

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ASKELADDEN, L.L.C.,

Petitioner,

v.

OHVA, INC.,

Patent Owner.

Case No. IPR2023-00921

U.S. Patent No. 9,679,286

**PATENT OWNER'S SUR-REPLY
TO PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE**

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I. INTRODUCTION

Patent Owner submits this Sur-Reply addressing arguments raised in Petitioner's Reply. The Reply fails on three critical points:

First, the challenged claims are entitled to a priority date of September 19, 2006, as fully supported by the '030 Application's written description. The Application explicitly discloses that its teachings apply equally to PCs and smart telephones, including the conversion of analog audio signals to digital transaction data. Petitioner's attempt to artificially parse the specification ignores its integrated teachings that would be apparent to a POSITA. Moreover, Petitioner ignores disclosure supporting the claimed limitations specific to smart telephones.

Second, Petitioner's overbroad construction of "transaction data" to encompass mere "account data" contradicts the specification's clear distinction between these two types of data. The '286 Patent consistently treats transaction data as separate from account information like ID numbers and PIN codes. This distinction is particularly relevant given the invention's focus on processing actual transaction data through a card reader.

Third, Cho fails to teach or suggest two key claim limitations. Cho's "account information" bears no meaningful resemblance to the claimed "transaction data," as it merely discloses static account details rather than data associated with specific transactions. Ironically, given Petitioner's challenge to Patent Owner's claim to

priority and attempt to parse the written description, Petitioner now advocates an interpretation of “transaction data” that is nowhere supported in the specification of the ’286 Patent, in order to force it to read on Cho’s examples of “account data,” i.e., Cho’s credit card number and credit card expiration date. In addition, Cho’s conversion of AC signals to DC voltage eliminates the variable voltage characteristics that define the claimed “analog variable voltage audio signal,” and Cho does not teach or suggest this claimed limitation either.

Accordingly, for the reasons detailed herein, the Board should confirm the patentability of Claims 1-4.

II. THE CHALLENGED CLAIMS ARE ENTITLED TO A PRIORITY DATE OF SEPTEMBER 19, 2006

A. The '030 Application Fully Supports the Claimed Smart Telephone Features

As an initial matter, Petitioner takes Patent Owner to task for demonstrating “written description support in the ’030 Application by piecing together different portions of the specification of the ’030 Application” without, in Petitioner’s view, evidence that a POSITA would readily recognize such support. Pet. Reply at 3-4. But Petitioner mischaracterizes the ’030 Application’s disclosure by artificially parsing it into discrete “sources,” while ignoring the integrated teachings that would be apparent to a POSITA. As is clear from the disclosure, implementation with a PC

is treated as interchangeable with a mobile smart telephone, PDA, or other computing devices. *See, e.g.*, EX1015 at 8 (discussing the embodiment of Figure 4, as implemented with a key jack plugged into the microphone input on a PC, or plugged into a “mobile smart telephone or PDA”). The written description makes clear, the invention may be implemented “at virtually any PC station or if so adapted **any mobile device capable of a bi-directional network connection.**” *Id.* at 9 (emphasis added). As such, all of the implementations on the PC are treated as essentially interchangeable with “any mobile device capable of a bi-directional network connection,” including the claimed smart telephone. Notably, Petitioner’s expert, Mr. McNair, provides no testimony indicating that, because written description support is to be found in “different portions of the specification,” this would somehow render unrecognizable to a POSITA. *See* EX1043.

Petitioner argues that the '030 Application fails to support a smart telephone that converts “the analog variable voltage audio signal...to the transaction data as digital data.” Reply at 4-14. This argument fails for several reasons.

First, Petitioner argues that because Figures 4-7 show different embodiments where signals flow to a PC, they somehow teach away from a smart telephone implementation. Pet. Reply at 7-11. But these embodiments illustrate general principles of signal flow that are equally applicable to a smart telephone implementation as to implementation on a PC, which the written description

expressly contemplates. EX1015 at 9. Petitioner argues that the smart telephone 701 in Figure 7 only “provides the sound pass to the PC 203” and that the “smart telephone 701 never receives the sound pass.” Pet. Reply at 11. But in doing so, Petitioner also ignores examples involving the smart telephone specifically.

For example, the '030 application discloses that a “key jack” “generates the sound pass signal” and “may be plugged into the sound input or headset connector jack associated with a mobile smart telephone or PDA enabling authentication through a telephone network.” EX1015 at 8. This clearly discloses the smart telephone “receiving” and “converting” a “sound pass signal.” Moreover, “enabling authentication through a telephone network” inherently requires that the analog audio signal received by the mobile smart telephone is converted to the transaction data as digital data. The written description explains that the sound file is “demodulated by a modem provided in the applet on the user[']s PC,” and the “sound pass token” is what “is input for authentication using a key jack.” EX1015 at 9. While this example refers to the PC, the written description makes clear that the key jack “may be used at virtually any PC station or if so adapted any mobile device capable of bi-directional network connection.” *Id.* (emphasis added). Hence, the same process and embodiment is intended to run on a smartphone “capable of bi-directional network connection.” *Id.* Further, “demodulat[ing]” the “sound pass or signal input to the sound card” inherently requires the ability to convert the analog

audio signal to digital data. *Id.* Petitioner supplies no evidence to the contrary, and its expert merely *asserts* in conclusory fashion that the written description never discloses converting analog to digital, without explaining the reasons for this conclusion, or what such conversion would involve. *See* EX1043 at ¶¶ 33, 35. Such conclusory expert testimony is entitled to no weight and should be disregarded. *See TQ Delta, LLC v. CISCO Sys., Inc.*, 942 F.3d 1352, 1358 (Fed. Cir. 2019).

Petitioner’s own argument later in the Reply, that there cannot be “conversion” because a “soft token” is already “digital from the time it is created,” misses Patent Owner’s point. Pet. Reply at 13. When the mobile device is “leveraged to play the modulated sound pass into a microphone plugged into PC,” the mobile device is playing an analog audio signal which is *received* by the PC. EX1015 at 11. Then, the “PC demodulates the sound pass signal”—which inherently and necessarily *converts* the analog sound pass into digital data—“and communicates with the server to authenticate the user.” EX1015 at 11. Petitioner cannot deny that, in this example and elsewhere, the sound pass is not *already* a digital file on the PC when it is “play[ed]” “into a microphone” or otherwise ignore the analog-to-digital conversion inherent therein. *Id.* Petitioner’s own expert agrees that the “sound pass” is an analog audio signal. EX1043 at ¶ 24. Petitioner simply wishes to ignore that the written description expressly states that this process may also be carried out via the smart telephone or other computing appliance. EX 1015 at 9; *id.* at 8; *id.* 12

Petitioner ignores other disclosures which support *receiving* the analog audio signal via the smart telephone. For example, the '030 application discloses that a “device or devices...will receive the token or a replicate of the token,” if the “token is a portable token.” EX1015 at 16. In context, the disclosure of a “portable token” (which may be a “sound file or generated sound,” EX1015 at 15) “receive[d]” at a “device” further supports the claimed limitation. The '030 Application also discloses that “[t]he card plugs into card reader 602, which in turn is plugged into the microphone input of the host computing [sic: computing] appliance or ***other line input capable of carrying sound*** and directly or indirectly connected to the sound card on the computing appliance such as a PC.” EX1015 at 9-10 (emphasis added). The written description makes clear that a “computing appliance” is not limited to a PC, but may include a PDA or smart telephone. *See id.* at 9; *id.* at 8; *id.* 12 (referring to a “a sound file token 901 located on a PC or on some external device like a cell phone, PDA, or other handheld device capable of playing the sound file.”).

Petitioner argues that the disclosure of an “applet” on the smartphone does not support the claimed limitation because it only “generate[s] the sound pass,” but does not receive or convert it. Pet. Reply at 12. But, when discussing the “token on the mobile device,” a “sound file,” the '030 application discloses that “in one embodiment the sound file may be ***updated by the applet on the device*** if the server sends a new session key to the ***mobile device*** directly or by the server contacting the

telephone directly and establishing a secure network session with the device to update the file.” EX1015 at 11 (emphasis added). This disclosure further supports the applet on the mobile device receiving and converting the signal. The written description teaches that the “mobile smart telephone or PDA” may receive a sound pass signal generated by a key jack plugged into its microphone input. EX1015 at 9. Since the sound pass signal is then stored on the “mobile device” for updating, this necessarily and inherently means that the analog sound pass signal was converted to digital data on the smart telephone. *Id.* at 11. The applet on the smart telephone or PDA is fully capable of converting the sound pass signal generated by the key jack into a digital signal, since it is capable of “perform[ing] the modulation, demodulation, and encryption.” *Id.* at 13. Indeed, the very fact that the sound pass signal generated by the key jack enables authentication through a telephone network after being plugged into the sound input of a smart telephone proves that the signal is converted to digital form. *Id.* at 8. Otherwise, authentication based on the sound pass signal would not be possible. Analog-to-digital conversion is necessarily and inherently disclosed on the smart telephone in order to accomplish such authentication. *See PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008). Indeed, any device receiving an analog audio signal through a microphone port must necessarily convert that signal to digital form for further processing. This is a fundamental requirement for any device handling audio signals.

When the '030 Application discusses "demodulating" the signal, for example, this inherently requires analog-to-digital conversion as a first step.

Accordingly, limitations [1.3.1] and [3.3] are supported by the '030 Application, and the claims are entitled to its priority date of at least September 19, 2006

B. The '030 Application Supports Direct Data Exchange with a Server

Petitioner's argument that the '030 Application fails to support "direct data exchange" between a smart telephone and server also fails. Pet. Reply at 15. The Reply focuses on Figure 7's illustration of communication through a PC while ignoring that this represents just one possible embodiment. The '030 Application discloses that "in one embodiment the sound file may be updated by the applet on the device if the server sends a new session key to the mobile device directly or by *the server contacting the telephone directly and establishing a secure network session with the device* to update the file." EX1015 at 11 (emphasis added). The written description also discloses "any mobile device capable of a bi-directional network connection." *Id.* at 9.

Moreover, a POSITA would understand that if a mobile device can execute applets and process signals, it necessarily has the processing capability to handle direct network communication. *PowerOasis*, 522 F.3d at 1306. Petitioner's suggestion that the PC is somehow required ignores both the explicit teachings of

the specification and the basic technical capabilities of mobile devices that would have been well understood by a POSITA as of the priority date.

Accordingly, limitations [1.3.2] and [3.4] are supported by the '030 Application, and the claims are entitled to its early priority date.

C. The Patent's Designation as a Continuation is Correct and Supported by the Record

Petitioner's arguments regarding the supposed continuation-in-part status of the '286 Patent (Pet. Reply at 16-18) are without merit. While it is true that the designation of an application as a continuation or continuation-in-part is not solely determinative of priority rights, it is still entitled to some weight in the Board's analysis.

Here, the prosecution history actually supports Patent Owner's position. While Petitioner attempts to dismiss Mr. Boys' testimony, the contemporaneous documentary evidence confirms that the priority issue was discussed with the Examiner, who ultimately allowed the application to issue as a continuation. Petitioner submits no evidence to rebut the fact that the Examiner issued a Notice of Allowance and—notably—no longer asserted that the '286 Patent was only entitled to the March 3, 2015 priority date or that it was a “continuation in part.” EX1002 at 33-38. Rather, the Examiner issued the '286 Patent, which on its face states that it is a “continuation” of the '842 Application, which was a continuation of the '030

Application filed on Sep. 19, 2006. EX1001 at 1-2. At a minimum, Challenged Claims 1-4 are entitled to the Sep. 19, 2006 priority date of the '030 Application.

The Examiner's decision to withdraw the continuation-in-part designation after reviewing the applicant's arguments demonstrates that the Office was satisfied with the applicant's priority claim.

Petitioner's attempt to discredit Mr. Boys' testimony based on alleged inconsistencies (Pet. Reply at 17-18) misses the mark. Any minor discrepancies in the declarations are easily explained by the passage of time, and Mr. Boys' good effort to bring all relevant evidence to the Board's attention. They do not undermine the fundamental point: the priority issue was raised and resolved during prosecution in Patent Owner's favor.

III. THE BOARD SHOULD REJECT PETITIONER'S OVERBROAD CONSTRUCTION OF "TRANSACTION DATA"

A. The Specification Clearly Distinguishes Transaction Data from Account Data

Petitioner's Reply doubles down on its attempt to equate "transaction data" with "account data," but this construction remains incorrect. Pet. Reply at 18-22. The '286 Patent clearly distinguishes between these two types of data, as shown in Figure 11 where "transaction data B1-Bn" is separate from "account" information like ID numbers and PIN codes.

It is important to recognize that the claimed invention specifically requires a “card reader” that extracts data from a user's credit card and transmits it through an audio jack (“output pin”). Petitioner's attempt to sweep in account information like user IDs, passwords, and bank account details makes no sense in this context, as such information is not “transacted” through the card reader and is not part of the claimed “transaction data.”

Petitioner argues that because the claims do not explicitly recite “account data,” the presumption that different terms have different meanings doesn't apply. Pet. Reply at 21. This misses the point. The specification's clear differentiation between these types of data informs the proper construction of “transaction data,” regardless of whether both terms appear in the claims.

Petitioner incorrectly suggests that Patent Owner is trying to import limitations from Figure 11. To the contrary, Patent Owner is simply pointing out that the specification's consistent treatment of “transaction data” as distinct from account data demonstrates the proper scope of the term. The specification shows that the “transaction data B1-Bn” is submitted *after* a new session key (which includes the “ID Number,” i.e., a form of “account data”) is generated. EX1001 at 12:34-36 (“The user may enter a PIN code (Pc) *and then* may perform a series of banking transactions by submitting transaction data B1-Bn”) (emphasis added). As such, “transaction data” cannot include “account data” such as the “ID Number,” which is

already part of the new session key generated prior to the submission of “transaction data B1-Bn.” *Id.*

This distinction makes technical sense given the invention's purpose. The card reader is designed to extract and transmit actual transaction data from a credit card through an audio jack. It would be technically nonsensical to interpret "transaction data" to include account authentication information that is never processed by the card reader itself.

Petitioner mischaracterizes Patent Owner's construction of "transaction data." Patent Owner has never argued that "transaction data" is simply any data "not used for user authentication." Respectfully, the Board's decision on rehearing—that “the claimed transaction data that is accepted from an output interface of a transaction card...comprises data stored on and read from a card, such as an ID number, password, authentication information, or session information, that can be used to a facilitate a transaction” (Paper 15 at 8)—is at odds with the specification, which consistently treats “transaction data” as different from identifying data such as an ID number, password, and so on.

B. Cho's “Account Information” Does Not Disclose Transaction Data Under Any Reasonable Construction

Even if the Board determines that “transaction data” should be broadly construed, Cho's disclosure of "account information" bears no meaningful

resemblance to the claimed "transaction data." Cho's "account information" includes "an account number, a card expiration date, etc." EX1005 at 3:24-27. The specification makes clear that the "ID number" read from the "bank card" is "different than the issued card number" and hence Cho's "account number" cannot meet this limitation. There is no disclosure of a "card expiration date" being "transaction data" or any other form of data in the '286 Patent.

Ironically, given Petitioner's insistence on challenging Patent Owner's claim to priority to the '030 Application, Petitioner now seeks to force the claimed "transaction data" to read on subject matter in Cho that is not disclosed or contemplated by the '286 Patent. There simply is not disclosure of "transaction data" being an "account number" or "card expiration date" in the '286 Patent. This is a further reason why, respectfully, the Board's construction of "transaction data" "as encompassing any data involved in a transaction, including account data" is impermissibly overbroad. Paper 15 at 9. Construing "transaction data" as met by Cho's "account number" or "card expiration date" is not supported by the specification or by the plain meaning of the term "transaction data." A transaction, by definition, is an event or instance of conducting business. "Transaction data" must therefore be data associated with a specific transaction being conducted. Cho's disclosure of static account information stored on a card does not meet this basic

requirement. Nowhere does Cho disclose processing actual transaction-specific data through its system.

The Reply attempts to obscure this distinction by arguing that Cho's account information "can be used to facilitate a transaction." Pet. Reply at 23-24. But the mere fact that data might "facilitate a transaction" does not transform it into "transaction data" within the meaning of the claims. Under Petitioner's logic, virtually any data that could potentially be used in a transaction would constitute "transaction data" - a construction so broad as to be meaningless.

Accordingly, Cho fails to teach or suggest the claimed "transaction data."

IV. CHO FAILS TO TEACH THE CLAIMED "ANALOG VARIABLE VOLTAGE AUDIO SIGNAL"

A. Cho's DC Conversion Eliminates Required Signal Characteristics

Petitioner's attempt to equate Cho's "AC voltage" with the claimed "analog variable voltage audio signal" fails. Pet. Reply at 27-30. The Reply cites various references discussing AC signals but misses the key distinction: Cho's system converts the AC signal to DC voltage, losing the variable voltage characteristics that define an audio signal.

An analog variable voltage audio signal directly represents instantaneous changes in the audio waveform, preserving frequency content and amplitude variations. Cho's conversion to DC voltage, in contrast, provides only static

characteristics like average amplitude. The Reply's attempt to minimize this distinction by arguing the claims don't require "directly correspond[ing] to the original audio waveform" (Pet. Reply at 29) misses the point - the claims require an "analog variable voltage audio signal," which by definition must preserve the variable voltage characteristics that Cho explicitly eliminates through DC conversion.

The Reply's citation of references showing that "AC voltage signal" can be "variable" (Pet. Reply at 30) is beside the point. The issue is not whether AC signals can vary - they obviously can. The issue is that Cho specifically teaches converting the AC signal to DC, thereby losing the variable voltage characteristics required by the claims.

Accordingly, Cho also fails to teach or suggest the claimed "analog variable voltage audio signal."

V. CONCLUSION

For the reasons above and in Patent Owner's Response, the Board should confirm the patentability of Claims 1-4. Petitioner has failed to show that its references qualify as prior art or that they teach or suggest all elements of the challenged claims.

Dated: October 25, 2024

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CERTIFICATE OF WORD COUNT

Under 37 C.F.R. § 42.24, the undersigned attorney for the Patent Owner OHVA, Inc., declares that the argument section of this Patent Owner's Response has 3,407 words, according to the word count tool in Microsoft Word.

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