UNITED STATES OF AMERICA

FEDERAL TRADE COMMISSION

In the Matter of:	)
Rambus, Inc.	) Docket No. 9302
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Wednesday, April 30, 2003

9:30 a.m.

TRIAL VOLUME 1

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: Please be seated, everyone. This hearing is now in order. At this time I will ask to call the case at bar.

MS. ARTHAUD: This evidentiary hearing is being held on April 30th, 2003, before Chief Administrative Law Judge Stephen J. McGuire on behalf of the United States Federal Trade Commission in the matter of Rambus, Inc., Docket 9302.

This proceeding is being conducted pursuant to a complaint filed by the FTC on June 18th, 2002, which alleges that respondent engaged in unfair methods of competition constituting three violations of Section 5 of the Federal Trade Commission Act.

Respondent is a public corporation organized and doing business under the laws of the State of Delaware with its principal case of business being located in Los Altos, California. Respondent filed its answer in this proceeding on July 29th, 2002.

JUDGE McGUIRE: Okay, thank you very much.

Counsel, before get started, at this time I will enter your appearance. I will start first with complaint counsel.

MR. ROYALL: Good morning, Your Honor, Sean

Royall, Deputy Director of the Bureau of Competition.

MR. OLIVER: Good morning, Your Honor, Geoffrey Oliver, Deputy Assistant Director of the Anti-Competitive Practices Division in the Bureau of Competition.

JUDGE McGUIRE: Now, for the respondent?

MR. STONE: Good morning, Your Honor, Gregory Stone of Munger, Tolles & Olson on behalf of the respondent, Rambus.

MR. PERRY: Steven Perry from Munger, Tolles & Olson for Rambus.

MR. MELAMED: Douglas Melamed from Wilmer, Cutler & Pickering on behalf of Rambus.

MR. DETRE: Peter Detre from Munger, Tolles & Olson on behalf of Rambus.

JUDGE McGUIRE: Thank you very much.

Counsel, before the start of this hearing this morning, I signed and approved the agreement between the parties that indicated the understandings that the parties had from your prehearing conference as to those items of evidence that would be entered into this proceeding.

I understand from our earlier conversations that there could still be some changes that may accrue. Does either side care to -- at this point to comment on

if there have been any changes in that regard, or if so, I understand it was going to take I think two days before we could get it all sort of organized. So, does either side want to comment on that?

MR. ROYALL: Your Honor, as we said yesterday, we expect to meet and confer soon on some remaining issues. We haven't had an opportunity to do that yet. We also need to confer on the identification of exhibits that are covered by the stipulation that's already been entered as we discussed yesterday, which we will try to do that as soon as we can.

JUDGE McGUIRE: Okay.

Do you have any comment on that, Mr. Stone?

MR. STONE: No, Your Honor, I think that correctly states where we are.

JUDGE McGUIRE: Okay, thank you very much.

I guess also one of the issues that the Court wanted to take up is included also in this agreement, is the fact that as the parties know, we have incorporated quite a few items of evidence to be accorded in camera treatment, and that was determined through prior orders issued by the Court.

I just want to take this time as well to say again to the parties it's your obligation to indicate to the Court at any time you intend to offer any in

camera evidence at the time it first comes in so I can then clear the courtroom, and we will understand at that time who has access to that information.

I also want to make clear today to the audience, both I think today and throughout the course of this hearing, that I will ask you to please turn off any pagers or anything like that. You will turn them off, put them on a quiet mode. If I hear anything go off here in this courtroom, I am going to ask you to go outside.

Are there any other items that the Court should take up at this time?

MR. STONE: Not that we're aware of, Your Honor.

MR. OLIVER: Your Honor, I just wanted to mention for your information that our opening does refer to two documents that are contained on respondent's motion for in camera treatment. We do intend to show one page from each of those documents.

In one instance, respondent has agreed that the particular page that we intend to show does not contain any information that requires in camera treatment. On the other page, we have redacted the information that they have indicated deserves in camera treatment. So, we don't anticipate any in camera problems this

morning.

JUDGE McGUIRE: Okay, thank you, Mr. Oliver.

If there aren't any other comments by the parties, at this time I'll entertain the opening argument of complaint counsel.

MR. ROYALL: Thank you, Your Honor.

On behalf of the Bureau of Competition and the other FTC attorneys who along with myself and Mr. Oliver have served as complaint counsel in this matter, it is a privilege to appear before Your Honor today to commence the administrative hearing in this highly important case. The case that we intend to present in this hearing is the same case that is outlined in the Commission's June 2002 complaint against the respondent, Rambus, Incorporated. The nature of our case is accurately summarized in the opening two paragraphs of the complaint, which I will read.

"Through this action, we challenge a pattern of anti-competitive acts and practices undertaken by Rambus over the course of the past decade, and

for the design and manufacture of a common form of digital computer memory, known as dynamic random access memory, or DRAM.

"Rambus' anti-competitive scheme involved participating in the work of an industry standard-setting organization, known as JEDEC, without making it known to JEDEC or to its members that Rambus was actively working to develop, and did in fact possess, a patent and several pending patent applications that involved specific technologies proposed for and ultimately adopted in the relevant standards. By concealing this information -- in violation of JEDEC's own operating rules and procedures -- and through other bad-faith deceptive conduct, Rambus purposefully sought to and did convey to JEDEC the materially false and misleading impression that it possessed no relevant intellectual property rights. Rambus' anti-competitive scheme further entailed perfecting its patent rights over these same technologies and then, once the standards had become widely adopted within the DRAM industry, enforcing such patents worldwide against companies manufacturing memory products in compliance with the standards."

Your Honor, these basic contentions as set forth in the Commission's unanimous complaint against

monopolization claim, requires proof of actual monopoly power. By contrast, Count II, the attempted monopolization claim, requires proof that Rambus' conduct at some point created a dangerous probability of monopolization. And Count III, the unfair methods of competition claim, requires proof of a material adverse effect on competition.

Thus, even in the unlikely event that complaint counsel could not prove that Rambus had succeeded in capturing an actual monopoly, we could still prevail on liability by showing either a dangerous probability of monopolization or material adverse effects on competition in any of the well-defined markets that we have alleged.

Of course, as is customary in an FTC administrative litigation, our proof with respect to all of these claims and all of the elements pertaining to them should be judged by a preponderance of the evidence standard. Whether we prevail on one, two or three of these counts, we will be entitled to an appropriate remedy, and in this regard, we fully expect to demonstrate through the evidence presented at trial that it is both necessary and appropriate for Your Honor to issue an injunction against Rambus in the form described in the complaint's notice of contemplated

relief.

In the time that we have available today for opening statements, Mr. Oliver and I will present a summary of what we expect the evidence in this hearing will show, and we plan to organize our presentation around five very basic questions.

What did Rambus do? Why did Rambus do it? Why was it wrong? What effect did it have? And what can and should be done about it now? I will address the first two questions. Mr. Oliver and I will each have something to say on the third. And then Mr. Oliver will finish up by addressing the last two questions.

Before turning to a detailed discussion of the evidence, I would like, however, to take a few minutes to talk about the bigger picture, and in that regard, I would like to pose one over-arching question. Why are we all here, or stated differently, why has the Federal Trade Commission committed the resources that it has to prosecuting this case against Rambus?

In our view, Your Honor, the answer to that question comes down to four things. We are here because Rambus simply refused to play by the rules. Rambus, to this day, refuses to accept responsibility for its own actions. Rambus seems determined to evade the legal consequences of its actions. And finally,

Rambus seeks to cling to a potential fortune in royalties that it acquired not through competition, but through deception.

Point one, Rambus simply refused to play by the rules. As we will demonstrate at trial, during its tenure as a member of JEDEC, Rambus had a very good appreciation of what JEDEC was all about. Rambus knew, for instance, that JEDEC was fundamentally committed to developing open standards, standards that were free to be used by anyone and that wherever possible steered clear of royalty-bearing patents.

Rambus also know that in an effort to achieve its goal of developing open standards, JEDEC required its members to disclose relevant patents and patent applications in good faith.

Furthermore, Rambus knew or had every reason to know that few things could possibly be more at odds with the purposes, rules and procedures of JEDEC than for a member company to remain silent while the organization proceeded to develop standards incorporating that company's patented or patent pending technologies, especially when the company had every intention of later enforcing its patents and collecting royalties.

Finally, Rambus knew that the only instance in

which JEDEC would possibly be willing to adopt a standard incorporating technology known to be covered by a patent or pending patent application was if the owner of the intellectual property agreed in advance to license its patents on reasonable and nondiscriminatory or so-called RAND terms.

Despite knowing all this, for over four years as a JEDEC member, Rambus consciously and deliberately concealed relevant patent applications from the organization. It also concealed at least one issued patent that was relevant to JEDEC's work. Moreover, this pattern of concealment augmented by affirmatively misleading actions and statements continued for years after Rambus left JEDEC.

While a member of JEDEC, Rambus did consider briefly whether it might be willing to make an advance commitment to licensing its patented technologies on RAND terms, but in the end, Rambus determined that such licensing commitments were contrary to its basic business model.

So instead, instead of making good faith patent disclosures to JEDEC and instead of committing in advance to reasonable license terms, what did Rambus do? The facts show very clearly what Rambus did. It waited. It allowed the memory industry to adopt

JEDEC's standards, and it then began enforcing its patents demanding substantial royalties from the manufacturers of JEDEC-compliant DRAMs and threatening to deny any license to firms that elected to challenge Rambus' patents in court.

Point two, Rambus to this day refuses to accept responsibility for its own actions. When it comes down to it, the facts of this case, certainly as they relate to what Rambus did, really are not in dispute. Indeed, because of the Infineon trial court's decision to pierce Rambus' attorney-client privilege because of evidence of fraud, we have an unusual degree of visibility into the precise nature of Rambus' conduct, as well as the underlying motivations for what Rambus did.

In defending this case, however, Rambus and its lawyers seem to want to focus their attention on anything but what the company did, as if the company's actions somehow didn't matter. For instance, clear evidence shows that during the time it was a member of JEDEC, Rambus' executives from the CEO on down firmly believed that the company had succeeded in filing patent claims that covered aspects of JEDEC's work on DRAM standards. Yet, despite holding such beliefs, the company consciously chose not to disclose this

information to JEDEC.

What does Rambus say in response to such evidence? It simply dismisses it as irrelevant. In Rambus' view, it doesn't matter what the company's executives believed, because Rambus claims it turned out after the fact that they were wrong.

As Your Honor knows, complaint counsel does take issue with Rambus' often repeated contention that no claim in any patent pending while Rambus was a member of JEDEC, in fact, covered or read on JEDEC's standards, but assuming this were right, should a company in this situation be permitted to escape any threat of antitrust liability if it turns out, after the fact, that the company's contemporaneous beliefs concerning the scope of its patent claims were mistaken, even though the same company later cured the defects in its claims and thereby secured a patent monopoly over the relevant standards?

We submit that if this were the law, it would wreak havoc not only on JEDEC, but on the broader standard-setting community, for it would invite companies to engage in precisely the sort of opportunistic conduct that Rambus engaged in here, but with impunity.

On the other hand, this issue is most

appropriately dealt with not as a legal matter, but as a factual matter, and we expect the facts to show that within JEDEC's process, a company's beliefs as to the coverage of its patents absolutely do matter; that is, when a JEDEC member company understands or believes that its patents bear upon specific aspects of JEDEC's standardization work, that knowledge on the part of the company triggers a duty to disclose.

Rambus' refusal to accept responsibility for its actions can be seen in other ways as well. From day one, it seems, Rambus' approach to this case has been to point fingers at others. At first, Rambus claimed that certain participants in JEDEC were seeking to misappropriate its intellectual property. Then the argument became that other JEDEC participants may have also violated the rules.

Later, the argument developed into a claim that the DRAM industry as a whole somehow conspired to thwart Rambus in the marketplace. And most recently, Rambus has argued that the JEDEC organization may be biased in a manner that is contrary to the public interest.

Rambus' thinking seems to be that if it can cast enough allegations against others, perhaps it can avoid dealing directly with its own misconduct.

Rambus' repeated attempts to shift the blame to others should not be condoned. This is not a lawsuit between two private parties in which the defendant is free to inject counterclaims, nor does the Federal Trade Commission through this lawsuit seek to conduct a roving inquiry into any potential type of misconduct that might possibly have affected consumer welfare in the DRAM industry or the DRAM technology marketplace over a ten-year period.

This case challenges a specific pattern of misconduct, of anti-competitive conduct, by a specific company, and it poses three narrow questions. Was that challenged conduct wrongful? Did it adversely impact the markets at issue here? And if so, what remedy should be imposed? If Rambus itself has been harmed by the alleged anti-competitive acts of others, it has every right to pursue relief, but in a proper forum. Such allegations should not be permitted to cloud the resolution of the Commission's claims in this case.

Point three, Rambus seems determined to evade the legal consequences of its conduct. One of the greatest ironies in this case is that Rambus' lawyers today vigorously deny that the company ever did anything wrong. Moreover, they seek to portray complaint counsel's legal contentions and its proposed

remedy as being boundless and legally unprecedented, yet during much of the time period in which Rambus was engaging in the very acts challenged by this case, the company's own lawyers were advising Rambus to stop what it was doing, because the legal risks were simply too great.

We expect, for instance, that Rambus' outside patent counsel, Lester Vincent, will testify at trial in this case that he advised Rambus as early as March 1992 that it should withdraw from JEDEC. Why? Very simple. Because of the risk that the company's participation in JEDEC at a time when it was simultaneously planning to assert patent rights over JEDEC's work could result in findings of equitable estoppel rendering Rambus' JEDEC-related patents unenforceable.

In May 1995, Mr. Vincent again alerted Rambus to such legal risks and to the additional risk that the company's conduct could lead to liability under the antitrust laws.

In September 1995, Rambus hired a new in-house patent lawyer, Mr. Anthony Diepenbrock. Within less than two weeks on the job, he too advised Rambus to withdraw from JEDEC. Why? Because he feared that the company's actions could be deemed misleading and that

JEDEC's members could be found to have relied to their detriment, again resulting in patents being held unenforceable.

Then came the last straw. In December 1995, when this agency, the Federal Trade Commission, publicly announced an antitrust consent order against Dell Computer Corporation challenging conduct strikingly similar to the conduct that Rambus was engaging in at that very time. In that consent order, Dell voluntarily complied with the Commission's proposed remedy, agreeing to forego any further efforts to enforce the relevant patents.

Within weeks of learning of the Dell consent order, what did Rambus do? Finally, based on emphatic legal advice, Rambus acquiesced to its lawyer's demands and agreed that it would withdraw from JEDEC and all other standards organizations.

We know, therefore, what Rambus' lawyers were telling the company at the time, but what are Rambus' lawyers saying today? Well, it would appear that Rambus' lawyers today have very different views. In their view, Rambus did nothing whatsoever that was wrong. Rambus' conduct was not misleading they claim; nor they claim did JEDEC's members rely to their detriment on anything that Rambus did or said.

Moreover, we see in Rambus' trial brief that the lawyers defending the company today reject the notion that conduct of this sort could ever result in antitrust liability. The very suggestion, they claim, is novel, unprecedented and contrary to established law.

Rambus' lawyers today also claim that there is no basis in law for enjoining the enforcement of patents in these circumstances. All of this causes one to ask, who should we believe? The lawyers defending Rambus now or the lawyers who at the time counseled the company against engaging in the same conduct challenged by this case?

In what other ways does Rambus have the appearance of a company that is determined to escape the legal consequences of its actions? One example might be that Rambus continues to try to characterize this case as something other than what it is; namely, an antitrust suit. Rambus' legal briefs are filled with references patent law, contract law, the common law of fraud, and indeed, even Constitutional law, but seldom do you see any discussion by Rambus of substantive antitrust principles.

To the extent Rambus does acknowledge that this is an antitrust case, it seeks to place the narrowest

of restrictions on complaint counsel's legal theory. In its trial brief, for instance, Rambus continues to cleave to technical procedural arguments in hopes of somehow foreclosing complaint counsel from pursuing the broader antitrust legal theories that are clearly outlined in the Commission's complaint.

Why is Rambus so intent on litigating this case as if it were anything but an antitrust suit? The reason seems fairly clear. Antitrust law, unlike patent law or contract law or the law of common law fraud does not lend itself to the kinds of narrow, highly technical arguments that have been Rambus' only refuge in prior litigation.

Your Honor's orders in this case have implicitly recognized this very distinction. Your Honor's orders have stated, in denying Rambus' motion for summary decision, that complaint counsel's antitrust allegations are far broader than whether Rambus simply had a disclosure obligation under JEDEC's patent policies.

As you know, we do allege and we fully intend to prove that Rambus' conduct did violate JEDEC's patent disclosure rules. We also allege that Rambus' conduct violated other JEDEC rules and procedures, including what JEDEC refers to as its most basic rule,

the rule that JEDEC's activities shall not be manipulated so as to result in restricting competition, giving a competitive advantage to any manufacturer or excluding competitors from the market. The theory of liability in this case, therefore, is rooted, in part, in Rambus' violations of JEDEC rules.

On the other hand, by contrast to what might be true in the context of a contract or a fraud case, liability in this case does not turn solely on proof that Rambus technically violated the rules of JEDEC. As Your Honor has noted, the ultimate issue here, insofar as Rambus' conduct is concerned, is whether Rambus engaged in a pattern of deceptive, exclusionary conduct through which it subverted JEDEC's open standards process. On the facts of this case, this ultimate standard of liability can be satisfied whether or not JEDEC's rules were technically violated.

So, then, why does Rambus seem to want to deny that this is an antitrust case? Very likely because it knows it did subvert JEDEC's open standards process. Rambus also knows that the kinds of narrow technical arguments that have served it well in other types of litigation provide no defense to such a charge.

What else suggests that Rambus is a company determined to escape the legal consequences of its

conduct? One example is Rambus' persistent attempts to relitigate issues on which it previously has litigated and lost. We all know, of course, that the Federal Circuit in the Infineon case rendered a decision favorable to Rambus on review of a common law fraud verdict. To say that Rambus places heavy reliance on that decision here would be an understatement.

Rambus' repeated references to the Federal Circuit decision again suggest that it is hoping to somehow shoehorn this antitrust case into the legal framework of a fraud suit, a framework in which Rambus apparently is much more comfortable litigating. But in reality, there is much about the Federal Circuit's Infineon decision that Rambus itself does not like.

What Rambus likes is the ultimate holding; that is, no liability for fraud. But many of the conclusions reached by the Federal Circuit en route to that holding are directly at odds with Rambus' arguments in this case.

To start with, Rambus' overall contention here, that it simply did nothing wrong, doesn't square well at all with the Federal Circuit's majority opinion which openly calls into question Rambus' business ethics. What is even more striking, however, is the fact that Rambus continues before this Court to make a

number of specific factual arguments that were expressly considered and rejected by the Federal Circuit majority as well as the dissenting judge in the Federal Circuit and also by the Infineon trial judge.

For instance, all four Infineon judges unanimously concluded that JEDEC's rules imposed mandatory disclosure duties on JEDEC members. By contrast, Rambus' claim here is that patent disclosure within JEDEC was a purely voluntary matter.

Likewise, all four Infineon judges concluded that JEDEC's members understood that the rules imposed mandatory disclosure obligations, yet Rambus claims that there was no such understanding. All four Infineon judges also concluded that the JEDEC disclosure duty extended to patent applications as well as to issued patents. Not Rambus. Rambus continued to maintain that, at most, only issued patents were subject to disclosure.

All four Infineon judges further concluded that JEDEC's disclosure rules required disclosure of all patents and applications that related to JEDEC's work. Rambus parts company with the Infineon judges here as well. Finally, the Infineon trial judge, the two-judge majority in the Federal Circuit and the one dissenting judge in the Federal Circuit, all four concluded that

Rambus itself, while participating as a member of the organization, was bound by JEDEC's disclosure rules and had a duty to comply with those rules, yet Rambus, before this Court, still maintains that it was never under any mandatory obligation to comply with any JEDEC policy or rule.

One cannot help but ask, if Rambus finds the need to make so many arguments directly at odds with the conclusions reached by the Federal Circuit, why should we trust Rambus' representation that the ultimate holding of the Federal Circuit is reliable? At a minimum, the fact that Rambus seems so intent on relitigating issues that were resolved against it by the Federal Circuit casts doubt on the merits of Rambus' defense in this case.

There is one issue, however, that Rambus will not be permitted to relitigate. It has been conclusively determined for purposes of this case that when Rambus instituted its document retention policy in 1998, it did so in part for the purpose of getting rid of documents that might be harmful in future litigation; that is, future litigation revolving around Rambus' enforcement of JEDEC-related patents.

Rambus might wish to deny that this is true, but it can't. Judge Timony ruled that having litigated

and lost on these issues before the Infineon trial court, Rambus should be barred from relitigating in this case both the fact that it destroyed very large volumes of its own business records starting in mid-1998 and the fact that its motivation for doing so related in part to getting rid of harmful evidence.

It has also been concluded for purposes of this case that Rambus' actions in this regard constituted intentional spoliation of evidence. In recognition of the seriousness of Rambus' document destruction, Judge Timony ruled that certain rebuttable inferences adverse to Rambus shall exist for the remainder of this case.

Specifically, Judge Timony ruled that the following facts, among others, will be presumed true unless or until Rambus, through rebuttal evidence, is able to prove otherwise.

First, Rambus knew or should have known from its pre-1996 participation in JEDEC that developing JEDEC standards would require the use of patents held or applied for Rambus.

Second, Rambus never disclosed to other JEDEC participants the existence of these patents.

Rambus knew that its failure to disclose the existence of these patents to other JEDEC participants could serve to equitably estop Rambus from enforcing

its patents as to other JEDEC participants.

And fourth and finally, Rambus knew or should have known from its participation in JEDEC that litigation over the enforcement of its patents was reasonably foreseeable.

The imposition of these sanctions through a pretrial order does not, of course, put an end to the issue of spoliation in this case. As Your Honor has stated, the effects of Rambus' spoliation and the extent to which further sanctions may be warranted are significant, ongoing concerns.

As Your Honor has also recognized, the massive volume of Rambus' document destruction combined with the fact that Rambus kept absolutely no inventory of the documents that were destroyed places complaint counsel in a most difficult situation.

We have already made our views on this issue quite clear. At this point, however, complaint counsel's intention is to press forward with our case based on the evidence that still exists. Moreover, we continue to maintain that notwithstanding Rambus' efforts to escape justice by systematically destroying evidence, the proof that remains is more than sufficient to establish the merits of our claims.

Point four, Rambus seeks to cling to a

potential fortune in royalties that it acquired not through competition, but through deception. Make no mistake about it, there is a great deal of money at issue in this case. In its complaint, the Commission alleges that Rambus' JEDEC-related patents could over the life of the patents potentially be worth in excess of a billion dollars in royalties. Evidence discussed in our pretrial brief suggests that this estimate, if anything, is on the low side.

In fact, according to some Rambus business documents, Rambus could stand to collect as much as $3 billion in royalties in one year alone. Whether it is a billion dollars or $30 billion dollars, we obviously are talking about very large sums of money.

The first question one might ask, then, is why are Rambus' patents worth so much? The answer to that question is really quite simple. In fact, it can be found in one of Rambus' own internal documents.

In August 1996, Richard Crisp, who was Rambus' principal representative to JEDEC, drafted this email, in which he made the following observation:

"The most valuable patents," he said, "are ones that must be used in order to be in compliance with a standard."

So, then, why are Rambus' patents so valuable?

monopoly power through illegitimate and anti-competitive acts, not reflecting competition on the merits, but rather, a deliberate effort to stifle and undermine an open competitive process.

We intend to show that Rambus today does possess a monopoly in several well-defined technology markets relating to the design of DRAM chips, but we also intend to show that Rambus acquired its monopoly not through the operation of natural market forces or through competition on the merits. It achieved its monopoly by subverting JEDEC's own standards process through conduct that amounts to deception, and it engaged in this conduct with the clear intent of limiting and excluding competition.

At this point, let me turn my attention to addressing the basic questions that I outlined earlier, starting with the first question, what did Rambus do? Given that the Commission's complaint challenges a pattern of anti-competitive conduct spanning the better part of a decade, this question does not necessarily lend itself to a short answer.

On the other hand, I have limited time, so I plan to move through the evidence fairly quickly. I also plan to go over the specific technologies that are at issue here, the manner in which JEDEC's proceedings

related to those technologies and the extent to which Rambus, while a member of JEDEC, possessed patent applications and in one instance an issued patent pertaining to such technologies; however, all of these issues will be covered in more detail by Mr. Oliver.

The starting point for understanding Rambus' conduct is roughly 1989. It was in that year that Rambus' co-founders, Mark Horowitz and Michael Farmwald, began to piece together the central ideas that led to the establishment of Rambus. What were those ideas?

Well, first of all, between them, Dr. Horowitz and Dr. Farmwald came up with a new, highly revolutionary set of ideas for designing a DRAM chip. Their ideas became known as the Rambus technology, and the same ideas were embodied in the Rambus DRAM or RDRAM design.

Another idea that was central to Horowitz's and Farmwald's thinking had to do with something called the memory bottleneck. This term referred to the fact that microprocessor chips, in effect the brains of a computer, had increased in performance capability beyond the levels of performance that were achievable through conventional DRAM memory chips. Conventional DRAMs, thus, were beginning to create a bottleneck or a

performance constraint within the standard computer system.

Rambus' founders hoped that their new revolutionary DRAM design would be able to solve the memory bottleneck by making it possible for DRAMs to function and process data at much higher speeds. Their hope was that companies that manufactured DRAMs might be willing to pay license fees and royalties to Rambus for the right to use its new revolutionary DRAM design; that is, the idea was to create a pure technology company, a company that didn't make anything, but rather, designed technologies and licensed them for a fee to others.

The third idea that appears to have been central to the thinking of Rambus' founders related to industry standards. From the very outset, Rambus' founders knew that establishing their proprietary DRAM design as a standard was the key to success. Why was it so key for Rambus to have its technology adopted as a standard? The reason, quite simply, was that the DRAM business revolved around industry standards. It was true then and it's still true today.

The earliest of Rambus' pre-incorporation business plans dating back to June 1989 makes this point repeatedly, as you can see by these statements on

the screen. "The Rambus technology has the opportunity to establish a single high-performance DRAM standard," the document states. "The DRAM market is highly sensitized to the concept of standardization." The document also states that, "The DRAM industry has a penchant for standardization."

Continuing, the document refers to the standardized cookie-cutter approach in the DRAM industry, the fact that DRAMs made by different vendors all share a common interface and the fact that new DRAM technologies generally are either adopted by everyone in the industry or by no one at all.

There is one final idea that seems to have been central to the thinking of Rambus' founders, and that is the need to secure broad patent rights covering their inventions. Rambus' founders understood that the issues of patents and standards went hand in hand. As Mike Farmwald wrote in the notes that you see here from August 1989, "Much depends on getting a standard which depends upon our patents."

Rambus might have been able to get its technology adopted as a standard, but unless the technology was patented, Rambus would have little ability to make money off of the use of its technology. Likewise, Rambus might have been able to get its

technology patented, but unless it became a standard, it was unlikely to be in high demand, and there was little hope of collecting large royalties.

Assuming, then, that Rambus would be able to secure patents over its designs in order to achieve its financial goals, Rambus' founders knew that their technology must be established as a standard. This, therefore, became Rambus' paramount business objective.

As stated in the company's very first business plan, which you see here on the screen, "Rambus must be established as a standard to effect large royalty payments."

By the way, I mentioned Rambus' founders' financial goals. What were their financial goals? Another document from the same time period makes that clear. Their goal, quite simply, was to "make a lot of money."

After it was incorporated in early 1990, Rambus continued to pursutrard,

transitioning into the company, it appears that Mr. Tate's strategic thinking for Rambus followed very much along the lines of the strategies that had been outlined by the company's founders, although Mr. Tate was perhaps more attuned to the potential risks of competition as well as to the risk of other companies seeking to work around Rambus' patents.

In the April 1990 document you see on the screen, Mr. Tate outlines some of his initial strategic thinking, and he made the following points, among others:

First, he noted that Rambus should assume that there are always ways to get around any patent. Second, he stated that Rambus should make it a high priority to avoid a contending standard from developing.

By 1991, however, it became apparent to Rambus that there already was a contending standard 7 l6umea9w.My wa

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auspices of a prominent standards organization known as J6hv(.

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employee who attended the meeting was Mr. Billy

different from JEDEC's RAS/CAS centered SDRAM design.

Rambus' documents acknowledge this fact in the clearest of terms. Thus, for instance, in an August 1992 business plan drafted eight or nine months after Rambus began attending JEDEC meetings, as you can see by the document on the screen, Rambus emphasizes that its proprietary RDRAM design is radically different from the more traditional DRAM architecture that JEDEC had chosen to use for its Synchronous DRAM standards; that is, it is radically different from the 1970s RAS/CAS DRAM interface.

In February 1992, Billy Garrett attended his second JEDEC meeting. In his trip report from that meeting, Mr. Garrett drew attention to the fact that one company, Fujitsu, had disclosed during the meeting that aspects of JEDEC's work were covered by certain of the company's pending patents. As you can see here, Mr. Garrett states, "Fujitsu indicated that they do have patents applied for, but that they will comply with the JEDEC requirements to make it a standard!!!"

Judging from the three exclamation points, it appears that Mr. Garrett considered the disclosure of patent applications to be a significant issue, and he wanted to make sure that this aspect of his report was not overlooked by his superiors back at Rambus.

Although this appears to have been the first time that a Rambus representative observed firsthand the act of another company complying with JEDEC's rules by disclosing a patent application, it would by no means be the last, but there is something else that Mr. Garrett appears to have been the first within Rambus to observe.

In the same trip report, Mr. Garrett wrote as follows:

"We could influence the voltage standard if we want, or we could use our patents to keep current-mode interfaces off of DRAMs (assuming that is what we patented...and that is what we want to do)."

Based on our review of Rambus' documents, it would appear that this is the first reported observation in Rambus that the company's patents or at this time pending patents might extend so far as to cover JEDEC's work on Synchronous DRAMs. Within no time at all, the idea of Rambus asserting patent claims against SDRAMs became a significant focus of Rambus' attention.

Less than a month after Billy Garrett wrote his February 1992 JEDEC trip report, Rambus was already consulting with its outside patent lawyer, Lester Vincent, about the company's plans to accuse others of

infringement in relation to JEDEC's SDRAM standards. How do we know that? We know that because the Infineon trial judge pierced Rambus' attorney-client privilege and forced it to turn over Mr. Vincent's notes.

You see on the screen notes from a February 25th, 1992 conference between Lester Vincent and Allen Roberts, who was Rambus' vice president of engineering. The writing may be a little bit difficult to read, but what these notes state is, "JEDEC, said need preplanning before accuse others of infringement. JEDEC committee. Standards for DRAMs. Advising JEDEC of patent applications."

And then further down the page, Vincent's notes state, "Allen," referring presumably to Allen Roberts who participated in this conference, "will get JEDEC bylaws re: patents." Thus, by late March 1992, Rambus was already planning to accuse others of infringement in connection with JEDEC's standards for DRAMs.

It also appears that Rambus by this point in time was concerned about the issue of advising JEDEC of patent applications, perhaps based on what Mr. Garrett had reported a month earlier. And as you can see, Rambus was already in the process at this point of obtaining JEDEC bylaws re: patents.

We also have Mr. Vincent's notes from a

follow-up conference held two days later, March 7th, 1992, this time held with both Allen Roberts and Richard Crisp. These notes reveal the nature of the initial legal advice Mr. Vincent gave to Rambus relating to its participation in JEDEC. As the notes clearly state, Mr. Vincent told Rambus that, "There could be an equitable estoppel problem if Rambus created the impression on JEDEC that it would not enforce its patents or patent applications."

He also told Rambus that it "cannot mislead JEDEC into thinking that Rambus will not enforce its patents." Thus, as of late March 1992, Rambus had been told by its outside patent counsel that there was a risk that through its participation in JEDEC, the company could be found to have misled JEDEC and, as a consequence, could be equitably estopped from enforcing its patents.

Was Rambus' lawyer right to be worried about the company misleading JEDEC? Well, it does seem like a logical thing to be concerned about given that the company was participating in this standard-setting organization at the same time that it was planning to accuse others of infringement in connection with that organization's standards.

We also expect that Mr. Vincent will testify at

the world.

This is evident from statements like the one you see on the screen. Mr. Crisp wrote:

"IBM really stressed the need for the parts to be pervasively used from laptop to mainframe. They cited pricing as being the driving force. If the part -- if the part wasn't pervasively used, then the price wouldn't ever get right."

The next page of the same document makes similar observations. He wrote, "Compaq, like others, stressed that price was the major concern for all of their systems. They didn't particularly seem to care if the SDRAMs had one or two banks so long as they didn't cost any more than conventional DRAMs."

Then he notes that, "Sun echoed the concerns about low cost. They really hammered on the point."

The official minutes from this same meeting make similar observations but evenjT(2 n3999 Tm s91aq, ernHe

reality was that even if the SDRAMs developed by JEDEC had significantly higher performance than the more conventional alternative DRAM devices that were already in the marketplace, they still would have difficulty succeeding in the marketplace unless the cost associated with SDRAMs were at most only a tiny fraction above the cost of conventional DRAMs.

Was it a source of concern to Richard Crisp and others within Rambus that JEDEC was so intently focused on controlling and minimizing the costs of the SDRAM devices that it was working to standardize? You bet it was. Mr. Crisp's notes from this April 1992 meeting make that very clear. For instance, look at what it says here.

"It seems unlikely that we," the "we" referring to Rambus and in particular to RDRAM, "are going to be able to do better on price than SDRAMs."

Why had Mr. Crisp come to that conclusion? Well, he says it right here.

"With RDRAM," he says, "there are license fees in need of recapture and royalties to be paid."

The other thing he mentions is Rambus' bigger die size which results in higher manufacturing costs.

Focusing on the first two points, what Mr. Crisp seems to be saying here is that SDRAMs are going

to cost less in part because they are being developed as an open standard, not subject to license fees or royalties. In other words, he was recognizing that Rambus' business model, which critically depended on charging royalties and license fees, suffered from an inherent competitive disadvantage when pitted against an open, nonproprietary standard, which is what JEDEC through its SDRAM standards was working to develop.

Based on his notes from this April 1992 meeting, it appears that there is something else that Mr. Crisp understood about JEDEC's standardization process. He understood that in the course of arriving at decisions about what technologies to include in the SDRAM standards, JEDEC members often had disagreements and often engaged in heated debates. In fact, Mr. Crisp's notes from this April 1992 meeting include several paragraphs of discussion under the heading Dissension in the JC-42 meeting.

For instance, he explains that several companies, Texas Instruments, Sun and Micron, expressed extreme frustration over the way the standard is evolving. Why? Because, as Mr. Crisp states, they wanted a simple SDRAM standard; that is, they didn't want to include a lot of fancy technical features that were unneeded and could only add to the cost of the end

confidential and if it was learned that the story came from us we would certainly be censured by JEDEC if we weren't tossed out. On the other hand," he states, "this sort of story could be very useful to us in print."

Complaint counsel is not aware whether Richard Crisp followed through with his plan of leaking this information to the press. Nevertheless, it does provide some insight into the mind of Richard Crisp and the extent to which he was willing to take actions fundamentally at odds with the interests of JEDEC in order to advance the commercial interests of the company that he worked for.

Of course, few things could be more fundamentally at odds with JEDEC's interests than for a member company to secretly go about securing patent rights over the organization's work with the intent of later enforcing such patents against manufacturers of JEDEC-compliant products, yet that is exactly the nature of the project that Richard Crisp and others within Rambus turned their attention to during this time period, roughly mid-1992.

To take one example, these are again notes drafted by Rambus' outside patent attorney, Lester Vincent, based on discussions with Rambus in this case.

The notes relate to a teleconference with Allen Roberts, who again was Rambus' vice president of engineering. The notes, again, are a little hard to read, but what they state is:

"Richard Crisp wants to add claims to the original application. Add claims to mode register, to control latency, output timing, depending upon clock cycle, check whether original application has blocks."

Notably, each one of the technical features mentioned here on which Mr. Crisp desired to add new patent claims had by this point in time been proposed for inclusion in JEDEC's SDRAM standards during JEDEC meetings attended by both Billy Garrett and Richard Crisp.

This process started in mid-1992; that is, the process by which Richard Crisp and others within Rambus, based on information gleaned from attending JEDEC meetings, would communicate to Lester Vincent the specific technical features that Rambus desired to cover through amended patent claims, but the process would continue for years after that, extending long after Rambus withdrew from JEDEC. Indeed, Your Honor, that process is still continuing today.

To avoid any possible misunderstanding, let me be very clear about something. It is not complaint

counsel's contention that the act of amending one's patent applications to cover a competitive product is in itself a wrongful act, nor do we claim that Rambus' use of information obtained from attending JEDEC meetings amounts to misappropriation or somehow renders Rambus' patents invalid.

Our claim is simply this: The rules and procedures of JEDEC do not allow companies to do what Rambus did; that is, to sit in JEDEC meetings, collect information on what technologies are to be included in JEDEC standards, expand the claims in a pending application to cover those standards, without ever disclosing to JEDEC the existence of such pending patent applications, all with an intent to secure and then later enforce patents over the products that are being standardized.

The rules of JEDEC forbid this. At a minimum, in such circumstances JEDEC's rules clearly would require that patent-related disclosures be made. Even assuming, however, that it could be shown that JEDEC's rules technically did not forbid this, it is nonetheless the case that a company that knowingly engages in such conduct and thereby secures a monopoly has fundamentally subverted the central purposes of JEDEC's open standards process and should not, as a

matter of law, be permitted to continue exercising its monopoly power. That, in a nutshell, is what we contend.

Now, returning to the 1992 time frame, it was in June 1992, slightly more than six months after Rambus joined JEDEC, that the issue of Rambus securing patent claims over JEDEC's SDRAM standards appears to have reached the highest levels of the company; namely, Rambus' CEO and the board of directors. We know this because on June 18th, 1992, Rambus' CEO, Geoffrey Tate, forwarded to the board of directors a new five-year business plan, a document that Mr. Tate was personally responsible for creating, and the same business plan was then discussed at a Rambus board meeting one week later.

This June 1992 Rambus business plan is a familiar document. Portions of it, in fact, are quoted in the Commission's complaint. The two passages from the document in particular are worthy of careful attention. The first reads as follows:

"For about two plus years a JEDEC committee has been working on the specifications for a Synchronous DRAM. No standard has yet been approved by JEDEC. Our expectation is a standard will not be reached until end of 1992 at the earliest."

On the next page, the document states, "Sync DRAMs are an incremental improvement on the 20-year-old RAS/CAS interface. The old interface is 'running out of gas' -- but all customers are familiar with it and understand it, so there will be a tendency to try the Sync DRAM approach to see if it will meet their needs rather than moving to a completely new interface (Rambus) with the need to have to do a lot of learning and re-architecting of their system/chip."

Once again, this language clearly acknowledges the fundamentally distinct nature of the designs used by Synchronous DRAM on the one hand and Rambus' proprietary RDRAM technology on the other. Note also that Rambus seems to be recognizing here that as antiquated as the SDRAM design might have been in their eyes, it was what all customers were familiar with, and hence, there was a tendency on the part of customers to try the Sync DRAM approach to see if it would meet their needs rather than moving to a completely new interface such as Rambus.

Taken together with Richard Crisp's earlier observations about the lower costs of SDRAMs, the observations made here seem to reflect Rambus' understanding that in trying to sell customers on RDRAM, it was fighting an uphill battle. SDRAMs were

manufacturers of those claims within a matter of months thereafter, during the fourth quarter of 1992.

As it turns out, Rambus chose to wait before advising Sync DRAM manufacturers of its JEDEC-related patents. In fact, for reasons that I will discuss, Rambus waited for nearly eight years after this document was written before going public with its JEDEC-related patent claims.

It is interesting to note, however, that Rambus' action plan in this time period was to tell Sync DRAM manufacturers about its patent claims almost immediately after they were filed; that is, the plan outlined here was for Rambus to disclose its pending patent applications to Sync DRAM manufacturers.

As Your Honor knows, Rambus' lawyers in this case have developed a litany of arguments for why it is unreasonable to expect any company to disclose even the existence of a pending patent application, but it would appear that in June 1992, that is exactly what Rambus' management had in mind.

Beyond the fact that it reveals the belief of Rambus' management that Synchronous DRAMs violated pending and soon to be amended Rambus patent applications, why else is this June 1992 Rambus business plan important? Well, for one thing, it marks

a somewhat dramatic shift in Rambus' business strategy.

Up until this time, Rambus' primary business strategy had been to establish RDRAM as a standard in order to effect large royalty payments, yet at this point in time, Rambus was embarking upon a secondary strategy that did not involve marketing Rambus' patented technology directly as a standard. Rather, it involved positioning Rambus through amendments to

its standards.

that point, the '327 patent, was omitted from the letter. Moreover, the letter said nothing whatsoever to inform JEDEC as to the nature or relevance of any of Rambus' various pending patent applications.

Rambus has argued that because all of the patents at issue here relate back to the '898 application filed in April 1990 and thus share the same technical description, even the disclosure of the '703 patent they claim or the public availability of Rambus' European patent application, which likewise did not relate to JEDEC's work, conveyed enough information for JEDEC to ferret out the true scope of Rambus'

applications and at least one issued patent that were relevant to JEDEC's work on SDRAM standards.

It was not just JEDEC's work that Rambus'

managed to persuade the Court that this sequencing of events meant that official work on what ultimately became the DDR SDRAM standard did not begin until after Rambus withdrew from JEDEC. Hence, the Court concluded that Rambus technically had no duty to disclose patents or patent applications related to technologies that were embodied only in the DDR standard but not in the earlier SDRAM standard, technologies such as on-chip PLL/DLL and dual edge clock.

As is apparent from the Commission's complaint in this case, we maintain that the facts show something very different. Indeed, we maintain that the work on what ultimately became known as DDR SDRAM began as early as the sp0o5d 6 li3, justy as theJC-42.3s

of directors, which must approve all JEDEC standards before they can be finalized.

Then, as you can see, Mr. Crisp's notes refer to some discussion within the same meeting of a next generation standard and future generation SDRAMs. Roughly a month later, on June 18th, 1993, Fred Ware, another Rambus engineer, wrote this email to Richard Crisp and others within Rambus.

Referring to Rambus' outside patent attorneys, he says, "I spoke with Lester Vincent and Tom Lee on the phone yesterday. The current status of the additional claims that we want to file on the original patent follows," and then there are several items. Item 1 refers to something called a writable configuration register permitting programmable CAS latency, and he explains that that patent claim is directed at SDRAMs.

But look at item number 3 just below that, which refers to DRAM with PLL clock generation. What does Mr. Ware say here? In 1993, "nus ofT9Msr. What

amendments to its patent applications.

Also note that the technology that Rambus was focusing on here, PLL clock generation on a DRAM, is a technology that was eventually adopted in the DDR SDRAM standard. Moreover, it is a technology that, as Mr. Oliver will explain, was discussed in presentations at JEDEC while Rambus was a member.

What else is there to suggest that JEDEC's work on future SDRAMs had already begun by the middle of

that is what JEDEC's DDR SDRAM standard is. It's a high-speed Synchronous DRAM interface.

If JEDEC's work on standardizing future SDRAMs began as early as the spring of 1993, why did it take JEDEC until 1999 to complete the DDR standard? There are a number of good answers to that question. One, quite frankly, is that JEDEC's process itself can at times move slowly given the fact that all participants have a right to voice their views and the goal is always to try to reach a consensus.

Another reason it took so long for JEDEC to adopt future SDRAM standards relates to the fact that the initial SDRAM standard was slow to be adopted in the marketplace, in part for the reasons I discussed earlier; that is, when SDRAM devices became available, they were slightly more expensive than conventional DRAMs, and therefore, it took a while for users to begin to switch over.

This became a significant cause for concern within JEDEC. In fact, it precipitated a movement within JEDEC to create a scaled-down version of the SDRAM standard, dubbed SDRAM-Lite. The idea was to strip away any unneeded features with the goal of trimming costs and thus making SDRAMs a more economical and hence readily accessible alternative to

conventional DRAM devices.

The SDRAM-Lite project consumed a fair bit of JEDEC's time and attention in the early to mid 1990s, which in turn interfered with JEDEC's process on future SDRAMs. However, in December 1995, just as the SDRAM-Lite project was coming to a close, what happened? We can read in Richard Crisp's notes from that meeting what happened, and in the email you see on the screen from December 1995, Crisp writes:

"The momentum is building for getting a new SDRAM standard kicked off. Kelley of IBM is saying that they need to do it right, do it to stand the test of time. He admits that the current SDRAM devices will not run over 100 megahertz. They all say it must change."

Mr. Crisp also notes the following comment by Hans Wiggers of Hewlett Packard. "HP (Wiggers) presented an appeal to the group for a plan to attack the high-speed SDRAM problem more effectively than they did last time." So, in other words, in December 1995, while Rambus was still a JEDEC member, the organization renewed its resolve to complete a standard for future high-speed SDRAMs, and Mr. Wiggers, who had been critical of the organization's earlier efforts to standardize a high-speed SDRAM interface, was appealing

to the committee to deal with the issues more effectively this time.

JEDEC's early work on future SDRAMs may have been ineffective. It may have been slow. It may have lost focus. And in December 1995, it may have needed to be kick-started again. Nevertheless, the work that was done on future SDRAMs starting in 1993 was official JEDEC work, and hence, companies like Rambus that possessed patent applications during this time period which related to that work did have a duty to disclose.

As I have explained, Rambus never disclosed to JEDEC that it possessed any issued or pending patents relevant either to JEDEC's initial SDRAM standard and the work that led to its adoption or to JEDEC's work on future high-speed SDRAMs, which later became known as DDR SDRAMs. But is it possible that despite the fact that Rambus never made such disclosures, JEDEC already knew or was effectively on notice that the SDRAM standards it was developing were likely to infringe upon Rambus' patent claims?

Record evidence answers that question, and the answer is no. Without question, there were some JEDEC members who had doubts and suspicions about Rambus patents, but what did JEDEC's members do in response to such doubts and suspicions? They did what you would

expect them to do. They confronted Rambus, and they asked for the truth. The unfortunate thing is that JEDEC's members never heard the truth from Rambus; that is, not until years later when Rambus began enforcing its patents against the makers of SDRAMs.

In May 1992, shortly after hearing an industry rumor about Rambus having patents over multi-bank DRAM design, Gordon Kelley of IBM, at the time the chairman of JEDEC's JC-42 committee, asked Richard Crisp during a meeting, during a JEDEC meeting, point blank, "Do you have anything to disclose relating to two-bank design?" Mr. Crisp's own notes indicate that he declined to comment. Others who were present to witness the episode say that Mr. Crisp shook his head no.

What Mr. Crisp clearly didn't do, however, was tell the truth; that is, he said nothing to alert JEDEC to the fact that Rambus was by this time already planning to accuse others of infringement in relation to JEDEC's SDRAM standards.

In September 1994, Mr. Crisp reported to his colleagues that a gentleman named Proebsting, who was a representative of the Korean DRAM company Hyundai, had expressed some suspicion about Rambus possibly having patent claims relating to the use of PLLs on DRAMs. Did Mr. Crisp confirm these suspicions? No. As he

told his colleagues, he had lunch with Mr. Proebsting but would not tell him anything regarding Rambus' IP portfolio.

In November 1994, after Rambus negotiated a new contract with another Korean DRAM maker, Samsung, Allen Roberts, again, the vice president of engineering of Rambus, inquired whether perhaps Rambus should explain in a letter to Samsung that Rambus considered PLL on a DRAM to be a Rambus invention. How was that idea received within Rambus? Rambus' CFO Gary Harmon wrote back telling Roberts, "Let's not rock the boat. Let's not let the cat out of the bag."

At most, Harmon suggested that Roberts might in the future want to make some vague statement to Samsung that Rambus considered these things to be part of the proprietary Rambus technology.

Of course, as I have explained, everyone in the DRAM industry understood that Rambus' proprietary RDRAM technology was radically different from the far more conventional RAS/CAS-centered wide bus architecture used in JEDEC's SDRAM standards.

In May 1995, Hyundai and other JEDEC members sponsored a presentation to JEDEC relating to yet another alternative DRAM design known as SyncLink. Unlike SDRAM, the SyncLinkther JEDmt2ncen ,itetwd, evanTj par1ir

the packetized architecture. So, again, Gordon Kelley of IBM asked Richard Crisp whether Rambus knew of any patents that may read on SyncLink.

Did Rambus know of any such patents? Sure it did. Rambus had been working to cover the SyncLink design through amended patent applications just as it had been doing with SDRAM. Did Richard Crisp tell JEDEC the truth? No. He came to the next meeting in September 1995 with a letter that provided no clear answer to the question. After he read the letter, Gordon Kelley of IBM, according to Richard Crisp's own notes, said that he heard a lot of words but did not hear anything said.

So, what did Richard Crisp do in response to that comment? He reminded the committee of the fact that he had disclosed the '703 patent two years earlier, the clear implication of that statement being that if Rambus had something to disclose, it would do so just as it had done before.

A few months earlier in June 1995, Richard Crisp had suggested to his colleagues that Rambus for strategic reasons might want to disclose to Hyundai that it had patents covering SyncLink, the thought being that this might scare Hyundai away from supporting SyncLink, making them more likely to take a

license to RDRAM.

Was Rambus' CEO Geoff Tate on board with that idea? No. Mr. Tate told Crisp in a one-on-one meeting that he did not want to advise Hyundai of that information.

In December 1995, Mr. Tate met in person with executives of another Korean company, LG, and he heard that they were working on high-speed, 200 megahertz SDRAMs, which would include features like PLLs, which Rambus believed to be covered by its patents. Did Mr. Tate tell LG that if it developed such a device, it would be at risk of infringing Rambus patents? No. All Mr. Tate said was that such devices start looking a lot like Rambus, so why not go straight to Rambus?

Mr. Tate's colleague, Subro Protani (phonetic), later congratulated him on this clever choice of words, telling Mr. Tate in an email that this was not a bad ploy.

The same pattern of deceptive conduct whereby Rambus concealed the existence of its JEDEC-related patents, either by remaining silent or at best making vague and misleading disclosures, continued long after Rambus left JEDEC.

In February 1997, Mr. Tate instructed his colleagues, "Do not tell customers/partners that we

feel DDR may infringe -- our leverage is better to wait."

In September 1997, during another meeting with the Korean firm LG, Geoff Tate inquired why it was that LG seemed to prefer DDR over RDRAM. The LG executive responded that it was because he expected DDR to be a "royalty-free, open JEDEC standard." Did Mr. Tate correct this misimpression by pointing out that Rambus would be seeking to collect royalties on DDR? No, he said nothing of the sort.

In January 1998, Geoff Tate noted to his colleagues that DDR infringes our patents, and he posed the question, "Do we start saying this publicly?" But Joel Karp, Rambus' new vice president of intellectual property, cautioned against this, noting that the best strategy for maximizing Rambus' DDR royalties was to approach companies individually and without publicity.

Finally, even as late as December 1999, after Rambus had already commenced with efforts to enforce its JEDEC-related patents, Rambus' CEO Geoffrey Tate was still admonishing his team that it was "important not to indicate/hint/wink/et cetera" that DDR SDRAM infringed Rambus' patents.

It appears that the only company with which Rambus was at all forthcoming about its JEDEC-related

patents was Intel. In the latter part of 1997, in an effort to dissuade Intel from supporting JEDEC's standards, Rambus apparently did in private discussions covered by nondisclosure agreements raise the spectre of potential patent infringement suits, but Rambus also made it perfectly clear to Intel that it had chosen to that time to withhold that information about its JEDEC-related patents from DRAM makers and that it hoped to continue withholding or concealing that information.

Could Intel have gone to JEDEC at this point in time and reported the existence of Rambus' patents? Had it done so, there is every reason to suspect that it would have been sued by Rambus for breaching their mutual nondisclosure agreement, and there is certainly evidence in the record to show that Rambus took such agreements very seriously. In fact, in this very same time period, Geoff Tate sent an email to his colleagues reminding them that Rambus' business partners are obligated by contract to keep our confidential information secret and thus cannot disclose it to third parties, specifically including standard-setting organizations like JEDEC.

What does all this evidence show? It shows that Rambus not only tried to conceal its JEDEC-related

patents from the DRAM industry, but in fact was successful in doing so until the very end. It also demonstrates the core allegation in the Commission's complaint, that Rambus engaged in a pattern of bad-faith deceptive conduct through which it purposefully sought to and did convey the materially false and misleading impression that it possessed no intellectual property rights that were relevant to JEDEC's standards.

I have now explained what Rambus did in as much detail as time will allow. What about the next question, why did Rambus do it? Well, I believe that I have substantially answered that question as well. Rambus from the outset knew that the only way for it to make a lot of money in the DRAM technology business was to have its patented technology established as a standard. Had RDRAM not faced such formidable competition from JEDEC's open standards, Rambus might have been able to achieve this goal on its own, but the fact is that JEDEC's SDRAM standards provided the DRAM marketplace with exactly what it desired, low-cost, incremental additions to the earlier generation of conventional DRAMs.

For a period of time in the late 1990s, RDRAM's chances of marketplace success were substantially

increased through the public endorsement of Intel, but as we have explained in our pretrial brief, by 1999, if not earlier, Intel had grown weary of RDRAM and began to signal that it would for the first time support the JEDEC SDRAM standards, and in particular, the DDR SDRAM standard. This very clearly is what triggered Rambus' decision to play its JEDEC IP card by enforcing the -- and ultimately going public with its strategic portfolio of JEDEC-related patents.

In the course of enforcing its JEDEC-related patents, what did Rambus seek to do? It followed the very same strategy that had been outlined by Geoff Tate himself a few years earlier. As spelled out in these notes you see on the screen taken by Joel Karp during a one-on-one meeting with Mr. Tate in October 1998, that strategy was to make the SDRAM royalties dependent on RDRAM with the idea of preventing a new competitive device.

As Mr. Tate himself had written a year earlier, the only acceptable deal was one providing for a royalty on DDR greater than the royalty on Rambus DRAMs. So, again, why did Rambus do what it did? In large part it appears Rambus was motivated by the goal of preventing or, at a minimum, limiting competition from a competing DRAM standard.

Of course, as the strategy played out in the end, the very act through which Rambus sought to restrict competition, that is, enforcement of its JEDEC-related patents, has positioned Rambus to collect literally billions of dollars in royalties.

In what little time I have left, let me begin to answer the third basic question, why was Rambus' conduct wrong? The starting point for that analysis is JEDEC's own purposes and rules. The analysis does not start, however, with JEDEC's patent disclosure rules. Those rules serve a very important function within JEDEC, and indeed, Rambus did violate JEDEC's disclosure rules as Mr. Oliver will explain, but JEDEC's disclosure rules are only part of a broader collection of JEDEC rules and procedures that serve to facilitate a much more fundamental purpose that pervades all JEDEC does.

What is that purpose? Well, Richard Crisp articulated it well when he said in this document that you see on the screen, a document drafted in August 1996, "The job of JEDEC is to create standards which steer clear of patents which must be used to be in compliance with the standard whenever possible." JEDEC's rules themselves contain similar language referring to avoiding requirements that call for the

exclusive use of a patented item or process.

So, in other words, JEDEC's core purpose, as

patent applications with the strategic objective of blocking or gaining control over a competitive product, but the fact is that Rambus did join JEDEC, and having done so, Rambus' conduct must be scrutinized through the lens of JEDEC's own governing rules and principles.

Is there anything novel or unprecedented about a theory of antitrust liability predicated on the subversion of an open standards process? No, there most certainly is not. The Allied Tube decision which we have discussed in our briefs provide direct, indeed compelling support for this theory, and we have, of course, cited Your Honor to many additional supporting authorities as well.

Even independent of the supporting case law, however, the fact is that nothing could be more in accord with the central principles of the antitrust laws than to condemn the very sort of exclusionary conduct that is on display in this case.

As I stated earlier, antitrust law is not implicated when a company, through superior skill, foresight, innovation or even historical accident, has the status of monopolist thrust upon it by natural market forces. Antitrust law most assuredly is implicated, however, when a company obtains monopoly power through illegitimate and anti-competitive acts,

not reflecting competition on the merits, but rather, a deliberate effort to stifle and undermine an open competitive process. We intend to show that this is exactly the route that Rambus has traveled in arriving at the monopoly perch upon which it sits today.

Your Honor, that concludes my presentation. At this time, I will surrender the podium to Mr. Oliver, who will complete complaint counsel's opening statement. Thank you.

JUDGE McGUIRE: Okay, thank you, Mr. Royall.

Mr. Oliver, you may begin your presentation.

MR. OLIVER: Good morning, Your Honor. Let me continue with our explanation of why Rambus' conduct was wrong.

As explained in our pretrial brief and as explained by Mr. Royall, monopolization in violation of antitrust laws does not require finding that Rambus violated the technical rules of JEDEC, but the evidence will show that Rambus did, in fact, violate the rules of JEDEC. Thus, even if Your Honor were to find that Rambus could not have violated the antitrust laws unless it violated the technical disclosure rules of JEDEC, the evidence will show that it did so.

We have summarized the evidence regarding JEDEC's specific disclosure obligations in our pretrial

brief, but let me just place Section 9.3.1 of the JEDEC manual on the screen, as well as in a moment on the easel, to remind us of the specific disclosure obligation. It refers to the obligation of all participants to inform the meeting of any knowledge they may have of any patents, or pending patents, that might be involved in the work they are undertaking.

To fully appreciate the evidence that you'll hear during the course of this trial, I will walk through a few of the specific events that you will hear about, and later a chronology of key events of JEDEC and the corresponding actions taken by Rambus in secret, either on its own or with its patent lawyer, Lester Vincent.

I will start with the events relating to the technologies incorporated in both the SDRAM and the DDR SDRAM standards; namely, programmable CAS latency and programmable burst length.

JUDGE McGUIRE: Okay, Mr. Oliver, can I ask you -- I am having some trouble hearing you. May I ask you just to get closer there to your microphone if you don't mind? Thank you.

MR. OLIVER: Is this better, Your Honor?

JUDGE McGUIRE: Yeah, that's better, thank you.

MR. OLIVER: Next, I will lay out separate

concepts relating to the technology incorporated in only the DDR SDRAM standard. First, on-chip PLL/DLL and then dual edge clock. Your Honor, for purposes of this discussion, I will not try to explain these four technologies. There will be many witnesses at trial far better qualified than I am to explain them to you.

In the meantime, I hope I can explain the chronology of the relevant events clearly in the absence of an explanation of the technologies, but if you have any questions, Your Honor, please do not hesitate to interrupt me.

Rambus' participation in events relating to programmable CAS latency and burst length started immediately with the very first JEDEC meeting that it attended. At the December 1991 meeting of the JEDEC JC-42.3 subcommittee, Howard Sussman, who you will hear from during the course of trial, presented the results of an interim meeting held in Portland, Oregon. That consensus concluded, number 2, "The latency of data to the clock should be programmable." Number 5, "Wrap length should be programmable."

We expect witnesses to testify that this described programmable CAS latency and programmable burst length as described in our complaint.

Billy Garrett, a Rambus employee, attended that

JC-42.3 meeting on behalf of Rambus. He reported the results back to everyone at Rambus in an email. He wrote, number 2, "Latency should be Programmable." And number 5, "Burst sequence and wrap length should be programmable."

Your Honor, I would like to place this on a time line. What I have done is I've laid out the time line, and across the bottom, I have also indicated the pendency of Rambus' family of '898 patent applications and patents, and as we go, I will add relevant events to this time line.

At the very next JC-42.3 meeting, in February 1992, also attended by Billy Garrett of Rambus, NEC made a more detailed presentation of how programmable CAS latency and wrap length can be implemented. Again, we expect a number of witnesses to testify that this presentation represented an implementation of the concepts of programmable CAS latency and burst length.

Let me add this presentation to the time line.

Less than one month later, Rambus vice president Allen Roberts called outside patent counsel Lester Vincent to set up a meeting. According to Lester Vincent's notes of the conversation, Allen Roberts said, "need preplanning before accuse others of

Now, let me place this conversation with Lester Vincent on our time line.

At the next JC-42.3 subcommittee meeting held in May 1992, a number of companies proposed variations on the concepts of programmable CAS latency and burst length. We expect witnesses to testify that this Samsung proposal on your screen was close to the implementation of programmable CAS latency and burst length that was later adopted by JEDEC. Witnesses will also testify that at this meeting, the JC-42.3 subcommittee decided to issue ballots to vote on whether to include these technologies in the SDRAM standard. Now, Richard Crisp attended that meeting on behalf of JEDEC.

Again, I'll add that presentation and decision to vote to our time line.

That very same month, Rambus vice president Allen Roberts met with outside counsel Lester Vincent. According to Lester Vincent's notes, Allen Roberts said Richard Crisp, the Rambus individual who was at the JEDEC meeting, "Richard Crisp wants to add claims to original application. Add claims to mode register, to control latency. Check whether original application has blocks."

Again, I'll place this meeting with Lester

Vincent underneath our time line.

At the next JEDEC meeting held in July 1992, the JC-42.3 subcommittee tabulated the votes on the register ballot, which included programmable CAS latency and programmable burst length. The minutes show that Richard Crisp cast a vote on behalf of Rambus. He voted against the proposal. The minutes reflect and witnesses will testify that following discussion of the no votes, including discussion of the Rambus vote, there was a clear consensus in favor of including programmable CAS latency and burst length in the SDRAM standard.

We also expect the evidence will show that Rambus vice president David Mooring also attended part of that meeting.

Let me add that meeting to our time line.

Shortly thereafter in September 1992, Richard Crisp met again with Lester Vincent to discuss the claims he wanted to add to Rambus' pending patent applications. Lester Vincent's notes from that meeting read, "What to include in divisional application." Number 2, "DRAM, programmable latency via control reg," control register. Two lines down from that, "So cause problem with Sync DRAM and DRAM."

Let me add the meeting with Lester Vincent

underneath our time line.

The following month, in October 1992, Richard Crisp gave a presentation to the full Rambus board of directors at an official board of directors meeting. The records state, "Mr. Crisp reported on the SDRAM status at JEDEC, the Rambus patent strategy and system level difficulties with SDRAMs."

To make this clear, Richard Crisp, the individual who was attending and participating in JEDEC, while JEDEC was developing a standard for SDRAMs, and who at the same time was working with Rambus' outside counsel to add claims to Rambus' pending patent applications, was now giving a presentation to the full Rambus board of directors regarding the SDRAM status at JEDEC and the Rambus patent strategy.

I'll add that board of directors meeting to our time line.

The evidence will show that in early 1993, a Rambus engineer by the name of Fred Ware took over responsibility for working with Lester Vincent to ensure that the appropriate claims were added to Rambus' pending patent applications. An exchange of emails between Fred Ware and Richard Crisp documents that one of the claims under consideration was DRAM

with programmable CAS latency.

I'll add this email to our time line.

The evidence will show that the final ballots for the SDRAM standard were approved by the JC-42.3 subcommittee in March 1993 and forwarded to the JEDEC Council for approval. Billy Garrett attended that meeting on behalf of Rambus.

I'll add that JC-42.3 subcommittee meeting to our time line.

In May 1993, Lester Vincent filed a preliminary amendment to Rambus' pending '651 application. The evidence will show that this amendment added several new claims relating to programmable CAS latency.

Let me add the amendment to the '651 application to our time line.

related to the concept of programmable CAS latency and that this amendment was intended to cover programmable CAS latency when used in DRAMs generally, including SDRAMs that were the subject of JEDEC work.

Now, Rambus argues that Lester Vincent inadvertently included language that served to limit this application to only the existing architecture, but we expect the evidence to show that Rambus executives and employees nevertheless believed that this '651 application covered the concept of programmable CAS

with Geoff Tate and Allen Roberts indicate that they discussed enforcement, Sync DRAMs, and the second item listed underneath that was config registers, in other words, configurable registers for programmable latency.

Let me add this meeting involving Rambus executive officers and outside patent counsel Lester Vincent to our time line.

Now, in the first h V2ee cand P0Dr86Sf/LDRAM standard was published and P0Dr8Rambus filed its '651 application with 6Sf/Patent & Trademark Office, programmable CAS latency and burst length receded somewhat into background for some periodV2eetime. JEDEC was working on other things, and Rambus believed that it h d P pending patent application with claims covering 6Sf/technologies in the LDRAM standard.

In mid- cand however, Allen Roberts revisited the issue of programmable CAS latency with Lester Vincent, and in Januarye ca5, Mr. Vincent filed on beh V2eeRambus a further preliminaryeamendment, this time to Rambus' pending '961 application. The preliminaryeamendment added claims relating to programmable CAS latency and programmable burst length.

We expect our technical expert, Professor Bruce Jacob, and our patent expert, Mark Nussbaum, a former patent examiner at the/Patent & Trademark Office, to

testify that this time Lester Vincent got it right. The amendment added claims that if granted could cover use of programmable CAS latency and programmable burst length as defined in JEDEC's SDRAM standard.

I'll add the amendment to Rambus' '961 patent application to our time line.

Now, throughout 1995, there were a number of proposals to change the way that programmable CAS latency and burst length were implemented in the SDRAM standard. For example, in March 1995, Texas Instruments presented a proposal to change the SDRAM programming. "SDRAM latency 1 made optional to reduce test cost."

We expect witnesses to testify that during this time, there were other proposals involving possible changes to programmable CAS latency and burst length as well. Indeed, some companies had second thoughts about the initial decision to use programmable CAS latency and burst length and were pushing instead for so-called SDRAM-Lite standard, but that using fixed CAS latency and burst length would be simpler and less expensive.

I'll add the Texas Instruments presentation to my time line.

At the next JEDEC meeting in May 1995, three companies presented a proposal known as SyncLink at

JEDEC. Richard Crisp's emails from that meeting indicate, as explained by Mr. Royall, that Gordon Kelley, the chairman of the JC-42.3 subcommittee, asked Richard Crisp to state whether Rambus knew of any patents that may read on the SyncLink proposal. Richard Crisp wrote in his internal email back to Rambus executives and employees, "As far as intellectual property issues go, here are a few ideas." Number 4, "DRAM with programmable access latency." The evidence will show that Rambus did not inform JEDEC of this.

I'll add this underneath our time line.

One month later, Lester Vincent's law firm filed on behalf of a Rambus a further preliminary amendment, this time to the '490 patent application to replace the claims that he had filed in January 1995. Again, we expect our technical expert, Professor Bruce Jacob, and our patent expert, Mark Nussbaum, to testify that the amendment added claims that, if granted, could cover use of programmable CAS latency as defined in JEDEC's SDRAM standard.

I'll add the amendment to the '490 application to our time line.

We expect the evidence to show that during the course of 1995, JEDEC also began to devote more and

more time to defining the next generation standard to succeed the SDRAM standard. JEDEC minutes show that in September 1995, JEDEC decided to issue a survey ballot to determine whether the members wanted to include certain features in the next generation standard.

The results were tabulated at the December 1995 meeting. The results indicated strong support for carrying programmable CAS latency and burst length over into the next generation standard. The minutes read, "Issues with strong support (greater than 2/3). Standardize CAS latencies, greater than 4, but make them optional."

I'll add the results of the survey ballot to our time line.

Not long thereafter, serious work began on refining programmable CAS latency and burst length for the next generation standard. In March 1996, for example, this presentation on SGRAM next generation register configuration proposed to carry over into the next generation standard programmable CAS latency.

I'll add this presentation to our time line.

Now, as you have heard, Rambus withdrew from JEDEC in June of 1996. Work continued within JEDEC, however, on refining programmable CAS latency and burst length to operate successfully within the computer

clock. When the SDRAM standard was adopted in 1998 and published in 1999, the new standard incorporated both programmable CAS latency and programmable burst length in very similar format to that in the SDRAM standard.

The evidence will show that throughout this entire time, while Rambus was attending JEDEC meetings and observing proposals to use programmable CAS latency and burst length, while Rambus was watching the actual adoption of these technologies and while Rambus was working with patent lawyer Lester Vincent to draft patent claims to cover these technologies, while certain of these claims were actually pending before the Patent & Trademark Office, and while Rambus was internally discussing plans to enforce these claims, Rambus never informed JEDEC of any of this.

Let's turn next to the technology known as on-chip PLL/DLL. In September 1992, as we've previously noted, Richard Crisp met with Lester Vincent to discuss claims that he wanted to add to Rambus' pending patent applications. At this meeting, Mr. Crisp also discussed with Mr. Vincent adding claims to cover use of on-chip PLL and DLL.

As Mr. Vincent's notes reflect, "What to include in divisional applications," and under number 4, "Using phase lock loops on DRAM to control delays

inside and outside DRAM."

I'll add these notes regarding on-chip PLL/DLL to our time line.

As we discussed earlier, in early 1993, engineer Fred Ware took over from Richard Crisp the

Let's add this presentation to our time line.

Now, Richard Crisp immediately recognized the significance of this presentation. That same afternoon, he sent an email to executives and others at Rambus. "JEDEC number 3," all caps, "NEC proposes PLL SDRAM!!!!," four exclamation points. Also in that email, six stars, "The big news here is the inclusion of a PLL enable mode option," more stars. Further down in the email, four stars, "The PLL mode," five stars,

certain we can win first."

Let's add this exchange of email correspondence underneath our time line.

One month later, in October 1994, the issue arose again in the context of license negotiations between Rambus and Samsung. Rambus was considering whether to accept Samsung's demands to use Rambus technology in non-RDRAM applications that might have the effect of having Rambus suing Samsung for using PLLs on SDRAMs.

Vice president Allen Roberts wrote to CEO Geoff

2 19et's add this exchange of email correspe

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ongoing work towards the next generation SDRAM standard, the JC-42.3 subcommittee decided it was time to issue a survey ballot to determine what features the membership wanted to include in the future standard.

That survey ballot was issued in October of 1995. The survey ballot included a critical question. "Does your company believe that an on-chip PLL or DLL is important to reduce the access time from the clock for future generations of SDRAMs?" The evidence indicates that this survey ballot was received by and circulated within Rambus.

I'll add this survey ballot to our time line.

One month after JEDEC decided to issue the survey ballot and in the same month in which the survey ballot was, in fact, distributed, Lester Vincent's billing records indicate that Rambus in-house counsel Tony Diepenbrock met with Lester Vincent regarding the status of Rambus' patent application covering on-chip PLL/DLLs.

I'll add that meeting to our time line.

Later that same month, on October 23rd, 1995, Lester Vincent filed on behalf of Rambus an amendment to its pending '692 application. Lester Vincent proposed specific amendments to the pending claims covering use of on-chip PLL.

Lester Vincent's notes of that meeting read, "Get variety of claims. Try to get broad and narrow claims. Say DLL on clock receiving circuit."

I'll add that meeting to our time line.

Two weeks later, in February 1996, Tony Diepenbrock met with Lester Vincent again and again talked about adding claims to Rambus' pending patent applications to cover use of on-chip PLL/DLL.

Let me add that meeting to our time line as well.

At the next regularly scheduled JEDEC meeting in March 1996, in a presentation focused on the future SDRAM standard, Mr. Desi Rhoden of VLSI, who you will hear from at trial shortly, proposed possibly using on-chip PLL or DLL for SDRAMs operating at 150 megahertz and definitely including them at speeds of 200 megahertz and higher.

I'll add this presentation to our time line.

At the next JEDEC meeting held in June 1996, there was another presentation proposing to adjust various latency values when on-chip DLL was used.

I'll add this JEDEC presentation to our time line as well.

We expect the evidence to show that at no point in time while this work was in progress at JEDEC did

Rambus disclose to JEDEC the existence of its '692 patent application or the fact that it was continuing to work with outside patent counsel to add yet more claims covering on-chip PLL/DLL to its pending patent applications.

Rambus withdrew from JEDEC in June 1996. Thereafter, the JC-42.3 subcommittee continued to work on the next generation standard, including on-chip PLL/DLL technology.

In 1998, the JC-42.3 subcommittee approved the next generation SDRAM standard, which became known as the DDR SDRAM standard. That standard incorporated on-chip DLL technology.

Finally, Your Honor, let's turn to dual edge clock technology. As with the technologies incorporated in the SDRAM standard, Rambus' experiences with the dual edge clock technology at JEDEC began with the very first JEDEC meeting that Rambus attended.

At the December 1991 JC-42.3 meeting which Billy Garrett attended on behalf of Rambus, Mr. Mark Kellogg of IBM, who we expect you will hear from at trial, made a presentation of IBM's so-called toggle mode technology. We expect Mr. Kellogg and Mr. Gordon Kelley of IBM, as well as other witnesses, to testify that toggle mode, as presented and proposed by IBM, was

virtually the same technology as dual edge clock technology.

I will add the IBM presentation of toggle mode technology to our dual edge clock time line.

At the April 1992 JEDEC task group meeting, which Richard Crisp attended on behalf of Rambus, William Hardell of IBM proposed using dual edge clock technology. Within his presentation, the second bullet point reads, "Dual edge clock."

I'll add IBM's presentation of dual edge clock technology to our time line.

At that April 1992 meeting, Richard Crisp noted the presentation and reported back to executives and staff at Rambus. "The IBM folks," then picking up a couple lines further down, "had a proposal for what was basically an asynchronous DRAM with a dual edge triggered output register."

I will add Mr. Crisp's email to Rambus executives and staff to our time line.

Now, we expect that you will hear from witnesses that JEDEC decided not to use dual edge clock technology in connection with the SDRAM standard, but rather, decided to postpone it and reconsider the issue when they took up the next generation standard.

As a result, the dual edge clock technology lay

dormant for some period of time.

In May 1994, however, Allen Roberts wrote to Lester Vincent with a number of additional ideas for claims that he wanted to be added to Rambus' pending patent applications. As Mr. Roberts explained, Rambus stated, they "feel we can enhance our claim coverage." The first item on Allen Roberts' list was, "Use of both edges of the clock for transmission of address, commands, or data (or any combination) on DRAM device to increase effective bandwidth/pin."

I'll add this letter to our time line.

In the summer of 1994, Lester Vincent was working on drafting claims to cover dual edge clock technology. Although we don't have a full record of communications between Rambus representatives and Mr. Vincent regarding the origin of this work, it appears that Rambus intended the claims to be directed at SDRAMs and other non-RDRAM architectures.

In August 1994, Rambus vice president Allen Roberts circulated Lester Vincent's draft amendment internally within Rambus. Allen Roberts' cover note read, "This is Lester's attempt to work the claims for the MOST/SDRAM defense."

I'll add this communication regarding dual edge clock claims to our time line.

The following month in September of 1994, Lester Vincent filed the preliminary amendment with the

standard, the JC-42.3 subcommittee decided it was time to issue a survey ballot to determine what features the membership wanted to include in the next generation standard. That survey ballot was issued in October 1995. The survey ballot included the question, "Does your company believe that future generations of SDRAMs could benefit from using BOTH edges of the clock for sampling inputs?" Again, the evidence indicates that this survey ballot was received by and circulated within Rambus.

I'll add this survey ballot to our time line.

Also in October 1995, the Patent & Trademark Office issued Rambus a notice of allowability, informing Rambus that claims 152 through 159 and 161 to 181 of the pending '646 application would be allowed and would issue the patent subject only to provision of formal drawings and payment of additional fees.

In other words, in October 1995, Rambus received confirmation from the Patent & Trademark Office that its pending claims covering use of dual edge clock technology had been approved and would issue as a patent.

I'll add the notice of allowability to our time line.

In December 1995, Richard Crisp attended the

42.3 subcommittee meeting at which the results of the October 1995 survey ballot were announced. The announced results included issues of mixed support, and the fourth bullet point, "Using both edges of the clock for sampling inputs."

Let's add this survey ballot to our time line.

At the next regularly scheduled JEDEC meeting held in March 1996, a number of presentations that focused on the future SDRAM standard. One of the most comprehensive presentations from Samsung proposed using dual edge clock technology. It can be seen at bullet points 4 and 6.

I'll add this presentation including a dual edge clock to our time line.

The next month, in April 1996, Rambus' pending '646 application formally issued as U.S. patent number 5,593,327, so-called '327 patent that you've heard about. We expect Professor Jacob and Mr. Nussbaum to testify that the claims in the issued '327 patent related to the use of both rising and falling edges of the clock signal to receive data.

I'll add the issued '327 patent to our time line.

On June 17, 1996, the very same day that Rambus sent its withdrawal letter to JEDEC, Rambus in-house

counsel Tony Diepenbrock asked Lester Vincent to evaluate Rambus' newly issued '327 patent to determine whether it was ready to be enforced against an alleged infringer.

Tony Diepenbrock wrote, "We would like your firm to give a legal opinion on the enforcement readiness of this patent. We would also like your firm's opinion regarding whether this patent would be infringed, literally or otherwise, if a device were constructed according to the information sent to you on June 14th."

I'll add this communication with Lester Vincent to our time line.

clock technology in the next generation standard which was ultimately published as a DDR SDRAM standard.

We expect Richard Crisp and other Rambus witnesses to testify that during this entire process, they never informed JEDEC that Rambus believed it could obtain patents containing claims covering ongoing JEDEC work; that Rambus was working with its patent lawyer to draft claims covering ongoing JEDEC work; or that Rambus believed that it had pending patent applications containing claims covering ongoing JEDEC work.

We expect Richard Crisp and other Rambus witnesses to testify that Rambus never informed JEDEC of its '651 patent application relating to CAS latency, its '961 patent application relating to CAS latency and burst length, its '490 patent application relating to CAS latency; its '692 patent application relating to on-chip PLL/DLL; its '646 patent application relating to dual edge clock technology; or its issued '327 patent, also relating to dual edge clock technology.

was covered by Rambus' pending patent applications, worked with their patent counsel Lester Vincent to ensure that the claims were broadened sufficiently to cover the ongoing JEDEC work, and discussed among themselves their future plans to enforce their patents against Synchronous DRAMs, and all the while, they said nothing to JEDEC.

But Rambus did more than simply not disclose. As you've heard, there were a number of other incidents in which Rambus engaged in a series of actions that served affirmatively to mislead JEDEC members. These include the incident in May 1992 when, in response to a direct question from the chairman of the 42.3 subcommittee regarding Rambus' patent position, Richard Crisp shook his head no.

It includes Rambus' vote on four ballots in July 1992 when Richard Crisp left blank the box asking about knowledge of any relevant patents. It includes Richard Crisp's disclosure of Rambus' '703 patent at JEDEC, although that patent was not related to any of JEDEC's ongoing work.

It includes Rambus' refusal to respond to a question relating to its patent rights regarding SyncLink. And it includes Richard Crisp's follow-up when questioned about Rambus' response, Richard Crisp's

follow-up statement to the effect that Rambus is among the JEDEC members that have made disclosures. And finally, of course, it includes Rambus' withdrawal letter, which listed all of Rambus' issued patents except for the '327 patent, the sole issued patent relevant to ongoing JEDEC work.

Now, after Rambus withdrew from JEDEC in June 1996, it continued its efforts to perfect patent rights covering the JEDEC work. The '646 application had already issued as the '327 patent, as we've seen. Lester Vincent continued to prosecute Rambus' '692 application covering use of on-chip PLL/DLLs until a successor application issued as a patent in August 1997.

In addition, starting in early 1997, Lester Vincent filed continuation and divisional applications based on the '961, the '490 and the '651 applications covering the four technologies at issue. Rambus was able to obtain multiple patents with claims covering each of the four technologies at issue.

In effect, Rambus completed Rambus CEO Geoffrey Tate's instruction from February 1996 to prepare the minefield. During this entire time, Rambus deliberately continued to conceal patent claims it had pursued. Why? As I'll explain in a moment, because of

industry lock-in.

Your Honor, this brings us to the fourth of the questions that Mr. Royall posed this morning. What are the effects of Rambus' conduct?

Rambus' failure to disclose at JEDEC and its other misleading conduct served to deny the industry

You will hear witnesses testify that even a simple circuit change can take many months for a manufacturer to implement. You will also hear that memory must interface with a number of other components, such as chip sets and graphics processors. You'll also hear that any change to memory can require corresponding changes to these other components.

Furthermore, you'll hear that OEMs, such as makers of computers and servers, typically begin their designs of their products long in advance. Thus, any change in components also disrupts OEMs' design.

This slide prepared by JEDEC chairman Desi Rhoden illustrates co-dependency among DRAMs, the memory modules, memory controllers, also known as chip sets, motherboards, BIOS programmers, and ultimately system designers.

Your Honor, I won't take the time to try to explain this diagram to you today, but I think that Mr. Rhoden will be able to explain it to you when he does testify.

Once a standard is adopted and implemented within the industry, any change to that standard requires review and possible change by some or all of these parts and components. As a result, it is extremely complicated, expensive and perhaps most

important of all time-consuming to try to make any changes once a standard has been adopted and implemented. Thus, once a standard has been set and accepted by the industry, once memory products have been designed, tested, validated and manufactured, once other components likewise have been designed, tested and produced, and once final products have been designed, assembled and sold, the entire industry becomes locked into use of that standard. That process is exactly what happened with respect to these four technologies at issue.

You'll hear numerous witnesses testify that at the time JEDEC was working on the SDRAM and DDR SDRAM standards, there were a number of alternatives for each of the technologies at issue. You will hear testimony, for example, that instead of programmable CAS latency and programmable burst length, the industry could have incorporated into the JEDEC standards fixed CAS latency and burst length, use of fuses to set CAS latency and burst length, or a dedicated pin or a combination of shared pins to set the CAS latency and the burst length.

Likewise, instead of on-chip PLL/DLL circuitry to correct for clock skew, the industry could have done

placed PLL or DLL circuitry on the memory module or on the controller, or it could have used a so-called vernier mechanism to correct for clock skew. Likewise, instead of dual edge clock technology, the industry could have used a single edge clock with faster frequency, used two outer phase clocks or interlead separate memory banks on the chip or module.

Rambus is likely to try to introduce a whole lot of testimony about which alternative is better and which is worse. Rambus wants to establish that the technologies actually incorporated within the standard were so superior that -- they were so superior to any other alternative that JEDEC could have used that JEDEC would have used the technologies in question regardless of whether Rambus had disclosed these patent applications.

We expect this will be contradicted by both documentary evidence and witness testimony. We expect witnesses to testify that if they had known about the Rambus plans to assert patent rights to the technologies in question, they would have looked to alternatives. Witnesses will testify that there are no perfect alternatives to the four technologies in question, but witnesses will also testify that the technologies themselves are not perfect either.

Rather, every technology has trade-offs.

Fixed burst length, for example, may be less flexible, but it is less expensive. If one alternative were clearly superior, they wouldn't need JEDEC. They have JEDEC because most of the problems have multiple solutions. No solution is perfect, and different companies have different preferences for which solution should be adopted. JEDEC is the forum to sort out company differences and to resolve preferences.

Furthermore, Your Honor, when evaluating Rambus' argument, it is helpful to keep in mind Rambus' conduct, because Rambus' argument today is inconsistent with Rambus' behavior atuhnoIimve. Let me ill2mlgnt Tferiinconsi

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that may work against them. If it is something really key, then we may want to mention it to Hyundai in our attempts to get the negotiation underway again. If it is not a really key issue, such as the initialization issue, then I think it makes no sense to alert them to a potential problem they can easily work around." Of course, Rambus decided not to disclose what it had either to Hyundai or to JEDEC.

Likewise, in February 1997, CEO Geoff Tate sent an email to executives and a number of engineers at Rambus setting forth the conclusions and actions from Rambus' DDR threat assessment meeting. Tate wrote:

"Action," then item number 2, "Do not tell customers/partners that we feel DDR may infringe -- our leverage is better to wait."

The clear import of Rambus' conduct is that it believed that if it had disclosed its pending patent applications, the industry likely would have been able to design around it. By waiting, however, the industry would be locked in to use of the technologies in question, and Rambus could then use its leverage to extract much higher royalties. This is, in fact, exactly what happened.

We expect witnesses to testify that at the time the standards were being debated, it would have been

relatively straightforward to use alternative technologies. By 2000, however, the situation had changed dramatically. Many companies had been using the technologies in question for years. DRAM manufacturers had produced products to the JEDEC standards. Manufacturers of chip sets, memory module manufacturers, motherboard makers, BIOS software programmers, test equipment makers and designers of final products, such as computers and servers, had all designed their products to incorporate and interact with JEDEC-compliant SDRAM and DDR SDRAM.

We expect numerous witnesses to testify that any attempt to change the JEDEC standard in the year 2000 would have created havoc. In effect, by the year 2000, it was too late for the indtqTjTTTT of

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against the programmable CAS latency feature in the JEDEC DDR SDRAM data sheet.

Similarly, the next page is Rambus' illustration of how specific provisions of claim 11 of its issued '214 patent covered the delay locked loop circuitry found in JEDEC DDR SDRAM data sheet.

Following receipt of similar threat letters, most major industry players felt they had no choice but to settle with Rambus and agree to pay royalties. The lone hold-outs at this time are Infineon, Hynix, formerly known as Hyundai, and Micron.

If Rambus is correct, if its patents are valid and JEDEC-compliant DRAMs infringe its patents, then 100 percent or virtually 100 percent of commodity DRAMs sold today use Rambus technology. Rambus has already demonstrated the classic indicia of monopoly power. Rambus has demonstrated the power to set price. Rambus has demonstrated the power to increase price. Rambus has demonstrated the power to price-differentiate or to charge different users different prices according to Rambus' strategic plans.

Rambus expects to have the power to exclude. Rambus' internal documents reflect its plans. "The Rambus policy on licensing, settling. Now, best terms. Later, higher but still good. Fight, then settle, even

higher terms. Until decision, no guarantee of a license." Rambus plans to take full advantage of its monopoly power.

Another Rambus planning document states, "5 year objectives: All/90% plus DRAMs/controllers pay us royalties. We are ratcheting up royalty rates over time..."

A third business document, perhaps somewhat over-optimistic in its financial forecast, nevertheless states market share increases from 25 percent to 100 percent. Average royalty rate increasing from 1 percent to 5 percent. And total royalties measured in the billions.

Furthermore, it is clear that once entrenched, there is no prospect of Rambus' monopoly power being threatened or eroded.

Another document states, "KR2001 Really Big Picture Goals. 1, Solidify the Franchise. Collect royalties on all DRAM and controllers forever."

The question presented by this case, Your Honor, is as follows: Is Rambus' course of conduct at JEDEC and afterwards a legitimate way for a company to obtain monopoly power over a supposedly open standard that affects an enormous range of high-tech industries? Or framed another way, is it reasonable to expect based

on Rambus' course of conduct at JEDEC and afterwards, that United States consumers should continue to pay royalties on all DRAMs and controllers forever? We submit, Your Honor, that it is not.

Your Honor, at this point, before I address the question of remedies, I would like to briefly address certain of Rambus' arguments. I would suggest, however, if you are interested in taking a break this morning, this might be an appropriate place to take a break.

JUDGE McGUIRE: Yeah, that's fine with me, Counsel.

Any opposition to that?

MR. STONE: No, Your Honor.

JUDGE McGUIRE: How much time, five minutes? Ten minutes?

MR. OLIVER: That would be fine, Your Honor.

JUDGE McGUIRE: We are off the record for a ten-minute break.

(A brief recess was taken.)

JUDGE McGUIRE: On the record again.

Okay, Mr. Oliver, you may proceed with your opening statement.

MR. OLIVER: Thank you, Your Honor.

Before I address the last of our questions, the

issue of remedies, Your Honor, I would like to address a few of the arguments we anticipate you will be hearing from Rambus. I don't intend to address all of Rambus' arguments. After all, Rambus makes a lot of them.

As a general comment, though, let me just echo Mr. Royall's observation earlier. What you are likely to hear is, unfortunately, long on narrow technicalities and short on acceptance of responsibility.

First, Rambus argues, of course, that Rambus cannot have violated the antitrust laws unless it committed a technical violation of JEDEC's written rules, narrowly interpreted. For all of the reasons set forth in our pretrial brief, this is simply wrong. Whether United States consumers are forced to pay Rambus' monopolistic royalty rates do not depend on whether JEDEC inadvertently left a loop hole in its written explanation of its disclosure policy.

Nevertheless, even if a decision were to be based solely on JEDEC's specific written disclosure policy, narrowly interpreted, that disclosure policy is more than sufficiently clear to support a specific duty to disclose.

Having said this though, Your Honor, let me

pause and ask, was the JEDEC disclosure policy articulated as clearly as it possibly could have been in all the EIA and JEDEC documents? Of course, Your Honor, the answer is no. With 20/20 hindsight, we can see that JEDEC's various statements of its disclosure policy were not perfect, and indeed, let me assure you, Your Honor, we wish they had been better, but the relevant question, Your Honor, is not whether JEDEC's statements of its policy were perfect, but rather, whether they were sufficient to impose an obligation on members not to use patents or patent applications to attempt to monopolize a JEDEC standard without disclosing the existence of the patents or applications at issue. We think, Your Honor, that you will find the JEDEC disclosure policy more than meets this test.

Rambus will also argue that other JEDEC members did not fulfill their disclosure obligations. We expect Rambus to go to considerable lengths to try to embarrass individual witnesses with respect to any possibly relevant patents or applications that they or the companies might not have disclosed at JEDEC. In effect, Rambus will try to put others here on trial.

Rambus, however, misses the fundamental point. Are all members of JEDEC perfect? No, of course not. Did all members of JEDEC always disclose every relevant

patent and patent application? No, they didn't. You'll hear about a few companies that did not disclose certain applications or patents because they had no intention of ever enforcing them. In effect, they were purely defensive patents.

You may also hear about other companies that didn't disclose certain patents or applications for unknown reasons after which the patent holders decided they could not in good faith enforce their patents. Were these technical violations of the JEDEC disclosure policy? Yeah, they probably were. Did these companies violate the fundamental purposes of JEDEC or the EIA Legal Guide's basic rules? No, these companies did not. They did not interfere with open standards nor did they hinder market access.

We are not aware of any other JEDEC members that obtained monopoly power by intentionally refusing to disclose relevant patents and patent applications and then asserting those patents over the standards. More directly to the point, however, Your Honor, even if Rambus could identify examples of companies intentionally failing to disclose relevant patents and then subsequently suing companies over the standard, does that excuse Rambus' conduct?

Would another company's violation of the United

States antitrust laws justify U.S. consumers having to foot the bill for hundreds of millions, possibly billions of dollars of Rambus' royalty charges? Absolutely not. Rambus cannot justify its conduct or the resulting cost imposed on United States consumers by pointing at the unrelated conduct of other companies.

Next, Your Honor, we expect Rambus to argue vigorously and repeatedly that it had no pending patent applications with claims covering the JEDEC standard. Please note, however, Your Honor, the number of assumptions that Rambus builds into this deliberately loaded statement.

First, Rambus ignores any obligation arising from any source other than JEDEC's specific written disclosure obligation. Thus, Rambus' argument takes absolutely no consideration of obligations arising out of JEDEC's fundamental purpose of open standards or the EIA Legal Guide's basic rules against standard-setting programs that restrict competition or exclude competitors from the market.

Second, Rambus simply dismisses out of hand its own belief at the time it was a JEDEC member; however, we expect that Rambus' position will be contradicted by the testimony of witnesses that the JEDEC disclosure

obligation was driven by belief and a member's disclosure obligation depended on that member's understanding of its patent rights, not on some technically detailed, after-the-fact analysis by a patent.

Third, Your Honor, even if one were to focus solely on the narrowest interpretation of the written JEDEC disclosure rules, Rambus' argument relies on a gross distortion of the plain language of that obligation. Allow me to demonstrate.

One might ask, what about Rambus' various pending patent applications during the time that it was a member of JEDEC that could have been amended and that Rambus was, in fact, trying to amend to add claims to cover JEDEC work? We didn't have to disclose those, says Rambus. When the disclosure policy says pending patents, it really means pending patents containing claims, and those applications didn't have any relevant claims. Yet.

Well, one might ask, what about Rambus' amendment to its '651 patent application filed in June

involved in," it really means covering, and the claims in the '651 application didn't cover JEDEC's ongoing work, because Rambus' lawyer got the claim wrong.

Well, what about Rambus' '692 application containing claims covering use of on-chip PLL/DLL, and what about Rambus' '646 application, and what about its '327 patent containing claims covering use of dual edge clock technology? The claims in those applications would have covered proposals being presented at JEDEC at the time. No, those don't count either, says Rambus, because the ongoing JEDEC work wasn't formal work. When the disclosure policy says "the work they are undertaking," that doesn't refer to just any standard-setting work at JEDEC. It refers to formal standard-setting work, and the standard-setting work directed toward the future SDRAM standard didn't become formal until it was given its final name of double data rate SDRAM standard.

Your Honor, you'll hear many witnesses testify that the JEDEC disclosure policy was precisely what the JEDEC manual said it was, not Rambus' creative revision of the manual. But Your Honor, even if you were to accept all of these arguments from Rambus, even if one disregarded all obligations arising from JEDEC's fundamental purposes or from the legal guides, even if

one rejected witness testimony that the JEDEC disclosure obligation was triggered by belief, and even if one accepted all of these revisions by Rambus to the JEDEC disclosure policy, even then we can still show that Rambus had pending patent applications containing claims that could have covered a formal JEDEC standard.

Our technical expert, Professor Bruce Jacob, and our patent expert, Mr. Mark Nussbaum, will testify that the amendments to Rambus' '961 application, filed in January 1995, and the amendments to Rambus' '490 application, filed in June 1995, contained claims that reasonably could have covered programmable CAS latency and programmable burst length as used in JEDEC's SDRAM standard and therefore should have been disclosed.

Third, Your Honor, Rambus will also try to argue that it disclosed its relevant patent information. Well, not exactly that it disclosed to JEDEC, but rather, it disclosed some information privately to some other people at selected companies under nondisclosure agreement, and the European Patent Office made its initial application available, and some JEDEC members obtained a copy of that. And in addition, that Rambus disclosed at JEDEC its '703 patent, although the evidence will show that the claims in the '703 patent were entirely unrelated to the

ongoing work of JEDEC.

Rambus then argues that, based on this information, JEDEC members should have been able to figure out for themselves that Rambus could file claims for the four technologies in question and that Rambus would, in fact, pursue such claims.

Now, Rambus will show that a number of companies knew that Rambus had patent applications pending. The fundamental issue, however, is that the JEDEC members did not know the scope of Rambus' potential patent rights, and let me explain.

The reason is that Rambus had a revolutionary new architecture that was radically different from the DRAM technology. You will hear testimony that the Rambus architecture, shown on the right-hand side of this screen in this Rambus document, was a so-called narrow bus architecture as opposed to the traditional wide bus architecture shown on the right side of the screen. The Rambus architecture was multiplexed, meaning that each bus line carried multiple types of information, as opposed to the traditional bus line dedicated to specific types of information.

Furthermore, the Rambus system was packetized, meaning that information traveled in packets, which again was very different from the traditional

architecture.

The diagram on the screen from one of the documents that Rambus used to explain its technologies to other companies demonstrates the contrast between a narrow bus, multiplexed, packetized Rambus architecture on the right-hand side of screen and the traditional wide bus architecture being pursued by JEDEC on the left. As a result, many companies understood that Rambus had patent applications with claims covering aspects of its narrow bus, multiplexed, packetized system, but what most companies did not understand and what Rambus deliberately sought to conceal was that it was also pursuing claims that would cover technologies used in a traditional wide bus architecture that was the subject of ongoing JEDEC work as shown on the left-hand side of that screen.

Well, did any companies have any questions about the scope of Rambus' potential patent rights? Yes, they did. A few companies had heard marketplace rumors that Rambus might have patent rights that would extend to certain technologies used in wide bus architecture. A few individuals even tried to consider prior art when trying to figure out what technologies Rambus might be able to claim.

As Mr. Royall explained earlier, a number of

companies even asked Rambus, but Rambus still never disclosed. Rambus will nevertheless argue that these few companies did not exercise proper due diligence in trying to determine the full scope of Rambus' patent rights.

And again, Your Honor, with the benefit of 20/20 hindsight, we can say that absolutely, we wish that the few companies who questioned their suspicions about possible Rambus patent rights had done more to try to follow up, but the fundamental point, Your Honor, as Mr. Royall explained earlier, is that these companies should not have had to grope around in the dark trying to figure out for themselves what patent rights Rambus might have been able to obtain.

The entire purpose of the JEDEC disclosure policy was to impose the disclosure obligation on the patent holder, precisely because that company alone has the information to provide an accurate answer.

Even if one were to find, however, that a small number of companies did not act as diligently as they should have in response to questions about the scope of Rambus' patent rights, that does not affect the issue of whether Rambus committed an antitrust violation.

You will hear testimony that JEDEC works by consensus when possible and that in any event nothing

is passed without at least a two-thirds majority. Furthermore, a proposal is not adopted as part of a standard if even a significant minority of the companies oppose it, and even a single company can block a proposal on patent-related grounds.

What this means is if even a small number of JEDEC members were not aware of Rambus' potential patent rights, that small number of companies would have been sufficient to block JEDEC from incorporating the technologies in question into the standard had Rambus properly disclosed.

In other words, even if Rambus can establish that certain companies had full, complete and perfect knowledge of the scope of Rambus' patent rights, which clearly was not the case, that evidence makes no difference in this case unless Rambus can show that such knowledge was widely shared throughout JEDEC, and we submit, Your Honor, that the evidence will not come close to supporting this.

In sum, Rambus' argument that a small number of companies had some suspicion that Rambus' patent rights might extend to certain technologies used in a wide bus architecture does not serve to relieve Rambus of liability for failing to disclose at JEDEC.

Finally, Your Honor, I would like to turn to

the last of the questions posed this morning by Mr. Royall. What can and should be done about Rambus' conduct now?

The relief imposed in this case, Your Honor, as set forth in the Commission's notice of contemplated relief, must be sufficiently broad to remedy the anti-competitive consequences of the conduct at issue. The proposed remedy set out in the Commission's notice of contemplated relief is required here for a number of reasons.

First, the effects are not limited to the United States, and effects in foreign countries impact the United States consumers. Witnesses will testify that a significant volume of SDRAMs are manufactured abroad and imported into the United States, that many SDRAMs are imported or re-imported into the United States after being incorporated into final products, and many SDRAMs and products incorporating SDRAMs are manufactured in the United States and exported to other countries.

If Rambus is able to enforce patents against the manufacture, sale or use of SDRAMs in foreign countries, it could have a significant impact on the price of both SDRAMs and products contain 19 m jT*

exactly that.

Rambus has patents similar to its U.S. patents in most of the important technology centers of the world. Rambus has sued other companies for infringement of these patents in a number of foreign countries. Furthermore, Rambus views these foreign lawsuits as equally important to its ability to secure its monopoly position.

Indeed, after the adverse result in the Infineon trial, Rambus announced, "While the Virginia case against Infineon involves only four Rambus U.S. patents, there are a dozen U.S. and European patents involved in other infringement cases pending against Infineon, Hyundai and Micron. Rambus intends to pursue all these cases vigorously, including a trial against Infineon in Germany currently scheduled for May 18."

Your Honor, there is another reason why a broad remedy is necessary in this case. In the same press release that we just looked at issued by Rambus after the results of the Infineon trial, Rambus also stated, "In addition, Rambus holds newly issued U.S. and European patents covering Rambus inventions used by SDRAMs and DDR SDRAMs that have not yet been asserted in any litigation and are not impacted by the Court's decision."

What does this mean? What other patents does Rambus have that have not yet been asserted? Your Honor, we're not sure. Despite our best efforts to learn the answer, Rambus has not been particularly forthcoming. But Your Honor, we think we can identify the answer at least in part.

While it was a member of JEDEC, Rambus representatives observed presentations proposing to use other technologies that Rambus also believed to be covered by claims in pending patent applications which it also did not disclose to JEDEC. For example, at the February 1992 JC-42.3 subcommittee meeting, Billy Garrett observed a presentation involving a low-voltage standard which Rambus referred to as low-voltage swing.

Mr. Garrett wrote home, "We could use our patents to keep current-mode interfaces off of DRAMs (assuming that is what we patented it that way and that is what we want to do)."

At the May 1994 JC-42.3 subcommittee meeting, Richard Crisp observed a presentation proposing to use a technology referred to as externally supplied reference voltage. Richard Crisp himself had participated in the drafting of patent claims covering this technology. Mr. Crisp wrote, "(again we need to check claims about DRAM with input receivers using an

externally supplied reference voltage). We may be able to slow down or stop (or at least collect from) all of the CTT, GTL and HSTL devices if this claim is allowed. (Allen, I believe this was one of the claims you, Lester, Tracy and I wrote up in '91, right?)."

Again at the March 1995 JC-42.3 subcommittee meeting, Richard Crisp observes a presentation involving a technology known as source synchronous clocking. He wrote home to his colleagues at Rambus, "It appears that they are starting to figure out that we have a very good idea with respect to source synchronous clocking. Of course, they may get in to patent trouble if they do this."

Needless to say, the evidence will show that Rambus did not disclose to JEDEC its knowledge that it had patent applications pending with respect to these technologies. Many of these technologies were, in fact, adopted by JEDEC and incorporated into the JEDEC SDRAM or DDR SDRAM standards, and Rambus did not forget about them.

SDRAMs which it thought were covered by its patents.

In addition to the four technologies listed in the Commission's complaint, the table lists low voltage swing signaling and source synchronous signaling as technologies in DDR SDRAMs. Nor is the concern that Rambus might try to enforce other patents covering other technologies speculative. After the Commission's complaint issued in this matter, newly produced documents for the first time put another technology, known as auto-precharge, in perspective.

Auto-precharge is a technology that Richard Crisp and Billy Garrett observed being discusssssra

convenience. It is not fundamental to the performance or usefulness of SDRAM or MOST. But patenting this feature would have high harassment value, especially to the extent that third-party SDRAM controllers depend on it."

Three months later, in September 1994, Lester Vincent filed an amendment to Rambus' pending '646 application that added claims covering use of auto-precharge. Rambus later abandoned those claims. Then, however, in the summer of 2001, Rambus lost its trial against Infineon. Shortly thereafter, Judge Payne issued an order enjoining Rambus from asserting in any lawsuit that JEDEC-compliant SDRAMs infringed any Rambus patent containing claims directed to any of four specific listed technologies. Auto-precharge, however, was not on Judge Payne's list.

In October 2001, Neal Steinberg, in-house counsel at Rambus, revisited the old technology, and in 2001, he filed an amendment to a pending patent application claiming priority all the way back to the original '898 application in 1990, and Neal Steinberg proposed adding claims covering use of auto-precharge technology. A narrowed version of that claim was allowed by the PTO in May of 2002.

In essence, Rambus was pursuing a means to sue

companies for manufacturing JEDEC-compliant SDRAMs based on a technology that was discussed while Rambus was at JEDEC, as to which Rambus never informed JEDEC that it had a pending patent application, but which was not covered by Judge Payne's order in the Infineon case.

Your Honor, among the technologies that were observed by Rambus at JEDEC and as to which Rambus believed it had patent rights but which Rambus did not disclose at JEDEC, we have identified programmable CAS latency and programmable burst length and on-chip PLL/DLL and dual edge clocking and auto-precharge and low voltage swing and external supplied reference voltage and source synchronous clocking, but we don't know what other technologies Rambus may have. We don't know what other technologies Rambus may now be in a position to assert patents against.

Is it possible that we've missed a technology or two? Absolutely. No one on our team claims to have sufficient understanding of this technology to be able to identify each and every technology in the SDRAM or DDR SDRAM standards over which Rambus may have patent rights. Should United States consumers bear the risk that we might have missed a technology? Absolutely not. When Rambus followed a decade-long scheme to try

to obtain patent coverage for every technology they could in the JEDEC SDRAM and DDR SDRAM standards and during the entire time it was a JEDEC member intentionally concealed from the members what it was

business unaffected with respect to both its narrow bus, packetized, multiplexed RDRAM architecture and with respect to all of its more recent products.

We submit that the remedy set forth in the Commission's notice of contemplated relief is appropriately tailored to the conduct at issue in this case.

To sum up, Your Honor, this case presents little dispute about Rambus' monopoly power. The fundamental issue here is how Rambus went about obtaining that monopoly power. Was it through superior foresight, skill and acumen? Did Rambus invent a better mousetrap? Hardly, Your Honor. Rambus invented a different mousetrap. Rambus' RDRAM architecture was innovative, even revolutionary, but ultimately, it was not what the marketplace wanted.

By intentionally failing to fulfill its disclosure obligations in JEDEC, however, indeed by engaging in affirmatively misleading conduct within JEDEC, Rambus has managed to capture the JEDEC standards and subvert them to Rambus' own monopolistic purposes.

We submit, Your Honor, that where Rambus obtained monopoly power by subverting the fundamental purposes of JEDEC, by, among other actions, failing to

disclose its relevant intellectual property and thereby capturing patent rights over the resulting standard, the United States consumers should not have to pay Rambus' increasing royalties forever.

Thank you.

JUDGE McGUIRE: All right, thank you, Mr. Oliver.

Then does that complete the complaint counsel's opening statement?

MR. ROYALL: Yes, Your Honor.

JUDGE McGUIRE: Okay, counsel, as we agreed, it's eight minutes until 1:00. Then I would suggest that we take a break until I think 2:30, and at that time, we'll be back here and we'll hear opening statement by respondent.

MR. STONE: Thank you, Your Honor.

JUDGE McGUIRE: This hearing is adjourned.

(Whereupon, at 12:52 p.m., a lunch recess was taken.)

AFTERNOON SESSION

(2:30 p.m.)

JUDGE McGUIRE: This hearing is now in order, reconvened at 2:30.

At this time we will hear the opening statement of respondent.

MR. STONE: Thank you, Your Honor. Could I just touch on a couple of logistics first? Complaint counsel asked if I had any objection if they walked around in the event they couldn't see my boards, and I have no objection. I just wanted to raise that.

JUDGE McGUIRE: That's fine.

MR. STONE: Secondly, if we get to a convenient breaking spot, I was wondering if you would permit if Mr. Perry could address an issue briefly that he's much more familiar with than I am, and then maybe when he finishes that, if we could take a short break, I'd catch my breath, and then I'd finish up.

JUDGE McGUIRE: Yes, that would be fine. I have no objection to that.

MR. STONE: Thank you, Your Honor.

The time was 1988 or 1989, and in that time frame, the computer industry was plainly facing a crisis. You heard it this morning. It was the memory bottleneck crisis. Computers were getting faster and

faster and faster. They wanted more and more data and they wanted the data at an ever quicker pace, but the memory devices of the day were not able to provide it, and the memory devices projected for tomorrow and the day after that and the year after that were not going to be able to provide it.

It was as if you had a Corvette trapped behind a hay wagon on a very narrow road. There was lots of potential speed and nowhere to go.

That memory bottleneck crisis was well known within the computer industry. IBM knew about it and Dell knew about it. TI knew about it, and all of the memory device manufacturers knew about it. The Samsungs, the Microns, the Infineons, the Hynixes, they all knew about the crisis, and none of them had a solution for it.

Well, Mike Farmwald, then a professor at the University of Illinois, also knew about the problem, and he decided to take the challenge of trying to solve it. Now, the problem -- and he drew pictures of the problem, and there's pictures in the early Rambus documents, and there's pictures of the same problem in a lot of the books and materials of all of these companies in the computer industry. They all saw the same problem. Memory devices were going at a slow pace

and projected to continue at a slow pace, and yet computers were going to go faster and faster all the time. So, the gap between the data that the computers needed and the data that the memory devices could deliver was an ever-expanding gap.

So, as Mike Farmwald's ideas for how to solve the problem began to form, he went out and contacted a former colleague, Mark Horowitz, and together they started to collaborate on coming up with a solution. Mark Horowitz was at that time a professor at Stanford, and they started to do their work in the fancy environs of Mark Horowitz's kitchen, and sitting at his kitchen table, they began to develop the ideas that ultimately resulted in a large number of inventions. Forty-three patents today, 43 patents, each representing separate inventions that they made in that time period.

Those inventions are fundamental to the solution to the memory bottleneck crisis. Without those inventions, you can't solve that problem. And why are we here today? Well, complaint counsel said why are we here, and there are answers to the question of why are we here. We're here first because Mike Farmwald and Mark Horowitz solved a critical problem with revolutionary inventions.

We're also here because, as complaint counsel

told you, all the DRAM manufacturers today use at least some of those fundamental Farmwald and Horowitz inventions. If they weren't using those inventions, we wouldn't be here, but they use them.

And finally we're here because Rambus wants fair compensation for those inventions. The patent laws acknowledge that you're entitled, if you make inventions and you are awarded patents by the patent office, you're entitled to fair compensation, and you are granted a limited monopoly, and we're here today because Rambus, the successor to the inventions of Mike Farmwald and Mark Horowitz, wants that fair compensation.

It is my honor today to represent Rambus in defending against the claims that have been brought by complaint counsel, and not just to defend and represent Rambus, but to defend and represent the men and women of Rambus, two of whom are here today and I want to introduce to Your Honor, because they have been mentioned a lot today. The first is Geoff Tate, who's here, who's the president and CEO, and then one of the inventors, Mike Farmwald. And it is my privilege to represent them, not just in defending the claims that have been made, but in defending against the challenges and charges that have been made to their reputations

and the reputations of Rambus.

The value of their inventions is really at the heart of this case. Is there true value in their inventions or is there, as complaint counsel contends, a value that was somehow created by nefarious activity that they have purported to describe? Well, let's look at some of the evidence as to whether or not there is true value to these inventions. If we could bring up Exhibit RX-279 on the screen, you will see this is an internal IBM memorandum from April of 1992. This is the first page, and we're going to jump to page 4 of the memorandum.

This is a memorandum, the topic of which is Rambus Assessment, and if we look at what I have highlighted, you'll see that in 1992, here's what IBM thought.

If you marry the Intel chip set -- that's this really fast computer chip set -- if you marry that with the Rambus protocol, people will be able to corner the PC market with state-of-the-art performance. State-of-the-art performance.

You'll remember that earlier today you heard complaint counsel say it's okay to get a monopoly if it results from superior skill. Well, IBM recognized in 1992 and the patent office has recognized for many

years thereafter that there was superior skill shown by Farmwald and Horowitz, and their inventions reflect it, and IBM knew it in 1992 because they knew this was the way to get state-of-the-art performance.

If we go to RX-488, you'll see confirmation of another one of the points that I put on my board. This document is originally one written in German. Here's the translation of it in English. It's a Siemens or Infineon document, and it's a memo that they wrote in 1994, and if you bring up the highlighted portion, what did Siemens say in 1994? They said, well, Rambus first has to get a viable base among our customers.

Then they said, Rambus is not a memory, but it's a memory system that includes controller, bus, interface protocol and memory. All computers will have to be built like this some day, but hopefully without royalties to Rambus.

Now, there's a couple things important in this paragraph. Complaint counsel said to you, well, everybody thought that Rambus was just this narrow bus architecture. Well, Siemens didn't. They thought it was a controller and a bus and an interface protocol and a memory. And most importantly, what Siemens or Infineon thought then was let's figure out a way not to pay Rambus fair compensation for these inventions.

Yes, all computers are going to have to be built this way, but let's come up with a way not to pay. So, that's why we're here today, those three reasons.

Rambus, after they made these inventions, came up with a business model, and I want to talk about the business model a little bit. It was a very simple business model as it ultimately was developed. Rambus planned to license its technology. It was not going to manufacture. It's that simple. We're not going to be manufacturers. They thought about that. It didn't make economic sense. We are simply going to license our technology.

And everyone in the industry knew what Rambus' business model was. There was no secret about the fact that what Rambus was going to do was license its technology. And everyone in the industry also knew that what Rambus was going to do was seek patent protection for its inventions. No secret about that either.

Now, I want to look at some of the evidence that makes this clear. If we could, we'll bring up RX-15. This is a Rambus business plan. The first page is shown here, and I would like you to go if you would to page 3 and bring up the highlighted text. This Rambus business plan shown to potential investors said

this:

"Because of the high cost of developing and operating a DRAM fabrication plant, Rambus technology will be licensed to major DRAM vendors for a modest royalty fee."

And you'll see in other documents that what they were thinking about was a royalty fee at that time of 2 to 3 percent --

JUDGE McGUIRE: I'm sorry, Counsel, just for my edification, could you tell me again the context of this statement?

MR. STONE: Yes, this was a business plan put together by the Rambus founders.

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This was written by three people, Farmwald, Horowitz and Bill Davidow, who was a former Intel employee for many years, became a venture capitalist, serves as the non-executive chairman of the board of Rambus at this time, and let's go, if we could, to page 15 of that document. Siemens was given this technology overview which said, here's how we're going to earn our income. We're going to consult, that is, we're going to help you use our technology, Siemens, and we're going to collect royalties and license fees. So, they told Siemens that.

Now, we saw complaint counsel use a business plan earlier today, and I want to go back to that. That's RX-320. Because the plan they used -- and this is the plan from 1992 to 1997, written in '92, and if you skip ahead to the page we need, it shows in this business plan that Rambus had filed 18 patents to date with over 400 claims, and they were broad and fundamental. That was clearly the Rambus business plan.

And in March of 1992, Rambus had what I guess you might call a debutante ball or a coming out party. Rambus threw an event in Palo Alto at a hotel and invited people from the public, the press and the industry, come see what Rambus is all about.

Could you bring up the cover of what they handed out?

This is a corporate backgrounder, March of 1992. This was the handout at the debutante ball or the coming out party for Rambus. So, this was publicly made available, and let's see at page 3 what they said they were going to do. Rambus said right then, we are "fully protecting the intellectual property rights of

you don't have any patents, they won't pay you very much money, and they won't pay you the money for very long. So, everyone knew that. And it is commonplace within the industry that you would seek patents that would cover your intellectual property and your technology.

And we can look at a document, 804, if we could. This is a document a little later in time. The top part of it is a document that was circulated by a person, Farhad Tabrizi, whose name I think you saw earlier, but the bottom part of it is what I want to focus on. The bottom part of this email chain -- as I guess Your Honor knows, you're going to see a lot of emails in this case, and usually the first one in time is at the bottom, and they go forward in time up towards the top.

The bottom one is to Mr. Tabrizi from Steve Appleton, the chairman of Micron, and he's writing about SyncLink, and you've heard some about SyncLink and you'll hear some more about SyncLink. If you would go to the second page and bring up, if you could, what's highlighted.

What Mr. Appleton said to Mr. Tabrizi was this:

"The future health of the DRAM industry will rely on the suppliers' ability to generate new

intellectual property for high frequency DRAMs."

So, it was not a surprise to anyone in the industry that Rambus was going to be seeking intellectual property and patents to cover its technology with DRAMs. That's what Mr. Appleton was telling Mr. Tabrizi everybody in the industry was doing and should be doing. Indeed, you will hear that within this industry, some of the companies that generate more patents per year than any other companies in the world are in the DRAM manufacturing business. It is a heavily intellectual property intensive business.

This is an antitrust case, and I am not here to tell you that we came to try a patent case, but I am here to tell you that the patent system is really important to this antitrust case, and we agree a little bit and we disagree a little bit with complaint counsel on how it works. There are certain fundamental points about it that I think we agree on. It's the application of the points where I think the disagreement develops.

To encourage invention and innovation, the Constitution grants a limited monopoly to inventors. The invention they make has to be described in the

the claims, in the written description. And I have the official copy of the '327 patent that Mr. Oliver talked about earlier. It doesn't have the ribbon on it, I think I lost the ribbon that would hold it together on the sides, but it still has the seal.

And this official copy is of interest because you'll see more patents probably than you want to see in the course of this case, but at the beginning, there's some listing of prior art, and then right away it starts with these figures, and we go through several pages of figures, and then as you'll see, we get to background of the invention, and then we start with the detailed description on column 5.

Beginning on column 5 and continuing all the way up to column 25, 21 columns of text, is the written description. That written description and those figures that I just flashed through were filed with the patent office April 18th of 1990, and they haven't changed. They haven't changed. All the inventions that Farmwald and Horowitz made had to be written down and put in that written description and shown on those figures, and all the patents that have issued thereafter have issued based on that very same written description and figures. So, what does that mean?

That means that the patent office has a job --

they have a lot of jobs -- and one of their jobs is we've got to make sure that the claims your patent are based upon, they claim the invention that you described in April of 1990. If you try to get claims that aren't for the invention that you described, you can't have them. You have to get a much later date. The only reason you're entitled to that April 18th, 1990 date is if the claims that you are allowed are claims that actually describe that original invention.

I don't know whether it's helpful or not, but here's how I think of it. For me, I envision a mosaic on the wall, a picture of people or scenery. That is the invention. You write out in words, this is my invention. They wrote out in words their invention. It turned out that what they wrote out was a whole bunch of inventions. That first application got to the patent office, and they said, there's at least 11 inventions here, so we appreciate this application, but it's got way too much stuff in it. We are going to split it into 11 parts, and it has since been split and divided even more, and we're to 43 today. That was a huge invention.

Well, that original description, that mosaic on the wall, you then have to write the claims that describe it, and if you think of those claims as each

tile, you have to describe the shade of color and the shape of the tile and the placement on the wall to make it the mosaic, and that claim-writing process takes time, and it's an iterative process.

You send claims into the patent office, and they say, we didn't quite like the language and so on, and you go round and round and round, and it takes a long time. Claims continued to be revised long after the application is filed, and most importantly, most importantly, the claims can be amended to reflect what happens out there in the marketplace.

Now, let me pause for a minute and go back. There is a tension, complaint counsel suggests, between the patent prosecution practices here or the patent laws and antitrust law. Well, that's been addressed in a lot of case. In Intergraph vs. Intel, for example, the Court said the patent and antitrust laws are complementary, the patent system serving to encourage invention and the bringing of new products to market by adjusting investment-based risks, and the antitrust laws serving to foster industrial competition.

I was trying to think of how I could more simply explain this concept of investment-based risks, and I happened upon a quote from Abraham Lincoln, the only president to ever be awarded a patent, and Abraham

Lincoln, much more succinct than most of us are used to talking today said, "Patents add the fuel of interest to the fire of genius."

The genius of Mike Farmwald and Mark Horowitz was indeed fueled -- fueled -- by the interests of maybe I could be rewarded for my inventions here. I won't just solve the problem, but I will give the solution to society, and I will be rewarded in return.

And it is important to note, as the Court said in Intergraph vs. Intel, "The antitrust laws do not and they clearly are not intended to negate the patentee's right to exclude others from patent property."

This was an issue most recently in this tribunal addressed in the VISX case. That's a lengthy opinion with a lot of different issues addressed, but one of the things of importance there was the Commission in VISX concluded that "the absence of a clear duty constitutes a substantial factor weighing against the finding of inequitable conduct or fraud," and I'll come back to that duty question, but they were looking at a very similar issue there.

Now, once we have this concept of a mosaic and this concept of tiles, one of the things we recognize is that given the business model that Rambus had, they started to share some of their ideas with people out

there, and other people might have had similar ideas that they came to after seeing what Farmwald and Horowitz did, and it is not uncommon that products would come out into the marketplace while you're still in the patent office going through the process of getting your claims.

And at that time, if you see those products or hear about those products or see specifications, it is okay -- it's okay -- to revise your claims to cover those products, as long as the claims that you write are indeed claims for tiles that are part of your mosaic that you wrote down and described in your

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thieves, that they somehow stole the ideas from what they heard at meetings of JEDEC. They could not have done that, could not. The patent office wouldn't let them do it, would not allow it. They would say, look, you can write a claim only if you already described the invention in what you filed in April of 1990. If it's not in that description, you can't have a claim on it.

And it is not for the Commission to turn to the patent office and say, well, sister agency, I'm sorry, but we've decided to rethink, redo, upset your decisions that you've already made. That is a decision that the patent office has to make and they did make with each of these claims. So, there is no issue in this case that any of the claims in dispute are anything other than claims to an invention Mike Farmwald and Mark Horowitz made well before April of 1990.

And Kingsdown, which you heard some discussion of, Kingsdown talks about this. Kingsdown says, you know, it's okay. They say it's not improper, illegal or inequitable to file a patent application for purposes of obtaining a right to exclude a known competitor's product in the market, nor is it in any manner improper to amend or assert claims intended to cover a competitor's product the applicant's attorney

has learned of during the prosecution of a patent application.

And Lemley, in a recent treatise, says a firm competing with an inventor may introduce a product containing a variant of the inventor's brainstorm. When the language in the patent application allows, the inventor's patent law adds a claim to the application embracing the new variant. In this manner, the competitor's product will infringe the patent if and when it issues. And then he says that this is standard practice and has been for a long time.

That's important as background. Let me continue with Rambus' plans, if I might, because it is Rambus' plans and how they ultimately evolved that lead us to where we are today.

Rambus wanted to provide an open industry standard. That doesn't mean a royalty-free standard. There's no question about that, and I'll show you during the course of this trial -- I'll show you, for example, IBM manuals from IBM. They have manuals on everything at IBM, and they have a manual at IBM about what to do if you attend a standard-setting organization's meetings, and they have ones that describe standards, and they talk about industry standards that come from an organization like JEDEC,

and they talk about de facto standards that develop in the marketplace, and they talk about an open standard and a proprietary standard, and what Rambus wanted was an open standard.

What did that mean? That meant they wanted everybody to be out there building the same product. They wanted high-volume, multiple suppliers. In order to get there, as we'll see from their documents, they knew they had to interest two groups of companies. They had to interest the computer or CPU companies, and they had to interest the DRAM companies. The computer companies had to say, whoa, that is a great memory device, we want to use it, and the DRAM companies then had to say, we're willing to manufacture it. So, they knew that was their challenge, and they knew they had to come up with multiple sources for several reasons.

Computer companies wouldn't be particularly thrilled about buying a product that only one supplier made, and the way to get the price down, which they knew was a goal they had to achieve, was to get multiple sources, but fundamentally, they wanted to ensure compatibility and consistent performance. They wanted to make sure that all the products built with their technology would ultimately be compatible. Regardless of which of these manufacturers built the

product, I could take the product, put it into my computer, and it would work. I wouldn't have to have a special setting for Samsung and a different one for Micron. They wanted to ensure that.

be enforceable? So, there they were in 1989 recognizing that they needed these patents and knowing they needed to interest these companies, both sets of companies, in their product.

If we look at RX-25, this again is the document that was provided to Siemens, we looked at it before, and we can skip ahead to page 16. Here's what they were telling Siemens. "Rambus should be made available to the open market fairly early. Second sources are important for all concerned. There is real value in having a world DRAM standard. We want to avoid the VHS/Betamax situation."

Now, what did they mean by that? We don't want our technology out there in incompatible formats, so you can't play a tape if you have the wrong recorder, and they felt the compelling nature of their technology would force the other vendors to participate if the

ball, and if we could go to the next -- the page we need and bring up that page, Rambus told everybody in March of 1992, "The Rambus solution is an open standard. Any IC company," that's any integrated circuit company, "may license it from Rambus."

One more on this background point. What role were patents going to play in Rambus' business plan? Well, we've talked about it to some extent, but I want to review it in just a little more detail. Originally, April of 1998, they filed the '898 application. It was divided up into multiple other applications, and many patents came out of that.

They were advised, Rambus was advised by their lawyers to keep their patent applications confidential, and that was not unusual advice. That's the advice that patent lawyers give to clients all the time and for good reason. And one of the issues Your Honor faces is in understanding whether conduct that is complained of here has, indeed, a legitimate pro-competitive purpose behind it. And keeping patent applications confidential is very, very legitimate.

What can happen if you disclose them? Well, among other things -- and you're going to hear expert testimony on this -- someone else can try to file a similar application and have an interference declared

in the patent office and slow down the prosecution of yours. What else can happen? Other people can get a jump start on building products that maybe they're not otherwise entitled to because you have shared your secrets with them, because the patent office and Congress recognize that patent applications should be kept confidential.

At one point in time, during the point in time we care about here, patent applications were confidential, and the Government kept them confidential until they issued as patents. One reason for that is patent applications reflect the future plans and the research and development efforts of a company, and you're not expected to share that with your competitors, and we shouldn't want companies to be required to do that. So, that was a legitimate reason to keep it confidential. That was the advice they received. They knew, and as we'll see, everyone in the industry knew, that the value of the Farmwald and Horowitz inventions depended on the strength of the Rambus patents.

You also saw a note from one of Rambus' patent lawyers which said, in effect, don't accuse anyone of infringement without preplanning. Well, that's pretty important, because you don't have any enforceable

rights until you have patents that issue. You can't sue someone for infringing a patent application. You have to have an issued patent. And as we will see, issued patents were a long time in coming for Rambus. They would have loved to have had them sooner, but they didn't get them very fast, and they didn't get ones that would be enforceable against anything in the marketplace until much later than complaint counsel suggested earlier today.

And as I said, Rambus sought to limit noncompatible uses, and what do I mean by that? Rambus wanted everybody to make RDRAM. They wanted everybody to make this standard product and avoid the VHS/Betamax situation. They didn't want there to be other uses of their inventions. They failed. They failed in that effort, because what happened, as we have heard and seen, is inventions that Farmwald and Horowitz made began to slowly be picked up by other people in the industry.

They took a few of those early inventions described in that '898 application, they put them in SDRAM. They took a few more and put them in DDR. They took a few more, I'm sure we'll hear in the testimony in this case, and put them in DDR-2. Rambus lost control of its ability to prevent noncompatible uses.

Its only way to prevent that, its only way was to say those of you who are using our inventions in something other than RDRAM, in a noncompatible product, if we can get patents issued, it will ultimately allow us to enforce them against you, and if you won't agree to stop, we could sue you.

Ultimately, as you will see, Rambus has licensed many companies on those noncompatible uses. It ultimately became clear that was what they had to do.

With this background, I want to go back to something that complaint counsel addressed as well in their earlier remarks, which is what do they have to prove? They say that we want this case to be tried as a fraud case or a patent case, not as an antitrust case. Not true. We're here to try an antitrust case.

We all know that there's plenty of types of breaches of contract and fraudulent conduct that does not give rise to an antitrust case. There are some particular hurdles that have to be overcome by complaint counsel here, and the first is duty. They have to show a duty that is enforceable under the antitrust laws. Not all duties are.

Let's say, for example, that I had a contract with one of my colleagues and that we agreed to fix

price, and we had a duty to comply with that contract. If I breach the contract and refuse to fix price and say I'm going to lower my price, that is not a breach of a duty that the antitrust laws will enforce. The antitrust laws would say to me, oh, no, no, no, that's a bad contract to begin with. The antitrust laws will only enforce those duties that satisfy its requirements of being the kind of a duty that will increase consumer benefits and consumer welfare and are pro-competitive.

Complaint counsel, once they could establish and if they could establish a duty, have to establish that the duty has been breached, and it has to have been breached -- these are antitrust terms of significance -- by exclusionary conduct. It can't just be by any kind of conduct. It has to be a breach by exclusionary conduct.

And finally, they have to prove causation, and the causation they have to prove is that the duty that was breached has led to anti-competitive effects. And I'm going to go through the evidence briefly to show that there is no duty, and there was no breach, and it has caused no anti-competitive effects.

I'm going to do that first by talking about duty. The first source of duty we have here is JEDEC and JEDEC's rules, and I don't take a narrow

construction or interpretation of those rules. I don't look for a broad one or a narrow one. I look for the correct one. And we ought to talk first about what's the evidence going to be? Where are we going to look for evidence about what are JEDEC's rules? And I think I have an exhaustive list of four places to look for JEDEC's rules.

We can look at written manuals. We can look at descriptions given at meetings of the patent policy. We can hear from JEDEC members as to what they remember today was the expectation back when Rambus was attending meetings. And then we can look at what JEDEC members and leaders did and said at the time. And I have no intention of trying to embarrass JEDEC members, as complaint counsel said I would do. My goal is to show you that JEDEC members and leaders, who I assume were understanding the policy and trying to comply with it, what their conduct was, because that sheds light on what they understood the policy to be.

So, I'm going to walk through some of the evidence on each of these four sources of understanding as to what was the JEDEC policy, and I think those four taken together are exhaustive.

The one I want to look at first is going to be the manuals, but before we turn to the manuals, I think

we need to say, okay, what are we looking for in this policy? What are the issues we're trying to resolve?

The first is, if there was an expectation of disclosure, if members of JEDEC were encouraged to disclose something, what were they being encouraged to disclose? Patents? Applications? Intentions to file patents or beliefs about patents or intentions to amend claims? We've heard from complaint counsel in their opening statement that there was an expectation that you would disclose patents, applications, intentions to broaden claims or file claims or file patents and your own beliefs about what your patents, your claims and your intentions were. So, we want to look at all of those to see what, in fact, the JEDEC policy applied to.

And then there's a question of when. When would you be encouraged to disclose? At the time of a first presentation, which is an official event in JEDEC meetings, as Your Honor will see? At the time of balloting? You heard from complaint counsel that the one time that a Rambus representative voted, they didn't check the box on balloting. Is that the time that you're expected to or encouraged to disclose, or when it becomes a final standard?

Then the third question is what is the expected

relationship between a patent and a standard that would lead someone to say we are encouraging you to disclose that patent? Is it essential? What do I mean by that? If you make a product in compliance with the standard, does the product necessarily infringe the patent such that a license to use the patent would be necessary or essential? That's an essential patent. Are you required to disclose essential patents or expected to, or is there some broader sense of anything that relates to it, so that if, for example, I have a patent that relates to DRAM, every time at a JEDEC meeting there's a discussion of DRAM, do I have to raise my hand and say, you know, I have a patent that relates to DRAM?

promulgate this standard. I want the body to actively consider this, and they are going to try to influence the outcome. So, the presenters are sometimes thought to be subject to a higher level of encouragement about what they should or shouldn't do. So, those are the four factors I think we should look at as we go forward.

Now, we can take some issues off the table right away, and that's this issue. We have a stipulation in this case. We have a set of stipulations that Your Honor has approved. Stipulation number 10 takes a lot of issues off the table. It says that throughout the time that Rambus attended JEDEC meetings, that is, up until January of 1996, Rambus had no issued patents that were essential to the manufacture or use of any device manufactured in compliance with any JEDEC standard. So, the entire time Rambus was going to meetings, it didn't have a patent that was essential to any JEDEC standard, SDRAM or any other one.

So, if the rule or policy was we're encouraging you to disclose essential patents, Rambus was never at a meeting when it had an essential patent that the complaint counsel will argue should be disclosed, because that issue is gone by our stipulation, and in

recognition not just that it's a stipulation, but it is indeed clearly the facts.

So, let's go to the written manuals. What did they provide when Rambus first became a member of JEDEC? Well, there were -- in terms of written documentation, there were two sources of manuals and another source of written description. There was a JEDEC manual, 21-H. There were two EIA manuals, and you heard about the EIA Legal Guides and the EIA manuals, and there were two, EP-3-F and EP-7-A, and then there was a written description that Jim Townsend used to put up at the beginning of almost every meeting. Jim Townsend was the chairman of JC-42.

Now, to tell you what that means, I have to step back a moment and talk about what JEDEC is. EIA is an organization. EIA has engineering departments. JEDEC was a function within the engineering department of EIA. It was not a corporate entity, couldn't sue or be sued. It was just a function within a department.

Jim Townsend was the chair of the JC-42 committees of which JC-42.3 was a subcommittee. He was, in effect, Mr. Patent Policy. He went to all the meetings, put up the patent policy, and he gave everybody a sense of this is what the patent policy is all about, and probably more than anyone else, he cared

about it.

Well, what do we see if we look at these manuals? What do these manuals tell us were the policies at JEDEC? Well, this is what we see. EP-3-F, the EIA manual, doesn't mention anything about patent applications, just talks about patents. EP-7-A doesn't mention patent applications, just talks about patents. 21-H doesn't mention patent applications, in fact, it doesn't mention patents.

The first time patent applications get mentioned is in 21-I, which isn't published until October of '93, quite a few months after the SDRAM standard was published. So, what complaint counsel showed you earlier was 21-I, and that doesn't happen until way out here after SDRAM is already standardized. And I am going to talk about it, because 21-I doesn't have the significance that they would give to it. So, we have no mention of patent applications, no mention of patent applications, no mention of patent applications.

What did Jim Townsend say when he got up and gave his description? Did he change that? Did he create an expectation on the part of the membership or did he give voice to a preexisting understanding or sense of expectation that the membership had? No. He

said, I'm going to show the patent policy at each task group and committee meeting, and that was the first slide he showed. He gave them a couple other rules of dos and don'ts. We may look at those, but they don't relate to patents.

Then he said -- he quoted two different provisions, and the reason we know this is what Mr. Townsend did is not because we have his testimony -- and I need to say that Mr. Townsend is deceased -- but what we have is the attachments that he put to each of the sets of minutes, and he would attach his transparencies, copies of the transparencies that he used at the meetings. So, we had to go back to the minutes and pull his transparencies and see what he used, and this is what he used.

They both say essentially the same thing. "No program standardization shall refer to a patented item or process unless all of the technical information covered by the patent is known to the committee, subcommittee," and so on.

Then from the other manual, he quoted, "No program of standardization shall refer to a product on which there is a known patent (underline mine)," that was underline his, not mine, "unless all the technical information is known." So, Jim Townsend talked only

about patents and never about patent applications, and the language he always quoted was from the EIA manuals.

It wasn't just because it was only the EIA manuals that really talked about patents. It was because, as we will hear from many witnesses, the EIA manuals controlled. The EIA was the governing organization. It was the organization. JEDEC was just a function within a department.

So, we know because of that that the EIA manuals were quoted by Jim Townsend, because he knew that that was what governed, and I'm going to show you some more evidence that bears on that very issue, but let's look at, okay, after the SDRAM standard was published, then what? Did things change? Was there a new set of expectations that was given voice to in the manuals or in the descriptions?

Well, 21-A was adopted in October of 1993, but it didn't change Jim Townsend's description. Jim Townsend, even after the language that complaint counsel showed you -- and I am going to put it up in a minute -- even after that language that mentioned patent applications, he didn't change his description. He kept using the same one, and that's because they continued to control.

What evidence will prove that? Well, in the

middle of 1994, Jim Townsend wrote a members' manual. Now, it's important to note that these other manuals weren't necessarily distributed to all the members. If you wanted a copy, you had to get it. You will hear testimony from a lot of members that they didn't have them. But what does the members' manual say that Jim Townsend wrote?

Whoops, I have the wrong one first. Let me get to -- well, let me do 21-I, that's okay.

This is the language that Mr. Oliver put up. What does 21-I say? 21-I says, "The chairperson of any committee must call to the attention of all those present the requirements contained in the EIA Legal Guides and call attention to the obligation of the participants to inform the meeting of any knowledge they may have of any patents, or pending patents, whatever those are, that might be involved in the work they are undertaking."

Okay, so the chairperson is supposed to call attention to people of their obligation. Well, what did Jim Townsend call attention to? He called attention to the obligation to disclose a patent or the encouragement to disclose a patent. He never called attention to anything about patent applications, because those weren't in the EIA manuals. That was not

part of the EIA rules, that was not part of anyone's obligation.

How do we know? Well, he wrote the members' manual, and he wrote a paragraph on patent policy, and what did he say? "Committees adhere rigidly to the EIA patent policy as given in the EIA publication EP-7-A and EIA publication EP-3-F, which require intellectual property disclosure and discussion if proposed standards are affected." That's what he said. We're governed by, we adhere rigidly to the EIA patent policy. And the reason he continued to use the EIA patent policy when he gave the description at the beginning of every meeting, here's the patent policy, is because that's what controlled.

Now, he went on and talked about one other thing that I suggested earlier might lead to a somewhat different set of expectations. He talked about first presentation. He said all first presentations must be accompanied by written handouts for all companies present giving complete details of the material being presented, and I think if I remember the procedures correctly, that meant you had to bring like 100 or 200 copies to the meeting.

Then it says, "In addition, the presenter must reveal any known or expected patents, within his

company, on the material presented."

So, there is here a discussion that a presenter maybe has to talk about both known and expected patents, whereas the patent policy otherwise not applicable to first presenters is whatever is set forth in the EIA manuals. And as we will see and as I represented, the EIA manuals apply only to patents.

The Fujitsu application discussed earlier is consistent with the members' manual -- discussed earlier by complaint counsel -- because in that situation they were the presenter.

In addition to the discussion that I've given you about Jim Townsend's description and his members' manual, which says that EIA manuals control, assuming the testimony we receive at trial is consistent with the testimony we've seen in deposition, we expect John Kelly, who's the general counsel or was the general counsel of EIA, to testify, as he has previously, that the EIA rules controlled, and EIA is the only legal entity that could have promulgated rules in any event.

Now, I told you there were several sources of evidence that I wanted to address. One of them was the manuals. One of them was the description given at the meetings, Jim Townsend was the describer, and then the third was what JEDEC members remember today, and we

will hear testimony from different JEDEC members about

outcome. So, some of that testimony is certainly not immune from that interest, but let's go back and ask, what did they do and say at the time?

Well, the first thing we'll see is very, very few patent applications were ever disclosed at JEDEC, and the reason we know that is Jim Townsend kept something called the Patent Tracking List, and any time somebody disclosed something -- and often you'll see it was one company disclosing a patent held by another company. It seemed like this was more a practice of catching other people than it was of doing it on your own, but he kept a list of everything. We will see there are very few applications disclosed, and they are almost always the applications of presenters. That's consistent, of course, with the members' manual.

We also will see evidence that some members said they would not disclose patents or applications. Gordon Kelley of IBM, the chair of 42.3, announced on several occasions, we will not disclose patents or applications. I'm not saying that that's a violation of the rules. I'm saying if we want to understand and determine what the rules were, it certainly ithatueWu

testimony about how people understood Mr. Kelley's statements.

In 1996, shortly after Rambus had stopped attending any JEDEC meetings -- and I suppose I should pause for a moment on that. Rambus last attended

mistake.

It's an unfortunate mistake, because complaint counsel think it suggests that somebody was being deceptive in their intent, but the records demonstrate the time line and chronology clearly, and there was no such intent.

But in any event, we go to '96, a really important event in '96. This Commission entered into a consent decree with Dell, and Mr. Royall talked about that. He said the Dell case was a lot like this one. It's really not. In the Dell case, they signed a written certification saying we don't have any patents, and that was false, and they knew it was false. But in any event, whether it was similar to this case or not, what's important about it is that consent decree was put out on the public record for public comment, published in the Federal Register, and EIA and JEDEC commented on it, and they wrote to the FTC in 1996 and said, here, FTC, we want to tell you what our patent disclosure policy is, and we're going to look at that.

Finally, and then I'll step over and look at some of the exhibits, in 2000, in 2000 this issue of whether or not you have to disclose patent applications came before the JEDEC board, not at the committee level, not at JC-42.3, not at JC-42, but all the way up

at the JEDEC governing board or council. They in the year 2000, after Rambus had already commenced some

disclosure rule, that's my legal advice, and they did.

Let's look at 420, RX-420, and we will go to the second page of that. Bring that up, if you could. This is a fax that was sent to Jim Townsend and copied to Ken McGhee, the secretary, and copied to other IBM representatives, and it's from Gordon Kelley, who's a member and for a significant period of time the chair of 42.3, and it says that the IBM intellectual property attorneys have informed me that "we will not use JEDEC as a forum for discussing this subject. It is the responsibility of the producer to evaluate the subject and to work out the proper use of rights."

By that he means the proper use of intellectual property rights. The guy who's going to manufacture or produce the product has to figure out for himself if he's infringing. He then goes on to say, "I cannot confirm or deny any intellectual property law rights."

To make it even clearer, look at RX-453. These

apply."

It couldn't have been clearer. Was that a violation of the rules? I don't contend it was a violation of the rules. Gordon Kelley, who made this announcement, was the chairman of the committee. He was taking a position that Betty Prince, for example, described -- I think will describe here at trial -- she said, you know, our expectation about how people will deal with patents was evolving. It wasn't clear, it was in flux. IBM's announcement, which they made all the time, that we are not going to tell you whether we have any patents or applications, we are not going to tell you, we are not undertaking that, that was just the way one of the member companies was working through it, and other companies were working through it in different ways. There was no clear standard. It was something that was evolving.

But let's look at what the -- by the time we get to '96, let's see if they had settled on a policy, and I want to show you the comments that EIA and JEDEC sent to the FTC, if I can, about the Dell consent decree, and bring up, if you would, 669.

This is the cover page to the Federal Trade Commission, Attention: Secretary Clark, from EIA, TIA, as well, which was another agency, another association,

on behalf of JEDEC. Go to the signature page, page 5, and we'll see it was signed by Dan Bart, who is the vice president, and John Kelly, who is I think a witness you're likely to hear from, the EIA general counsel is listed below that. Then go back if you would to the pertinent page and bring up the text.

The first part talks about why including patents in standards is, in fact, pro-competitive, but we don't need to focus on that so much now. We will hear about that in the trial. The important point is the first sentence in the second paragraph there. "Both EIA and TIA encourage the early, voluntary disclosure of patents that relate to the standards in work." Three key concepts. It's patents, not applications; it's voluntary, not mandatory; it's encourage, not require.

The FTC understood it, because they wrote back not too long later, and let's go to the next exhibit, 739. Secretary Clark wrote back to Mr. Bart, and if you would bring it up, this is July of 1996, he said, "EIA and TIA, following ANSI procedures, encourage the early, voluntary disclosure of patents, but do not require a certification by participating companies regarding potentially conflicting patent interests." It's that certification that was at issue in Dell.

So, Secretary Clark understood it. EIA encourages voluntary disclosure of patents, not applications, not mandatory, not required.

After the Dell consent decree was finalized, members of JEDEC were notified of that result, and if we bring up 742 -- and why don't you try to bring up the whole text for just a minute. This is a document to Jim Townsend, you've heard me mention his name a lot, from Ken McGhee, who is the secretary of JEDEC, and then if we just go back and bring up just the highlighted portion, he says, well, the FTC's statement accompanying the final order seems to address all of our concerns, and they were intending not to signal a general duty to search for patents, and then he says -- and this is what's important, because after all of this, this is Ken McGhee saying, what's our policy -- "ANSI and EIA do, however, encourage early, voluntary disclosure of any known essential patents."

So, Ken McGhee writes to Jim Townsend and says I just want to let you know and you let other people know, as well, our policy is we encourage it, we don't require it; voluntary, not mandatory; and it's known, essential patents. Jim Townsend did not write back and say, oh, you've got it wrong. That's not the policy, the expectation, the way we do business. He didn't do

anything, because that was right. That was what really and truly was their practice at the time.

So, what happened then in 2000? What happened in 2000? Well, Micron -- at a meeting, Micron disclosed a patent application, and that raised a little bit of a stir. People said, well, is it okay to disclose patent applications? Should we be doing this? Is it required? What's our policy? How are we going to deal with patent applications? And that issue wound its way to the JEDEC board.

And if we can bring that up, that's 1556. This is the Micron letter disclosing this in January of 2000, and that letter came up to the board at 1571. This is a meeting of the JEDEC board of directors, February of 2000, the Sheraton Safari Hotel in Orlando, Florida, and they talk about this issue on page 13 of this document, and bring up, if you would, their discussion, "Disclosure on Patents Pending."

If we go to the second sentence, the first part just refers to the letter I showed you. The issue is whether companies should make public that a patent is pending. The board of directors discussed it and noted that they encourage companies to make this kind of disclosure even though they were not required by JEDEC bylaws. That's what they said at the board meeting.

Then after the board meeting, Ken McGhee sent out a memo summarizing this, and if we bring that up, it's 1582, and I think I have it on a board, Your Honor, so maybe I can show it to you that way. I do. Ken McGhee sends out this note, and he sends it out and he says, "The JEDEC patent policy concerns items that are known to be patented that are included in JEDEC standards. Disclosure of patents is a very big issue for Committee members and cannot be required of members at meetings." This is 2000.

"Therefore," he says, "in Micron's letter, by giving early disclosure, they have gone one step beyond the patent policy and have complied with the spirit of the law." It's a great thing, we encourage it, but it's beyond the patent policy.

So, what do we know? Well, we know that JEDEC's patent policy doesn't apply to patent applications, didn't apply when the SDRAM standard was being discussed, didn't apply after that, even after 21-I was promulgated, because even at that point in time, the EIA manuals controlled. It didn't matter after that, as the members' manual explained, because the EIA manuals continued to control. In '96, that was the rule, and all the way up to 2000, applications don't have to be disclosed, yet this case turns on an

allegation that Rambus should have disclosed patent applications.

Let me talk briefly about a couple of the other elements of this policy. We talked about whether it's patents or applications. Let me just stop for a minute and talk about whether it's intentions or beliefs. Is there any basis to think there was an obligation to disclose intentions to file or amend or beliefs about what your claims might be or could be? Well, there's no evidence of that at all.

Complaint counsel showed us no evidence. The manuals don't talk about it. The minutes don't talk about it. The patent tracking list doesn't list intentions or beliefs. It lists patents and a few applications. There's no evidence that the policy extended to intentions to file or beliefs.

Indeed, if it did, think what that would mean. Suppose there was a requirement that you disclose an intention to file for a patent. Well, in many countries, the first to file gets the patent. So, if you went to a JEDEC meeting and said, I think I'm going to be filing for a patent sometime soon on this particular invention, somebody could go file in one of those countries that applied a first-to-file rule, and they could end up with the patent and not you.

And so for all the reasons that we don't encourage public disclosure of applications, we surely would not encourage the disclosure of intentions or beliefs.

Let me go to the question of timing. What is the evidence going to be on timing? The first presentation, balloting, final standards? I want to show you just a snippet of some testimony that you will hear by deposition during the course of this hearing, to which there's no objection, from Willie Meier, and Willie Meier is an employee of Infineon or Siemens. He's in Germany, not available, we will hear him by deposition. He testified against Rambus in the Infineon trial. He's not somebody whose interests are at all aligned with Rambus, I think that's a fair conclusion to reach.

He was examined at his deposition prior to the Infineon trial on this topic, and if you would play that now.

(Videotape begun.)

Q. So, this process begins with a first showing, correct?

A. Yes.

Q. And ends with a publication of standard?

A. Yes.

Q. And it was your understanding that at least at the beginning of that process there was a proposal, there would be no obligation to disclose patents or applications under the patent also?

A. You mean before there is a first showing?

Q. Right.

A. No, there is no reason.

Q. And no obligation?

MR. STONE: Then he went on on another one.

(Videotape continued.)

Q. Was there an obligation -- let me withdraw that. Did the patent policy specify at what point in time a participant was required to disclose? Was it at the first showing, the second showing, before the ballot, before the council passes it? When it on spectrum?

A. There was one specific point in time which was highlighted on the ballot by the presence of a check box and wording saying if you're aware of patents covering this standard alert the committee, and it was good practice to notify the committee before that, but the ballot was considered the deadline when it should have been done.

MR. STONE: "The ballot was considered the deadline when it should have been done."

Is that going to be the only testimony you're going to hear on this issue? No. You're going to hear more testimony on different people with different views as to the deadline, but Willie Meier was clear. The deadline is balloting, and that is sort of important when we look at this -- I was looking for my time line -- I've got it. It's sort of important to think about that timing for this reason:

JEDEC attended its last meeting in December of '95. It sent its letter confirming its withdrawal in June of '96. Apparently we have a little bit of a dispute about when the first showing occurred for DDR, but Judge Payne found it to be in December of '96. The Federal Circuit agreed with that, and for that reason, they said there couldn't under any circumstances be any duty to make any disclosure with respect to DDR, all of that occurred after the time frame, because the earliest possible time to require disclosure is first presentation.

Apparently complaint counsel are going to try to find something that pushes it back earlier in time. The evidence will not support that.

But the point is the balloting, the first balloting on DDR occurred way after that. So, Rambus was long gone before anybody took a ballot on DDR, and

that, according to Willie Meier, was the deadline as to when you needed to disclose.

Well, that takes me then to the last point here. What types of patents were people encouraged to disclose? Patents that relate or patents that are essential? You will hear testimony from witnesses, I believe including Gordon Kelley, that it's essential patents only. You'll hear testimony from Willie Meier that we will read to you in which he says it's essential patents only. But Mr. Royall put up a slide earlier today in which he said that the Federal Circuit had said that it was broader than that, it was patents that relate to, and I think he got that wrong, because if we look at the Federal Circuit decision, they said several things of interest on these points that are up here, and I really had not intended to talk about the Federal Circuit decision, because I was really here to talk about these facts and this case before you, but I want to respond briefly since that was brought up, and I just scribbled out a couple of notes on this.

What the Federal Circuit said was there is a staggering lack of defining detail in the EIA JEDEC patent policy. That's at 318 F.3rd 1102. The Federal Circuit also held the JEDEC patent policy, and I am going to quote, "does not create a duty premised on

subjective beliefs. The JEDEC disclosure duty does not depend on a manufacturer's subjective belief that its patents do or do not read on the proposed standard." They said those beliefs are irrelevant.

They went on and said more. They said, "There must be a reasonable expectation that a license is needed to implement the standard before anything would have to be disclosed." The license is needed. An essential patent is all that needs to be disclosed.

They said that this is so because the -- they said a claim could not reasonably be read to cover the standard or require a license to practice the standard, therefore, it didn't have to be disclosed. And they said, what would happen if the rule was otherwise? I quote, "To hold otherwise would contradict the record evidence and render the JEDEC disclosure duty unbounded." Unbounded. "Under such an amorphous duty, any patent or application having a vague relationship to the standard would have to be disclosed. JEDEC members would be required to disclose improvement patents, implementation patents," and so on and so on.

Then they go on to say, "Look at what the risks would be if we allowed the duty to be morphed in this fashion." They say, "Such a lack of compliance with a well-defined patent policy would chill participation

with open standard-setting bodies. After-the-fact

it was attending JEDEC meetings. Flat out stipulated, no facts there. The FTC also has stipulated -- this is paragraph 9 of the stipulations -- that Rambus had no applications whose claims covered SDRAM before the SDRAM standard was adopted, and if I don't engage you in a discussion of the evidence that responds to each of the points that Mr. Oliver made, although we can and well may be required to as we go forward, it's because

So, on these points, duty, breach, you will hear us talk about the law and the policy -- should we take a break, Your Honor?

JUDGE McGUIRE: No, I'm okay. My contact is just kind of coming off, but I'm okay.

MR. STONE: Okay, I am almost to the point where I am ready to break anyway.

JUDGE McGUIRE: Okay.

MR. STONE: Duty, you are going to hear about from the experts whether the duty that complaint counsel have crafted is one that's enforceable under the antitrust laws, but whether it is or it isn't, it's not a duty that would have required Rambus to do anything it didn't do. Rambus didn't breach it, and its conduct was not exclusionary.

So, what might make sense, Your Honor, is if we take the break, I want to talk about the causation part of the case, and maybe after the break, Mr. Perry can talk a little bit about the one issue I wanted him to address, and I'll conclude.

JUDGE McGUIRE: Okay, that's fine. Any opposition? Then let's go off the record. We will take a break for, what, 15 minutes?

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

JUDGE McGUIRE: Thank you.

(A brief recess was taken.)

JUDGE McGUIRE: This hearing is now in order and reconvened at 10 minutes after 4:00, and we will continue with the presentation of the opening statement by respondent, and you have the floor, Mr. Perry.

MR. PERRY: Thank you, Your Honor.

We wanted to respond quickly to the statement by Mr. Royall this morning that complaint counsel need prove the elements of their claims by a preponderance of the evidence. We disagree with that. We think there are several reasons why essential elements of their claims must be proved by clear and convincing

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antitrust and Section 5 claims based upon an alleged failure by the patent holder to make certain disclosures of certain information. Both cases alleged the patents as a result had more market power than they would have had otherwise, and in both cases, the remedy sought was an order that the patents not be enforced. And in both cases, complaint counsel were required to prove the essential elements of their claims by clear and convincing evidence.

This case shares those same characteristics. In this case, the complaint alleges that because Rambus failed to make certain disclosures, it has acquired market power that it's not entitled to. Complaint counsel says this case is different because in American Cyanamid and in VISX, the disclosures that weren't made weren't made to the patent office, and here, the disclosures that weren't made supposedly weren't made to a private standard-setting organization.

We say that doesn't make a difference because of the reasons why the burden of proof was higher in Cyanamid and VISX and similar district court cases. Those reasons apply here.

What are the reasons? There are two principal reasons. First, someone who holds a valid patent -- and they don't challenge in this proceeding the

validity of the patents -- someone who holds a valid patent has a Constitutional and statutory right given it by the United States Government to be paid royalties for the use of his invention by others. The courts have recognized this right to be a fundamental part of the bargain between the Government and the inventor. The inventor discloses his invention to the Government and agrees that after a certain period of time, when the patent term expires, the invention can be used by everyone for free, but the part of the bargain that goes back to the inventor is the right during the patent term to be paid royalties for the use of the invention.

The other right that flows from the Government to the inventor in exchange for the inventor giving up his perpetual rights to that invention are access to the courts, and that's also been deemed to be a fundamental right, access to the courts when an infringer won't pay, and there is no dispute about infringement here either.

So, in this case and in other cases, when either a private party or a different agency of the United States Government seeks an order that takes away both of those fundamental rights, there are certain elements of the Government's claims that must be proven

by clear and convincing evidence, and especially where the remedy sought is as unprecedented as it is here.

Now, that's a strong word, but it's not my word. It's the complaint counsel's word from the VISX case. When they moved to dismiss the complaint in VISX, they said, "The Commission's ability to order that a presumptively valid patent not be enforced is unsettled. We are unaware of an antitrust courl's w3w3wvf9rwvf9

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inequitable conduct by clear and convincing evidence, and here's a quote from 139 that is clear as day.

"To establish inequitable conduct, clear and convincing evidence must demonstrate both materiality and a deceptive intent."

Now, we can also look at complaint counsel's post-hearing brief in VISX, where they say at page 9, "To prove fraud or inequitable conduct, complaint counsel had to prove 'materiality, intent and but for by clear and convincing evidence.'" That's what complaint counsel agreed they had to prove. That's what Judge Levin said they had to prove on either fraud or inequitable conduct, and the reason is they're taking away, they're interrupting, they're interfering with, or they're trying to, a fundamental bargain that was made between an inventor and the United States Government, and when an agency tries to do that, they've got to take on a higher burden.

So, we would request that with respect to the materiality of the information that we supposedly didn't disclose and our intent to deceive and whether or not that was, in fact, pro-competitive, anti-competitive, deceptive, and on causation, what the world would have looked like if we had disclosed more information than we actually did, that on all those

elements, as the Court held in VISX and as complaint counsel agreed just a few years ago, Your Honor should apply a clear and convincing burden of proof on those elements.

Thank you.

JUDGE McGUIRE: Now, that's an argument you intend to make in your post-hearing brief?

MR. PERRY: Yes, Your Honor.

JUDGE McGUIRE: Then I would like to see some counter-argument on that by the other side as well. So, that's a topic we will take up in post-hearing. All right.

MR. PERRY: Thank you.

JUDGE McGUIRE: All right, thank you, Mr. Perry.

All right, Mr. Stone?

MR. STONE: Thank you, Your Honor.

I left off with my discussion of the evidence having summarized evidence that goes to the question I think the evidence demonstrates that there was no duty that under the practice or the policy or the procedures or the manuals or the written descriptions or what other people did at JEDEC meetings, there was no duty that arose that Rambus did not follow. So, for duty and breach, the evidence is there was no duty that was

breached, but complaint counsel do allege more, and we argued this issue as recently as two days ago, as to whether they have a claim that is based on something other than a violation of JEDEC rules, and although it's a little hard to get our arms entirely around that argument, I think it's fair to say that part of what they are saying and part of what I heard them say this morning is that Rambus didn't act in good faith, that Rambus should have done things differently because that would have -- it would have been a good thing.

Well, it is not our burden to prove that Rambus acted in good faith. It's complaint counsel's burden to prove that they didn't. But I want to take on that burden, because Rambus did act in good faith, and I'm going to show you some Crisp emails that show you that Richard Crisp acted in good faith, and his subjective intent was fine.

The first point, Rambus sought and followed the advice of its lawyers. Its lawyers said we want you to keep your patent applications confidential, and they did. They sought the advice of their lawyers with respect to JEDEC, and as you will see, in fact, they followed that advice.

They followed the examples of others around them. That certainly is good faith. They looked at

what everybody else was doing. They didn't just see, okay, what are the rules, and even if other people are doing more, can I just stand on the rules? They followed the examples of others around them.

And as I have shown, the evidence is clear, they followed the rules, and they followed the law. They applied for patents on inventions that they had made, that Mike Farmwald and Mark Horowitz had made, they applied for patents on them. The patent office looked at them and said, yep, you're entitled to a patent. They followed the law. Consistent with Kingsdown and consistent with all the progeny of Kingsdown, they continued that iterative process of getting their claims. So, they acted in good faith.

And Richard Crisp's own emails, when you look at the totality of them, show that he as well as the rest of Rambus acted in good faith, and I'd like to show you -- it's a lengthy exhibit, because it's a whole string of emails. Richard Crisp's emails were stacked up in hundreds of pages, but let's bring up CX-711, and we are going to go to page 187, and this is an email that is a Richard Crisp email, and if you go up to the -- it's a subject -- go up to the subject line, if you could, Matthew -- right there, and the subject is, "JEDEC Meeting Notes, December 5, 1995."

And I should digress for a moment. On these meeting notes, complaint counsel seemed to suggest earlier that the fact that Richard Crisp sent these notes about what was happening at JEDEC meetings was in some sense improper, that he shouldn't have reported back to his management. Well, I mentioned to you earlier the IBM manuals. Well, the IBM manuals tell their participants who go to standard-setting organizations, you are required when you go to a standard-setting meeting to prepare a trip report, tell everybody in your management hierarchy what happened at the meeting when you return, which is what Richard Crisp did, not as formalized as IBM, but he did exactly what IBM did, or Betty Prince will testify that she sat in the meetings and took notes on her computer, just as Richard Crisp did. So, nothing untoward about that.

But what did he say here? Well, this was a point in time when Mr. Crisp was -- December '95 -- was trying to persuade others at Rambus to try to standardize the Rambus module, not the DRAM, but the module, the little package, if you think of it as that, he wanted them to try to get it standardized at JEDEC, and so he had gone to the prior meeting, December 5, and he talked to people about what would be involved if we wanted to get a standard on our module.

And if you bring up the highlighted part, first, he had lunch with Jim Townsend of Toshiba, and they talked about the patent policy and what they would have to do to get the R-Module standardized. And Jim said, well, as long as Rambus would state that it would abide by the patent policy, as far as the modules were concerned, that would be no problem. And the policy, he writes back to his management at Rambus, "requires that we state that we would license the patents necessary" -- necessary or essential -- and if you go to the next page, pick up the top part -- "license the patents necessary to build the module (but not the DRAM patents) to all-comers on a non-discriminatory basis for reasonable license fees and royalties." That's what Jim Townsend told him they needed to do.

say on a case-by-case basis that we will abide by the policy where it is relevant. We can say when a showing is made -- that is, when we come in and make a showing on our R-Module -- that there may be patent activity in that area.

Then if you go back, and we will pick up the bottom half of this -- and I know this is a lengthy one, but I want to show you in full context what was Richard Crisp's state of mind right after the last JEDEC meeting he attended. So the conclusion I reach here, he says, is we can abide by the patent policy on a case-by-case basis, and set the terms of our license agreements to what we like, and we give up nothing else in the patent -- in the process. The patent policy is something you deal with on a ballot-by-ballot basis, as Sussman recently advised me.

Then he goes on to talk about, as long as we mention when we make the showing that there is potential balloting or patent issues or we do it when the ballot comes to the floor, then we're fine.

Then he says, at the same time, we do not necessarily have to agree to abide by the policy -- by that, we don't have to agree to license for any particular presentation or ballot -- we can pick and choose what we decide to abide by on a case-by-case

basis.

And then he says, the things we should not do, we should not speak up -- the things we should not do are to not speak up when we know that there's a patent issue. To intentionally propose something as a standard and quietly have a patent in our back pocket we are keeping secret that is required to implement the standard and then stick it to them later (as WANG and SEEQ did).

And what did he say to his management? I am unaware of us doing any of this or of any plans to do this. This is not a document that Richard Crisp wrote for prosperity, publication or others.

JUDGE McGUIRE: What's the date on that document, Counsel?

MR. STONE: December 5th, 1995.

JUDGE McGUIRE: Okay.

MR. STONE: At the time of his last JEDEC meeting, he says I am unaware of us doing any of this or any plans to do this.

Let's look at one other of the many -- and there is many, many Crisp emails you will see. Let's look at RX-837. This is an email that Richard Crisp wrote a couple of months earlier in September of '95, and if you would go down to the bottom, he's talking

here about Tony Diepenbrock, the in-house lawyer which you heard complaint counsel talk about earlier, and he says, "Tony brings up a good point regarding our patent position. At the time we began attending JEDEC, we did so to learn what the competition was working on and what sort of performance systems using that technology would be able to achieve and what sort of issues would arise when designing with the devices.

"As time passed, our reasons for attending JEDEC increased into gaining leads into who was working for what semiconductor company (contact points for o was working

pro-competitive reasons.

"As time passed, some of the patents issued, and we have not really made the committees aware of this fact except for once, when I did and was later castigated for doing so."

Then he goes on to say, "It seems to me that we should re-evaluate our position relative to what we decide to keep quiet about, and just say what we have. It has been clear to me for some time that everyone that wants to know what we have issued will find out if they are willing to invest 10 minutes on the World Wide Web."

So, what was he saying? We might as well tell them about our patents that have issued, because if they want to find them, they can. So, let's just tell them about them. Whether they relate to anything or not, let's tell them about our patents. He wasn't worried then and he wasn't worried in his December memo about patent applications. He didn't have subjectively the state of mind that he had done anything wrong, that he was supposed to disclose things he hadn't disclosed, and the full context of his documents makes that clear.

So, his intent, which complaint counsel suggested was an issue in this case, his intent in that regard is not wrongful in the least.

So, let me go from this good faith argument that counsel make to my third point, which is causation, and yes, I am going to talk about whether the JEDEC members were misled. Were they misled? They believed Rambus was seeking the broadest possible intellectual property coverage for its inventions. We've shown you that and we'll show you more evidence.

They believed Rambus had many patent applications pending. They believed Rambus had filed applications to cover all the inventions described in the '898 application.

(Telephone interruption.)

MR. STONE: That's not mine.

They believed Rambus hoped its patents would cover SyncLink and other permutations of Synchronous DRAM, and there were many, many red flags that I'm going to talk about in a minute. So, for all these reasons, I am going to show you that no DRAM manufacturer was misled.

And I want to go to a time period that complaint counsel talked about, May of 1992. This is the JEDEC meeting where Richard Crisp was asked about

and I want to look at what those documents show us happened at that meeting.

RX-285A, if we could. It's an A because this is the English translation of another document originally written in German, and if you would bring up the yellow.

This trip report says, "The DRAM interface has become more and more of a problem for system developers." I think this very portion was shown to you earlier by Mr. Royall. "In order to eliminate this data transmission rate bottleneck, various competing concepts regarding the design of newer DRAMs have emerged, such as toggle-mode, cached DRAM, Rambus, and Synchronous DRAM."

Then if we go to the next page and we bring up that part, what was said? "Both factors are interwoven. The original idea behind the SDRAM is based on the basic principle of a simple pulse input and the complex Rambus structure."

Now, you remember earlier I showed you the Siemens document that described the complex Rambus structure as consisting of many different elements, not just the narrow bus? So, they say, well, the SDRAM is based on two things. Somebody's taken the IBM simple pulse input and put it together with the complex Rambus

structure, and that's SDRAM, and from it, NEC, a Rambus licensee who they thought would have the best insight, I guess, into Rambus' technology was the first to suggest a streamlined public domain version, meaning we're trying to find one that gets around the intellectual property that Rambus has. 1992.

Okay, so then what? We go to 286A, and here's another memo. This is a memo of a conference call held between people at IBM and people at Siemens that occurred the day before. It occurred on April 29th. If we go to the next page, let's see what they say. Talking about Rambus in this conference call, they said, well, Rambus visited key in-house IBM users -- and remember, this is a Siemens memo writing about what IBM told them -- IBM is still keeping its eye on Rambus. Rambus has announced a claim against Samsung for $10 million due to the similarity of SDRAM with the Rambus storage device architecture. For this reason, IBM is thinking of taking a license.

So, here we are, April 29th or April 30th of 1992, and IBM and Siemens are talking about the fact that Rambus has announced a claim against Samsung for $10 million because of the similarity of SDRAM and the Rambus storage device. That early on, that's what they knew.

at that meeting, May 7th, 1992, a JEDEC meeting in New Orleans, and we want to look at Mark Kellogg's handwritten notes. Mark Kellogg is also from IBM.

If you could bring up 290, this is the first page of his handwritten notes of the JEDEC meeting, May 7th, 1992, and then skip ahead, if you would, and then bring up these two points that he wrote in his notes. You'll see and you'll hear testimony that when he wrote a company name and underlined it, that was the speaker.

So, Siemens has been talking to IBM before this meeting, and Siemens brings up this issue, and he writes it in his notes. "The kernel of chip is similar to Rambus." Well, you remember in their notes earlier they said the Rambus chip is -- the SDRAM is really the simple IBM toggle mode and the complex Rambus structure, and he's saying again, "The kernel of the chip is similar to Rambus. Patent concerns?"

And when Mr. Crisp was asked if he would care to comment, he said no, he didn't care to comment, no Rambus comments.

Then he writes down that the NEC representative at the meeting said, well, we have the Rambus international patent application, sometimes called the WIPO application. It's 150 pages long. And then he said -- as to the Rambus patent, what did he say?

even more and you'll hear even more evidence -- these are some of the many, many, many times that Rambus gave notice to DRAM manufacturers that it had intellectual property that would cover things that they were thinking about manufacturing.

I showed you the early ones in the April-May

So, Betty Prince was hired, retained by Samsung to go to Korea and give a presentation on the Rambus DRAM, and she gave her presentation using transparencies or overheads, and when she got to Korea, they made copies of her transparencies, handed them out to everybody at the meeting, gave her back a copy. It's that copy they gave her back that she produced to us in this case, because it has Korean characters on it, which she said I can't read them and I didn't put them there, and it shows us what she went through in the course of that presentation.

As Your Honor knows from having reviewed her motion in camera, everything she said in that presentation was publicly available information, because that's her practice, nothing confidential that she learned at TI or anyplace else. Let's look at her report.

July of 1994, here's the cover page of the report she presented, and you see the characters in the upper left corner, and then we'll go to page 10. I'll just take a moment on this report, but I want you to see what she wrote at the bottom.

She wrote, "Many of the large systems houses believe that the Rambus patents are challengeable by previous internal work and/or patents. The early

concern about the impact of the Rambus patents on the major systems houses and vendors seems to have diminished considerably."

So, originally there was a lot of concern about the Rambus patents, and now the concern is diminished. Was it because they were lulled, or was it because the systems houses had concluded that the patents would be challengeable by previous internal work and/or patents? We'll keep seeing more and more evidence it was the latter.

JUDGE McGUIRE: Now, Counsel, what patents in your opinion is she talking about there, the patents that are challengeable?

MR. STONE: As we will see, what she's talking about is the potential patents that may issue some day down the road, not the patents they have now, and I'll show you why, if we could go to the next page.

She says, Rambus' technology lead "depends on whether the Rambus patents are valid or not." Now, she's talking there, and I am going to show you some other documents, not just about the issued patents but the patents that people thought might be issued because they had seen the very broad description of the invention in the WIPO application and in the patents that had been disclosed.

And if we go to September '95, which is the next time period I want to get to, we will see why that is so clear. So, if we go up here to September of '95, we are going to see several things that happened in that time frame.

If we could bring up the first document, they are the minutes of a SyncLink meeting, and I suppose I should pause for a moment on SyncLink.

SyncLink is a consortium who was trying to design a product that would perform as well as Rambus, and they designed a product that utilized a large amount of the Rambus inventions and technology, and they knew it, and they recognized the similarities, and they understood the similarities, and they went forward with it anyway, because they found that they had to find a way to get the performance that was somewhere in the ballpark with the RDRAM performance, and this was the only way they could do it.

What did they say at this meeting in September of 1995, if we bring up RX-589? I'm sorry, August of '95. Go to the next page of these minutes and bring up the highlighted part.

Interestingly, at this particular meeting, Richard Crisp had been invited to attend, and what did Richard Crisp say at this August 1995 SyncLink meeting?

He said, in Rambus' opinion, both RamLink and SyncLink may violate Rambus patents that date as far back as 1989. Others commented that the RamLink work was public early enough to avoid problems, and thus might invalidate such patents to the same extent that they appear to be violated.

So, the thinking at the SyncLink meeting was we think we have prior art. The RamLink work is public early enough that it will invalidate the Rambus patents. This August meeting, 1995, of SyncLink, we have stipulated was attended by at least five individuals at that SyncLink meeting who then attended the September 11 JEDEC meeting that followed, and we're going to look at that September 11 JEDEC meeting, and that's RX-600, are the minutes from that meeting, just a few weeks later.

This is one held in Crystal City, Virginia, September 11th, '95, and at that meeting, if we go to page 2, you will see what we have highlighted under the heading Patent Policies, the patent policies are shown as Attachment B, and that's Jim Townsend's patent policies, the slides I showed you earlier, and then the SyncLink/RamLink patents were discussed, and Rambus noted at the general meeting their position, see Attachment C.

Now, if we went to Attachment C to these minutes, we would see a faxed memo dated September 11th, but it's not a very good copy. Richard Crisp did another fax the next day which is dated September 12th, because he had one of those auto-dating functions on his program, and so this one, which is identical to the one on September 11th, does have a September 12 date on it, but I don't think anybody's going to contend there's anything nefarious about that.

This fax was attached to the minutes, was read at the meeting, was presented to everybody who was in attendance, because they all got the minutes with this attachment, and what did he say? He said, well, at the last JEDEC meeting, the one before the SyncLink meeting, it was noted that the subject of the SyncLink DRAM proposal bears a strong resemblance to Rambus DRAMs, and so I was asked to make a comment about the Rambus intellectual property position as it may relate to the SyncLink proposal.

Now, remember, he had been told at the SyncLink meeting, we think RamLink predates you, so we're not going to worry about the Rambus patents, because RamLink came first, it's prior art, it's going to invalidate your patent.

He responds to that. He says, the first Rambus

patents were filed more than five years ago, with

work is not going to help you out.

So, why then, after we look at all of these red flags, all of this knowledge and awareness of Rambus' intellectual property, clear awareness that Rambus thought that it read on the SDRAM and had asked Samsung for money, clear awareness that it read on the SyncLink proposals that were under discussion and told them that and said, by the way, your invalidity defense isn't any good, why with all of this information and knowledge about Rambus' intellectual property did the DRAM manufacturers go ahead and make use of what they knew Mike Farmwald and Mark Horowitz had invented? Why did they do that?

Well, we might ask ourselves at the outset, why did Mike Farmwald and Mark Horowitz make the inventions that solved the memory bottleneck crisis and why not all the resources of IBM or Dell or Micron or Hynix or Infineon make those inventions? We might ask ourselves whether JEDEC and its members had a reason for preferring the very slow pace of evolution -- and you're going to hear them tell you that's just what they liked -- as opposed to the fast pace of technological revolution or progress, which is where Rambus was trying to take the industry.

Why did JEDEC initially take a few of the

Farmwald and Horowitz inventions and include them, and then grab a few more and include them, and then a few more and include them? What motivated them to do that? And did they want to avoid manufacturing the Rambus product, the RDRAM product, because they were afraid of paying royalties? And did they think they could use the Farmwald and Horowitz inventions a little bit at a time and avoid paying royalties? Or were there other reasons? What led them to make this choice in light of all the knowledge they had?

Was it a fear that they would lose control of the technology? Was it a concern that their own R&D efforts had been so lacking for so long that if somebody came along with a great new idea and blew them out of the water in terms of the technology, that they wouldn't be able to sort of control the pace of their own business, and they might have to just start manufacturing products that someone else designed to be used with the Intel chip sets and others?

They were facing a huge problem, because computers were really going fast, and because computers were really going faster, they had to find a way to get there, but what they knew was, hey, if all the memory devices are slow, we're okay. As long as there's nobody out there making a fast device, we're fine. So,

as long as we're all sitting in a JEDEC meeting agreeing that we're going to go slow, we're okay. We don't have to worry about technology, R&D. We don't care about whether we give the consumers a fast computer or a slow computer. They'll take whatever we give them, because we are going to sit in these meetings and agree to go slow.

And Rambus threatened that business strategy, because Rambus said, we have a product that goes fast. What were they going to do about it? Well, they decided they had to go faster, and they -- I guess they looked at all the alternatives. They looked for all the ways to go faster. And what did they pick? They picked the alternatives that Mike Farmwald and Mark Horowitz invented and disclosed in April of 1990 in their patent application, and they started bit by bit

1a procb.

6ieceocb.6ieceotaking those inventions and sticking them into their products.

Okay, so that's what tell us? Well, that takes us to something called the but for world. The but for world is something that antitrust lawyers and economists love. It's that hypothetical world of what would things have looked like if only I turned right instead of left, if only I had taken the high road instead of the low road?

You know, before we get to the specifics of the alternative here, we have a very interesting proposition in this case. Mr. Royall told us this

I think they would have. They would have done the same thing. So, the but for world if Rambus had never joined JEDEC is the world we live in today. That sort of ends the case really. That's all there is to it. But let me go to the particulars of what complaint counsel argued.

They say, well, no, no, if Rambus had not been at the meetings, then people would have thought about other alternatives that they didn't think about because Rambus was there. The logic of that is a little baffling. Why would they have thought about alternatives to Rambus' technology if Rambus wasn't there but they wouldn't have thought about them if Rambus was there?

But let's look at those alternatives in any event. Let's just jump over the logical gap in that reasoning. Are there alternatives? Complaint counsel says there are. Okay. Would they have chosen those alternatives? We probably ought to think about what they cost, because if they cost a lot more, they might not have chosen them. Remember, using the Rambus features in the world we live in today only requires the payment of a relatively small royalty, and it is relatively small because it is less than the standard royalty that IBM charges for its patents, to put it in

context.

In addition, if they had looked at these alternatives, they would have asked themselves not only what they cost, but how do they perform? Can they get me there? Are they fast enough? Will they work? And then they, of course, I guess, because this is what we've been told, they would have asked themselves if there are alternatives, do they infringe any patents, Rambus' patents or anybody else's patents? Because apparently JEDEC's practice was to not put anything patented in their standards.

So, those are sort of the questions we ask ourselves about this theoretical but for world, and I do want to show you that these DRAM manufacturers, they were pretty savvy about this, if you could bring up 777. This is a memorandum email that was written to Farhad Tabrizi from Jim Sogas, and we are going to look at the bottom part of what he sent, and what he sent was this was intended to be an email that Farhad Tabrizi would send on to other people. So, this was intended for Farhad's signature, and it was proposed to him by Jim Sorgas, and one of the things he wanted Farhad to say is the following:

"There is an alternative that Intel can achieve their desired performance level with an industry

standard solution, which we call SyncLink. SyncLink is not where --" he wrote were -- "SyncLink is not where Rambus is today, however, with everyone's support we can get there quickly."

So, what did he recognize? Okay, SyncLink, which Richard Crisp told them infringe Rambus patents, SyncLink was the way to go. It will get us there. It's not as good as Rambus. It's the way we can go. Farhad, you have to tell people to do this, because they recognized they weren't there for the level of performance.

Okay, if we take the theory, the theory about what a but for world is all about, and look at the evidence, what do we find out? What would the but for world look like in fact? Well, we know some things. DRAM manufacturers knew about Rambus' IP. I've only shown you the tip of that iceberg.

They believed Rambus would not be able to obtain valid patents. You will see evidence on that. They decided, yeah, we know there's a lot of Rambus IP, we know they have the fundamental inventions, we know they're revolutionary, we know Farmwald and Horowitz have that special skill that none of us had to solve this problem, but we don't think their patents are going to be valid, because we think we have prior art.

We have the RamLink or whatever.

They considered possible alternatives to Rambus' features, and they did not use them, because, the evidence will show, they wouldn't give them the performance they needed. And so what did they do? Aware of all these risks, they deliberately chose to use Rambus' features, deliberately chose to take a risk. It was a gamble. And you know, maybe not a bad gamble. I mean, Infineon won the first trial. So, Infineon avoided it. They found a way to avoid it. They took the risk, I am going to use those features, I will go to litigation, I will see if I can beat Rambus.

Well, Betty Prince told us exactly that in her report as of July of '94. Yeah, there's a lot of concern about the Rambus patents, but there's not so much concern now because we think there's prior art. But there's more.

Let's bring up, if we can, RX-629. This is an internal Micron memorandum written by Jeff Maheux in November of 1995, and if you bring up the text, what does he say? He says, well, attached are abstracts for the patents that have been granted to Rambus so far. Okay, I guess he didn't have any trouble finding them on the web. None of these guys do. He says, please look them over and send me any feedback you might have.

We can get copies of the full patent for any that are of particular interest.

And then what did he say in 1995? "Please consider both the quality (is there prior art?) and the breadth (do they apply to more than just Rambus?) of the patents. Please feel free to forward this to others for comment."

So, November 7, 1995, Micron sends around the abstract of all of Rambus' patents and asks for comment on the breadth and the validity of those patents. What happens next? Let's look at RX-663.

There's a SyncLink meeting, January 11 of 1996, a couple of months later, attended by people from a variety of these DRAM manufacturers, including Micron. If we could go to the next page, and if we bring up that, we will see a discussion. "Rambus has 16 patents already, with more pending. Rambus says their patents may cover our SyncLink approach even though our method came out of early RamLink work. Micron is particularly concerned to avoid the Rambus patents, though all of us share this concern."

So, they looked at the patents, they knew more were pending, they knew that Rambus said the SyncLink approach would infringe on those patents sooner or later, and what did they do? Well, let's keep going.

Let's look at 888. They then took this issue to a JEDEC meeting in 1997, March of 1997, in Fort Lauderdale, Florida. They brought this same issue up again at JEDEC.

NEC is making a presentation, a presentation about DDR, a first showing is made there, and it included a read clock and a write clock. Some on the committee felt that Rambus had a patent on that type of clock design. Others felt that the concept predated Rambus by decades. Okay, so they said, well, Rambus has got a patent on it we think, and somebody else says, no, it won't be valid, we have prior art. We can keep going forward, take the risk. We're going to beat them back, we will invalidate the patents. It's a gamble. Sometimes you win a gamble; sometimes you lose.

Some committee members did not feel that Rambus' patent license fees fit the JEDEC requirement of being reasonable. Okay, some thought the rate was too high. It's lower than IBM's. Rambus has also told JEDEC that they do not intend to comply with JEDEC patent policies. Okay. So, everybody's on notice there. That I think relates to the licensing provisions are reasonable and nondiscriminatory since Rambus was no longer attending meetings.

Let's go back to that document 777 we looked at earlier. I only showed you the part about wanting to get the same performance as Rambus. Now we look at the part that precedes it. This is what Farhad Tabrizi was going to say to everybody when he sent out this email. This is what gives us our first clue as to what was motivating the DRAM manufacturers at the time. He's really worried, because if Intel and Rambus get together, put together this marriage of the Rambus technology and the fast Intel processors, we saw IBM years earlier thinking they could corner the PC market, but what's he worried about?

He's worried -- and it's in the second paragraph that I've highlighted -- that we will become a foundry for all Intel activities, and that if Intel wants to do business with us, we may get a small share of their demand or not. He says Rambus licensing is not just an issue of paying a royalty to Rambus. It's not. It's not just an issue of paying a royalty to Rambus. He was concerned that if Intel implements Rambus, all other applications will move in that same direction, and even if the architecture changes, their signaling, the Rambus signaling, will remain for many generations.

So, they're worried. They're not worried about

paying royalties to Rambus. They are worried that they have gotten so far behind in the race for technology, they have gotten so far behind in their ability to deliver faster speeds to the computer manufacturers and faster speeds to the consumers, and they are afraid that they can't keep up without using the Rambus inventions.

So, what does he say? He says, "I urge you to educate others and get their agreement to say no to Rambus." Say no to Rambus. And then he goes on to say, "What I showed you earlier, that SyncLink is the way to go. We are going to all get together. We are going to put together this SyncLink proposal. We know it infringes Rambus patents, or at least Rambus tells us it does. We think they're invalid, Rambus tells us they're not. It doesn't matter. We don't want to be a foundry for Intel. We're going full speed ahead, full speed ahead on SyncLink." Full speed ahead using technology that they know Rambus says infringes.

RX-1444. Samsung has announced that they're going to start building an RDRAM product that Intel needs. Samsung has made this announcement. A press article reporting on that announcement is included here. This is a Micron document, and bring me up the second part of that. What does the Micron author write

when they see that article?

"This article shows that Samsung has broken ranks with the other suppliers and sold their soul to the devil." In other words, Samsung has decided we're not going to try to go slow. We're going to get on the fast pace of revolution, and we're going to get a product out there that will go fast, but that, according to Micron, was selling their soul to the devil and breaking ranks with other suppliers.

And then if we go up to the top, what do we see? An officer of Micron writes this email. He says, "I've certainly made the point with the officers," and you'll see in context he's talking about the officers of Samsung, "that Intel is essentially disabling our marketing, applications and design, and other key parts of the company, and ultimately could control the DRAM industry the same as they have others. I don't think everyone considers it as much of a threat as I do. There are a number of options for Intel. Seems to me they'll be forced to do several strategies simultaneously to avoid egg-on-face and the Justice Department. 1, provide an alternative chipset; 2, use Samsung to drive Rambus; and 3, work with the industry on a non-Rambus packetized DRAM."

So, what was driving the DRAM manufacturers? I

offer this evidence not to show you that the DRAM manufacturers had engaged in an unlawful joint boycott of Rambus products. I offer this evidence to explain to you why the DRAM manufacturers, with all this notice about Rambus intellectual property, would decide we are going to take the risk of using that intellectual property because if we don't and if the RDRAM product wins out, well, we're going to be a foundry for Intel. Their fear of being a foundry for Intel drove them to take the risk of using Mike Farmwald and Mark Horowitz's inventions piece by piece and bit by bit in the products that they designed at JEDEC, because they realized the continual evolutionary, go slow, hay wagon pace of JEDEC wasn't going to work.

So, where does that take us? It takes us to the end of the evidence and the end of the three issues. Duty? No duty. Breach? No breach. Any duty that was enforceable under the antitrust laws? No. Any exclusionary conduct? Has Rambus kept anybody out of the business? The only extent to which Rambus has kept anybody out of any business is by being the ones to invent the solution to the memory bottleneck. And they got a patent on it, a lot of patents on it, because their invention -- and everyone concedes -- it was revolutionary. So revolutionary that everybody is

using it today.

And did they do anything that caused any anti-competitive harm? No. And I want to talk about the anti-competitive harm for a moment. If Rambus had never joined JEDEC, the world would be the same today, except we wouldn't be here. If Rambus had disclosed its IP at JEDEC meetings, we'd be where we are today in terms of people using that technology, because they all knew about the technology, and they used it anyway, and the best example of their willingness to use the technology despite being warned is SyncLink, because Richard Crisp went to the SyncLink meeting, and he said, you infringe our patents. And they said, no, we don't. No, we don't. RamLink was first.

So, he went back to the next meeting, it was a JEDEC meeting, and he said, RamLink was not first, we were first. And he wrote them a letter and said, we were first, forget that argument. You are not going to invalidate our patents on RamLink.

So, what we know -- what we know is that the but for world that we live in today is a but for world where the DRAM manufacturers had a choice. Should I sign up with RDRAM, pay royalties, make the fastest possible product, give the consumers what they want and need, or should we try to all hang together and go the

slow performance route? And there's a risk in taking the slow performance route, because if you go slow and some other manufacturer goes fast, you could get knocked out of the market.

So, when Samsung decided they were going to go fast and start making the RDRAM and break ranks with the rest of the industry, well, the other guys going the slow route got worried, and they said, we've got to speed it up. And so they re-invigorated their whole SyncLink plan.

And if we bring up 857, I think this is the right one -- yeah, that's it. Bring up 857. Here's what they did when they became aware of this. Bring up the highlighted part, if you will.

They said, oh, my gosh, we've got to do something about this. They called a SyncLink executive meeting in Yokohama, Japan, and the purpose of the meeting was to re-ignite the consortium in light of the recent Intel announcement to enter into a design partnership with Rambus for the so-called Rambus Direct, and with few exceptions, every DRAM manufacturer was represented there. So, they knew, Intel is such a threat to us -- it's really Intel and not Rambus, because Intel is a dominant force in the market, and it is fair to say that Rambus is not a very

large company or a very dominant company -- but they knew that if Intel paired with Rambus, their slow products wouldn't make it.

So, they called a meeting and they said, we know we infringe Rambus patents -- we know they told us that -- but we're going forward anyway. We are going to re-ignite the consortium. We are going to ignore the red flags that Mark Kellogg and everybody else talked about, we are going to ignore all that information, and we are going to go forward.

And what does that tell us? That we would be today exactly where we are if Rambus had sent a lengthy letter from its lawyers to everyone at JEDEC saying, by the way, we have some patents, we have some applications, we expect to get more patents, we think they're going to hold up someday, and we think what you guys are doing may well infringe them, and what would have happened is the DRAM manufacturers would have done in that scenario exactly what they have done now, which is to say, we don't -- we'll take our chances.

We don't think your patents are valid. We'll take our chances. If we have to, we'll litigate with you. We'll litigate until something freezes over. We will litigate, and we will invalidate your patents. We are going to take our chances. We will not become a

foundry for Intel. We live today in the same world we would have lived in if Rambus had told the JEDEC members everything that complaint counsel envisions should have been told.

Thank you, Your Honor.

JUDGE McGUIRE: All righhave i2igh Th. Stone

standard that I was going to employ, and at that time I believe I said that I would agree to anything, to have entered any item that the two sides could come to terms on, and you've done that.

The problem with that is, it sort of also goes -- it's in conflict, then, when I came out Tuesday morning, as you recall, and made an opening statement regarding how I intended to employ that standard regarding that I would not have entered raw hearsay. So, what I have now that I've approved, but now, having had further chance to go back and I think review it, is an agreement between the parties which basically is going to allow into evidence in this case over I think 6000 documents. That was not what the Court intended, and perhaps the Court shares part of the blame in not being more clear as to what it hoped to have entered into this record.

So, at this point, I want to perhaps get some more input by the two sides, and as you know, when we first convened back in early April and I indicated to the parties at that time that -- because at the conclusion of this hearing, the Court would only have a -- it would not have that much time to issue its opinion in this case, and that the parties would not have all that much time as well to offer their

post-hearing briefs.

So, now, with the idea that the parties have agreed to dump this kind of evidence in this case, I'm concerned that it's going to cause us all problems. So, what I'm going to ask the parties to do is to take some time again, go back and determine that evidence that you intend to employ for purposes of this hearing, and within the same spirit that you entered into this other agreement, I'm going to ask you to go back, and I don't know how much time this is going to take -- and I apologize if this is causing any heartache at this point of the trial -- and see if we can't do a better job of determining what evidence in this case is, in fact, going to be employed, and the evidence that you had indicated that you're otherwise going to have entered but odds are you aren't going to employ.

Any comment on that from either side at this point?

MR. ROYALL: I can make one comment, Your Honor.

JUDGE McGUIRE: All right, Mr. Royall.

MR. ROYALL: As you know, we proposed the agreement that led to this stipulation, and of course, complaint counsel -- respondent quickly, with a couple of caveats, agreed, but I know the spirit in which we

proposed it or what we had in mind was that you had said that just because you enter something into evidence doesn't mean that it's going to be given any weight.

JUDGE McGUIRE: Right.

MR. ROYALL: And so we certainly believe from our standpoint that it is incumbent upon us, if we desire for you to give any evidence that's admitted weight in your decision, that we draw attention through witnesses to the importance of that evidence and that we be prepared then to explain in post-trial briefs what importance that evidence has, and we also fully expected that we would be permitted, notwithstanding stipulations as to the admissibility of evidence on their list, that we would be able to both make objections that would go to the weight of the evidence potentially or the reliability of the evidence, and we could also explain in post-trial briefs if it turns out that some of the evidence that was admitted by virtue of the stipulation wasn't presented through any witness, we don't know anything about it, and at the end of the day, we would likely argue in our post-trial briefs that it should be given little, if any, weight for that reason, because it is incumbent upon us, notwithstanding the admission of the evidence by

stipulation, to draw attention to it, explain through a witness why it's important and what it relates to.

So, we -- that was the spirit, I think, that we had in mind when we entered into this, and we take very seriously our responsibility, following up on what you have said, that if we desire for you to give weight to evidence, we can't just draw out a stipulation. We need to bring witnesses in here, explain it, and we need to be prepared to connect the dots.

JUDGE McGUIRE: Right, and there is no problem with that. My concern is I would be quite surprised if you intend to explore every item of evidence that you have agreed to offer during the course of this proceeding. If you do, I will be amazed, because I believe you have admitted over I think 4000 items of evidence, and that's items. Each item could be a hundred pages. So, you know, that's the scope of the problem I'm concerned with.

Could I hear from the other side just to see what input you might have on this, Mr. Stone?

MR. STONE: Your Honor, I think we're to a large extent in agreement with complaint counsel, which was I think we all entered into the stipulation because we didn't sense that it was going to be profitable to stand up and make objections to evidence as it came in,

and we --

JUDGE McGUIRE: And you know, that's the Court's fault, and I want to apologize to the parties. I was under the impression on the 28th that was going to be the day that all this would come to a head, and it didn't seem like everyone had that same idea, so that's why when I came out early on Tuesday, then I tried to I think clarify what I had indicated to you on the 28th. And then I get this, and that does not seem to comport with the standard that I had then indicated I would employ on the 29th, on Tuesday. So, I'm just deeply concerned at this point that the -- and I'm happy that you have come to terms on this, but I'm unhappy with how much of this stuff you've agreed to.

So, I want to take some steps here, and I want the parties to spend some time again and try to do what you can to further isolate all of this evidence into a more cogent package that then you can agree to, and should in the course of this hearing you have to offer other evidence that you haven't agreed to, then of course, at that point, I'll offer you that opportunity.

MR. STONE: The --

JUDGE McGUIRE: But I'm going to ask the parties perhaps -- and if we have to, instead of trying to get an early start tomorrow, maybe we could start at

2:00 p.m. again, I don't know, and -- again, I feel on the eve of the case in chief here that this is causing some problems, but it's a problem that I would have addressed now than after the hearing, when we're all going to be under very tight constraints to issue an opinion and offer your post-hearing briefs.

MR. STONE: Well, I think we should talk with complaint counsel about it, and I think probably before I make any -- I don't want to make any proposals now that I haven't discussed with them in advance, and I'm sure they feel the same. I simply would say that I think we all agree that we are not going to draw attention to all of the evidence that is on both of the exhibit lists. We -- that will not happen.

The question is, it's very hard to know now which subset we will draw attention to and which one we won't. So, I certainly agree with Mr. Royall's comments in that regard, and I think in terms of how to deal with that, if you could give us an opportunity to talk about it, I don't know that we need to delay -- it's up to you. I think if you would give us over the weekend to try to work on this problem and maybe just if you want to just -- we understand that we haven't -- let's not stamp all those exhibits admitted or something.

JUDGE McGUIRE: Yeah, don't stamp them, so that's why I wanted to talk about this before we get too far along in the current endeavor.

MR. STONE: Because we might be able to -- I think we're now hearing your concerns --

JUDGE McGUIRE: Yes.

MR. STONE: -- and rather than us try to negotiate through you in the courtroom, I'd rather --

JUDGE McGUIRE: Right, and that's why I'd rather talk about this. It is a concern. It's one I want addressed. So, it's not a question of just talking about it. I want to see something actively involved to where -- and I'll be happy to offer counsel, you know, a couple more days. Perhaps we can -- well, you tell me how much time you think you're going to need to go through this, and if you could -- you know, tomorrow is obviously Thursday, and you might not be able to get it done by, say, Friday close of business, and if not, then we will take it up again early next week.

MR. OLIVER: Your Honor, if I could mention one other possible approach, I don't know if this would alleviate your concerns or not. We had prepared a document that we referred to as an annotated exhibit list. It's a document that we did share with the other

side. We have not produced it to you. It consists of approximately 500 to 600 of our exhibits, the ones we consider to be most important. We have organized them by topic, and we have attempted to point out how we think each of those documents is relevant to the particular points that we are making.

I was wondering if it would alleviate your concerns if we were to provide you with a copy of that such that you could see which subset within our exhibits you thought we were --

JUDGE McGUIRE: Well, that is kind of what I was hoping to accomplish when we first convened on the 28th when I talked about let's indicate what categories of the proposed evidence that the parties were going to offer, and that didn't seem to at that time really I suppose get much traction, so I want to see something on this done, and I don't want you to come back, whether it's on Friday or sometime early next week, and still offer me this same agreement, because I'm not going to accept it at this point.

So, I -- and again, the Court understands it was in part to blame for what's happened. As you know, we've had just so many orders we've had to have an

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I don't think it's a standard procedure, and I --

JUDGE McGUIRE: I don't think it is either, Counsel, and you have had a chance, and you did an excellent job, as I said, each of you on your opening statements. You know, I don't think that I'll have to have at this time any further argument.

MR. ROYALL: That's fine, Your Honor, and the only reason I raise it, just in terms of the appropriateness, in the earlier oral argument in the case, Judge Timony did hear rebuttal. That's all.

JUDGE McGUIRE: Thank you very much.

If there is nothing else, this hearing is adjourned and will convene tomorrow morning at 9:30 a.m. Thank you very much.

(Whereupon, at 5:30 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: APRIL 30, 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: 5/1/03

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