

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

VARIA HOLDINGS LLC,
Patent Owner

Case IPR2024-01364
U.S. Patent No. 8,127,984

**PETITIONER'S AUTHORIZED RESPONSE TO PATENT OWNER'S
REQUEST FOR DIRECTOR REVIEW**

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I. INTRODUCTION

Varia’s Request attempts to re-litigate its construction of “RFID” elements¹ as both requiring emulation and excluding a physical RFID transponder. *See* POR, 20. To that end, with its argument fully considered on the merits and yet rejected by the Board in the Final Written Decision (FWD), Varia now pivots to procedure. But the root of this complaint rests on a single false premise—that the Board exclusively relied on Petitioner’s evidence and arguments relating to “functional emulation” in resolving (1) construction of the “RFID” elements and (2) determining claims 1-39 (“Challenged Claims”) of U.S. Patent No. 8,127,984 (“the ’984 patent”) unpatentable. This framing mischaracterizes the FWD, and it fails to acknowledge other aspects of the record that the Board relied upon and that independently support the Board in reaching its determinations.

As a threshold matter, the Request’s focus on “functional emulation” is legally irrelevant. As the Board determined, “there is no need to rewrite the claims to restore the emulation terms” because “Patent Owner **deliberately removed** those terms during prosecution.” FWD, 22 (emphasis added). Given the removal and hence absence of claim language within the independent claims directed to

¹ The “RFID” elements include “RFID transponder signal[s],” “RFID transponder data,” “second RFID transponder data.” *See* APPLE-1001, Cls. 1, 9, 13, 21, 32.

emulation, the Board naturally resolved the “RFID” elements as not requiring any type of emulation. *See* FWD, 22-27. The Board reached this determination based on the plain conduct of Patent Owner during original prosecution—not in reliance on the Reply. Varia’s myopic focus on the Reply’s “functional emulation” discussion is therefore inapposite. Moreover, its allegation of the Reply’s arguments being impermissibly new is also unfounded because these arguments were properly presented as a rebuttal to Varia’s construction of the “RFID” elements in its POR. *See* §III, *infra*.

Even if unqualified recitation of “RFID” elements was read to require emulation, the Board still found Varia’s patentability arguments lacking basis because “emulation does not rule out the use of physical RFID transponder circuitry in the transponder.” FWD, 26 n.10 (citing POR, 23-24). Tellingly, this and other portions of the FWD were omitted from the Request because they demonstrate appropriate reliance upon aspects of the record independent from the Reply² and confirm that Varia has no legal or factual basis to justify its emulation-

² As explained in §§II.A-B, *infra*, the Board’s analysis of “functional emulation” within the FWD extends to aspects of the specification, the ’984 File History, and the Willgert disclosure beyond the Reply’s limited discussion of “functional emulation” as demonstrating why Varia’s construction of the “RFID” elements was

based arguments. As discussed in §III.A, *infra*, these aspects include the specification, the file history of the related '984 patent (“the '984 File History”), and specific disclosures of the Willgert reference cited in the Petition. *See* FWD, 22-27, 38-39.

Moreover, the Board’s specific reference to Reply’s “functional emulation” discussion on pages 9 and 10 was limited. This part of the Reply was cited once throughout the Board’s 8-page analysis relating to the parties’ positions regarding the “RFID” elements. *See* FWD, 22-27, 38-39. That citation was to debunk Varia’s argument by explaining, consistent with Apple’s arguments, that “it is unnecessary to formalize a comprehensive construction for the RFID transponder signal or data terms.” *See* FWD, 22. While the FWD considered the Reply’s “functional emulation” discussion to reject Varia’s construction, this does not mean the FWD relied on *only* this discussion to reach its unpatentability determinations.

The Reply’s “functional emulation” discussion is not impermissibly new. It instead is consistent with the Petition’s analysis of transmitting elements recited in the Challenged Claims as functionally operating in one of two recited modes of operation, and thereby functionally emulating each. *Compare* Pet., 23-29, and

too narrow. The Board’s findings are therefore not exclusively limited to arguments in the Reply, as suggested in the Request. *See* FWD, 22-27, 38-39.

Reply, 8-13. Moreover, the Reply advanced this discussion responsive to Varia's construction of the "RFID" elements—a construction offered for the first time in its POR.

II. THE BOARD PROPERLY DETERMINED THAT THE CHALLENGED CLAIMS DO NOT REQUIRE EMULATION, MUCH LESS FUNCTIONAL EMULATION, MAKING THE REQUEST'S FOCUS ON "FUNCTIONAL EMULATION" ENTIRELY IRRELEVANT

The Board held that the Challenged Claims do not require emulation because "Patent Owner deliberately removed those terms during prosecution." FWD, 22. This determination was based on the "prosecution history of the parent '984 patent" and, more specifically, Patent Owner's attempt to distinguish prior art based on claims that "*specifically recited 'emulation'.*" FWD, 25 (citing APPLE-1002, 269) (emphasis in original). Consistent with the Examiner, the Board rightly pointed out that "Patent Owner amended the claims to drop all references to emulation in the independent claims." *Id.* at 26 (citing APPLE-1002, 188-194). The Board's analysis of the prosecution history to determine the claims as not requiring emulation rebuts the points raised in the Request, which presume that (1) the "RFID" elements require emulation, and (2) the Board's conclusions are based on the Reply's "functional emulation" discussion. And with the Board expressly acknowledging that "RFID" elements lack a requirement for emulation, there can

be no legitimate question over Board reliance on arguments relating to “functional emulation.”

III. THE BOARD’S UNPATENTABILITY DETERMINATIONS REGARDING THE “RFID” ELEMENTS ARE SUPPORTED BY RECORD EVIDENCE

A. The Board’s Determinations Relating to Construction of the “RFID” Elements Were Principally Based on the Specification and the ’984 Patent File History

In resolving a construction dispute regarding the “RFID” elements, the Board determined that “it is unnecessary to formalize a construction for the RFID transponder signal or data terms.” FWD, 22. The Board also declined to limit claim scope by imposing Varia’s proposed negative limitation. *See* FWD, 24 (citing *Omega Engineering*, 334 F.3d at 1333 and *BillJCo, LLC v. Apple Inc.*, No. 2023-2189, 2023-2190, 2025 WL 1417957, at *1). In drawing these conclusions the FWD more directly evaluated the specification and the ’984 File History, not the Reply’s “functional emulation” discussion. *See id.*, 22-27 (citing APPLE-1001, 1:16-17, 1:30-54, 2:17-21, 3:34-36, 3:44-55, 5:6, 9:8-12; and APPLE-1002, pp. 18, 135, 197, 243, 269, 277).

The Board determined that the specification’s “frequent reference to ‘emulated,’ ‘emulation’ or the like” is “to emphasize the fact that the mobile communications device of the claims has a **dual role**: to provide voice call communications, and to transmit RFID transponder data.” FWD, 22 (emphasis

added). When the FWD then identified “functional emulation implicit in the ’984 specification and claims,” it references the mobile communications device’s “dual role” within the specification—not arguments advanced in the Reply. *Id.* The Board’s analysis of the intrinsic record within this part of the decision reveals that the “functional emulation” underlying its determinations is derived from the disclosure itself and not from any new evidence introduced with the Reply.

The FWD’s subsequent analysis further confirms this point. In analyzing “the problem that the ’984 patent describes,” the Board found the specification addressed this by “incorporating RFID capability into a mobile communications device such as a wireless mobile phone.” *Id.*, 22-23 (citing APPLE-1001, 1:30-54 and 3:44-55). The Board also found the specification teaches that a “functional emulation solution is served regardless of how the specific RFID transceiver is implemented.” *Id.*, 23. Again, this analysis is entirely rooted in the specification, not based on evidence or arguments advanced in the Reply.

The Board also evaluated the file history (APPLE-1002; “the ’984 File History”) to resolve whether applicant’s statements supported Varia’s construction of the RFID elements. FWD, 25-27. The Board determined that the ’984 File History “provides no basis for excluding from coverage a mobile communications device that incorporates RFID transponder circuitry into a transceiver in order to

switch between outputting voice call signals in one state and outputting RFID transponder signals in another state.” *Id.*, 27.

Critically, the Board found that, to the extent certain statements reflected any disclaimer, such disclaimer was directed to “a separate RFID transponder that is not incorporated into a mobile communications device,” and therefore, had “no basis for excluding from coverage a mobile communications device that incorporates RFID transponder circuitry into a transceiver.” *Id.* This coincides with the Board’s conclusion that “it is unnecessary to formalize a comprehensive construction for the RFID transponder signal or data terms,” i.e., declining to accept a negative limitation included in Varia’s construction that sought to exclude physical RFID transponders from the claim scope. *See* FWD, 22; *see also* POR, 20 (“without the use of a physical RFID transponder”). Here again, this analysis is rooted in the ’984 File History; and not based on arguments advanced in the Reply.

B. The Board’s Evaluation of Willgert-Mooney and the RFID Elements is Based on the Specification and Willgert

The FWD’s obviousness analysis of the “RFID” elements over the Willgert-Mooney combination is similarly grounded in the specification and the disclosures of Willgert cited in the Petition—not the Reply’s “functional emulation” discussion. The Board disagreed with Varia that the “Willgert/Mooney combination does not transmit RFID transponder data” because “the claims do not rule out the use of physical transponder circuitry to generate the RFID transponder

data or signals.” FWD, 39. The Board reached this conclusion based on the disclosures of the specification and Willgert, and its evaluation of each was independent of the Reply’s “functional emulation” discussion. *See id.*, 38-39 (citing APPLE-1001, 3:47-55, Fig. 1; and APPLE-1004, [0008], [0009], [0015], [0019], [0032]).

More specifically, the FWD found that, “[j]ust as disclosed in the ’984 patent, Willgert’s RFID transponder 2 shares ‘substantial portions of the hardware...employed to provide a RFID’ with the Bluetooth transmission hardware, thus ‘advantageously leverage on existing elements of mobile communication device.’” *Id.*, 39 (comparing APPLE-1004, [0015], [0019] and APPLE-1001, 3:42-55, Fig. 1). When the FWD found that Willgert-Mooney described “the functional emulation purpose of the ’984 patent,” this was reference to paragraph [0032] of Willgert disclosing that “Bluetooth and [the] transponder are both integrated in a mobile telephone.” *Id.* Thus, when referencing a “functional emulation purpose,” the Board found that Willgert was directed to similar issues as those described in the specification. For example, both provide “us[ing] one device for voice call communications and RFID identification.” *Id.*, 38-39. This analysis is rooted in the specification and Willgert, not arguments advanced in the Reply. The Board’s identification of “functional emulation purpose” in Willgert (and the specification) is consistent with the Petition’s

analysis. Both the Petition and the FWD addressed the concept of “functional emulation” as an example of dual functionality provided by a mobile phone in acting as an RFID transponder and a Bluetooth/voice call transmitter—an example the Board determined is encompassed by the claims. FWD, 22; *see* §III.A, *infra*.

C. Varia’s Request Mischaracterizes the FWD

As discussed above, the Board’s analysis reflects consideration of each of the specification, the ’984 File History, and the disclosures of Willgert cited and applied in the Petition to address unpatentability of the Challenged Claims. *See* FWD, 39 (citing APPLE-1001, 3:47-55; and APPLE-1004, [0008], [0009], [0015], [0019]). This belies Varia’s attempt to characterize the FWD’s reference to “functional emulation” as simply an adoption of statements from the Reply to cure alleged defects in the Petition. Req., 12.

Tellingly, the Request omits any discussion of the Board’s analysis of the specification, let alone the Board’s determination that “[t]he functional emulation **implicit in the ’984 specification and claims** serves to address the problem that the ’984 patent describes...” FWD, 22. To the extent that the Board relied on the Reply’s “functional emulation” discussion, it did so to explain, consistent with the arguments raised in that part of the briefing, that it is “unnecessary to formalize a comprehensive construction for the RFID transponder signal or data terms.” FWD, 22 (citing Reply, 11-12). The FWD makes no other reference to the Reply in its

other determinations relating to “functional emulation” within the specification, the ‘984 File History, or Willgert. *See* FWD, 22-27, 38-39.

IV. THE REPLY’S “FUNCTIONAL EMULATION” DISCUSSION WAS PROPERLY RESPONSIVE TO THE PATENT OWNER RESPONSE

A. *The Petition’s Unpatentability Theories Are Consistent With the Reply’s “Functional Emulation” Discussion*

The Petition explained that claim 1’s “mobile communications device” was rendered obvious by Willgert disclosing a “communications unit” that “includes a ‘receiver/transmitter unit’ operable with a ‘Bluetooth communications system’ (Bluetooth transmitter) and a ‘transponder’ operable with an “‘RFID system’ (RFID transponder).” Pet., 17 (quoting APPLE-1004, [0032]). The Petition further observed that “[a] POSITA would have recognized usage scenarios involving a **dual-mode transmitter** based on their well-known capability to receive and transmit different types of signals (Bluetooth, RFID) and thereby operate in different states.” Pet., 28 n.7 (emphasis added). As previously discussed, this coincides with the FWD’s reference to specification as “emphasiz[ing] the fact that the mobile communications device of the claims has a **dual role**: to provide voice call communications, and to transmit RFID transponder data.” FWD, 22 (emphasis added). Both the Petition and the FWD thereby addressed “functional emulation” in a similar manner regarding dual functionality emulated by a mobile phone.

The Petition also identified a “dual-role transmitter” as a “well-known capability to receive and transmit different types of signals (Bluetooth, RFID)” in addressing claim 1’s signal transceiving elements. Specifically, in Ground 1B, the Petition applied an interpretation describing the “*transceiver*” as encompassing circuitry of different components within a mobile device that collectively enable transmission/reception functionality of the mobile device,” and cited to expert testimony explaining that such an interpretation is “rendered obvious by Willgert’s contemplated RFID and voice call signaling functionality within a single telephone.” Pet., 65 (citing APPLE-1003, ¶¶195-196). The Petition further explained that Willgert’s disclosure leveraged a “communications unit” that provides signaling capabilities relating to different types of wireless signals (e.g., Bluetooth, RFID). *Id.*, 43 (citing APPLE-1004, [0030]-[0031]). This reflects a theory of “functional emulation” insofar as it identifies the dual signaling capabilities of a device such that the device functionally emulates the capabilities of each.

B. The Reply’s “Functional Emulation” Discussion Responded to Varia’s Assertion That the RFID Elements Require Construction

The Federal Circuit has also consistently held any concern over a supposedly new argument in reply “is eliminated” when the “reply arguments are responsive to arguments raised in [the] patent owner response.” *Apple Inc. v. Andrea Electronics Corp.*, 949 F.3d 697, 706; *Axonics, Inc. v. Medtronic, Inc.*, 75 F.4th 1374, 1385

(Fed. Cir. 2023); *Genzyme Therapeutic Prods. L.P. v. Biomarin Pharm. Inc.*, 825 F.3d 1360, 1366 (Fed. Cir. 2016). As in each of those cases, the Reply squarely responds to Varia’s arguments. It makes no difference that, as part of that response, Apple further fleshed out the arguments in the petition. “Parties are not barred from elaborating on their arguments on issues previously raised.” *Chamberlain Grp., Inc. v. One World Techs., Inc.*, 944 F.3d 919, 925 (Fed. Cir. 2019).

More specifically, the Reply’s “functional emulation” discussion was presented to rebut Varia’s assertion in the POR that the “RFID” elements required construction. POR, 20. Varia’s construction would have required “RFID signals emulated by a mobile communications device **without the use of a physical RFID transponder.**” *Id.* (emphasis added). The Reply thereby noted that “Varia’s construction assumes that the only way to generate ‘emulated’ RFID data/signals is to exclude use of a physical RFID transponder, implying that such exclusion is ***inherent*** to emulation.” Reply, 10 (emphasis in original). To demonstrate the lack of such inherency, the Reply contended that Varia’s proposed construction “overlooks well-known aspects of ‘functional emulation’ available as one option to implement the emulation described in the specification relating to emulation.” *Id.*, 11.

This cannot be impermissibly new because Apple could not have foreseen, when the Petition was filed, that Varia would later propose a construction that

excludes physical RFID transponders. Indeed, as the FWD confirms, because the specification and the '984 File History lacked express disclosure of such exclusion, “there is no basis for adding the negative limitation proposed by Patent Owner.” FWD, 24-25; *see* Reply, 8-10 (citing *Omega Engineering, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1333 (Fed. Cir. 2003) (rejecting a construction because “neither the plain text of the claims, the specification, nor the file wrapper justifies the imposition of this negative limitation”)).

V. DENIAL OF VARIA’S REQUEST IS NOT INCONSISTENT WITH RECENT DIRECTOR REVIEW DECISIONS

Denial of Varia’s Request is also not inconsistent with recent Director Review Decisions. The Board’s analysis of “functional emulation” present in the specification and Willgert is not impermissibly new because “[t]he Final Written Decision need not be a verbatim recounting of the Petition.” IPR2024-00486, Paper 36, at 7 (PTAB Nov. 7, 2025). Indeed, “the Board may articulate the same reasoning in the Petition in its own words.” *Id.* The Federal Circuit has similarly concluded that “the Board did not deviate from the grounds in the petition” by relying upon different terms than those used in the petition and citing for support the same portions of the prior art that the petition cited. *See Sirona Dental Sys. GmbH v. Institut Straumann AG*, 892 F.3d 1349, 1356 (Fed. Cir. 2018). As discussed in §III.B, *supra*, the Petition and the FWD each addressed “functional emulation” in a similar manner regarding dual functionality emulated by a mobile

phone in relation to at least Willgert's disclosure. *Compare* Pet., 17 (citing APPLE-1004, [0032]), *and* FWD, 38-39 (citing the same).

Moreover, as discussed in §§II.A-B, *supra*, because the Board's unpatentability determinations regarding the "RFID" elements are independently supported by the specification, the '984 File History, and Willgert's disclosures, any reliance on the Reply's "functional emulation" discussion would not have altered the outcome. *See* IPR2024-00486, Paper 36, at 8 ("...to the extent the Board's final determination did depend on [the disputed reasoning], there is no evidence in the record that indicates it would have had any impact on the outcome"). Indeed, as discussed above, in discussing "functional emulation," the FWD cited paragraph [0032] of Willgert—"a paragraph first cited in the Petition, and relied on throughout the trial." *Id.*, 7; *see* Pet., 12-16, 23-30.

Moreover, recent Director Review decisions vacating FWDs for reliance on new arguments and evidence outside the scope of a proper reply are also distinguishable. For example, in IPR2024-00101, vacatur of the FWD was based on a petitioner raising an argument only *after* the Institution Decision preliminarily found that the prior art did not disclose the claimed element. Here, the Board's Institution Decision did not identify defects in the prior art pertinent to the Reply's "RFID" elements. The Institution Decision instead reaffirmed the mappings to Willgert in the Petition because, based on the preliminary record, "there is no

reason to confine the scope of the claims to the disclosed embodiments and there is nothing in the specification or claims that disavows including Willgert's RFID transponder within the scope of the claims.” ID, 22-23. The Reply’s “functional emulation” discussion thereby did not fill a supposed gap that the Petition had failed to address.

VI. CONCLUSION

For the foregoing reasons, the Board properly determined that “claims 1-39 of U.S. Patent No. 8,127,984 B2 have been shown to be unpatentable under 35 U.S.C. § 103.” FWD, 47. Thus, Director Review of the Final Written Decision is not warranted, and the Request should be denied.

Respectfully submitted,

Date: April 7, 2026

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e)(4), the undersigned certifies that on April 7, 2026, a complete and entire copy of this Petitioner's Authorized Response to Patent Owner's Request for Director Review were provided via email to the Patent Owner by serving the email correspondence addresses of record as follows:

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