PUBLIC

UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION

In the Matter of **RAMBUS INC.,** **a corporation.**	**Docket No. 9302**

BRIEF OF APPELLEE AND CROSS-APPELLANT RAMBUS INC.

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I. INTRODUCTION AND SUMMARY OF ARGUMENT

Respondent Rambus Inc. ("Rambus") respectfully submits this brief in connection with Complaint Counsel's appeal, and Rambus's cross-appeal, from the Initial Decision by Judge McGuire.[1]

In their Opening Statement at the outset of trial, Complaint Counsel stated that "[w]e are here because Rambus simply refused to play by the rules." Trial, Tr. 12. After a three-month trial that involved 44 live witnesses, over 1900 admitted exhibits, and almost 12,000 pages of trial transcript, the evidence is overwhelming that Rambus broke no rules. The evidence also shows that if Rambus possesses market power, as Complaint Counsel contend, it does so as the result of the inventive efforts of Rambus's founders, Drs. Farmwald and Horowitz, which efforts have resulted in the grant of numerous valid patents by the United States Patent Office.

Complaint Counsel do not contend that Rambus's patents are invalid or were obtained improperly. They nevertheless sought below an order that would deny Rambus the right to continue to collect royalties under license agreements it has signed, prevent it from suing companies that infringe its patents, and award to all DRAM manufacturers the perpetual free use of Rambus's patents for devices standardized by JEDEC. Complaint Counsel sought this extraordinary relief in order to enforce what they alleged was JEDEC's patent disclosure policy – a policy they said required the disclosure of patents, patent applications and intentions to file or amend patent applications that in

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[1] The following abbreviations are used throughout this brief:

IDF	- Initial Decision, Findings of Fact
IDC	- Initial Decision, Conclusions of Law
RPF	- Rambus Inc.'s Proposed Findings of Fact
RRPF	- Rambus Inc.'s Responses to Complaint Counsel's Proposed Findings
CCPF	- Complaint Counsel's Proposed Findings of Fact
CCRPF	- Complaint Counsel's Responses to Rambus Inc.'s Proposed Findings
CCAB	- Complaint Counsel's Appeal Brief.

any way related to matters discussed at JEDEC.

After many months of considering the testimony and documentary evidence on these issues, and after preparing over 1,650 individual findings of fact. Judge McGuire concluded that Complaint Counsel had failed to meet their burden of proof on each essential element of their claims. Judge McGuire found, for example, that:

- Complaint Counsel failed to prove that JEDEC's patent policy required disclosure of a member's intellectual property interests; the evidence, including JEDEC's board minutes and the Commission's own records, conclusively showed instead that disclosure was voluntary;
- Complaint Counsel failed to prove that the disclosure duty they posited arose *prior* to JEDEC balloting (a showing they needed to make because virtually none of the presentations they point to were ever balloted); indeed, their own witnesses testified to the contrary;
- Complaint Counsel failed to prove that Rambus possessed patents or patent applications that covered the presentations they rely upon; the expert testimony and the Court of Appeals for the Federal Circuit demonstrated that there were no such patents or applications;
- Complaint Counsel failed to prove that Rambus had led other JEDEC members to believe it would disclose any relevant intellectual property; the evidence instead showed beyond a doubt that Rambus had put JEDEC on notice that it would *not* disclose, and that it reserved *all* rights to, its intellectual property;
- Complaint Counsel failed to prove that JEDEC would have adopted different standards if Rambus had disclosed its intentions, failed to prove that there were acceptable alternatives, and failed to prove that any equal or superior technologies were excluded by Rambus's

alleged conduct; and

- Complaint Counsel failed to prove that the DRAM industry was now "locked in" and could not avoid the use of Rambus's technologies. Indeed, the evidence showed quite the opposite – and even included emails by JEDEC members that used the phrase "I am *not* locked in."

Complaint Counsel bore the burden of proof on all of these issues, and more; a failure to meet their burden on *any* of them required dismissal. Judge McGuire found that Complaint Counsel failed to meet their burden as to *all* of them. As demonstrated in this brief and in Judge McGuire's Initial Decision, this conclusion was correct in all respects and should be affirmed.

II. STATEMENT OF THE FACTS

A. Introduction

Complaint Counsel ask the Commission to ignore all of the findings of fact contained in Judge McGuire's Initial Decision. According to Complaint Counsel, because the Initial Decision is "riddled . . . with factual error" and "cannot assist the Commission," the Commissioners should "set it aside entirely" in deciding this case. CCAB 7. Complaint Counsel ask the Commission to believe that every single one of Judge McGuire's findings is erroneous, even though their brief fails to challenge *any* single finding or explain why it is in error.

The Commission's rules do not permit a party simply to say "all of the ALJ's findings are wrong. Please adopt my proposed findings." Rules 3.51-3.52 instead require a party appealing from an Initial Decision to identify its specific objections in its opening brief. Moreover, because of both fundamental fairness and judicial efficiency concerns, the importance of such a requirement grows, not shrinks, as trials increase in length and as the issues at stake grow in importance and complexity. There is thus no precedential value, and great danger to the efficiency and credibility of the administrative process, in an argument by agency counsel that an ALJ's months-long, painstaking analysis of the testimony and evidence that he received should simply be ignored in its entirety.[2]

Complaint Counsel's refusal to identify alleged errors in Judge McGuire's findings should be held to constitute a waiver of any challenge to those findings. *See In the Matter of Sears Roebuck & Company*, 95 F.T.C. 406, 1980 FTC LEXIS 87 at *226-7 n.7 (1980). Rambus nevertheless submits below a statement of facts that demonstrates that Complaint Counsel failed to meet their burden of proof on the essential elements of their claims.

B. Rambus And Its Inventions

1. Introduction

Rambus was founded by two young professors of electrical engineering, Drs. Michael Farmwald and Mark Horowitz, who foresaw an impending crisis in computer memory technology and invested their time and energy to devise novel solutions to the problem. *See generally* RPF 27-45. Dr. Farmwald realized in the late 1980s that developments in microprocessor technology would lead to significant speed increases in microprocessors while memory chip performance would not keep up. RPF 27-32. He recognized that the result of these trends would be a "bottleneck" – memory technology would limit computer system performance. RPF 28.

In an effort to solve the memory bottleneck problem, Dr. Farmwald conceived the general idea of a new memory interface and protocol (an organization of

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[2] Complaint Counsel's brief also argues that all of Judge McGuire's findings that were based on findings proposed by Rambus should be ignored *for that reason alone*. The Commission has long disregarded such arguments. *See In the Matter of Coca-Cola Company*, 83 F.T.C. 746, 1973 FTC LEXIS 245, *105-6 (1973) ("We test the initial decision's findings by their relevance and adequacy, not by a tally of the number derived from the proposed findings of either party to the litigation.").

the bits and timing of bits transferred by a memory chip) that would allow a *single* DRAM chip to have higher performance than a board containing *320* existing DRAM chips. RPF 41. Dr. Farmwald enlisted the help of Dr. Mark Horowitz, an expert in circuit design, who took a leave from his professorship at Stanford to work with Dr. Farmwald. RPF 42-44.

Drs. Farmwald and Horowitz realized that although then-existing DRAM memory chips were asynchronous, they needed to develop a synchronous device with mechanisms for exercising very tight control over timing with respect to the clock to make sure that each bit of data – traveling at a very high speed – was read during the very narrow window of time when it was valid. RPF 64. Among the numerous inventions that Drs. Farmwald and Horowitz devised to optimize the performance of such a synchronous device are the four that Complaint Counsel have put in issue in this case:

- Drs. Farmwald and Horowitz decided to put registers on the DRAM to make the interface more efficient, including access time registers that could be programmed with a latency value, an invention known as "programmable latency." RPF 68-69.

- Drs. Farmwald and Horowitz allowed the response to a request to include a variable amount of data, an invention known as "variable block size" or "variable burst length." RPF 70.

- Drs. Farmwald and Horowitz realized that they could not build a 500 MHz DRAM with current technology and so, to transmit data at the highest possible speed, they conceived the idea of transmitting and receiving data on both edges of a 250 MHz clock, an invention known as "dual edged clocking." RPF 63.

- In order to have the highest speed possible, Drs. Farmwald and Horowitz also decided to use specialized circuitry, either a delay locked loop (DLL) or a phase locked loop (PLL), placed on the DRAM itself in order to minimize timing uncertainties, an invention known as "on-chip PLL/DLL." RPF 66.

2. Rambus's Initial Patent Application And The PCT Application

By early 1990, Drs. Farmwald and Horowitz had put together a set of their ideas that they proceeded to describe in a patent application. This patent application, serial number 07/510,898 (the "'898 application"), was filed on April 18, 1990. IDF 168. After the filing of the '898 application, Rambus received an 11-way restriction requirement from the United States Patent and Trademark Office ("PTO") – that is, the Patent Examiner determined that Rambus was claiming 11 *distinct* inventions in the '898 application. IDF 171. Rambus was, therefore, required to file numerous divisional applications in order to pursue all of the inventions identified by the Patent Examiner. *Id*. The Rambus patents at issue here have all issued from applications that are continuations or divisionals stemming from the original '898 application. IDF 177. *All* of those patents are based upon and contain the same specification as the original application. *Id*. In other words, they are all based on the description of the inventions that was included in the '898 applications. *Id.*[3]

Complaint Counsel imply that the Farmwald and Horowitz inventions were limited to the use of various features in an RDRAM device and that Rambus stole the idea from JEDEC of using these features in other DRAM devices and then used that stolen idea to obtain patents covering the other DRAMs. Nothing could be further from the truth. The record evidence fully demonstrates that the innovative features at issue here were set out in Rambus's original '898 patent application, filed well before JEDEC had begun considering the SDRAM standard. IDF 177. Moreover, Complaint Counsel

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[3] Under United States patent law, an inventor is entitled to file later applications called "continuation applications," claiming different inventions from those claimed in the initial application, so long as those later-claimed inventions are supported by the disclosure, known as the "written description," in the initial application. Such continuation practice can legitimately be used to add claims to cover later developed, competing products, again so long as those claims are supported by the original disclosure. *Kingsdown Medical Consultants, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 874 (Fed. Cir. 1988). That is, the original written description must clearly convey to one of ordinary skill in the art that the inventor was in possession of the later-claimed invention at the time that the initial application was filed. *Id*.

stipulated prior to and during trial that they were not in any way challenging the PTO's determination that Rambus's founders had met all of the statutory prerequisites to the issuance of valid U.S. patents, necessarily including the determination by the PTO that the inventions in question were described in the original '898 application. In other words, Complaint Counsel have acknowledged for purposes of this case that Rambus's founders (*not* JEDEC) first conceived of the inventions in question. 35 U.S.C. § 112.

On April 16, 1991, Rambus filed an international patent application pursuant to the Patent Cooperation Treaty (the "PCT application"). RPF 659-61. The PCT application was published on October 31, 1991. *Id.* The specification contained in the application was identical to that contained in the '898 application and described the four inventions at issue in this case. IDF 186-206.

3. The Scope Of Rambus's Subsequent Patent Applications

Despite the breadth of the specification contained in Rambus's '898 and PCT applications, Rambus did not in the early and mid-1990's file *claims* seeking broad patent coverage over the use of various features in any DRAM device. In fact, Complaint Counsel have formally stipulated that as of January 1996, almost six years after the '898 application was filed, Rambus held no issued U.S. patents that were required for the manufacture or use of *any* device manufactured in compliance with a JEDEC standard. IDF 939. Judge McGuire, like the Federal Circuit, further found that as of the time of Rambus's departure from JEDEC, Rambus had no claims in any patent or pending U.S. patent application that were required for the manufacture or use of any JEDEC-compliant device. IDF 939-966; IDC 275-7; *Rambus Inc. v. Infineon Technologies AG*, 318 F.3d 1081, 1103-05 (Fed. Cir. 2003) ("*Infineon*"). Therefore, even if Rambus was obligated as a JEDEC member to disclose patents or patent applications at JEDEC meetings, Judge McGuire correctly concluded that Rambus had nothing to disclose.[4]

C. The Manuals And Policies That Governed JEDEC Meetings Did Not Require Disclosure Of Intellectual Property Interests

Judge McGuire found that the JEDEC patent policy during the 1992-1996 time period (when Rambus was a member) did *not* require disclosure of patents, patent applications or intent to file or amend patent applications by JEDEC members, and instead "encourag[ed]" the "voluntary disclosure of any known essential patents." IDF 679. Although Complaint Counsel claim that the patent policy *mandated* disclosure, CCAB 17, they address none of the overwhelming evidence that Judge McGuire cited in support of his contrary findings. That evidence is summarized below.

1. The EIA Legal Guides That Governed JEDEC's Activities Did Not Require The Disclosure Of Intellectual Property Interests

Throughout most of the 1990's, JEDEC was not a separate legal entity but was instead an unincorporated "activity" within the engineering department of a trade association known as the Electronic Industries Association ("EIA"). Rhoden, Tr. 289. It is undisputed that for the entire time that Rambus was a JEDEC member, EIA policies governed the conduct of JEDEC meetings and the obligations of its members. IDF 222; Rhoden, Tr. 289; Kelly, Tr. 1918. As JEDEC Council Chairman Gordon Kelley put it, JEDEC "fell completely under the umbrella of the EIA for legal guides" prior to 1999. RX1179 at 1.

The official EIA Legal Guides were published in March 1983 and remained

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[4] Complaint Counsel do not challenge any of the underlying bases for Judge McGuire's conclusion and offer only a single chart that purports to show "the relevant technologies" and the "respective Rambus applications" and amendments that "address" that technology. CCAB 22, n.11. Complaint Counsel's chart is no substitute for a reasoned analysis of Judge McGuire's alleged errors and does nothing to satisfy Complaint Counsel's Rule 3.52 requirements.

in effect throughout the pertinent time period. CX204. Complaint Counsel acknowledge in their brief that the Legal Guides governed "all EIA engineering standardization and related programs" and had to be followed by JEDEC members. CX204 at 4; CX206 at 6; Kelly, Tr. 1829-30; CCAB 46 and n.43.

Complaint Counsel repeatedly cite to a provision in the Legal Guides that states that standards should not be proposed or adopted for the purpose of restricting competition or excluding competitors from a market. CCAB 13-14, 16-17, 46, 53, 60, 63. They also cite to a provision that standardization programs should be "carried on in good faith. . . ." CCAB 42. From this general language, Complaint Counsel posit that it was a "fundamental purpose" of EIA and JEDEC to avoid the use of standards that might incorporate patented technologies, and they suggest that a patent disclosure obligation arises from that purported purpose. Complaint Counsel fail to mention, however, that the EIA Legal Guides also contain an express provision that *directly* addresses intellectual property questions. The EIA Legal Guides state that it is a "basic objective" of all EIA standardization activities that:

> "[s]tandards are proposed or adopted by EIA *without regard to* whether their proposal or adoption may in any way involve patents on articles, materials, or processes."

IDF 599, 633; CX204 at 4 (emphasis added).

This specific and unambiguous language – that one of the EIA's "basic objectives" is that standards are to be proposed and adopted "without regard" to whether they "in any way involve patents" – is far more relevant to the issues in this case than the general provision cited by Complaint Counsel. In light of this provision, Complaint Counsel's contention that EIA and JEDEC had a fundamental purpose of *avoiding* patents is simply wrong. *See* IDF 590-591.[5]

2. Other EIA Manuals Did Not Require Disclosure Of Intellectual Property Interests

During the time when Rambus was a JEDEC member, there were several other EIA manuals that governed JEDEC meetings. None of these manuals describes any obligation on the part of meeting participants or others to disclose patents or patent applications. EIA Manual EP-3-F, for example, provides simply that:

> "No program of standardization shall refer to a product on which there is a known patent unless all the technical information covered by the patent is known to the Formulating committee, subcommittee, or working group. The Committee Chairman must also have received a written expression from the patent holder that he is willing to license applicants under reasonable terms and conditions that are demonstrably free of any unfair discrimination."

IDF 635; CX203A at 11.

The EP-7-A manual similarly provided that:

> "No program of standardization shall refer to a patented item or process unless all of the technical information covered by the patent is known to the formulating committee or working group, and the Committee Chairman has received a written expression from the patent holder that one of the following conditions prevails:
>
> (1) A license shall be made available without charge to applicants desiring to utilize the patent for the purpose of implementing the standard; or
>
> (2) A license should be made available to applicants under reasonable terms and conditions that are demonstrably free of any unfair discrimination."

IDF 636; JX54 at 9-10.

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[5] Judge McGuire also correctly found that the structure of the Legal Guides showed that the "good faith" admonition was directed to the administrators who conduct the standardization programs, not to individual members. *Id.*

The language in these two manuals, which was routinely shown at JEDEC meetings, does not require disclosure of intellectual property interests by anyone. Instead, it describes the approach to be followed if a standards committee chooses to refer to a "known" patent when publishing a standard. Had the EIA intended to impose an affirmative requirement that members disclose relevant patents, it is reasonable to assume it would have said so by using mandatory language. It is, moreover, completely *un*reasonable to suggest that the quoted language not only imposes a mandatory obligation, but also requires disclosure of patent *applications*, which it nowhere mentions and whose disclosure would reveal a company's trade secrets. *See* Section III.D.1.a. Indeed, the Chairman of the JEDEC Council (who also served as the Chair of the 42.3 subcommittee while Rambus was a member) testified that he understood throughout the early and mid-1990's that the EIA manuals quoted above did *not* require the disclosure of patent applications. Kelley, Tr. 2686-7, 2695-7.

3. The ANSI Patent Policy Did Not Require Disclosure Of Intellectual Property Interests

In understanding what EIA's rules required, it is also important to understand the contours of the American National Standards Institute ("ANSI") Patent Policy. ANSI was and is an umbrella organization that accredits various standards-setting organizations, including the EIA. Kelly, Tr. 1947-8; 2074-5.

ANSI's Patent Policy, like that of the EIA, *encourages* but does not *require* the disclosure of intellectual property interests. IDF 643; Kelly, Tr. 1961. The ANSI Patent Policy was officially endorsed by the EIA at least as early as 1995, when EIA Manual EP-7-B was published. *See* RX616 at 2. The EP-7-B manual states that "[s]tandards and publications are adopted by EIA in accordance with the [ANSI] patent policy." *Id*. Given the voluntary nature of disclosure under the ANSI policy, the EIA's express adoption of that policy confirms the voluntary nature of disclosure within the EIA as well.

Even before the ANSI Patent Policy was officially endorsed by the EIA in 1995, the ANSI Patent Policy Guidelines were circulated to members of the JC 42.3 subcommittee because "they provided insight into the proper interpretation of the EIA and JEDEC patent policy." IDF 630-640; Kelly, Tr. 1950; CX3538 at 1; CX34 at 19. It was undisputed at trial that when the ANSI Guidelines were circulated to JC 42.3 members in 1994, the relevant language of the EIA patent policy was essentially identical to that of the ANSI patent policy. IDF 642; Kelly, Tr. 2077-8.

4. The EIA, On Behalf Of JEDEC And Its Other Standardization Activities, Informed The Federal Trade Commission In 1996 That Intellectual Property Disclosure Was "Voluntary" Under EIA Rules

The Commission need not rely solely on the language of the various EIA manuals and ANSI guidelines to understand how the EIA interpreted its patent policy. In January 1996, in response to the Commission's request for public comments regarding the proposed consent decree in the *Dell* case, the EIA submitted written comments to the Commission that described EIA's patent policy. IDF 673; RX669 at 1. The EIA's January 1996 comments to the Commission were submitted on behalf of the EIA and its unincorporated divisions and departments such as JEDEC. IDF 673; RX669 at 5; Kelly, Tr. 2094. In fact, the comment letter *expressly* refers to JEDEC's standardization efforts. RX669 at 1. The comment letter was approved by both the EIA's General Counsel and by its Vice-President for Standards and Technology. RX669 at 5; Kelly, Tr. 2092-3.

Consistent with the statement in the EP-7-B manual that EIA standards were adopted in accordance with the ANSI Patent Policy, the EIA's comment letter began by stating that the EIA "endorse[d] and follow[ed]" the ANSI Patent Policy. RX669 at 2. The letter went on to state that the EIA "*encourage[d]* the early, *voluntary* disclosure of patents that relate to the standards in work." *Id*. at 3 (emphasis added).

It is reasonable to assume that a formal comment letter to a governmental agency is a carefully considered document that accurately presents an entity's official position. The words used by the EIA were clear and unambiguous. "Voluntary disclosure" does not mean "required disclosure." Instead, according to the dictionary selected by the EIA as its official reference guide, "voluntary" means an act "performed, made, or given of one's own free will," as well as an act performed "without any present legal obligation to do the thing done or any such obligation that can accrue from the existing state of affairs. . . ." *Webster's Third New International Dictionary Unabridged* (1986), p. 2564.[6]

The Commission staff certainly understood that the EIA patent policy did not require the disclosure of intellectual property. In July 1996, FTC Secretary Donald Clark responded to the EIA's comment letter and stated that:

> "EIA and TIA, following ANSI procedures, encourage the early, voluntary disclosure of patents, but do not require a certification by participating companies regarding a potentially conflicting patent interest."

IDF 676; RX740 at 1.[7]

Secretary Clark also pointed out that because the EIA policy differed from the patent policy at issue in the *Dell* matter, the "expectations of participants" regarding intellectual property disclosure would differ. *Id.* at 2. The statement of the Commission's views that accompanied the May 1996 release of the *Dell* consent order made this same point:

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[6] The EIA had selected Webster's Third New International Dictionary as its official reference guide in 1990. JX54 at 3.

[7] The record evidence shows that the EIA was not alone in communicating the voluntary nature of patent disclosure policies within standards-setting bodies. The IEEE Standards Board, which represented a membership of more than 300,000 engineers and which had published 900 standards in the electrical engineering field, also submitted a comment letter to the Commission in January 1996. RX668 at 2. The IEEE letter stated that disclosure by IEEE members of intellectual property interests was "voluntary," and it urged the Commission *not* to impose mandatory disclosure obligations on participants in standards-setting organizations. *Id*. at 5.

> "ANSI does not require that companies provide a certification as to conflicting intellectual property rights. Therefore, its policy, unlike VESA's, *does not create an expectation that there is no conflicting intellectual property*."

In the Matter of Dell Computer Corp. ("Dell"),121 F.T.C. 616,

, 1996 FTC LEXIS 291 at *18 n.6 (1996) (emphasis added).

Upon receiving Secretary Clark's letter, JEDEC Secretary Kenneth McGhee sent a memo to all "JEDEC Council Members and Alternates" forwarding Clark's letter and repeating that ANSI and EIA "encourage early, voluntary disclosure of any known essential patents." IDF 678; RX742 at 1.

In light of this highly credible, contemporaneous evidence of the EIA's own interpretation of its patent policies, it is not surprising that Judge McGuire found that when Rambus was a JEDEC member, the disclosure of relevant patents was voluntary, not mandatory. IDF 679.

5. Complaint Counsel's Reliance On JEDEC Manual 21-I Is Unjustified

Complaint Counsel's opening brief ignores the relevant language in the EIA Legal Guides, ignores the EIA's express adoption of the ANSI Patent Policy, and ignores the EIA's own contemporaneous interpretation of its patent policy. In support of their argument that patent disclosure was mandatory, Complaint Counsel rely almost entirely upon a single JEDEC manual. CCAB 17-18, 47-48. The manual to which Complaint Counsel point is JEDEC manual 21-I, which bears an October 1993 publication date. CX208.[8] In language that Complaint Counsel cite repeatedly, the 21-I

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[8] Complaint Counsel fail to mention that JEDEC manual 21-H, which was in effect when Rambus joined JEDEC in 1992 and when the SDRAM standard was passed in 1993, provides that "JEDEC standards are adopted *without regard* to whether or not their adoption may involve patents on articles, materials or processes." CX205A at 11 (emphasis added). The 21-H manual makes no other reference to intellectual property. Similarly, when Rambus filled out an application to join JEDEC, the application form said nothing about intellectual property disclosure. CX601.

manual refers to a requirement on the part of committee chairpersons to "call attention 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." CX208 at 19. The reference in this passage to an "obligation" stands alone among the contemporaneous EIA, ANSI and JEDEC documentation and conflicts with, among other things, the governing EIA manuals, the 1996 correspondence exchanged by the EIA and the FTC, and Secretary McGhee's July 1996 explanation of the patent policy to JEDEC members. This apparent conflict is, however, readily resolved.

As discussed above, the EIA's policies governed the conduct of JEDEC meetings while Rambus was a JEDEC member. IDF 222; Rhoden, Tr. 289; Kelly, Tr. 1918; RX1179 at 1. During that time period, JEDEC was not a separate entity and was instead an "activity" within the EIA's Engineering Department. Rhoden, Tr. 289. The record evidence further shows that JEDEC Manual 21-I was not effective until and unless it was approved by the EIA's Engineering Department Executive Council ("EDEC"). As John Kelly, EIA's General Counsel, testified:

> "Q. The JEDEC manual 21-I, it needed a final stamp of approval from EDEC, correct?
>
> A. I believe at the time that was correct, yes, sir, in 1993."

Kelly, Tr. 2105. Mr. Kelly testified that he did not know if the 21-I manual had ever received the necessary EDEC approval. *Id.* He also testified that he had not intended, in response to questions from Complaint Counsel, to testify that the 21-I manual *had* been approved by EDEC. *Id.*

It was Complaint Counsel's burden to prove that the 21-I manual was in effect during the time that Rambus was a JEDEC member. 16 C.F.R. § 3.43(a). Despite the importance of the 21-I manual to Complaint Counsel's allegations, they made no effort to show that the manual had become effective. No witness testified that the requisite EDEC approval had been sought or obtained. Moreover, although EIA General Counsel Kelly testified during the first few weeks of the three-month-long trial that he had access to the minutes of EDEC, Complaint Counsel chose *not* to call him in their rebuttal case to testify about those minutes. Judge McGuire thus correctly determined that "Complaint Counsel did not provide sufficient evidence to find that JEP 21-I received the approval from EDEC necessary for JEP 21-I to become the controlling manual." IDF 628.

Complaint Counsel do not challenge Judge McGuire's finding that they failed to satisfy their burden of proof on this issue. Instead, they *ignore* that finding, fail even to *mention* it to the Commission, and *pretend* that they had met their burden of proof. They did not do so.[9]

This is not some technical failure to prove an otherwise indisputable fact. Indeed, it is quite clear from subsequent events that the 21-I manual was *never* in effect. As an example, it is undisputed that after the release of the 21-I manual, JEDEC leaders did *not* show the language from the 21-I manual at JC 42.3 meetings but instead continued to show the controlling language from the *EIA* manual. *See, e.g.*, JX20 at 15-16; JX21 at 14-15; JX22 at 12-13; JX25 at 18-19; JX26 at 15-16. Even more telling is

[9] Complaint Counsel, who were well aware of Judge McGuire's finding that they had failed to prove that the 21-I manual ever became effective, cannot use their reply brief to challenge that finding. *See In the Matter of Sears Roebuck & Co.*, 95 FTC 406, 1980 FTC LEXIS 87 (1980); *Cavallo v. Star Enter.*, 100 F.3d 1150, 1152 (4th Cir. 1996) ("Under the decisions of this and the majority of circuits, an issue first argued in a reply brief is not properly before a court of appeals"); *Mississippi River Corp. v. FTC*, 454 F.2d 1083, 1093 (8th Cir. 1972) (same). While it is true that JEDEC challenges this finding in its *amicus* brief, it has no standing to do so. Moreover, the JEDEC brief offers no explanation for the EIA General Counsel's sworn testimony that the 21-I manual needed EDEC approval, and instead cites a 1972 district court case for the proposition that a corporation's bylaws are presumed to be valid. JEDEC Brief 16-17. As noted above, however, JEDEC was not a corporate entity while Rambus was a member, and instead operated "entirely" under the EIA's legal guides. RX1179 at 1.

the fact that IBM's JEDEC representative, who also happened to chair both the JC 42.3 subcommittee and the JEDEC Council, informed JEDEC members on several occasions that IBM would not disclose its intellectual property, and in particular its patent applications, at JEDEC meetings. JX15 at 6; RX420 at 2; JX18 at 8; JX19; Kelley, Tr. 2715-16; RPF 197. In the December 1993 meeting, for instance, the IBM representative stated that "in the future they will not come to the Committee with a list of applicable patents on standards proposals. It is up to the user of the standard to discover which patents apply." IDF 693; JX 18 at 8. A few months earlier, the IBM representative had similarly stated in writing that "IBM Intellectual Property Law attorneys have informed me that we will not use JEDEC as a forum for discussing" intellectual property rights. IDF 692; RX420 at 2. IBM explained that it was "the responsibility of the producer to evaluate the subject and to work out the proper use of rights." *Id*. After IBM's statements appeared in the JEDEC meeting minutes, no IBM patents or patent applications were added to the "patent tracking list" maintained by JC 42 Chairman Jim Townsend prior to Rambus's departure from JEDEC. IDF 694.

In addition, in March 1994, after the 21-I manual had supposedly become effective, JEDEC Secretary Ken McGhee prepared a memorandum to JC 42 Chairman Jim Townsend that transmitted the advice of EIA's legal counsel. According to McGhee, the legal counsel had said that "he didn't think it was a good idea to require people at JEDEC standards meetings to sign a document assuring *anything* about their company's patent rights. . . ," for four reasons:

> "(1) It would have a chilling effect at future meeting.
> (2) The general assurance wouldn't be worth that much anyway.
> (3) It needs to come from a VP or higher within the company – engineers can't sign such documents.
> (4) It would need to be done at each meeting slowing down the business at hand."

RX486 at 1 (emphasis added). Secretary McGhee's memorandum shows that, even after the publication of the 21-I manual, it was quite clear to EIA counsel and to Mr. McGhee that neither EIA nor JEDEC had imposed a mandatory disclosure obligation on its members. If asking a JEDEC representative to sign a statement regarding patent rights would have a "chilling effect," how can it be possible that each representative was *already* under an *obligation* to disclose patents or patent applications or risk forfeiting those rights?[10]

In addition, numerous patents and patent applications relating to JEDEC standards were not disclosed to JEDEC, even when named inventors were in the room when the proposed standard was being discussed. IDF 708-717; RPF 239-73. Although one might explain a few instances of non-disclosure as the result of inadvertence, or perhaps even as the result of a deliberate desire to evade the "obligations" supposedly imposed by the 21-I manual, the extent of such non-disclosures weighs against such explanations. The evidence of non-disclosure is consistent only with the conclusion that JEDEC members understood that the disclosure of patents was encouraged, but not mandatory.

Finally, although not contemporaneous with Rambus's membership in JEDEC, Secretary McGhee informed JEDEC 42.4 members in February 2000 that:

> "[t]he 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*."

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[10] McGhee's March 1994 memo provides additional support for Secretary Clark's 1996 statement that the EIA patent policy differed from that of the standards-setting body involved in the *Dell* matter. IDF 676; RX740 at 1. In the *Dell* matter, the standards-setting body required participants to sign written statements that their company had no intellectual property rights in the technology being considered for standardization. RX740 at 2; *Dell*, 121 F.T.C. at 617. JEDEC Secretary McGhee's March 1994 memo reveals a deliberate policy decision by the EIA that no such statements should be required of JEDEC members. RX486 at 1.

IDF 684; RX1582 at 1 (emphasis added). McGhee's email went on to state that a company that had disclosed a patent application had gone "one step *beyond*" the patent policy. *Id*. (emphasis added). The February 2000 JEDEC Board of Directors meeting minutes similarly state that disclosure of patent applications was "not required under JEDEC bylaws." IDF 683; RX1570 at 13. These statements make plain that a JEDEC member's disclosure of intellectual property interests was voluntary, not mandatory.

Although Complaint Counsel do not challenge Judge McGuire's findings regarding the February 2000 Board minutes and Secretary McGhee's related email, JEDEC calls them "gross error" in its *amicus* brief and argues that the Board minutes that were received into evidence (without objection) were a draft. JEDEC Br. 24. The Commission cannot, of course, rely upon "facts" outside the record that are submitted to it by *amici*. *See In the Matter of Chester H. Roth*, 55 F.T.C. 1076, 1959 FTC LEXIS 21 *9 (1959) ("It is elementary that Commission decisions are to be founded upon the established record"); 5 U.S.C. § 556(e). *See also Hameetman v. Chicago*, 776 F.2d 636, 645 (7th Cir. 1985). In any event, the JEDEC brief does not cite to any testimony or evidence, and instead cites only to Complaint Counsel's responses to Rambus's proposed findings (which responses also failed to cite any evidence). Judge McGuire's reliance on the February 2000 Board minutes and the contemporaneous email by Secretary McGhee was thus more than justified. In any event, Complaint Counsel do not raise this issue on appeal.[11]

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[11] Complaint Counsel had previously asserted, in their responses to Rambus's proposed findings, that the February 2000 Board minutes had not been approved by the JEDEC Chairman, Mr. Rhoden, or by the EIA General Counsel, Mr. Kelly. This assertion lacked any evidentiary support and Complaint Counsel did not explain why they did not ask their own witnesses, Messrs. Rhoden and Kelly, to testify that the minutes were a draft or were otherwise inaccurate. Moreover, the copy of the Board minutes that was received into evidence *does* show approval by Chairman Rhoden, on February 24, 2000, and by General Counsel Kelly one week later, on March 1, 2000. RX1570 at 13. Finally, Secretary McGhee was present at the JEDEC board meeting in question, and his

6. JEDEC's Desire To Have "Open Standards" Does Nothing To Satisfy Complaint Counsel's Burden Of Proof

Although the parties agree that JEDEC desired "open standards," they disagree about the meaning of that phrase. Complaint Counsel suggest that an "open" standard is a standard that contains no undisclosed intellectual property. CCAB 44. The overwhelming weight of the evidence is to the contrary and shows that the phrase "open standards" was uniformly understood to mean standards that could be practiced by all potential users, with intellectual property licenses available on reasonable terms.

Numerous contemporaneous documents, and the evidence of JEDEC's actual practice, make clear that "open" standards may, and often do, include patented technologies. The EIA's January 1996 letter to the Commission, for example, confirmed that an "open" standard is one where necessary patent licenses are available to all comers on reasonable terms. RX669 at 4 ("the important issue is the license availability to all parties on reasonable, non-discriminatory terms"). EIA General Counsel John Kelly similarly explained in a May 2000 letter to a prospective member that "JEDEC standards are open (in terms of IP *licensing*). . . ." (CX419 at 1) (emphasis added). Mr. Kelley corroborated this view in his testimony at trial:

> "Q. And you say, 'open standards by definition are free of restrictive intellectual property or IP rights,' correct?
>
> A. Yes, sir.
>
> Q. And by 'restricted' you mean that there's no objection to having features [in] standards that are protected by valid patents as long as they're available to all comers on reasonable and non-discriminatory terms?
>
> A. Yes, sir."

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contemporaneous email describing the Board's discussion is fully consistent with, and corroborates, the statement in the Board minutes that disclosure of patent applications was "not required." *See* RX1582 at 1 (McGhee email stating that "[d]isclosure of patents . . . cannot be required of members at meetings.").

Kelly, Tr. 2072.[12]

Any other policy – *e.g.*, a policy designed to *avoid* patents because of possible license fees – would hinder innovation and thwart progress, as the EIA recognized when it told the Commission in January 1996 that

> "[a]llowing patented technology in standards is procompetitive. . . . By allowing standards based on patents, American consumers are assured of standards that reflect the latest innovation and high technology [that] the great technical minds of this country can deliver."

RX669 at 2-3.

The IEEE Standards Board also spoke to this issue in its own January 1996 letter to the Commission :

> "Of equal concern is the FTC statement that 'open, industry-wide standards also benefit consumers because they can be used by everyone without cost.' The apparent view of the Commission is that 'open industry standards' equates to standards without any patent rights. This is not a view generally shared by industry and government. . . ."

RX668 at 5.

JEDEC's actual practices during the relevant time period also make it clear that JEDEC did not have a policy of avoiding patented technology. For example, when JEDEC added language to its ballots requesting certain information about issued patents, it emphasized that any responses would be "for information only and [would not] be checked to see who said what." CX3 at 6. Similarly, in the so-called "Quad Cas incident," where Texas Instruments ("TI") was accused of failing to disclose issued patents at the time of balloting of a JEDEC standard, all suggestions that the patented feature be withdrawn from the standard were themselves *withdrawn* after TI agreed to

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[12] JEDEC does not decide the question of whether a license fee is "reasonable." IDF 1542-45. The record shows that Rambus's license fees are reasonable and well within industry parameters. IDF 1546-67.

license its patents on reasonable and non-discriminatory, or "RAND," terms. JX25 at 5. It is also undisputed that JEDEC routinely approved ballots despite an awareness of patents related to the proposed standards, and that it often did so *without* requesting or receiving "RAND" assurances. RPF 1220-1238.

7. The Other JEDEC Documents And Testimony That Complaint Counsel Rely Upon Do Nothing To Satisfy Their Burden Of Proof

Complaint Counsel also contend that certain language contained in JEDEC's ballots support their argument that disclosure was mandatory. The ballots contained the phrase "If anyone receiving this ballot is aware of patents involving this ballot, please alert the committee accordingly during your voting response." CX252A at 2. This language is framed in the form of a request. As Judge McGuire found, JEDEC officials certainly knew how to use ballot language that *mandated* a response when they wanted to. The JEDEC ballot expressly informed members who voted "no" on a proposal that a written explanation of their "no" vote was "MANDATORY." CX252A at 2, *quoted in* IDF 654 (capitalization in original document). The ballot used no such language in referring to patents, and the ballot said nothing at all about patent applications.

Moreover, when the language cited by Complaint Counsel was first added to the ballots, there was a discussion in a JEDEC meeting of the purpose of the new language. The meeting minutes state:

> "Council discussed patent issue at their June meeting at the request of JC-42.3. The result was not to change EIA legal requirements as outlined in document EP-7, but to add some wording on JEDEC ballot voting sheets about informing the Committee if any patent covers the balloted material.
>
> TI was concerned that Committee members could be held liable if they didn't inform Committee members correctly on patent matters. *Committee responded that the question was added on*

> *ballot voting sheets for information only and was not going to be checked to see who said what*."

IDF 656; CX3 at 6 (emphasis added). This formal committee response is consistent only with an interpretation that the language on the ballot was intended to *encourage*, but not *require*, the disclosure of patents.

Complaint Counsel also rely upon a memorandum prepared "[f]rom time to time" by Jim Townsend, the Chair of the JC-42 committee, that asked *certain* JEDEC members to provide their company's position regarding certain listed patents or patent applications. CCAB 48. Complaint Counsel fail to reveal that Mr. Townsend *never* addressed his memorandum to Rambus. RRPF 371. The memorandum thus undercuts the proposition that Rambus had any duty to disclose.

Complaint Counsel also rely upon documents relating to the so-called "Quad CAS" dispute. CCAB 45-46. In that incident, a TI representative had failed to disclose issued patents (not patent applications) that covered technologies that TI was *itself* proposing to JEDEC. Sussman, Tr. 1335. Rambus did not have issued patents while it was a JEDEC member that read on any standard, and it never promoted a technology at JEDEC, so the Quad Cas dispute is irrelevant. Moreover, the dispute was resolved when TI agreed to license its patents to all comers for a reasonable royalty. JX25 at 3; Kellogg, Tr. 5220-26. It is thus evident that, as the EIA told the Commission in January 1996, "the important issue is the license availability to all parties on reasonable non-discriminatory terms," RX 669 at 4, not the timing of disclosure.

Finally, Complaint Counsel point to the after-the-fact testimony of interested parties – officers and employees of DRAM manufacturers or other companies who might need to license Rambus's patents. Judge McGuire considered that testimony and rejected it. In so doing, he gave "greater weight . . . to contemporaneous documents than to the after-the-fact testimony by interested witnesses," IDC 264, 268-9, *citing United States v. United States Gypsum Co.*, 333 U.S. 364, 365 (1947). Although

Complaint Counsel challenge Judge McGuire's application of the *Gypsum* rule, it mirrored Commission precedent. *See, e.g., In the Matter of Timken Roller Bearing Company*, 58 F.T.C. 98, 1961 FTC LEXIS 354 at *18 (1961) ("Where, as here, oral testimony given several years later is not consistent with contemporaneous written statements, such oral testimony can be given little weight."). Application of the rule is especially appropriate here in light of the importance of widespread participation in standards-setting bodies. As the Federal Circuit explained in *Infineon*, any "after-the-fact morphing of a vague, loosely defined policy to capture actions not within the scope of that policy . . . would chill participation in open standards-setting bodies." *Infineon*, 318 F.3d at 1102 n.10.

8. If Any Disclosure Was Required, It Was Not Required Until The Time Of Balloting

Even if the Commission were to conclude that JEDEC members were obligated to disclose some intellectual property interests at JEDEC meetings while Rambus was a member, it should conclude, as Judge McGuire did, that no such disclosure was required until a proposal was balloted for approval. IDF 784-785.

JC 42.3 Chairman Gordon Kelley, Siemens' representative Willi Meyer and Cray's representative Alan Grossmeier each testified that disclosure was required only at the time of balloting, although earlier disclosure was encouraged. *See* RPF 297-98. EIA General Counsel John Kelly contended that disclosure should come *before* balloting if the members had actual knowledge of the relationship between the patent and the standard, although he conceded that this analysis involved "an area of judgment," particularly "where . . . the standard is evolving [and] their IP may be evolving. . . ," Kelly, Tr. 1981. Tying disclosure to balloting is the only sensible approach, for a pre-balloting disclosure requirement would cause enormous system inefficiencies, as the IEEE Standards Association explained in an April 2002 comment letter to the FTC:

> "If disclosure of issued patents is expected too early in the process – i.e., before the draft standard has reached a level of stability – more patents may be disclosed than those that are essential, since it may be too early to determine exactly those that will be required for implementation. This problem would become even larger if, as some have suggested, patent applications were to be treated in the same manner as issued patents. . . . Standards committees realize that until a patent has been issued there is very little value to disclosure since the scope of valid patent claims has not been determined."

RX2011 at 5.

After considering the evidence and testimony of each witness on this issue, Judge McGuire correctly found that disclosure of a JEDEC member's intellectual property, if required at all, was only required at the time of balloting. IDF 784-785.[13]

9. If Any Disclosure Was Required, It Was Triggered Only By The Actual Knowledge Of JEDEC Participants

Judge McGuire determined that any disclosure obligations that existed under the JEDEC patent policy were *only* triggered by "actual knowledge" on the part of the JEDEC representative or participant about a patent or patent application. IDC 274; IDF 780-81, 903-910. This finding was based on the testimony of Complaint Counsel's witnesses and is not challenged in Complaint Counsel's brief on appeal. Judge McGuire also concluded that Complaint Counsel had not met their burden of proving that Rambus representative Richard Crisp had any "actual knowledge" of the claims contained in any of the patents or patent applications that Complaint Counsel argue should have been disclosed to JEDEC. *Id.*

10. Disclosure Of Patent Applications Was Not Required

Judge McGuire correctly found that the JEDEC patent policy did not require the disclosure of patent applications or an intent to file or amend patent

[13] Complaint Counsel do not contend that there was any balloting of the DDR SDRAM standard during the time that Rambus was a JEDEC member.

applications. IDF 772-774; IDC 269.[14] Although Complaint Counsel tell the Commission that Judge McGuire "ignored" any contrary evidence and testimony in arriving at this conclusion, CCAB 5, the Initial Decision shows instead that he considered that evidence and testimony (*see* IDF 610-632, 731-752) and rejected it, after finding that the witnesses in question were not credible. IDF 748; IDC 270 ("the after-the-fact testimony of interested witnesses" on this issue "is not persuasive and is contradicted by the bulk of the contemporaneous evidence."). Judge McGuire did not abuse his discretion in making this credibility determination; his conclusion that the policy did not require disclosure of patent applications was sound and should be affirmed.

Even if disclosure of patent applications *were* required, moreover, it is clear that the patent policy did *not* require disclosure of patent applications that are filed *after* a standard has been approved. Rhoden, Tr. 1211-12. Since the parties have stipulated that "[p]rior to the adoption of the JEDEC SDRAM standard in 1993, Rambus had no claims in any pending patent application that, if issued, would necessarily have been infringed by the manufacture or use" of any JEDEC-compliant SDRAM device, IDF 959; RPF 361, it necessarily follows that Rambus had no obligation to disclose any subsequently filed applications that might relate to the SDRAM standard. In any event, there were no such applications filed before Rambus left JEDEC. *See* Section II.D.1.f.

11. A Company That Resigns From JEDEC Has No Disclosure Duties After That Date

Judge McGuire correctly found that after a company withdraws from

[14] Much of the overwhelming evidence on this issue is described elsewhere in this brief and will not be repeated here. It is worth noting that as Judge McGuire points out, the minutes of the February 2000 meeting of the JEDEC Board of Directors state emphatically that disclosure of patent applications was "not required under JEDEC bylaws." RX1570 at 13. *See also* RX1582 at 1 (February 2000 email to JEDEC members by JEDEC Secretary McGhee stated that disclosure of patent applications went "one step beyond" the patent policy.")

JEDEC, it has no duty to disclose anything about its intellectual property. *See* IDF 982, *citing* testimony by JEDEC Council Chairman Gordon Kelley. Accordingly, it is undisputed that after Rambus resigned from JEDEC in 1996, it had no duty under any interpretation of EIA/JEDEC policies to disclose anything. This is particularly important given that, as Judge McGuire found, as well as all three judges on the Federal Circuit panel in the *Infineon* case and the District Court judge in that case found, JEDEC standardization of the DDR SDRAM device did not begin until after Rambus left JEDEC. *See* IDF 968-82.

D. Rambus Did Not Violate Any EIA/JEDEC Rules

1. Even If Disclosure Had Been Required, Rambus Never Had, While It Was A JEDEC Member, Any Intellectual Property Interests That Were Subject To Disclosure

Judge McGuire found that Rambus did not obtain a patent with claims that were infringed by JEDEC-compliant SDRAMs or DDR SDRAMs until mid-1999, three years after Rambus withdrew from JEDEC. IDF 913. The evidence fully supports this finding. As discussed below, Rambus had no undisclosed patent claims (or claims in patent applications) during the time it was at JEDEC that read on JEDEC standards or even on presentations made at JEDEC.

a. The Only Issued Patent Involved In This Case Is The ’327 Patent

Complaint Counsel stipulated prior to trial that as of January 1996, Rambus had no U.S. patents that were essential to the manufacture or use of any JEDEC-compliant device. IDF 939. Thus, the only patents potentially in issue are those that issued between January 1996 and June 1996, when Rambus formalized its withdrawal from JEDEC. In fact, Complaint Counsel acknowledge this limitation and contend only that Rambus should have disclosed U.S. Patent 5,513,327 (“the ’327 patent”), which issued on April 30, 1996. IDF 940; CCAB 14-15 and n.11.

b. The ’327 Patent Does Not Cover Any Technology Incorporated In A JEDEC Standard

Complaint Counsel allege that disclosure of the ’327 patent was required because claims 1 and 7 of the patent purportedly would have covered a JEDEC-compliant SDRAM that also incorporated certain dual-edge clocking proposals made at JEDEC. In this regard, Complaint Counsel point to three specific presentations made at JEDEC during the period while Rambus was a member, as well as vague allegations of unidentified “discussions” at JEDEC. IDF 941; CCRPF 328.

Judge McGuire correctly found that claims 1 and 7 of the ’327 patent did not cover the technologies proposed in any of the three presentations. In order to show that a claim covers a product, it is necessary to show that each and every element or “limitation” in the claim, or its substantial equivalent, is found in that product. *See, e.g.*, *Wolverine World Wide v. Nike, Inc.*, 38 F.3d 1192, 1199 (Fed. Cir. 1994). None of the cited presentations ever reached the level of a concrete proposal or specified how the features would actually be implemented. IDF 947-58; RPF 334-50. The presentations and discussions relied on by Complaint Counsel refer at most to the broad concept of dual edge clocking. *Id.* But, as Complaint Counsel’s technical expert conceded, the ’327 patent is not broad enough to cover that concept and, as a matter of patent law, extends only to certain “specific implementations” of dual edge clocking that satisfy all of the limitations recited in the claims. IDF 945-946; RPF 335-36. Because the required limitations are not in *any* of the three presentations raised by Complaint Counsel, the claims of the ’327 patent do not cover those presentations. IDF 957; RPF 351-52. Moreover, as the parties have stipulated, Rambus has never asserted the ’327 patent against any SDRAM or DDR SDRAM devices. IDF 958; RPF 356.[15]

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[15] Because Complaint Counsel have not in their brief pointed to any specific reasons why Judge McGuire erred in finding that the three presentations did not satisfy the limitations of the ’327 patent, Rambus will not argue the point further. Rambus does note that the 1992 Hardell presentation that Complaint Counsel cite involved IBM’s

There are many other reasons why Rambus was not obligated to disclose the ’327 patent, including: (1) disclosure of patents was voluntary, rather than mandatory, *see* Section II.C; (2) Complaint Counsel failed to prove that Rambus’s JEDEC representative, Mr. Crisp, had any actual knowledge that the claims of the ’327 patent were essential to any JEDEC standard (or proposed standard), *see* section II.C.9; and (3) none of the presentations in question were ever balloted. *See* IDF 951, 954, 956.

c. The ’327 Patent Was Known To Numerous JEDEC Members Long Prior To The Balloting Of Dual Edge Clocking At JEDEC

Complaint Counsel apparently contend that if Rambus had disclosed the existence of the ’327 patent to JEDEC, JEDEC members would likely have insisted on an alternative to dual edge clocking when voting on the DDR SDRAM standard. CCAB 21, 89-100. It is undisputed, however, that numerous DRAM manufacturers were well aware of the ’327 patent *before* the DDR SDRAM standard was adopted. In a July 1998 email, a Hynix executive sent “a list of Rambus patents” to a large group of JEDEC representatives and DRAM engineers at such companies as Siemens, IBM, Micron, Texas Instruments, and Compaq. IDF 900; RX1214 at 1. The “list of Rambus patents” included the ’327 patent. IDF 901; RX1214 at 1. Despite this undisputed awareness of the ’327 patent, JEDEC issued the DDR SDRAM standard in August 1999. IDF 427; CX234 at 1. The fact that the DDR standard was approved in the face of the ’327 patent demonstrates conclusively that the patent was irrelevant to the DDR standardization

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toggle mode DRAM, which was an asynchronous design rather than a synchronous DRAM. In the Hardell presentation, *asynchronous* RAS and CAS signals control the operation of the DRAM, rather than a clock. IDF 947-949; RPF 337-39. Rambus also notes that in support of their proposed findings on this issue, Complaint Counsel relied solely on the testimony of their technical expert, Professor Jacob. Professor Jacob has no patents to his name and has never previously done any claims analysis. IDF 944. Complaint Counsel’s expert on patent law, Mr. Nusbaum, did *not* testify that the claims of the ’327 patent related to JEDEC work. IDF 943.

process, and it also disproves Complaint Counsel's contention that Rambus's failure to disclose the '327 patent "subverted" the standardization process or caused any competitive injury.

d. Prior To Its Withdrawal From JEDEC, Rambus Had No Patent Applications That Covered Any Feature Contained In The SDRAM Standard

The parties have stipulated that prior to the adoption of the JEDEC SDRAM standard in 1993, Rambus had no claims in any pending patent applications that, if issued, would necessarily have been infringed by the manufacture or use of any SDRAM device manufactured in accordance with the 1993 JEDEC SDRAM standard. IDF 959; RPF 361.[16] Complaint Counsel nevertheless assert that there were three patent applications that Rambus should have disclosed to JEDEC in connection with the SDRAM standard: the '651 application, the '961 application, and the '490 application. CCAB 14-15 n.11.

Complaint Counsel argued below that the claims contained in the '961 and '490 applications covered the programmable latency and burst features contained in the SDRAM standard. IDF 960-62.[17] On appeal, however, they argue only that the claims in question "relat[e] to" or "address" those features. CCAB 14-15 and n.11. The distinction is telling, because the JEDEC policy – if it required disclosure at all – sought disclosure only of "essential" patents. *See* IDF 775-78; IDC 270-71. Moreover, any conclusion that the '961 and '490 applications contained claims reading on the SDRAM standard would

[16] The parties have also stipulated that the patents that Rambus has sought to license to SDRAM and/or DDR SDRAM manufacturers all issued from applications filed in or after November 1997. *See* Patent Tree attached to the Parties' First Set of Stipulations (showing asserted patents with red border). The earliest such application, which resulted in U.S. Patent No. 5,915,105, was filed on November 26, 1997 – almost two years after Rambus attended its last JEDEC meeting.

[17] Complaint Counsel have stipulated that the '651 application did not contain claims covering the SDRAM standard. IDF 959; RPF 361.

be directly at odds with the opinion of the Federal Circuit, the Court of Appeals charged with construing and applying patent claims. The Federal Circuit stated that:

> "This court has examined the claims of the cited applications [including the '961 and '651 applications] as well as the relevant portions of the SDRAM standard. Based on this review, this court has determined that substantial evidence does not support the finding that these applications had claims that read on the SDRAM standard."

Infineon, 318 F.3d at 1103; *see* RPF 364. Although the '490 application was not expressly considered by the Federal Circuit (since Infineon had not argued that it contained claims reading on JEDEC standard devices), Complaint Counsel's own expert admitted that the claims of the '490 application are substantially similar to the claims of the '961 application that *were* considered by the Federal Circuit. RPF 367.

In addition, the record shows that the '961 and '490 applications at issue were pending only briefly in 1995, over a year after the SDRAM standard was published. The relevant claims of the '961 application were rejected by the patent examiner about three months after they were filed and were later cancelled by Rambus; the relevant claims of the '490 application were withdrawn by Rambus approximately five months after filing in response to a restriction requirement. RPF 363, 366. Because Complaint Counsel have not even attempted to show a duty to disclose *rejected, cancelled* or *withdrawn* claims, they have failed for this additional reason to prove that claims of the '961 and '490 applications had to be disclosed to JEDEC.[18]

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[18] Complaint Counsel point to various e-mails that, they say, show Rambus's *intent* or *desire* to file claims broadly covering the use of the features in question in JEDEC-compliant DRAMs. Many of the cited e-mails were prepared after Rambus left JEDEC or are otherwise taken out of context. Even assuming, however, that Rambus executives or employees did at various times in the early or mid-90's harbor a desire or intent to try to obtain broad patents, there was no credible evidence at trial that a JEDEC member was required to disclose its hopes and desires. IDF 772-74; IDC 269-77. Moreover, Judge McGuire correctly found that there were no prohibitions against JEDEC

e. Rambus Withdrew From JEDEC Before The Standardization Of DDR SDRAM Began

Complaint Counsel also assert that Rambus had a duty to disclose certain patent applications that supposedly related to JEDEC's DDR SDRAM standardization process. CCAB 14 n.11. This argument, which has been rejected by all five judges who have so far considered it, finds no support in the trial record.

It is undisputed that the JC 42.3 committee did not transmit the DDR SDRAM standard to the JEDEC Council for approval until March 1998, long after Rambus left JEDEC. IDF 969. It is also undisputed that JEDEC did not issue the standard until August 1999. IDF 427; CX234 at 1. Faced with these facts, Complaint Counsel assert that the JC-42.3 Subcommittee *began* work on the DDR SDRAM device in 1993. CCAB 14. Complaint Counsel fail to mention that all of the Federal Circuit judges on the *Infineon* panel, and the District Court judge in that case, determined that DDR SDRAM standard-setting did not begin until *after* Rambus had left JEDEC**.** *See Infineon*, 318 F.3d at 1105 (quoting trial court ruling that "substantial evidence did not support the jury's verdict [of fraud relating to DDR SDRAM] because Rambus withdrew from JEDEC before formal consideration of the DDR SDRAM standard"); *id*. (unanimously affirming District Court ruling and holding that "[n]one of the evidence relied on by Infineon . . . provides substantial evidence for the implicit jury finding that Rambus had patents or applications 'related to' the DDR SDRAM standard that should have been disclosed. . . .").

Moreover, discovery taken in *this* case uncovered additional evidence, not available to the judges in the *Infineon* case, that conclusively demonstrates that JEDEC did not begin the DDR standardization process until December 1996, six months after Rambus formally withdrew from JEDEC and one year after it attended its last JEDEC

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members seeking patent protection for inventions that related to JEDEC standards. IDF 919-928.

meeting. In March 1998, current JEDEC Chairman Desi Rhoden wrote a lengthy email to all JC 42.3 members in which he "recap[ped]" JEDEC's DDR SDRAM standardization process. Mr. Rhoden stated:

> "[W]e could have finished the DDR standard sooner *if only we had started earlier*. Let us recap what has transpired with DDR:
>
> 1. A lot of private and independent work *outside of JEDEC* for most of 1996 (here is where we missed a good opportunity to start early).
>
> 2. December 96 – A single overview presentation of a DDR proposal at a JC 42 meeting."

CX375 at 1-2 (emphasis added); RPF 402-04.

When questioned at trial about his email, Mr. Rhoden contended it was simply the *name* "DDR" that was coined in December 1996, and he testified that work on the new standard had been going on for years prior to that date. CCRPF 402, 405, 407, 409. Mr. Rhoden's attempted explanation is absurd. He could not have intended to convey in his March 1998 email that JEDEC "could have finished the DDR standard sooner" if only the *name* "DDR" had been coined earlier. Judge McGuire correctly found this explanation not to be credible. IDF 373-76; IDC 277-79.

The timeline in Mr. Rhoden's March 1998 email is also corroborated by other contemporaneous documents. Mr. Rhoden himself wrote in April 1997 that "DDR & SLDRAM were introduced in JEDEC in Dec 1996." RPF 407. A March 1997 IBM presentation on DDR SDRAM describes work on DDR SDRAM as beginning *outside* of JEDEC between mid-June and mid-September 1996, with the first DDR SDRAM showing at JEDEC in December 1996. IDF 377; RPF 411. An internal document from JEDEC member Mitsubishi similarly describes private meetings outside of JEDEC in the summer of 1996, with the first JEDEC meeting related to DDR SDRAM occurring in December 1996. RPF 412. Finally, an official JEDEC ballot circulated in July 1997 stated that "DDR SDRAMs has been under discussion within JEDEC since September

1996." RPF 413.

The Commission should conclude, as the *Infineon* trial judge, the entire Federal Circuit panel, and Judge McGuire each concluded, that Rambus had ceased to be a JEDEC member before JEDEC began its work on the DDR SDRAM standard, and that Rambus had no disclosure obligations with respect to that standard.

f. Prior To Its Withdrawal From JEDEC, Rambus Had No Patent Applications That Covered Any Feature Contained In The DDR SDRAM Standard

Even assuming that, as Complaint Counsel contend, JEDEC had begun the DDR SDRAM standardization process before Rambus left JEDEC, there are only two applications that Complaint Counsel allege should have been disclosed by Rambus in connection with the DDR SDRAM standard: the '692 application and the '646 application. CCAB 14-15 and n.11. The claims of these applications are *not* alleged to cover any feature in the *actual* JEDEC standard, but instead are alleged to cover certain unballoted JEDEC *presentations* concerning on-chip PLL and dual-edge clocking.

Complaint Counsel allege that certain claims of the '692 application cover a September 1994 JEDEC presentation made by NEC. The claims cited by Complaint Counsel do not, however, read on that presentation. Indeed, the testimony of Complaint Counsel's own experts show that each of the claims contains limitations that are not found in the NEC presentation, and, consequently, would not cover that presentation. IDF 957; RPF 373-76.

Moreover, Claim 151 of the '646 application, the only claim from that application that Complaint Counsel raise, was not pending at the time of any of the allegedly triggering presentations. The claim had been rejected by the PTO in January 1995, a few months after it was filed, and it was subsequently cancelled by Rambus. RPF 379-80. For these reasons alone, Complaint Counsel failed to show there was any duty to disclose this claim. Moreover, as discussed above in connection with the '327 patent, the presentations cited by Complaint Counsel contain no implementation details. *See* Section II.D.1.b. The claims of the '646 application (and the '327 patent) are implementation-specific. RPF 382. That means that a device would infringe the patent only if it employed all of the implementation details and limitations set out in the patent. *Id.* Because the cited presentations do not contain the information about implementation that would be required to determine if claim 151 of the '646 application was in any way infringed by anything described in the presentations, they are irrelevant here. RPF 381-82.

g. Rambus's Alleged Destruction Of Documents Does Nothing To Satisfy Complaint Counsel's Burden Of Proof

Complaint Counsel argue that Rambus implemented a document retention policy in 1998 that resulted in the destruction of large quantities of documents. CCAB 23. While Judge McGuire expressed concern both before and after trial about this issue, he concluded after reviewing the evidence that "the process here has not been prejudiced as there is no indication that any documents [that are] relevant and material to the disposition of the issues in this case were destroyed." IDC 244.

Judge McGuire's conclusion is amply supported by the evidence. For example, there are no documents that Rambus could have destroyed that would assist Complaint Counsel in meeting their burden of proof on such issues as the scope of Rambus's patent applications (which were maintained by the PTO) or the nature of the presentations and ballots at JEDEC (maintained by JEDEC). With respect to Rambus's *own* conduct and its motivations for that conduct, Complaint Counsel acknowledged in their opening statement at trial that "[w]e have an unusual degree of visibility into the precise nature of Rambus's conduct, as well as the underlying motivations for what Rambus did." Trial, Tr. 15.

Complaint Counsel's brief also misstates the evidence on the document retention issue. Complaint Counsel claim, for example, that Mr. Crisp discarded "any documents he had relating to JEDEC. . . ." CCAB 23. In fact, Mr. Crisp testified that while he discarded the papers that he had received *from* JEDEC (such as official meeting minutes), he deliberately *preserved* the JEDEC-related electronic materials that he had created (such as his trip reports for each of the meetings he attended). Crisp, Tr. 3570-73, 3576.

Judge McGuire thus correctly concluded that the adjudicative process in this case was not impaired by Rambus's implementation of a document retention policy.

E. JEDEC Members Were Aware As Early As 1992 That Rambus Might Obtain Patent Rights Over Features Being Considered For Inclusion In JEDEC Standards

1. Rambus Explained Its Inventions Under NDAs To Numerous DRAM Manufacturers

As discussed above, Rambus did not, while it was a JEDEC member, have any claims in issued patents or pending patent applications that covered any technology proposed for standardization by JEDEC. As a consequence, Complaint Counsel are left to argue that Rambus should have disclosed that it *might* someday be able to obtain, or that it *hoped* to obtain, intellectual protection over certain technologies. CCAB 16-21.

Complaint Counsel's argument is unsupported by any documents or testimony regarding the JEDEC patent policy. The argument also runs squarely into the overwhelming body of evidence showing that JEDEC members were well aware of such a prospect. Indeed, from Rambus's earliest days, DRAM manufacturers and others were put on notice of the nature of Rambus's inventions, including the four features at issue here. In 1989 and 1990, Drs. Farmwald and Horowitz began visiting the major DRAM manufacturers and systems companies, such as Texas Instruments, IBM, Toshiba, Fujitsu, Mitsubishi, NEC, Matsushita, Micron, Siemens, Sun Microsystems, Motorola, Apple, SGI and Tandem, to try to interest them in Rambus technology. IDF 103-04;

109-21, 130-34. On appeal, Complaint Counsel do not challenge Judge McGuire's findings that these earliest presentations (which were protected by non-disclosure agreements) disclosed the four features at issue. IDF 106-08, 161.

The audiences for these early Rambus presentations expressed disbelief that Drs. Farmwald and Horowitz would be able to achieve a 500 megabit per second DRAM data rate and were skeptical about many of the specific features of the technology, including some of the features at issue here. IDF 105. For example, it was felt that putting registers on a DRAM, such as those used to implement the programmable latency invention, was too expensive for a commodity part and that one could not put a phase locked loop or a delay locked loop on the DRAM itself. *Id.* Feedback from the recipients of the detailed technical descriptions, such as Siemens, also show that those recipients focused on the very inventions at issue here. IDF 122-29.

2. Rambus Publicly Described Its Technological Innovations And Business Plan

In early 1992, after the PCT application had been made publicly available, Rambus produced and distributed its first marketing brochure about Rambus technology. RPF 638. The 1992 marketing brochure disclosed the four features of Rambus technology at issue here. RPF 639-42. Rambus also published additional technical papers describing its inventions that were widely distributed. RPF 643-47. Rambus also provided information about its technology to the press in the early 1990s, resulting in descriptions of the technology, including the features at issue in here, in industry publications. RPF 648-54.

In September 1993, the PTO granted (and published) Rambus's first United States Patent, no. 5,243,703. IDF 179. The '703 patent, like the PCT application, claims priority to the filing date of the '898 application and its specification is identical in all material respects to that of the '898 application, including a clear description of the four features at issue. RPF 715-16. Moreover, although under no legal obligation to do so, Rambus listed in the ’703 patent the nine other divisional applications of the ’898 application that were then pending, which disclosed that Rambus was actively pursuing a number of the inventions in the ’898 application. RPF 717, IDF 182.

When founding Rambus, Drs. Farmwald and Horowitz recognized that any company they formed would not be able to manufacture the DRAM parts that they were designing; a DRAM manufacturing facility cost a half a billion dollars. They understood that, as Dr. Farmwald testified, “the only possible business model that made any sense was to patent it, convince others to build it, and charge them royalties.” Farmwald, Tr. 8095.

Rambus made no secret of its business model. For instance, Rambus’s 1992 marketing brochure explained that: “Rambus Inc. is fully protecting the intellectual property rights of its technology by filing basic, broad patents in all major industrial nations around the world.” RPF 599. The brochure also made clear that Rambus’s business strategy was to license its technology, work with the licensee to help implement the technology, and to receive fees and royalties in return. RPF 602-3.

Testimony at trial confirmed that Rambus’s business model was well known in the industry during the time Rambus attended JEDEC meetings. Brett Williams, a JEDEC representative for Micron testified that in 1992, “I knew it was [Rambus’s] business model to patent their technology, and that’s how they would gain their revenues.” RPF 604. Similarly, Martin Peisl of Infineon stated that he was aware of Rambus’s business model in the early 1990's and expected Rambus to get patents to cover their technology. *Id.* According to Andreas Bechtelsheim, formerly of Sun Microsystems, Rambus made very clear to Sun that it intended to seek patent coverage for all of its inventions and developments, because it intended to obtain revenue or earn revenue through licensing its technology to both memory manufacturers and system manufacturers. RPF 605.

3. The Evidence Shows That JEDEC Members Were Aware Of The Potential Scope Of Rambus's Intellectual Property

As discussed above, Rambus's technology, including the four inventions at issue here, were well known throughout the DRAM industry in the early 1990s. *See* IDC 306-09. In addition, the evidence shows that the industry was well aware of Rambus's patent applications, giving them more specific insight into the technology that Rambus could seek to patent in the future. In particular, various industry players obtained and analyzed Rambus's PCT application after it became public in October 1991. IDF 185 ("Several JEDEC members obtained the PCT application in the early 1990's, including Mitsubishi and IBM"); IDF 810 (Howard Sussman of NEC reviewed the PCT application and described it at a JEDEC meeting in May 1992). Rambus's first issued patent, the '703 patent, was disclosed to JEDEC in September 1993, shortly after it issued. IDF 179.

It is undisputed that the PCT application and the '703 patent have the same written description as Rambus's original '898 application and that all of the patents that Rambus has asserted against SDRAMs and DDR SDRAMs claim priority to that original application. Complaint Counsel have argued, nevertheless, that the written description contained in the '898 and PCT applications and in the '703 patent would *not* alert a reasonable engineer that Rambus might obtain claims sufficiently broad to read on SDRAM or DDR SDRAM. According to Complaint Counsel, DRAM engineers reading the PCT or '898 application would be left in the dark because "Rambus's initial patent application and European (or WIPO) application contained claims relating solely to RDRAM." *Id*. Complaint Counsel's argument is wrong as a matter of law and is contradicted by evidence showing that engineers reviewing the PCT application did, in fact, realize that Rambus might get such broad claims.

Complaint Counsel concede that Rambus has obtained patents claiming priority to the '898 application that contain claims sufficiently broad to cover SDRAM and DDR SDRAM devices containing the four features at issue. IDF 219. Complaint Counsel do not challenge the validity of those claims. As a consequence, Complaint Counsel do not (and cannot) contend that the patents in question fail to satisfy the "written description" requirement in the patent statute. In accord with this requirement, the Patent Office has determined that the claims at issue *are supported* by the original '898 application and that a person of ordinary skill, such as a DRAM engineer, *would recognize from reviewing the '898 application that Drs. Farmwald and Horowitz had made those inventions*. IDF 207-19; RPF 703-05. *See Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991) (holding that under the "written description" requirement, in order for later-filed claims to be valid, an applicant must convey in the original written description "with reasonable clarity to those skilled in the art that . . . he or she was in possession of [the invention now being claimed]").

In other words, as a matter of law, the '898 application (which was in all material respects identical to the PCT application) conveyed to the DRAM engineers who reviewed it that Rambus might claim inventorship of the features described in it. Indeed, the Federal Circuit has explained that the original purpose of this written description requirement was precisely to serve a notice function: namely, "to guard against prejudice or injury from the use of an invention which the party may otherwise innocently suppose not to be patented." *Id.* at 1561 (citation omitted). Accordingly, and as Judge McGuire concluded, the PCT application and the other information publicly available to the DRAM industry "should have raised concerns within the industry that Rambus might be able to obtain patents over the four technologies in issue." IDC 298.

The real world evidence shows that the PCT and the '703 patent did indeed cause engineers to recognize that Rambus could obtain claims to the four inventions at issue. For example, Mitsubishi engineers reviewed the PCT application in 1993 and recognized that Rambus might obtain broad claims in the future based on the written description in that application. IDF 193-94. Later Mitsubishi documents relating to the analysis of the PCT application show a recognition that Rambus might be able to obtain claims on some of the very features at issue here, such as programmable latency as used in SDRAMs. IDF 197-98, 217.

Complaint Counsel have not challenged Judge McGuire's findings regarding the PCT application, although they do claim that the specification in the '703 patent did not put JEDEC members on notice of the possible scope of Rambus's inventions. Complaint Counsel tell the Commission that "JEDEC members who reviewed [the '703] patent concluded that Rambus did not have patent rights over ongoing JEDEC work." CCAB 25. This statement is inaccurate. The only cited evidentiary support is CCFF 1275-76, where counsel pointed to the testimony of Siemens representative Willi Meyer and Micron representative Terry Lee. Of the two, only Lee testified that he had reviewed the '703 patent. Lee, Tr. 6609-10. Mr. Lee did not, however, testify that he had concluded from reading the '703 patent that Rambus's patent rights did not extend to "JEDEC work." Instead, he testified on direct examination that *other* patents seemed to apply "kind of specifically" to the RDRAM product. *Id*. On cross-examination, Lee admitted that his review of the '703 patent had led him to believe – and to state at a JEDEC meeting in 1997 – that Rambus might have intellectual property relating "to the work of the committee." Lee, Tr. 6961-62. Lee drew this conclusion even though the "work" in question – a proposed clocking scheme for DDR SDRAM – did not involve any "multiplexed," "packetized" or "narrow bus" architecture. *Id*. *See also* IDF 882-83. It is thus evident that Mr. Lee understood from the description in the '703 patent of Rambus's inventions that the scope of Rambus's possible claims was *not* limited to the RDRAM architecture. *Id*.

4. JEDEC Members Believed That Rambus's Inventions Were A Collection Of Prior Art And That Rambus Would Be Unable To Obtain Broad Claims

The trial record contains substantial evidence that JEDEC members believed that Rambus's intellectual property rights, though potentially broad, would be defeated by prior art. For example, NEC representative Howard Sussman stated at the May 1992 JC 42.3 meeting that he had reviewed Rambus's PCT application and that many of its claims were anticipated by prior art. RX290 at 3; CX673 at 1. Siemens representative Willi Meyer also testified that a JEDEC member had described Rambus's PCT application at a September 1993 meeting as "a collection of prior art." CX2057, Meyer Depo. Tr. 300:7-23. A few months later, Mr. Meyer prepared an internal Siemens memorandum that, in referring to Rambus, acknowledged that "[a]ll computers will (have to be) built like this some day," *"hopefully without royalties to Rambus."* RX488A at 1 (emphasis added).

Other JEDEC members also expressed their belief or hope that any Rambus intellectual property claims would be barred by prior art. In December 1996, for example, a senior Micron engineer told Micron's CEO that "We have been investigating high speed DRAMs and the intellectual property associated with them. . . ." RX829 at 2. In April 1997, two years *before* the DDR SDRAM was standardized at JEDEC, Micron learned that "Rambus plans legal action to request royalties on all DDR memory efforts." RX920 at 2. A senior Micron engineer wrote in response that he thought "that is old technology." RX920 at 1. There was also trial testimony that as late as 2000, JEDEC members believed that Rambus's patent claims could be defeated by prior art, and that DRAM manufacturers "were considering the fact that some of the Rambus patents might be "overturned" when making decisions about whether to try to design around Rambus's patents. Kellogg, Tr. 5303-4.

It is thus apparent that if JEDEC members lacked concern about Rambus's intellectual property, it was their own views about the probable invalidity of Rambus's patent claims, not Rambus's conduct, that led them there.

F. Rambus Did Not Lull JEDEC Members Into Believing That Rambus Would Not Obtain Patents Over Technologies Proposed For JEDEC Standards. Instead, Rambus's Positions Raised JEDEC Members' Level Of Concern

1. Rambus Did Not Mislead Anyone At The May 1992 Meeting

Complaint Counsel assert that Rambus's JEDEC representative, Richard Crisp, led other JEDEC members at the May 1992 JC 42.3 meeting to believe that Rambus's intellectual property was limited in scope. CCAB 13, 50. According to Complaint Counsel, Mr. Crisp was asked if "he had anything to say" about whether Rambus held patents relating to a proposed feature of SDRAMs, and he shook his head "no." *Id*.

Complaint Counsel's assertion is misleading. As Judge McGuire found, there were five witnesses who testified about the May 1992 exchange between JC 42.3 Committee Chairman Gordon Kelley and Mr. Crisp: Kelley, Crisp, Siemens representative Willi Meyer, IBM representative Mark Kellogg and Intel representative Samuel Calvin. In support of their allegation that Mr. Crisp misled JEDEC members, however, Complaint Counsel cite only *one* of these witnesses, and they misrepresent the nature of that testimony. Complaint Counsel cite only to the videotaped deposition testimony of Siemens representative Meyer, where Mr. Meyer (initially) testified that Chairman Kelley had asked Mr. Crisp whether Rambus had any intellectual property regarding the SDRAM 2-bank structure, and that Mr. Crisp shook his head "no." CCAB 50, *citing* CCFF 904. Complaint Counsel argue that Mr. Crisp's response communicated to JEDEC members that Rambus had no relevant intellectual property. *Id*. What Complaint Counsel should have informed the Commission, however, is that Mr. Meyer *corrected* his testimony in *the very same deposition* and testified that Mr. Kelley had asked Mr. Crisp if he *wanted* to comment, and that Mr. Crisp "shook his head." CX2088 at 134-136.

All of the other witnesses who testified about the May 1992 exchange between Kelley and Crisp testified, as Mr. Meyer eventually did, that Mr. Crisp had *declined to respond* to Mr. Kelley's inquiry. IDF 811-817; Calvin, Tr. 1068-70; Kelley, Tr. 2662; Kellogg, Tr. 5323-4; Crisp, Tr. 2993-94, 3490-91. Moreover, all of the contemporaneous notes and trip reports about the May 1992 exchange report that Mr. Crisp had declined to comment about Rambus's intellectual property. Mr. Meyer's own trip report, for example, states: "Siemens and Philips concerned about patent situation with regard to Rambus and Motorola. No comments given." IDF 815; RX297 at 5. Mr. Crisp's e-mailed report, sent the day of the meeting, states that "Siemens expressed concern over potential Rambus Patents covering designs. Gordon Kelley of IBM asked me if we would comment which I declined." IDF 816; CX673 at 1. Finally, IBM representative Mark Kellogg prepared handwritten notes during the May 1992 meeting that stated that:

> "Siemens: Kernel of chip similar to Rambus. Patent concerns?
> (No Rambus comments).

IDF 820; RX290 at 3.

In short, all of the testimony and the contemporaneous documents agree: Mr. Crisp openly declined to respond to questions about Rambus's intellectual property with respect to the SDRAM architecture. Did this exchange lull JEDEC members into believing that they need not be concerned about Rambus's intellectual property? The evidence tells us it did not. IBM representative Mark Kellogg testified, for example, that he thought the exchange between Mr. Kelley and Mr. Crisp was "a flag, which is why I wrote it down." IDF 822; Kellogg, Tr. 5322. By "flag," Kellogg meant in part that the discussion raised concerns about "possible intellectual property concerns," and he testified that the "lack of response by Rambus is also a concern." Kellogg, Tr. 5323. Mr. Kellogg also testified that when he used the phrase "kernel of chip similar to Rambus," he was referring to a concern that "the fundamental architecture of the SDRAM device" was "similar to Rambus." IDF 821; Kellogg, Tr. 5324.

JC 42.3 Committee Chairman Gordon Kelley similarly testified, in connection with a subsequent refusal by Mr. Crisp to provide information about Rambus's intellectual property intentions, that a "no comment" from a JEDEC member in response to a question about intellectual property was "unusual" and "surprising," and that it constituted "notification to the committee that there should be a concern." IDF 819; Kelley, Tr. 2579.

Mr. Kelley's testimony – that a refusal to comment by a JEDEC member was "notification to the committee that there should be a concern" – is entirely consistent with his contemporaneous documents. One month after the May 1992 JC 42.3 meeting, Mr. Kelley gave a presentation to a group of about 30 IBM and Siemens engineers. IDF 830; Kelley, Tr. 2658-9. The slides that Kelley used in his presentation stated in part: "Patent Problems? (Motorola/Rambus)." IDF 831; RX303 at 1. Kelley testified that he was intending to and did use this language in his slide to:

> "notify[ ] the people involved in the design of the joint work that was going on between IBM and Siemens that there was concern about potential patent problems as I had heard at the JEDEC meeting about Motorola and Rambus intellectual property, and I wanted the group to recognize that there was this concern."

IDF 832; Kelley, Tr. 2545.[19]

From his review of this undisputed evidence – virtually all of it provided by witnesses called by Complaint Counsel – Judge McGuire concluded that Complaint Counsel had not met their burden of showing that Mr. Crisp had misled JEDEC members at the May 1992 meeting. IDF 786-823, 829-835; IDC 279-281. Judge McGuire also found that Mr. Crisp's refusal to comment "put members on notice" that Rambus might seek broad patent coverage. IDC 281. Given the uniform nature of the testimony in

[19] Siemens representative Meyer gave a similar presentation to Siemens management in September 1992 that called Rambus a "deadly menace to the established computer industry." IDF 833; RX321 at 2.

question, and the fact that the testimony was corroborated by contemporaneous documents from multiple sources, Judge McGuire's conclusion was the only possible interpretation of the evidence.

2. Rambus Did Not Mislead Anyone At The September 1995 Meeting

Rambus was also asked at a 1995 JEDEC meeting to respond to questions about its intellectual property. At the May 1995 meeting, presentations were made by several JEDEC members regarding a "next generation" memory technology called "SyncLink." JX26 at 10-11. Rambus representative Richard Crisp was asked at the meeting to "get a statement from his company on the issue of whether they held patents on the concepts of the SyncLink DRAM. . . ." Kelley, Tr. 2578.

At the next JEDEC meeting, held in September 1995, Mr. Crisp presented a written response to the questions about intellectual property that had been raised at the May 1995 meeting. The statement included this passage:

> "At this time, Rambus elects to not make a specific comment on our intellectual property position relative to the Synclink proposal. *Our presence or silence at committee meetings does not constitute an endorsement of any proposal under the committee's consideration nor does it make any statement regarding potential infringement of Rambus intellectual property."*

JX27 at 26 (emphasis added). Rambus's statement was published in full in the official JEDEC minutes of the September 1995 meeting. *Id*.

When questioned by Complaint Counsel about Rambus's statement, JC 42.3 chair Gordon Kelley testified that Rambus's "comment of no comment" was "unusual on the committee and is surprising. . . ." Kelley, Tr. 2579. He also stated that "[a] comment of no comment is notification to the committee that there should be a concern" about intellectual property issues. *Id.* A contemporaneous meeting report prepared by Motorola JEDEC representative Mark Farley confirmed that JEDEC members were not lulled by Mr. Crisp's remarks. The memorandum stated that Crisp had:

> "[m]ade a non-statement statement to the committee saying that Rambus has been developing this technology for five+ years and has a substantial number of patents relating to high bandwidth DRAMs."

RX615 at 1. Mr. Farley also reported that "SyncLink told Motorola confidentially that there were very likely patents violated by their proposal." *Id*. Intel representative Samuel Calvin similarly testified that he understood from Rambus's September 11, 1995 statement that any silence by Rambus at JEDEC meetings should not be taken as an indication that it did not have intellectual property relating to JEDEC's work. Calvin, Tr. 1070.

Judge McGuire correctly concluded that "JEDEC members should have clearly understood from [Mr. Crisp's] statement that Rambus might have or might attempt to obtain patents covering technology utilized in JEDEC standards." IDC 281.[20]

3. Rambus's June 1996 Withdrawal Letter Did Not Mislead Anyone

Rambus's separation from JEDEC was formalized on June 17, 1996, when Rambus sent a letter to the JEDEC office that stated in part that Rambus was "not renewing its membership in JEDEC." CX887 at 1. The letter *also* stated that "[w]e trust that you will understand that Rambus reserves all rights regarding its intellectual property. *Id*. In addition, the letter enclosed "a list of Rambus U.S. and foreign patents" and stated that "*Rambus has also applied for a number of additional patents in order to*

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[20] As Judge McGuire also found, Rambus executives had directly warned various DRAM manufacturers in the fall of 1995 that Rambus might obtain intellectual property rights with respect to SyncLink and SDRAM devices. IDF 859-862. *See also* RX555 at 5 (Rambus letter to Hynix in April 1995 noting that "Rambus was the first low pincount high bandwidth DRAM" and warning that "Rambus has filed and had issued a number of very fundamental patents. . . .").

protect Rambus technology." *Id*. (emphasis added).

Complaint Counsel contend that Rambus deliberately omitted its newly issued '327 patent from the list of patents attached to its June 17, 1996 letter to JEDEC, and they say that the claims of the '327 patent would have alerted JEDEC members to the breadth of Rambus's potential patent claims. CCAB 21, 51. There was no evidence at trial, however, to support this contention. Indeed, no witness testified that he or she had ever seen Rambus's withdrawal letter or the list of patents attached to it. Complaint Counsel thus failed to meet their burden of showing that the absence of the '327 patent from the list misled anyone.[21]

Moreover, the trial record demonstrates that the '327 patent was left off the list of Rambus's patents by mistake. It was the responsibility of outside counsel, Mr. Vincent, to compile the list of patents sent to JEDEC with the letter confirming Rambus's withdrawal. CX3129, Vincent Micron Depo. at 538. Mr. Vincent testified that he did not purposely leave the '327 patent off the list, which had been compiled in connection with an earlier draft of the letter in late March 1996 and which was not updated when the letter was sent in June 1996. CX879 at 3; CX3129, Vincent Micron Depo. at 490-91.

4. Rambus Acted In Good Faith

As noted in Section II.C.1, the EIA's general admonition that standardization activities be administered in good faith did not create any disclosure obligation with respect to a JEDEC member's intellectual property. It is nevertheless important to note that Rambus acted at all times in good faith. Rambus did not at any time encourage or push JEDEC to adopt any feature or technology. Rambus never even voted in favor of the standardization of any feature or technology. When Rambus was

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[21] In any event, the '327 patent was on a list of Rambus patents circulated in 1998 by Hynix to numerous DRAM manufacturers. IDF 900.

asked on two occasions at JEDEC meetings if it would care to comment about its intellectual property rights, it stated that it did not care to do so. *See* RPF 491-515; 544-48. Rambus did not lie and say that it had no such rights; it did not lie and say that it would not assert whatever rights it had. Instead, it openly and publicly declined to comment, and all present understood that it had declined to comment. *Id*. Indeed, JEDEC Council and 42.3 Chairman Gordon Kelley testified that Rambus's refusal to comment was "unusual" and constituted "notification to the committee that there should be a concern" about intellectual property issues. Kelley, Tr. 2579.

This conduct represents the definition of good faith. Rambus misled no one. It lulled no one. It chose, for legitimate business reasons and on the advice of counsel, to keep its patent applications confidential. It had undertaken no duty, and had assumed no obligation, to act otherwise. If it *had* had such a duty, *if* it *had* assumed such an obligation, surely someone at the JEDEC meetings where Rambus declined to comment would have said: "no, you must comment," or "you have agreed to comment," or "the rules require you to comment." No such words were spoken. *Id*.

Complaint Counsel argue that the evidence does not support a conclusion that Rambus chose not to disclose its patent applications for business reasons and on the advice of counsel. CCAB 55. In fact, the evidence supports no other conclusion. Complaint Counsel concede that Rambus's outside patent counsel, Lester Vincent, instructed Rambus personnel that patent applications were confidential and should not be disclosed. *Id*. *See also* IDF 936-37. Mr. Vincent also advised Rambus JEDEC representative Richard Crisp that if Rambus's applications were disclosed:

> "companies could potentially file interference actions on our patent applications in the patent office; that in certain countries where the rules are first to file, somebody could potentially file a claim before we actually did; and that we basically would be disclosing trade secrets that could work against us in terms of our competitive position in the marketplace."

IDF 1064 (*quoting* Crisp, Tr. 3496).

This testimony was fully corroborated by the contemporaneous evidence. In an internal email sent in September 1995, Mr. Crisp set out the reasons why Rambus had not disclosed to JEDEC the claims in its pending patent applications:

> "[W]e decided that we really could not be expected to talk about potential infringement for patents that had not issued both from the perspective of not knowing what would wind up being acceptable to the examiner, and from the perspective of not disclosing our trade secrets any earlier than we are forced to."

IDF 1065; CX837 at 2.

In light of this evidence, Judge McGuire correctly found that Rambus was not acting in bad faith and that it had legitimate business reasons for declining to respond to questions about its intellectual property. IDC 286-289.

G. JEDEC Would Not Have Adopted Different Standards Even If Rambus Had Made Additional Disclosures

Even assuming that Complaint Counsel were able to prove that (a) JEDEC imposed a mandatory obligation on its members to disclose intellectual property interests, (b) that Rambus failed to disclose intellectual property that fell within that obligation, and (c) that Rambus's conduct misled JEDEC members into believing that Rambus would not obtain patents over technologies proposed for inclusion in the standards, Complaint Counsel must still prove that had Rambus made the additional disclosures Complaint Counsel posit, the outcome of JEDEC's standardization work would have been different. In other words, Complaint Counsel must still prove that "but for" the alleged failure to disclose, JEDEC would have adopted alternatives for *each* of Rambus's technologies – the two technologies incorporated in the SDRAM standard and all four technologies incorporated in the DDR standard[22] – or Rambus's royalty rates would have been lower.

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[22] Had JEDEC incorporated only some but not all of the Rambus technologies in question, Rambus would still be in the position to assert its patents over JEDEC-

For their assertion that, had Rambus made the allegedly-required additional disclosures, "JEDEC's members likely would have selected different technologies," CCAB 90, Complaint Counsel turn to two lines of evidence. First, Complaint Counsel seek to establish that the allegedly-required disclosures were the type of information that was "material," i.e., "likely to affect the decision-making process in questions." CCAB 74-75. Complaint Counsel hopes that by showing this, the Commission may infer that JEDEC's technology selection would have been different. CCAB 77-81. Second, Complaint Counsel rely on the testimony of JEDEC members that they would have (a) supported other technologies or (b) at least, considered alternatives more carefully. CCAB 90.

This evidence, however, is an inadequate foundation for antitrust liability. The evidence of materiality, *at most*, only shows that the additional disclosures might have been the *type* of information that is considered by JEDEC members. In certain non-antitrust cases, such as securities cases, involving thousands of faceless actors making thousands of independent decisions (the "market"), evidence that withheld information is of the *type* that is material is sometimes used to support an inference that disclosure would affect the market outcome. Here, however, there are a limited number of identified decision makers – the members of one committee, JC 42.3 – who made four

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compliant devices. Complaint Counsel would therefore have failed to prove a causal connection between the challenged conduct and Rambus's market power. *See, e.g.*, Complaint Counsel's Motion to Dismiss the Complaint, *In the Matter of VISX, Inc.*, Dkt. No. 9286 (filed December 1, 1999), pp. 6-7 (requesting dismissal of complaint seeking to enjoin enforcement of patent allegedly procured by fraud because Respondent received new patent "that will give [Respondent] monopoly power in the technology market and market power in the apparatus market to the same extent as the old one"); Timothy J. Muris, *The FTC and the Law of Monopolization*, 67 ANTITRUST L.J. 693, 716 (2000) (explaining that there could be no "causal connection between the alleged exclusionary conduct and its impact on consumers" if market power derives from another patent untainted by the challenged conduct).

decisions to adopt Rambus's technologies. There is abundant evidence about how these decision makers actually reacted to knowledge of Rambus's patents and in similar situations in the past, so there is no basis to rely on speculation or inference.

Instead, the question for the Commission is how, in light of this evidence, would JEDEC members have reacted to the *specific* information allegedly withheld by Rambus. In their attempt to answer this question, Complaint Counsel rely on after-the-fact testimony of JEDEC members about what they think they might have done had Rambus made the additional disclosures. But this testimony is necessarily unreliable; Complaint Counsel asked these witnesses to reinvent their decision processes for choices they made six to ten years ago. Moreover, many of Complaint Counsel's questions asked the witnesses to assume that Rambus held patents and applications that it did not then have. *See, e.g.*, Sussman, Tr. 1417. It was difficult enough for these witnesses to remember such things as what options were available, what considerations were important, and what their views were at the time. Asking them to reformulate their decisions based on unavoidably deteriorated memories is an invitation to speculation. Their conjecture does not provide an adequate basis for the extraordinary remedy Complaint Counsel seek, particularly where the witnesses work for companies with an interest in the outcome of this litigation. IDC 270.

Moreover, the biased and speculative testimony of Complaint Counsel's witnesses is directly contradicted by real world events. First, there is the evidence of real world technology decisions made by JEDEC members *when directly confronted by Rambus's claims that its patents cover the four at-issue technologies*. This evidence guts Complaint Counsel's case because it shows that JEDEC members continued to adopt Rambus's technologies for future standards, even though they knew that Rambus would claim that it had patents covering those technologies. Second, the economic and technical evidence demonstrates that Rambus's technologies were superior to the available alternatives in cost/performance terms, even accounting for Rambus's royalties.

This evidence shows that any rational JEDEC member would have chosen Rambus's technologies over alternatives (and it explains why JEDEC members continued to adopt Rambus's technologies even after knowing about Rambus's issued patents). Third, evidence concerning JEDEC's and Rambus's behavior and economic incentives confirms that JEDEC would have adopted Rambus's technologies in the but for world that JEDEC members would not have insisted on *ex ante* negotiations resulting in lower royalty rates.

These three sets of evidence demonstrate that, even if Rambus had made additional disclosures, JEDEC still would have adopted Rambus's technologies. *See* IDF 1128-1535. In short, when the evidence is evaluated as a whole, Judge McGuire correctly found that the weak and suspect inference that might be drawn from Complaint Counsel's selected portions of the record does nothing to meet Complaint Counsel's burden on this issue. IDC 316-22.

1. JEDEC Repeatedly Chose Rambus's Technologies Despite Concerns About Rambus's Intellectual Property, And Even After Rambus Began Asserting Its Patents

Noticeably absent from Complaint Counsel's description of the record is the evidence of real world technology decisions made by JEDEC members *with full knowledge of Rambus's issued patents*. Complaint Counsel's hypothesis is that if Rambus had disclosed that it had pending patent applications that *might* issue and that *might* relate to technologies suggested for inclusion in JEDEC standards, JEDEC members would have selected alternative technologies to avoid paying royalties to Rambus. But this hypothesis founders on the evidence of what JEDEC *actually* did in the past five years, *after* Rambus obtained *issued* patents that *covered* technologies suggested for incorporation in future standards. This evidence shows that after Rambus publicly began to license its patents against DRAM manufacturers, JEDEC *considered* but *rejected* alternatives to Rambus's technologies for a *new* standard – DDR2. In addition, this evidence shows that, even after Rambus began to assert its patents, certain JEDEC members developed a new product outside of the JEDEC process – RLDRAM – which incorporated Rambus's technologies as well. This evidence is nothing short of a "natural experiment" for how JEDEC members would have reacted to further disclosures from Rambus. It demonstrates that JEDEC members would have continued to adopt Rambus's technologies.

a. JEDEC Chose Rambus's Technologies For DDR2, Even Though Rambus Was Licensing Its Patents To DRAM Manufacturers

JEDEC's behavior after the relevant Rambus patents issued extinguishes the notion that additional disclosures would have changed the outcome. When Rambus began its highly publicized efforts to license its patents – a "disclosure" that even Complaint Counsel cannot contend was insufficient to put JEDEC members on notice – JEDEC was in the process of developing its standard for DDR2.[23] All of the concerns that, according to Complaint Counsel, troubled JEDEC with regard to future standards were present. To be specific, JEDEC members were faced with the prospect of paying Rambus royalties on any newly designed, future products that incorporated Rambus technologies. Under Complaint Counsel's view of the world, under this "threat," JEDEC members would run to alternative technologies.

But that is not what the evidence shows. The evidence shows that after Rambus's patents issued, JEDEC members did consider alternatives to Rambus's

[23] The JEDEC Future DRAM Task Group began work on the DDR2 in April 1998, but as of May 2003 the standard had not yet been published. It is uncontested that in November 1999, Rambus began seeking to license its patents for JEDEC-compliant SDRAM and DDR products that incorporated the technologies at issue in this case. *See* CCPF 1950. This was widely publicized and well-known in the industry. JEDEC's development of the DDR2 standard therefore continued in the face of this knowledge. RPF 732-38; IDF 1492-99.

technologies for the DDR2 standard.[24] But after considering those alternatives, JEDEC *chose* to use Rambus's technologies. Specifically, after Rambus's patents issued, JEDEC considered but rejected alternatives for Rambus's dual-edge clocking, variable burst length, and programmable latency technologies. In addition, despite identifying potential alternatives for Rambus's on-chip DLL technology before Rambus's patents issued, JEDEC elected to retain Rambus's technology.

Programmable latency. Only a few months after Rambus began licensing its patents, in March 2000, Micron proposed to JEDEC several alternatives for Rambus's programmable latency technology in SDRAM, DDR, as well as DDR2. IDF 1505; RPF 749; CX154A at 25 ("the first part of this presentation discusses possible methods for eliminating programmable read latency from existing SDR and DDR devices; this discussion serves as useful background for the DDR II proposal"). JEDEC members carefully considered these proposals, and emails exchanged between committee members show that the alternatives raised cost concerns: "What are we really saving here? . . . . Any cost savings has to be off-set with the additional component costs associated with adding new part numbers . . . . On DDR II devices, I still want multiple CAS latencies supported for the same reasons." RX-1626 at 3. Ultimately, JEDEC rejected the alternatives and adopted Rambus's programmable latency technology for DDR2,[25]

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[24] Steve Polzin of AMD, for example, testified that he had discussions with DRAM manufacturers in 2000 about alternatives to programmable latency, variable burst length, and dual-edge clocking. IDF 1500; RPF 747; Polzin, Tr. 3988, 3996, 4044. Mr. Polzin understood at the time of these discussions that Rambus patents covered these technologies *Id*. Similarly, Ilan Krashinsky of Hewlett-Packard testified that JEDEC was looking at alternatives to Rambus's dual-edge clocking technology to avoid Rambus's patents. Krashinsky, Tr. 2828.

[25] In July 2000, Micron made another proposal that included alternatives for programmable latency, including using multiple pins "to select specific latency values." IDF 1508; RPF 752. JEDEC rejected this proposal as well.

despite knowledge of Rambus's patents.[26] IDF 1509.

Dual-edge Clocking. At the September 2000 JEDEC meeting, Micron proposed that DDR2 incorporate single data rate technology instead of dual-edge clocking. IDF 1515; CX2769 at 13. The minutes of a November 2000 conference call show that JEDEC committee members developed a consensus to adopt the technology in place of dual-edge clocking "if it works": "Single data rate clock is preferred provided we can make it work." CX426 at 4; IDF 1516. But it apparently did not work; JEDEC adopted Rambus's dual-edge clocking technology for DDR2. IDF 1517-18; RPF 760-63.

Variable Burst Length. In July 2001, JEDEC issued the preliminary specification for DDR2, which specified the use of a fixed burst length – an alternative to Rambus's variable burst length technology. IDF 1510; RX-1854 at 20. At a September 12-13, 2001 JEDEC meeting, however, JEDEC rejected the alternative and returned to Rambus's technology. IDF 1511; RPF 754-58. At that meeting, Intel and IBM jointly proposed that the DDR2 specification be modified to "add support for burst length of 8." CX174 at 7. AMD also made a similar proposal at that same meeting. CX174 at 8. This was to be accomplished by *reincorporating* into the standard Rambus's variable burst length technology. CX174 at 37 ("Mode-Register Programming for Burst-Length of 8"; "Need programmability to allow for either BL=4 or BL=8"). According to Intel and IBM, the addition of Rambus's technology would substantially improve performance in certain applications. CX174 at 35 ("Potential Improvement of 4-10% On High-Bandwidth Applications"); *id.* at 36 (using technology to allow for burst length of 8 "Improves Data Efficiency By As Much As 15%"). The proposal to reject the fixed burst

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[26] As Judge McGuire found, there can be no doubt that JEDEC members were fully aware of Rambus's patent claims during this time. Joe Macri, the chair of the task group working on DDR2, testified that Rambus's patent claims were such common knowledge that he did not even bother mentioning them during committee meetings discussing alternatives to Rambus's technologies. IDF 1497.

length alternative and to reincorporate Rambus's variable burst length technology passed unanimously. CX174 at 7-8; IDF 1512-13 (JEDEC adopted proposal despite being aware that technology was covered by Rambus's patents).

On-chip DLL. After being assigned to investigate alternatives to Rambus's on-chip DLL technology, in December 1998, both HP and IBM proposed alternatives for DDR2. IDF 1502-03; CX137 at 3, 4, 27 (using a vernier mechanism in place of on-chip PLL). Despite these proposals, and despite Rambus's assertion of its patents in 1999, JEDEC did not adopt an alternative to on-chip DLL. IDF 1504. In other words, even though the DDR2 standard was still in process at the time JEDEC members became aware of Rambus's issued patents, JEDEC elected to remain with Rambus's technology instead of the alternatives that it had already investigated.

These choices were not driven by "lock-in." Before the ALJ, Complaint Counsel attempted to dodge the implications of this evidence by positing that JEDEC had to use the Rambus technologies in DDR2 because they were used in DDR. Specifically, Complaint Counsel have contended that JEDEC adopted Rambus's technologies in DDR2 to maintain "backward compatibility" with DDR, by which they mean that memory controllers could be designed to work with both types of memory and that both types of memory could be manufactured on the same die.[27] RRPF 3244-46.

While there is evidence that this sort of "backward compatibility" was a consideration in the design of DDR2, three sets of evidence demonstrate that JEDEC was not "locked-in" to using Rambus's technologies. First, the JEDEC task group in charge of what became DDR2 seriously considered basing its work on architectures that were

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[27] Complaint Counsel also asserted below that JEDEC did not adopt alternatives because firms were already preparing to introduce products using the new standard. This contention, however, is contradicted by the contemporaneous evidence and direct testimony regarding when companies started work on DDR2 products. *See* RRPF 3255-61.

entirely different from DDR, which would have precluded any sort of "backward compatibility." RPF 739-63. Had "backward compatibility" been an overriding concern, it is unlikely that JEDEC would waste time considering alternative architectures.

Second, as discussed above, JEDEC considered alternatives for each of the four Rambus technologies. Again, as Complaint Counsel's own economist admitted, if JEDEC were locked in, it would not have wasted its time in these efforts. IDF 1501; McAfee, Tr. 7571. But even more telling, as discussed above, the preliminary specification for DDR2 *did* adopt an alternative for Rambus's variable burst length technology. If "backward compatibility" was driving JEDEC's decisions, this would have never happened. The evidence shows that JEDEC eventually abandoned that alternative and returned to Rambus's technology for performance reasons, not any "backward compatibility" concerns. IDF 1511. In addition, IBM's Mark Kellogg testified that he would, today, support going to an alternative for on-chip PLL/DLL, indicating that no "backward compatibility" concerns prevent a change. Kellogg, Tr. 5245-47.

Third, there is no contemporaneous evidence that any decision to use Rambus's technologies in DDR2 was driven by "backward compatibility" concerns. In fact, when considering Micron's proposed alternatives for Rambus's programmable latency technology, two companies flatly stated that they were not "locked in." Bob Fusco at Hitachi wrote, "For DDR-2, we have no legacy to live with, so I like the Micron proposal." RX1626 at 4. Similarly, Bill Hovis of IBM wrote that for DDR2 "the situation with the system is that I am not currently locked in." RX1626 at 3.

No technological or economic impediment forced JEDEC to use Rambus's technologies in DDR2. Yet JEDEC members voted to incorporate each of the four Rambus technologies despite knowing that Rambus's patents had issued and that Rambus was demanding royalties for these technologies. When asking what JEDEC members would have done in the but for world, we need only look at what they did in the real world when indisputably confronted with the information Complaint Counsel insist they lacked.

b. DRAM Manufacturers Incorporated Rambus's Technologies For RLDRAM, Despite Full Knowledge Of Rambus's Patent Rights And Even Though RLDRAM Is Not A JEDEC Standard

The development of RLDRAM dispels any doubt that JEDEC would have chosen Rambus's technologies in the but for world. After Rambus's patents issued and Rambus began to demand royalties for use of the four at-issue technologies in late 1999, three JEDEC members – Infineon, Micron, and Cisco – jointly developed RLDRAM. Bechtolsheim, Tr. 5962, 5965-66. The RLDRAM specification was developed outside of the JEDEC process. Bechtolsheim, Tr. 5962; IDF 1040. Thus, there was no JEDEC standard requiring the use of Rambus technologies. Nor was there any need to use Rambus technologies to be compatible with JEDEC-standard complementary devices. Yet RLDRAM incorporates three of the same Rambus technologies that are in SDRAM and DDR: programmable latency, variable burst length, and dual-edge clocking. Bechtolsheim, Tr. 5966. And despite Rambus's patents, RLDRAM went into full production. *See* CX2466 at 8-9 (Infineon offering six different types of RLDRAM (according to the part numbers) in 2002); IDF 1615.

The development of RLDRAM refutes Complaint Counsel's but for world story. Nothing forced Infineon, Micron and Cisco to use Rambus's technologies. There is no doubt that these companies were aware of Rambus's claims that these technologies were patented. Not only was this common knowledge in the industry (RPF 734, IDF 1495), but Rambus specifically discussed its patents with Infineon in June 2000 (CX1127 at 1), and Micron's CEO testified that he was well aware of Rambus's patents before Rambus contacted him about a license in August 2000. Appleton, Tr. 6394-95. Yet contrary to everything Complaint Counsel argues would happen if Rambus had only made further disclosures, this trio of JEDEC members was undeterred by *full* knowledge of Rambus's intellectual property rights and incorporated Rambus's technologies into RLDRAM.[28]

Complaint Counsel have never addressed this evidence. They did not do so before the ALJ; they do not do so in their appeal brief. The inferences from the adoption of Rambus's technologies into RLDRAM stand uncontested.

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The DDR2 and RLDRAM evidence shows that additional information about Rambus's patent interests would not have caused JEDEC members to seek alternative technologies. JEDEC has demonstrated in the real world that additional knowledge of Rambus's patent interests does not lead it to stop using Rambus's technologies. The same would be true in the but for world.[29]

JEDEC members' incorporation of Rambus's technologies in DDR2 and RLDRAM is fully consistent with the evidence of their perceptions and motivations.

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[28] This real-world behavior also undermines the testimony of the Micron and Infineon engineers, relied upon by Complaint Counsel, who claimed that they would have favored alternatives to Rambus's technologies had Rambus made the additional disclosures. *See* CCAB 90 (relying on the testimony of Micron engineer Terry Lee and Infineon engineer Willi Meyer).

[29] As Judge McGuire found, this conclusion may also be framed as stemming from the economic doctrine of "revealed preference." Economists use evidence of real world choices to draw inferences about preferences and use those preferences to infer what choices would be made in a but for world. RPF 724-25. JEDEC's selection of Rambus's technologies for SDRAM and DDR demonstrate that, all other things being equal, Rambus's technologies were seen as superior to the alternatives. RPF 724-27; IDF 1486-1535; IDC 322-23. Complaint Counsel assail this conclusion, pointing out that these decisions were made without the additional information that Rambus allegedly withheld. CCAB 93. The question, therefore, is whether the additional information would have changed JEDEC members' revealed preference. JEDEC's selection of the same technologies for DDR2 (as well as the selection of these technologies for RLDRAM) shows that knowledge of Rambus's patents did not change that preference in the real world. Further disclosures from Rambus certainly would not have changed the revealed preference in the but for world.

Complaint Counsel insist that JEDEC members would cower at the prospect of paying royalties for Rambus's technologies and therefore scramble for some alternative explanation for the DDR2 standard (they have no explanation for RLDRAM). But Complaint Counsel's assumption is wrong for two reasons. First, as discussed above, JEDEC members were convinced that Rambus's patents would be invalidated by prior art. *See*, e.g., IDF 1519-35; RPF 764-83. These beliefs specifically motivated JEDEC when it was developing DDR2. Mark Kellogg of IBM testified, for example, that after he examined Rambus's patents in 2001, he conveyed to other DRAM manufacturer his belief that there was prior art to Rambus's patents. According to Mr. Kellogg, the DRAM manufacturers "were considering the fact that some of the Rambus patents might be overturned" when making decisions about whether to try to design around Rambus patents. IDF 1521-22; Kellogg, Tr. 5301-04. Second, even if JEDEC members fully expected that Rambus's patents would be valid and would cover the four technologies, as explained below, Rambus's technologies were superior in cost/performance terms to the alternatives, even accounting for Rambus's royalties. JEDEC members were simply acting as any rational producer or customer would when confronted with a superior choice.

2. Rambus's Technologies Were Superior In Cost/Performance Terms, Even Taking Into Account Rambus's Royalties

After weighing the economic and technical evidence, Judge McGuire correctly found that JEDEC would have selected Rambus's technologies in the but for world because, even accounting for Rambus's royalties, the technologies are superior in cost/performance terms. Using standard economic assumptions, this evidence shows that a rational JEDEC member would have voted to include Rambus's technologies over any alternatives.

a. Complaint Counsel Did Not Meet Their Burden Of Proving That There Were Any Acceptable Alternatives

At trial, Complaint Counsel sought to establish that there existed acceptable alternatives to which JEDEC would have switched. This required Complaint Counsel to prove that there were alternatives for both of the Rambus technologies incorporated in SDRAM (programmable latency and variable burst length) and all four technologies incorporated in DDR (programmable latency, variable burst length, dual-edge clocking, and on-chip DLL). As Complaint Counsel's economist admitted, the relevant test for alternatives is whether they were "equal or superior" to Rambus's technologies; the exclusion of an inferior technology is not "exclusionary in an economic sense." McAfee, Tr. 7536-37.

The evidence concerning potential alternative technologies is voluminous, detailed, and technically complex. It includes the testimony of several experts (Complaint Counsel's technical expert, Professor Jacob, their economist, Professor McAfee, Rambus's technical experts, Dr. Soderman and Mr. Geilhufe, and a Rambus economist, Dr. Rapp), the testimony of several JEDEC members, the testimony of one of Rambus's inventors (Dr. Horowitz), and substantial documentary evidence. All of this evidence can be divided into three categories: technical performance, economic costs, and patent issues. The evidence therefore allows an evaluation of each alternative to determine whether its use (1) would affect quality (performance); (2) would increase or decrease overall costs; and (3) would be affected by intellectual property rights (either Rambus's or a third party's).

Judge McGuire made extensive findings on all of this evidence. IDF 1128-1402. In addition, responses to Complaint Counsel's contentions are set out in Rambus's Reponses to Proposed Findings of Fact. *See* RRPF 2130-2414. While the evidence is both complex and voluminous, it can be easily summarized. All of Complaint Counsel's proposed alternatives are either too costly, lack the necessary performance, or run into patents held by Rambus or others. In short, Complaint Counsel failed to meet their burden to show that there were available and acceptable noninfringing alternatives to Rambus's technologies. None of the technologies they offered were "equal or superior." IDC 312-16.

Though the evidence is detailed, several key points confirm that Judge McGuire's conclusion is correct:

Complaint Counsel's key evidence on technical performance is suspect. After hearing all of the testimony and reviewing all of the documents on this issue, Judge McGuire specifically found that the testimony of Complaint Counsel's technical expert, Professor Jacob, was not persuasive. IDF 1128-34. Judge McGuire found that Professor Jacob lacked relevant experience because he "has never done DRAM circuit design," has "never designed *any* circuits for computer chips (even apart from DRAMs) that were to be fabricated prior to 2002," and had "no particular DRAM-related experience in the mid-1990's." IDF 1128; *see also* IDC 316 (noting Professor Jacob's lack of experience). Moreover, Judge McGuire found that Professor Jacobs methodology was lacking. Although Professor Jacob used software to model the DRAM architectures discussed in his publications, with the exception of three alternatives, he did "no simulation or modeling of any kind" to try to assess the performance of the alternatives he offered at trial. IDF 1132. Moreover, his proposed alternatives were not sufficiently detailed. IDF 1133; *see also* IDC 316 (summarizing deficiencies in Jacobs's testimony).

Complaint Counsel failed to offer any cost data. Complaint Counsel have repeatedly stressed the importance of costs in the assessment of alternatives. *See, e.g.*, CCAB 84. But Complaint Counsel did not introduce *any evidence at all* quantifying the relative costs of using their proposed alternatives versus Rambus's technologies. In fact, Complaint Counsel's economist, Professor McAfee, offered these opinions *without any cost data*, even though he purported to opine on the "commercial viability" of the various alternatives. IDF 1091. In contrast, Rambus introduced expert testimony regarding the incremental fixed and variable costs of using these alternatives in place of Rambus's technologies. RPF 969-88, 1125-1140. While Complaint Counsel take various jabs at this evidence, they have not submitted *any* cost evidence that undermines or contradicts Rambus's evidence.

Complaint Counsel failed to rebut any of the evidence of blocking patents. Complaint Counsel's own economist admitted that a blocking patent could render an alternative not "commercially viable," even under his definition of the term. IDF 1095. Rambus produced evidence that several of Complaint Counsel's proposed alternatives were covered by patents, either Rambus's or those of third parties. *See, e.g.*, RPF 863, 892, 938, 964-68, 1141-46. In fact, contemporaneous documents show that JEDEC members knew that some alternatives had patent problems. RPF 867. Yet Complaint Counsel offered no rebuttal to this evidence; and their experts did not even consider these patents. RPF 1123-24; IDF 1095, 1134, 1206.

Complaint Counsel's alternatives are more costly. Even putting aside performance deficiencies – of which there were many – the evidence shows that all of Complaint Counsel's purportedly noninfringing alternatives would entail increased variable costs that *exceed* Rambus's royalties. IDF 1260-79, 1388-1402; RPF 969-88, 1125-1140. This is true for both SDRAM and DDR SDRAM. *Id.* Thus, additional disclosures by Rambus would not have deterred JEDEC from using Rambus's technologies because a rational manufacturer and a rational standards setting body would have adopted Rambus's technologies, even with full knowledge that doing so might result in paying royalties to Rambus. *See* IDF 1277-79, 1400-402.

In sum, Complaint Counsel failed to show that there were acceptable, noninfringing alternatives to Rambus's technologies. To the contrary, the evidence shows that Rambus's technologies were superior to alternatives in cost/performance terms.

b. JEDEC Would Have Acted Rationally

Complaint Counsel seek to sidestep the above-cited evidence. They make three arguments, none of which is sound.

First, Complaint Counsel urge the Commission to *ignore* the evidence and to base its decision solely on the fact that JEDEC considered other alternatives. As Complaint Counsel put it, "JEDEC's serious consideration of . . . alternatives should be determinative." CCAB 83. But the fact that JEDEC considered and *rejected* alternatives hardly shows that it would have chosen them in the but for world. To the contrary, there is substantial testimony from several JEDEC members that many of the alternatives – though considered – were *not* acceptable.[30] And Complaint Counsel's own economist, Professor McAfee, was unable to testify that many of the alternatives listed by Complaint Counsel as "considered by JEDEC" were "commercially viable," even under his imprecise and overly expansive notion of that term. *See, e.g.*, McAfee Tr. 7372 ("using fuses to set burst length" not determined to be "commercially viable").

Second, Complaint Counsel argue that, while JEDEC decisions were driven by a number of factors, the "need for low cost was an overriding concern" and would have driven JEDEC away from using Rambus's technologies. CCAB 84-85. While Complaint Counsel constantly tout the purported "$1-3 billion price tag" in Rambus royalty payments, however, they *ignore* the evidence of the *relative* costs of the Rambus technologies versus the alternatives. This evidence shows that Rambus's technologies,

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[30] *See, e.g.* RPF 814 (fixed latency not flexible enough); 825 (fixed latency "would have a significant cost impact for the DRAM manufacturers"); 875 (using pin to set latency would be disadvantageous because of need for pins for future generation advances); 913 (fixed burst length would have been "very, very bad for AMD"); 937 (using a pin to set burst length removes pin needed in higher densities); 955 (burst terminate command would make system less efficient); 1015 (interleaving on-module banks would lead to signal integrity problems); 1048 (single edge clocks at higher frequency would lead to electromagnetic interference); 1096 (off-chip DLL would increase system cost).

after accounting for Rambus's royalties, are *less* costly than any noninfringing alternatives. *See* IDF 1277-79, 1400-402. Not surprisingly, the cost data are consistent with the testimony of JEDEC members. *See, e.g.*, Kelley, Tr. 2550-51 (Rambus's variable burst length technology "drives low cost"); Landgraf, Tr. 1709 (Rambus's on-chip DLL technology "reduces the overall cost of the system"); Landgraf, Tr. 1709-10 (Rambus's dual-edge clocking technology reduces costs by using "the package and the pins more efficiently"). If low costs were the overriding concern, rational JEDEC members would have selected Rambus's technologies.

Third, Complaint Counsel argue that because of the need for consensus, JEDEC members did not behave as rational, profit-maximizing, economic actors, but would instead have avoided Rambus's technologies by selecting inferior technologies as the result of "satisficing" behavior. CCAB 87, 93.[31] The evidence, however, shows that JEDEC *does* seek the best alternative in cost/performance terms, i.e., JEDEC members *do* seek to profit maximize. RRPF 2650. JC 42.3 Chairman Gordon Kelley testified that JEDEC sought to select the "best" technologies. Kelley, Tr. 2709. A Micron JEDEC representative testified that "we had long discussions of the pros and cons of various options and tried to determine what was the best standard." Williams, Tr. 770. An IBM representative testified that he sought to work with the industry to find the "optimal solution, price/performance." Kellogg, Tr. 5113. The JEDEC minutes are rife with concerns of cost and performance.[32] This evidence shows that JEDEC would have acted rationally and would thus have selected the technologies with the best cost/performance

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[31] The legal implications of Complaint Counsel's suggestion that JEDEC would in this way have chosen inferior technologies over Rambus's patented technologies are discussed in Section III.2.

[32] *See, e.g.*, CX18 at 5 (Mitsubishi comments regarding performance concerns); CX34 at 9 (concern that proposed package would have slow performance); CX47 at 3 ("There was a lot of discussion about the NOPs in all banks idle entry. Mr. Lai (Intel) had strong feelings about it – it was something that gives slightly more performance.").

characteristics, not just the lowest cost irrespective of performance.

3. Even Assuming That Viable Alternatives Existed, JEDEC Would Have Chosen Rambus's Technologies

Even if there were viable alternatives, as Judge McGuire found, JEDEC's and Rambus's behavior and economic incentives confirm that JEDEC would still have adopted Rambus's technologies in the but for world.[33] IDF 1403-85; IDC 319-22. Sidestepping the implications of Rambus's technologies being superior, Complaint Counsel repeatedly fall back on a two-fold, rules-and-behavior based argument: (i) JEDEC's rules supposedly would have precluded the adoption of Rambus's technologies absent an assurance from Rambus that it would license on reasonable and nondiscriminatory ("RAND") terms and (ii) Rambus allegedly would not have provided such a RAND letter. *See* CCAB 95, 99, 101. But this argument makes two unsupported assumptions: (1) that JEDEC would not have proceeded without first seeking a RAND assurance from Rambus; and (2) that in the but for world, after disclosing its trade secrets to JEDEC, Rambus would have refused to give a RAND assurance. Neither assumption is supported by the record.

a. JEDEC Might Well Have Proceeded Without A RAND Assurance

Both parties' economists agree that if JEDEC had not sought a RAND assurance from Rambus, "it would have lead to the same outcome as the actual world." McAfee, Tr. 11308; IDF 1419. As Judge McGuire found, there is substantial reason to find that JEDEC might well have proceeded in this manner. IDF 1414-34.

JEDEC members were likely to have believed that Rambus was trying to

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[33] At trial, Rambus's economist, Professor Teece, presented an analysis of both JEDEC's and Rambus's likely behavior in the form of a decision tree. Judge McGuire found this testimony to be "highly persuasive," IDC 319, and specifically contrasted Professor Teece's qualifications to testify on this subject with those of Complaint Counsel's economist, IDF 1403-10.

"game" the system. Standard setting organization members have recognized that companies might, for competitive reasons, make false patent-related disclosures in order to derail or detour a standard setting process. *See, e.g.*, RPF 1172; IDF 1426. There is real world evidence of the EIA's reaction when its members believed that a patent holder was engaging in this conduct. In the *Echelon* case, an EIA standards body purposefully avoided asking for a RAND assurance to prevent "gaming" by a member that, the body believed, had tried to use intellectual property disclosures to force the body to forego a competitor's technology. RPF 1166-71; IDF 1421-25. The trial record shows that several JEDEC members believed that Rambus had tried to use its intellectual property to delay or prevent standardization of devices that might compete with its RDRAM. *See* RPF 476 (belief that Rambus made questionable intellectual property disclosures in effort to "torpedo" IEEE standard setting efforts); IDF 1427-31 (belief that Rambus made false claims about its patents to prevent adoption of DDR). Complaint Counsel's own economist admitted that if JEDEC believed Rambus was gaming the system, it was a "logical possibility" that JEDEC would not ask for a RAND letter and proceed to use Rambus's technologies. IDF 1434; RPF 1181.

JEDEC members might have believed that Rambus could not obtain valid patents. Even if JEDEC members believed that Rambus's disclosures were sincere, JEDEC likely would not have sought a RAND letter if it thought Rambus could not obtain valid patents. IDF 1416; RPF 1160. Complaint Counsel's economist agreed that this is the case. IDF 1433; RPF 1180. There is substantial evidence that JEDEC members were convinced that Rambus's patent applications would either never issue or be invalid because of prior art. *See, e.g.*, RPF 764-783; IDF 1519-35.

JEDEC's minutes show numerous instances in which it proceeded without obtaining a RAND commitment. Not only did JEDEC members have incentives not to seek a RAND assurance from Rambus, the evidence shows that JEDEC often proceeded to standardize technologies with seeking a RAND assurance despite patent issues. *See* RPF 1228-32, 1234. In other words, contrary to Complaint Counsel's assumption, *whatever* the rules stated, JEDEC did not reflexively seek a RAND assurance every time a patent issue came up.

b. Had JEDEC Sought a RAND Assurance, It Would Still Have Adopted The Same Standards

Even if JEDEC would have sought a RAND assurance from Rambus, as Judge McGuire found, it still would have adopted Rambus's technologies. IDF 1435-85. Confronted with a request, Rambus would have given a RAND letter. Consistent with its behavior in other situations, JEDEC would have proceeded to adopt the technologies.

(1) Faced With The Circumstances Of The But For World, Rambus Would Have Given A RAND Letter

In the but for world, Rambus would have every economic incentive to give a RAND letter. IDF 1442-45; RPF 1184-1203. The economic testimony shows that Rambus had little to lose, for after making the additional disclosures, Rambus would have already given up the benefit of keeping information about its pending patent applications confidential. IDF 1442; RPF 1193. And it had much to gain. Rambus is dependent on licensing for its revenues. Giving a RAND letter would likely open up licensing opportunities with dozens of companies. Refusing would close those doors. IDF 1443-44; RPF 1194-95. Moreover, agreeing to license on RAND terms is consistent with Rambus's real-world conduct: its actual SDRAM and DDR licenses are reasonable and nondiscriminatory. IDF 1536-81; RPF 1361-1422.

Complaint Counsel respond to this evidence by citing *drafts* of Rambus's JEDEC withdrawal letters, a *draft* letter to the IEEE (not JEDEC), a letter to the IEEE that makes no mention of RAND, and the (miscited) testimony of Gordon Kelley that Richard Crisp had said Rambus was unwilling to agree to the JEDEC licensing policy for technologies Rambus sought to *propose* to JEDEC. CCAB 101. But none of this purported evidence is based upon the circumstances of a but for world in which Rambus had already disclosed its trade secrets. Moreover, this evidence is undermined by the real world confusion about what a RAND commitment entailed. IDF 1448-50; RPF 1200-1201. For instance, Rambus's counsel who drafted the IEEE letter apparently believed that Rambus would have to verify that *all of its existing licenses* were consistent with RAND requirements. RRPF 2420. Similarly, Rambus believed that JEDEC's licensing policy was "onerous," until it later made inquiries and was told by JEDEC leaders that "reasonable" meant "almost anything we wanted it to mean." RPF 1201; IDF 1450.

If confronted with a request for a RAND assurance in the but for world, however, Rambus would have been motivated to investigate the limits of RAND. IDF 1449; RPF 1200. Having done so, it would have agreed to give a RAND assurance to JEDEC.

(2) JEDEC Would Have Adopted Rambus's Technology With A RAND Assurance

The evidence also demonstrates that JEDEC would have adopted Rambus's technologies upon receiving a RAND assurance. Doing so would have been consistent with how JEDEC operated.

The record is replete with instances in which JEDEC adopted technologies despite patent issues. The JC 42.3 meeting minutes show that during the period from May 1990 through the end of 1995, patented technology, or potentially patented technology was proposed to JC 42.3 for standardization on at least a dozen occasions, and in each instance the technology was balloted and the ballot passed. IDF 1467-80; RPF 1220-38.

Key JEDEC members corroborate this record. Gordon Kelley, a long time chair of JC 42.3, testified that he could not recall any instance in which JEDEC pursued alternatives after receiving a RAND commitment on what the committee thought was the best alternative. Kelley, Tr. 2707-09. Similarly, James McGrath, the JEDEC representative for Molex, could not recall a single instance between 1992 and 1996 in which a JEDEC committee changed its course with regard to a standard upon learning of a patent or patent application. McGrath, Tr. 9243, 9255. During the time Rambus attended JEDEC, Desi Rhoden could not recall any example of a JEDEC committee seeking an alternative after a JEDEC member disclosed a patent application and stated that it would license on RAND terms. Rhoden, Tr. 628-29.

Economic analysis confirms that JEDEC would be satisfied with a RAND assurance. Technology licensees, such as JEDEC members, are most concerned with ensuring that licenses are nondiscriminatory and thus provide a "level playing field." IDF 1440-41; RPF 1192. If the *amicus* economics professors are correct, technology users are partly immunized from costs and thus have "only weak incentives to resist" even very high royalty demands that apply uniformly. Brief *Amicus Curiae* of Economics Professors and Scholars ("Economists Brief") at 10. A RAND assurance, which is a promise to license on reasonable and non-discriminatory terms, is therefore sufficient.

(3) There Would Not Have Been *Ex Ante* Negotiations

Complaint Counsel's fall-back argument is that JEDEC members would have insisted on *ex ante* licensing negotiations, which would have resulted in lower royalty rates. CCAB 100-02. Despite calling dozens of JEDEC members as witnesses and submitting scores of JEDEC-related documents into evidence, however, Complaint Counsel cannot point to a single incidence of an *ex ante* negotiation precipitated by a patent-related disclosure at JEDEC. IDF 1452-53; RPF 1206-07; IDC 321. Moreover, Complaint Counsel's economist could testify only that, as a matter of theory, JEDEC members would have an "incentive" to engage in *ex ante* negotiations to avoid "hold up." IDF 1452; RPF 1204. But so long as Rambus gave a RAND assurance – ensuring that licenses would be offered on nondiscriminatory terms – any such "incentive" would be very weak. *See* Economists Brief at 12 (manufacturers' incentives to reduce uniform royalties are "quite limited"); *Amicus Curiae* Brief of the American Antitrust Institute ("AAI Brief") at 14 ("SSOs do not always have strong incentives to prevent [a] symmetric *ex post* 'cost shock'").

Moreover, whatever the "incentive" for *ex ante* negotiations, reality makes them all but impossible. Licenses cannot as a practical matter be negotiated before the parties know whether the patents will issue, what their claims will be, whether they are likely to be valid, what the standard will be, and the value of the patented technology compared to the alternatives. *See* IDF 1454-63; RPF 1208-18. That is why Complaint Counsel have been unable to come up with any evidence of *ex ante* bargaining in response to disclosure of patent interests at JEDEC, and that is another reason why JEDEC asks for no more than a RAND commitment.

Complaint Counsel nonetheless posit that things would have been different in Rambus's case. They contend that JEDEC members would have negotiated for a broader scope of use rights as part of their RDRAM licenses. CCAB 101-02. But despite widespread and documented concerns about Rambus's intellectual property, the evidence shows that (with only one exception) DRAM manufacturers did *not* negotiate broader rights. RRPF 2455-60 (Hyundai obtained broader rights; Samsung obtained only agreement not to sue for *unintentional* use of Rambus technologies in other DRAM). Even the one exception later gave up those rights. RRPF 2457. Because Rambus would have given a RAND assurance in the but for world, there is no reason to think that JEDEC members would complicate RDRAM license negotiations by insisting on broader scope of use rights.

c. Rambus's Royalties Are Reasonable And Non-Discriminatory; Nothing Would Be Different In The But For World

As Judge McGuire concluded, the evidence also shows that Rambus's royalty rates would have been the same as they are in the real world. IDF 1536-81. Because JEDEC members would not have engaged in *ex ante* negotiations in the but for world, JEDEC members and Rambus would have negotiated for licenses to Rambus's technologies at the same time as they did in the real world – after the relevant Rambus patents issued in 1999. The only difference is that Rambus would have issued a formal RAND letter. That would not have made a difference; the evidence shows that Rambus's actual royalty rates are consistent with a RAND commitment.

First, Rambus's royalty rates are "reasonable."[34] JEDEC left it to the market (and if necessary to the courts) to define what is "reasonable." IDF 1542-45; RPF 1372-75. Rambus's SDRAM and DDR royalty rates (.75% and 3.5%) fall well within the rates charged by others in the DRAM and semiconductor industries. IDF 1546-67; RPF 1376-1404. For instance, the IBM Worldwide Licensing Policy, which was presented to JEDEC in a 1991 meeting, sets forth royalty rates from 1-5% of selling price. IDF 1548-49; RPF 1377-78. Similarly, the IBM Standards Practice Manual that was in effect in 1996 states:

> The normal royalty rate for a license to IBM patents ranges from 1% to 5% of the selling price for the apparatus that practices the patents. This is a very reasonable rate in our industry, and generally meets the requirement of standards organizations that licenses be made available "on reasonable and nondiscriminatory terms and conditions."

IDF 1551; RX653 at IBM/2 128124. Evidence of other rates shows that they vary from 1% to 9%. RPF 1384-88. Other data on patents in the semiconductor industry shows average royalty rates to be about 4.5%. RPF 1389-90. Rambus's rates are in the middle

[34] Judge McGuire found Professor Teece's testimony on the issue of whether Rambus's royalty rates were reasonable to be "highly persuasive." IDC 324. In contrast, he found that Complaint Counsel's economist "had no expertise in how to determine a reasonable royalty rate and Complaint Counsel failed to introduce any evidence to rebut" Rambus's evidence. IDC 325.

to low end of these DRAM industry and semiconductor industry rates. IDF 1558; RPF 1393.

Rambus's licenses are also "nondiscriminatory." As with "reasonable," JEDEC left the definition of "nondiscriminatory" to the market. IDF 1568-72; RPF 1406. Complaint Counsel have argued that Rambus's rates are discriminatory because Rambus charged a slightly higher rate to one licensee, Hitachi, that chose to litigate with Rambus. But this does not make Rambus's licenses "discriminatory." First, Rambus *offered* the same royalty rates to all potential licensees, including Hitachi. IDF 1574; RPF 1412. Second, the evidence shows that JEDEC members did not believe that "nondiscriminatory" prevented higher rates for litigating parties. IDF 1572; RPF 1406-10. Third, demanding a slightly higher royalty from a party that insists on litigation is not discriminatory in an economic sense. IDF 1575-81; RPF 1414-17.

* * *

In sum, the outcome in the but for world is identical to that in the real world. Therefore, had Rambus made the additional disclosures Complaint Counsel allege it should have made, nothing would be different today. *See* IDC 323 ("Respondent's conduct before JEDEC with respect to nondisclosure of its patents and patent applications did not cause JEDEC to adopt these technologies into its SDRAM and DDR standards.").

H. The DRAM Industry Is Not Locked In

According to Complaint Counsel, Rambus acquired "durable" market power because, though there supposedly are alternatives, the DRAM industry is "locked in" to using the Rambus technologies in SDRAM and DDR. CCAB 65. In other words, Complaint Counsel contend that after Rambus's patents issued in 1999, it was too "costly, complicated, and time consuming" to switch away from using Rambus's technologies. *Id.* To substantiate this claim, Complaint Counsel posited a world in which the industry had to suddenly turn-on a dime and instantly stop using Rambus's technologies. Responding to this hypothetical, witnesses responded that it would be "impossible." Thus, according to Complaint Counsel, Rambus's market power was created not by the superiority of its technologies, but by "lock in."

As Judge McGuire found, however, the evidence does not bear this out. *See* IDF 1582-1665; IDC 326-29; RPF 1259-1360. It is clear, for instance, that once Rambus's patents issued, JEDEC considered alternatives for the Rambus technologies in SDRAM and DDR. *See, e.g.,* CX154A at 26 (March 2000 presentation at JEDEC, "Avoiding Programmable Latency in SDR/DDR SDRAMs"); RX1626 at 4 (April 2000 email to JEDEC task group, "I think for SDR we should approve the proposal to make CL programmability an option. . . . . For DDR-1 it's not too late for minor, carefully considered changes, so I'm open to either proposal."); RPF 1261. If "lock in" so obviously precluded switching, JEDEC members would not waste their time exploring these options. IDF 1585 (noting that Complaint Counsel's expert conceded this point). Moreover, Complaint Counsel have not identified a *single* contemporaneous document reflecting any concern about lock in. In fact, the only contemporaneous documents that speak to the issue indicate the opposite. *See* RPF 1264; IDC 326 ("Complaint Counsel, however, have not presented evidence, contemporaneous or otherwise, that the industry is locked in.").

Further, the evidence refutes the notion that switching would be "costly, complicated, and time consuming." For a manufacturer, switching from one type of DRAM to another is relatively simple. The majority of DRAM design work involves the memory array, but changing from one DRAM standard to another involves only the peripheral circuitry. Kelley, Tr. 2590. Thus, as explained in a 1996 Micron document, switching from one "flavor" of DRAM to another involves little effort:

> Keep in mind that ALL of these DRAM technologies use the same DRAM process, the same DRAM cell, and virtually the same DRAM array. . . . *Switching from one product to another, while still using the same core technology, involves only*

> *changing priorities in design and product engineering and may mean some differences in our assembly and test equipment purchases.* SDRAM, SLDRAM, nDRAM all use the same fab equipment and core DRAM technology. In short, *while the flavors might change, it's still a DRAM.*

RX 836 at 3 (emphasis added).[35]

Switching to alternatives for the Rambus technologies (if they existed) would thus be straightforward. The Rambus technologies are in the peripheral circuitry, not in the memory array. Geilhufe, Tr. 9559. DRAM manufacturers routinely redesign their products.[36] Incorporation of alternatives to Rambus's technologies could "piggyback" on one of the frequent DRAM redesigns. Geilhufe, Tr. 9675; IDF 1656. Such a transition could occur rapidly. For instance, Hyundai was able to transition from manufacturing SDRAM to manufacturing DDR – a transition involving far more than changing the two Rambus technologies in SDRAM – in only nine months. CX2108 at 237 (Oh Dep.); IDF 1602. The incremental cost necessary to incorporate alternatives during one of these routine redesigns is relatively minor in relation to Rambus's royalties.[37] IDF 1655; RPF 1334-46 (estimating costs to switch from Rambus's

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[35] To this evidence, Complaint Counsel could only respond that it is somehow "misleading as it implies that DRAM manufacturers can quickly 'com[e] out with new and redesigned DRAM products.'" *See* CCRF 1291 (referring to CCRF 1278). In other words, Complaint Counsel simply believe that what Micron said in a contemporaneous document is "against the weight of the evidence." *Id.*

[36] DRAM manufacturers are constantly redesigning their products, introducing new designs, and retiring old ones. *See* RPF 1287-1307; RRPF 2253; CX2466 at 5-9 (showing that in 2002, Infineon was introducing 15 new SDRAM products and retiring 12 and was introducing 17 new DDR products and retiring 2). Economic forces – such as economies of scale and network effects – do not lock-in DRAM manufacturers. RPF 1305-07.

[37] Complaint Counsel's estimate of the switching costs (CCAB 66) is based on the testimony of a Micron witness regarding the costs of a "revision design," which is a process that Micron has gone through when it found its designs to be defective. Shirley, Tr. 4168. There is no evidence, however, to support the notion that the costs of a "revision design" are an appropriate approximation of the cost to avoid Rambus's

technology to fixed latency and burst length to be approximately $4.3 million).[38] DRAM manufacturers could – as they often do – phase in their new products while they phase out their old.[39]

The ease of switching is fully supported by the fact that the DRAM industry routinely switches from one standard to another. Complaint Counsel would like to paint the DRAM industry as a slow-moving, inertia-laden, collection of uncooperative and disparate companies. Once it finally rests on an standard – such as SDRAM or DDR – according to Complaint Counsel, moving the industry to anything different is a massive undertaking. But the reality is very different. The evidence shows that the DRAM industry routinely switches to new standards. Contrary to Complaint Counsel's suggestion, the SDRAM and DDR standards are not monolithic. *See* RRPF 2542-46. Rather, each is comprised of a number of *incompatible* sub-standards.[40] For SDRAM there are three: PC66, PC100, and PC133.[41] IDF 1594; RPF 1276. For DDR there are

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patents. RRPF 2530. For instance, unlike a situation requiring a "revision design," industry members could continue to use older designs during the transition to alternatives.

[38] By contrast, Complaint Counsel's economist admitted that he did not quantify switching costs. IDF 1658 ("Complaint Counsel's expert was not persuasive because he admitted that he did not quantify or 'add up' any switching costs."); RPF 1338-39.

[39] There is therefore no reason to credit the idea that DRAM manufactures would lose "hundreds of millions of dollars in lost inventory." Brief of *Amici Curiae* Micron Technology, Inc., Hynix Semiconductor, Inc. and Infineon Technologies AG at 41.

[40] The coexistence of these multiple standards shows that no technological or economic force mandates a single standard. *See* IDF 1595; RPF 1267-77.

[41] There is no support for the proposition that "securing agreement within JEDEC" on alternatives would be "difficult and time consuming." When JEDEC has not moved quickly enough, Intel and others have stepped in to manage the transition, facilitating rapid transitions from PC66 to PC100 to PC133 and from DDR200 to DDR266 to DDR333 to DDR400. RRPF 2563-64. Moreover, Complaint Counsel's burst length example (CCAB 68) ignores the fact that *neither* Intel or AMD – the only two CPU manufacturers – would have accepted a fixed burst length alternative. *Both* companies rejected this alternative for DDR2 because it would result in decreased

four: DDR200, DDR266, DDR333, DDR400. *Id.* Switching between these sub-standards required both new DRAM and new infrastructure components, such as chip sets and motherboards.[42] IDF 1624; RPF 1308-1319. Yet the industry quickly and seamlessly switched from one subgeneration to another.[43] *See* IDF 1624-25; RPF 1320 (AMD made five transitions in less than four years);[44] IDF 1642; RPF 1328 (from 1995 to 2002, Compaq switched from EDO to PC66 to PC100 to PC133 to DDR266 to DDR333).

The evidence therefore shows that neither the costs incurred by component manufacturers nor coordination difficulties would prevent switching. Switching to alternatives for the Rambus technologies would not be any more difficult or expensive than these routine transitions.[45] In fact, Complaint Counsel's economist admitted that the

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performance. *See* RPF 754-58. Complaint Counsel have not been able to find any "specific investments" that would preclude agreement. *See also* IDF 1662-63 (rejecting argument that because some DRAM manufacturers are licensed while other are not prevents agreement).

[42] This evidence completely undermines Complaint Counsel's assertion "introducing a smaller or faster, but otherwise identical, version of an existing DRAM, is <u>not</u> the same as introducing a new DRAM." CCAB 69. The transitions between the various subgenerations *did* involve redesigning, testing, and qualifying new DRAM as well as changes to the infrastructure.

[43] Complaint Counsel's assertion that switching would take "two years" is unfounded; it is based on evidence of how long it took the industry to switch to an entirely new architecture, not a switch that involved only two or four features. *See* RRPF 2564-65.

[44] The AMD transitions followed AMD's rapid coordination and development of an entirely new infrastructure – motherboards, chip sets, BIOS, etc. – for its newly designed microprocessors. AMD started the process in June 1997 and was able to ship complete computer systems in 1999. IDF 1624-25; RPF 1309-11.

[45] The only evidence relied on by Complaint Counsel for the proposition that compatible component manufacturers would endure excessive costs is testimony concerning what Cisco would have to spend to redesign every single memory board that it currently produces (*see* CCAB 70 citing Bechtolsheim testimony) – a "worst case" scenario in which the production of all SDRAM stopped instantaneously. RRPF 2505.

industry overcomes switching costs at a frequency of more than once a year. McAfee Tr. 11357-58; RRPF 2553; IDF 1659. And he admitted that switching cost to avoid Rambus's technologies would be no greater than those routinely absorbed by the industry. McAfee Tr. 7714-18; RRPF 2553; IDF 1658.

In sum, Complaint Counsel's evidence is based on a hypothetical world in which DRAM manufacturers, component manufacturers, and DRAM customers must suddenly stop everything, throw away existing products, redesign every product in their factories, and try to shift instantaneously to alternatives. By framing their questions with this picture in mind, Complaint Counsel not surprisingly elicited some testimony that such a change would be "impossible." But that is not how the DRAM industry has operated in the real world. The industry has gone through routine transitions from one standard to the next, readily coordinating the necessary infrastructure with none of the disastrous interruptions that Complaint Counsel imagine. There is no evidence showing that switching from Rambus's technologies would somehow be different. Complaint Counsel have not met their burden to show that the industry is "locked in."

III. ARGUMENT

A. Standard Of Review

Although the Commission is authorized to conduct a *de novo* review of an ALJ's factual findings, the Commission ordinarily "leave[s] undisturbed those findings of an ALJ derived from his observations of the demeanor of witnesses and the bearing this has on his evaluation of the character and quality of the testimony received at trial." *Certified Bldg. Prods., Inc.*, 83 F.T.C. 1004, 1973 FTC LEXIS 250 at *43 (1973), *aff'd sub nom. Thiret v. FTC*, 512 F.2d 176 (10th Cir. 1975). *See also In the Matter of Trans*

But the evidence shows that the DRAM industry has historically moved from standard to standard without having such a drastic disruption. There is no reason to believe that there is something about the Rambus technologies that would require such a departure from historical practices.

Union Corporation, 2000 FTC LEXIS 23, *41 (2000) (in a case where the ALJ found one of two live witnesses more credible, "we give deference to this determination"); *In the Matter of Southern States Dist. Co.*, 83 F.T.C. 1126, 1973 FTC LEXIS 253 at *106 (1973) ("Evaluation of witness credibility, however, is a matter for which the administrative law judge is best situated, and absent good cause to challenge that evaluation, we will not disturb it."). This rule is supported by a longstanding recognition of the unique advantages that an ALJ or other trial judge has in making credibility determinations:

> "[i]t is the ALJ, as trier of the facts, who has lived with the case, and who has had the opportunity to closely scrutinize witnesses' overall demeanor and to judge their credibility. Accordingly, absent a clear abuse of discretion, the Commission will not disturb on appeal the ALJ's conclusions as to credibility."

In the Matter of Horizon Corp., 97 F.T.C. 464, 1981 FTC LEXIS 47, *130 (1981). *Accord*, *NLRB v. Walton Mnfg. Co.*, 369 U.S. 404, 408 (1962) (noting that a hearing examiner in an agency proceeding "sees the witnesses and hears them testify, while the Board and the reviewing court look only at cold records"); *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 495 (1951) (noting that because of the hearing examiner's "opportunity to observe the witnesses," his decision "intrinsically commands" considerable "probative force"); *Beavers v. Secretary of Health, Education & Welfare*, 577 F.2d 383, 387 (6th Cir. 1978) ("The opportunity to observe the demeanor of a witness, evaluating what is said in the light of how it is said, and considering how it fits with the rest of the evidence gathered before the person who is conducting the hearing, is invaluable, and should not be discarded lightly.").

Many of Judge McGuire's findings are based on explicit or implicit credibility findings. *See Beavers*, 577 F.2d at 387 n.2 (holding that an "express finding" by an ALJ that a witness's testimony was or was not credible is not required, as long as the credibility determination is implicit in the finding or conclusion itself). For example, there was conflicting testimony by Complaint Counsel's own trial witnesses about whether JEDEC sought disclosure of: (1) patents that were simply "related" in some way to a proposed JEDEC standard; or (2) only those patents that were "essential" to a standard, *i.e.*, patents necessary for the manufacture or use of a product that complied with the standard. IDF 775-778. Judge McGuire found that that "[d]isclosure was only encouraged of patents that were 'essential' to a standard." IDF 775. In so doing, he expressly relied on the testimony of three witnesses: Hewlett-Packard representative Thomas Landgraf, JEDEC Council and JC 42.3 Chairman Gordon Kelly, and IBM representative Mark Kellogg. IDF 776-778. Judge McGuire also expressly acknowledged the contrary testimony on this point, but he disregarded it because it was "after-the-fact testimony by interested witnesses." IDC 270. Judge McGuire did not need to be any more explicit; the credibility determination is implicit in the finding itself. *Beavers*, 577 F.2d at 387 n.2. Judge McGuire also made *explicit* credibility findings on some issues, as he did in holding that "after-the-fact testimony of interested witnesses" was "not persuasive" on the issue of whether JEDEC required disclosure of patent applications and intentions to file patent applications. IDC 270. *See also* IDF 748 (same).

In short, in a case such as this, involving 44 live witnesses and nearly 12,000 pages of trial testimony, where many issues depend for resolution upon the varied and conflicting recollections of participants in meetings that occurred as long ago as 1989, the ALJ's resolution of those disputed factual issues should be entitled to substantial weight and should not be disturbed "absent a clear abuse of discretion." *In the Matter of Horizon Corp.*, 97 F.T.C. 464, 1981 FTC LEXIS 47, *130 (1981).

B. The Elements Necessary To Support Complaint Counsel's Claims

While the Complaint in this matter alleges three violations of Section 5 of the FTC Act, *see* Complaint at ¶¶ 122-24, the fundamental theory of the case is the allegation that Rambus monopolized certain technology markets. *See* Complaint Counsel's Post-Hearing Brief ("CCPHB") at 16. As Complaint Counsel explained in their post-hearing brief, "Count I of the Commission's Complaint sets forth a Sherman Act-based claim of monopolization. Count II sets forth a Sherman Act-based claim of attempted monopolization." CCPHB at 16. And Count III "differs from the monopolization claim (Count I) principally in that there is no need to demonstrate actual monopoly power – proof of market power and material adverse effects on competition will suffice." CCPHB at 19. Thus, as Complaint Counsel explained it, "[a]lthough the essential elements of proof required to establish liability under these separate counts of the Complaint do differ, they differ only at the margins . . ." CCPHB at 16. Accordingly, in this case, Complaint Counsel must prove the elements of a monopolization claim or an attempted monopolization claim under Section 2.

To prove monopolization under Section 2, a plaintiff must show: "(1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident." *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1966). In other words, a plaintiff must show that the defendant gained monopoly power "by anticompetitive conduct." *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1060 (8th Cir. 2000). For an attempted monopolization claim, a plaintiff must prove "(1) that the defendant has engaged in predatory or anticompetitive conduct with (2) a specific intent to monopolize and (3) a dangerous probability of achieving monopoly power." *Spectrum Sports v. McQuillan*, 506 U.S. 447, 456 (1993).

Complaint Counsel therefore must prove, at a minimum, that Rambus (a) engaged in anticompetitive conduct and (b) that this conduct, as opposed to the superiority of its patented technology, led to its acquisition of, or a dangerous probability of its gaining, monopoly power. In other words, Complaint Counsel must prove a *causal* *connection* between anticompetitive conduct and monopoly power. *See Spectrum Sports*, 506 U.S. at 458 (overruling line of cases that held proof of "unfair" or "predatory" conduct was sufficient under Section 2, even without proof of a dangerous probability of gaining monopoly power).[46]

C. Complaint Counsel Failed To Prove That Rambus's Conduct Was Exclusionary

Antitrust law carefully circumscribes the scope of antitrust liability in order to ensure that neither application of antitrust principles nor uncertainty about their application injures consumers by dampening incentives for aggressive competition and entrepreneurship.

Complaint Counsel's case is based on the allegation that Rambus had a duty to disclose to others information about the patent potential of its inventions. Such information is universally regarded as a trade secret and is jealously guarded. RPF 92-93; IDF 1076, 1078, 1085. The owner of such information possesses a property right contingent on its confidentiality; in the limited circumstances in which firms share such secrets with prospective business partners, they do so within the confines of carefully crafted non-disclosure agreements. RPF 102. Premature disclosure outside the bounds of a confidential relationship can throw a monkey wrench into the patent process and permit appropriation of the intellectual property by others. RPF 94-100; IDF 1081-83. Antitrust law respects the right of inventors to preserve their trade secrets because doing so promotes innovation and therefore competition. Ordinarily, then, an owner has the right

[46] *See also* Einer Elhauge, *Defining Better Monopolization Standards*, 56 STAN. L. REV. 253, 331 (2003) (Section 2 requires "a causal connection between the challenged exclusionary conduct and the acquisition or maintenance of that power"); Timothy J. Muris, *The FTC and the Law of Monopolization*, 67 ANTITRUST L.J. 693, 694, 696. (2000) ("Courts require a causal link between the conduct under scrutiny and the existence, extension, or protection of monopoly power before a violation of Section 2 can be established.").

to guard the patent potential of inventions by refusing to share confidential information about that potential with anyone else.[47]

This case is premised, then, on the allegation that – contrary to the usual rule – Rambus had an antitrust duty to share confidential trade secret property with the other members of JEDEC. Such a claim faces high hurdles because compelling firms whose strength lies in their property holdings "to share the source of their advantage is in some tension with the underlying purpose of antitrust law." *Verizon Communs., Inc. v. Law Offices of Curtis V. Trinko, LLP,* 124 S.Ct. 872, 879 (2004). Thus – whatever duties to share property *other* areas of the law might impose – the Sherman Act does not recognize a general "duty to deal." *See also Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1358, 1363 (Fed. Cir. 1999) ("no case has held that the divulgation of proprietary information . . . on a 'refusal to deal' antitrust premise"; "the owner of proprietary information has no obligation to provide it, whether to a competitor, customer, or supplier").

Accordingly, Complaint Counsel must demonstrate that Rambus's conduct in following the usual, widespread business practice of guarding trade secrets rather than sharing them with others – its "refusal to deal" – was exclusionary within the meaning of the antitrust laws. To do so, Complaint Counsel must establish two propositions.

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[47] Four of the a*micus* briefs filed in this matter argue that there are policy reasons to disregard this right in the context of standard-setting organizations like JEDEC. *See* AAI Brief; Brief of *Amici Curiae* Consumer Electronics Association, et al. ("CEA Brief"); Economists Brief; *Amicus Curiae* Brief of JEDEC Solid State Technology Association in Support of Complaint Counsel's Appeal of Initial Decision ("JEDEC Brief"). But three of those briefs make no effort to address the *antitrust* issues presented by this case, and none of those briefs recognizes or acknowledges that information about unrealized patent potential is routinely and legitimately treated as a trade secret whose protection as a general matter promotes competition and economic welfare. Therefore, none of these briefs addresses both the costs and the benefits of antitrust intervention in cases like this, and the Commission cannot properly rely upon the analysis of any of them.

First, they must prove that JEDEC rules were sufficient to reverse the normal expectation of trade secret confidentiality. Rambus would have had no reason to reveal its business secrets unless JEDEC's rules required it; as the Commission put it recently, the antitrust laws do not "create codes of desirable business conduct under which competitors must assist each other for the public good." Brief for the United States and the Federal Trade Commission as *Amicus Curiae* Supporting Petitioner, *Verizon Communications, Inc. v. Trinko* ("*Trinko* Merits Br."), No. 02-682, at 13 (May 27, 2003); *see also* 3A P. AREEDA & H. HOVENKAMP, ANTITRUST LAW (hereinafter "ANTITRUST LAW") ¶ 773e, at 211 (2d ed. 2002) ("[N]o firm has a general duty to injure itself in order to benefit a rival.").[48] Moreover, to provide a basis for antitrust liability, JEDEC's rules would have to further the purposes of the antitrust laws by being clear and procompetitive.

Second, Complaint Counsel must show that Rambus's conduct not only violated a private duty to JEDEC, but also independently meets the test for exclusionary conduct under the antitrust laws. The Supreme Court's decision earlier this year in

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[48] There is another reason why antitrust law cannot prudently impose disclosure obligations on members that the organizations themselves did not impose. Disclosure rules vary greatly among standard setting organizations because of their different circumstances and "policy judgments" about how to weigh the costs and benefits of disclosure. RX2011 at 5 (IEEE-SA Comments to the FTC, "Procedures for the disclosure of patent rights and the determination of which patents are expected to be disclosed vary according to the needs of the standards developer . . ."); CEA Brief at 16; *see also* Mark Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1904-06, 1973-75(2002) (describing wide variety of disclosure rules among 43 standard setting organizations studied); AAI Brief at 10-11. Imposition of different disclosure duties by antitrust law would thus undermine the ability of the organizations to strike an optimal balance between those costs and benefits and would likely impair the effectiveness of the organizations. *See* CEA Brief at 13-14; JEDEC Brief at 34; RX2011 at 3 ("The danger here, as in other areas of standards-related patent policy, is that government intervention will create (however unintentionally) inflexible industry-wide rules that deter robust participation in standards-setting activities.").

Trinko made clear that the violation of a private duty – even violation of another federal statute intended to promote competition – does not suffice to establish antitrust liability.

1. The Core Conduct That Complaint Counsel Attack Are Economically Desirable And Legally Protected Legitimate Business Practices

As Complaint Counsel explain in the opening pages of their appeal brief, the conduct they challenge is Rambus's participation in JEDEC "while concealing its patents and patent applications, carefully amending and expanding the scope of its patent applications, and planning for future enforcement of its patents. . . ." CCAB 2. As discussed above, Rambus did not conceal any relevant, issued patents from JEDEC. *See* Section _. Thus, Complaint Counsel's case rests entirely on allegations about the then unrealized patent potential of Rambus's inventions. Complaint Counsel complain that Rambus (1) did not disclose information about its pending and future patent applications and (2) attempted to amend its patent applications over time. Both are unquestionably legitimate business practices.

a. Maintaining The Confidentiality Of Patent Applications Is Not Only A Legitimate Business Practice, It Is Legally Protected Because It Is Economically Desirable

The uncontradicted evidence confirms what is already obvious: Keeping information regarding pending patent applications confidential is a legitimate and economically desirable business practice. *See* IDF 1072; RPF 91-104. Patent applications contain trade secrets. RPF 92-93; IDF 1073-76. This fact is widely acknowledged throughout the legal system. The protection of trade secrets is why the Patent Office maintains patent applications in strict confidence, IDF 1075; RPF 91,[49] and

[49] Effective in 2000, U.S. patent law was amended to conform more closely to international patent laws. As amended, U.S. patent law now provides that patent applications be published 18 months after filing unless the inventor requests that they not be published and certifies that the disclosed invention is not the subject of a foreign

courts have always prevented or severely limited third-party access to applications filed with the Patent Office. *See, e.g., Irons & Sears v. Dann*, 606 F.2d 1215, 1220-21 (D.C. Cir. 1979) (denying access through the Freedom of Information Act to patent applications to prevent competitive harm); *Cordis Corp. v. SciMed Life Sys., Inc.*, 982 F.Supp. 1358, 1360 (D. Minn. 1997) ("It is well-settled that the secrecy of pending and abandoned United States patent applications should be preserved whenever possible").

A patent application continues to hold valuable trade secrets even after the written description becomes public (by, for instance, publication of a related PCT application). IDF 1074, 1079; RPF 94. Disclosure of the written description does not reveal the *claims* in the pending application. IDF 1074; RPF 94-95; Fliesler, Tr. 8840-41. As Judge McGuire found, the unrebutted evidence shows that maintaining the confidentiality of pending claims is important:

- Disclosure of information about pending claims shows which inventions the applicant is seeking to protect, and thus reveals both technical information and the applicant's business strategies. IDF 1080.

- Disclosure of information about pending patent claims may enable a competitor to slow down or interfere with the patent application process. IDF 1081. For instance, such information may enable a competitor to provoke an "interference" at the Patent Office by claiming the same invention in one of the competitor's applications.[50] IDF 1082.

- Disclosure of information about pending applications could jeopardize the applicant's ability to obtain foreign patents. Most foreign jurisdictions have a "first to file" rule. IDF 1083. Disclosure of information regarding pending U.S. patent claims may

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patent application that would be published. 35 U.S.C. § 122. This law was not in effect when Rambus was a member of JEDEC.

[50] *See* 3-10 CHISUM ON PATENTS § 10.09[2][b] (2003) (noting that a competing patent applicant "will rarely be in a position to [seek such an interference] because pending applications are held by the PTO in confidence").

> thus enable a competitor to win the “race” to those foreign patent offices. IDF 1083; *see also* RPF 1436-37.

For these reasons, it is normal business practice for firms to maintain the confidentiality of their patent applications. Competent patent attorneys routinely advise their clients to strictly maintain that confidentiality. IDF 1084. If disclosure of information becomes necessary, companies devise means to circumscribe the amount and type of information disclosed. RPF 102.

This normal business practice was well recognized within JEDEC. IDF 1085. For example, in October 1992, JC 42 chairman Jim Townsend circulated to members of the committee an article entitled “Don’t Lose Your Patent Rights.” CX342 at 8. The article admonishes inventors to “Keep It Under Your Hat,” *i.e.*, not to disclose their inventions prematurely because disclosure may jeopardize their ability to obtain a patent. *Id*. The article warns that, in some foreign jurisdictions, “[a]ny disclosure before filing of an application will bar rights to a patent.”[51] *Id.*

The ability of firms like Rambus to maintain the confidentiality of their pending and future patent applications promotes consumer welfare. It preserves incentives to innovate, which leads to enhanced competition, increased output, and lower prices. Rapp, Tr. 9918-19. By contrast, requiring disclosure of pending applications may “discourage firms from filing for patents” and could “have an adverse effect on the incentives of firms to innovate.” Reiko Aoki & Yossi Spiegel, *Public Disclosure of Patent Applications, R&D, and Welfare*, Berglas School of Economics Working Paper 30-98, at p. 26 (Dec. 1998), *available at* http://ssrn.com/abstract=146414.

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[51] This article was sent to many of the witnesses Complaint Counsel called at trial to testify regarding JEDEC’s patent policy, including John Kelly, Brett Williams, Howard Sussman, Willi Meyer, Desi Rhoden, Gordon Kelley, and Mark Kellogg. CX342 at 1.

b. Amending Pending Patent Applications Based On Competitive Information Is A Legitimate Business Practice Which Ensures That Inventors Are Rewarded For Their Innovations

Complaint Counsel also complain that Rambus attempted to amend its patent applications to cover competitive technologies. But that is unquestionably a lawful and legitimate practice. As the Federal Circuit explained in holding that there is nothing improper about amending a patent application to cover a competing product:

> It should be made clear at the outset of the present discussion that there is *nothing improper, illegal or inequitable* in filing a patent application for the purpose of obtaining a right to exclude a known competitor's product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitor's product the applicant's attorney has learned about during the prosecution of a patent application.

Kingsdown Medical Consultants, Ltd. v. Hollister, Inc., 863 F.2d 867, 874 (Fed. Cir. 1988) (emphasis added); *see also Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 909 n.2 (Fed. Cir. 2004). Amending a patent application to cover a competing product is *not* acting in "bad faith"[52] and does not evidence any intent to deceive.[53] These principles apply in the DRAM industry as in any other. *See Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 871 F.2d 1054, 1064-65 (Fed. Cir. 1989).

Amending patent claims to cover competing products is not only legal; it is procompetitive. Any amendments – which are made through continuation[54] or divisional applications[55] – are limited to claims based on the inventions disclosed in the original

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[52] *See Multiform Desiccants, Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1482 (Fed. Cir. 1998).

[53] *See Emerson Elec. Co. v. Spartan Tool, LLC*, 223 F.Supp.2d 856, 921 (N.D. Ohio 2002).

[54] A continuation application is a second application containing the same disclosure as the original application. *See* 4-12 CHISUM ON PATENTS §13.03[2] (2003).

[55] Divisional applications effectively divide the original application into several applications. Where a patent application contains "independent" and "distinct"

written description – in this case, the ’898 application filed in 1990. *See* RPF 83-85. A continuation or divisional application may not add any “new matter” to the description in the original application. 35 U.S.C. §§ 120, 121, 132; *Applied Materials v. Advanced Semiconductor Materials Am.*, 98 F.3d 1563, 1579 (Fed. Cir. 1996) (Mayer, J., concurring). “New matter” is something that describes a different invention or adds to or changes the nature of the disclosed inventions. *See, e.g., Regents of the Univ. of N.M. v. Knight*, 321 F.3d 1111, 1121 (Fed. Cir. 2003).

Therefore, amending patent claims simply enables the applicant to obtain the patents for inventions adequately disclosed in the original application. The written description requirement ensures that this is the case:

> “The purpose of the written description requirement is to prevent an applicant from later asserting that he invented that which he did not; the applicant for a patent is therefore required to ‘recount his invention in such detail that his future claims can be determined to be encompassed within his original creation.’”

Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1330 (Fed. Cir. 2003) (quoting *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1561 (Fed. Cir. 1991)); *see also PIN/NIP, Inc. v. Platte Chem. Co.*, 304 F.3d 1235, 1247 (Fed. Cir. 2002) (“While it is legitimate to amend claims or add claims to a patent application purposefully to encompass devices or processes of others, there must be support for such amendments or additions in the originally filed application.”).[56] If applicants could not amend their

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inventions, i.e., “inventions that do not form a single inventive concept,” 37 C.F.R. § 1.141(a), the patent examiner “may require the application to be restricted to one of the inventions.” 35 U.S.C. § 121. In response, the applicant may elect to pursue one of these inventions in the original application and file “divisional” applications to obtain claims covering the other inventions. *Id.*; *see also* 4-12 CHISUM ON PATENTS § 12.04 (2003).

[56] For this reason, there is no basis to suggest that Rambus might have “taken” ideas from JEDEC to be incorporated into its patent applications. The patent laws dictate that Rambus’s patents could be based only on the ideas described in the original Farmwald-Horowitz patent application (the ’898 application). In any event, as

claims in light of new market information, patent applicants would inevitably be unable to obtain patents warranted by their inventions; the results would be a reduction in the intended incentives for innovation and thus economic welfare.[57]

Complaint Counsel have acknowledged that Rambus unquestionably had a lawful and legitimate right to amend its patent applications:

> "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."

Complaint Counsel's Opening Statement, Tr. 49-50.[58]

Judge McGuire found, Rambus did not violate any JEDEC rules by broadening its applications based on information obtained at JEDEC). IDF 914-28; *see also* IDC 282-86.

[57] Patentees would likely seek to mitigate these costs by filing at the outset every possibly patentable claim they can imagine for their inventions. They would understandably overlook some of the most valuable claims, and yet would both incur enormous additional costs – a tax on innovation – and flood the patent office with countless meritless and commercially unimportant patent claims. *Cf.* American Intellectual Property Law Association, *AIPLA Response to the October 2003 Federal Trade Commission Report* at 35 (April 21, 2004) (stating that there are legitimate reasons to file narrow claims with a patent application and presenting broader claims in a continuation"), *available at* http://www.aipla.org/Content/ContentGroups/Issues_and_Advocacy/Comments2/Patent_and_Trademark_Office/2004/ResponseToFTC.pdf.

[58] In a recent report, the Commission expressed concern that allowing a patentee to amend its claims to cover competing products can upset the expectations and investment of competitors. *See* To Promote Innovation: The Proper Balance of Competition Law and Policy, A Report by the Federal Trade Commission, Ch. 4, pp. 26-31 (Oct. 2003). But the report recommended, not limitations on the ability of applicants to file amended applications, but rather only the creation of certain intervening rights by others; and it recognized that legislation would be needed to implement the change. *Id.* This recommendation itself has been criticized. *See AIPLA Response* at 35 (stating that recommendation "could cause substantial unintended consequences").

Complaint Counsel's case thus rests entirely on the allegation that Rambus violated JEDEC rules requiring it to disclose its pending and future applications: "Our claim is simply this: The rules and procedures of JEDEC do not allow companies to do what Rambus did . . ." *Id.* To prevail, therefore, Complaint Counsel had to prove both that Rambus violated JEDEC rules and that those rules provide a proper basis for antitrust liability.

2. JEDEC's Rules Were Not Sufficient To Transform Rambus's Legitimate Business Conduct Into The Basis For Antitrust Liability

As we explain elsewhere, JEDEC's rules did not require Rambus to disclose the information Complaint Counsel say it should have disclosed. But, even if JEDEC's rules had intended to require such disclosure, they would still not provide a basis for antitrust liability because, if that were the intent of the rules, they were neither sufficiently clear and unambiguous nor procompetitive.

a. JEDEC's Rules Were Not Clear

Because antitrust law "rests on the premise that the unrestrained interaction of competitive forces will yield the best allocation of our economic resources," *Northern P. R. Co. v. United States*, 356 U.S. 1, 4 (1958), courts have been "careful to avoid constructions of § 2 [of the Sherman Act] which might chill competition, rather than foster it." *Spectrum Sports*, 506 U.S. at 458. It is thus a fundamental precept that antitrust law requires a clear demarcation between condemned conduct and other types of aggressive conduct that are not condemned by the antitrust laws. *See, e.g.*, *Concord v. Boston Edison Co.*, 915 F.2d 17, 22 (1st Cir. 1990) (Breyer, J.); *see also Barry Wright Corp. v. ITT Grinnell Corp.*, 724 F.2d 227, 231-32 (1st Cir. 1983) (Breyer, J.) ("There is also general agreement that the antitrust courts' major task is to set rules and precedents . . . precise enough to avoid discouraging desirable price-cutting activity").[59]

The need for clear and precise rules is especially important in the context of standard setting organizations like JEDEC, and especially with regard to patent rights.[60] As the courts have long recognized, those organizations entail collaboration among competitors and, for that reason, have "traditionally been objects of antitrust scrutiny." *Allied Tube & Conduit Corp. v. Indian Head*, 486 U.S. 492, 500 (1988). Typically, private standard-setting organizations, like JEDEC in this case, include members that have horizontal and vertical business relations and thus often have economic incentives to restrain competition and to use the organization to set standards for that purpose. Private standard-setting organizations have therefore traditionally been objects of antitrust scrutiny. *See, e.g., American Soc'y of Mechanical Eng'rs v. Hydrolevel Corp.*, 456 U.S. 556, 571 (1982) ("Furthermore, a standard-setting organization like ASME can be rife with opportunities for anticompetitive activity.").

Antitrust policies require that such collaborations be undertaken only on clear and precise terms in order that they not, deliberately or inadvertently, chill the vigor of competition among their members. As the Supreme Court noted in *Allied Tube,* "[p]roduct standardization might impair competition in several ways. . . . [It] might deprive some consumers of a desired product, eliminate quality competition, exclude

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[59] *Berkey Photo, Inc. v. Eastman Kodak Co.*, 603 F.2d 263, 281-82 (2d Cir. 1979) (rejecting proposed rule because the "inherent uncertainty" of its application "would have an inevitable chilling effect on innovation"); *Licata & Co. v. Goldberg*, 812 F.Supp. 403, 410 (S.D.N.Y. 1993) (discussing "chilling effect" of ambiguous duties on "potentially legitimate competition").

[60] In its amicus brief, JEDEC argues that the ambiguity of its rules is unimportant and that courts often construe statutes and contracts in the face of ambiguity, rather than holding them "unenforceable *in toto*." JEDEC Brief at 27. But the cited cases concern contract disputes and similar issues; none stands for the proposition that *antitrust* liability can be based on a standard setting organization's rule that purportedly upsets ordinary and procompetitive practices regarding trade secrets but does not do so clearly and unambiguously.

rival producers, or facilitate oligopolistic pricing by easing rivals' ability to monitor each other's prices." 486 U.S. at 505 n.5.

Absent a clearly defined duty to disclose, Complaint Counsel's antitrust case unravels.[61] Complaint Counsel cannot save its case by evidence of members' "expectations" or reference to vague standards like "good faith" or the "spirit" of the rules. CCAB 9, 10, 39, 47. Such amorphous notions cannot be the basis for liability because, absent an unambiguous patent disclosure policy, "members form vaguely defined expectations as to what they believe the policy requires – whether the policy in fact so requires or not." *Rambus Inc. v. Infineon Techs. AG*, 318 F.3d 1081, 1102 (Fed. Cir. 2003). Unclear policies chill aggressive competition both by creating uncertainty about the rules *ex ante* and because testimony – especially self-serving testimony, like the testimony by interested parties on which Complaint Counsel rely – about such rules and the resulting "expectations" is subject to "after-the-fact morphing of a vague, loosely defined policy to capture actions not within the actual scope of that policy." *Id.* at 1102 n.10; *see also* IDC 290 (liability based on unclear policy "would have a chilling effect on procompetitive" conduct).

Complaint Counsel, therefore, must prove that JEDEC's patent policy clearly and unambiguously reached Rambus's undisclosed intellectual property interests. They have failed to do so. On the basis of the record evidence, including that discussed above, this Court should conclude, as the Federal Circuit concluded, that "there is a staggering lack of defining details in the EIA/JEDEC patent policy." *Infineon*, 318 F.3d at 1102. Similarly, based on an even more extensive record, Judge McGuire found that

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[61] Indeed, the patent-related equitable estoppel case on which Complaint Counsel relied below makes clear that "silence alone will not create an estoppel unless there was a *clear duty to speak*, or somehow the patentee's continued silence reenforces the defendant's inference from the plaintiff's *known acquiescence* that the defendant will be unmolested." *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1043-44 (Fed. Cir. 1992) (emphasis added) (internal citations omitted).

the "EIA/JEDEC patent policy has been shown to be a loosely defined amalgam of confusing, contradictory documents and presentations. It failed to define members' rights, or more importantly, their obligations." IDC 290.

First, Complaint Counsel failed to prove that the JEDEC clearly imposed *any* duty to disclose. As Judge McGuire found, the weight of the evidence shows that JEDEC's rule and policies merely encouraged but did not require disclosure. IDC 260-70. This finding is amply supported by the record evidence. *See* Section II.C. As Complaint Counsel admit, if a standard-setting organization does not require the disclosure of intellectual property interests, any "misrepresentations" about such interests cannot be the basis for antitrust liability – "even if it violates some other duty." CCAB 77 n.76. Moreover, Complaint Counsel's economist admitted that his entire testimony was premised on the assumption that Rambus violated a JEDEC rule or process. IDF 1110. This failure of proof is therefore fatal.

Second, Complaint Counsel failed to prove that JEDEC clearly required the disclosure of patent applications. To the contrary, Judge McGuire found that JEDEC's patent policy was limited to issued patents. IDC 269-70. Again, this finding is well-supported by the record. *See* Section II.C. As discussed above, Rambus had no issued patents that were required to be disclosed. *See* Section II.D.

Third, Complaint Counsel failed to prove that any duty of disclosure extended beyond "essential" patents. Judge McGuire rejected Complaint Counsel's argument that there was a duty to disclose intellectual property interests that "might be involved" in the standards under development and found that any duty was limited to essential patents – i.e., patents that cover the technology being considered for incorporation. IDC 270-71. As both Judge McGuire and the Federal Circuit found, a broader duty would, in any event, make no sense and be impossible to apply:

> "[t]o hold otherwise would . . . render the JEDEC disclosure duty 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 patents directed to the testing of standard-compliant devices – even though the standard itself could be practiced without licenses under such patents."

IDC 271 (quoting *Infineon*, 318 F.3d at 1101).

As Judge McGuire found, Rambus had no patents or patent applications while it was at JEDEC that were essential to any technologies incorporated in the SDRAM standard. IDC 274-77. Moreover, all five judges who have considered this case determined that Rambus withdrew from JEDEC before DDR standardization began and, thus, that Rambus could not have violated any duty to disclose with respect to that standard. *See* IDC 277-79. The record also shows that while it was a JEDEC member, Rambus did not possess patent applications with claims that would have covered the technologies Complaint Counsel allege were part of the DDR standardization process. *See* Section II.D.1.f.

Complaint Counsel have pointed to evidence that Rambus employees might have *believed*, though erroneously, that Rambus had pending patent applications that, if issued, could cover technologies presented at JEDEC. But Complaint Counsel did not prove that a duty to disclose extended to a member's incorrect belief that claims in its applications, if issued, would have covered technologies being standardized by JEDEC. IDC 277 (quoting *Infineon*, 318 F.3d at 1104). The record evidence confirms that a duty to disclose is not and cannot be triggered by an incorrect belief about patent interests. *See* RPF 274-85, 288-95.

<u>Fourth,</u> Complaint Counsel did not prove, as they recognize they must, that "Rambus *intentionally* violated each of JEDEC's patent-related rules." CCAB 48 (emphasis added). Proof of specific intent is an essential element in an attempt case, *see Spectrum Sports*, 506 U.S. at 456, and evidence of intent in a monopolization case is "relevant to the question whether the challenged conduct is fairly characterized as

'exclusionary' or 'anticompetitive.'" *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 602 (1985); *see also E.I. Du Pont de Nemours & Co. v. F.T.C.*, 729 F.2d 128, 139 (2d Cir. 1984) (requiring evidence of intent in Section 5 case challenging unilateral conduct). In cases involving alleged misrepresentations, an antitrust plaintiff must prove that the representations were *knowingly* false or misleading.[62]

The conduct challenged here – not disclosing information about pending patent applications – is a normal and legitimate (indeed, procompetitive) business practice. To support an antitrust claim based on the theory that this conduct misled JEDEC members, Complaint Counsel must therefore prove that Rambus's "representations" were "knowingly false and misleading."[63] After all, it would be a strange rule indeed that premised antitrust liability on normal, procompetitive conduct undertaken without any intent to violate some extraordinary duty imposed by a private organization.

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[62] *See Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*, 382 U.S. 172, 177 (1965) (holding that Section 2 claim challenging defendant's enforcement of fraudulently procured patent requires proof that defendant obtained patent "by knowingly and willfully misrepresenting facts to the Patent Office"); *AD/SAT, Div. of Skylight, Inc. v. Associated Press*, 181 F.3d 216, 231 (2d Cir. 1999) ("'pre-announcement' of a new product constitutes predatory conduct only when it is knowingly false"); 3 ANTITRUST LAW at ¶782b ("To determine the impropriety of a representation implicates the usual tort issues with respect to nondisclosure . . . [including] the knowledge and due care of the speaker . . .").

[63] *See MCI Communications Corp. v. American Tel. & Tel. Co.*, 708 F.2d 1081, 1129 (7th Cir. 1983) (requiring evidence that representation about an intended product launch was "knowingly false or misleading before it can amount to an exclusionary practice" so as not to discourage legitimate disclosures); *Nobelpharma AB v. Implant Innovations*, 141 F.3d 1059, 1069-71 (Fed. Cir. 1998) (requiring "independent and clear evidence of deceptive intent" to establish liability under Section 2 for enforcement of a patent allegedly obtained by fraud so as not to chill the filing of patents). The case law refutes the standard urged by *amicus* that liability should be imposed where "the IP owner knew *or should have known* that the undisclosed information was material to the pro-competitive activities of the SSO." AAI Brief at 21 (emphasis added).

Judge McGuire – who was in a position to judge the credibility of Rambus's JEDEC representative and executives – found that "[t]here is no evidence that [Rambus] ever made a knowingly false statement to JEDEC or member companies regarding its patent position."[64] IDC 299. To begin with, after reviewing the evidence presented by Complaint Counsel and hearing the testimony of Richard Crisp, Judge McGuire found that there is no evidence that Mr. Crisp had actual knowledge that Rambus had any pending claims that could be asserted against SDRAM or DDR products. IDF 903-913. In other words, Complaint Counsel did not prove that Mr. Crisp knowingly violated JEDEC's rules. *See* IDF 780-81 (any duty to disclose applied only to participants with actual knowledge of relevant intellectual property).

Moreover, Judge McGuire found that Rambus both sought and followed legal advice with regard to the their obligations with respect to JEDEC. IDF 929-38. Based on that advice, Mr. Crisp understood that "Rambus should not go and promote a standard, and we should not mislead JEDEC into thinking that we wouldn't enforce our property rights." IDF 931; Crisp, Tr. 3470-71. As Judge McGuire found, Rambus followed this advice. It did not promote any technologies at JEDEC. IDF 932. And, as Mr. Crisp wrote in an internal 1995 email, Rambus had never "intentionally propose[d] something as a standard and quietly ha[d] a patent in [its] back pocket." IDF 934; CX711 at 188.

Judge McGuire also found that Rambus was motivated by legitimate business reasons for not disclosing its patent applications. He found that Rambus's JEDEC representative, Richard Crisp, understood from Rambus's outside patent counsel

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[64] Because determinations of intent necessarily turn on the court's evaluation of credibility, Judge McGuire's findings are entitled to substantial weight. *See, e.g., Lewis v. Lewis*, 321 F.3d 824, 830 (9th Cir. 2003) (claim based on discriminatory intent turns on court's evaluation of credibility); *In re Watman*, 301 F.3d 3, 8 (1st Cir. 2002) (intent issue turns on credibility of debtor and appeals court therefore defers to the lower court's conclusion).

that he should keep Rambus's patents applications confidential because:

> "companies could potentially file interference actions on our patent applications in the patent office; that in certain countries where the rules are first to file, somebody could potentially file a claim before we actually did; and that we basically would be disclosing trade secrets that could work against us in terms of our competitive position in the marketplace."

IDF ¶ 1064 (quoting Crisp, Tr. 3496). This testimony was confirmed by Crisp's contemporaneous email. IDF 1065; CX837 at 2 ("[W]e decided that we really could not be expected to talk about potential infringement for patents that had not issued both from the perspective of not knowing what would wind up being acceptable to the examiner, and from the perspective of not disclosing our trade secrets any earlier than we are forced to.").

In short, Complaint Counsel failed to prove either that JEDEC's rules and policies were clear or that Rambus violated or intended to violate any duty owed to JEDEC. These failures are fatal to Complaint Counsel's case.

b. JEDEC's Rules, As Interpreted By Complaint Counsel, Were Not Procompetitive

There is another reason why antitrust liability cannot be premised on a violation of JEDEC's rules. Antitrust policy embraces a single "goal": "promot[ing] efficiency in the economic sense." RICHARD A. POSNER, ANTITRUST LAW, 2 (2d ed. 2001); *see also Olympia Equipment Leasing Co. v. Western Union Tel. Co.,* 797 F.2d 370, 375 (7th Cir. 1986) ("the emphasis of antitrust policy [has] shifted from the protection of competition as a process of rivalry to the protection of competition as a means of promoting economic efficiency"). Therefore, legal rules extrinsic to antitrust – even if they are otherwise enforceable – cannot serve as the basis for antitrust liability unless they further the antitrust objective of promoting economic efficiency, *i.e.*, unless they are procompetitive. *See, e.g., Brookside Ambulance Serv., Inc. v. Walker Ambulance Serv., Inc.*, No. 93-4135, 1994 WL 592941, at *3 (6th Cir., Oct. 26, 1994) (per curiam); *Vernon v. Southern California Edison Co.*, 955 F.2d 1361, 1368 (9th Cir. 1992).

The record here fails to demonstrate that JEDEC's rules were procompetitive. To the contrary, it establishes that, if the rules mean what Complaint Counsel say they mean, they would be *anti*competitive.

Complaint Counsel's economic expert suggested that a disclosure rule might in general mitigate a hold-up risk, but he admitted that he had done no analysis to determine whether JEDEC's rules and processes are efficient or advance the interests of antitrust law. McAfee, Tr. 7532-33, 7727-28; IDF 1120. Nor did he perform any analysis of costs and benefits in order to determine more generally what would be an economically efficient or procompetitive disclosure rule. McAfee, Tr. 7727-28; IDF 1121.

Moreover, although he opined that disclosure rules mitigate the risk of hold up, Complaint Counsel's economic expert admitted that *JEDEC's* disclosure rules in fact do little to mitigate that risk because the disclosure obligation is measured only by the knowledge of the representative at the meeting. IDF 1126; McAfee, Tr. 7724-25. He also admitted that a JEDEC disclosure requirement does not mitigate the risk that the standard might involve technology covered by patents held by nonmembers. IDF 1127; McAfee, Tr. 7725. In short, even according to their own economist, any benefits of Complaint Counsel's presumed disclosure rule are modest.

By contrast, disclosing information about pending and future patent applications involves economic costs. These include the cost to the patent applicant of losing trade secret protection and the costs to JEDEC of trying to evaluate and assess such highly preliminary information. Teece, Tr. 10453-54; IDF 1123; RX2011 at 5 (discussing problems with early disclosure, especially disclosure of applications). Complaint Counsel did not demonstrate that the benefits of disclosure would outweigh these costs.

More important, Complaint Counsel do not even attempt to demonstrate that any benefits from the alleged JEDEC disclosure duty exceed the benefits to consumer welfare from permitting firms like Rambus to keep secret the patent potential of their inventions – benefits Complaint Counsel do not dispute. Rapp, Tr. 9918-19.[65] To the contrary, the record shows that, for two reasons, if JEDEC had the rules Complaint Counsel allege, they would be inefficient and *anti*competitive. As the Economists Brief puts it, there is "no clear reason to expect" standard setting organization members "collectively to favor rules that encourage overall economic efficiency."[66]

(1) JEDEC's Rules, As Interpreted By Complaint Counsel, Required Sharing Non-Public Information With Competitors When A Less Costly Alternative Was Available

Complaint Counsel argue that JEDEC rules required members to disclose confidential information about their patent applications so that JEDEC could select alternative technologies or bargain *ex ante* over royalties in order to avoid hold-up. The record establishes, however, that the rules had neither of these benefits. To the contrary, that disclosure of intellectual property interests to JEDEC did *not* result in *ex ante* bargaining. IDF 1455-56, 1468-82. As Judge McGuire found, *ex ante* bargaining did not take place because the key facts necessary for bargaining were unknown and largely unknowable before the patents (if any) issue and the standard is determined. IDF 1454-63; RPF 1208-18. As the IEEE Standards Association explained in its April 2002 comments to the Commission, "Standards committees realize that until a patent has been

[65] Such a showing, while a necessary part of Complaint Counsel's case, is far from sufficient to establish that Rambus's conduct was anticompetitive. As the *Trinko* court reminds us, the Sherman Act does not give "*carte blanche* to insist that a monopolist alter its way of doing business whenever some other approach might yield greater competition." 124 S.Ct. at 883.

[66] Economists Brief 9-10.

issued, there is very little value to disclosure since the scope of valid patent claims has not been determined." RX2011 at 5. It is thus not surprising that there is no evidence to support Complaint Counsel's suggestion that disclosure of future patent interests would lead to the "present[ation]" to JEDEC of a royalty "price tag." CCAB 89, 96.

As Judge McGuire further found, the record also shows that disclosure of patent interests did not cause JEDEC to alter its choice of technology. IDF 1467-80; RPF 1220-38. To the contrary, having decided which technology it preferred, JEDEC stuck with that choice notwithstanding disclosures of patent interests. *Id.* When disclosure of patent interests did have an effect, it had a much narrower and much different effect – it induced JEDEC to insist that the patent holder commit generally to license its patents on reasonable and non-discriminatory ("RAND") terms. *Id.*

Under the circumstances, therefore, the disclosure rule alleged by Complaint Counsel is anticompetitive because a RAND commitment could be obtained without any disclosure requirement at all. JEDEC could, instead, simply require all members to agree that, if they obtained patents covering technologies that were included in JEDEC standards, they would license those patents on RAND terms.[67] This alternative would have achieved all the benefits obtained by a disclosure obligation, without the anticompetitive cost of required surrender of legitimate trade secrets.[68]

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[67] Indeed, this is what JEDEC Council member Hans Wiggers understood the rule to be. Wiggers, Tr. 10591. If members were unwilling to make a blanket RAND commitment, they could be given the option of disclosing their patent interests in individual instances and declaring that they would not make a RAND commitment. This alternative would avoid the anticompetitive costs of requiring disclosure of trade secrets by those who are willing to make a RAND commitment.

[68] *Amici* standard-setting organizations concede that such a rule would work. *See* CEA Brief 18. They assert, however, that members would not agree to such a rule. *See id.* at 18-19. But their reasons for not agreeing to such a rule could be addressed by the alternative described in the preceding footnote and do not in any event provide an antitrust justification for adopting and trying to enforce, instead, an anticompetitive rule like the alleged JEDEC disclosure requirement.

The fact that there is an obviously less restrictive alternative to the disclosure requirement on which Complaint Counsel base their case should put an end to this matter. It has been clear since Justice Taft's landmark opinion in the *Addyston Pipe* case more than one hundred years ago that agreements among competitors, such as those establishing the rules and policies of standard setting organizations, will be deemed to violate the antitrust laws if their purportedly legitimate purposes can be served by means that impinge less upon other antitrust objectives. *United States v. Addyston Pipe & Steel Co.*, 85 F. 271, 282-83 (6th Cir. 1898), *modified and aff'd*, 175 U.S. 211 (1899); *see also Sullivan v. NFL*, 34 F.3d 1091, 1103 (1st Cir. 1994) (restraint is not reasonable for antitrust purposes "if a reasonable, less restrictive alternative . . . exists that would provide the same benefits"). The Commission should construe JEDEC's patent policy, if it can, so that it comports with the law; at a minimum, the more restrictive (and anticompetitive) construction Complaint Counsel offer cannot be the basis of antitrust liability.

(2) JEDEC's Rules, As Interpreted By Complaint Counsel, Would Result In The Standardization Of Inferior Technologies, While JEDEC Members Could Reap Private Benefits

There is an additional reason why JEDEC's disclosure rules, if construed as Complaint Counsel allege, cannot be the basis of an antitrust case against Rambus. If – as Complaint Counsel's economic expert put it – JEDEC's rules put a "penalty" on patented technologies (McAfee, Tr. 7337, 7582-83) (*see* CCAB 78 (JEDEC policies "provided for avoiding patents where possible")), then their purpose would be inconsistent with the purposes of the antitrust laws.[69] As the EIA itself pointed out in a

[69] The evidence as to whether JEDEC had such rules is in dispute. Because the rule alleged by Complaint Counsel would undermine the objectives of the antitrust laws, it should not readily be assumed that JEDEC would have adopted such a rule.

1996 letter to the FTC, avoiding patented technology would deny consumers the benefit of the best technology and would be anticompetitive. RX669 at 2-3; RRPF 301-04. Such a policy would effectively constitute an unlawful boycott of patented technologies. It would result in the selection of inferior technologies and inferior standards where, as here, the patented technologies are superior to the alternatives. Inferior technologies mean reduced efficiency, reduced total economic welfare, and reduced consumer welfare as well. RX669 at 2, 3; RX2011 at 2-5; *see also* David Teece and Edward Sherry, *Standard Setting and Antitrust*, 87 MINN. L. REV. 1913, 1931-33, 1991-92 (2003).

The Commission has itself recognized that a refusal to include patented technology in a standard is inconsistent with the objectives of the antitrust laws and, indeed, constitutes a violation of Section 5. In *In the Matter of American Society of Sanitary Engineering*, 106 FTC 324, 1985 FTC LEXIS 20 (1985), the American Society of Sanitary Engineering ("ASSE") had refused to permit inclusion of patented technology even though it performed at least as well as other technologies that were included within the standard. 1985 FTC LEXIS 20, *7-9. The FTC charged that the refusal to permit inclusion of patented technology into a standard constituted a concerted refusal to deal and thus violated Section 5 of the Federal Trade Commission Act. *Id.* at *9-10.

On Complaint Counsel's theory here, the alleged JEDEC policies would have the same anticompetitive effects of retarding the development and use of new and better technologies – especially those invented by outsiders like Rambus. Those policies therefore cannot properly be the basis for an antitrust case.

c. Undermining Or Subverting The Purpose Of The Rules Without Violating Them Is Not Enough

Having failed to establish that Rambus violated actual JEDEC rules, Complaint Counsel fall back to the more nebulous allegation that Rambus's conduct "undermined the fundamental purpose of JEDEC" to prevent "opportunist behavior by members to hijack" its standards. CCAB 28, 35. And the antitrust laws, they argue, have long been concerned with the same risk. CCAB 31.

Complaint Counsel's argument fails because JEDEC's rules did not reflect any such single-minded objective, but rather embodied compromises and limitations that reflect other objectives. *See* Section II.C. Moreover, it is wrong as a matter of law because generalized claims about offensive conduct are not enough for an antitrust case. As the Supreme Court has made clear, it is not the purpose of the antitrust laws to regulate such issues; *other* laws "provide remedies for various 'competitive practices thought to be offensive to proper standards of business morality.'" *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128, 137 (1998) (quoting 3 P. AREEDA & H. HOVENKAMP, ANTITRUST LAW ¶ 651d, p. 78 (1996)); *see also Brooke Group Ltd. v. Brown & Williamson Tobacco Corp.*, 509 U.S. 209, 225 (1993) ("Even an act of pure malice by one business competitor against another does not, without more, state a claim under the federal antitrust laws"); *Conoco, Inc. v. Inman Oil Co.*, 774 F.2d 895, 905-6, 908-9 (8th Cir. 1985) (antitrust laws not violated by conduct that violates common law duty of good faith and fair dealing).

Complaint Counsel purport to find a free-standing antitrust duty in two sources, both of which they misconstrue. The first is a 1981 article by FTC Chairman Muris, which analyzes the phenomenon of common law courts reading implicit terms into contracts to avoid opportunism by one of the parties. By a process of creative extraction, Complaint Counsel quote general language from the article for the proposition that, as regards standard setting organizations:

> "The antitrust laws and the FTC Act provide a remedy when a member of such an organization nevertheless captures the standard – whether by violating the organization's express rules or by circumventing those rules in a manner 'contrary to the other [parties'] understanding . . . but not necessarily contrary to [the rules'] explicit terms.' – and thereby acquires monopoly power."

CCAB 36 (quoting Timothy J. Muris, *Opportunistic Behavior and the Law of Contracts*,

65 MINN. L. REV. 521 (1981)).

The kind of equitable contract construction described in Chairman Muris's article does not, however, bear the meaning Complaint Counsel ascribe to it. In the first place, the article did not purport to articulate a new standard for exclusionary conduct under the antitrust laws. Moreover, even in contract law, which was the subject of the article, implied duties of good faith are not intended to expand anyone's rights or duties.[70] Rather, they are intended only to ensure that the parties have the benefits and the obligations that they agreed upon – and no more. The Restatement puts it this way: The implied duty of good faith requires "faithfulness to an *agreed* common purpose and consistency with the *justified* expectations of the other party."[71] Thus, as one commentator has explained, good faith performance simply requires a party to use its discretion "for any purpose within the reasonable contemplation of the parties at the time of formation." Matters of "good faith," therefore, could help Complaint Counsel here only if they had proven that the parties – JEDEC and Rambus – had a clear understanding of the disclosure requirements, and that the rules themselves had failed to capture that understanding. That is precisely what Complaint Counsel failed to prove.

Complaint Counsel also rely on two Supreme Court cases in support of its "hijacking" argument. But those cases differ from this case in two fundamental respects. First, they involved horizontal agreements that violated Section 1 of the Sherman Act, 15 U.S.C. § 1, and thus raised very different antitrust issues from those raised in a single-

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[70] As discussed above, Complaint Counsel contend that a duty of good faith arose not from a contract, but from the EIA Legal Guide. Any duty imposed by this policy, however, did not include a duty to disclose pending patent applications. *See* Section II.C.1.

[71] RESTATEMENT (SECOND) OF CONTRACTS § 205, cmt. a (1982) (emphasis added).

firm case like Complaint Counsel's case here.[72] In *Indian Head, Inc. v. Allied Tube & Conduit Corp.*, 817 F.2d 938 (2d Cir. 1987), *aff'd*, 486 U.S. 492 (1988), the defendant conspired with other steel companies to take control of the standard setting organization in order to exclude the plaintiff's competing plastic products from standards set by the organization. *Id.* at 497. Similarly, in *American Society of Mechanical Engineers, Inc. v. Hydrolevel Corp*., 456 U.S. 556 (1982), the defendant standard setting organization conspired with others (including a manufacturer) to misrepresent a standard and put another manufacturer out of business. As the Fifth Circuit put it, "To bring the case within the ambit of *Indian Head*, [the claimant] must allege that there was a conspiracy . . . ." *Stearns Airport Equip. Co. v. FMC Corp.*, 170 F.3d 518, 526 (5th Cir. 1999).[73]

Second, in all of the cases on which Complaint Counsel rely, the defendants not only colluded among themselves, but also took affirmative steps to block competitors. Here, by contrast, Complaint Counsel's case rests on inaction – a unilateral refusal of Rambus to share its intellectual property, its trade secrets, with others.

In short, by contrast to this case, the conduct involved Complaint Counsel's cited cases is plainly the kind of unlawful activity that has traditionally concerned

[72] This is also true of all of the other standard setting cases on which Complaint Counsel rely. *See* CCAB 32-34; *see also* AAI Brief 2 n.2 (none of the reported cases establishes clear guidance for this case). Complaint Counsel's assertion that "the presence of the standards organization itself supplies the concerted conduct element of" Section 1, CCAB 40, is untenable. The concerted conduct element of Section 1 requires that the allegedly unlawful conduct – the defendant's conduct – be taken in concert with others.

[73] Complaint Counsel argue to the contrary that the gravamen of *Indian Head* and *Hydrolevel* was "not the fact that the conduct was executed by agreement, but the effect of the conduct." CCAB 40. This argument conflates the two basic and different elements of Complaint Counsel's case: proof that Rambus engaged in anticompetitive conduct within the meaning of Section 2, and proof that that conduct caused injury to competition. Complaint Counsel must prove both.

antitrust courts about standard setting bodies – collusion among some or all members to exclude rival technologies. The defendants in those cases argued that their conduct was nevertheless lawful because it did not violate the organization's rules. The court rejected the defense, saying, in language quoted by Complaint Counsel, that it would not "permit a defendant to use its literal compliance with a standard setting organization's rules as a shield . . . from antitrust liability." CCAB 38, *quoting Indian Head*, 817 F.2d at 941. Complaint Counsel would read the quoted language to mean that any conduct that confounds an alleged purpose of a standard setting organization can violate the antitrust laws and that compliance with the organization's rules is irrelevant. But the cases on which they rely mean no such thing. They mean only that conduct – an anticompetitive conspiracy – that is *otherwise* a violation of the antitrust laws is not immunized from liability simply because it does not also violate the organization's rules.

3. Even If Rambus Had Violated A Clear JEDEC Duty Requiring Disclosure, Rambus's Refusal To Aid Its Competitors By Disclosing Its Trade Secrets Was Not Exclusionary Within The Meaning Of The Antitrust Laws

The antitrust laws prohibit only conduct that is exclusionary within the meaning of the antitrust laws. Conduct is not exclusionary simply because it violates non-antitrust standards. Nor is it anticompetitive simply because, by some kind of after-the-fact reckoning, it might be thought to have injured competition. To the contrary, conduct is exclusionary for antitrust purposes only if, when it was undertaken, it did not serve a legitimate purpose – only if, in other words, it did not make business sense for the defendant but for its exclusion of rivals and the resulting market power. The conduct Complaint Counsel allege here – Rambus's failure to share its trade secrets with others – does not meet this test.

a. The Violation Of A Duty Extrinsic To The Antitrust Laws Is Not Enough To Establish Antitrust Liability

Even if Complaint Counsel had shown that Rambus's conduct violated JEDEC's rules and that those rules were not anticompetitive, they would still not have established that Rambus's conduct was exclusionary under the antitrust laws. It has long been clear that whether conduct is exclusionary cannot be determined simply by reference to non-antitrust duties or standards. As Judge Posner put it, exclusionary conduct cannot be determined by liability "in tort or contract law, under theories of equitable or promissory estoppel or implied contract . . . or by analogy to the common law tort" rules. *Olympia Equip. Leasing Co.*, 797 F.2d at 376.

The courts have repeatedly made clear that a violation of a non-antitrust rule, statute, or ethic – even those that promote social welfare – is not itself exclusionary conduct. The Supreme Court removed any doubt about this point in its decision earlier this year in *Trinko*, holding that an antitrust claim cannot be based simply on duties extrinsic to antitrust, even those arising from a federal statute enacted for an explicitly procompetitive purpose. *See Trinko*, 124 S.Ct. at 883. Rather, the Court said, the legal standard for a monopolization case is whether the defendant's activity "*violates preexisting antitrust standards*." *Id*. at 878.

The refusal of the antitrust laws simply to equate a violation of non-antitrust rules with exclusionary conduct applies with special force in cases involving policies created by private organizations such as JEDEC. Such policies in general are intended to achieve the private goals of the parties and do not necessarily further antitrust goals. Accordingly, antitrust law, "framed to preserve normal competitive forces," does not, for instance, "police the performance of private contracts." *Madison Fund, Inc. v. Charter Co.*, 406 F.Supp. 749, 751 (S.D.N.Y. 1975); and "a claimed breach of contract by unreasonable conduct, standing alone, should not give rise to antitrust liability," *City of Vernon v. Southern Cal. Edison*, 955 F.2d at 1368; *see also Bucher v. Shumway*, 452 F.Supp. 1288, 1291 (S.D.N.Y. 1978) (no antitrust liability for violation of laws preventing "deception or overreaching" in the securities markets). As the Fifth Circuit put it, "[a]ntitrust law is rife with . . . examples of what competitors find to be disreputable business practices that do not qualify as predatory behavior." *Taylor Publ'g Co. v. Jostens Inc.*, 216 F.3d 465, 476 (5th Cir. 2000).

b. To Establish Exclusionary Conduct, A Plaintiff Must Demonstrate That Defendant's Conduct Lacked A Legitimate Business Justification

(1) Exclusionary Conduct Is Determined Pursuant To The "Sacrifice" Test

As a general rule, conduct is exclusionary for antitrust purposes only if it would be unprofitable to the defendant but for the defendant's expectation that it will exclude rivals and thereby enable the defendant to gain additional market power with which to recoup the losses caused by the conduct. *See, e.g., Aspen Skiing*, 472 U.S. at 610-11 (defendant was "willing to sacrifice short-run benefits and consumer goodwill in exchange for a perceived long-run impact on its smaller rival"); *Advanced Health-Care Servs. v. Radford Community Hosp.*, 910 F.2d 139, 148 (4th Cir. 1990) ("if a plaintiff shows that a defendant has harmed consumers and competition by making a short-term sacrifice in order to further its exclusive, anti-competitive objectives, it has shown predation"). Thus, to prevail here, Complaint Counsel must prove that Rambus engaged in conduct that had "no rational business purpose other than its adverse effects on competitors." *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1062 (8th Cir. 2000); *see also High Technology Careers v. San Jose Mercury News*, 996 F.2d 987, 990 (9th Cir. 1993) ("if there is a valid business justification for [defendants'] conduct, there is no antitrust liability").

This test, which is sometimes called the "sacrifice test," furthers antitrust interests in several ways. It ensures that the antitrust laws do not condemn – and thus will not deter – competition on the merits, *i.e.*, conduct that makes business sense because, for example, it reduces the defendant's costs, improves the defendant's products, or provides rewards for innovation.[74] By condemning only conduct that makes no sense apart from exclusion and resulting market power, the sacrifice test ensures that the antitrust laws condemn only conduct from which an anticompetitive intent can unambiguously be inferred. And the test provides simple, effective and meaningful guidance to firms so that they will know how to avoid antitrust liability without steering clear of procompetitive conduct.

This basic requirement for exclusionary conduct would apply here, even if Rambus had failed to comply with either a JEDEC disclosure rule or a duty of good faith. *See, e.g.*, *Trinko*, 124 S.Ct. at 878; Brief for the United States and the Federal Trade Commission as Amicus Curiae Supporting Petitioner, *Verizon Communications, Inc. v. Trinko*, No. 02-682, at 13 (May 27, 2003), *available at* http://www.usdoj/gov/atr/cases/F201000/201048.htm ("*Trinko* Merits Br.") 27 ("Here, petitioner is alleged to have breached contractual and regulatory requirements . . . . Unless that conduct would not make economic sense apart from a tendency to impair or forestall competition, it is not exclusionary and is not actionable under Section 2."). For example, in *Conoco, Inc. v. Inman Oil Co.*, 774 F.2d 895 (8th Cir. 1985), a distributor of petroleum products brought suit against its franchisor alleging that the franchisor's bidding for contracts in competition with the distributor constituted both a breach of the implied obligation of good faith and fair dealing between the parties and an attempt to monopolize. While holding that bidding against its franchisee *did* breach the franchisor's implied obligation

[74] Invoking rhetoric of an earlier age, Complaint Counsel repeatedly suggest that conduct is legitimate for antitrust purposes only if it furthers *static* efficiency by reducing prices or improving efficiency. *See, e.g.*, CCAB 30 n.28, 53-54. These formulations ignore the important, legitimate, dynamic benefits – to the innovation process, efficiency, and competition – from the protection of Rambus's trade secrets.

of good faith and fair dealing, the Court held that the conduct was *not* exclusionary because the franchisor had a legitimate business reason unrelated to the elimination of competitors – obtaining a new customer. *Id.* at 905-06, 908-09.[75]

Complaint Counsel do not directly dispute that the sacrifice test is the controlling standard for exclusionary conduct; nor could they, given the fact that the Department of Justice and the Federal Trade Commission have repeatedly endorsed that definition.[76] But they attempt to divert attention from the requirements of the test by quoting earlier and more general formulations, such as the requirement that exclusionary conduct is conduct that does not further competition or does so in an unnecessarily restrictive manner. *See* CCAB 30. That general language, however, is not inconsistent with the test for exclusionary conduct that the Justice Department, the Commission and the courts have repeatedly embraced. To the contrary, the sacrifice test is simply a more precise way of identifying conduct that does not further competition.

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[75] *See also Brookside Ambulance Serv., Inc.*, 1994 WL 592941, at *3 (per curiam) (table) (even if it violated existing protocol, defendant ambulance company's practice of "run-jumping" was "not anticompetitive" for antitrust purposes because the practice maximized defendant's ability to receive calls and promoted efficient use of its ambulance fleet; a firm, "regardless of its market power," may promote efficiency).

[76] *See* Brief for the United States and the Federal Trade Commission as Amicus Curiae on Petition for a Writ of Certiorari, *Verizon Communications, Inc. v. Trinko*, No. 02-682, at 13 (December 2002), http://www.usdoj.gov/atr/cases/f200500/200558.htm ("*Trinko* Cert. Br.") (conduct is exclusionary only when it "would not make economic sense unless it tended to reduce or eliminate competition"); *see also, e.g., Trinko* Merits Br. (refusal to deal); Brief of the United States, *United States v. Dentsply Int'l, Inc.*, at 18, 26-27 No. 03-4097 (3d Cir. January 2004) (exclusive dealing); Brief for Appellees United States and the State Plaintiffs, *United States v. Microsoft Corp.*, at 48, Nos. 00-5212, 00-5213 (D.C. Cir., January 2001) (various exclusionary practices); Brief for the United States as Amicus Curiae, *Consolidated Rail Corp. v. Delaware & Hudson Ry. Co.* (Sup. Ct. April 1991) (refusal to deal).

(2) The Sacrifice Test Applies Particularly To Cases Like This One, In Which A Defendant Refuses To Share With Competitors

Complaint Counsel's economist did not dispute – because he could not – that, had Rambus never attended a JEDEC meeting, the world – and the JEDEC standards in it – *would be identical to the way we find them today*. IDF 1118, 1054. On Complaint Counsel's theory, therefore, competition was impaired, not by anything Rambus did, but by what Rambus did not do – because Rambus did not share its trade secrets with others. Complaint Counsel's case is thus based on a "duty to deal" theory – a claim that Rambus had a duty to share its property with others.

The Supreme Court in *Trinko* reiterated the general rule that a firm's refusal to share its property with other firms (whatever other duties such refusal may breach) does not violate the antitrust laws. It advised "cautio[n] in recognizing . . . exceptions, because of the uncertain virtue of forced sharing and the difficulty of identifying and remedying anticompetitive conduct by a single firm." 124 S.Ct. at 879. The Court emphasized that cases that have found a duty to deal, like *Aspen Skiing* (which the Court also cautioned lay "at or near the outer boundary of § 2 liability," *id.*), ask whether defendant's "course of dealing suggested a willingness to forsake short-term profits to achieve an anticompetitive end," *id*. at 880.

In its brief in *Trinko,* the Commission made clear why application of the sacrifice test is particularly important in a duty-to-deal context:

> In the context of an alleged refusal to assist a rival, conduct is exclusionary only if it would not make business or economic sense apart from its tendency to reduce or eliminate competition. That demanding standard is necessary to ensure that the Sherman Act promotes competition. A more generalized duty would rarely enhance consumer welfare and would threaten to impair the competition the antitrust laws are designed to promote.

Trinko Merits Brief 7. As the Commission went on to explain, regardless whether conduct violates such a duty or is otherwise actionable, if the "monopolist's refusal to deal (*or, as here, breach of an agreement to deal*) on particular terms does make business sense apart from exclusionary consequences, *antitrust law* should avoid interfering with such business choices." *Trinko* Merits Brief at 20 (emphasis added).

Indeed, although *Trinko* itself did not involve intellectual property, the reluctance of courts to recognize a duty to deal cognizable under antitrust law is particularly pronounced where the requested forced sharing arises in the context of intellectual property. *See generally In re Independent Service Organization Antitrust Litigation*, 203 F.3d 1322 (Fed. Cir. 2000).

c. Complaint Counsel Have Not Demonstrated That Rambus's Conduct Lacked A Legitimate Business Reason

Complaint Counsel have not shown that Rambus's conduct meets the requirements for exclusionary conduct under the antitrust laws. To the contrary, as Judge McGuire found, the evidence demonstrates that Rambus was advised by counsel not to disclose its trade secrets, including information about the unrealized patent potential of its inventions (IDF 1064); that companies are routinely advised to and do keep such information secret (IDF 1078, 1084-85); that disclosure of such business secrets can undermine a firm's ability to obtain patents to which it is entitled and thus its ability to realize the full value of its inventions (IDF 1078-83); that innovation, dynamic efficiency and competition are promoted when firms protect such trade secrets (Rapp, Tr. 9918-19); and that Rambus would benefit from keeping information about its patent applications confidential regardless what happened at JEDEC (IDF 1086-87).[77]

In light of this evidence, there is no basis to conclude that Rambus's

[77] Rambus's conduct therefore falls into the benign category of conduct "that impairs the opportunity of rivals by improving the monopolist's own efficiency." CCAB 30 n.28, *citing* Einer Elhauge, *Defining Better Monopolization Standards*, 56 Stan. L. Rev. 253 (2003).

decision to protect its trade secrets did not make business sense. Nor is there any basis to conclude, as Complaint Counsel now suggest in footnote, that Rambus's desire to protect its intellectual property was not "a form of competition on the merits." *See* CCAB 53, n.59, *quoting United States v. Microsoft Corp.*, 253 F.3d 34, 59 (D.C. Cir. 2001).

Instead, Complaint Counsel argue that Rambus's business justification is pretextual. *See* CCAB 55-56. Complaint Counsel reason that, if Rambus had been truly concerned about the loss of its trade secrets, it would not have chosen "to join and participate in a standard-setting organization which required disclosure of relevant patent information," *id.* at 55, and thereby risked its ability to enforce its patents in order to obtain a monopoly over JEDEC-compliant products. This argument ignores, however, Judge McGuire's findings that Rambus's counsel advised that Rambus would have no obligation to disclose the kind of trade secret information at issue in this case if it followed a specified course of conduct and that Rambus followed that course. IDF 929-38.

More important, Complaint Counsel's argument is internally inconsistent and illogical. If Rambus knew when it joined JEDEC, as Complaint Counsel argue, that it was required to disclose its patent interests, then the scheme alleged by Complaint Counsel would be irrational. As Complaint Counsel's economist admitted, Rambus would have known that its efforts to enforce its patents after the industry was locked in to its technologies would have revealed its failure to disclose its patent interests earlier and would thus have made it impossible for Rambus to enforce its patents. IDF 1109. Rambus would, in other words, have anticipated no payoff from the scheme alleged by Complaint Counsel. *See* RPF 1472-75. The more sensible explanation, then, is that Rambus thought it was entitled to protect its trade secrets and chose to protect them for the legitimate and ordinary reasons that firms routinely protect their similar trade secrets.

D. Complaint Counsel Failed To Prove That Rambus's Conduct Caused Any Anticompetitive Effects

In addition to proof of exclusionary conduct, antitrust law requires that plaintiffs prove that the challenged conduct caused anticompetitive effects. *See Spectrum Sports*, 506 U.S. at 458. Complaint Counsel thus concede that there must be a "causal link" between the conduct at issue and the acquisition of monopoly power. CCAB 74. In an effort to meet this burden, Complaint Counsel tried a two-pronged approach. First, they sought to show a causal connection by proving that JEDEC would not have adopted Rambus's technologies in SDRAM or DDR but for the challenged conduct. Second, because the evidence weighed against them, Complaint Counsel argued that causation should nonetheless be inferred under a lower standard or proof. Neither approach succeeds.

1. Complaint Counsel Failed To Prove A Causal Connection Between The Alleged Conduct And Rambus's Market Power

a. Complaint Counsel Did Not Show That Disclosure Would Have Changed The Outcome

Complaint Counsel's case founders on the evidence. They failed to prove that the alleged failure to disclose was the "but for" cause of Rambus's market power. Judge McGuire correctly found that this is so for a number of reasons.

Complaint Counsel failed to prove that JEDEC members relied on any failure to disclose or alleged misrepresentations by Rambus. Complaints Counsel's entire case rests on the notion that JEDEC members were misled by Rambus's conduct. Reliance is therefore an essential element of their theory of causation. *See, e.g.*, *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 1070-71 (Fed. Cir. 1998) (monopolization claim based on fraud on the Patent Office requires a "*clear showing of reliance*, *i.e.*, that the patent would not have issued but for the misrepresentation or omission" that "*cause[d]* [the] PTO to grant [an] invalid patent"); *American Professional Testing Serv. v. Harcourt Brace Jovanovich Legal & Professional Publs.*, 108 F.3d 1147, 1152 (9th Cir. 1997) (monopolization claim based on alleged false advertising requires proof of reliance). The evidence, however, shows that JEDEC members were not misled by Rambus's conduct:

- When Rambus joined JEDEC, JEDEC members were concerned that Rambus might obtain patents covering technologies being incorporated into the SDRAM standard. IDF 786-806.

- Rambus's conduct at JEDEC did not allay these concerns, it magnified them. When Richard Crisp declined to comment on Rambus's intellectual property at the May 1992 JEDEC meeting, JEDEC members saw this as a "flag" and a "notification to the committee that there should be a concern." IDF 819-23, IDC 280. Further, the evidence shows that after that meeting, JEDEC members continued to be concerned about Rambus "patent problems." IDF 829-35.

- Similarly, when Rambus issued a statement at the September 1995 meeting stating, "Our presence or silence at committee meetings . . . does [not] make any statement regarding potential infringement of Rambus intellectual property," JEDEC members understood that Rambus's presence and silence at JEDEC meetings did not mean that Rambus did not have intellectual property relating to JEDEC's work. IDF 855-857.

- In addition, Rambus's PCT application, which was published in April 1991 and discussed at JEDEC (IDF 183, 836-41), put JEDEC members on notice that Rambus could obtain patents over the technologies being incorporated in JEDEC's work. IDF 207-19.

- The evidence also shows that in October 1995, Rambus informed several JEDEC members that Rambus's intellectual property might apply to SDRAMs. IDF 859-64. Internal documents show that JEDEC members continued to be concerned about Rambus's potential patent rights. IDF 864-68.

- After Rambus withdrew, JEDEC members continued to be concerned that Rambus might obtain patents over SDRAM and DDR. IDF 877-901.

- Based on this evidence, Judge McGuire correctly found that "the evidence does not support the contention that JEDEC was misled." IDC 282.

Complaint Counsel cannot escape the requirement to show that Rambus's conduct actually caused JEDEC to adopt Rambus's technologies simply because JEDEC's choices involved several decision makers. *See* CCAB 75 n.73, 90. Proof of causation necessarily involves "deconstructing the decision-making process to ascertain what factors prompted" JEDEC's decisions. *Sessions Tank Liners v. Joor Mfg., Inc.*, 17 F.3d 295, 300 (9th Cir. 1994) (monopolization claim based on misrepresentations to decision making body); *Heary Bros. Lightning Prot. Co. v. Lighting Prot. Inst.*, 287 F.Supp.2d 1038, 1049-50 (D. Ariz. 2003) (antitrust claim based on misrepresentation to standard-setting body requires "deconstructing the decision-making process"). That deconstruction shows just the opposite of what Complaint Counsel expected:

- Even with full knowledge of Rambus's issued patents, JEDEC and its members have freely chosen to use the Rambus technologies in new standards. Knowing that Rambus claimed intellectual property rights to the four at-issue technologies, JEDEC explored but rejected alternatives to Rambus's technologies for the new DDR2 standard. *See* Section II.G.1.a; IDF 1486-1535. Similarly, even after Rambus began to assert its patents, Micron, Infineon, and Cisco – JEDEC members all – developed RLDRAM, which uses the Rambus technologies. *See* Section II.G.1.b.

- This is not surprising: The evidence shows that Rambus's technologies are superior in cost-performance terms to the available alternatives, even accounting for Rambus's royalties. *See* Section II.G.2; IDF 1260-79, 1388-1402. A rational, profit-maximizing JEDEC member would have selected Rambus's technologies. IDF 1278-79, 1401-02. Further, the evidence shows that JEDEC members in fact seek the best alternatives in cost performance terms. RRPF 2650.

- Economic analysis confirms that additional disclosures would not have changed anything. Given both JEDEC's and Rambus's economic incentives and past behavior, had Rambus made additional disclosures, JEDEC still would have adopted Rambus's technologies. *See* Section II.G.3; IDF 1403-85. This is consistent with JEDEC's past behavior. IDF 1467-80. Further, there is no reason to believe that the parties would have negotiated licenses *ex ante*. IDF 1432-63. Rather, the evidence shows that licenses would have been negotiated after Rambus's patents issued – the same time they were negotiated in the real world. Thus, JEDEC members would be paying the same reasonable and nondiscriminatory royalties that they currently pay to Rambus. IDC 324-26.

What is more, Complaint Counsel failed to prove that the industry could not switch to competing technologies. This is fatal to Complaint Counsel's case. *See, e.g., Alcatel USA, Inc. v. DGI Techs., Inc.*, 166 F.3d 772, 783-84 (5th Cir. 1999) (rejecting monopolization claim because plaintiff failed to prove significant switching costs); *United Farmers Agents Ass'n v. Farmers Ins. Exch.*, 89 F.3d 233, 237-39 (5th Cir. 1996) (affirming summary judgment for failure to prove monopoly power because switching costs were low). The evidence shows that:

- Switching to available alternatives (if they existed) is relatively easy for DRAM manufacturers. *See* Section II.H; IDF 1646-58. DRAM manufactures are constantly redesigning their products, and any switch to alternatives could "piggyback" on one of these routine procedures at relatively minimal costs. IDF 1656.

- The industry routinely transitions to new standards. *See* Section II.H; IDF 1624-45. These transitions mandate the redesign of complementary components. *Id.* Yet the DRAM industry has been able to quickly and seamlessly coordinate these changes. *Id.*; IDF 1659-65.

- Complaint Counsel's own economist admitted that the switching costs involved in changing to alternatives to Rambus's technologies would be no greater than those the industry has overcome more than once every year. RRPF 2553; IDF 1659; *see also* IDC 326-29.

Complaint Counsel have not only failed to prove that Rambus's conduct caused JEDEC to adopt Rambus's technologies, but they have failed to prove that standardization of those technologies enhanced Rambus's market power. IDC 303; IDF 1030-51; RPF 1503-30. Standardization may enhance the market power of a patent holder whose technology is selected where (1) there are high compatibility requirements and (2) there are alternatives that are equivalent in cost performance terms. IDF 1049;

RPF 1524. Complaint Counsel do not dispute this. *See* CCRPF 1524. Here, however, the economic evidence shows:

- Compatibility requirements are not high. IDF 1037; RPF 1509-13. DRAM need only be compatible with the particular computer in which it is installed – there is no network compatibility required. IDF 1037; RPF 1511. Network effects are weak. IDF 1037-38; RPF 1511-12. And multiple standards may and do coexist. IDF 1586-95; RPF 1513.

- Standardization by JEDEC is neither necessary nor sufficient for market success. IDF 1039; RPF 1514-23. Products developed outside of JEDEC have succeeded. IDF 1039-40. And some products standardized by JEDEC have failed in the market. IDF 1041. In fact, even the SDRAM that is actually used in the marketplace is based on Intel's standard, not JEDEC's. IDF 1042-47. Formal standard setting, versus *de facto*, is not necessary. IDF 1048; RPF 1523.[78]

- There were not any alternatives that were equivalent to Rambus's technologies in cost/performance terms. *See* Section II.G.2. Rather, the evidence shows that Rambus's technologies were superior, even accounting for Rambus's royalties. IDF 1260-79, 1388-1402.

b. Complaint Counsel Cannot Avoid The Implications Of This Failure By Simply Inferring Causation

Evidently concerned about these facts, Complaint Counsel argue that they do not really have to prove a causal link; instead, they say, the Commission can infer causation from the allegedly anticompetitive conduct itself. CCAB 74. Citing case law from other substantive areas of law, Complaint Counsel conclude that, "where the anticompetitive act consists in substantial part of concealing information," the causation inquiry focuses on whether "the information concealed appears to have been 'material.'"[79] In effect, Complaint Counsel argue, there is no separate causation element

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[78] *See* AAI Brief 8, 18.

[79] Complaint Counsel did not suggest below that the "materiality" standard that they now say applies"[i]n a case such as this." CCAB 74. The only direct support plaintiffs claim for their materiality argument is a 1976 securities law case. But cases decided under the securities laws provide no basis for dispensing with the causation

to the offenses they have alleged.

For this extraordinary proposition, the only antitrust-related materials Complaint Counsel cite are the statement by the Court of Appeals in the *Microsoft* case that courts will infer causation from conduct that "'reasonably appear[s] capable of making a significant contribution to [creating] . . . monopoly power,'" *Microsoft*, 253 F.3d at 79 (quoting 3 ANTITRUST LAW ¶ 651c, at 78),[80] and recent writings by Chairman Muris. Neither supports Complaint Counsel here. To the contrary, as the leading treatise explains, in a standard setting case such as this, the plaintiff "must establish that the standard-setting organization adopted the standard in question, and *would not have done so but for* the misrepresentation or omission." 2 H. HOVENKAMP, ET. AL., IP AND ANTITRUST, § 35-5 at 35-40 (2002) (emphasis added).

(1) An Inference Of Anticompetitive Effects Is Not Appropriate When – Unlike In *Microsoft* – The Entire Chain Of Causation Is Conjecture

In the *Microsoft* case, the government proved the first link in the chain of causation alleged there: that Microsoft had engaged in a widespread pattern of anticompetitive and exclusionary conduct that had the purpose and effect of denying rival Netscape access to the most effective means of distribution and thus made it impossible for Netscape to compete effectively against Microsoft. *See Microsoft*, 253 F.3d at 58, 64-

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requirement in an antitrust case. The antitrust laws require that the plaintiff prove that the wrongful conduct actually injured competition in order to ensure that those laws do not needlessly interfere with or deter aggressive competition, an objective that is inapplicable in the securities law context.

Not surprisingly, therefore, the *antitrust* cases dealing with misstatements have made clear that materiality is not enough. *See Nobelpharma AB*, 141 F.3d at 1070-71; *American Professional Testing Serv.*, 108 F.3d at 1152.

[80] The *Microsoft* case itself was concerned with, and the quoted language referred to, "maintaining" monopoly power, not "creating" it.

67, 78; *United States v. Microsoft Corp.*, 87 F.Supp.2d 30, 39 (D.D.C. 2000), *aff'd in relevant part*, 253 F.3d 34 (D.C. Cir. 2001). The court found that, but for that conduct, Netscape might have flourished in competition with Microsoft's browser and that a successful Netscape browser might have served as a middleware platform that would have stimulated entry into the desktop operating system market and thus eroded Microsoft's monopoly there. *Microsoft*, 253 F.3d at 79; 87 F.Supp.2d at 38-39. The court also found that Microsoft's success in crippling Netscape by its exclusionary conduct made it impossible for the court to determine directly whether these other, subsequent events would have come to pass. *Microsoft*, 253 F.3d at 79. Under those circumstances, the court said, it would infer that Microsoft's exclusionary conduct had the required effect on competition, solely for purposes of liability (as opposed to remedy). *Id.* at 78-79.

This case is very different. While the government proved that Microsoft's conduct excluded Netscape, Complaint Counsel here want to infer – because they cannot prove – even the very first step of causation in this case (*i.e.*, that JEDEC would have adopted a different standard). CCAB 77. *Microsoft* does not stand for the proposition that Complaint Counsel is excused from the burden of proving those things that it attempted but failed to prove.

(2) An Inference Of Anticompetitive Effects Is Not Appropriate In A Case – Unlike *Microsoft* – Where Facts As To The But For World Are Ascertainable And Appear In The Record

This case differs from *Microsoft* in an additional way. In *Microsoft*, the subsequent events alleged by the government – the development of Netscape into a middleware platform and the resulting new entry into the operating system market – had no historical precedents, and Microsoft's conduct made it impossible for the court to know whether that unprecedented chain of events would have ensued if Microsoft had not excluded Netscape from the effective means of distribution. Here, by contrast, there is substantial experience with the kinds of events alleged by Complaint Counsel, and the evidence provides a sufficient basis for the court to conclude that Complaint Counsel have failed to prove the required "causal link." The evidence shows, for example, that patent interests have been disclosed to JEDEC on several occasions and yet never caused JEDEC to adopt a different standard. *See* IDF 1481. The evidence also shows that there were no viable alternatives to Rambus's technologies (*see* IDF 1128-1402); that DRAM standards succeed, even if not selected by JEDEC, and fail, even if chosen by JEDEC – that, in other words, the success of standards depends on their merit, not JEDEC's imprimatur (*see* IDF 1039-41, 1043-48); and that nothing prevents the DRAM industry from switching to different standards if there are viable alternatives to Rambus's technology (*see* IDF 1582-1665). All of these facts are knowable in light of the record in this case, but Complaint Counsel would like the Court to ignore the evidence and to relieve them of their burden to prove causation. Nothing in the *Microsoft* case supports that.

The Areeda & Hovenkamp treatise on which the *Microsoft* court relied makes clear that causation cannot be inferred under circumstances like those here. "[B]efore [an inference] can properly be used against the defendant, it must at least appear plausible" that the challenged conduct "could have had, or would probably have, a *significant relationship* to the defendant's monopoly," 3 ANTITRUST LAW ¶ 651c, at 78 (emphasis added), and that the monopoly power would not have been attained absent the challenged conduct. *See also Grinnell*, 384 U.S. at 570-71 (requiring proof that defendant acquired monopoly power through anticompetitive conduct rather than a superior product). It is, therefore, not enough to link inference upon inference, as Complaint Counsel urge. Complaint Counsel must at the very least prove a likely causal connection. That takes Complaint Counsel back to the evidence, which does not support their claim.

(3) As The Portion Of The *Microsoft* Decision Omitted By Complaint Counsel Makes Clear, A Higher Standard Of Proof Of Causation Applies In Light of the Remedy Complaint Counsel Seek

Complaint Counsel's reliance on inference is especially inappropriate in light of the kind of remedy Complaint Counsel seek. As Areeda and Hovenkamp explain, "[t]he causal connection between conduct and power can be relatively modest when the only remedy sought is an injunction against continuation of that conduct." 3 ANTITRUST LAW, ¶ 650a(2)(A) at 67. By contrast, relief that goes beyond an order to refrain from specified conduct and that targets the monopoly itself, such as divestiture or in this case forfeiture of intellectual property rights, "raise[s] more serious questions and require[s] a clearer indication of causal connection between the conduct and creation or maintenance of the market power." *Id.* ¶ 653b at 98. Not surprisingly, even the *Microsoft* court, which found inference of causation to be appropriate under the circumstances there, cautioned that significant remedies may not be imposed where causation is merely inferred: Such remedies require "a clearer indication of a significant causal connection between the conduct and . . . the market power" and are not appropriate "[a]bsent some measure of confidence that there has been an *actual* loss to competition" resulting from the challenged conduct. *Microsoft*, 253 F.3d at 80 (emphasis added).

(4) Chairman Muris's Articles Do Not Support Complaint Counsel's Reliance On Inference

Similarly, Chairman Muris's writings do not support the notion of short-circuiting the usual requirement of proving anticompetitive effects in FTC cases. To the contrary, they criticize efforts to avoid such proof as "wrong on the law, wrong on policy, and wrong on the facts." Timothy J. Muris, *The FTC and the Law of Monopolization*, 67

ANTITRUST L. J. 693, 694 (2000).[81]

As Chairman Muris explained:

> "Recent Supreme Court pronouncements have confirmed that no matter how bad a firm's conduct is, or how injurious to rivals, there can be no Section 2 violation without injury to competition. . . . Both the history of Supreme Court cases, as well as an analysis of the weak empirical foundation of much of modern economic theory, suggest that so-called exclusionary conduct can be condemned as monopolistic only after a full analysis, including consideration of whether the practice in fact has an anticompetitive impact."[82]

These cautions against inference sound particularly loudly in a case like this one, in which the defendant's underlying conduct – nondisclosure of trade secrets – has competitive value and where the antitrust theories on which Complaint Counsel's case rest are novel and untested.[83]

2. Even If Complaint Counsel Had Proven That JEDEC Would Have Adopted A Different Standard, Complaint Counsel Still Failed To Prove That Rambus's Conduct Injured Competition

Even if Complaint Counsel had proven that JEDEC would have eschewed Rambus's technologies if Rambus had made the additional disclosures and that Rambus gained market power as a result of not having made the disclosures, they would still have failed to prove that Rambus's conduct injured competition within the meaning of the

[81] *See also*, Timothy J. Muris, *Anticompetitive Effects in Monopolization Cases: Reply*, 68 ANTITRUST L. J. 325, 327 (2000) (rejecting "claim that the government did not have the burden of demonstrating anticompetitive effects").

[82] *See also*, Muris, *Anticompetitive Effects*, at 329 (government's past record of condemning practices as anticompetitive "should also convince us to reject any attempt to make it easier for the government to win section 2 cases").

[83] It is noteworthy in this connection that the court in the *Microsoft* case condemned Microsoft's conduct only after concluding that it had no efficiency benefits whatsoever.

antitrust laws.

Complaint Counsel were required to prove injury to competition in the market as a whole. Ordinarily, proof that the defendant gained market power is sufficient for that purpose. But that is not sufficient here because, on Complaint Counsel's theory, the market is a winner-take-all market whose winner is determined by JEDEC. JEDEC is not a market, and its process is not a market process. *See* IDF 1039-47 (selection by JEDEC is neither necessary nor sufficient for market success). Therefore, before Complaint Counsel can turn a change in JEDEC's decision (and thus, on their theory, the market outcome) into injury to competition, it must show that the relevant market has in fact been injured.[84] That requires Complaint Counsel to show that the resulting outcome is worse than otherwise. This requires proof that the technologies that would have been chosen in the but for world were superior to Rambus's technologies.

The requisite injury to competition cannot be inferred simply from the fact – if it were a fact – that JEDEC would have chosen different technology. The antitrust laws are intended to promote "the welfare of the public." *Valley Drug Co. v. Geneva Pharms., Inc.*, 344 F.3d 1294, 1307 (11th Cir. 2003); *Olympia Equip.*, 797 F.2d at 375 ("the emphasis of antitrust policy [has] shifted from the protection of competition as a process of rivalry to the protection of competition as a means of promoting economic efficiency"). But organizations like JEDEC are private organizations whose rules reflect the interests of their members. There is no assurance that the interests of the firms that participate in the organization are aligned with the interests of the public as a whole.

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[84] *Compare Fishman v. Estate of Wirtz*, 807 F.2d 520 (7th Cir. 1986), where the plaintiff won a competition to control what the court characterized as "a natural monopoly," *id*. at 525, and "the defendants set out to destroy the plaintiffs' victory through anticompetitive acts." *Id*. There was no doubt in that case either that an alternative was in fact displaced by the defendant's wrongful conduct or that the displaced alternative had been determined *in the relevant market* to be the preferred and superior alternative.

Because standard setting organizations make choices directed at maximizing private interests rather than the interests of the public, conduct that alters those choices does not necessarily cause anticompetitive effects. *See* McAfee, Tr. 7536-37 (exclusion of inferior technology is not exclusionary). This is especially true if, as Complaint counsel argue, JEDEC did not seek the best technologies in cost/performance terms.

To prevail in this case, therefore, Complaint Counsel must prove that JEDEC would have adopted equal or superior, noninfringing alternatives if Rambus had made the additional disclosures.[85] The evidence shows, however, that Rambus's technologies were superior to the alternatives in cost/performance terms, even taking into account royalties charged by Rambus. IDF 1260-79, 1388-1401. Their inclusion in the JEDEC standard and their use by the industry thus benefited consumers and DRAM manufacturers and thereby enhanced "the welfare of the public" and promoted "economic efficiency" IDF 1401; s*ee also* IDF 1464, 1532, 1616.[86] And the royalty payments – which as explained are consistent with RAND – provide Rambus with the intended reward for its inventions.

Complaint Counsel attempt to elide their failure to prove harm to competition by arguing that JEDEC members considered certain "price-constraining substitutes" and that their consideration of those alternatives "should be determinative"

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[85] *Cf.* Muris, *The FTC and the Law of Monopolization*, 67 Antitrust L. J. 693, 719 (2000) ("consumers are harmed" when "the winner is not the best product available").

[86] Indeed, public welfare and economic efficiency are served by the use of Rambus's technologies, even if – contrary to the evidence in this case – the royalties exceed the extent to which those technologies are superior to the alternatives. The reason is this: From the perspective of "economic efficiency," a royalty payment is not a real cost because, unlike the cost of labor or raw materials, it does not use economic resources; it is just a transfer payment from the licensee to the licensor. *See* Teece & Sherry, *supra*, 87 MINN. L. REV. at 1931-33. While a royalty requirement does impose a *private* cost on DRAM manufacturers, overall social welfare is disserved by the use of inferior technologies, even if those technologies are royalty-free. *See id.*

with “no need to go further.”[87] CCAB 83. But the fact that JEDEC considered and rejected inferior alternatives of course does not prove injury to competition. Moreover, neither Complaint Counsel nor their economist ever defined in any meaningful way what “price constraining” means (IDF 1483-84 (“price constraining” not equivalent to an economic substitute)); on Complaint Counsel’s theory, an alternative could in fact constrain price only if there is *ex ante* bargaining, but that would not have happened; and this argument in any event shows neither that Rambus would have had less market power in the but for world nor that manufacturers or consumers would have been better off in that world.

Accordingly, even if Complaint Counsel had shown that JEDEC and the industry would have chosen different standards had Rambus made additional disclosures, Complaint Counsel would still not have proven the requisite injury to competition. To prove that Rambus’s failure to make the disclosures injured competition, Complaint Counsel had to show that Rambus’s conduct excluded superior technologies. Complaint Counsel have failed to prove that.

E. No Part Of The Remedy Complaint Counsel Seek Is Supported Legally Or By The Evidence

Complaint Counsel’s proposed remedy would preclude Rambus from (1) pursuing any legal action in which it claims that any person or entity is infringing, or has infringed, Rambus’s patents through the manufacture, sale or use of any JEDEC-compliant product; (2) pursuing any legal action in which it claims that any person or entity is infringing, or has infringed, Rambus’s foreign patents through the manufacture,

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[87] In a variation on this argument, Complaint Counsel charge that Judge McGuire was “obsess[ed]” with “objectively equal or superior to the selected technologies,” CCAB 91, and argue that determination of product superiority was “for markets, not judges, to make.” CCAB 92. This argument misses the point that this case, *by definition*, involves, not market determinations, but rather collective decision-making that is not constrained by ordinary market forces. *See* AAI Brief 3.

sale or use of any JEDEC-compliant product; and (3) collecting "fees, royalties or other payments" for the "manufacture, sale or use of any JEDEC-Compliant Product pursuant to any existing License Agreement." CCFF, Proposed Order ¶¶ II-VI.

1. Absent Proof That Rambus's Conduct Actually Caused Anticompetitive Effects, Complaint Counsel May Not Receive The Remedy They Seek

As a threshold matter – as set forth in Section III.D.b.(3) above – none of these remedies is available unless Complaint Counsel has proven both that Rambus engaged in exclusionary conduct and that such conduct *in fact* caused injury to competition. While "[t]he causal connection between conduct and power can be relatively modest when the only remedy sought is an injunction against continuation of that conduct," 3 ANTITRUST LAW, ¶ 650a(2)(A) at 67, relief that goes beyond an order to refrain from specified conduct and that targets the monopoly itself "raise[s] more serious questions and require[s] a clearer indication of causal connection between the conduct and creation or maintenance of the market power." *Id.* ¶ 653b at 98.

The remedies Complaint Counsel seek thus require "a clearer indication of a significant causal connection" and are not appropriate "[a]bsent some measure of confidence that there has been an *actual* loss to competition" resulting from the challenged conduct. *Microsoft*, 253 F.3d at 80 (emphasis added).

2. Complaint Counsel's Proposed Remedy Is Overly Broad And Unsupported

Even if there were evidence sufficient to show a causal connect between Rambus's conduct and injury to competition, Complaint Counsel's proposed remedy goes far beyond what is required to restore competition. Complaint Counsel ask the Commission to impose compulsory *royalty-free* licensing. Compulsory licensing, however, "is a rarity in our patent system." *Dawson Chemical Co. v. Rohm & Haas Co.*, 448 U.S. 176, 215 (1980). *Royalty-free* compulsory licensing is almost unheard of.[88] *See, e.g., United States v. National Lead Co.*, 332 U.S. 319, 338-49 (1947) (rejecting decree imposing the issuance of royalty-free patent licenses); *Hartford-Empire Co. v. United States*, 323 U.S. 386, 415 (1945) (holding that decree in an antitrust case compelling royalty-free licensing of valid patents would amount to forfeiture of defendants' property and that the decree should be modified to allow for reasonable royalties).[89] Indeed, Complaint Counsel in *VISX* candidly admitted that they could find no authority for the Commission's ability to impose such a remedy: "The Commission's ability to order that a presumptively valid patent not be enforced is unsettled. We are unaware of an antitrust court that has ordered that an antitrust defendant not enforce a valid patent." Complaint Counsel's Motion To Dismiss The Complaint, *In the Matter of VISX, Inc.*, Dkt. No. 9286 (filed December 1, 1999) (available at www.ftc.gov/os/adjpro/d286/index.htm), at 7 n.5.[90]

In their briefs below, Complaint Counsel did manage to find some ancient authority for their proposed remedy: a 1952 district court case and *dicta* in a Commission

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[88] Compulsory royalty-free licensing as a remedy is even controversial in the context of consent decrees. *See* William E. Kovacic, *Designing Antitrust Remedies for Dominant Firm Misconduct*, 31 CONN. L. REV. 1285, 1304-05 (1999) ("[Commentators] have argued that in several important instances compulsory licensing, while increasing entry, has forced U.S. firms to surrender their competitive advantage to foreign firms and diminished the capability of domestic industry.").

[89] That the proposed remedy is limited to present and future JEDEC-compliant SDRAM and DDR products (rather than all possible products) does not render the remedy proper. *See Hartford-Empire*, 323 U.S. at 418-19 (restricting decree to compulsory licensing on reasonable terms as well as to only specific products).

[90] Complaint Counsel could only reason by analogy that requiring licensing under "reasonable terms" might be supported: "A close analogy is cases decided under the essential facilities doctrine. Where a monopolist owner of an essential facility is found liable under section 2 of the Sherman Act, the remedy is an order requiring access on reasonable terms, not free access." *Id.*

opinion. Neither of these authorities, however, supports the imposition of royalty-free licensing in this case. In *United States v. General Electric Co.*, 115 F.Supp. 835 (D.N.J. 1952), the patent holder had "an arsenal of a huge body of patents that can easily overwhelm and defeat competition by small firms desiring to stay in or gain a foothold in the industry." *Id.* at 844. The court specifically found that royalty-free licensing was required on the grounds that "*any* licensing fees may prove an important factor in limiting or inhibiting the growth of competition" and that the patentee's competitors were "unequipped to engage in litigation." *Id.* (emphasis added).

The Commission's *dicta* cited by Complaint Counsel is likewise limited. In *In re American Cyanamid Co.*, 72 F.T.C. 623, 1967 LEXIS 43 (1967), the Commission ordered compulsory licensing at a 2.5% royalty rate but commented that "where the circumstances justify such relief, the Commission has the authority to require royalty free licensing." 1967 FTC LEXIS 43 at *151-52. The sole authority cited by the Commission, however, suggested that this remedy be available only in limited circumstances not found here: "The one type of case in which such an order would seem necessary would be the rare situation where the holder of the patent was so powerful in comparison with his competitors that forcing them to pay any royalties would keep them out altogether." Note, *Improperly Procured Patents*: *FTC Jurisdiction and Remedial Power*, 77 HARV. L. REV. 1505, 1519 (1964).

There is no evidence that "any royalty" for Rambus's patents would eliminate competition. To the contrary, the evidence shows that the DRAM manufacturers that have taken licenses to Rambus's patents compete vigorously. *See* CCFF 1999-2013 (listing licensees). Nor are the DRAM manufacturers "small firms" who are "unequipped to engage in litigation." The unlicensed manufacturers – Micron, Infineon, and Hynix – have demonstrated both their ability and their willingness to litigate against Rambus.

At the most, compulsory licensing at reasonable and non-discriminatory royalty rates could be a permissible remedy in this case. *See United States v. Glaxo Group, Ltd.*, 410 U.S. 52, 59 (1973) (referring to "reasonable-royalty licensing" as a "well-established form[] of relief when necessary to an effective remedy" in an antitrust case).[91] If the Commission were to impose this requirement, it would need to determine an appropriate royalty rate.

What would be a reasonable and nondiscriminatory rate, however, has already been answered. As Judge McGuire found, the evidence shows that Rambus's existing royalty rates meet this criterion. IDF 1536-81. The evidence supporting this conclusion is overwhelming. *See* Section II.G.3.c. Moreover, it stands unrebutted; Complaint Counsel did not offer any testimony from their economist or any other witness as to what would be a reasonable royalty rate for Rambus's patents.[92] And on appeal, Complaint Counsel did not challenge Judge McGuire's findings on this issue. Thus, the evidence could at most support a Commission order mandating that Rambus continue to offer licenses on the existing terms.

Beyond that, Complaint Counsel's proposed remedy is unsupported. First, by precluding Rambus from pursuing damages for past infringement, the proposed remedy effectively seeks disgorgement of monies Rambus is owed. But the Commission may pursue that type of remedy only through litigation in district court. *See FTC v. Mylan Lab., Inc.*, 62 F.Supp.2d 25, 36-37 (D.D.C. 1999).

Second, the scope of the proposed remedy is overly broad. It would apply to *all* of Rambus's patents with a priority date prior to June 17, 1996, not just those patents for which Complaint Counsel presented evidence. It would also apply to all

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[91] This conclusion also follows because royalty-free licensing is a form of forfeiture, and the Commission is precluded from effecting a forfeiture. *FTC v. Ruberoid Co.*, 343 U.S. 470, 473 (1952).

[92] Indeed, their economist admitted that he had no expertise in how to determine a reasonable royalty rate. McAfee, Tr. 7737.

future versions of the JEDEC SDRAM and DDR standards, thereby extending to technologies never in previous standards. The remedy would therefore apply to patents with respect to which there is no evidence that Rambus did anything wrong and no evidence that Rambus has gained monopoly power. The courts, however, have rejected the notion that an antitrust violation with respect to one patent would allow a court to enjoin the enforcement of a related patent: "It is fundamental that for a patent to be unenforceable because of unclean hands (misuse or *antitrust violations*) the *patent in suit* must be shown to have been misused." *Western Electric Co. v. Milgo Electronic Corp.*, 450 F.Supp. 835, 839 (S.D. Fla. 1978) (emphasis added).

Finally, the scope of the proposed remedy asks the Commission to go where there courts have refused: enjoining the enforcement of foreign patents based on conduct related to U.S. patents. As the courts have recognized, "patents granted by different countries represent separate and distinct legal rights which should be controlled by the country granting the right." *Western Electric,* 450 F.Supp. at 838 (citing *Boesch v. Graff,* 133 U.S. 697 (1890)); *see also Medtronic, Inc. v. Catalyst Research Corp.*, 518 F.Supp. 946, 955 (D. Minn. 1981) ("[f]oreign patents, despite covering precisely the same product as an American patent, present separate and independent rights"). The courts have therefore refused to enjoin the enforcement of foreign patent rights based on the misuse or invalidity of related U.S. patents. *See, e.g., Stein Associates, Inc. v. Heat & Control, Inc.*, 748 F.2d 653, 658 (Fed. Cir. 1984) (affirming refusal to enjoin enforcement of British patent rights because "[o]nly a British court, applying British law, can determine validity and infringement of British patents"); *Western Electric*, 450 F.Supp. at 839.

IV. CONCLUSION

For all of the foregoing reasons, and for the reasons set out in Rambus's Proposed Findings, Complaint Counsel did not satisfy their burden of proof on the essential elements of their claims, and their claims are legally deficient. The Commission should affirm Judge McGuire's Initial Decision in its entirety.

CROSS APPEAL

JUDGE MCGUIRE ERRED IN NOT REQUIRING COMPLAINT COUNSEL TO MEET A CLEAR AND CONVINCING BURDEN OF PROOF AS TO CERTAIN ISSUES.

Under *Steadman v. SEC*, 450 U.S. 91 (1981), the standard of proof applicable in most formal adjudicative agency proceedings is the preponderance of evidence standard. *See, e.g.*, *In re Advetist Health System/West*, 117 F.T.C. 224, 297 (1994). As Rambus contended below, however, Complaint Counsel in this case should be required to meet a clear and convincing burden of proof with respect to the essential elements of their claims. In his Initial Decision, Judge McGuire disagreed at least in part and held that "the government's case in this proceeding shall be adjudicated under the preponderance of evidence standard." IDC 243. Rambus cross-appeals from that determination.[93]

The courts have long recognized an inherent tension between the patent and antitrust laws. Pursuant to Article 1 of the Constitution, a patent confers a legal monopoly for a limited period of time. In return for a patent, the patentee must fully disclose the patented invention or process, and after the expiration of the statutory period, the patentee loses all exclusive rights to the invention. *See generally Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480-81 (1974). As the Court of Appeals for the Federal

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[93] Rambus's Cross-Appeal is based upon, and expressly incorporates, the Statement of Facts set out in Section II. As is made clear from that Statement of Facts and from the arguments presented in this brief, and as Judge McGuire found, Complaint Counsel have failed to meet even the preponderance burden of proof with respect to the essential elements of their claims. The Commission therefore need reach the burden of proof issue presented by Rambus's cross-appeal only if it decides not to affirm Judge McGuire under the preponderance standard.

Circuit has explained, this system "serves a very positive function in our system of competition, i.e., 'the encouragement of investment based risk,'" which in turn "'encourages innovation and its fruits: new jobs and new industries, new consumer goods and trade benefits.'" *Loctite Corp. v. Ultraseal, Ltd.*, 781 F.2d 861, 876-77 (Fed. Cir. 1985) (citation omitted).

Precisely because a patent confers exclusive rights, a patentee that attempts to enforce a patent is often faced with threats of antitrust liability. Most commonly, the defendant accuses the patentee of obtaining market power improperly by withholding material information from the patent office in the course of obtaining the patent. Such claims are called "*Walker Process*" claims, after the Supreme Court's decision in *Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*, 382 U.S. 172 (1965), which allowed the fraudulent procurement of a patent to form the basis for an antitrust claim under certain circumstances.

The courts have consistently required parties asserting *Walker Process* claims to prove the elements of fraud with "clear and convincing" evidence. *See, e.g.*, *Loctite Corp.*, 781 F.2d at 876-7. They have done so not simply because many, if not most, states require clear and convincing evidence of common law fraud. *See generally* 9 Wigmore, EVIDENCE (Chadbourn rev. 1981), ¶ 2498 at p. 424. The courts have required the heightened burden of proof for substantial public policy reasons, in recognition of the statutory basis of a patent's status and to "prevent frustration of patent law by the long reach of antitrust law." *Handgards, Inc. v. Ethicon, Inc.*, 601 F.2d 986, 996 (9th Cir. 1979) (discussing *Walker Process* and holding that the "clear and convincing" standard that had been applied in such cases would also apply to antitrust claims based upon the bad faith enforcement of a patent); *see also Zenith Elecs. Corp. v. Exzec, Inc.*, 182 F.3d 1340, 1352 (Fed. Cir. 1999) (observing that a "suitable accommodation" between the patent and antitrust laws "has been achieved by erecting certain barriers to antitrust suits against a patentee attempting to enforce its patent").

As Complaint Counsel pointed out below, this is not a private antitrust suit brought in federal court, and the Administrative Procedure Act has been held to require that an administrative agency need satisfy only a preponderance of the evidence burden in most agency proceedings. *See Steadman*, 450 U.S. at 95. This Commission, however, has acknowledged the tension between the interests served by the patent and antitrust laws and has expressly adopted the "clear and convincing" standard of proof in Section 5 cases based on the allegedly fraudulent procurement of a patent. As early as the 1960's, in the *American Cyanamid* cases, the Commission observed that "[w]here fraud in the procurement of a patent has been alleged in infringement suits and cancellation proceedings, the courts have stated that it must be established by clear and convincing evidence that the false or misleading statement was made (or information was withheld) deliberately and with intent to deceive. Also, of course, the information that is misrepresented or withheld must be material." *In the Matter of American Cyanamid Co.*, 63 F.T.C. 1747, 1963, FTC LEXIS 77 at *224-5 (1963). Upon remand from the Sixth Circuit, the Commission again employed the "clear and convincing" standard in finding that American Cyanamid and Pfizer had committed fraud upon the patent office. See *In the Matter of American Cyanamid Co.*, 72 F.T.C. 623, 1967 FTC Lexis 43 at *138-*145 (1967).[94]

More recently, in *In the Matter of VISX, Inc.*, Docket No. 9286, the Commission alleged that VISX, Inc. had fraudulently procured a patent covering certain surgical procedures. The Commission alleged, as an alternative, that VISX had engaged in "inequitable conduct" before the Patent Office that justified an order barring further enforcement of the patent. In a lengthy Initial Decision, Judge Levin held that:

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[94] The Commission held, for example, that "the evidence is clear and convincing that Cyanamid deliberately withheld from the Patent Office information which it knew or had reason to believe was relevant to "the PTO's validity determination. *Id*. at *145.

> (1) an antitrust claim based upon the allegedly fraudulent procurement of a patent requires, in part, that the Commission present "[c]lear and convincing evidence of an intent to deceive the examiner and reliance must be adduced"; and
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> (2) to establish inequitable conduct, "clear and convincing evidence must demonstrate both the materiality of the reference . . . and a deceptive intent in withholding the reference. . . ."

Initial Decision, *In the Matter of VISX, Inc.*, Dkt. No. 9286 (filed May 27, 1999) (available at www.ftc.gov/os/adjpro/d9286/index.htm) ("VISX Initial Decision"), pp. 111, 139. Complaint Counsel conceded the correctness of this approach, noting in their Post-Hearing Brief that to find either fraud or inequitable conduct, "[m]ateriality, intent and 'but for' all must be proved by clear and convincing evidence, evidence 'which proves in the mind of the trier of fact an abiding conviction that the truth of [the] factual contentions [is] highly probable.'" Complaint Counsel's Post-Hearing Brief, *In the Matter of VISX, Inc.*, Dkt. No. 9286 (filed April 7, 1999), p. 9 n.26 (citations omitted) (available in Commission file).

After reviewing the evidence, Judge Levin dismissed the fraud and inequitable conduct claims. As he explained:

> The patent grant allows the patentee to exclude competition in the use of the patented invention, and the absence of clear and convincing evidence of concealment or omission of the prior art with intent to deceive necessarily strips complaint charges of monopolization, attempted monopolization, and unfair competition of all foundation and support. Absent fraud or inequitable conduct, the other elements of the violations alleged in the complaint are not material under Rule 3.51(c)(1). Since Complaint Counsel have failed to adduce clear and convincing evidence that prior art was either withheld or omitted with intent to deceive the PTO, a Section 5 violation cannot, as a matter of law, be sustained against VISX on *Walker Process* or *American Cyanamid* grounds. Accordingly, Count 3 of the complaint must be dismissed.

VISX Initial Decision, p. 145.[95]

Complaint Counsel argued below that they had not asserted a *Walker Process* claim, and that *American Cyanamid* and *VISX* were not applicable here. There are, however, substantial similarities between the claims asserted in *Walker Process, American Cyanamid* and *VISX* and the claims asserted in the Complaint, and all of the policy considerations that required a "clear and convincing" burden of proof in those cases apply with equal force here. Here, as in those cases, the plaintiff alleged that the patentee's failure to disclose material information resulted in its obtaining monopoly power in a market that it otherwise would not have achieved. Here, as in those cases, the plaintiff alleged that the patentee's use of the courts to enforce its patents was part of an "anticompetitive scheme" to monopolize a market. The crux of the anticompetitive conduct alleged here – the failure to disclose material information and the bad faith enforcement of patents against manufacturers practicing JEDEC standards – is thus identical to the conduct that was held to the clear and convincing standard of proof in the *Walker Process* line of cases.

In his Initial Decision, Judge McGuire saw a distinction between this case and the *Walker Process* line of cases, holding that "[t]here is a fundamental difference between the failure to disclose material information to the Patent Office, to whom a duty of candor is owed, and the failure to disclose information *to competitors*, alleged here." IDC 242 (emphasis added). Judge McGuire overlooked the fact that Complaint Counsel had alleged that Rambus did indeed have a "duty to candor" towards its competitors that required it to "disclose information to" those competitors. Complaint Counsel continue to make that argument on appeal. *See* CCAB 42 (arguing that Rambus's failure to

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[95] The Commission subsequently granted Complaint Counsel's motion to dismiss an appeal from Judge Levin's Initial Decision. *See* Order Reopening The Record and Dismissing The Complaint, *In the Matter of VISX, Inc.*, Dkt. No. 9286 (filed February 9, 2001) (available at www.ftc.gov/os/caselist/d9286.htm).

disclose patent-related information to its competitors violated "the implied duty of good faith that arises from any joint undertaking such as cooperative standard-setting."). The need for a heightened burden of proof is even *more* pronounced where the Government seeks to impose antitrust liability not because of a violation of an unambiguous PTO rule, as in the *Walker Process* cases, but because of a violation of some amorphous, untested "duty of good faith," as is the case here.

Complaint Counsel should also be held to a heightened burden of proof in this case because of the nature of the remedy sought. As the Patent and Trademark Office has acknowledged, the inventions at issue here sprang from the creative genius of two men, who were awarded patent rights by the Government for a limited period of time. As a consequence of their efforts, these inventors have a constitutional and statutory right to be paid royalties for the use of their inventions by others. The courts have recognized this right to be a fundamental part of the bargain between the Government and an inventor. When an inventor discloses the invention to the Government, he or she agrees that after the patent term expires, the invention can be used by everyone for free. To induce inventors to agree to this donation, the Government awards the inventor the right during the patent term to be paid royalties for others' use of the invention. The Government also provides the inventor, in exchange for the inventor's donation, the right of access to the courts when an infringer will not pay royalties. *See generally CVD, Inc. v. Raytheon Co.*, 769 F.2d 842, 849 (1st Cir. 1985).

The courts have acknowledged that antitrust suits against patentees that seek to strip away this fundamental "benefit of the bargain" between the Government and the inventor threaten the system of incentives that underlie the patent system. As a result, the "courts have protected the federal interests in patent law enforcement and the free access to the courts by requiring, in addition to the other necessary elements of an antitrust claim, 'clear and convincing evidence' of fraud in asserting or pursuing patent infringement claims." *Id*. As noted above, Complaint Counsel seek to strip Rambus of its right to recover for the use of its inventions and its right to have access to the courts to obtain judicial relief against infringers. As a consequence, Complaint Counsel must be required to meet a heightened burden of proof.[96]

A heightened burden of proof is also appropriate here because of the strong public policy considerations arising from the importance of standard-setting organizations in today's high-tech economy. The risks associated with participation in standards-setting must not be so great that innovators are deterred from participating by fear that a mistake in judgment, or an "after-the-fact morphing of a vague, loosely defined policy," could lead to forfeiture of valuable intellectual property. *Infineon*, 318 F.3d at 1102 n.10. See also *Inquiry Into Three Mile Island Unit 2 Leak Rate Data Falsification*, 1992 WL 910, *14 (N.R.C. 1992) (where an agency's examination of events comes well after the events transpired, and the resolution of important issues "depends on strained and faded memories, it would be unfair to find a person guilty of dishonest or fraudulent conduct on a mere preponderance of the evidence.").

In sum, given the conflicting statutory interests involved, given the nature of the claims alleged and the evidence offered to support and rebut them, and given the fundamental nature of the rights that would be lost were the proposed remedy ever implemented, Complaint Counsel should bear the burden of proving the essential elements of their claims by clear and convincing evidence.

[96] Judge McGuire held that because of his determination of liability issues, he need not reach the question of whether the remedy sought by Complaint Counsel would require the imposition of a clear and convincing burden of proof. IDC 243.

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