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DEPARTMENT: MICRO LAW

A Review of *Wisconsin Alumni Research Foundation v. Apple*—Part VI

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Part I of this series introduced the *Wisconsin Alumni Research Foundation v. Apple* cases and described the asserted patent (U.S. Patent No. 5,781,752). That article also summarized some recent large verdicts for patents asserted by academic institutions and provided several reasons why this series may be of interest to the readership of *IEEE Micro*, most notably because the inventors are well known and several well-known computer architects worked as experts on this case. Part II described the complaints; namely, it described the plaintiff, Wisconsin Alumni Research Foundation ("WARF"), the inventors, and WARF's allegations as to how the Apple's products infringed WARF's patent. Part III described Apple's answer to the allegations in WARF's complaint, Apple's counterclaims, and WARF's response to those counterclaims. Part IV examined Apple's allegation of inequitable conduct by the inventors, a technical analysis of that allegation, and Judge Conley's legal analysis of the sufficiency of Apple's allegations.

HEARING FOR WARF'S MOTION TO COMPEL

Part V reviewed WARF's motion to compel Apple to produce an executable version of its A6, A7, and A8 processor (hereinafter "Accused Products") simulators.[a] WARF requested that the court order Apple to either produce an executable version of the simulator on a standalone laptop or allow WARF to use the simulator in its native environment on the Apple servers (hereinafter "native execution").

Magistrate Judge Crocker (hereinafter "Judge Crocker") held a telephonic hearing on 31 October 2014 for this motion and another motion to compel by WARF (see *Wis. Alumni Rsch. Found. v. Apple, Inc.*[1]). At that hearing, Judge Crocker denied both motions to compel, but with "one very small exception" for the second motion to compel, and orally provided his reasoning during the hearing. The redacted version of the hearing transcript was not publicly available until after the publication date of Part V.

> *JUDGE CROCKER FIRST STATED THAT HE THOUGHT THAT, BASED ON THEN-APPLE EMPLOYEE PETER BANNON'S SWORN DECLARATION, REQUIRING APPLE TO PORT AN EXECUTABLE VERSION OF THE SIMULATOR FROM A SERVER ENVIRONMENT TO A STANDALONE LAPTOP WAS TOO HIGH OF A BURDEN FOR APPLE.*

In evaluating a motion to compel, courts weigh the relevance of producing the requested item versus the burden to produce it. Judge Crocker first stated that he thought that, based on then-Apple employee Peter Bannon's sworn declaration, requiring Apple to port an executable version of the simulator from a server environment to a standalone laptop was too high of a burden for Apple (see page 4 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]).

With respect to the native execution option, Judge Crocker stated that because production of the simulator was a damages issue (WARF wanted to use the simulator to measure the benefit of the patent in order to calculate the damages through Apple's alleged infringement of the patent), there was no need for him

[a]A motion to compel is a request by a party (e.g., WARF) to the court to order the opposing party (e.g., Apple) to do something that the moving party requests (e.g., produce an executable version of a simulator).

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to order Apple to produce the simulator immediately as the damages analysis would not occur until the following year (see pages 4–5 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]).

WARF's counsel informed Judge Crocker that while Apple had made the source code for the simulator available for review, reviewing the simulator source for the Accused Products had "minimal probative value" and that WARF needed to be able to run simulations (see page 6 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]).

Judge Crocker asked WARF's counsel what simulations WARF needed to run (see page 7 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). WARF's counsel said they "have a fairly good idea of the types of simulations[b] we would want to run. We would have to inspect the actual software to get an idea of how to run them" (see page 7 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). When asked how many simulations WARF thought it needed to run, WARF's counsel that it was "[d]ifficult to say[,] [m]aybe a dozen[,]" but it would not be "anything on the magnitude of the [redacted] that we did not know existed until Apple's opposition to the motion" (see pages 7 to 8 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). To the extent that what was redacted out was a number, it is very interesting that Apple believed that the number of simulations or configurations was confidential information that required redactions. It is difficult to imagine how the number of potential simulations WARF needed or planned to run in the context of litigation is somehow confidential information that should be redacted out to protect Apple. In any event, WARF's point is that it believed the burden on Apple was merely a dozen simulations, which appears to be substantially less than the number of simulations Apple said WARF would likely run.

When Judge Crocker asked WARF's counsel whether they were able to provide a plan of simulations, WARF's counsel said that they were not able to do so given that they lacked some information from Apple (see pages 7 to 8 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). Unfortunately, the information that WARF said it needed was redacted out (see pages 7 to 8 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]).

Judge Crocker appeared to say that the simulations took a long time, but that it was possible to "compress" (also described as "condense") the simulation time, but he did not elaborate if that meant sampling, fast-forwarding/reduced detail execution, truncated execution, reduced benchmarks, etc. (see page 8 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). One obvious approach to reduce the number of simulations is to simulate a subset of the traces. But both sides would likely disagree what subset of traces should be simulated, with WARF likely to advocate for memory-bound traces and Apple for CPU-bound traces. This disagreement might cause one or both parties to file what is called a *Daubert* motion. Under *Daubert v. Merrell Dow Pharms. Inc.*, the Supreme Court held that the trial judge has the responsibility to filter out testimony from expert witnesses that is based on unreliable methodology or not based on scientific principles. If the judge finds that an expert's testimony is unreliable, the judge can grant the *Daubert* motion, which means that the expert witness will be prevented from testifying at trial on some or all of what the expert provided opinions for. In this case, if WARF only used memory-bound workloads to evaluate the speedup due to the patent, Apple could file a *Daubert* motion that would argue that WARF's methodology is unreliable because it cherry picks workloads in order to inflate the apparent performance. If the judge granted the motion and excluded all simulator-based performance data, then WARF's expert could not present that data to the jury, which would undermine the entire purpose of WARF filing a motion to compel to require Apple to produce an executable version of its simulator.

Judge Crocker then asked Apple's counsel whether a face-to-face meeting between Apple's engineers and WARF's expert would be beneficial to helping WARF's expert understand the simulator and how to run the simulator (see page 12 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). Apple's counsel replied that they were concerned this meeting would be "the equivalent of a deposition and endless questions and it wouldn't be constrained in any way with counsel for WARF kind of having at one of our engineers for unclear what amount of time, unclear what boundaries, unclear exactly what would happen" (see page 12 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]).

Judge Crocker then asked Apple's counsel if WARF requested a specific simulation, would Apple "categorically reject" that proposal or would they consider it (see page 13 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2])? Apple's counsel said it would be willing to consider the request, but he also made other four points (see page 14 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). The first point Apple made was that if WARF asked for

[b]Both WARF and Apple appear to agree on what a "simulation" entailed. While they did not expressly describe what that meant, it appears to be more than running a single processor configuration for a single trace, but may encompass running all traces for a particular Accused Product, e.g., A6.

a specific simulation, Apple would be willing to talk to its own engineers to "get answers to questions, find out what's in the realm of doable, and also find out what the impact is in terms of burden" (see page 14 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). The second point was that even Apple's own engineers need special training to use the simulator (see page 14 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). The third point was that Apple would need to train WARF's experts, and "also set up and configure the test, oversee the test, and on top of that … [redacted] is a constrained resource" (see page 14 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). Apple's counsel said this had never been done before and "[i]t both gets in the way of engineer time to oversee it and gets in the way of Apple's other daily work" (see page 15 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]).

Apple's last point was that it had "produced all of the existing evidence about the simulations that we ran at the time, including output files, simulation results, email describing those simulation results. And so I think the preexisting tests before the litigation tells you I think what you need to know from the simulations" (see page 15 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). Even after Apple produced this information, WARF may have believed that that information was not adequate for it to measure the speedup due to the patent. For example, the prelitigation simulation results may not have been for the Accused Products, but were generated using an earlier unaccused product as a proof-of-concept, or only for some Accused Products, i.e., the older Accused Products. Or, even if the prelitigation simulation results were from a simulator for the Accused Products, the simulator may have been an older, less accurate simulator. The processor configuration used for the prelitigation simulation results may differ than the actual configurations for the Accused Products. In short, there may be some differences, whether small or large, between the configurations used to generate the prelitigation simulation results and the Accused Products, such that WARF may have been concerned that Apple would argue to the jury that the prelitigation simulation results Apple produced were not indicative of the actual speedup due to the patent.

In addition, the prelitigation simulation results may have used a nonrepresentative set of workloads; may have used compressed or condensed mode, which could have introduced some errors; or were missing some configurations, workloads, etc., which might have introduced some errors and/or made it more difficult to determine trends and/or make apples-to-apples comparisons.

Even if Apple's previous prelitigation simulation results were complete, WARF may have wanted to run their own simulations in order to try to increase the speedup due to the patent, or to generate enough data in order to build an analytical model of performance that it could use to estimate the performance of future processors or future configurations, etc.

Apple never appeared to suggest that, as an alternative to producing an executable version of the simulator (which it also argued was not relevant and was an undue burden), that WARF should run the workloads on actual silicon of the Accused Products. This tends to indicate that there was no way to turn off the data-dependency prediction feature in the Accused Products, and thus there would be no way to measure the speedup of the patent.

In response to Apple's points, Judge Crocker clarified that his question assumed that Apple's engineers—and not WARF's experts—would run the simulations on Apple's servers.

In conclusion, Judge Crocker essentially denied WARF's motion to compel as being premature (as it would not be needed for damages calculation until the following year) and because WARF needed additional information in order to determine what simulations it believed it needed. With respect to the latter, Judge Crocker ordered the parties to "meet-and-confer," i.e., discuss, "in whatever fashion would be useful" in order to "forestall future trouble" (see page 16 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]). Judge Crocker also said that he was "not going to require that Apple make an engineer available on-site for basically an unrecorded freeform deposition" where the engineer would sit down with WARF's expert and attorney to answer questions about the simulators (see page 17 of *Wis. Alumni Rsch. Found. v. Apple, Inc.*[2]).

With respect to Judge Crocker's decisions, I agree with him that this motion may be premature and that it may be helpful for the parties to meet-and-confer so that WARF could better understand the simulator and other related issues, which would allow WARF to put together a simulation plan. A simulation plan would help Judge Crocker decide what the actual burden was on Apple. For example, if WARF was correct and it was just a dozen simulations that could be run in compressed or condensed mode, then the burden may be minimal. But if Apple is correct and WARF needed significantly more simulations, the burden would be concomitantly higher. With respect to relevance, it appears that Judge Crocker believed that the production of the executable simulation was relevant.

But based on the parties' briefs and the unredacted portions of the hearing transcript, I believe that Judge

Crocker may have underestimated how important and useful simulation results are to engineers. While the redacted portions of the transcript may reveal more specific information, it seemed like Apple's arguments that it was an undue burden for WARF to run simulations on their servers seem to be somewhat inflated.

BASED ON THE PARTIES' BRIEFS AND THE UNREDACTED PORTIONS OF THE HEARING TRANSCRIPT, I BELIEVE THAT JUDGE CROCKER MAY HAVE UNDERESTIMATED HOW IMPORTANT AND USEFUL SIMULATION RESULTS ARE TO ENGINEERS.

Or that while the number of simulations may have seemed like a large number, compared to the types of simulations Apple runs in the ordinary course of business, that number of simulations may have been reasonable, if not relatively small.

Finally, even if Judge Crocker agreed with my analysis that the burden was not undue and ordered Apple to produce the simulator, that does not ensure that WARF's experts would be able to present these simulation results to the jury. Rather, Apple could file a *Daubert* motion that WARF's use of those simulation results in its damages analysis had methodological flaws, etc., and the court exclude both the simulation results and the damages estimates based on those simulation results by granting the *Daubert* motion at that time.

The next article in this series will continue to examine what happened in this case.

REFERENCES

1. Wis. Alumni Res. Found. v. Apple Inc., No. 3:14-cv-00062, ECF No. 71 (W.D. Wis., Oct. 31, 2014).
2. Wis. Alumni Res. Found. v. Apple Inc., No. 3:14-cv-00062, ECF No. 832 (W.D. Wis., Aug. 11, 2025).

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