UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Apple Inc.,
Petitioner,

v.

Varia Holdings LLC,
Patent Owner.

U.S. Patent No. 8,381,974

Inter Partes Review Case No. 2024-01362

PATENT OWNER'S PRELIMINARY RESPONSE

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LIST OF PATENT OWNER'S EXHIBITS

Exhibit	Description
2001	U.S. Patent No. 6,771,981 to Zalewski *et al.*

Varia Holdings LLC ("Patent Owner") submits this Preliminary Response to the Petition of Apple Inc. ("Petitioner" or "Apple") seeking *inter partes* review ("IPR") of U.S. Patent No. 8,381,974 ("the '974 patent").

I. INTRODUCTION

Patent Owner respectfully requests that the Board deny the Petition for IPR against the '974 patent. The Petition has failed to establish a reasonable likelihood that it will prevail in demonstrating that any of the challenged claims are unpatentable.

The '974 patent, entitled "Emulated Radio Frequency Identification," relates to a mobile communication device, such as a mobile phone, that can perform telephony and emulate RFID tags. The "primary communication function" of the device is transmission of "signals of a voice call," which "facilitate a user in communicating with another user of another communication device." APPLE-1001 at 7:14-18, 3:53-55.

All challenged claims require a mobile communication device having: (1) a "transceiver" and/or "transmitter" (2) that is configured to output a "voice call signal." Willgert, The Petition's primary reference, fails to disclose these limitations.

The Petition tries to mask the prior art's deficiencies by incorrectly asserting that a ***Bluetooth signal*** satisfies the required "***voice call signal***" limitation of all challenged claims. That argument fails. The Bluetooth signal disclosed in the

Willgert/Mooney combination is a low power, short range signal transmitted from a mobile device to a headset—it is ***not*** the type of signal capable of making or generating a voice call to the user of another device, as required by the claims. The Petition never once addresses, and essentially ignores, these fundamental differences between a "***voice call signal***" and a ***Bluetooth signal***. Nor does it identify any circuit elements purportedly capable of transmitting a "voice call signal." Accordingly, Willgert, alone or in combination with Mooney, is missing a "transceiver" and/or "transmitter" having "voice call signal" functionality.

All challenged claims additionally require a "transceiver" and/or "transmitter" configured to output "RFID transponder" signals/data. Here too, Willgert fails to disclose these limitations.

Willgert is substantively identical to the disclosure of U.S. Patent No. 6,771,981 to ("Zalewski") (Ex. 2001), which the Patent Office previously considered. Willgert, like Zalewski, discloses only a conventional RFID transponder, not a "transceiver" or "transmitter." As the Patent Office previously determined, a conventional RFID transponder like Zalewski or Willgert does not meet the claimed "transceiver" or "transmitter" limitations.

The inventors here took a different approach from the prior art—instead of using a conventional RFID transponder capable of outputting only one unique RFID, the '974 patent uses a "transceiver" and/or "transmitter" having "RFID

transponder" functionality. This innovation allowed a mobile communication device to ***emulate*** any number of RFID transponders, thereby enabling the device's virtual wallet capability. During prosecution of related U.S. patent 8,127,984 (the '984 patent), the Patent Office initially applied a prior art rejection over Zalewski, which Patent Owner overcame. In allowing the claims, the Examiner identified that "[t]he prior art of record fails to reach the limitations of the transmitter/transceiver configured to output/transmit . . . the RFID transponder signal/data." APPLE-1008 at 18.

Lastly, because the Patent Office has considered the substance of Willgert and the Petition does not assert the Office made any material errors, the Board should exercise its discretion under 35 U.S.C. § 325(d) to deny institution of review.

Accordingly, the Petition fails and the Board should deny institution.

II. BACKGROUND

A. The Prior Art Used Dedicated RFID Transponders

Radio frequency identification, or RFID, is a wireless identification technology that can be used wherever identification and/or verification is required. Such applications include, as examples: financial transactions, *e.g.*, using a credit card; granting physical access, *e.g.*, opening a door lock; and enabling use, *e.g.*, starting an automobile. In the prior art, radio frequency identification was accomplished by embedding an RFID transponder (often called a "tag"), into an

object, such as credit card, keycard, or car key, etc. Transponders were relatively simple circuits that would output a unique identifier when placed within a radio field. An RFID reader would read the transponder by emitting a wireless signal. If the transponder was close enough to the reader, the transponder would send its unique identifier, thereby initiating the payment transaction, access, or other authorization.

Prior art RFID transponders were isolated simple circuits that were not integrated with any device electronics. They often required no internal power source—the RFID signal from the reader would energize a transponder to emit its signal—and their sole function was to return their unique identifier when placed near a reader. Because each RFID transponder could only return a single identification—both as a limitation of their technology, but also by design as a unique identifier—a user would need separate tags or cards for each RFID identification, *e.g.*, one for each credit card, keycard or key.

U.S. Patent No. 6,771,981 (the "Zalewski '981 patent"), discussed extensively by the Patent Office during prosecution of the '984 patent, was an example of this prior art approach. It focused on "an RFID transponder 110" embedded in a removable cover for a phone or other device "such as an MP3 player." Ex. 2001 at 7:63-8:3. Like all RFID transponders, it included only a single, unique identifier. If a user wanted to use more than one RFID transponder—e.g., one for a credit card and separate one for a hotel key—they would need to change to a different device

cover.

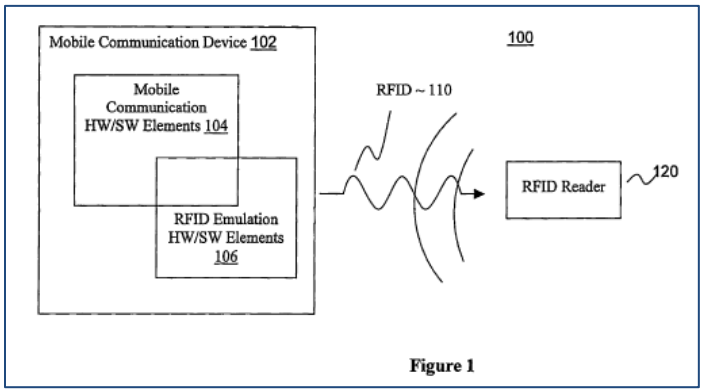
B. The Patented Inventions Replaced RFID Tags with RFID Emulation

Varia's patented inventions solved the drawbacks of the prior art through "Emulated Radio Frequency Identification." Rather than use an RFID transponder, Varia's patent ***emulates*** a transponder by using other electronic components such as a "transceiver" and/or "transmitter." By integrating these components into the electronics of a mobile communications device, Varia enabled smartphones to replace the collection of credit cards, keycards, car keys, etc., with a singular device that could store and present myriad RFID data on demand. The embodiments of the patent taught how to detect the presence of an RFID reader, and in response, allow the user to present an emulated RFID tag that mimics an RFID transponder. This inventive RFID emulation feature allows a user to enter, store and present any specific RFID data of their choosing using the device's processor, display and interface, creating a virtual wallet of credit cards and keys on a phone.

To enable RFID emulation, additional components needed to be added to a mobile communication device. At the same time, some existing circuitry within a smartphone could be repurposed to support RFID emulation. Varia's patents teach leveraging and supplementing the existing telephony infrastructure of a smartphone with dedicated internal RFID components to enable RFID emulation and mobile wallet functionality. APPLE-1001 at 3:56-61 ("embodiments of the present

invention advantageously leverage on existing elements of mobile communication device 102, and supplement them, to enable mobile communication device 102 to be able to provide a RFID, emulating a RFID transponder, as well as facilitating user communication").

Figure 1 of Varia's patents shows there is only partial, not total, overlap of the components performing telephony and RFID emulation in the patented inventions. *Id.*, Fig. 1; 3:48-55. Such overlap may include, *e.g.*, the processor and other electronic components of the device, as illustrated in Figure 3. *Id.*, Fig. 3; 5:14-36.



III. SUMMARY OF THE REFERENCES ASSERTED IN THE PETITION

A. Willgert

Willgert describes a "communications unit for identifying objects or persons." APPLE-1004 at Abstract. The "communications unit" includes a "receiver/transmitter unit" operable with a "Bluetooth communications system," and a "transponder" operable with an "RFID System." *Id.* The "communications unit" itself is not equipped with any "voice call signaling" capability.

While Willgert explains that a "transponder" can be included in a mobile telephone designed for Bluetooth communication (*id.* at [0030]), Willgert does not describe any telephony infrastructure. To the extent any telephony infrastructure could be suggested by Willgert, it focuses on a single design "constructed so that the transponder will also function when the mobile telephone is switched-off in general." *Id.* at [0031]. This would enable "the user [to] be identified without carrying a separate transponder." *Id.* at [0031].

B. Mooney

Mooney relates to communication of a Bluetooth signal between a mobile phone and an external headset. In particular, Mooney describes a Bluetooth interface that allows a Bluetooth headset to establish an audio connection to a "conventional wireless phone" that "does not have Bluetooth installed." APPLE-1005 at Abstract. The Bluetooth protocol disclosed by Mooney involves a "secure pairing process in a piconet" which provides "communications over short distances." *Id.* at [0002], [0004].

IV. <u>CLAIM CONSTRUCTION</u>

The Petition notes that the parties have submitted claim construction briefing in a district court litigation involving the '974 patent in the Eastern District of New York (*Varia Holdings LLC v. Apple Inc.*, 23-cv-7477, E.D.N.Y.) and further asserts that no formal claim constructions are required in this proceeding. Pet. at 6.

Patent Owner does not dispute the Petition's statement on claim construction for the purposes of this Preliminary Response. Patent Owner does not acquiesce to Petitioner's claim construction positions or waive any right to address or propose interpretations of any claim term as appropriate if review should be instituted.

V. THE PETITION FAILS TO SHOW A REASONABLE LIKELIHOOD OF PREVAILING ON ANY CHALLENGED CLAIM

The Petition fails to demonstrate that Willgert, either in view of Mooney or alone, renders obvious any of the challenged claims.

A. Grounds 1A and 2: The Willgert-Mooney Combination Fails to Disclose a "Transceiver" and/or "Transmitter" Capable of Outputting "Voice Call Signal[s]"

All challenged claims require a "transceiver" and/or "transmitter" configured to output or transmit "voice call signal[s]" Ex. 1001 at cls. 1, 8, 12. There is no disclosure in Willgert or Mooney that teaches or suggests these limitations.

As to transmitting "voice call signal[s]," the Petition points to Willgert and Mooney's Bluetooth communication capability. In particular, the Petition points to Willgert and Mooney's disclosure of "Bluetooth voice communication between a telephone . . . and a Bluetooth headset." Pet. at 19. The Petition's argument fails. The signals that perform Bluetooth communication between a mobile device and its paired headset are fundamentally different from, and do not satisfy the "voice call signal[s]" required by the claims.

The '974 patent teaches that "the transmit and receive signals of a voice call"

are "the ***primary communication function***" of the claimed mobile device. APPLE-1001 at 7:14-17 (emphasis added). The patent further specifies the primary function of the claimed mobile device "facilitate[s] a user of device 102 to engage in communication with another user of another communication device." *Id.* at 3:35-37. In other words, the claimed "voice call signals" are the type of signals capable of making or generating a voice/telephone call to the user of another device.

Unlike the claimed "voice call signal," Bluetooth signals are not used to make or generate calls. Bluetooth signals are short-range wireless signals. They are primarily used as an alternative to a wired connection in order to pair or couple nearby devices electronic devices, such as peripheral headsets. APPLE-1013 at 22-23 ("Bluetooth is a low cost, low power, short range radio technology originally developed as a cable replacement to connect devices such as mobile phones, headsets, PDA's and portable computers."); APPLE-1017 at 1 (Bluetooth "can also be adapted for printers, fax machines, keyboards").

To the extent the '974 patent references any applications/functionality that involve pairing or coupling the claimed mobile communication device to a peripheral—the only disclosure involves providing RFIDs to be stored in the mobile device. APPLE-1001 at 4:37-44 ("The RFIDs may be provided in any one of a number of known or to be designed manners, including . . . from a coupled computing device.").

In the Willgert-Mooney combination, the Bluetooth communication that the Petition relies upon is a Bluetooth headset signal, not a "voice call signal." While a Bluetooth headset signal may allow a headset to "hear voice and/or tones . . . generated from [a] wireless phone" via an "audio gateway" (Pet. at 15 (citing Ex. 1005 at [0048]), such a signal does ***not*** have the capability to make or generate a voice call to the user of another device.

The Petition itself recognizes this distinction. As one example, in alleging that it would have been obvious to modify Willgert's communication unit to include a single, common processor for various types of wireless signals, the Petition acknowledges that Bluetooth signals are distinct from voice call signals. Pet. at 63 ("Willgert's 'communications unit,' involve use of a single, common processor . . . for processing ***all wireless signals*** (RFID, ***Bluetooth***, ***voice calls***.") (emphasis added). Petitioner's expert, Dr. Ding, likewise recognizes this distinction. APPLE-1003 at 135 ("this configuration would have removed the need for redundant circuitry . . . for Bluetooth and voice call signals with a mobile telephone.").

For the reasons explained above, the Petition has failed to show that Willgert, alone or in combination with Mooney, discloses the claimed "voice call signal." Nor does the Petition identify any circuit elements purportedly capable of transmitting a "voice call signal." Accordingly, Willgert, alone or in combination with Mooney, is missing a "transceiver" and/or "transmitter" having "voice call signal" functionality.

B. Ground 1B: Willgert Fails to Disclose a "Transceiver" Capable of Outputting "Voice Call Signals

Ground 1B purports to apply Varia's claim construction positions from the district court litigation involving the '974 patent in the Eastern District of New York (*Varia Holdings LLC v. Apple Inc.*, 23-cv-7477, E.D.N.Y. ("Litigation"). Pet. at 1, 6-7. The Petition makes the conclusory assertion that Willgert's purported disclosure of "RFID and voice call signaling functionality within a single telephone" somehow renders the claim elements obvious under Varia's Litigation construction, but fails to explain how. (Pet. at 62).

As an initial matter, Patent Owner expressly disagrees with the Petition's characterizations of Varia's proposed Litigation constructions. The particular constructions that the Petition appears to apply in Ground 1B do not track or apply Varia's proposed Litigation constructions.[1] Nevertheless, whether under Varia's

[1] While the Petition includes the claim construction briefing from the Litigation as supporting exhibits, none of Patent Owner's claim construction briefing is cited in Ground 1B. Pet. at 60-67. Rather, the Petition cites only to preliminary Litigation documents that were filed ***before*** the Parties' exchanged their claim construction positions in May 2023 in accordance with the Litigation schedule (APPLE-1058 at 2), such as the Complaint (APPLE-1050), Preliminary Infringement Contentions

actual claim construction positions from the Litigation or under the Petition's incorrect characterization of those construction—Ground 1B fails.

i. Willgert Fails to Disclose a "Transceiver" / "Transmitter" under Varia's Litigation Position

With respect to "transceiver," the Petition incorrectly alleges that "Varia interprets ***transceiver*** as encompassing circuity of different components within a mobile device that *collectively* enable transmission/reception functionality of the mobile device." Pet. at 62. (emphasis in original). That is not Varia's Litigation construction, and in fact, it is much broader than Varia's construction.

As reflected in the claim construction briefing, Varia's proffered Litigation construction for "transceiver" is: "[t]he components responsible for transmitting and receiving signals in a mobile communications device that are ***integrated into the electronics of the device***." APPLE-1059 (emphasis added). Among other things, the Petition omits the portion of Varia's construction that requires the RFID components to be electronically integrated into a device having voice call signal functionality. Pet at 62-66. This omission is significant, as Willgert fails to disclose RFID transmission components that are integrated to the electronics of a phone.

Willgert relates to "an object or person identification communications unit"

(APPLE-1052), and briefing and expert testimony in connection with a Motion to Dismiss (APPLE-1053; APPLE-1055). Pet. at 60-67.

equipped with Bluetooth and RFID signaling capability. APPLE-1004 at [0010]. This "communications unit" itself, as described by Willgert's figures and specification, is not equipped with any "voice call signaling" components or capability, and does not have any telephone capability. And, while Willgert's Bluetooth and RFID signaling components are connected, Willgert ***does not*** disclose or suggest integrating the RFID electronics with the electronics of a mobile phone.

Just the opposite—Willgert teaches it is "particularly advantageous" when "the [RFID] ***transponder*** will also function ***when the mobile telephone is switched-off*** in general" so that "the user can be identified without carrying a separate transponder." APPLE-1004 at [0031]. In other words, Willgert teaches ***separating*** the electronics and processing of RFID signals from the electronics and processing of voice call signals in a mobile telephone. Accordingly, under Varia's litigation position, Willgert fails to disclose or suggest a "transceiver" or "transmitter" capable of outputting "RFID transponder" signals/data.

ii. Willgert Fails to Disclose a "Transceiver" / "Transmitter" Under The Petition's Incorrect Characterization

Ground 1B also fails under the Petition's incorrect characterization of Varia's Litigation construction. All challenged claims in Ground 1B require a "transceiver" capable of outputting a "voice call signal." Ex. 1001 at cls. 1, 8. However, for the reasons explained above in Section V.A (incorporated by reference here), and the

additional reasons below, Willgert does not teach, disclose, or suggest outputting a "voice call signal," let alone a "transceiver" or any other circuitry for outputting a "voice call signal." These elements are simply not disclosed in Willgert.

The Petition wholly fails to identify any particular component(s) in Willgert that it alleges would satisfy the "transceiver" and/or "transmitter" elements having voice call signaling capability. As explained above, Willgert's "communications unit" itself does not include any "voice call" signaling components or capability—it contains only Bluetooth and RFID signaling components/functionality, none of which satisfy the claimed elements. Furthermore, Willgert does not describe or suggest any specific "transceiver" or "transmitter" having voice call signaling functionality, nor does the Petition allege that it does. Thus, under Ground 1B, the Petition simply fails to identify where any such elements are allegedly disclosed.

With respect to the elements of "switching" a "transceiver" to output a "voice call signal," the Petition alleges that because Willgert's "circuit 6" can purportedly "provide[] signal processing functionality for both Bluetooth signals and RFID signals," a POSITA would be motivated to modify the "communications unit" to "configure control circuit 6 as a common processor for handling processing for voice call signals"—along with Bluetooth and RFID signals. Pet. at 63-64. The Petition alleges that this would "remov[e] the need for redundant circuitry . . . for Bluetooth and voice call signals." *Id.* at 64.

These conclusory obviousness arguments fail to track the claim limitations or provide the requisite analysis for a proper obviousness inquiry. Instead, the Petition merely presents a single sentence conclusion of desirability (*i.e.*, "removing the need for redundant circuitry for Bluetooth and voice call signals"), without ever *identifying* any transmission and/or processing circuitry capable of sending a "voice call signal"—let alone explaining what the modification is, how a POSITA would implement such a modification, or how a POSITA would have done so with an expectation of success. *Id.* Such conclusory statements cannot support a finding (even preliminarily) of obviousness. *Intelligent Bio-Sys. Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify with particularity the evidence that supports the grounds for the challenge to each claim.").

Contrary to the Petition's mischaracterization, a POSITA would *not* have been motivated to modify Willgert's communication unit to include a "a single, common processor . . . for processing all wireless signals (RFID, Bluetooth, voice calls)." Pet. at 63. As an initial matter, while Willgert discloses "[d]ifferent embodiments with different degrees of integration between the Bluetooth arrangement and the [RFID] transponder arrangement" of the communications unit itself (APPLE-1004 at [0027]), Willgert ***does not*** disclose or suggest integrating the electronics of the

"object or person identification communications unit" with the electronics of a mobile telephone. Just the opposite—as explained above in Section V.B.i, and incorporated herein by reference, Willgert expressly teaches ***separating*** the electronics and processing of RFID signals from the electronics and processing of voice call signals in a mobile telephone. Thus, Willgert's disclosure expressly undermines and teaches away from the Petition's alleged motivation to combine all processing in order to remove redundant circuitry. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326 (Fed. Cir. 2009) ("An inference of nonobviousness is especially strong where the prior art's teachings undermine the very reason being proffered as to why a person of ordinary skill would have combined the known elements."). Accordingly, the Petition's obviousness challenge fails.

C. All Grounds: Willgert Fails to Disclose a "Transceiver" and/or "Transmitter" Configured to Output "RFID Transponder" Data/Signals

All challenged claims of the '974 patent require a "transceiver" and/or "transmitter" that is configured to output or transmit "RFID transponder data" or "RFID transponder signals." Ex. 1001 at cls. 1, 8, 12. But there is no disclosure in Willgert that teaches or suggests any such "transceiver" or "transmitter."

The Petition points to Willgert's "RFID transponder 2" for RFID signaling capability. Pet at 28. ("[S]witch 7. . . switches between transmitting voice signals

(e.g., Bluetooth voice communication) and RFID signals, e.g., by switching between the output of Bluetooth transmitter 1 and the output of RFID transponder 2."). The Petition's argument fails. "RFID transponder 2" is a conventional type of RFID transponder as demonstrated, for example, by its ability to continue to function while the mobile telephone is switched off. APPLE-1004 at [0031]. For the reasons explained above in Section II.A, conventional RFID transponders are different from and do not satisfy the claimed "transceiver" and "transmitter" limitations.

Zalewski—which was previously considered by the Patent Office and contains substantively identical disclosure to that of Willgert—demonstrates why this is the case. Zalewski involved "an RFID transponder 110" embedded in a removable cover for a phone or other device "such as an MP3 player." Ex. 2001 at 7:63-8:3. As argued during prosecution of related U.S. patent 9,405,947, like Willgert, Zalewski disclosed a conventional RFID transponder that lacked RFID emulation and virtual wallet capability—its RFID transponder would continue to function independently as an RFID transponder whether attached to the device or not. APPLE-1009 at 530 ("Zalewski describes an RFID transponder (110) that functions regardless of whether it is attached"). During the '984 patent prosecution, the Examiner initially applied a prior art rejection over Zalewski, which the Patent Owner ultimately overcame. APPLE-1008 at 283-287. In allowing the '984 patent claims, the Examiner identified that "[t]he prior art of record fails to reach the

limitations of the transmitter/transceiver configured to output/transmit . . . the RFID transponder signal/data." APPLE-1008 at 18.

D. 35 U.S.C. § 325(d) Applies to All Grounds

The Patent Office previously considered Zalewski—having a substantively identical disclosure to Willgert—as discussed above in Section V.C. In allowing the claims, the Examiner identified that "[t]he prior art of record fails to reach the limitations of the transmitter/transceiver configured to output/transmit . . . the RFID transponder signal/data." APPLE-1008 at 18. Because the Patent Office has considered the substance of Willgert and the Petition does not assert the Office made any material errors, the Board should exercise its discretion under 35 U.S.C. § 325(d) to deny institution of review.

E. Holloway and Pitroda Do Not Teach or Suggest The Limitations of the Independent Claims

The Petition relies on Holloway and Pitroda in Ground 2 in connection with the dependent claims of the '984 patent. There is no disclosure in Holloway or Pitroda that teaches or suggests the limitations of the independent claims. And the Petition does not even contend that Holloway or Pitroda teaches or suggests any limitations of the independent claims as it points to nothing from those references in connection with the independent claims. *See* Pet. at 67-87.

VI. CONCLUSION

For the reasons set forth above, Patent Owner respectfully requests that the

Board deny institution.

Respectfully submitted,

Dated: December 13, 2024

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 CFR § 42.24(d), the undersigned certifies that this brief complies with the type-volume limitations of 37 CFR §§ 42.24(b)(1), 42.24(a)(1)(i). This brief contains 3,933 words as calculated by the "Word Count" feature of Microsoft Word, the word processing program used to create it, which is less than the 14,000 word count limit.

Dated: December 13, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.205(b), the undersigned hereby certifies that on December 13, 2024, a complete and entire copy of the foregoing **Patent Owner's Preliminary Response** and Exhibit 2001 were served on Petitioner by filing through the Patent Trial and Appeal Case Tracking System (P-TACTS) and via email to IPR50095-0181IP1@fr.com, as authorized in Petitioner's mandatory notices:

Dated: December 13, 2024

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