

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

ENTROPIC COMMUNICATIONS, LLC,
Patent Owner.

Case IPR2024-00446
Patent 8,223,775

PATENT OWNER'S REQUEST FOR DIRECTOR REVIEW

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I. INTRODUCTION

Congress, the courts, and the Office have set clear rules to ensure that IPRs are decided fairly and efficiently. The petitioner must prove invalidity in the petition, not later; new reply arguments and evidence are barred; and the Board must confront the patent owner's contrary arguments and evidence before canceling claims. These are not technicalities—they are the rules that protect the integrity of the process and ensure just results. The Final Written Decision is a paradigmatic example of the unfair and unlawful outcome that results when these foundational rules are broken, warranting review and reversal.

Here, the Board found that the Petition's theory failed but nevertheless invalidated the claims. The claims require a “cable modem engine including a DOCSIS controller.”¹ *See* Ex. 1001, cl. 18. Petitioner's only argument that Rabenko's voice and data processor (“VDP”) is a “DOCSIS controller” was that it “process[es] and transport[s] voice over packet based networks.” Pet., 31. The Board rightly rejected this argument, “agree[ing]” with Patent Owner that such actions did “not appear to implicate DOCSIS.” FWD, 17. Having found that Petitioner failed to prove invalidity, that should have been the end of the case.

¹ “DOCSIS” refers to Data Over Cable Service Interface Specification standard for transmitting high bandwidth data over an existing cable television system.

Instead, the Board invalidated the claims based upon untimely reply arguments and evidence that should not have been considered. The new arguments were, moreover, irreconcilable with the Petition’s theory. The Petition relied on Rabenko’s embodiment wherein the “proxy gateway[’s]” cable modem functions are “*implemented by [the MIPS] core 228.*” Pet., 25. The Reply abandoned that embodiment in favor of a different one wherein the “proxy gateway functions” are “*implemented in the voice and data processor.*” Reply, 7. Based upon this shift, Petitioner argued the VDP included the MTA call client—which was not mentioned in the Petition—to argue the VDP was a DOCSIS controller. *Id.*, 7-8. The Board adopted Petitioner’s untimely theory, dismissing the “inconsistency” as “immaterial” (FWD, 18)—even though it was the very basis for invalidation—without ever addressing why these untimely arguments were considered at all.

Compounding the error, the Board adopted these untimely, inconsistent arguments while ignoring compelling arguments and evidence to the contrary. Patent Owner presented un rebutted evidence that Rabenko’s VDP is a voice DSP, a critical fact because the ’775 patent expressly distinguishes its DOCSIS controller from its voice DSP and further places its voice DSP outside of the CME altogether. The Board, however, ignored this evidence in finding Rabenko’s voice DSP (the VDP) to be a DOCSIS controller and a part of an alleged CME.

The Board also ignored that Rabenko’s Figure 5b—the figure Petitioner

relied upon—proves that the MTA call client is separate and distinct from the voice DSP (*i.e.*, the VDP), not a part of it. Similarly, the Board ignored Rabenko’s own statements indicating that the MTA call client is a part of the MIPS core (rather than the VDP) and far from being a part of the VDP, the MTA call client controls the VDP. Additionally, the Board’s decision rested upon the misapprehension that the entirety of Rabenko’s applications layer—an abstract high-level systemwide software layer—was implemented by Rabenko’s VDP.

Even if all of that could be overlooked, the FWD should be reviewed and reversed because it is based upon a clear misreading of the claims. The claims require that the “cable modem functions performed by the cable modem engine *are completely partitioned* from the home networking functions performed by the data networking engine.” *See, e.g.*, Ex. 1001, cl. 18. The “complete[] partition[ing]” of the cable modem functions of the CME and home networking functions of the DNE was a major focus of Patent Owner’s briefing and argument. And yet, in finding that the claimed DNE and CME are disclosed by Rabenko, the Board errantly rejected Patent Owner’s arguments as “not persuasive ... because the claims do not recite ‘partitioning.’” FWD, 24-25. Claims should not be invalidated based upon such clear error.

Here, where the Petition’s theory failed, an untimely reply theory was considered without explanation and without consideration of critical contrary

arguments and evidence, and the claims were flat out misread, review and reversal are clearly warranted.

II. THE BOARD ERRED BY INVALIDATING THE CLAIMS BASED UPON UNTIMELY ARGUMENTS, IGNORING PATENT OWNER’S ARGUMENTS, AND MISREADING THE CLAIMS.

Director Review should be granted and the FWD reversed because the Board (A) failed to reject the grounds after rejecting Petitioner’s core theory; (B) relied upon reply-stage arguments that were untimely and inconsistent with the Petition; (C) ignored unrebutted evidence showing that Rabenko’s VDP is a voice DSP, not a DOCSIS controller in a CME, and that the MTA call client is not a part of the VDP; (D) misapprehended the relationship between Rabenko’s proxy gateway, applications layer, and VDP; and (E) committed clear legal error by misreading the claims and disregarding the “completely partitioned” limitation.

A. Under Governing Precedent, The FWD’s Finding That The Petition’s Theory Failed Should Have Been Dispositive.

The FWD should be reversed because the Board rejected the Petition’s argument that Rabenko’s VDP is the claimed “DOCSIS controller.” That conclusion required the Board to reject the Petition’s grounds.

Each of the claims requires a “cable modem engine including a DOCSIS controller.” Petitioner argued that Rabenko’s VDP is a DOCSIS controller because it “is used for processing and transporting voice over packet based

networks.” Pet., 31; FWD, 16. But, as Patent Owner explained, processing and transporting voice over packet based networks had nothing to do with DOCSIS. POR, 15-17. The Board “agree[d]” with Patent Owner, rejecting the Petition’s theory, and finding that such activities “do[] not appear to implicate DOCSIS, as [Rabenko] describes only processing the signal and converting it into an internal (*i.e.*, not DOCSIS) packet format.” FWD, 16-17.

This should have ended the case in Patent Owner’s favor. Under governing law, “the expedited nature of IPRs bring with it an *obligation for petitioners to make their case in their petition* to institute.” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016); Ex. 2016, 6-16. Having failed to so make its case, the Petition’s grounds had to be rejected. The Board’s failure to follow that precedent is sufficient reason for review and reversal.

B. The Prevailing Reply-Stage Theory Was Untimely And Flatly Inconsistent With The Petition’s Argument.

The FWD should also be reversed because it improperly invalidated the claims based upon untimely reply arguments, all resting upon a pivotal new argument that was inconsistent with the Petition’s theory.

In the Petition, Petitioner relied upon Rabenko’s embodiment wherein the “[c]able modem functions implemented by *proxy gateway 142 would be implemented by [MIPS] core 228* using software.” Pet., 25. In the Reply,

however, Petitioner switched course, relying upon the “proxy gateway functions [being] *implemented in the voice and data processor*’ and *can include MTA call client 520*.” Reply, 7. By shifting the proxy gateway functions from the MIPS core to the VDP, Petitioner for the first time argued that the “MTA call client”—something never even mentioned in the Petition—was part of the VDP. These new arguments were pivotal; the Board found the VDP to be a DOCSIS controller on the basis that it supposedly included the MTA call client. *See* FWD, 17.

Patent Owner explained that these new arguments were untimely and inconsistent, citing Federal Circuit precedent holding that “[s]hifting arguments” in this fashion “is foreclosed by statute, our precedent, and Board guidelines.” *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017); Sur-Reply, 12-13; Ex. 2016, 32-34. The Office’s own guidance is equally clear: “a reply ... that raises a new issue or belatedly presents evidence may not be considered.” CTPG, 74 (Nov. 2019). Yet the FWD ignored this precedent and provided no rationale for permitting Petitioner’s new theories.

Instead, the Board excused “any inconsistency in the Petition” to be “immaterial to the analysis” allegedly because implementing the proxy gateway in

the MIPS core was not needed to satisfy any claim limitation. FWD, 18.² But, Petitioner made a strategic choice in the Petition to place the proxy gateway in the MIPS core because it advanced its position. Its new argument was hardly “immaterial.” It was the basis of the Board’s ruling. Invalidating claims based upon new reply arguments, however, is foreclosed under binding precedent.

C. In Adopting This Untimely Theory, The Board Ignored Patent Owner’s Key Responsive Arguments.

The Board further erred by ignoring critical arguments and evidence presented by Patent Owner demonstrating that (1) the VDP is a voice DSP, something the ’775 patent expressly distinguishes from a DOCSIS controller and (2) that the MTA call client is not a part of the VDP.

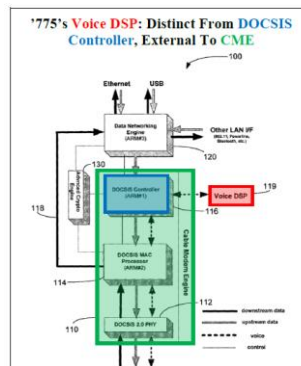
1. The Board Ignored Evidence That Rabenko’s VDP Is A Voice DSP, Not A “DOCSIS Controller” And Not A Part Of A CME.

The claims again require a “cable modem engine including a DOCSIS controller.” The FWD should be overturned because it invalidated the claims

² The FWD notes that Petitioner cites paragraph 74 which identifies the embodiment wherein the VDP includes the proxy gateway function described in connection with Fig. 1b. FWD, 17. But paragraph 74 also identifies the “[a]lternative[]” embodiment the Petition relied upon wherein “the proxy gateway function [is] implemented in the MIPS core 228.” Ex. 1005, ¶ 74; Pet., 25.

while ignoring critical evidence: Rabenko's VDP is a voice DSP and the '775 patent expressly (i) distinguishes a voice DSP from a "DOCSIS controller" and (ii) further confirms that the '775 patent's voice DSP is not even a part of its CME.

Rabenko's voice and data processor is implemented by a voice DSP (digital signal processor). *See* Ex. 1005 [Rabenko] ¶¶ 11, 89, Fig. 4; Sur-Reply, 8-11; Ex. 2016, 12. By contrast, the '775 makes clear that a **voice DSP** is not a **DOCSIS controller**, showing them as distinct elements in Figure 1, further demonstrating that the voice DSP is not even a part of the **cable modem engine** ("CME"):



See Sur-Reply, 9-11; Ex. 1001 ['775] Figs. 1-2; 3:40-47 (distinguishing DOCSIS controller 116 from "external voice DSP 119"); Ex. 2016, 13-14.

Petitioner's theory thus depended on Rabenko's voice DSP being a DOCSIS controller that is part of a CME when the '775 patent itself makes clear that its corresponding voice DSP is neither the DOCSIS controller nor part of the CME. *See id.*; *see also*, Sur-Reply, 8-11; Ex. 2016, 53-56.

This disconnect was the subject of significant discussion at the hearing. As Judge Laney said: “the [’775’s] figure clearly shows that the DOCSIS controller is something different than the voice DSP.” Paper 37, 7:22-7. Summing things up concisely, Judge Laney stated that the ’775’s “specification ... makes clear [] that a voice DSP is not a DOCSIS controller. Why do I know that? Because [the ’775] clearly an[d] unambiguously shows them as two separate structures. ... [The ’775] tell[s] me that those two things are two different things.” *Id.*, 13:14-21, 43:13-15.

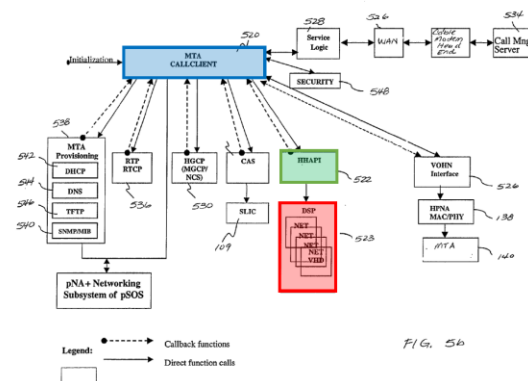
Yet, despite this uncontroverted evidence, the FWD never explained how Rabenko’s voice DSP could plausibly be either a DOCSIS controller or part of the CME. That failure to reconcile the record is reversible error.

2. The Board Ignored Compelling Evidence That The MTA Call Client Was Not A Part Of Rabenko’s VDP.

The FWD invalidated the claims by adopting Petitioner’s untimely theory that the MTA call client is “in the VDP” and performs a DOCSIS function. FWD, 17. The FWD should be reversed because that finding is irreconcilable with Rabenko’s own disclosure, including the very evidence Petitioner relied upon.

To argue that the MTA call client is in the VDP and controls DOCSIS functions, Petitioner and its expert relied upon Rabenko’s Figure 5b and paragraph 97. Reply, 7; *see also* Ex. 1018, ¶ 26. Rabenko’s Figure 5b, however, unambiguously confirms that the MTA call client is a separate and discrete

element from the VDP. Again, Rabenko's VDP is a voice DSP. *See* Section II.C.1; *see also* Ex. 1005 [Rabenko] ¶¶ 11, 89, Fig. 4; Sur-Reply, 8-11; Ex. 2016, 12. And, Figure 5b clearly shows that the **MTA call client** is separate from and not a part of the **DSP**:



Ex. 1005 [Rabenko], Fig. 5b (annotated); Sur-Reply, 15; Ex. 2016, 35. Thus, the Board found that the MTA call client is a part of the VDP while completely ignoring Rabenko's Figure 5b which shows precisely the opposite.

And, as Figure 5b additionally shows, the MTA call client can only communicate with the VDP via the HAPI interface. If the MTA call client were a part of the VDP, it would hardly need to communicate with the VDP via an interface. Additionally, as Rabenko's paragraph 97 provides, "[a] **host application programming interface (HAPI) 522** provides a software messaging interface between the **MIPS core 228** in the residential gateway (see FIG. 2) and the **voice processor DSP**." Ex. 1005, ¶ 97. Because, again, the **HAPI** provides an interface between the **MTA call client** and the **voice processor DSP**, this statement suggests

the MTA call client is implemented in the MIPS core, not the VDP. *See* Sur-Reply, 16; Paper 37, 76:22-77:3; Ex. 2016, 37. This too went unaddressed.

Nor was this omission because the arguments were not clearly presented. To the contrary, they were featured in Patent Owner's sur-reply, demonstratives, and oral argument. *See* Sur-Reply, 15-16, 22-23; Ex. 2016, 35-37, 53-56; Paper 37, 42:15-24 ("the figure they rely upon, Figure 5b, shows that the MTA call client is separate from the DSP, it is not in the VDP ... the MTA call client which is clearly not in the voice and data processor. That's what the very evidence they cite says. That's what Paragraph 97 says, that's what Paragraph 98 says, and that's what Figure 5b says."); 74:19-22 ("You still have the problem that we see on Slide 35. Which is the MTA call client. The thing that they claim has something to do with DOSCIS is separate from the DSP. It's not the same thing, it's separate."); 75:3-4 ("they still can't get over the fact that the MTA call client is not in the DSP."); 75:13-18 ("[Petitioner's expert] relies on Figure 5b and he hasn't considered the fact that the MTA call client and the DSP are separate elements. ... So that's an untimely argument that is dead wrong."); 76:12-14 ("And then we go to Figure 5b, ... we see the VDP separate from the MTA call client."); 46:2-5, 49:2-9, 51:2-5.

The Board further ignored Rabenko's paragraph 98 which confirms that far from being a part of the VDP, the MTA call client controls the VDP. Rabenko states that "[t]he GCP logic 530 controls the voice processor DSP, via the MTA

call client 520 and the HAPI interface 522 ...” Ex. 1005, ¶ 98. This too was raised both in Patent Owner’s briefing and at the hearing. Sur-Reply, 17-18; Paper 37, 77:4-7; 78:4-7 (“what we just read was that the GCP logic controls the voice processor DSP via the MTA call client. So the narrative description suggests that the MTA call client is in the MIPS core ... and that the MTA call client controls the VDP.”). And yet, the FWD ignored this additional evidence indicating that the MTA call client controls the VDP.

The FWD, thus, adopted an untimely theory that the MTA call client was a part of the VDP while entirely ignoring compelling evidence to the contrary.

D. The FWD’s Finding Of Invalidity Is Based Upon A Misapprehension Of Rabenko’s Disclosure.

The FWD should further be reversed because it misapprehended Rabenko in finding that the MTA call client is implemented in the VDP. The Board reasoned:

Rabenko states ... that “the proxy gateway function can be implemented in the voice and data processor,” that “[i]n the described exemplary embodiment, the proxy gateway function is implemented with embedded software at the applications layer,” and that “the applications layer also includes an MTA call client 520 which provides overall control.” We read this to mean that the call client is implemented at the applications layer in the voice and data processor.

FWD, 19 (quoting Ex. 1005, ¶ 97). Thus, the Board’s syllogism was: because the proxy gateway can be implemented in the VDP, and because the proxy gateway is

“implemented with embedded software at the applications layer,” *ergo* the entire applications layer—including the MTA call client—is implemented in the VDP.

But that is not what Rabenko says and the Board’s reasoning does not follow. Rabenko never says that the MTA call client is part of either the VDP or the proxy gateway. Sur-Reply, 14-15. It certainly never says the entire applications layer is a part of the VDP. The applications layer is not a block in the DSP. It is a high-level abstract software layer—not hardware—that encompasses Rabenko’s numerous embedded software modules (such as the proxy gateway and the MTA call client). That a given software module (*e.g.*, the proxy gateway) can be executed on a processor does not mean that ***all*** software modules—or the entire application layer—may be executed on that processor. Rabenko simply does not suggest that the entire applications layer and all software modules within it would be executed on a voice and data processor, an element directed towards processing and transporting voice over packet based networks. Pet., 31; Ex. 1005, ¶ 74.

Paragraph 97—the paragraph the FWD relied upon— itself shows the flaw. It says: “the application layer further includes a VoHN interface 524 which provides a software messaging interface between the MIPS core and the voice processor DSP.” Ex. 1005, ¶ 97. If the entire applications layer were “in” the DSP, it would not provide an interface ***between*** the MIPS core and the DSP.

Instead, as discussed in the preceding section, Figure 5b confirms the

separation: the MTA call client 520 is drawn as distinct from the DSP 523 (*i.e.*, the VDP), connected only by the HAPI 522 interface. Paragraph 97 underscores this by explaining that the HAPI “provides a software messaging interface between the MIPS core 228 ... and the voice processor DSP.” Paragraph 98 then makes the relationship explicit: “the GCP logic 530 controls the voice processor DSP, via the MTA call client 520 and the HAPI interface 522.” Far from being part of the DSP, the MTA call client is software in the MIPS core that controls the DSP.

The correct reading of paragraph 97 is straightforward: the proxy gateway is one software function within the applications layer that may, in some embodiments, be executed (or implemented) on the DSP. The applications layer also contains other software functions, including the MTA call client, but those are not thereby subsumed into or implemented by the DSP. The FWD’s syllogism—treating the applications layer itself as if it were located inside the VDP—collapses distinct categories and disregards Rabenko’s text and figures.

E. The FWD Flatly Misread The Claims, Disregarding The “Completely Partitioned” Limitation.

The FWD should be reversed because it rested on the finding that the challenged claims do not “recite ‘partitioning.’” That is flatly contrary to the claim language itself. Claim 18 recites: “the cable modem functions performed by the cable modem engine are *completely partitioned* from the home networking

functions performed by the data networking engine.” Ex. 1001, cls. 18, 1, 14.

Such functional partitioning was a central feature of Patent Owner’s briefing, which argued that Rabenko lacks a CME whose functions are “completely partitioned” from the DNE’s functions. *See, e.g.*, POR, 5, 23-24, 36

(“Rabenko[’s] [Fig. 1b] indicates that these elements [of the CME and DNE] are not ... functionally partitioned from one another.”) (quoting Ex. 2008, ¶ 83); 36

(“Rabenko, again, has an entirely different goal from the ’775 patent’s goal of a functionally partitioned architecture ... Rabenko simply lacks the partitioning that is critical to the claimed inventions.”) (quoting Ex. 2008, ¶ 84); Sur-Reply, 19

(“Rabenko ... identifies no DNE nor CME, much less ones that are functionally partitioned.”), 23 (similar); *see also* Ex. 2016, 41, 43, 57.

And yet, the Board rejected Patent Owner’s argument that “Rabenko simply lacks the partitioning that is critical to the claimed inventions” as “not persuasive... *because the claims do not recite ‘partitioning.’*” FWD, 24-25. In this regard, the Board ignored the claim requirement that cable modem functions of the CME are “completely partitioned” from the data networking functions of the DNE. This is clear, undeniable legal error and warrants review and reversal.

III. CONCLUSION

For the aforementioned reasons, Patent Owner respectfully requests that the Director grant review and reverse the FWD.

Respectfully submitted,

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Date: September 29, 2025

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the following document was served by electronic service, by agreement between the parties, on the date below:

PATENT OWNER'S REQUEST FOR DIRECTOR REVIEW

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