looking at coming to market with a part, SDRAM had moved or was in the process of moving from 66 megahertz up to 100 megahertz, and the committee was undertaking work from 66 megahertz to 100 megahertz -- actually it could have happened prior to this, but -- so, we knew we had -- if we were going to be competitive, we had to be able to support the data rate.

And we had looked at 75 megahertz, we were easily at 75 megahertz and could achieve that, and actually had the design engineer looking at the lab, and we had it cycling at 125 megahertz, and so that gave me the indication that we had for this part to at least go to 125 megahertz.

Q. And if I could introduce CX-2632, which should be in your set of documents.

A. Okay.

Q. Are you familiar with this document?

A. Yes, I am.

Q. What is this document?

A. This is a quarterly document that is -- was issued by Micron for design engineers where various articles of new technologies or tech -- how to use the technologies and devices would appear, and on this specific one, the front page was my article that I wrote for this specific Design Line on burst EDO.

Q. If you could turn to page 5 of CX-2632, and the sentence at the bottom left column of this page reads in part, "Burst EDO is currently being specified for 75 megahertz operation. This specification will be available shortly. The cycle time of burst EDO is not an issue -- burst EDO is currently cycling at 125 megahertz over temperature and voltage."

Do you see that?

A. Yes, I do.

Q. And was this consistent with your experience of how burst -- what the current cycling potential of burst EDO at the time this document was written was -- was achieving?

A. Yes, it was. There were some naysayers of SDRAM components that said that burst EDO couldn't keep up with it, and this was showing that yeah, it did. In fact, we were cycling in the 125 megahertz not at room

temperature, but over voltage and temperature where various parameters would slow down, and so it was showing good head room.

Q. In general terms, can you explain what ultimately happened to burst EDO?

A. Synchronous DRAM gained sufficient momentum in the industry that burst EDO was not accepted even though there were many suppliers that had it on their parts, there were many chipset manufacturers that had support for it. It just did not emerge in the market as a mainstream part. Synchronous DRAM -- the momentum behind the Synchronous DRAM actually killed burst EDO.

Q. And based on your understanding and experience with burst EDO, did you have an understanding that if burst EDO were chosen at that time, improvements could have been made to burst EDO?

A. Yes, and in fact, even in this document, we thought that right around 120 -- 100 megahertz, somewhere in that area, it would need to have more work done on it to increase the performance beyond that, whether that was changing the I/O signaling levels or whatever, there would be more work that needed to be done, and actually I indicated that on page 5 of that same document. So, we knew that more work needed to be done on it. Where ultimately it could have gone would

just be based upon the work that we did.

Q. In the 1993 time frame, did you ever try to compare SDRAM to Rambus DRAM?

A. Yes, I did.

Q. Why did you do that?

A. More as a training tool for the field application engineering force and salespeople inside Micron.

Q. What exactly did you do when you tried to compare SDRAM with Rambus DRAM?

A. With the information that I had, I tried to just gather the similarities and differences and tried to determine what direction the market would go based upon that, and from the technical standpoint, just look at the technical differences between the two architectures.

Q. Did you prepare a presentation on the difference between SDRAM and Rambus DRAM?

A. Yes, I did.

Q. I'd like to show you Respondent's Exhibit 340. Do you have that in front of you?

A. Yes, I do.

Q. And if you could turn to page 11 of this exhibit.

A. Okay.

Q. Now, what were you trying to do on this page?
A. What I was trying to do is take a look at what Rambus was saying in their literature and in the industry as what they thought their advantages were over SDRAM and try to refute those advantages.
Q. Okay. And if you could look at the sixth bullet point on this page, it reads, "Uses both edges of the 250 megahertz clock."
Do you see that?
A. Yes.
Q. What did you mean when you included this bullet point on this page?
A. That the Rambus DRAM actually used two edges of the clock versus the single edge that was being used in the SDRAM.
Q. And how did you know that?
A. From the documentation that Rambus was providing in the industry.
Q. Did anyone at Rambus ever tell you that they had intellectual property on using both edges of the clock?
A. No.
Q. Did you ever show a representative from Rambus your presentation on sync -- Synchronous DRAMs versus Rambus DRAM?

A. No, I didn't.

Q. Okay. Did you ever show someone from Rambus, either inside or outside of JEDEC, your slides from this presentation on SDRAM versus Rambus DRAM?

A. No, this was really an internal training tool as well as -- I believe I gave it to some customers, but no, I didn't have any direct relationship with Rambus regarding this presentation.

Q. Did you ever have occasion to discuss with a representative of Rambus the substance of the presentation that we just looked at?

A. I wouldn't call it a discussion, but yes, at one JEDEC meeting, I don't know how they got a copy of it -- I assume from a customer -- but I got a marked-up copy of my presentation back from the Rambus JEDEC representative at one of the JEDEC meetings.

Q. If I could refer you to Respondent's Exhibit 2250, which is the last document in your set.

A. Okay.

Q. Are you familiar with this exhibit?

A. Yes.

Q. Can you tell the Court what this exhibit is?

A. Yes, this is the marked-up copy of my presentation that actually was handed to me by Richard Crisp at one of the JEDEC meetings.

Q. If you could turn to page 6 of Respondent's Exhibit 2250.

A. Okay.

Q. Now, was this page a page from the exhibit that we just looked at, which was Respondent's Exhibit 340?

A. Yes.

Q. Okay.

A. With the Rambus mark-ups.

Q. Now, what were you doing on this page of your presentation?

A. On the original presentation, what I was trying to show was the advantages of Sync DRAM versus Rambus, both from a royalty standpoint, from a standardization standpoint, and from a bus length standpoint.

Q. Okay. And underneath Sync DRAM, the first bullet point reads, "No royalties, industry standard part."

Do you see that?

A. Yes.

Q. Why did you include that in your original presentation?

A. Because at this time it was known that on the Rambus DRAM, there were royalties associated with it, and this was a big sticking point with all memory manufacturers to ensure that the DRAM is as cheap as

possible, and so what I was pointing out here is that with Sync DRAM, it's an industry standard, it's not a proprietary part and required no royalties.

Q. Now, there is an arrow that points up to this bullet point that you made, and it's at the bottom of the page, and it reads, "Motorola and other have SDRAM patents."

Do you see that?

A. Yes.

Q. Does this indicate that Mr. Crisp made a comment with respect to no royalty -- your no royalty -- no royalties point about Sync DRAM?

A. Yes, he was trying to indicate that he believed -- and I believe at this time at JEDEC, some information came forth that Motorola might have an SDRAM -- a patent on synchronous devices that might apply, and I think he was trying to point that out.

Q. Now, he -- Mr. Crisp also mentions "other have SDRAM patents."

Do you see that?

A. Yes.

Q. Did Mr. Crisp ever indicate who those other people -- other companies might be that had IP that contradicted your point that Sync DRAMs had no royalties?

A. No, I just took this comment as trying to state that, you know, there could be some other royalties associated with it based upon the work that was being done at JEDEC, and I believe we were then able to determine what he states here, that the Motorola having patents, they actually did not apply to Sync DRAM.

Q. I just need a moment to gather my thoughts.

Okay, if you could turn to page 2 of Respondent's Exhibit 2250.

A. Okay.

Q. Now, this looks an awful lot like the page we just looked at in your presentation on Sync DRAM versus Rambus. Is this the page that -- a version of the page that we were just looking at?

A. Yes, it is, with the Rambus comments.

Q. Okay. And we looked at -- recently at bullet point six of your presentation, and -- which states, "Uses both edges of the 250 megahertz clock."

Do you see that?

A. Yes.

Q. Did Mr. Crisp have anything to say about your statement on this page about Rambus?

A. Yes, it's down at the bottom. He's stated that, "Rambus has patented techniques for synthesizing up to 50% duty cycle on the chip," which I took to mean

that, okay, they have some sort of patented technique on RDRAM that has to do with synthesizing the duty cycle.

Q. Did you also take that to mean that Rambus had intellectual property over using both edges of the clock?

A. No, I did not. I would have assumed that if he meant that they had specific IP dealing with dual edge clock, he would have stated such.

Q. Okay. Do you have an understanding of what a duty cycle is?

A. Yeah, a duty cycle means that a certain portion of the time, the clock cycle is high, and the other portion of the time, the clock cycle is low. So, based upon that percentage between the two, that's your duty cycle.

Q. And what is a 50 percent duty cycle?

A. It means that it's pretty tightly controlled between the -- the high time and the low time is very closely matched to each other, being 50 percent high, 50 percent low.

Q. Do you have an understanding of why it might be useful to achieve a 50 percent duty cycle?

A. Yes, and in fact, in my presentation, I talk about that's one of the biggest problems with the

Rambus DRAM, is that you had to control the edge-to-edge clock skew. That's a real problem if you're going to use both edges of the clock, and I saw that as a problem, where if you use a single clock edge, you don't have to worry about that edge-to-edge clock skew.

Q. Is 50 percent duty cycle the same thing as using both edges of the clock?

A. No.

Q. Okay.

I have no further questions, Your Honor.

JUDGE McGUIRE: Okay, thank you, Ms. Zuk.

MS. ZUK: Oh, I have a procedural thing that I failed to take account of. I have to -- I would like to offer certain of the exhibits I used into evidence --

JUDGE McGUIRE: Okay, go ahead.

MS. ZUK: -- at this time. The first is CX-253.

MR. STONE: No objection.

JUDGE McGUIRE: Entered.

(CX Exhibit Number 253 was admitted into evidence.)

MS. ZUK: The second is CX-254.

MR. STONE: No objection.

JUDGE McGUIRE: Entered.

(CX Exhibit Number 254 was admitted into evidence.)

MS. ZUK: And then CX-252A.

MR. STONE: No objection.

JUDGE McGUIRE: Entered.

(CX Exhibit Number 252A was admitted into evidence.)

MS. ZUK: CX-255.

MR. STONE: No objection.

JUDGE McGUIRE: Entered.

(CX Exhibit Number 255 was admitted into evidence.)

MS. ZUK: CX-2632.

MR. STONE: No objection.

JUDGE McGUIRE: Entered.

(CX Exhibit Number 2632 was admitted into evidence.)

MS. ZUK: JX-14.

MR. STONE: No objection.

JUDGE McGUIRE: Entered.

(JX Exhibit Number 14 was admitted into evidence.)

MS. ZUK: And JX-23.

MR. STONE: No objection.

JUDGE McGUIRE: Entered.

(JX Exhibit Number 23 was admitted into evidence.)

JUDGE McGUIRE: All right, thank you, Ms. Zuk.

MR. STONE: What would you like -- would you like me to go for 15 or 20 minutes and then take the noon break, would that work?

JUDGE McGUIRE: You know, I think it would almost be better at this point if we just take off now at this point for lunch and come back unimpeded.

MR. STONE: Okay.

JUDGE McGUIRE: It's quarter to 12:00. Why don't we come back at 1:20, is that good for everybody?

MR. STONE: That's fine.

JUDGE McGUIRE: This hearing is recessed until 1:20. Thank you.

(Whereupon, at 11:45 a.m., a lunch recess was taken.)

AFTERNOON SESSION

(1:20 p.m.)

JUDGE McGUIRE: This hearing is now in order.

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

Mr. Stone?

MR. STONE: Thank you, Your Honor.

CROSS EXAMINATION

BY MR. STONE:

Q. Good afternoon, Mr. Williams.

A. Good afternoon.

Q. You told us a little earlier today that the marked-up copy of this presentation on Rambus versus SDRAM, you told us the marked-up copy, Exhibit RX-2250, was a marked-up version of RX-340.

Do you recall that?

A. Yes.

Q. Why do you think -- what made you come to the conclusion that RX-2250 was a marked-up version of RX-340?

A. Because they looked very similar.

Q. They're different, though, aren't they?

A. I'm not aware of that if they are.

Q. Well, I mean, didn't you -- you looked at these before you came here today to testify, right?

A. Yes.
Q. You worked on -- you have two of your lawyers here today?
A. Yes.
Q. You worked with them to get ready?
A. Yes.
Q. You knew you were going to be asked a question about these two documents, didn't you?
A. Yes.
Q. You talked with Ms. Zuk before you testified?
A. Yes.
Q. So, with all those people to help you, you tell us that 2250 is a marked-up version of 340, correct? That's what you told us?
A. Yes, and --
Q. Okay, look at page 12 of Exhibit 340.
A. 340, page 12. Okay.
Q. Okay, do you have page 12 of Exhibit 340?
A. Yes, I do.
Q. And what is the seventh bullet point down, what does it say?
A. On the left or on the right?
Q. On the right.
A. "Compensate for narrowed bus through --"
Q. No, the seventh.

A. "Not likely - requires royalties to Rambus, Incorporated from all IC manufacturers; JEDEC will not pass."

Q. Okay. Now, go if you would to document 2250, RX-2250, and go to the third page. That's the comparable page, isn't it? That's the one that has page 12 written below the line?

A. Yes, it does look like the comparable page.

Q. And if you go to the seventh bullet point, it's different, isn't it?

A. Yes, it's slightly different.

Q. Yes. It has a mention of royalties being required from both standard, the IC and system manufacturers, right?

A. Yes, it does.

Q. And the idea of system manufacturers paying royalties to Rambus was taken out by the time you got to Exhibit 340, wasn't it?

A. I'm not sure if it was. I made a lot of variations of Exhibit 340. That was one -- one revision.

Q. Um-hum.

A. And I'm not sure if what was marked up was a prior revision or a later revision than what is shown in 340.

Q. I'll show you what the differences are.
A. Okay.
Q. We'll get there.
Turn, if you would, to -- in 2250, the marked-up version, go to page 9.
A. Okay.
Q. In the handwriting on the left-hand side it says, "It's October. Approval has been imminent all year." Correct?
A. Okay, there we go. Yeah, that's the Rambus notation.
Q. Yeah, the Rambus notation. "It's October."
A. That's right.
Q. Now, the exhibit you showed us that you said had been a marked-up version was dated November, wasn't it?
A. Correct.
Q. So, the marked-up version was earlier than the November one, right?
A. Correct.
Q. Okay. So, your testimony earlier today was incorrect. Am I correct?
A. It was incorrect that Exhibit 340 came later than the marked-up version; however, I had done earlier versions of the same work in 340.

Q. No, you gave this presentation a lot.
A. Yes.
Q. You gave it to customers.
A. Yes.
Q. You gave it to your sales force.
A. Yes.
Q. The effort was to give information to your sales force that they could use to sell SDRAM in competition with Rambus, correct?
A. Or at least know the differences between the two.
Q. And the reason you wanted them to know the differences was so they could sell SDRAM, right?
A. At that point in time, we were not making SDRAM, so I just wanted -- this was for a technical comparison. So, it was not to -- mainly to the sales force, more to the application unit is where I applied this.
Q. And you wanted to enable your sales force and your customers to make a decision as to which to choose ultimately when they were both in the market?
A. I would think so, yes.
Q. And your preference was that customers choose SDRAM, correct?
A. At that point in time, yes.

Q. And it's been true ever since that point in time that you wanted them to choose SDRAM over Rambus, correct?

A. Ultimately, whatever our customers wanted, we'd produce.

Q. But you never produced RDRAM, did you?

A. We didn't get to the full production stage, no.

Q. And Dell wanted you to produce RDRAM, didn't it?

A. If they wanted us to produce it, we would have done it.

Q. And you promised them that you would produce it, but you didn't, correct?

A. That I'm not aware of.

Q. Michael Dell wrote to Steve Appleton and said, we need you to hurry up and get us the RDRAM, and Steve Appleton said that he would, but you never produced it, did you?

MS. ZUK: Objection, calls for speculation.

JUDGE McGUIRE: Counsel, if you are going to offer any objection, I want you to stand.

Now, what's your objection?

MS. ZUK: The respondent has not established any foundation to allow Brett Williams to talk about these issues.

JUDGE McGUIRE: Mr. Stone, response?

MR. STONE: Yes, he testified earlier that Dell was one of his customers, Your Honor. Michael Dell is the chairman and founder of Dell. He said he was aware of their needs and what they did to meet their needs.

JUDGE McGUIRE: But that doesn't go to speak to the point you just made that the chairman was -- in fact, had done what you had indicated. There's some causal connection there, but I don't see it, so sustained, and you can restate.

BY MR. STONE:

Q. Steve Appleton is -- holds a position at Micron, correct?

A. Correct.

Q. What's his position?

A. He is the chairman, CEO.

Q. And you know him?

A. Yes.

Q. And he gets involved with major customers, doesn't he?

A. Yes.

Q. And there has been a period of several years when the largest single customer for DRAMs manufactured by Micron was Dell, correct?

A. I believe that's so.

Q. And that's something that's talked about widely within the company.

A. I would think so.

Q. And there was a time when Dell was your customer, correct?

A. When you say my customer, do you mean --

Q. You had responsibilities for providing technical advice and engineering to Dell in connection with products that they were purchasing or thinking of purchasing.

A. Yes, that's true.

Q. Okay. And you know that from time to time Steve Appleton had communications with Michael Dell about products that Micron hoped to sell to Dell, correct?

A. Typically I'm not privy to those discussions.

Q. But you knew they occurred, didn't you?

MS. ZUK: Objection, lacks foundation.

JUDGE McGUIRE: Response?

MR. STONE: It's the only way I can find out whether he knew it or not is to ask him, Your Honor. It's proper cross examination.

JUDGE McGUIRE: All right, overruled.

THE WITNESS: Not necessarily. In fact, that specific letter you're referring to or the comment I

have never even heard of.

BY MR. STONE:

Q. Okay, but you have heard of some communications between Mr. Appleton and Mr. Dell?

A. I couldn't state exactly what those were, and it wouldn't be direct anyway.

Q. And you knew -- and you knew, didn't you, that Dell had placed an order with Micron for RDRAM?

A. No, I didn't know that.

Q. Did you know that Micron never manufactured and sold RDRAM?

A. Yes.

Q. Okay.

JUDGE McGUIRE: Off the record a second.

(Discussion off the record.)

JUDGE McGUIRE: On the record.

BY MR. STONE:

Q. Mr. Williams, let me show you what has previously been marked as RX-317.

Do you want a copy?

JUDGE McGUIRE: No, I don't need it. I don't need it if it's going to be on the ELMO.

MR. STONE: Okay.

BY MR. STONE:

Q. Directing your attention to the first page of

RX-317, is this the cover of a presentation that you gave at a sales meeting in August of 1992?

A. Yes, it is.

Q. And in this document, turn, if you would, to page 12. Do you have page 12 in front of you?

A. Yes, I do.

Q. And does that have on it at bullet point seven the language that appears on RX-2250, the one with the handwritten notations?

A. I don't know if we're on the same page. I only see four bullet points here. Is it page 12 of 34 or --

Q. You know what, the way it's numbered for some reason, it's going to say page 8 of 34, but it's slide number 12.

A. Okay, all right.

Q. I can't --

A. That's what was up on the monitor, this -- okay, yes.

Q. So, you have the slide number 12?

A. Yes.

Q. And if you look at the seventh bullet point, this has the identical language to the one that we looked at in 2250 with the handwritten notations, does it not?

A. Correct.

Q. Okay. So, based on the kind of comparison you did before you testified today, which is looking back at the language, doesn't it now appear that what was marked as 2250 is a marked-up version of some of the slides from what I've shown you as Exhibit RX-317?

A. On that specific slide, yes, but even then I made several revisions, so I couldn't even testify that they're exactly the mark-up of this, but a version of this, I could.

Q. Okay, so we're at least back in time, you would agree, that the handwritten notations were made prior to November of 1992?

A. Yes.

Q. Okay. And you were given this handwritten document at the December 1992 JEDEC meeting, weren't you?

A. I'm not sure which JEDEC meeting it was, but it was at a JEDEC meeting, yes.

Q. And are you clear in your recollection that you were given it by Mr. Crisp rather than by Mr. Mooring?

A. Yes.

Q. And do you recognize the handwriting on this document?

A. I do not recognize the handwriting on the document.

Q. Do you know whether it's Mr. Mooring's handwriting on Mr. Crisp's?

A. I do not know.

Q. So, when you talked earlier about it, "Crisp, Crisp, Crisp," in reference to the handwritten notes, you don't know that they're his or not?

A. I inferred they were his since he gave me the document.

Q. And you're sure you didn't get it or discuss it with Mr. Mooring?

A. Absolutely.

Q. Okay, but you remember him being at the meeting in December of 1992?

A. Ah, was it -- I remember him being at several meetings, yes.

Q. Because earlier today you were shown some minutes that had his name on it as an attendee. Do you recall that?

A. Yes, yes.

Q. And was one of those for December '92?

A. Yes.

Q. Okay. As of December of 1992, did you know that the design of RDRAM included variable latency?

A. No, I didn't.

Q. Did you know that it included programmable

burst length?

A. No, I did not.

Q. Well, when you wrote in your chart -- and we can look at any one of the versions. Let's take 340, the one you looked at -- is that handy?

A. Yes.

Q. Let's just look at 340, the one you looked at earlier today with Ms. Zuk. If you go to slide number 11, and it says, "Requires 256-byte block," do you see that?

A. Yes.

Q. And then a couple further down, it talks about smaller blocks reduce data rate.

A. Yes.

Q. Does that indicate to you that the size of the blocks will vary?

A. That the blocks can vary, yes.

Q. Okay. And did you understand when you wrote that that that meant that the burst length could be programmable?

A. I didn't infer that as a programmable burst length, just -- because I wasn't that familiar with the entire Rambus chip operation.

Q. But you put this together from Rambus data sheets, didn't you?

A. No, not data sheets, from their marketing data.
Q. Okay. And when you wrote -- and we can just stay on that slide 11 -- when you wrote that it uses both edges of the 250-megahertz clock, you understood that to be what's called dual edge clocking, correct?
A. I understood that they used two edges of the clock.
Q. Okay. And when you wrote "clock skew (edge-to-edge) - big problem," what did you mean?
A. That it was hard to control both edges of those clock, and that in a system design was a big problem.
Q. And how did Rambus control both edges of the clock?
A. I don't know specifically how they did that.
Q. Do you know today?
A. Not specifically, no.
Q. How does Micron control possible skew when they use two edges of the clock today?
A. I am not a designer, but I've got an idea of how they do it.
Q. PLL or DLL on the chip, correct?
A. That's how, yes, I believe we do it on the SDRAM.
Q. Look at the handwritten version of this page, if you would. That is RX-2250, page 2.

A. Okay.

Q. It says, looking at these same two bullet points, uses both edges of the clock and clock skew, there is a comment and an arrow drawn to each of those two bullet points, correct?

A. Yes.

Q. And the uses both edges of the 250-megahertz clock has a comment drawn to it which says, "Rambus has patented techniques for synthesizing up the 50% duty cycle on chip," correct?

A. Yes.

Q. Now, that's not drawn to the bullet point that talks about clock skew, is it?

A. No, it's not.

Q. It's not drawn to the bullet point that talks about the difficulty in finding a way to deal with the 50 percent duty cycle of a full clock cycle, does it?

A. Correct.

Q. Okay. So, the patented techniques is drawn to the bullet point that talks about dual edge clocking.

A. It points to that bullet, that's correct.

Q. And your understanding at the time was such that you looked at that and you said, okay, I know they have a patented techniques comment that's drawn to the bullet point that says both edges of the clock, but my

understanding of that is that the patented techniques apply to something other than the use of both edges of the clock, correct?

A. I didn't really take an inference from that, just that whatever the patented technique was, it had to do with synthesizing the duty cycle.

Q. And the duty cycle has to do with addressing the problem of skew when you use both the rising and falling edges of the clock, correct?

A. Or skew between two clocks or skew on the clock itself.

Q. Okay. And skew is addressed in the very next bullet point, isn't it?

A. Yes.

Q. And this comment about patented techniques wasn't drawn to the clock skew point, was it?

A. It wasn't, but --

Q. Okay.

A. -- I didn't infer that much from where it was actually drawn to.

Q. Okay. And the clock skew bullet point has a comment by it which says, "Proven: That a two nanosecond system specification, cleaner wave forms at two nanoseconds than TTL at 20 nanoseconds," correct?

A. Yes.

Q. And what's TTL?

A. TTL is an interface standard.

Q. Up above on the same page, you had written that the innovative packetized address/command, in the Hype column, you then said it's not a new idea, many buses use this, such as Multibus II, ethernet, TCP/IP, et cetera, correct?

A. Correct.

Q. And that made you think that Rambus couldn't have a patent on their innovative packetized address/command structure because it was not a new idea, right?

A. No. I was just detailing what Rambus was touting -- in fact, in this whole discussion, I didn't address patents whatsoever. It was never in my mind to try to figure out whether Rambus had patents on some of this or not. From their marketing data, I was detailing the Rambus marketing talking points and trying to refute those talking points.

Q. Well, if Rambus didn't have patents, why did you think that system manufacturers were going to have to pay them royalties?

A. I did not -- I know that Rambus' tech -- Rambus' business plan was to patent a technology; however, I did not know on exactly what they had

patents on.

Q. Well, why did you say that royalties would be required to be paid by system manufacturers if you didn't think they had any patents?

A. I never said that I didn't think they had any patents.

Q. Okay, you did think they had patents --

A. It was known that they had patents. Upon what those patents were based, I did not know.

Q. Okay. So, in the time frame of August-September-October of 1992, you knew Rambus had patents or at least had applied for them, correct?

A. Or that that was their business model more than -- I did not know -- to correct myself, I did not know whether they had patents or applied for them. I knew it was their business model to patent their technology, and that's how they would gain their revenues.

Q. Isn't it a general practice of Micron to regularly search the patent office files to determine who has patents in the fields that you do business in?

A. I'm not aware of that.

Q. Had you ever been told by anybody when they first saw patents issued to Rambus?

A. I'm sorry, say that again.

Q. Had you ever been told by someone else at Micron when they first saw patents that had been issued to Rambus?

A. No.

Q. Does Kevin Ryan work for you? Did he at the time, '95-'96?

A. No, not in that time frame.

Q. When did he report to you?

A. Earlier than the '9 -- let's see, when did he join? Probably in '91-'93 time frame.

Q. And did you report to Mr. Cloud up until the time of his retirement?

A. Maybe not the total time before his retirement, but for most of the time before he retired I did, yes.

Q. Okay. Turn, if you would, to -- we're on Exhibit 2250, and turn to the third page of that document, which is slide number 12. In the upper left-hand corner, the handwritten notation says, "Rambus provides a 'cookbook' system solution."

Do you see that?

A. Yes.

Q. Did you at this time understand that it was part of Rambus' business plan not just to apply for patents, but also to provide a cookbook to its customers so that they would be able to manufacture the

product and make use of the Rambus technology?

A. I don't believe I knew that at this time.

Q. Okay. So, the first time you heard that was when you got this handwritten note?

A. Yes, and I didn't know exactly what that meant.

Q. Did you ask Mr. Crisp or Mr. Mooring what these notes meant?

A. No.

Q. After you got these notes and had a chance to look at them, did you pick up the phone and call them?

A. No.

Q. You had known Mr. Mooring from your days at Intel, right?

A. I did.

Q. And you had called on Mr. Crisp when he had been a customer, correct?

A. Correct.

Q. And was there any reason that you would have not called them if you had wanted to find out more information?

A. If I wanted to find out more information, yeah, I probably would have called them, but I didn't.

Q. Okay. Look at the -- we've been -- we've focused a lot or I drew your attention, at least, to the seventh bullet point on the right-hand side, and

the language in this particular version which says, "Requires royalties to Rambus from both standard, the IC and system manufacturers."

Do you see that language?

A. Yes.

Q. What's that mean, "from both standard, the IC"?

A. I think it is a typo. I think it should say, "both standard, IC and system manufacturers."

Q. Okay. So, the word "the" should just be taken out?

A. I believe so.

Q. And you can see one of the things that's written in hand is somebody wrote sort of lines around the letters "system manufacturers" and then brought it down to a comment which says, "Not true," correct?

A. Correct.

Q. And isn't it correct -- and you can look at all the versions you wrote of this document -- but isn't it correct that after you received these handwritten comments from either Mr. Crisp or Mr. Mooring where they said it's not true that royalties from system manufacturers would be required, you dropped that language from all your subsequent slides?

A. Based upon what I'm seeing here, it is not in the subsequent slides, so it looks like it was dropped.

Q. And the reason you dropped it was because of the information they provided you, correct?

A. I'm not sure if it was that information or whether I discussed it with people back at Micron to see or other people to determine whether or not system manufacturers had to pay. I'm not sure exactly where I got that information.

Q. Who else at Micron did you discuss the comments with that you received from Mr. Crisp or Mr. Mooring?

A. I can't remember specifically who I discussed them with.

Q. At that point in time, you reported to Mr. Cloud, correct?

A. Correct.

Q. And at that point in time, Mr. Ryan reported to you, correct?

A. Correct.

Q. And at that point in time, Mr. Walther was in a parallel position with you, also reporting to Mr. Cloud, didn't he?

A. Let's see, this was the '92 time frame?

Q. Yes, it is.

A. I believe at that point Mr. Walther was applications manager over in Europe.

Q. Okay. And then when he came back in '93, he

became the JEDEC rep and took your spot or at least shortly after Mr. Fusco.

A. Right.

Q. And Mr. Walther had been the JEDEC representative before you took over that position, correct?

A. Correct.

Q. And it says in the handwritten notes, still on this third page of Exhibit 2250, slide number 12, it says, -- you wrote under Hype, "Rambus will be a standard," and the handwritten note is, "Rambus is already a standard."

Do you see that?

A. Yes.

Q. Well, you knew that Rambus wasn't the JEDEC standard, correct?

A. Correct.

Q. And you knew the reference was to Rambus being a de facto standard, didn't you?

A. Which reference?

Q. Rambus' reference.

A. I didn't know to what he was actually referring, because -- no, I was stating that specifically Rambus wouldn't be a JEDEC standard, which in my mind means it's then a standard.

Q. It wouldn't be a JEDEC standard because they required the payment of royalties?

A. I don't know if I specifically had in mind why, but definitely it wasn't being pushed through JEDEC at that time.

Q. Well, but what you wrote on your slide, you have, "Rambus will be a standard," and then across from it, isn't that the reality that relates to Rambus would be a standard? Isn't your version of the reality where you wrote, "Not likely - requires royalties to Rambus"?

A. Right.

Q. So, your thinking when you wrote this document, at least what you told your sales force and customers was, Rambus won't be a standard because it requires royalties.

A. Correct.

Q. And is that what you thought at the time?

A. Yes.

Q. Now, it's okay to charge royalties if JEDEC puts patented technology into a standard, isn't it?

A. As long as it's minimal and it's fair and equitable.

Q. Well, the words that you use are reasonable and nondiscriminatory, right?

A. Those are some good words for it, yes.

Q. And that's when you write what's the letter that you talked about before, the assurance letter that you write to JEDEC, that requires that you use the language which says reasonable and nondiscriminatory.

A. Correct.

Q. And you have never been involved in negotiations to come to an understanding of what's reasonable or not, have you?

A. I have not.

Q. Okay. Turn, if you would, to the sixth page of Exhibit 2250, which is slide 18. That's the one that has the no royalties, industry standard part as the first bullet point on the left.

A. This is -- okay.

Q. Got it?

A. Yes.

Q. So, you wrote under Sync DRAM -- and Sync DRAM was what you used to refer to what most of the time during this trial we have been calling SDRAM. Those are the same thing, right?

A. Exactly.

Q. And the handwritten note that points to that bullet point says -- is that Infoquest?

A. It kind of looks like it, I'm not sure exactly.

Q. Or maybe it's Dataquest, one or the other?

A. I-N-something.

Q. Okay. It says, "Micron pays 10% in royalties on DRAMs today."

Do you see that?

A. Yes.

Q. Did you from your own knowledge when you were handed these -- this marked-up copy of some of your slides, did you from your own knowledge at that time know whether Micron was paying 10 percent royalties on DRAMs or not?

A. I did not know that, no.

Q. When you went back and talked with people at Micron about these handwritten notations, did you make any effort to confirm whether that information was correct or not?

A. Not about the amount of the royalties, but I did understand that, yes, based upon any DRAM we made, there were certain royalties that needed to be paid regardless of what DRAM it was, its fundamental DRAM patents to produce the DRAM.

Q. And did you come to some understanding through that conversation as to whether 10 percent royalties was more or less in the ballpark of what, in fact, was being paid?

A. I -- no, I didn't try to confirm the amount.

Q. On this same page, you were asked about it earlier by Ms. Zuk, down at the bottom, the handwritten notation that points back to this same bullet point. It says, "Motorola and others have SDRAM patents."

Do you see that?

A. Yes.

Q. And I -- as I recall your testimony when you were asked questions by Ms. Zuk, you answered that you looked at that Motorola patent and determined it did not apply?

A. No, I didn't specifically look at the patent. I -- in the course of the JEDEC committee, and I don't know who actually made the determination, it was determined that the Motorola patents did not apply to the SDRAM.

Q. Didn't apply or people thought they were not going to be valid?

A. I did not make a distinction between the two.

Q. Okay. So, in your mind, it could have been that somebody said that the Motorola DRAM patent didn't look to them like it would be valid?

A. It was that we didn't need to consider it any longer in the committee because it wouldn't have impact upon the standard.

Q. And the Motorola patent was brought up at a

JEDEC meeting the same time the possibility of Rambus patents were brought up, correct?

A. I'm not sure of the exact time they were brought up.

Q. Wasn't it brought up by the representatives from Siemens and IBM?

A. I can't remember specifically who did that.

Q. Do you remember who said we don't need to worry about the Motorola patent?

A. No. It was just a -- it was just that the committee didn't -- we weren't talking about it anymore.

Q. Do you know when that Motorola patent issued, more or less?

A. I don't.

Q. Would it be consistent with your recollection if that patent issued about December 31st of 1991?

A. I couldn't say.

Q. Let me ask you about this. I'm going to read to you from the summary of the invention of a Motorola patent with the patent number 5,077,693 that issued on December 31st of 1991, and here's the summary of the invention. It says:

"A particular --"

MS. ZUK: Objection, Your Honor. I think this

line of questioning lacks foundation. The witness already testified that he's not familiar with the Motorola patent.

MR. STONE: And I am going to ask him, Your Honor, whether as I represent this description -- and I'm happy to let counsel read it as well -- simply going to ask him whether it does not, in fact, describe an SDRAM. He's testified to a --

JUDGE McGUIRE: Overruled. You may ask the question.

BY MR. STONE:

Q. The summary of the invention from the patent I just described is as follows:

"A particular embodiment of the present invention consists of a DRAM having a clock input, a column enable and a row enable. In operation, the DRAM is accessed and row and column addresses are latched based on the clock input."

Those words, sir, all make sense to you?

A. Yes.

Q. And does that describe an SDRAM?

A. I couldn't say specifically whether it does or not.

Q. Okay. That's beyond your technical expertise?

A. Yes.

Q. So, earlier today when you showed us that demonstrative of what's an SDRAM, is that something within your technical expertise?

A. That's at a higher level, yes.

Q. That's at a higher level?

A. Yes.

Q. So, what I read you you think is more detailed than what you showed us?

A. Well, I can't determine how those lines interconnect or how they actually operate.

Q. Okay. Pull up, if you would, DX-4, which is the demonstrative you showed us earlier.

Yeah, we don't have that on our computer, Your Honor --

JUDGE McGUIRE: That's all right, go ahead.

MR. STONE: -- perhaps complaint counsel want to bring it up, because --

JUDGE McGUIRE: Oh, you don't have it for the witness. Is that correct?

MR. STONE: The witness has it.

JUDGE McGUIRE: Go ahead and proceed.

THE WITNESS: I'm looking for it.

MR. STONE: Did you bring it up?

THE WITNESS: Oh, here it is.

MR. STONE: Thank you. Complaint counsel

brought it up for us, thank you. I appreciate your help.

BY MR. STONE:

Q. So, this is a description of an SDRAM at a level of technical detail that you do understand?

A. At a block diagram level, yes.

Q. I'm sorry?

A. Yes.

Q. Over on the left-hand side, you show something called the memory controller.

A. Yes.

Q. And then you show -- from that you show address/command bus?

A. Yes.

Q. Isn't that really two buses?

A. You have the address bus and then you have the command signals.

Q. So, those are two separate buses, because they have dedicated lines for address and dedicated lines for command, correct?

A. They do have dedicated lines, yes.

Q. And you would -- and you would agree with me that that really is two separate buses?

A. It could be two separate buses, but they always operate in concert, so...

Q. And do you know whether or not the SDRAM that you described on DX-4 does or does not infringe Rambus patents?

A. State that again, please.

Q. Do you know whether the SDRAM that you've depicted on DX-4 does or does not infringe any Rambus patents?

A. I do not know that.

Q. Do you know whether at any point in time when Rambus was attending JEDEC meetings it had any patents or patent applications with claims that were essential to the use of an SDRAM as described in DX-4?

A. No, I wouldn't know that.

Q. Let me take you back to Exhibit 2250, if we can, and we'll go to page 8, which is slide 13. Do you have that one in front of you?

A. Yes, I do.

Q. Look at the comment, the handwritten comment in the lower left corner, if you would. "DRAMs and RDRAMs are based on the same core -- both benefit from manufacturing economics -- I'm sorry, both benefit from manufacturing economies and both something improve with faster cores."

Do you see that?

A. Yes.

Q. Was it your understanding at the latter part of 1992 when you received this document, Exhibit RX-2250, that the majority of the die for an RDRAM was identical to the majority of the die for an SDRAM in that they both had the same core?

A. No, that wasn't my understanding.

Q. So, did you disagree with the handwritten comment here?

A. I thought what he was trying to say with that handwritten comment was that they were about the same and they would shrink the same, and as I understand it, SDRAMs shrink better than RDRAMs.

Q. What did you understand the "based on the same core" to mean?

A. I had no idea specifically what he was referring to.

Q. And it's been your experience that there are economies of scale which are realized in the manufacture of integrated circuits, correct?

A. Correct.

Q. The higher the volume, generally the cheaper the cost of manufacture?

A. Correct.

Q. Turn, if you would, to the paper you wrote, CX-2636. I'm sorry, CX-2632.

A. Okay.
Q. What's the date of this publication?
A. Q4 '95.
Q. And do you know when that was released?
A. That was -- it would be right in that time frame.
Q. And Micron was then selling burst EDO devices?
A. I'm not sure if we were actually selling them at that time frame or not. I know we produced a few, but did -- but never went to volume production.
Q. Never went to volume production on any?
A. On -- no.
Q. But burst EDO was standardized by JEDEC, wasn't it?
A. Yes, it was.
Q. And if I remember Mr. Rhoden's testimony from the other day, he told us that once you -- once you were standardized as a JEDEC product, you were assured of a certain market share. Was that not your experience with burst EDO?
A. If -- no, that's correct, it was not.
Q. Was Mr. Rhoden familiar with burst EDO?
MS. ZUK: Objection, that lacks foundation.
MR. STONE: Well, let me withdraw it.
BY MR. STONE:

Q. Mr. Rhoden worked for VLSI at one point in time, didn't he?

A. Yes.

Q. You went on a tour with Mr. Rhoden to potential customers in an effort to sell them burst EDO, didn't you?

A. Yes, I did.

Q. So, he was out there on a sales call with you trying to sell burst EDO?

A. I don't think it was a sales call, more than I was trying to promote the acceptance of it.

Q. You were trying to promote the acceptance; he went along with you.

A. I believe so, yes.

Q. He was well aware that you never went into full production of burst EDO, wasn't he?

A. I don't know if I could say that or not.

Q. In any event, it is true, isn't it, that the fact that burst EDO was standardized by JEDEC did not assure it any particular market share in the DRAM market?

A. Not for this specific product.

Q. Okay. Now, is that the product you were writing about in CX-2632?

A. Yes.

Q. Okay. You told us earlier that it had a -- this burst EDO had a CAS latency of two. Is that correct?

A. Yes, yes.

Q. Now, burst EDO was asynchronous, correct?

A. That's correct.

Q. And the latency was not a function of clock cycles, was it?

A. It was not.

Q. So, it didn't have a CAS latency of two clock cycles, did it?

A. Well, when you say a CAS latency of two, if you look for a typical system clock external to it and you matched up the time for CAS latency, it would be in essence two clock cycles.

Q. It would be roughly in the neighborhood of two clock cycles?

A. Correct.

Q. But it could vary because it was asynchronous?

A. It was asynchronous.

Q. Okay. So, when you told us earlier that it had a CAS latency of two cycles, that's really not correct, because what it really had was it had a latency of some nanoseconds, correct?

A. It did have a latency of so many nanoseconds

based upon -- and where I got the two was from based upon the latency time and you map that into the clock cycle, but once you get the address there at a specific clock, you had a certain amount of latency, and that mapped into two 66-megahertz system clock cycles.

Q. And what it took to get the data there was two toggles, correct?

A. Two toggles of?

Q. You had two toggle signals before data came out. Am I right? I'm looking at the --

A. Of the system clock?

Q. No, of the asynchronous toggle.

A. Of which signal?

Q. Take a look at page 5 of 2632. If we look at that diagram, is the top one the external clock?

A. Yes, the top one -- let me --

Q. Okay, what's the next one?

A. That is the RAS signal.

Q. And what's the next one?

A. That is the CAS signal.

Q. And does it show toggles?

A. It shows toggles, but it's not that you get data out. You have to toggle the CAS twice to get data out. What it's showing is that I can toggle the CAS up to four times to get four data items out. You have to

toggle the CAS for each data item.

Q. And isn't there --

A. And from the first time you toggle at CAS, if you map that into the system clock, there is two clocks before that application is valid.

Q. And doesn't it take two toggles before you get the first piece of data out? Isn't that what we see on this diagram?

A. No.

Q. Don't we see -- on the CAS toggle line, don't we see every time it dips down, isn't that a toggle?

A. Yeah, when it -- when it goes low and it goes back high, that's a toggle.

Q. Don't we see it dip down twice before the first data bit comes out?

A. You do see it dip down twice, but I can toggle every -- from the first toggle, you've got an access time by the nomenclature TAA.

Q. Um-hum.

A. From the first toggle you have an access time of when the first data would be valid. From the second toggle is when you get your CAS access time. So --

Q. And isn't the period until you get your CAS access, isn't that what we call the CAS latency?

A. It would determine -- well, actually, you want

to -- what I was calling CAS latency was from the time you started -- you latched in the CAS address. So, from when you latch in the CAS address until the time you get valid data out on the bus, that's what in essence is determined as CAS latency.

Q. And on this diagram, isn't that two toggles?

A. If I latch the address on the first toggle and then I -- yes, I latch the address on the first toggle. The second toggle is when I start getting data out.

Q. Thank you.

Didn't you when you wrote this say that burst EDO will probably reach its limit somewhere around 100 megahertz?

A. We knew it was going to be -- without some more development work, that with the current design, yeah, it would be around 100 megahertz. We had it cycling at 125, so we knew that we could get there, and that was over temperature and voltage, not just at room temperature. So, we knew we were there -- we could achieve that.

Now, that was just a few parts, it wasn't the mass production, but yeah, we knew what we would have to do is do more development work. What that development work entails, I mean, could be lower voltages on the bus, I mean, who knows what it would

entail? I'm not a chip designer, so I couldn't give you all the points.

Q. And you were very strongly pushing the use of burst EDO, weren't you?

A. Yes, I was.

Q. And after that specification was issued for burst EDO, you put together a -- some materials for some of your sales force to use, correct?

A. Which specification?

Q. You wrote a memo to Mr. Lin, didn't you?

A. An email to Mr. Lin?

Q. Yeah, an email or a fax to Mr. Lin.

A. Yes.

Q. I'm looking for that. Give me one second.

Let's bring up Exhibit RX-585, if we could.

If I may approach, Your Honor?

JUDGE McGUIRE: Please.

BY MR. STONE:

Q. I hand you, Mr. Williams, what we have marked as RX-585. Am I correct that this is a fax that you prepared and sent to Mr. Lin?

A. Yes.

Q. And you prepared it when? August 1st of 1995?

A. Yes.

Q. And was one of the first things you wanted to

communicate to him that you now had standardized burst EDO?

A. Yes.

Q. And you had been a big part of obtaining that standard, because you had worked out the remaining issues between Micron and Samsung yourself, correct?

A. Correct.

Q. And then did you tell him that one of the advantages of burst EDO was that everybody who was making it was going to design it to the Micron specification?

A. If it's in here, then yes, I said it.

Q. Well, I want you to see it. Don't take my word for it.

A. Okay, I'm trying to find it.

Q. Look at the very top of the second page. It goes, "Now, let's look at the SDRAM. Unlike BEDO where all suppliers are designing to the Micron specification --" do you see that?

A. Okay, yes.

Q. Okay. So, in August of 1995, your understanding was the great advantage -- one of the great advantages of burst EDO was everybody who made it would make it to the Micron specifications, correct?

A. Right, they were using Micron's data sheet as

the guide.

Q. Okay. And by contrast, SDRAM suppliers, each supplier had a different set of specifications that they were using, correct?

A. Even though the features were the same based upon the JEDEC standard, there were some nuances, like setup and hold weren't quite exactly the same, the access times weren't quite exactly the same, so there -- all that hadn't been standardized, the actual parameters.

Q. And you thought it was a real benefit to have everybody using all the same specifications as opposed to allowing variation, correct?

A. What I was stating is that an advantage is that everybody was using -- using Micron's specification, that's correct.

Q. Okay. Did you understand in August of 1995 that one of the things that Rambus was pushing was that everybody would manufacture RDRAM to the Rambus specifications?

A. No, I wasn't aware of that.

Q. Okay. Were there other products out there that you were aware of other than burst EDO where you saw the benefit being achieved because everybody was manufacturing it to the specifications put together by

a single company?

A. No.

Q. Okay. You told us earlier -- you mentioned the VPAK patent as an example of someone who disclosed a patent at a JEDEC meeting. Do you recall that?

A. Yes.

Q. Later you determined that the VPAK patent that Micron had wasn't necessary in order to meet the JEDEC standard for packaging, correct?

A. I didn't make that determination, but I -- it -- I believe it was determined that our patent did not apply to the VPAK standard of JEDEC.

Q. Okay, but at the time the disclosure was made, did people know that then?

A. That it didn't apply?

Q. Yes.

A. No, because if they knew that, we wouldn't have had to disclose.

Q. If they had known that it didn't apply, they wouldn't have had to disclose?

A. That it didn't apply to what was being discussed.

Q. And that was your understanding of the JEDEC patent policy, correct?

A. Yes, that if it didn't -- if whatever the

patent was that didn't apply to the material being discussed, no need to disclose it, only if it could have applied.

Q. And by "could have applied," you meant was necessary in order to practice the standard?

A. No, the -- I meant that if there was a possibility that it could apply, then you need to -- and that's why we -- why we disclosed it, because we didn't know whether it did or not, but it could have. So, we decided, okay, we better disclose.

Q. And the "apply" part of that means -- I just want to understand the words you're using -- okay, when you said if there was a possibility that it could apply, I understand the possibility part of that, and I want to ask you just about the "could apply."

"Could apply" means that the patent applied to the standard, correct?

A. Or that there was a possibility, there was a reasonable possibility that it could apply to the standard.

Q. And I want you just to set aside the possibility part for a second. I'm not taking it out of your answer.

A. Okay.

Q. You have said it to me. I just want to

understand when you said apply, you meant that manufacturing something to the standard would necessarily infringe the patent. That's what "apply" means?

A. Well, I don't know if it just has to do with manufacturing, but if it had to do with the standard, if it could have implication on the standard, then it needed to be disclosed.

Q. Okay. Let's look, if you can find it in your stack, at RX-356. Those are what you referred to earlier as draft minutes. Do you recall that?

A. That helps. Yes.

Q. Got them?

A. Yes.

Q. Okay. And remember I stood up and objected and I wanted --

A. Yes.

Q. Okay. Did you attend the meeting in Fort Lauderdale, Florida in December of 1992?

A. Yes.

Q. Okay. And were these draft minutes that came to you from JEDEC?

A. They came from the JEDEC secretary.

Q. Directly to you?

A. Yes.

Q. And you recall that?
A. Yeah.
Q. You're not just guessing at it?
A. No, I would have received the minutes.
Q. Okay, let's bring up RX-361. It's not going to be in your stack. You are going to have to look at the --
A. Okay.
Q. Do you see RX-361 on the screen?
A. Yes.
Q. Is that a memo to you from Mr. Fusco?
A. It is.
Q. Okay, dated December 16th of 1992?
A. Correct.
Q. And he says, "Attached are the minutes from the December --"
A. Right.
Q. " -- JEDEC meeting"?
A. Right.
Q. Is that the final minutes or the draft minutes or some other set of minutes?
A. This is Bob Fusco -- Bob Fusco was in the process of learning how to take over the responsibility of the JEDEC rep, and these were important items that he sent to me based upon what he gathered from the

JEDEC meeting.

Q. And when he says, "Attached are the minutes," what's he referring to?

A. From this, I couldn't tell.

Q. If you go to the next page, you'll see it says, "Attachment"?

A. Um-hum.

Q. And if you look at the very bottom of that page, you'll see it has an MR number stamped on it?

A. Yes.

Q. Do you see that?

And it calls it MR-20427, and it also calls it M-167.002?

A. Yes.

Q. And then the -- what you told us earlier were the draft minutes, Exhibit RX-356, you will notice those are numbered also M-167.007 through something?

A. Um-hum, yes.

Q. And it appears from that -- it appears from that that RX-361 came right ahead of RX-356 with just about pages 3, 4, 5 and 6 of document 167 in between. Do you see that?

A. No, say that again.

Q. Okay. If you look at what I marked as RX-361 --

MS. ZUK: I will object to the lack of foundation.

MR. STONE: I am trying to lay the foundation, Your Honor, that the attachment to Exhibit 361 was --

JUDGE McGUIRE: On what foundation are you talking about it, Counselor, that you say that he is not already in the process of laying?

MS. ZUK: The witness has not testified that he's familiar with the numbering system that --

JUDGE McGUIRE: Overruled. I'll give him a chance to ask the question first.

BY MR. STONE:

Q. Mr. Williams --

JUDGE McGUIRE: Actually, why don't we just ask that question now, Mr. Stone.

MR. STONE: I will, that's what I'm going to ask.

JUDGE McGUIRE: And then you will decide what to do.

BY MR. STONE:

Q. I want you to look at the bottom of either one of the documents. Do you see where it has M000167.00 and then a page number that runs consecutive?

A. Like the 02, yes.

Q. Yes. So, you have 02, and then on the draft

minutes that you were shown earlier by Ms. Zuk, it goes 07 through 013?

A. Yes.

Q. Is it your -- do you have an understanding that the way Micron numbered the documents that they produced to us was each document was given a number, like 167, and each page was given a page number, like .001, 2, 3, 4 and so on?

A. No, I don't know specifically how they did that.

Q. Okay, then let me just ask it this way: Can you testify whether or not Exhibit RX-356 was sent to you attached to a memo from Mr. Fusco?

A. No, I can't.

Q. And do you know why if Exhibit 356 came to Micron from JEDEC it would be marked under the terms of the protective order as outside counsel only?

A. No, I wouldn't know why it is marked that.

Q. Do you know whether or not what was marked as Exhibit RX-356 was simply Mr. Fusco's notes of the meeting?

A. I know this wasn't the notes of the meeting from Fusco.

Q. You know that this is not Fusco's notes?

A. No, this is a typical draft minutes that we

would normally get from the JEDEC -- these were the typical draft minutes, typical state of the draft minutes that normally the members would get before the final ones were issued from the JEDEC office.

Q. Okay. And you were shown -- and I guess one reason, then, that draft minutes were circulated was so members could make corrections?

A. Corrections, additions, make sure everything's included, right.

Q. And you pointed us earlier or in response to questions by Ms. Zuk, you responded down here to a discussion in the draft minutes where there's a mention of patent applications, correct? Do you remember that?

A. Ah, yes, yes.

Q. It's on page 2 of Exhibit 356.

A. Right, yes.

Q. And it says, "Call to order - Jim Townsend," and then it says, "Review of patent items - members are cautioned to disclose their relevant patent applications."

Do you see that?

A. Yes.

Q. That language is not in the final minutes, is it?

A. I believe not.

Q. Okay. So, that could mean that somebody called up the preparer of the minutes and said, that's erroneous, we need to change it, that needs to be deleted because it didn't happen that way? Any of those things could be an explanation for why it was taken out?

A. Or it could have been that the final minutes were just abbreviated.

Q. But the final minutes are pretty long, aren't they? We have them. It's --

A. Well, that's just because in the final minutes, you have all the attachments and presentations that were given.

Q. Well, let's look at JX-14. Those are the final minutes from the meeting, right?

A. Yes.

Q. Okay. And there's an item 5 on the final minutes which appears on page 3, and it says, "Patent Policies," correct?

A. Yes.

Q. And it has just as many lines in it as the Review of Patent items from page 2 of Exhibit RX-356, doesn't it?

A. Yes.

Q. So, nobody shortened it by taking information

out; they changed the information, didn't they?

A. I notice that they added things to it.

Q. Um-hum, they added things. They talked about that what he showed was a draft of proposed changes to the manual, correct?

A. Correct.

Q. Okay. Now, the draft language that he showed is in the document, Exhibit JX-14, at the page numbered 15107. I can't tell you the direct pagination number, because I -- it's cut off on my copy.

A. JEDEC 15107?

Q. Yeah. Do you have 15107?

A. I'm getting there. Yes.

Q. And it says Appendix F.

A. Yes.

Q. Patent Policy Guidelines. This was not as of December of 1992 the part of any existing manual, was it?

A. I don't know if it was or not.

Q. Did you ever look at any of the JEDEC manuals?

A. Not specifically.

Q. Were you given one when you became a member?

A. I can't remember if I did or not. Terry might have given me one. I don't remember.

Q. Okay. And then what follows that page on page

15108 and 15109 and 15110, those three pages are the pages that you recall being put up as overhead slides. Is that right or not? If you recall.

A. Overhead slides for what?

Q. By Jim Townsend. Do you recall what he put up on the overheads?

A. He put up stuff on overheads multiple times. He would have -- these specific ones were on the overheads when we were discussing -- I don't know if it was specifically at this meeting, but when we were discussing modification to the standard, these were presented, yes.

Q. Okay. So, those went up as the drafts at this meeting. Do you recall if they ever went up at another meeting?

A. I don't recall specifically, but I do know that we did discuss it at multiple meetings.

Q. Okay. You discussed changing the manual, correct?

A. Correct, as well as, of course, the patent policy was discussed at each meeting.

Q. And JEDEC, am I correct that JEDEC was a function within the engineering department of EIA?

A. Yes.

Q. It did not have any separate standing as a

company or corporation or so on, it was just a function?

A. I don't know exactly how it was organized, but yeah, it was under the auspices of EIA.

Q. Okay. I want to -- did we -- JX-15, I'm going to bring up JX-15, because I don't think we have enough copies. We'll bring it up on the screen, and as you'll see, these are the minutes of the JC-42.3 meeting, Scottsdale, Arizona, March 3 and 4, 1993.

Do you see that?

A. Yep.

Q. And it shows Bob Fusco in attendance from Micron on the first page. Do you see that?

A. Yes.

Q. And I didn't see your name anywhere in there, and would that be consistent with your recollection that you did not attend?

A. Yes.

Q. Okay. So, this would be the meeting following the Fort Lauderdale meeting, correct?

A. Yes. I don't know if there was an interim meeting, because sometimes you do have interim meetings, but yeah, this would be the -- you will have it every quarter, and this would have been the meeting in the first quarter.

Q. Okay. So, the normally scheduled meetings would be one in December and one in March?

A. Maybe not specifically, but once a quarter, within those three months.

Q. Okay, okay. So, let me ask you to look at page 5 of JX-15. Do we have that one up there?

A. Yes.

Q. And do you see where it says, "Micron for clarity, change items to all banks idle on the timing diagram," about two-thirds of the way down?

A. Yes.

Q. And then right above that it says, "Hitachi: Patent alert"?

A. Yes.

Q. Did anybody talk with you about these -- this meeting or those minutes and a Hitachi patent alert?

A. No.

Q. And then turn to the next page, which is page 6. At the top it says, "MOSAID: Patent issue." Then it says, "The Committee was aware of the Hitachi patent. It was noted that Motorola has already noted that they have a patent."

Do you know if in this time frame that was a reference to the Motorola patent you and I discussed earlier?

A. I don't know that.

Q. Okay. And then it says, "IBM noted that their view has been to ignore patent disclosure rule because their attorneys have advised them that if they do then a listing may be construed as complete."

Do you see that language?

A. Yes.

Q. Well, after the December 1992 meeting when you talked about amending the language, talked about patent applications, and Mr. Fusco went with you --

A. Yes.

Q. -- and he circulated -- you got from some source the draft minutes, and then you got the final minutes that included the proposed amendments, and you recall a discussion of patent applications at that meeting, did Mr. Fusco come back from this meeting in March in Scottsdale and tell you, you know, despite what we both heard together in December, IBM has just announced that they're not going to talk -- they're not going to disclose patents or applications. They're going to ignore it.

A. That isn't the information that I got. It was more that IBM had so many patents, they couldn't go research all the patents on every issue, but that they would comply as best they could. But they were

concerned that if they gave a list of patents, that it would be thought of as complete, and then they would be reprimanded for that.

Q. And you were still getting the minutes, weren't you?

A. Yes.

Q. And so when you read in the minutes that IBM noted that their view has been to ignore the patent disclosure rule, did you understand that to be consistent with what you had seen IBM do in the past?

A. It was explained to me that it wasn't that they were going to ignore the rule but that they couldn't give a full list of all their patents.

Q. And did you ever see the email or fax that they sent to Mr. Townsend explaining the advice they had received from their lawyers about ignoring the patent disclosure rule?

A. I can't remember if I saw that or not.

Q. Okay. You were shown some ballots earlier.

We are going to take one of these minutes first. Let's take a look at JX-10, which I think you will have in front of you.

A. Yes.

Q. You were -- Ms. Zuk showed you JX-10, which is the December 1991 minutes for the Maui meeting,

correct?

A. Yes.

Q. And was this the first meeting that you can recall anyone from Rambus ever attending?

A. I can't remember which was the first meeting.

Q. Do you recall whether the first person from Rambus who ever attended was Mr. Garrett?

A. No, I can't.

Q. Does this show anybody from Rambus present as a member?

A. They're not listed -- Rambus isn't listed under the Members Present, but under the Others Present.

Q. And if you come as someone's guest, would you be listed as Others Present?

A. You could be either others or you could be an alternate, not be a regular member.

Q. So, you don't -- you don't know if in December of '91 Rambus was a member or not?

A. No, I don't.

Q. Okay. Now, was there a discussion of VPAK at this meeting?

A. I can't remember if it was specifically at this meeting. VPAK was discussed at several meetings.

Q. Who for Micron disclosed the VPAK patent?

A. I did.

Q. When did you disclose it?

A. At one of the early meetings. It might have been this meeting. It would be contained in the minutes when it was disclosed.

Q. Was there a patent tracking list that existed as of December of 1991?

A. I don't know if it was at that specific time, but it was either late '91 or early '92 when they started circulating a patent tracking list.

Q. Was it December of 1991 when there was a discussion that maybe that would be a good thing to start doing?

A. I can't remember specifically if it was at that specific meeting, but yes, it was discussed that that was something we needed to start doing.

Q. Okay. And then -- that's all my questions on that particular document at the moment.

If you would go to JX-13, which you were also shown earlier, and is this the July 21st meeting in 1992?

A. Yes, it is.

Q. In Denver, Colorado?

A. Correct.

Q. And you were present at this one?

A. Yes.

Q. And you were asked about some ballots that occurred at this meeting by Ms. Zuk. Do you recall that?

A. Yes.

Q. And you were asked about some "no" votes?

A. Yes.

Q. Now, am I -- is it correct that the way the balloting works is you send your ballots in ahead of time, somebody tallies the ballots and reports on the results at the meeting?

A. Correct, the ballots are sent in to the JEDEC office. The secretary -- I can't remember his name -- would tally the votes, and it would come back with the vote tallied as well as any comments that were on the ballots.

Q. And that's Ken McGhee, right?

A. Correct, that's him.

Q. So, you weren't the person who tallied the ballots?

A. No.

Q. And did you ever see the ballots Rambus filled out?

A. No.

Q. You told us earlier that the language in the minutes was exactly the words that Rambus had written

on their ballot. Do you recall that testimony?

A. Yes.

Q. But how do you know that?

A. Only based upon the practice. The practice was that whatever the comments needed -- that were on the ballot had to be discussed and resolved.

Q. Okay. And so it's consistent with your practice that whatever somebody wrote on the ballot, Ken McGhee would accurately transcribe that information into the minutes?

A. Correct.

Q. And you never had an occasion when he didn't get it right, correct?

A. He might have -- I'm not saying he was 100 percent fallible, no, but typically he copied the minutes fairly accurate, especially the comments, because that's what had to be resolved in order to move the ballot along.

Q. And I think you meant, "I'm not saying he's 100 percent infallible." Is that what you meant?

A. Yeah, right.

Q. In other words, he might not be right all of the time, but he was right almost 100 percent of the time?

A. Right.

Q. So, these ballots that are voted on at the meeting, are they kept by JEDEC so if we wanted to know how somebody voted later, we can go back and look at the ballots?

A. I believe so.

Q. So, you think JEDEC should have all the ballots that would show exactly what Rambus said?

A. Yes, I believe they kept them all.

Q. Was it your practice to write trip reports when you went to these meetings?

A. From time to time I would try to, yes.

Q. And you keep all your trip reports?

A. Yes.

Q. So, in the production of all the documents from Micron, we ought to be able to go find your trip reports?

A. If I wrote one, yeah, it would be there.

Q. Okay. And if it's not there, that would be inconsistent with your practice?

A. Or that I didn't write a trip report for that specific meeting because I got too busy afterwards.

Q. Okay.

A. But yes, that was the practice, trying to write them.

Q. And did you review any of your trip reports

before you came up here to testify this morning?

A. No.

Q. Has anybody shown you any of your trip reports with respect to any of your JEDEC meetings in connection with your depositions in this or any other case?

A. I can't remember any.

Q. Have you ever gone back to look and see if you still have them?

A. Yes, I have. I gathered all my documents from timing planners, et cetera, and gave all those documents to my lawyers.

Q. And did you see trip reports in there?

A. I can't remember if I saw any or not.

Q. Okay, let me show you Exhibit CX-40. I have a copy for you, and we can bring it up on the screen. Do you recognize this document?

A. Yeah, this is one of the JC-16 minutes.

Q. Okay. And it shows you in attendance, does it not?

A. Yes.

Q. And then if you would go to page 7 of the document, it says CX-0040-007 on it. Did you find that?

A. Yes.

Q. And then if you look at the right-hand side of the document, you'll see a sheet which is the first page of the patent tracking list, isn't it?

A. It discusses the -- yes, it's the first page of the patent tracking list.

Q. And wasn't it the practice that prior to a JEDEC meeting, Mr. Townsend would fax out to certain people this cover memo, along with the list of patents that had been disclosed to date?

A. Yes, anybody who was on the patent list, that had something on the patent tracking list was sent this memo.

Q. Okay. So, you were the person who got this memo on behalf of Micron the entire time that Mr. Townsend was sending it out. Isn't that right?

A. I don't know if it was the entire time, but at this specific time, yes, I received it.

Q. Okay. We will get to the last one at least I can find in the minutes --

A. Okay.

Q. -- and I think you'll see your name is still there, but let me ask it this way. Do you recall that what happened was after you stopped being a JEDEC official member, you would still get the patent tracking list, and you would pass it on to somebody

else at Micron?

A. I can't remember if I received it and passed it on or they received it.

Q. Okay. Did you ever see among a list of people to whom this patent tracking list was sent, did you ever see anybody at Rambus?

A. I can't remember all that it was sent to. I just wanted to determine -- I mainly looked for myself to see if we had something that we needed to take care of.

Q. Okay. And do you recall when you got the first patent tracking list sent to you in that fashion that you've just talked about?

A. I don't.

Q. Well, let me ask you to take a look at CX-336.

A. Thanks.

Q. This is an easier to read copy. This one's dated May 26th of 1992, correct?

A. Yes.

Q. And it shows you as the person at Micron who received it?

A. Yes.

Q. And do you remember that to be your fax number at the time?

A. I believe so.

Q. Okay. And then it says -- the text of this says, "Please refer to the existing rules of the EIA governing patentable matters, which follow."

Do you see that?

A. Yes.

Q. And then following that material is a list of matters that had been brought to the attention of the JEDEC memory committee.

Do you see that?

A. Yes.

Q. And the next page, Patent Tracking, Jim Townsend, Toshiba, was this one of the rules of EIA governing patentable matters?

A. I couldn't state whether it was EIA specifically, but it was definitely what was talked about as the responsibility of the members of the committee.

Q. Okay. And then if you turn to the third page of Exhibit 336, the one that's headed EIA Policy at the top and is pretty much a full page of text, is that a page of information that was part of Jim Townsend's slides that you recall him putting up at the meetings?

A. It looks like it is, yes.

Q. Okay. And that you understood to also be the part of the EIA rules governing patentable matters?

A. This actually came out of the Style Manual, yes, as well as the Manual for Committees.

Q. And if you look at the bottom, it has what came out of the EP-3-F Manual for Committee?

A. Yes.

Q. And so this has information both from the Style Manual and the Manual for Committee, right?

A. Yes.

Q. Turn, if you would, to the fourth page, and is page 4 together with page 5 the list of patents that had been disclosed to JEDEC as of that time?

A. Those that were under consideration and needed resolution.

Q. Did you ever see any patents taken off of the list?

A. I can't remember if they were.

Q. Okay. If you go down almost to the bottom of page 4, you'll see it says, "Moto."

A. Yes.

Q. That refers to Motorola?

A. Yes.

Q. And you'll see the patent number listed there?

A. Yes.

Q. And the patent I read you earlier was 5,077,693, and is that the number we see there?

A. That's correct.

Q. Okay. And does the L next to Moto mean that Motorola had given a letter of assurance?

A. I can't remember what that actually refers to, but that might be it.

Q. Okay. And then if we go up above for Micron, we see two listings, a VPAK and a 3-port VRAM.

Do you see that?

A. Yes.

Q. Are you familiar with the 3-port VRAM reference?

A. Absolutely.

Q. Did Micron have a patent on that?

A. I believe so. I'm not really sure.

Q. Did you ever give that patent number to anybody at JEDEC so they could add it to the list?

A. Not to my knowledge.

Q. Okay. Did you ever disclose any patents to Mr. Townsend to include on this patent tracking list?

A. Yeah, the VPAK patent.

Q. Okay, and other than the VPAK patent, did you ever disclose any others?

A. No.

Q. And did you ever disclose any patent applications?

A. No.

Q. I am going to show you another document, CX-342. There you are, Mr. Williams.

Do you recognize Exhibit 342 to be another copy of the patent tracking list, this time October of 1992?

A. Yes.

Q. Okay. And my particular interest here is on one of the attachments, and if you could go all the way to the last page of the document -- someone wants to know the page number -- three, four, five, six -- seven. Eight, try eight. There we go. Maybe you can focus in on that.

This is an article entitled Don't Lose your Patent Rights. Do you see that?

A. Yes.

Q. And that -- I'm not going to -- you can take time to read it if you want. I'm not going to rush you on it, but let me see if I can draw your attention to something.

Part way down in the left-hand column in bold, it says, "Keep it under your hat."

Do you see that?

A. Yes.

Q. And it says, "In the United States, if an invention is publicly disclosed more than one year

before a patent application is filed, one is not entitled to the patent -- the invention is considered to be in the public domain."

Do you see that reference?

A. Yes.

Q. And then if you skip to the next paragraph, it says, "Moreover, premature disclosure can severely jeopardize non-U.S. rights. While the inventor may enjoy a one-year grace period in the United States, many countries, including Belgium, Greece, Great Britain, Spain and Taiwan, require absolute novelty. Any disclosure before the filing of a patent application will bar rights to a patent."

Do you see that?

A. Yes.

Q. Did this subject ever come up at a JEDEC meeting where they talked about what would happen if people disclosed patentable inventions before they had filed for a patent?

A. I can't remember specific discussion on it, no.

Q. Was it ever your understanding that you were obligated to disclose a patentable invention before you had filed your application?

A. I typically would file -- if we were going to disclose, I would want to file as soon as I possibly

could to protect it, yes.

Q. And was it ever your understanding that the JEDEC practice or policy was to have somebody disclose a patentable invention before they had filed?

A. It wasn't that specific. It was -- the rules were more you need to file -- I mean, you need to disclose as soon as you could if you thought it was going to be applicable to the work that was being discussed.

Q. After this article was circulated, did you ever recall Mr. Rhoden saying, you have to disclose your patentable ideas as soon as you have them, even if it's before you filed for them, even if it means you're going to lose your rights in certain foreign countries?

A. I don't remember those specific words, no.

Q. Was there ever a JEDEC meeting that you recall where anyone discussed you have to disclose your patentable inventions as early as you know you might file for a patent, even if it means you're going to lose rights in foreign countries?

A. I don't remember those specific words, but yes, the spirit was to disclose, especially if you thought that there was going to be a reasonable -- that there would be a reasonable possibility that the patent was going to be associated with the work of JEDEC, that you

ought to say, hey, I've got something I'm patenting here or there's something that you're talking about that I've got some IP on.

Q. Now, did anybody ever disclose a patentable invention before they filed?

A. I don't know if they did or not.

Q. Okay. At Micron, the practice is to do an invention disclosure when you have an invention that you think may be patentable, send it in to somebody in the organization who decides whether to file a patent, correct?

A. Correct.

Q. And you did invention disclosures on burst EDO, correct?

A. Yes.

Q. Okay. Let me just show you the last tracking list I was able to find. Let's pull RX-691, if we could. Just go forward a couple pages on that, because I don't seem to have the copy in the box. That's okay, I'll come back to it. I'll come back to it.

Let me show you a different one. Let me show you RX-559. You recognize this to be a patent tracking list, correct?

A. Yes, it is.

Q. And this one is dated May 10 of 1995?

A. Yes.

Q. Okay. And then turn, if you would, to the -- let me count the pages. One, two, three, four -- the fifth page, and you'll see about a third of the way down there's a reference to Rambus sync clock with a patent number.

A. Yes.

Q. Okay. Then if you go back to the first page, even though there's now a Rambus patent listed on that list, there's no Rambus person and no reference to the Rambus company in the people to whom this list was sent, is there?

A. That's correct.

Q. Okay. And then for Micron on this particular document, RX-559, you have listed the same two patents we saw earlier, VPAK and 3-port VRAM, correct?

A. Yes, those are still listed.

Q. And there is still no patent number for the 3-port VRAM, is there?

A. Correct.

Q. Did you ever provide a written assurance letter to JEDEC saying that with respect to any particular patent, Micron would be willing to license it on reasonable and nondiscriminatory terms?

A. Yes, we presented that on the VPAK.

Q. And you presented that on VPAK?

A. Yes.

Q. When did you do that?

A. I'm not sure exactly when. It would have been during my tenure there. I'm not sure exactly when that was.

Q. And were you aware that there was a list of patent assurance letters that was circulated within JEDEC?

A. I don't recall that.

Q. And did you ever look at any list to see if your assurance letter was listed there?

A. No.

Q. Okay. That's the only letter you ever provided?

A. Correct.

Q. You told us in your testimony earlier, if I heard you correctly, that when you were trying to interest manufacturers in burst EDO, you told them that if they started to manufacture burst EDO, it would be free.

A. That our IP on burst EDO would be free.

Q. Who at Micron was required to approve the offering of free licenses?

A. I'm not sure exactly who can approve that.

Q. Was that within your authority? Could you just offer it on your own?

A. I offered it on my own.

Q. You offered it on your own?

A. Yes.

Q. Without any approval from anybody?

A. Well, my manager knew what I was doing.

Q. And that was Mr. Cloud?

A. Yes.

Q. And you were asked about this at your deposition in this case, weren't you?

A. I don't recall the specific question.

Q. I sat it someplace here. I've got it.

Well, you were deposed in this case by Ms. Jeffries who came out to Boise and took your deposition. Do you recall that?

A. Yes.

Q. Let me give you a copy of your transcript from that deposition. You were -- after you were deposed, you had an opportunity to review the transcript and make any changes you needed to make, didn't you?

A. I think I did, yes.

Q. Okay.

Your Honor, would you like one so you can see the references to the pages?

JUDGE McGUIRE: Yes, please, thank you.

BY MR. STONE:

Q. Well, let me ask you to turn to page 28, Mr. Williams. Isn't it correct -- starting on line 8, weren't you asked the following question:

"QUESTION: Regarding burst EDO, were you ever involved in any discussions about whether Micron would seek royalties on its burst EDO patents?

"ANSWER: I can't remember any discussions to that effect, no."

And then weren't you asked:

"QUESTION: Have you ever heard about or become aware of discussions regarding whether Micron would charge royalties or seek royalties for its burst EDO patents?"

And after having the question read again, didn't you say, "No, I'm not aware of those discussions"?

A. And in this context, I thought she was talking about royalties or discussions taking place within Micron of whether or not there was a decision made to do royalties on burst EDO.

Q. Okay, well, turn to the next page.

A. Okay.

Q. Look at the top of page 29 beginning at line 3

through line 5. Were you asked the question:

"QUESTION: Are you aware of any decision by Micron not to assert its burst EDO patents in any way?

"ANSWER: I have not been privy to those decisions.

"QUESTION: Are you aware of whether any of Micron's burst EDO patents are part of any cross-license?

"ANSWER: I'm not aware of that."

But do you see the one that precedes it?

A. Yes.

Q. "QUESTION: Are you aware of any decision by Micron not to assert its burst EDO patents?"

A. Correct.

Q. Then the bottom of page 28, last line, "Are you aware of any decision by Micron not to seek royalties on its burst EDO patents?

"ANSWER: I'm not aware of any of those discussions."

But your testimony today is that you had discussions about this with Mr. Cloud, correct?

A. Not specific discussions of whether or not we were going to seek royalties, just that in order to garner support from the other memory manufacturers, that we would allow them to use the patents without

charge.

Q. So, you had a discussion with Mr. Cloud that you were not going to charge royalties?

A. And I'm not sure exactly to what extent that discussion was, but there was an understanding that I could go ahead and do that.

Q. And you had discussions with manufacturers about that?

A. Various manufacturers, correct.

Q. And you didn't in your deposition in answer to the question I just read, you didn't talk about either your discussions with Mr. Cloud or your discussion with manufacturers, correct?

A. No, I did not.

Q. Okay. Now, you complied with what you understood to be the JEDEC patent policy while you were a member, didn't you?

A. Yes.

Q. And in connection with the burst EDO patents, you complied, didn't you?

A. I believe so.

Q. Okay. You don't think there's anything you did during your time at JEDEC or afterwards where the burst EDO patents were not handled and disclosed in accordance with JEDEC policy. Is that right?

A. Well, I think you need to understand that at the point that I was no longer the JEDEC representative, I was on to other things, and so I didn't concern myself that much with what needed to be done at JEDEC.

Q. Well, you came back to JEDEC meetings after you finished being an official representative, didn't you?

A. Yes, one or two to do a presentation.

Q. And at one of them you gave a fairly extensive presentation on burst EDO?

A. Correct.

Q. And at that time, you were aware that anybody who attended a JEDEC meeting, whether they were the official representative or not, had an obligation to disclose whatever it was they were required to disclose.

A. True.

Q. And you didn't feel at that time that you needed to disclose any of the patents or patent applications on burst EDO that were then pending, did you?

A. Actually, at that time, I didn't know what had been disclosed. I mean, this wasn't the first discussion on burst EDO, and I did not know exactly what had or had not been disclosed to the committee.

Q. That meeting was January of 1995, right?
A. That was one of them, yes.
Q. That was the one where you gave your big presentation?
A. I don't -- there was two, January and there was one later, and I can't remember which one I presented at and which one maybe Bob Fusco might have presented the information.
Q. Well, I think Ms. Zuk showed you the January 1995 minutes of the meeting.
A. Right, I was present then.
Q. You were there in January '95?
A. Yes.
Q. You saw a presentation given by somebody from Micron?
A. Right, either myself or Bob.
Q. Okay. And then we looked just a moment ago, we looked at RX-559, remember, the May 10, 1995 patent tracking list?
A. Yes.
Q. And the one that was sent to you, Brett Williams?
A. And at that point in time, I don't know -- it was sent to my mail slot, but I'm not sure if I received this specifically and Bob picked it up or

whether I got it specifically.

Q. Well, it was sent to your fax number, right?

A. That's my -- our fax number is on it, but typically it's received in the mail.

Q. And it doesn't list any burst EDO patents, does it, from Micron?

A. No, it doesn't. No, it doesn't.

Q. Does it list burst EDO patents from anybody?

A. No.

Q. Are you sure?

A. Well, let me take a look.

Q. Why don't you take a look at the fourth page of -- the fifth page of it. Doesn't OKI list a burst DRAM -- something?

A. It is a burst DRAM, but I don't know if that's actually burst EDO.

Q. Okay. So, either you or Mr. Fusco got the patent tracking list in May of 1995, right?

A. Should have, yes.

Q. And both of you had been at a meeting in January of '95 where burst EDO was discussed, correct?

A. Correct.

Q. And both of you thought that the fact that in May of 1995, none of the Micron burst EDO patents or applications was on the list was okay, it was in

compliance with the rules, right?

A. State that again.

Q. Sure.

When the tracking list was received at Micron by either you or Mr. Fusco in May of '95, following the January of '95 meeting, either you or Mr. Fusco concluded that Micron had complied with the rules even though it hadn't disclosed any burst EDO patents or applications, correct?

A. I don't know if I could say that.

Q. Well, do you looking back today think you complied with the rules?

A. I think -- I know that there was a disclosure, and I don't know if those disclosures contained everything that needed to be disclosed or not.

Q. Well, you know there was a disclosure in April of '96.

A. Yes, I believe that's when it was.

Q. Um-hum, okay, but as of May of '95, was there any need to have disclosed any of the patents or applications as of that date as you understood the rules?

A. I'm not sure. I wasn't -- and maybe this was a mistake, but I wasn't that involved in what needed to be disclosed at that time. I wasn't regularly

attending the meetings. That was typically Bob or Terry Walther, and at that point in time, I did not actually discuss with them -- and maybe we should have -- of what actually had been disclosed and what hadn't.

Also, I am not sure at that specific time how many disclosures we had actually made -- how many patent applications or disclosures for applications had been made and where they were in the process.

Q. The -- well, as of this time, both Mr. Walther and Mr. Fusco knew you were applying for patents on burst EDO, correct?

A. I don't know if they did or not.

Q. Wasn't it well known within the company that you were seeking intellectual property on burst EDO?

A. I worked with two specific engineers and the legal department, and I don't know exactly what I had communicated to Mr. Walther and Mr. Fusco.

Q. Okay. And one of the patents, one of the burst EDO patents, has been asserted in litigation by Micron, hasn't it?

A. Not to my knowledge.

Q. Haven't they asserted the '376 patent against Mosel Vitalic?

A. I'm not aware of that.

Q. Nobody's told you that?

A. No.

Q. You're an inventor on the '376 patent, correct?

A. I'm not -- I don't track those that closely, so if I'm listed on it, I am. I'm not sure if -- what specifically those numbers refer to.

Q. If at a JEDEC meeting someone was asked about their intellectual property, they were asked do you have any or something like that and they refused to answer that question, was that something you would have considered to be a violation of the rules?

A. Yes, I would think that -- well, whether it's a violation of rules, we would ask them why they were not responding, and I think people would -- from the committee would dig into it to see if there were some -- something there that needed to be taken care of.

Q. Now, do you recall a meeting where Mr. Crisp was asked if he cared to comment, and he said no, he didn't want to comment?

A. I don't remember that specifically.

Q. And your understanding is if you -- if that event had occurred in your presence, that would have caused you to do more digging, right?

A. Maybe, maybe not. It depended on the

situation.

MR. STONE: Your Honor, were you going to take an afternoon break? Would now be convenient? I'm going to go to another demonstrative.

JUDGE McGUIRE: It's up to the parties. I'm fine right now.

Counsel, any suggestions in that regard?

MR. OLIVER: I think a break would be fine, Your Honor.

JUDGE McGUIRE: Let's go off the record. We'll break for ten minutes.

(A brief recess was taken.)

JUDGE McGUIRE: On the record.

At this time, you may proceed with your cross examination, Mr. Stone.

MR. STONE: Thank you, Your Honor.

BY MR. STONE:

Q. Could we bring up the first page of the first EDO demonstrative?

What I would like to do if we could, Mr. Williams, is put up a time line of events that relate to the first EDO standardization at JEDEC, and did you have an opportunity -- I had provided a copy of this demonstrative to complaint counsel yesterday. Had you seen it before?

A. Just briefly, yes.

Q. Well, I am going to see if -- did you look at it and see anything that was wrong with it?

A. I didn't actually look at it in detail to determine if there was anything wrong.

Q. Let me -- I'll move as quickly as I can, but if you need me to slow down, you tell me, okay?

If we can bring up the reference to the JC-42.3 meeting on September 13, 1994.

Is it consistent with your understanding, Mr. Williams, that the first JEDEC meeting at which burst EDO was discussed was September 13 of 1994?

A. I'm not sure if that's the exact first meeting, but it was I think being discussed in that time frame.

Q. Would you like me to show you the minutes from that meeting and you can confirm it?

A. I don't think from the minutes of the meeting it will say it's the first, but it will say that it's being discussed during the meeting.

Q. Okay. Well, during the application process, during the -- when you were prosecuting your patents in the patent office, one of the things you did is you disclosed to the patent office prior art, correct?

A. Yes.

Q. And one of the things you disclosed to them was

the JEDEC meetings that were prior art, correct?

A. I can't remember exactly what I disclosed to them.

Q. Okay, we will skip ahead for just a moment and see if we can clarify that point. Let's just bring up -- let me get the document number here. Let's bring up RX-730. We have a cover page of RX-730, which is a patent 5,526,320, on which you are a named inventor, correct?

A. Yes.

Q. And under the Other Publications portion -- go ahead and bring up that whole thing like you're doing. Under Other Publications, you'll see it says, "Samsung Electronics, Samsung Synchronous DRAM, March 1993, pages 1 to 16," and then it says, "OKI Electric Industries Company, Limited, Burst DRAM Function & Pinout, Second Presentation, Item 619, September 1994."

Do you see that?

A. Yes.

Q. And then if we go to the next column, pick up the top part there, and then you'll see that the first one is, "Toshiba Pipelined Burst DRAM, December 1994, JEDEC, JC-42.3, Hawaii."

Do you see that?

A. Yes.

Q. So, do those references indicate that at least for purposes of what you filed with the patent office, you thought one of the pieces of prior art was an OKI presentation in September of 1994 as shown on my demonstrative, if we can go back to it?

A. Yeah, I don't know if I gave this information or whether the patent counsel gathered that information.

Q. Okay, but somebody from Micron gathered it.

A. Somebody, yes.

Q. And it's in a patent that issued in your name, right?

A. As one of the inventors, yes.

Q. Right, okay.

And then if September '94 wasn't the first discussion, it was at least a discussion. Would you agree with that?

A. Yes.

Q. And then let's go to the next event, and was there another discussion in December of '94 which, as we saw on the patent we just looked at, was the one in Hawaii?

A. I'm sorry, the question again was?

Q. Was there another discussion of burst EDO -- I'll just hand you the cover page of that patent if it

helps you to reference it.

Was there another discussion of burst EDO at a JEDEC meeting in December of 1994, and was that the Toshiba presentation?

A. It looks like that, yes.

Q. Okay. And then the next one that you're aware of and you attended is January of 1995, correct?

A. Yes.

Q. Okay. And there was a presentation given by either you or Mr. Fusco at that one?

A. Correct.

Q. And the minutes have a copy of that entire presentation attached to them, don't they?

A. Yes, it does.

Q. Okay. And then if we go to the next event, March 15th of '95, this is the meeting where JEDEC essentially approved the burst EDO standard as you wrote in your fax to Mr. Lin, correct?

MS. ZUK: Objection, the respondent's counsel has not established that Mr. Williams was present at this meeting.

JUDGE McGUIRE: Sustained.

BY MR. STONE:

Q. Okay, let me go back.

Let me show you -- if you'd pull it out, Mr.

Williams, Exhibit RX-585.

A. The fax communication?

Q. Yes.

A. Okay.

Q. Okay. This is a document you wrote to Mr. Lin, correct?

A. Yes.

Q. And you said in the first line, "I have included the minutes from the JEDEC meetings in March (Las Vegas) and May (New Orleans)," correct?

A. Yes.

Q. And you were referring to the meeting in March of 1995 and May of 1995, right?

A. Yes.

Q. Then you say, "The March meeting minutes show the vote, the following discussion to clear up some problems and how it passed unanimously as a standard," correct?

A. Yes.

Q. So, it was your understanding when you prepared Exhibit 585 that the vote was taken at the March meeting in Las Vegas of 1995 and that it passed unanimously, correct?

A. Yes.

Q. Okay, let me go back to the demonstrative.

So, would you agree that the description on my demonstrative is correct, that JEDEC approved the Micron burst EDO proposal that had been made in January and then additional presentations were made at this meeting?

A. I'm sorry, state that again.

Q. Sure.

Look at the description on your screen.

A. Right.

Q. Just tell me if that description is an accurate summary of what occurred at the March 15, 1995 meeting.

A. I would tend to think it is, but I'd like to look at the specific meeting ballot to determine if it was the Micron burst EDO.

Q. Okay, I can at least show you the minutes from that meeting. I'll give you my set. Bring up JX-25, if you would.

A. (Document review.) So, your question again was, if you can state that?

Q. Was this the meeting at which the Micron burst EDO standard was passed?

A. And I guess my concern is with the Micron standard, and even in the fax I state that with reference to the March meeting that BEDO was voted on as a standard. Now, whose exact standard that is, I

guess that's -- that's my question.

Q. Okay.

A. Is it Micron or -- but there was a burst EDO standard.

Q. That's fair.

Let's bring back up the demonstrative. If we took the word "Micron" out and just said, "JEDEC approves burst EDO proposal," would you then agree with that description?

A. Yes.

Q. Okay, I'll make that change in the demonstrative when we're done today.

There's one more meeting I wanted to bring up, if we could. There's a May 24 meeting, and you talk about that one in your memo to Mr. Lin as well, and you say that the May meeting minutes show that on the second ballot, there was some confusion by Samsung, which was cleared up, and a new ballot was voted unanimously to be issued.

Do you see that?

A. Yes.

Q. Okay. So, do you agree with my description on the demonstrative as to what happened at the May meeting?

A. Without looking at the actual ballot, I can't

confirm that was actually the burst EDO dual CAS operation, but there was some clarification that got -- and I can't remember specifically if that was what it was.

Q. Okay. So, let me -- I'll correct the demonstrative to remove that specific reference, which is not important for these purposes, and with that, if I take that out and it will just say that a burst EDO proposal was brought out, that would be correct, wouldn't you agree?

A. Yes.

Q. Okay. Then following that -- following those events up through May, I want to now go back and look at the history of the patent applications, if we can, on burst EDO.

A. Okay.

Q. Okay? Because your best testimony today is that your disclosure of those applications and patents was consistent with what you understood the rules to be at the time, right?

A. I believe so.

Q. Okay. Let's look, if we can, at the first event on this time line. No, no, I'm sorry, the first of the next events. The next one. That was the fax we just looked at. Forward. One more. There we go.

Okay, is it correct that the first patent application that you filed for burst EDO was filed December 23 of 1994?

A. I filed some applications in that time frame. I don't know if that's the first or if that's the exact date, but yes, in that time frame.

Q. Look at the cover sheet, if you would, on the patent that I showed you earlier. Does that show you when it was filed?

A. Yes, and it's listing Paul Zager as the primary inventor, so actually Paul could have been the one filing it and I was just added to it.

Q. As a co-inventor?

A. As a co-inventor.

Q. And what's the filing date on that one?

A. That is -- this one?

Q. The filing date, not the issue date.

A. December 23rd, 1994.

Q. Okay. So, the -- and is it consistent with your recollection that that is as early as any of the applications were filed by Micron employees on burst EDO?

A. I'm not sure when that -- they first got filed, but this states that it was filed on this date.

Q. Okay. And that patent issued with what number?

A. 5,526,320.

Q. Okay. And out of that -- and that original application number was the '761 application?

A. I'm sorry, state that again.

Q. The original application number there was the '761 application? Do you see the application number?

A. I'm looking for it. Oh, yes, 370,761.

Q. About 20 patents issued from that initial application. Is that right?

A. I'm not sure how many.

Q. Is that in the ballpark of what you recall?

A. I think so.

Q. And is it consistent with your recollection that the first patent application that anyone at Micron filed on burst EDO came after the September meeting of JEDEC in 1994 and after the December meeting of JEDEC in 1994?

A. According to these dates in the demonstrative, it was filed in December, which would be after those two meetings.

Q. And according to the citations to prior art in that document, the first page of the patent, there were some JEDEC meetings that occurred before that patent was filed, correct?

A. Correct.

Q. Now, there wasn't anything in your view -- you weren't violating any JEDEC policy by filing for a patent on something that had been discussed at earlier JEDEC meetings, were you?

A. I'm not sure if what the patent covered was actually discussed at JEDEC.

Q. Okay, but the fact that the general subject of burst EDO was talked about at a meeting didn't in your mind mean that you couldn't file for a patent, did it?

A. State that again, please.

Q. Sure, I'm sorry.

Did you think you did anything improper in filing for this patent after there had been some discussion of burst EDO at a JEDEC meeting?

A. No, because there was many different types of operation of what was termed either burst EDO or pipelined nibble mode EDO, so no, I didn't think it was improper to file it.

Q. Okay. And you didn't think that -- JEDEC didn't have any rules that said you couldn't file a general subject matter that had been discussed at a JEDEC meeting before you filed, right?

A. I think -- I don't know if I gave it that much thought at this point in time since I wasn't part of JEDEC. I was just filing patents on things that we

thought we invented.

Q. And nobody ever told you in the course of applying for these patents, nobody at Micron ever told you that you were doing something improper, did they?

A. No, they didn't.

Q. Okay, let's look at the next patent, if we can. What I'm going to do is let's skip all the way ahead and fill out the demonstrative, okay, because I can put these patents in through a stipulation or in some other fashion if that speeds things up.

JUDGE McGUIRE: That would be helpful.

MR. STONE: Otherwise, I will ask you to take judicial notice.

JUDGE McGUIRE: All right.

BY MR. STONE:

Q. There's a large number of patents and applications listed on the bottom of this time line. Do you see that, Mr. Williams?

A. Yes.

Q. And is it consistent with your general recollection that that's about the number of patent applications that Micron employees filed on burst EDO?

A. I think that's pretty close.

Q. Okay. And is it consistent with your recollection that the first time anybody at Micron

notified JEDEC of any of these applications was in April of '96?

A. I know that there was a letter that was issued, and I'm not sure exactly of the -- of the exact date of that issuance.

Q. Well, let me show you that document. It's CX-364, and for some reason, Mr. Williams, there's some stuff attached to the back of this letter which may or may not go with it, but you can tell us, if you know.

Let's look at the first page of CX-364. Is this the letter you were thinking of?

A. Yes, this is the letter that Terry actually put together to issue to the JEDEC committee.

Q. And it references three patent applications, correct?

A. Yes.

Q. And it says, "In accordance with the policy, if the patent issues and the patented invention is required for use of the standard, Micron will license the patents under reasonable terms and conditions that are demonstrably free of any unfair discrimination."

Do you see that?

A. Yes.

Q. Do you know why in this letter it didn't refer to the offer you told us you made to everybody, which

was that manufacturers could have it for free?

A. I don't.

Q. Okay. And then it goes on to say, "I will provide the appropriate patent numbers if and when any of the pending applications issue."

Do you see that?

A. Yes.

Q. Now, go back to the time line, if we could. Do you know which of the applications shown on my time line that predate April 11 of '96, or the one that was filed on April 11 of '96, are the three referred to in this letter?

A. I don't.

Q. Don't know?

A. Nope.

Q. And do you know if the patent numbers were ever provided to JEDEC?

A. I don't.

Q. Okay. And so far as you know, even though the standard had been approved by JEDEC before April 11 of 1996, as you told Mr. Lin in your August of '95 memo, waiting until April of '96 to disclose these applications was as far as you understand consistent with your understanding of the rules?

A. No, I wouldn't say that. I would say that I

was not aware that they hadn't been disclosed. Terry and I did not talk regarding these. I was off doing other things, and he was off doing his stuff, and maybe that was an error. I mean, maybe I should have been more diligent in informing him of patents that we had submitted application for.

Q. Well, in May of '95 when the -- when the patent tracking list was addressed to you and you could have looked at it and seen that there weren't any burst EDO patents on it, if you had seen it and looked at it, would that have caused you to think, oh, we should disclose now, or would you have thought you were okay because you had told the manufacturers about your patents?

A. Actually, I thought that in -- actually, I didn't even think about it, but I don't know if I got that or not. At that point in time, other people were taking care of JEDEC, and I didn't know if they had disclosed or not, nor did -- was I at that point concerning myself whether or not it got disclosed. I expected other people were taking care of it.

Q. And if somebody who was at JEDEC was sort of watching the Micron representatives to see what was expected of a JEDEC member, it's true, isn't it, that what they would have seen was Micron made a disclosure

of burst EDO patent applications after the standard was approved?

A. State that again.

Q. Certainly.

If another JEDEC member was sort of watching Micron and saying, well, I want to see how the other members behave so I can see what's expected of me, if they had been watching Micron, what they would have seen was a disclosure of applications made after the standard had been approved?

A. In this point, yeah, there was a disclosure of some of the -- and maybe it was all that apply, I'm not sure which actually applied to the standard, after the standard was actually made.

Q. Okay. And they also, had they been a manufacturer of DRAM, they would have known that you had disclosed the patents earlier in meetings with the manufacturers in trying to interest them in manufacturing it and that you hadn't disclosed them at JEDEC, correct?

A. I didn't actually disclose patents. I just said that we had IP and that there wouldn't be an issue with them using that IP if they would manufacture the standard.

Q. Okay. So, a manufacturer who had been watching

who was a JEDEC member -- and most of them were, right?

A. Yes.

Q. -- they would have seen that someone who had IP, like Micron did for burst EDO, might tell them about it in a meeting, but might not disclose it at JEDEC until after the standard was developed, correct?

A. You might get that inference, and it could be that why they weren't concerned about it is that burst EDO died, it didn't become the next memory part, or maybe they weren't concerned about it because I had already talked to them about that there wasn't going to be a -- a royalty associated with it. I'm not sure why they didn't bring it up.

Q. And the first of the Micron patents to issue was June of '96, correct, which is the date of the patent that I gave you earlier?

A. Yes, this one issued in June of '96.

Q. Okay. So, once the patent issued in June of '96, if somebody had gone back and looked at that patent, they would have seen -- by just looking at the patent, they would have seen, well, Micron cited as prior art early JEDEC meetings, and Micron applied for the patent in December of '94, after some of the early meetings and before -- right before the January '95 presentation that you and Mr. Fusco attended, and the

patent issued in June of '96, and Micron made the disclosure to JEDEC in April of '96. That's the facts they would have seen.

A. Yes.

Q. And to your knowledge, nobody seeing those facts, no JEDEC member, came to Micron and said, you guys acted in a way inconsistent with the JEDEC policy, did they?

A. I'm not sure if anybody talked to Micron about that or not. Nobody talked to me about it.

Q. Okay. Nobody ever -- Mr. Walther never called you in and said, you know, I think between us or maybe it's all my fault, but it's your patents, Mr. Williams, and between us somehow, we didn't comply with the JEDEC policy. Nobody ever called you in and said anything like that?

A. He never stated that, no.

Q. Okay. And did you ever hear from anybody at JEDEC directly that they wanted to talk to you about it?

A. No.

Q. Okay. So, you've never been called on the carpet by anybody for anything to do with the burst EDO patent disclosures at JEDEC.

A. No, but maybe I should have been.

Q. And even today, after this presentation in this hearing, right up until today, nobody has ever said to you that your conduct was in violation of the JEDEC policies, have they?

A. Nobody's specifically said that, no.

Q. Okay.

A. But maybe that's because the standard was never adopted. It died shortly after in the middle of '95. I'm not sure why they didn't do that. Maybe it was irrelevant.

Q. But the standard was adopted, right?

A. It was adopted, but nobody ever made the part.

Q. One more topic. Maybe I should be -- maybe I should be more cautious and say let me switch topics as opposed to saying just one more.

Patents are very important to Micron, aren't they?

A. Yes.

Q. Last year, Micron was number three on the list of U.S. -- on the list of companies in the world in terms of the number of U.S. patents it was issued, correct?

A. I'm not sure. I haven't seen the specific statistics, but I know we issue a lot.

Q. And it's something that is talked about within

the company as it's important to do and we're proud of how well we've done in gathering intellectual property?

A. Yes.

Q. Okay. Are you aware that Micron signed a license agreement with Rambus to manufacture RDRAM?

A. I have heard of it.

Q. And you're aware that they never actually went to production with any RDRAM, correct?

A. Yes.

Q. When -- you did go to production with burst EDO, or no?

A. Not full production. We produced a few parts, but no, we never went to volume production.

Q. Did you produce those at a facility that also produces DRAM of other kinds?

A. I couldn't state specifically which fab they were produced in, whether it was a developmental fab or a full production. I don't know which fab it came out of.

Q. Were they produced at a fab that is devoted solely to burst EDO?

A. I couldn't even say that.

Q. Okay. Let me show you a document, RX-629, if we could bring that up.

Directing your attention to Exhibit 629, Mr.

Williams, did you know who Jeff Mailloux was in November of '95?

A. Yes.

Q. What was his position then?

A. I think at that time he was marketing manager.

Q. For DRAMs?

A. For -- I don't know if it was specifically all DRAMs -- all products or just DRAMs.

Q. And what position did Steve Casper have at the time?

A. I believe at that time he was a designer, may have even been a product engineer.

Q. What position did Gene Cloud have?

A. I think he was VP of marketing.

Q. And Ed Heitzeberg, what was his position?

A. I believe he was at this time vice president of QA.

Q. Now, I don't know whose name is next, and it had been at some point highlighted. Do you?

A. I can't read it.

Q. Okay, I can't either. In the left column, at this time, November of 1995, what was Tyler Lowrey's position?

A. I don't know if he was vice president of design. He was very high in the design organization or

in the process organization.

Q. And Kevin Ryan, what was his position?

A. At this time, he was in -- he might have still been in apps or strategic marketing.

Q. And when he was in apps, did he report to you?

A. Yes, and this is the time frame that I moved away from the main DRAM products and went into the motherboard arena and the startups, so --

Q. And in November of '95, were you still reporting to Gene Cloud?

A. I don't think so. I can't recall specifically when I made that transition.

Q. And Tom Trent, what was his position in November of '95?

A. He was involved in the design area somewhere.

Q. And Terry Walther, what was his position?

A. He was in applications and I believe at this time was a JEDEC rep.

Q. And do you recall whether this memorandum was shared with you?

A. No, it was not.

Q. And did anybody share with you in this time frame, November and December of '95, any abstracts or actual patents that had been issued to Rambus?

A. No.

Q. Did anybody ever discuss with you their views on any of the Rambus patents?

A. No.

Q. Let me show you what's been marked as RX-663. You're familiar with SyncLink, are you not?

A. I have heard of it.

Q. And if you look at the cover page of Exhibit 663, you'll see there's a reference to Kevin Ryan of Micron, and is that the person we talked about a moment ago who is shown on the addressee list of 629?

A. Yes.

Q. Okay. And if you turn to the second page of 663, do you see this is the -- another list of attendees that's sort of a repeat of the same one, and it shows Kevin Ryan, and then at the bottom it shows Terry Walther?

A. Yes.

Q. He's also on the first page as well, do you see?

A. Yes.

Q. If you look then right on the second page of Exhibit 663, if you look right below the attendee list in that first paragraph, you'll see in brackets where it says, "Rambus has 16 patents already with more pending. Rambus says their patents may cover our

SyncLink approach, even though their method came out of early RamLink work. Micron is particularly concerned to avoid the Rambus patents, though all of us share this concern."

Do you see that?

A. Yes.

Q. Did any -- either Mr. Walther or Mr. Ryan in the January of '96 time frame discuss with you whether -- what level of concern they or others at Micron had about Rambus' patents?

A. No.

Q. Did anyone -- and is that -- in January of '96, were you off at this other startup company?

A. Yes.

Q. And when did you come back to sort of Mother Micron, if you will?

A. Late 1999, early 2000.

Q. Okay. So, beginning right around the time -- the November time frame of Exhibit 629, you were sort of out of the loop for being involved with issues that might relate to SDRAM or DDR SDRAM until you returned. Is that right?

A. That's correct.

Q. Had Micron commenced production of SDRAM when you left?

A. I don't believe so.

Q. So, earlier today when you showed us that diagram of SDRAM, is that a product that you've ever been involved with?

A. Yes.

Q. And did you get involved with it when you came back?

A. No, we made motherboards and used -- that used SDRAM.

Q. When you were out at the startup company, you made the motherboards?

A. Right, as well as when we were doing Crucial, we sold SDRAM modules.

Q. Okay. But at that point in time, were you concerned then about the comparative benefits and performance of RDRAM and SDRAM?

A. No.

Q. Okay. So, is it a fair statement, then, or a correct statement, then, that as of November of '95 and January of '96, the extent to which Rambus had patents that covered SyncLink or other products was not something of concern to you in your job responsibilities at the time?

A. That's correct.

Q. Okay.

No further questions at this time, Your Honor.

JUDGE McGUIRE: Okay, thank you, Mr. Stone.

Does complaint counsel wish to proceed on to redirect?

MS. ZUK: Your Honor, may I have a few minutes to do a short --

JUDGE McGUIRE: Sure, let's go off the record, take a couple minutes.

(A brief recess was taken.)

JUDGE McGUIRE: Let's go back on the record, and I want to advise you, Counselor, that you are to confine the scope and your inquiries to that covered under the cross examination.

MS. ZUK: Okay.

JUDGE McGUIRE: Thank you. You may proceed.

REDIRECT EXAMINATION

BY MS. ZUK:

Q. Now, Mr. Williams, Mr. Stone showed you a lot of examples of patent tracking lists that you received from Mr. Townsend --

JUDGE McGUIRE: Ms. Zuk, I can't quite hear -- you are going to have to pull that closer to you. I'm having trouble hearing you at this time. I don't know -- perhaps it's just gotten off base a little bit there. Do you want to try again?

MS. ZUK: How about now?

JUDGE McGUIRE: That's much better. Thank you.

BY MS. ZUK:

Q. Do you remember looking at those patent tracking lists?

A. Yes.

Q. I would like to draw your attention back to an exhibit we looked at earlier today. It's JX-13.

A. Okay.

Q. And you testified earlier that you attended this -- this meeting, but perhaps first I should ask, are you familiar with this document?

A. Yes.

Q. And can you please tell us what this document is again?

A. This is minutes of the JC-42.3 committee of July of '92 in Denver, Colorado.

Q. Now, earlier today you testified that you attended this meeting in July --

A. Yes.

Q. -- 1992, and we flipped the attendance roster, and we saw that the minutes indicated that Richard Crisp attended and Dave Mooring attended on behalf of Rambus at this meeting.

Do you see those references in the attendance

roster?

A. Richard Crisp is listed as a member that is present, and Dave Mooring is listed as Others Present.

Q. If I could direct your attention to page 14 of JX-13, which is also JEDEC 14781.

A. Okay.

Q. Are you familiar with this page in the minutes of the July 1992 meeting?

A. Yes, this is a typical page that would be shown at the meeting.

Q. Can you describe what this page is?

A. This specific page is the first page of the patent tracking or patent issues or maybe this isn't the first -- yeah, actually, this looks like the first page of what Jim Townsend would put up on his presentation.

Q. Okay. And how often would Chairman Townsend use this particular page in his patent presentations that you talked about earlier today?

A. These and the subsequent pages were typically always part of his explanation of the duties of each member to -- to disclose their patents and patent applications.

Q. Okay. And I'd like to direct your attention to the paragraph, written paragraph on this page. It

reads, "Please refer to the existing rules of the EIA governing patentable matters, which follow. Following that material is a list of matters which have been brought to the attention of the JEDEC Memory Committee. In some cases, a patent number is already identified. Please examine the list and research your company's position on patents held or applied for on the items next to your company name in the 'Holder' column, and reply with the patent number, application number, or letter indicating the intent of your company to patent or not patent the subject matter."

Do you see that?

A. Yes.

Q. Did Mr. -- or did Chairman Townsend go over this material in this slide during his patent presentations?

A. Yes, he went over it quite often, at every meeting.

Q. And when he used this particular slide in his presentation, do you have -- do you have any memory of what he would explain when he used this document?

A. I can't remember the exact words he would use, except I do know that he would always stress the necessary requirement of all the members to disclose patents or patent applications as early in the JEDEC

process as possible.

Q. Okay. Now, is this -- is this a page that you -- or I'll strike that.

Could you explain for the Court the relationship between this page and some of the exhibits that respondent's counsel showed you during his examination?

A. Which exhibits?

MR. STONE: Objection, Your Honor, vague with respect to exhibits I showed the witness during my examination. I think she needs to draw the witness' attention to some specific exhibit.

JUDGE McGUIRE: Yeah, Counselor, when you say "this page," it's not clear which page you're talking to, so please cite to the proper exhibit number and/or page.

MS. ZUK: Okay.

BY MS. ZUK:

Q. Well, the page I was directing your attention to was page 114 of JX-13.

A. Okay.

Q. And my question is directed at your explanation of the relationship between -- or if any, of this page and, for example, one of the patent tracking lists that Mr. Stone showed you earlier.

A. Can you refer me to a specific exhibit?

Q. I don't have the number in front of me, but it is Bates number TAEC 0032031, and the date of the document appears to be June 8, 1992.

A. I do have several here. I don't know which one you want me to refer to in comparison. I don't seem to find the Bates. I found a Kelly.

Q. Well, I can -- may I approach the witness and --

JUDGE McGUIRE: Go ahead.

BY MS. ZUK:

Q. Here you go.

A. Great, thanks.

Q. Do you remember taking a look at that document?

A. Yes.

Q. And what is that document in front of you that respondent -- Mr. Stone used with you earlier today?

A. This is one of the patent tracking documents that was sent out prior to a meeting.

Q. And what is the date of that document?

A. This document is May 26th, '92.

Q. And Mr. Stone mentioned that Rambus wasn't one of the recipients of the patent tracking list that you have before you that's dated May 26th, 1992.

A. They are not listed on the -- the "To" area

where supposedly they were all sent to.

Q. Was there another opportunity for Rambus to look at this patent tracking -- at the same patent tracking list that you have before you?

A. Of course, at every meeting, such as the one you pointed to, it has the same verbiage and has the same patent tracking information, and that was presented at each meeting.

Q. Okay. And I'd like to direct your attention to JX-28, and I think the easiest way to do it is for you to look at your screen. I didn't use this with you earlier today.

A. Oh, okay.

MS. ZUK: And unfortunately, I don't have copies for Your Honor or --

JUDGE McGUIRE: It's on the screen, so I assume that's all right.

BY MS. ZUK:

Q. Are you familiar with this document?

A. I can't say that I am.

Q. Okay. Well, perhaps I can direct your attention to another page and see if you're familiar with that page in this document. Would you turn to page --

JUDGE McGUIRE: Well, hold on again. I'm not

clear now what you're talking about. What document number is this?

MS. ZUK: This is JX-28.

JUDGE McGUIRE: Twenty-eight, okay.

BY MS. ZUK:

Q. And if you could turn to page 12 of JX-28, are you familiar with this document, which is page 12 of JX-28?

A. I can't say specifically that I am, because in this time frame I was no longer the JEDEC rep, and even though my name is on it, I can't state that I actually received it. It could have been that it was just mailed, and even though my name is on it, Bob Fusco or Terry Walther or whoever the JEDEC rep was actually received it.

Q. Are you familiar with this kind of document?

A. This looks like the typical language that would be attached to the patent tracking document, yes, which would be mailed out prior or that would be also gone over in the JEDEC meetings.

Q. Okay. And if you could turn back to the first page of this exhibit, which is JX-28, now, the top of the page reads, "December 6th, 1995, JC-42.3 Committee on RAM Memories and Minutes of Meeting Number 77."

Do you see that?

A. Yes.

Q. Does this indicate that JX-28 is a set of minutes from the December 6th, 1995 JC-42.3 meeting?

A. Yes, it says that.

Q. Now, Mr. Stone walked you through a lot of burst EDO patents or you had a discussion about burst EDO patents, and he referred you to a document that showed an April 1996 letter from Terry Walther disclosing three patent applications on burst EDO.

Do you remember that?

A. Yes.

Q. Do you have an understanding of the circumstances surrounding the disclosure of three applications related to burst EDO in 1996?

A. I'm not sure exactly why they were disclosed, no, I don't know what precipitated that event.

Q. Well, in your discussion of the various burst EDO patents and applications that Micron either filed or had at various points in time, you said at one point that maybe you made a mistake by not -- or you indicated that maybe you made a mistake about -- by not disclosing patents and/or patent applications related to burst EDO to JEDEC.

Do you remember that?

A. I don't know if that was my specific testimony,

but I remember saying that, yeah, I could have made a mistake by not telling Terry more directly instead of relying on him to know what was going on. Maybe I should have said, hey, look, we're filing IP here, and you need to disclose it. Maybe that was the mistake I made.

Q. Okay. Did you think that under the terms of the JEDEC patent policy, as you understood it between 1991 and 1993, that perhaps you should have done something differently with respect to the patents and patent applications in 1996?

A. In retrospect, yeah, we should have done something different, I believe. I think we should have disclosed them earlier.

Q. Now, I want to get some more facts about the sequence of your involvement in burst EDO. As I understood it from your testimony earlier today, you were involved at some point at Micron in promoting burst EDO in the industry.

A. Yes.

Q. Would that be fair?

A. That's correct.

Q. And when did your activity surrounding the promotion of burst EDO begin at Micron?

A. Probably in the early '94 time frame.

Q. Okay. And did you have meetings in 1995 with DRAM customers and perhaps manufacturers about burst EDO?

A. I can't remember exactly when we had meetings, but in the '94-'95 time frame, I did have meetings with the manufacturers of DRAM to support burst EDO.

Q. And when would you say your activity in relation to promoting burst EDO in the industry stopped?

A. Either the -- probably be early '96, early to mid-'96.

Q. Okay. In late 1993 to 1994, to the best of your knowledge, did Micron ever intend to seek royalties on the burst EDO patents that list you as a co-inventor or inventor?

A. No, we did not.

Q. In the 1995 time frame, to the best of your knowledge, did Micron ever intend to seek royalties on the burst EDO patents that list you as a co-inventor or inventor?

A. No, they did not.

Q. And how about in early 1996?

A. No.

Q. Okay. Why not?

A. I think there are several reasons. First of

all, from my discussions with the manufacturers and chipset -- both the memory manufacturers and the chipset manufacturers, I'd already given them an assurance that they could use the patents, whatever those patents were, with regard to burst EDO without any royalties in order to garner their support for the standard and to produce it.

Then later, it was never produced by anybody else. Even though they had the capability on their die, they never did come to market with the product. So, it wasn't required.

Q. Now, focusing outside of DRAM manufacturers and your interaction with them, at any time up to April 1996, were you aware of any intention within Micron to enforce burst EDO patents against companies practicing to the burst EDO standard?

A. Say that again. I'm sorry, I got daydreaming for a second.

Q. At any time up until April 1996, were you aware of any intention within Micron to enforce burst EDO patents against companies practicing to a burst EDO standard?

A. No.

Q. Do you have an understanding as to why?

A. Not specifically. I think in general it's

because the standard never did come to the market. Also, the -- we stated that we wouldn't prosecute any patents against anybody who used that standard. Those are two thoughts that I have.

Q. Would it be fair to say, then, that neither you or your company, to the best of your understanding, ever had any intention of enforcing burst EDO patents against companies that -- which might choose to practice to the burst EDO standard?

A. Yes, I think that's a fair statement.

MS. ZUK: No further questions.

JUDGE McGUIRE: Thank you, Ms. Zuk.

Mr. Stone, any further recross?

MR. STONE: Briefly, Your Honor.

JUDGE McGUIRE: And again, you are under the same caution regarding the scope and inquiry.

MR. STONE: Thank you.

RECROSS EXAMINATION

BY MR. STONE:

Q. Mr. Williams, January of 1995, burst EDO presentation, you and Mr. Fusco were there, right?

A. Yes.

Q. The meeting started with a presentation of the patent tracking list the way it did at all the other meetings you attended, right?

A. Yes.

Q. Up came the patent tracking list, not a single Micron burst EDO patent was on that list that went up on the screen, was it?

A. That's correct.

Q. You knew in January of '95 that Mr. Walther, Mr. Fusco and yourself had not disclosed a single burst EDO patent to JEDEC, correct?

MS. ZUK: Objection, lacks foundation.

JUDGE McGUIRE: Overruled.

THE WITNESS: I did not know that they were disclosed or not.

BY MR. STONE:

Q. You knew when the patent tracking list came up on the screen and you had a chance to look at it that no Micron burst EDO patents were listed, were they?

A. They were not listed on the patent tracking list.

Q. And you knew from your years at JEDEC, as you tell us today you knew, that you should have disclosed patent applications, right?

A. Somebody should have disclosed.

Q. And you knew in January of '95 that nobody had, because they didn't come up on the list, right?

A. No, I don't think I could infer that they --

they hadn't been disclosed because they weren't on the list.

Q. Well, what does the list say at the very beginning? Doesn't it say this is a list of all the patents that have been disclosed to date?

A. I don't know if it has those exact words, but it says --

Q. Take a look at one of them.

A. Let me read it.

Q. It's right on the cover memo. What's it say in the first paragraph that Mr. Townsend wrote that you said came up at every one of the meetings?

A. "This is the list of matters which have been brought to the attention of the JEDEC Memory Committee."

Q. Okay. So, that was up, January of '95, this is a list of the matters that have been brought to our attention. It's followed by a list. There's no Micron burst EDO patents on that list, correct?

A. Correct.

Q. Okay. And in January of '95, with what you knew then about the JEDEC patent policy, you didn't raise your hand and say, Jim Townsend, I'm here from Micron, I'm an inventor, I have a lot of patents that have been applied for on burst EDO, and I want to make

sure they get on the list, because that's what I understand I should do. You didn't do that, did you?

A. No, I didn't.

Q. And you didn't nudge Mr. Fusco and say, hey, Bob, if you're the rep today and it's your responsibility maybe instead of mine, raise your hand, because I'm about to talk about burst EDO at this meeting, and I and some other guys at Micron have applied for a lot of patents on burst EDO. You didn't do that either, did you?

A. No, I didn't.

Q. So, if we were to look at your conduct in January of '95, we would see a man who knowing that the list didn't show any Micron burst EDO patents, didn't feel he should raise his hand and say anything about it. That's what we'd see if we looked at your conduct, wouldn't we?

A. I don't know if you could characterize it that way. I think you would -- you could characterize it that maybe I should have.

Q. Well, you didn't feel in January of '95 when you flew back to Boise, you didn't go back into Mr. Cloud's office and say, I think I goofed, I should have disclosed it in January '95, and I didn't. You didn't do that, did you?

A. No, I didn't.

Q. You didn't go back to Boise and tell Mr. Walther or Mr. Fusco, you know, probably I should have disclosed them, because I saw they weren't on the list, probably I should have disclosed them then, but next meeting, you guys do it. You didn't do that either, did you?

A. No, I didn't.

Q. The first time you've ever said in public -- the first time you've ever said, I should have disclosed those applications, was when you came here today and testified, right?

A. Yes.

Q. Okay. In your depositions in the Micron case against Rambus, you never said that.

A. I can't remember everything I said in the deposition, but you can probably show me.

Q. And in your deposition that Ms. Jeffries took of you in this case, you never said, I goofed, I should have disclosed them, did you?

A. I don't know if I was asked the specific question.

Q. The first time you've ever told a supervisor, a subordinate, a colleague at Micron that you now realize that the patent policy in effect in '95 was one that

required you to have disclosed patent applications that you didn't disclose, the first time you've ever come up with that is here today, right?

A. State the question again.

Q. The first time you've ever told any other Micron employee that you think back in January of '95 maybe you should have acted differently, the first time you've ever said that to anybody at Micron, is today.

A. I don't know if I could characterize it that I've never said that anybody, that I goofed and should have disclosed earlier, was the first time today.

Q. Well, when did you realize that the patent tracking list that you saw in January '95 didn't have any burst EDO patents on it from Micron? Didn't you realize it that day?

A. I don't think I looked at it that day.

Q. Okay. And you didn't look at the ones that I showed you earlier that were faxed to the general fax number for your group either, right?

A. I looked at those prior to those meetings, yeah.

Q. Okay. So, the one I showed you for May of '95, you looked at that one after your January meeting?

A. I'm sorry, which one did you refer to?

Q. May of 1995. I showed you the patent tracking

list sent to your attention, May of '95. Did you look at that one to see if they had picked up the applications that related to the presentation you had given in January?

A. At that point in time, I didn't know where the patents actually were, whether I knew that I did a disclosure, but I didn't know where they were in the process.

Q. You don't mean to tell me, seriously, that you didn't sign the patent applications that went to the patent office?

A. Yes, I did.

Q. Okay. You signed them under oath with a notary before they went to the patent office, right?

A. Yes.

Q. Okay. And you signed those applications well before January of '95, didn't you?

A. I believe -- yes, I believe so.

Q. Okay. Ms. Zuk showed you JX-28. Do you still have it in front of you?

A. Which one was that?

Q. That was the minutes of the meeting in December of '95. Do you remember she showed you those?

A. Oh, I think this is one I don't have a copy of. Is this --

Q. Yeah, maybe she just brought it up on the screen.

Do you remember this was the meeting in December of '95, Fairmont Hotel, Dallas, Texas?

A. Right.

Q. And then she asked you to look at a couple of pages of the document?

A. Right.

Q. Take a look at page 20, if you would. We will just bring it up on the screen.

You'll see it says Toshiba in the bottom right-hand corner.

A. Yes.

Q. And that was the company that Jim Townsend worked for?

A. Yes.

Q. And do you see that it tells you how to find patents by going to this worldwide web address?

A. Yes.

Q. And do you see what is listed on this slide as the source of the information for how to get patents?

A. Yes.

Q. What's it say?

A. It says, "R. Crisp, email, 5/23."

Q. And do you understand that R. Crisp to be a

reference to Richard Crisp?

A. I would think so.

MS. ZUK: Objection, lacks foundation.

JUDGE McGUIRE: I think at this point that's overruled.

BY MR. STONE:

Q. And did you answer? I'm sorry.

A. Yeah, I believe it does.

Q. Okay. This intent not to seek royalties for any of the burst EDO patents, you testified to that earlier, okay? Do you remember?

A. Yes.

Q. You would agree, wouldn't you, that it's not within your authority to make a decision on behalf of Micron as to whether they are going to seek royalties or not seek royalties for any particular patent?

A. In general, that's true.

Q. And one of the burst EDO patents that I put up on my demonstrative earlier is -- I'll try to get the number right here -- just give me a minute. I'm slow, but I'll get there.

It's the '376 patent, which is Distributed Write Data Drivers for Burst Access Memories, that's the name of it, and I'm going to show you that patent. Well, I thought I was.

If we could bring it up on the screen, it is RX-861.

Now, if we take a look at this patent, you'll see the title of it is Distributed Write Data Drivers for Burst Access Memories. Do you see that?

A. Yes.

Q. Just bring it up the way you had it before.

Do you see that it was filed January 30 of 1995?

A. Yes.

Q. And it was a continuation-in-part of -- a continuation-in-part of one that was filed back on December 23rd of '94 that we talked about earlier? Do you see that under Related Patent Data?

A. Yes.

Q. And this is a patent that relates to burst EDO, isn't it?

A. I'm not sure without reading it.

Q. Well, if you look under the Other Publications, do you see in the prior art it lists the Samsung Synchronous DRAM presentation from March of '93, the OKI presentation from September of '94, the Toshiba presentation from December of '94, down at the bottom, and then it -- do you see that?

A. Yes, I see those.

Q. If this is a patent that relates to burst EDO, is this one that you're testifying today Micron has no intention to enforce or seek royalties for?

A. I can't state that, because I had no involvement with this patent.

Q. Well, do you know which of the patents that I showed you earlier on my chronology are ones that you think you can testify today Micron has no intention of seeking to enforce or to seek royalties for?

MS. ZUK: Objection, mischaracterizes his testimony.

JUDGE McGUIRE: I'm sorry, I can't hear you, Ms. Zuk.

MS. ZUK: Objection, I believe respondent's counsel is mischaracterizing Mr. Williams' earlier testimony.

MR. STONE: Let me rephrase, Your Honor.

JUDGE McGUIRE: All right, go ahead.

BY MR. STONE:

Q. Mr. Williams, did you testify earlier today that Micron has no intention of seeking at this point in time to enforce certain of the burst EDO patents?

A. Yes.

Q. Okay. And which of the patents -- do you know which patents that applies to?

A. I don't.

Q. You don't know?

A. No.

Q. Who at Micron told you that a decision had been made not to enforce certain of the burst EDO patents?

A. Nobody at Micron told me.

Q. Okay. So, that's just -- do you have any basis for that understanding other than that's what you think you should do?

A. Correct. At that point in time when I was trying to get people to support the standard, other memory manufacturers to support the standard, in the late '94 time frame or '94 time frame, the work that we had done on burst EDO up to that time would not apply to whatever they were going to use in the standard.

Q. So, the fact that the patent I just showed you on the screen has been asserted -- I represent to you, it's been asserted in a lawsuit in Delaware by Micron against Mosel Vitalic -- did I say that correctly?

A. Vitalic.

Q. -- Mosel Vitalic, that's not inconsistent or is it inconsistent with your understanding of what you were authorized to say?

A. I am not aware of whether or not we've -- we have actually asserted a patent, a burst EDO patent

against them, nor whether this applies to burst EDO.

Q. And how many of the manufacturers that you met with and discussed burst EDO with participate in cross-license agreements with Micron?

A. I'm not sure how many.

Q. When you met with them and said not to worry, it would be free, did you tell them that it would be free because it would be part of an existing cross-license?

A. No.

Q. Did you tell them it would be part of a patent pool?

A. No.

Q. Did you have an understanding that it was part of a cross-license or a patent pool?

A. No.

Q. Who would know that at Micron?

A. I'm not sure exactly who that would be.

Q. Do you know if Mr. Cloud would know that?

A. I don't know.

Q. Okay. And is it your understanding that in order to give or spend money on behalf of Micron above a certain amount, you have to be at a certain level within the company?

A. Yes.

Q. And do you have a certain level of authority that you can spend on your own?

A. I did at that time.

Q. Okay. And did that authority allow you to give away for free patents?

A. Probably not.

Q. Okay.

Thank you, no further questions, Your Honor.

JUDGE McGUIRE: Okay, thank you very much, Counsel.

MR. STONE: Could I move in some exhibits, Your Honor?

JUDGE McGUIRE: Oh, yes, let's please do that.

MR. STONE: And the ones that I believe I used that I haven't moved in are the following: CX-40 --

JUDGE McGUIRE: Do you want to take them as we did, one at a time, or just have them all moved in and then we can ascertain whether there's any opposition?

MR. STONE: Could I suggest maybe this is a -- why don't I move in the ones that I'd like to move in, and then if they want to advise us of objections even in the morning or in the afternoon tomorrow, whenever we start up, we can do it that way, or what's easiest?

JUDGE McGUIRE: I would like them to do it now. Let's do it as we did earlier today and just do it one

at a time, one at a time, and then counsel can advise whether there's any objection to each individual exhibit.

All right, go ahead, Mr. Stone.

MR. STONE: CX-40.

JUDGE McGUIRE: Any objection?

MS. ZUK: There is no objection.

MR. STONE: CX-336 --

JUDGE McGUIRE: Hold it, one at a time. Entered.

(CX Exhibit Number 40 was admitted into evidence.)

MR. STONE: CX-336.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(CX Exhibit Number 336 was admitted into evidence.)

MR. STONE: CX 342.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(CX Exhibit Number 342 was admitted into evidence.)

MR. STONE: CX-364.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(CX Exhibit Number 364 was admitted into evidence.)

MR. STONE: CX-2632.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(CX Exhibit Number 2632 was admitted into evidence.)

MR. STONE: RX-559.

MS. ZUK: I'd like to ask what that -- what -- which respondent's exhibit that is.

MR. STONE: Yeah, why don't we bring them up. That was one of the patent tracking lists.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 559 was admitted into evidence.)

MR. STONE: RX-629.

MS. ZUK: If it would be possible to take a look at that.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 629 was admitted into evidence.)

MR. STONE: RX-663.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 663 was admitted into evidence.)

MR. STONE: RX-361.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 361 was admitted into evidence.)

MR. STONE: RX-356.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 356 was admitted into evidence.)

MR. STONE: RX-585.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 585 was admitted into evidence.)

MR. STONE: RX-340.

MS. ZUK: No objection.

MR. STONE: This is really complaint counsel's, but I have no objection to moving it in.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 340 was admitted into

evidence.)

MR. STONE: RX-317.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 317 was admitted into evidence.)

MR. STONE: And my last one is RX-2250.

MS. ZUK: No objection.

JUDGE McGUIRE: Entered.

(RX Exhibit Number 2250 was admitted into evidence.)

MR. STONE: Thank you, Your Honor.

JUDGE McGUIRE: Okay, very good.

All right, sir, you're excused. We do appreciate you being here today and your testimony.

Counsel, just to advise everyone again, we're going to convene the hearing tomorrow, on Tuesday, at 1:00 p.m., and let me ask complaint counsel at this time to advise me as to who you intend to call at that time.

MR. OLIVER: Yes, Your Honor, we intend to call Mr. Sam Calvin, recently retired, formerly of Intel.

If I could also just mention very briefly, following the comments on Friday afternoon, that we have been giving some further consideration to our

schedule and have been trying to work to loosen it somewhat. We have tentatively planned to leave this coming Friday free, as one of our alternate Fridays free, and I hope that shortly we will be able to give you more information about the changes in our schedule.

JUDGE McGUIRE: Okay, all right, very good.

Anything you want to add to that, Mr. Stone?

MR. STONE: I would just say that we have asked complaint counsel not to leave this Friday dark if we can avoid it at the moment, because we're concerned -- they gave us a new time estimate of how long it's going to take, and we're concerned about that, and we're really --

JUDGE McGUIRE: Well, let's leave that open for the next day or so and see how it looks, and we will be happy to take that up again should it become an issue.

MR. STONE: We appreciate it.

JUDGE McGUIRE: Hopefully the two sides can determine for themselves what's going to be in their best interests.

MR. STONE: Thank you, Your Honor.

JUDGE McGUIRE: Otherwise, we will see you on Tuesday at 1:00 p.m. We are adjourned. Thank you.

(Whereupon, at 4:30 p.m., the hearing was adjourned.)

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

DOCKET NUMBER: 9302

CASE TITLE: RAMBUS, INC.

DATE: MAY 5, 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: 5/6/03

SUSANNE BERGLING, RMR

C E R T I F I C A T I O N 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.

DIANE QUADE