UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION,
Petitioner

v.

INTERDIGITAL PATENT HOLDINGS, INC.
Patent Owner

Case No. IPR2024-00306
U.S. Patent No. 9,173,054

PATENT OWNER'S PRELIMINARY RESPONSE

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InterDigital Patent Holdings, Inc. ("Patent Owner" or "InterDigital") submits this preliminary response in accordance with 35 U.S.C. § 313 and 37 C.F.R. § 42.107, responding to the Petition for *Inter Partes* Review ("Petition") of claims 1, 3-10, 12, 14-15, 21, 23, 25-32, 34, 36-37, 43, 46-47, and 49-50 of U.S. Patent No. 9,173,054 ("the '054 Patent") filed by Microsoft Corporation ("Petitioner" or "Microsoft").

I. INTRODUCTION

The Board should deny institution in its discretion under 35 U.S.C. § 314(a) for any one of the following reasons:

Procedurally, the petition should be denied on *Fintiv* grounds in light of the underlying district court and ITC proceedings. Petitioner has filed four IPR petitions challenging the validity of two patents at issue in the underlying district court case and ITC proceeding.[1] The IPR petitions contain in total 25 grounds. *Id*. Importantly, Petitioner has asserted these same prior art references (and many more) in both the ITC proceeding and in the district court case. Ex-2006, 9-10; Ex-2004, 75-146. By way of this Petition and its three other petitions challenging the claims of the two patents, Petitioner is seeking to circumvent the true purpose of the America Invents Act and, rather than simplify or streamline existing proceedings, Petitioner is

[1] *See, e.g.*, IPR2024-00305; IPR2024-00306; IPR2024-00537; and IPR2024-00538.

seeking to offer its real-party-in-interest ("RPI"), Lenovo, four distinct opportunities to challenge the claims of these patents (once at the ITC, once in district court, and in two separate Petitions before this tribunal). Moreover, the district court case (in which Petitioner's RPI, Lenovo, has not requested a stay) will have completed the claim construction process before the Board makes an institution decision in ***any*** of the aforementioned IPRs. Accordingly, institution of this Petition and the other Petitions goes against the very principles and premise of the AIA, as it would multiply and complicate the proceedings, rather than simplify matters.

Substantively, the Petition fails to consider secondary considerations of non-obviousness. While Petitioner does not bear the burden of proof as to secondary considerations, it is well aware of the fact that Patent Owner is relying on Apple AirDrop in proving up Domestic Industry in the underlying ITC proceeding because Petitioner and RPI Lenovo's have been cooperating in the preparation of this Petition. By way of example, Petitioner Microsoft is challenging the same claims in this Petition that are asserted in the underlying district court case, and because the infringement contentions in that case were served—rather than publicly filed—the only way Petitioner would be in possession of that information would be if those contentions, or a list of asserted claims, had been provided by RPI Lenovo. RPI Lenovo is also clearly aware of Patent Owner's contention, provided in interrogatory responses in the ITC proceeding, that secondary considerations show that the very

claims challenged in this Petition are not obvious.

As will be shown below, Apple—recognizing that the ’054 Patent (and the related ’933 Patent) include fundamental aspects of its highly successful AirDrop system—took a license to the ’933 and ’054 Patents in October 2022. The evidence presented below will demonstrate that substantial evidence shows that the Challenged Claims of the ’054 Patent are not obvious because no one in the industry combined the features of the Challenged Claims prior to the priority date of the ’054 Patent. Moreover, the features recited in the Challenged Claims, and embodied in the Apple AirDrop system, have been commercially successful, have received substantial commercial acclaim, solved a long-felt but unresolved need for the claimed features, and are being copied by others that are seeking to compete with AirDrop.

For these reasons, institution should be denied.

II. BACKGROUND

A. The ’054 Patent

The ’054 Patent includes two independent claims, Claims 1 and 23, and each of these claims, along with numerous claims that depend from Claims 1 and 23, have been challenged in the Petition. Petition, 2. Specifically, Petitioner has challenged the patentability of claims 1, 3-10, 12, 14-15, 21, 23, 25-32, 34, 36-37, 43, 46-47, and 49-50 (collectively, the “Challenged Claims”).

The ’054 Patent describes, among other things, a method and apparatus for wirelessly transferring data from a touchscreen device. According to the method of the patent, a user may select a file to transfer from a touchscreen device. The processor of the touchscreen device uses Bluetooth to detect nearby devices, from which the user can select a target device. After sending a message to the target device to transfer the selected file, and receiving an acceptance, the touchscreen device transfers the file to the target device using Wi-Fi. Claim 1 of the ’054 Patent is representative and is shown below.

> 1. A method performed by a wireless transmit/receive unit (WTRU), the method comprising:
>
> processing, by the WTRU from a touch display, an input to select media in an application;
>
> detecting, by the WTRU over bluetooth, another WTRU;
>
> processing, by the WTRU, another input from the touch display to select the another WTRU;
>
> sending, by the WTRU to the selected another WTRU, a message to transfer the selected media;
>
> receiving, by the WTRU, an acceptance to transfer the selected media; and
>
> transferring, by the WTRU to the selected another WTRU over

WiFi, the selected media.

Ex-1001, 10:53-65. As specifically recited in Claim 1, the wireless transmit/receive unit ("WTRU") is a touchscreen device capable of receiving touchscreen inputs. *Id*., Figure 1; 2:42-45 ("In general, WTRU 101, and WTRU 103 are each minimally comprised of an application processor 105, a communication peripheral 107, and a touchscreen/display peripheral 109.").

The WTRU is capable of processing a touchscreen input from a user indicating that a media element is desired to be transmitted to a second device. *Id*., 8:6-45. When such an input is detected, the transmitting WTRU relies on a communication technology to detect another WTRU (e.g., a target WTRU) in proximity to the transmitting WTRU. These communications technologies can "include technologies such as a third generation partnership (3GPP) second or third generation standards (2G/3G) modem, Bluetooth© or WiFi©." Ex-1001, 2:60-63. Furthermore, the specification of the '054 Patent makes clear that "[a]ny combination or all of these communication technologies may be implemented in a single component design." *Id*., 2:63-65.

In a specific embodiment, the '054 Patent discloses that environment information can be gathered by the transmitting WTRU about target WTRUs, and the information gathering process can be "gathered via a service discovery protocol (SDP) such as currently available protocols such as Bluetooth© …." *Id*., 5:38-40.

This same protocol enables the transmitting WTRU to discover other information about target WTRUs. *Id*., 5:38-6:17. The information collected by the transmitting WTRU enables the transmitting WTRU to understand the capabilities of the target WTRU and generate configuration information that can be used to prepare "instructions for implementing the transfer process through specific components in the communication peripheral." Ex-1001, 5:38-6:17; 6:50-7:6.

Once a desired target WTRU has been identified, a user can select that specific target WTRU from among other available WTRUs. Ex-1001, 7:7-22. The transmitting WTRU can then send a message to the target WTRU to determine whether the user of the target WTRU is willing to receive the transfer of information (which may be media element such as a digital photograph, video file, word processing document, or other media element, Ex-1001, 8:28-32). Ex-1001, Abstract; Claim 1; Claim 23. If the user accepts the request to transfer the media element, the media element can be transferred to the target WTRU. *Id*., Abstract; 8:60-63; Claim 1; Claim 23. The transfer may be based on the aforementioned configuration information, which accounts for "settings for attributes such as power level, antenna orientation, security parameters, and the like." *Id*., 6:50-7:6. Thus, in some embodiments, the transfer of the media element data may be completed using one of the communication technologies disclosed in the '054 Patent, including Bluetooth© and Wi-Fi©. Ex-1001, 2:45-49; 2:55-65; 4:53-65; 6:50-7:6; Claim 1;

Claim 23.

B. Claim Construction

For the sake of this Response only, Patent Owner adopts Petitioner's position that no constructions are required.

C. Person of Skill in the Art

For the purposes of this Preliminary Response, Patent Owner does not challenge Petitioner's definition of a POSITA, but Patent Owner reserves the right to argue for a different definition should the Board institute trial in this proceeding.

III. ARGUMENT

A. Institution Should Be Denied Under *Fintiv* Because the Issues Presented by this Petition and Petitioner's Two Other Petitions will be Resolved in the Underlying District Court Case and Institution of this Petition and the Other Petitions Will Greatly Multiply the Proceedings, Rather than Simplify Matters

Petitioner and its real-party-in-interest, Lenovo, are seeking four bites at the validity apple. The '054 Patent is being asserted by Patent Owner in an ITC proceeding and a related district court proceeding in the Eastern District of North Carolina. Petitioner has now filed two IPR petitions (the present case and IPR2024-00538) challenging the claims of the '054 Patent without offering any stipulation as to whether the prior art presented in this case (or in the related case) will be used in the ITC or in the district court case. This is contrary to the purpose of the America Invents Act and contravenes the goal of the PTAB to present an alternative to district court litigation challenging patent validity. Instead Petitioner seeks to complicate

the proceedings and take advantage of ***four*** distinct opportunities to challenge the claims of the '054 Patent (in the aforementioned petitions, the district court, and in the ITC proceeding). This should not be permitted, and the Board should exercise its discretion to deny institution of this Petition.

As Director Vidal has pointed out, "Congress designed the America Invents Act (AIA) post-grant proceedings 'to establish a more efficient and streamlined patent system that will improve patent quality and limit unnecessary and counterproductive litigation costs.'" Ex. 2002, 1 (citing H.R. Rep. No. 112- 98, pt. 1, at 40 (2011), 2011 U.S.C.C.A.N. 67, 69; *see* S. Rep. No. 110- 259, at 20 (2008)). Instituting Petitioner's multiple IPR petitions is directly contrary to this goal. This is because "[p]arallel district court and AIA proceedings involving the same parties and invalidity challenges ***can increase, rather than limit***, litigation costs." *Id.* (emphasis added).

Here, instituting the two IPR petitions challenging the claims of the '054 Patent will have the same outcome as the ***single*** district court case (upholding validity or invalidating the patents) and will dramatically increase the litigation costs of the parties. Notably, the district court case is considering the exact same references and will also consider more invalidity grounds. It is a fallacy to consider Petitioner's IPR petitions as streamlining the dispute between the parties. And this analysis ignores the parallel ITC proceeding, in which the ITC is considering the

exact same references (as well as additional invalidity grounds). The Board should thus use its discretion to deny institution.

Under 35 U.S.C § 314(a), the Board has discretion to deny a petition based on the status of a related litigation. The Board considers six factors to determine whether efficiency, fairness, and the merits support denial:

> Factor 1: whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
>
> Factor 2: proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
>
> Factor 3: investment in the parallel proceeding by the court and the parties;
>
> Factor 4: overlap between issues raised in the petition and the parallel proceeding;
>
> Factor 5: whether the petitioner and the defendant in the parallel proceeding are the same parties;
>
> Factor 6: other circumstances that impact the Board's exercise of discretion, including the merits.

Apple v. Fintiv, IPR2020-00019, Paper 11 at 5-6 (PTAB March 20, 2020) (precedential). As discussed below, the six *Fintiv* factors support the Board denying institution in this case. The current advanced state of the parallel district court case, as well as the lack of even a request for a stay, favors denial of the Petition. By the time the Board would issue an institution decision in any of the IPR petitions filed by Petitioner Microsoft (expected late-June or early-July 2024), claim construction will have been fully briefed and likely argued to the district court. Moreover, fact

discovery has been underway and will continue during the pendency of all four of the Petitions. As mentioned above and explained below, Lenovo has not requested a stay pending resolution of the IPRs.

Furthermore, ***Petitioner failed to present any stipulation*** in its Petition related to prior art being asserted at the ITC and in district court. In fact, the very art asserted in this Petition, and in the related Petitions cited below, are being asserted by an RPI in this case—Lenovo—in the ITC case and in the district court case as well. Ex-2006, 9-10; Ex-2004 75-146. While Petitioner may argue that it is not a party to those cases, Petitioner's identification of real-parties-in-interest is telling. Specifically, Petitioner identified "its customers Lenovo (United States). Inc., Lenovo PC HK Limited, Lenovo Group Limited, and Motorola Mobility LLC . . . as additional RPIs for this Petition." Petition, xii. Moreover, ***the Petition challenges the same claims*** of the '054 Patent that have been asserted in infringement contentions served in the district court case. These contentions have not been publicly filed, so it is without doubt that Petitioner Microsoft is working closely with RPI Lenovo in coordinating these IPRs with the parallel district court proceeding.

Patent Owner is, at this point, unaware of whether Petitioner Microsoft is indemnifying Lenovo (or any of the RPIs listed in the Petition) in the underlying ITC and district court proceedings, but it seems unlikely that Petitioner would have

filed two IPR petitions challenging the claims of the '054 Patent[2], as well as two additional petitions[3] challenging the claims of U.S. Patent No. 8,737,933 (the parent of the '054 Patent) if that were not the case. Accordingly, Petitioner and its RPIs are seeking to challenge Patent Owner's patent claims four times—twice before the PTAB, once in the district court proceeding, and once at the ITC. And Petitioner's failure to offer any stipulation as to the use of the asserted prior art in other venues should be determinative and the Board should exercise its discretion to deny institution of these duplicative proceedings and deny Petitioner the opportunity to end-run the rules of the PTAB with multiple challenges to the claims in the '054 Patent ***in three different forums***.

Petitioner's challenge of the '054 Patent does not meet the purpose of the American Invents Act—to alleviate the duplicative efforts in assessing the invalidity of the patents, and, in fact, it increases the likelihood of inconsistent results across the proceedings in the three separate venues. There is no argument that can be offered that supports instituting four IPRs—that would issue narrow invalidity rulings under 35 U.S.C. §§ 102 and 103 in the district court trial—rather than letting the parties resolve all of these issues in a single district court case. Accordingly, the

[2] IPR2024-00306 and IPR2024-00538.

[3] IPR2024-00305 and IPR2024-00537.

Board should deny institution to maintain the goals of efficiency and efficacy. *See General Plastic Industrial Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 16-17 (PTAB Sept. 6, 2017).

Factor 1: the district court case has not been stayed. This factor is neutral. The Board has previously held that "***[i]n the absence of specific evidence***, we will not attempt to predict how the district court in the related district court litigation will proceed because the court may determine whether or not to stay any individual case." *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24 at 7 (PTAB June 16, 2020) (informative) (emphasis added). Here there is no evidence in the Petition suggesting that the district court litigation will be stayed pre or post institution.[4]

[4] Petitioner presents a single paragraph arguing why the Board should not deny institution under *Fintiv* in its Petition (Petition, 3) and makes an almost identical argument in its second Petition challenging the claims of the '054 patent (IPR2024-00538, Paper 1, 3). That single paragraph fails to include any substantive evidence as to why the Board should ignore *Fintiv* in either case—despite the fact that Petitioner had ***two*** opportunities (***four*** if the Board also considers the identical arguments made in IPR2024-00305 and IPR2024-00537) to do so. Accordingly, Petitioner should not be allowed to present additional *Fintiv*-related argument in

Petitioner has not filed a motion to stay the district court litigation and never mentions, in any of its Petitions, whether it will do so. Accordingly, in the absence of any evidence presented by Petitioner, the Board should consider this factor to be, at best, neutral.

Factor 2: the ITC and district court case will resolve all of the issues presented in the two petitions (and more). A trial date has not been set by the Court in the Eastern District of North Carolina, but the ITC trial is scheduled to take place on June 26, 2024 (likely before an institution decision in any of the IPR filings). Ex-2048, 7. The Patent Office has noted that "scheduled trial dates are unreliable and often change" and that "[a] court's scheduled trial date, therefore, is not by itself a good indicator of whether the district court trial will occur before the statutory deadline for a final written decision."[5] Here, while the court in the Eastern District of North Carolina has not yet set a trial date, Petitioner has not provided any evidence or speculation as to when that trial date will fall, and the Board should thus consider

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response to this or any other POPR. Petitioner had ample opportunity and word-space to make such arguments and consciously elected not to do so. The Board should not permit Petitioner additional briefing (and words) to further end-run the Board's rules.

[5] Ex-2002, 8.

this factor to be neutral.

Factor 3: there has and continues to be significant investment by the parties in the district court litigation. The Board has used its discretion to deny institution when, as here, there is significant investment in the parallel district court proceeding. The district court proceeding has been pending since September 1, 2023. The Parties have prepared and exchanged infringement and invalidity contentions, presented initial disclosures, and are in the midst of fact discovery and motion practice. In fact, by the time the Board would even issue an institution decision, claim construction will have been briefed and likely argued. Ex-2003, 15. Specifically, claim construction briefing will be completed on May 23, 2024. *Id*. While the court has not set a date for a claim construction hearing (which is discretionary), it is likely that such a hearing would take place prior to an institution decision in this case, which will issue in late June or early July of 2024. Because of the investment in the underlying district court case, and the fact that the claims construction proceedings in that case will likely be complete before any institution decision from the Board, this factor weighs against institution.

Factor 4: there is significant overlap between issues raised in the petition and in the parallel proceeding. "[I]f the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding, th[at] fact has favored denial." *Fintiv*, IPR2020-00019, Paper 11 at 12.

In this case, Factor 4 weighs heavily in favor of denying institution.

As noted above, Petitioner is seeking four distinct opportunities to challenge the patentability of the claims of the '054 Patent. Specifically, the same art is being asserted against the '054 Patent in the two IPRs, the district court case, and in the ITC proceeding. Petitioner has failed to offer any stipulation whatsoever—in either Petition challenging the '054 Patent—that would alleviate duplication or streamline parallel proceedings. Petitioner could have proposed such a stipulation that might better address the duplicative efforts and adhere to the purpose of *inter partes* review as an alternative to district court litigation. *Compare Sand Revolution II*, Paper 24 at 12 n.5 ("Petitioner stipulates only that it will not pursue, in district court, the 'same grounds' presented in the Petition . . . Petitioner could have stipulated that it would not pursue any ground raised or that *could have been reasonably raised in an IPR*.") (emphasis added), *with Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 19 (PTAB Dec. 1, 2020) (precedential) ("Importantly, Petitioner broadly stipulates to not pursue 'any ground raised or that could have been reasonably raised.'"). Instead, in the two IPR Petitions challenging the claims of the '054 Patent, Petitioner intentionally elected not to provide any such stipulation despite having 28,000 words across the two Petitions to do so.

Petitioner challenges the same claims in this Petition—and in its additional Petition challenging the claims of the '054 Patent—that RPI Lenovo does in its

invalidity contentions at the ITC. *See* Ex-2004, 75-146. In fact, Petitioner relies on the same principal references in the Petition that RPI Lenovo relies on in the parallel district court litigation. *See* Ex. 2006, 9-10. Thus, the Petition includes substantial overlap with the claims and evidence asserted in the parallel litigation. Those invalidity contentions cite the same prior art references asserted in the two IPR Petitions.

Petitioner's failure to offer a stipulation actually allows it to circumvent estoppel and get four bites at the invalidity apple for the '054 Patent. It would permit Petitioner's named RPI, Lenovo, to maintain in the district court and ITC proceedings additional invalidity arguments that are not presented in the two IPR petitions. Those invalidity arguments could then be raised during trial. If Petitioner were to fail at trial, it would still have, as backup, the Final Written Decision to be issued by the Board, in this case and the related case (IPR2024-00538). Petitioner's failure to offer a stipulation is antithetical to the purposes of *inter partes* review, and this factor weighs heavily in favor of denying institution.

Factor 5: the petitioner and the defendant in the parallel proceeding are the same party. Factor 5 weighs in favor of denial because both Patent Owner InterDigital, and Microsoft's identified real-party-in-interest, Lenovo, are the same parties in the related district court litigation and ITC proceeding. *Fintiv*, IPR2020-00019, Paper 11 at 15 ("Because the petitioner and the defendant in the parallel

proceeding are the same party, this factor weighs in favor of discretionary denial."). Petitioner does not contest this and specifically identifies Lenovo as an RPI in both of its Petitions challenging the claims of the '054 Patent. Accordingly, this factor weighs in favor of denying institution.

Factor 6: the merits of the Petition are weak. The final factor weighs in favor of denial because there is no "compelling challenge" of invalidity on the merits of the Petition. Ex-2002, 4 ("compelling, meritorious challenges will be allowed to proceed at the PTAB even where district court litigation is proceeding in parallel"). As shown in the following sections, Petitioner's arguments on the merits do not meet the high standard required of an invalidity challenge. *Id.* ("Compelling, meritorious challenges are those in which the evidence, if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence."); *see also Vector Flow, Inc. v. HID Glob. Corp.*, IPR2023-00353, Paper 8 at 23-24 (PTAB July 27, 2023) (same). Specifically, the evidence presented below shows that Petitioner cannot overcome substantial evidence supporting secondary considerations of non-obviousness that definitively show that the Challenged Claims of the '054 Patent are not obvious.

B. The Petition Fails To Establish a *Prima Facie* Case of Obviousness Because it Does Not Consider Secondary Considerations of Non-Obviousness

"To satisfy its burden of proving obviousness, a petitioner cannot employ merely conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380–81 (Fed. Cir. 2016). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *Garmin Intl., Inc. v. Wisconsin Archery Prods.*, LLC, IPR2018-01137, Paper 31 at 46 (PTAB Dec. 9, 2019) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966)).

Secondary considerations of non-obviousness "guard as a check against hindsight bias." *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1079 (Fed. Cir. 2012). Secondary considerations serve to avoid having a fact finder "develop a hunch that the claimed invention was obvious, and then construct a selective version of the facts that confirms that hunch." *Id*. "Objective evidence of non-obviousness may often be the most probative and cogent evidence in the record and may often establish that an invention appearing to

have been obvious in light of the prior art was not." *Fox Factory Inc. v. SRAM LLC*, Case IPR2016-01876, Paper 8, 23 (PTAB Apr. 2, 2018) (internal quotations omitted).

As noted above in Section II.A, the inventions claimed in the '054 Patent relate to a method and device for wirelessly transferring information. According to the claims of the patent, a user may select a file to transfer from a touchscreen device. The processor of the touchscreen device uses Bluetooth to detect nearby devices, from which the user can select a target device. After sending a message to the target device and transfer the selected information, and receiving an acceptance, the touchscreen device transfers the information to the target device using Wi-Fi.

As shown in detail below, this same functionality is embodied in products made and sold by Apple, who has taken a license to the '054 Patent. The evidence provided below shows that the inventions recited in the claims of the '054 Patent are embodied in Apple's licensed AirDrop products, are not obvious, and these secondary considerations overcome the obviousness case presented in the Petition.

Petitioner ignores secondary considerations of non-obviousness, even though Petitioner is well aware of the commercial success, praise by others, skepticism, copying, and long-felt, unresolved need relating to Apple's licensed, commercial embodiments, all submitted herewith. All of these factors weigh heavily in favor of non-obviousness, and against institution, as explained below and in the declaration

of Dr. George Edwards (Ex-2001).

1. There is a Nexus Between the Benefits of the Claimed Invention and Apple's Licensed, Commercial Product

"[O]bjective evidence of nonobviousness includes copying, long felt but unsolved need, failure of others, commercial success, unexpected results created by the claimed invention, unexpected properties of the claimed invention, licenses showing industry respect for the invention, and skepticism of skilled artisans before the invention." *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998) (internal citations omitted). For evidence of secondary considerations of non-obviousness "to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention." *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010) (quoting *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995)).

a. Apple's Licensed AirDrop System

Apple AirDrop is a feature that allows users to share files, photos, videos, contacts, and other data wirelessly between nearby Apple devices, such as iPhones, iPads, Macs, and iPods. AirDrop uses a combination of Bluetooth and Wi-Fi to establish a peer-to-peer connection and transfer data securely and quickly, without requiring an internet connection or a common network. Ex-2007, 8-9; Ex-2008, 1-3.

AirDrop was introduced in Apple iOS 7, which was released on September 18, 2013, as part of the redesigned Apple Control Center. To use AirDrop, the sender can choose a file or content they want to share and tap or click the AirDrop icon, which will show a list of nearby devices that are also using AirDrop. The sender can then select the device they want to share with, and the receiver will get a notification asking them to accept or decline the transfer. If the receiver accepts, the file or content will be downloaded to their device, either to the app that supports it or to the Downloads folder on Mac. Ex-2009, 1-4; Ex-2011, 1-2.

AirDrop enables information to be shared between wireless devices by using Bluetooth to discover and pair devices that are within about 40 feet of each other, and Wi-Fi to create a direct link and transfer data at high speeds. AirDrop does not use the internet or a common network, which means it can work even when there is no cellular or Wi-Fi signal, or when the devices are on different networks. AirDrop also encrypts the data during the transfer, which means it is protected from unauthorized access or interception. Ex-2011, 1; Ex-2012, 3.

b. AirDrop Performs the Elements of the Challenged Claims of the '054 Patent

As described above, Apple's licensed AirDrop products include the functionality recited in the Challenged Claims. The following tables identify specific mappings of claim elements to AirDrop functionality and demonstrate nexus

between the merits of the claimed invention and the commercial and licensed AirDrop products that are made and sold by Apple. *See also* Ex-2001 (Edwards Decl.) at ¶¶ 68-112.

Claim Element	**Nexus Between the Claim Element and Apple AirDrop Products**
1[pre] A method performed by a wireless transmit/receive unit (WTRU), the method comprising:	Apple AirDrop products are wireless transmit/receive units that perform the claimed method. iPhone 14 Pro iPhone 15 Pro Ex-2013 IDG1373_0018174–18188, at -18174. For example, Apple devices with iOS 7 or later are touchscreen, Wi-Fi-enabled devices that are pre-installed with AirDrop. "AirDrop is an entirely new way to quickly and easily share content with people nearby." Ex-2021 IDG1373_0024231 at -24232. As shown below, the Apple AirDrop products have Wi-Fi capabilities.

iPhone 14 Pro	iPhone 15 Pro
Cellular and Wireless	
GSM/EDGE	GSM/EDGE
UMTS/HSPA+	UMTS/HSPA+
DC-HSDPA	DC-HSDPA
5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]	5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]
Gigabit LTE[6]	Gigabit LTE[6]
Wi-Fi 6	Wi-Fi 6E[10]
Bluetooth 5.3	Bluetooth 5.3
Ultra Wideband chip[11]	Second-generation Ultra Wideband chip[11]

Ex-2013 IDG1373_0018174–18188, at -18182.

Apple AirDrop products have a 6.1 inch OLED display with haptic touch capabilities. See, e.g., Ex-2013 IDG1373_0018174–18188 at -18177-78.

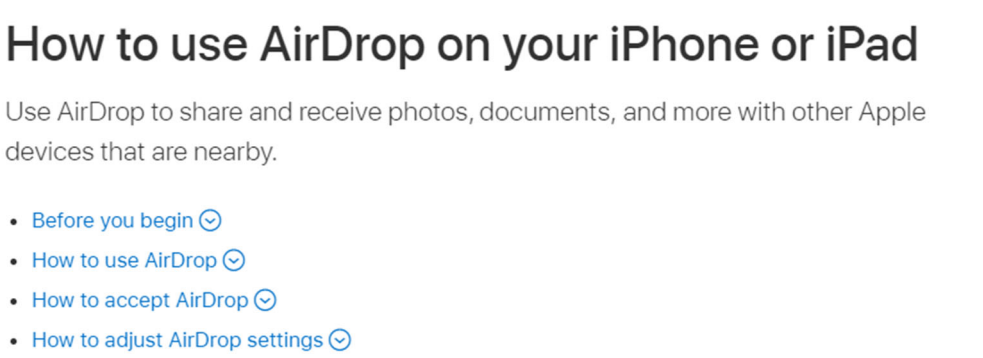
More specifically, and as shown below, "AirDrop-capable iOS devices and iPad devices running iOS 7 or later" are able to "use Bluetooth Low Energy (BLE) and Apple-created peer-to-peer Wi-Fi technology to send files and information to nearby devices."

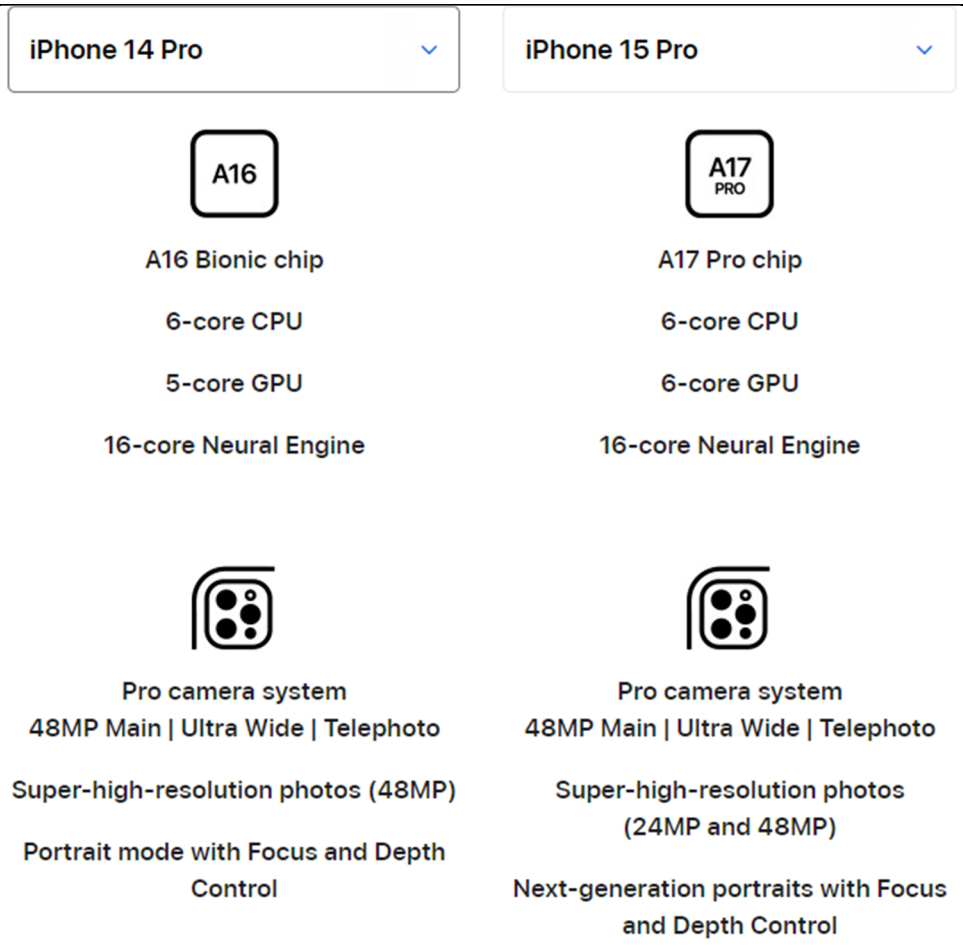
AirDrop security

Apple devices that support AirDrop use Bluetooth Low Energy (BLE) and Apple-created peer-to-peer Wi-Fi technology to send files and information to nearby devices, including AirDrop-capable iOS devices and iPad devices running iOS 7 or later and Mac computers running OS X 10.11 or later. The Wi-Fi radio is used to communicate directly between devices without using any internet connection or wireless access point (AP). This connection is encrypted with TLS.

AirDrop is set to share with Contacts Only by default. Users can also choose to use AirDrop to share with everyone, or turn off the feature entirely. Organizations can restrict the use of AirDrop for devices or apps being managed by using a mobile device management (MDM) solution.

Ex-2014 IDG1373_0003862–3863, at -3862.

	 Ex-2015 IDG1373_0018170–18173, at -18170.
1[a] processing, by the WTRU from a touch display, an input to select media in an application;	Apple AirDrop products comprise a WTRU that processes from a touch display an input to select media in an application, either literally or under the doctrine of equivalents. For example, as shown below, the iPhone 15 Pro contains an A17 Pro chip. The iPhone 14 Pro contains an A16 Bionic Chip.



Ex-2013 IDG1373_0018174–18188, at -18175.

Further, Apple AirDrop products have a 6.1 inch OLED display with haptic touch capabilities. See, e.g., Ex-2013 IDG1373_0018174–18188 at -18177-78.

As another example, when using AirDrop, users must "[o]pen an app, then ***tap Share*** or the Share button," such as when "shar[ing] a photo from the Photos app." Ex-2015 IDG1373_0018170–18173, at -18170 (all emphases added). "If you share a photo from the Photos app, ***you can swipe left or right and select multiple photos***." *Id*.

	How to use AirDrop 1. Open an app, then tap Share or the Share button. If you share a photo from the Photos app, you can swipe left or right and select multiple photos. 2. Tap the AirDrop button. Ex-2015 IDG1373_0018170–18173, at -18170.
1[b] detecting, by the WTRU over Bluetooth, another WTRU;	Apple AirDrop products comprise WTRUs that detect over Bluetooth another WTRU. Apple AirDrop products have Bluetooth 5.3 capability that detects devices in their proximity. Ex-2013 IDG1373_0018174–18188, at -18182.

iPhone 14 Pro | iPhone 15 Pro

Cellular and Wireless

iPhone 14 Pro	iPhone 15 Pro
GSM/EDGE	GSM/EDGE
UMTS/HSPA+	UMTS/HSPA+
DC-HSDPA	DC-HSDPA
5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]	5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]
Gigabit LTE[6]	Gigabit LTE[6]
Wi-Fi 6	Wi-Fi 6E[10]
Bluetooth 5.3	Bluetooth 5.3
Ultra Wideband chip[11]	Second-generation Ultra Wideband chip[11]

Ex-2013 IDG1373_0018174–18188, at -18182.

As shown below, when a user selects AirDrop as the method for sharing an item, the user's device emits a Bluetooth signal. "Other Apple devices that are awake, ***in close proximity***, and have AirDrop turned on, detect the signal and respond using peer-to-peer Wi-Fi, so that the sending device can ***discover the identity of any responding devices***." Ex-2014 IDG1373_0003862–3863, at -3863 (all emphases added); Ex-2020 IDG1373_0024231 at -24232 ("When you've got something you want to share, ***AirDrop shows you your contacts close by***.").

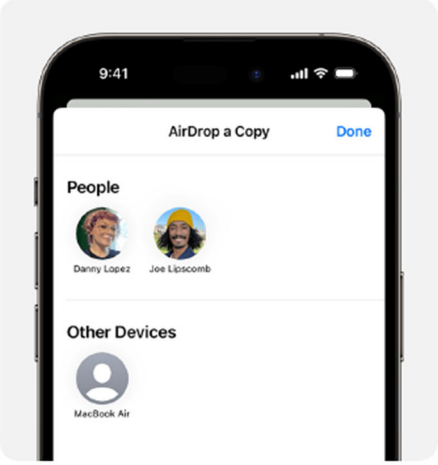
AirDrop operation

AirDrop uses iCloud services to help users authenticate. When a user signs in to iCloud, a 2048-bit RSA identity is stored on the device, and when the user turns on AirDrop, an AirDrop short identity hash is created based on the email addresses and phone numbers associated with the user's Apple ID.

When a user chooses AirDrop as the method for sharing an item, the sending device emits an AirDrop signal over BLE that includes the user's AirDrop short identity hash. Other Apple devices that are awake, in close proximity, and have AirDrop turned on, detect the signal and respond using peer-to-peer Wi-Fi, so that the sending device can discover the identity of any responding devices.

Ex-2014 IDG1373_0003862–3863, at -3863.

	See below documentation instructing users to "[c]heck that you and the person you're sending to have Wi-Fi and Bluetooth turned on" in order to use AirDrop. How to use AirDrop on your iPhone or iPad Use AirDrop to share and receive photos, documents, and more with other Apple devices that are nearby. Before you begin • Make sure that the person you're sending to is nearby and within Bluetooth and Wi-Fi range. • Check that you and the person you're sending to have Wi-Fi and Bluetooth turned on. If either of you have Personal Hotspot on, turn it off. • Check if the person you're sending to has their AirDrop set to receive from Contacts Only. If they do, and you're in their Contacts, they need to have your Apple ID's email address or mobile number in your contact card for AirDrop to work. • If you're not in their Contacts, have them set their AirDrop receiving setting to Everyone in order to receive the file. You can put your AirDrop receiving setting to Contacts Only or Receiving Off at any time to control who can see your device and send you content in AirDrop. Ex-2016 IDG1373_0003864–3866, at -3864 (How to use your iPhone or iPad) (annotated).
1[c] processing, by the WTRU, another input from the touch display to select the another WTRU;	Apple AirDrop products comprise a WTRU that processes another input from the touch display to select the another WTRU. For example, once potential AirDrop recipients are displayed on the user's device a user can select the AirDrop recipient with whom they want to share media. Ex-2020 IDG1373_0024231 at -24232 ("Just ***select who you want to share with*** and AirDrop does the rest."). As shown below, Apple users are instructed to "***[t]ap the AirDrop*** user that you want to share with."

	3. Tap the AirDrop user[1] that you want to share with. Or you can use AirDrop between your own Apple devices.  If you see a red numbered badge on the AirDrop button, there are multiple devices nearby that you can share with. Tap the AirDrop button, then tap the user that you want to share with. Learn what to do if you don't see the AirDrop user or your other device. Ex-2015 IDG1373_0018170–18173, at -18171.
1[d] sending, by the WTRU to the selected another WTRU, a message to transfer the selected media;	Apple AirDrop products comprise a WTRU that sends to the selected another WTRU a message to transfer the selected media. For example, as shown below, "[w]hen someone shares something with you using AirDrop, ***you see an alert***" showing the proposed transfer, which the user can "tap [to] Accept or Decline."

	How to accept AirDrop When someone shares something with you using AirDrop, you see an alert. You can tap Accept or Decline. Ex-2015 IDG1373_0018170–18173, at -18171.
1[e] receiving, by the WTRU, an acceptance to transfer the selected media; and	Apple AirDrop products comprise a WTRU that receives an acceptance to transfer the selected media. For example, as shown below, "[w]hen someone shares something with you using AirDrop, you see an alert," which the user can "tap [to] Accept or Decline." Then, "***if you tap Accept, the AirDrop will come through*** within the same app it was sent from."

<table>
<tr><td></td><td>
<h3>How to accept AirDrop</h3>
When someone shares something with you using AirDrop, you see an alert. You can tap Accept or Decline.

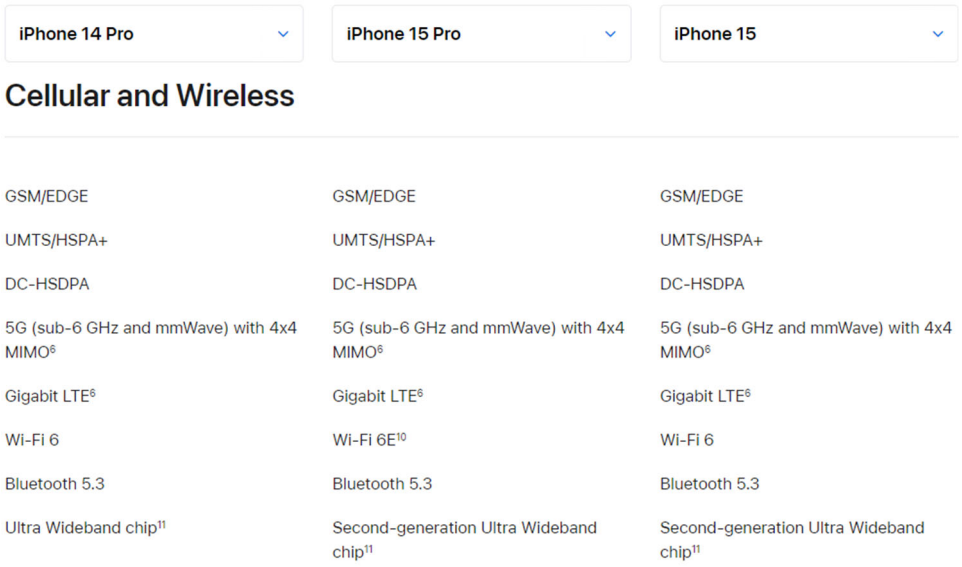
For most apps, if you tap Accept, the AirDrop will come through within the same app it was sent from. For example, photos appear in the Photos app and websites open in Safari. App links open in the App Store so you can download or purchase the app.

Ex-2015 IDG1373_0018170–18173, at -18171.
</td></tr>
<tr><td>1[f] transferring, by the WTRU to the selected another WTRU over WiFi, the selected media.</td><td>
Apple AirDrop products comprise a WTRU that transfers to the selected another WTRU over WiFi the selected media.

For example, as shown below, AirDrop uses “Apple-created peer-to-peer ***Wi-Fi technology to send files and information to nearby devices***, including AirDrop-capable iOS devices.”

<h3>AirDrop security</h3>
Apple devices that support AirDrop use Bluetooth Low Energy (BLE) and Apple-created peer-to-peer Wi-Fi technology to send files and information to nearby devices, including AirDrop-capable iOS devices and iPad devices running iOS 7 or later and Mac computers running OS X 10.11 or later. The Wi-Fi radio is used to communicate directly between devices without using any internet connection or wireless access point (AP). This connection is encrypted with TLS.

Ex-2014 IDG1373_0003862–3863, at -3863 (Apple Platform Security) (annotated).
</td></tr>
</table>

	Apple AirDrop products have at least Wi-Fi 6 capability.  iPhone 14 Pro ⌄ iPhone 15 Pro ⌄ iPhone 15 ⌄ **Cellular and Wireless** GSM/EDGE / GSM/EDGE / GSM/EDGE UMTS/HSPA+ / UMTS/HSPA+ / UMTS/HSPA+ DC-HSDPA / DC-HSDPA / DC-HSDPA 5G (sub-6 GHz and mmWave) with 4x4 MIMO[6] / 5G (sub-6 GHz and mmWave) with 4x4 MIMO[6] / 5G (sub-6 GHz and mmWave) with 4x4 MIMO[6] Gigabit LTE[6] / Gigabit LTE[6] / Gigabit LTE[6] Wi-Fi 6 / Wi-Fi 6E[10] / Wi-Fi 6 Bluetooth 5.3 / Bluetooth 5.3 / Bluetooth 5.3 Ultra Wideband chip[11] / Second-generation Ultra Wideband chip[11] / Second-generation Ultra Wideband chip[11] Ex-2013 IDG1373_0018174–18188, at -18182.

The same mapping can be attributed to Claim 23 of the ’054 Patent.

Claim Element	Nexus Between the Claim Element and Apple AirDrop Products
23[pre] A wireless transmit/receive unit (WTRU) comprising:	Apple AirDrop products are wireless transmit/receive units.

	iPhone 14 Pro iPhone 15 Pro Ex-2013 IDG1373_0018174–18188, at -18174. For example, Apple devices with iOS 7 or later are touchscreen, Wi-Fi-enabled WTRUs that are pre-installed with AirDrop. "AirDrop is an entirely new way to quickly and easily share content with people nearby." Ex-2020 IDG1373_0024231 at -24232. As shown below, the Apple Domestic Industry Products have Wi-Fi capabilities.

iPhone 14 Pro	iPhone 15 Pro
Cellular and Wireless	
GSM/EDGE	GSM/EDGE
UMTS/HSPA+	UMTS/HSPA+
DC-HSDPA	DC-HSDPA
5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]	5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]
Gigabit LTE[6]	Gigabit LTE[6]
Wi-Fi 6	Wi-Fi 6E[10]
Bluetooth 5.3	Bluetooth 5.3
Ultra Wideband chip[11]	Second-generation Ultra Wideband chip[11]

Ex-2013 IDG1373_0018174–18188, at -18182.

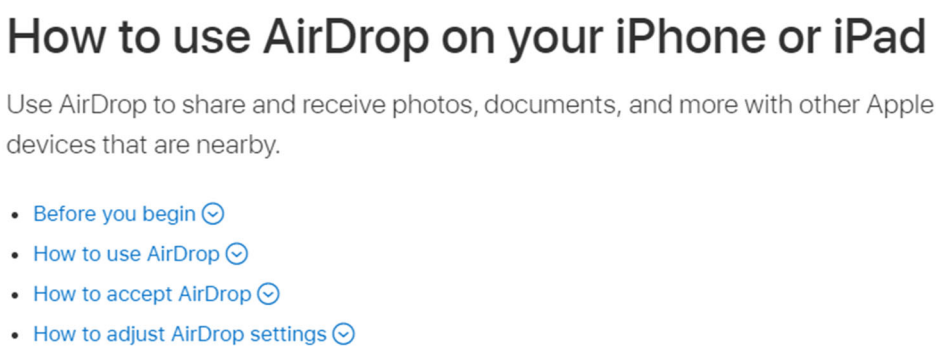
Apple AirDrop products have a 6.1 inch OLED display with haptic touch capabilities. See, e.g., Ex-2013 IDG1373_0018174–18188 at -18177-78.

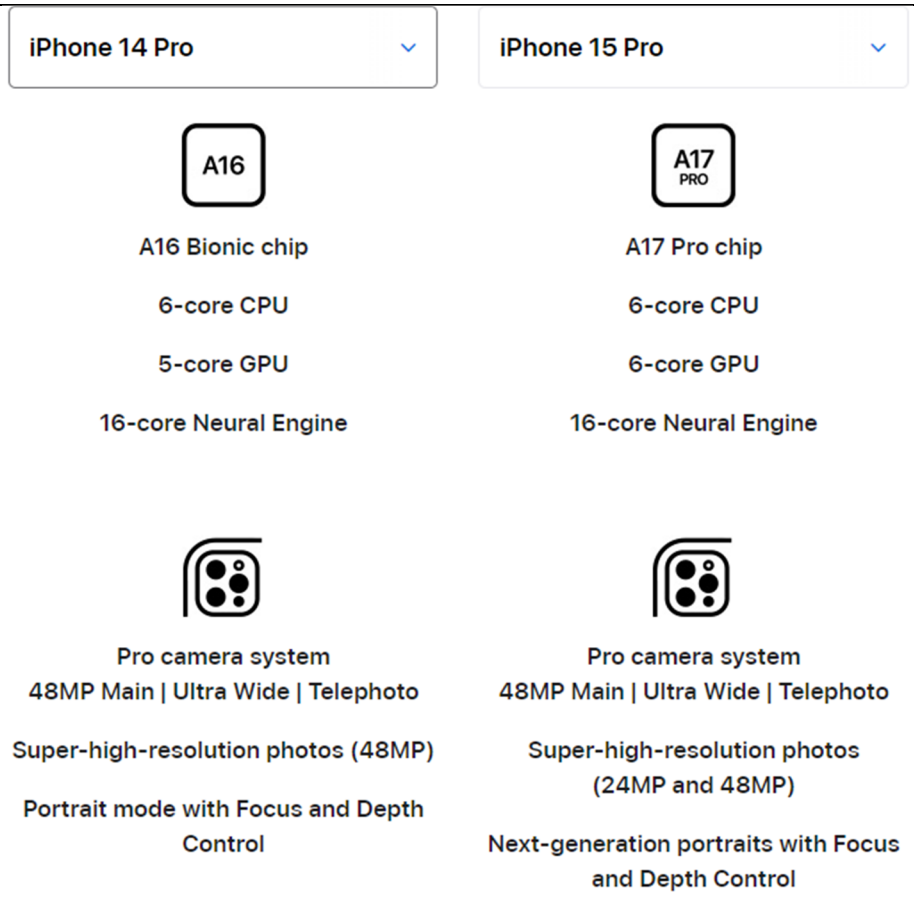
More specifically, and as shown below, “AirDrop-capable iOS devices and iPad devices running iOS 7 or later” are able to “use Bluetooth Low Energy (BLE) and Apple-created peer-to-peer Wi-Fi technology to send files and information to nearby devices.”

AirDrop security

Apple devices that support AirDrop use Bluetooth Low Energy (BLE) and Apple-created peer-to-peer Wi-Fi technology to send files and information to nearby devices, including AirDrop-capable iOS devices and iPad devices running iOS 7 or later and Mac computers running OS X 10.11 or later. The Wi-Fi radio is used to communicate directly between devices without using any internet connection or wireless access point (AP). This connection is encrypted with TLS.

AirDrop is set to share with Contacts Only by default. Users can also choose to use AirDrop to share with everyone, or turn off the feature entirely. Organizations can restrict the use of AirDrop for devices or apps being managed by using a mobile device management (MDM) solution.

	Ex-2014 IDG1373_0003862–3863, at -3862.  Ex-2015 IDG1373_0018170–18173, at -18170.
23[a] circuitry configured to process, from a touch display, an input to select media in an application;	Apple AirDrop products comprise circuitry configured to process, from a touch display, an input to select media in an application. Each Apple AirDrop product comprises circuitry configured to process, from a touch display, an input to select media in an application. The iPhone 14 Pro and iPhone 15 Pro contain an A16 Bionic chip and A17 Bionic chip, respectively.



Ex-2013 IDG1373_0018174–18188, at -18175.

Further, Apple AirDrop products have a 6.1 inch OLED display with haptic touch capabilities. See, e.g., Ex-2013 IDG1373_0018174–18188 at -18177-78.

As another example, when using AirDrop, users must "[o]pen an app, then ***tap Share*** or the Share button," such as when "shar[ing] a photo from the Photos app." Ex-2015 IDG1373_0018170–18173, at -18170 (all emphases added). "If you share a photo from the Photos app, ***you can swipe left or right and select multiple photos***." *Id*.

	How to use AirDrop 1. Open an app, then tap Share or the Share button. If you share a photo from the Photos app, you can swipe left or right and select multiple photos. 2. Tap the AirDrop button. Ex-2015 IDG1373_0018170–18173, at -18170.
23[b] circuitry configured to detect, by the WTRU over bluetooth, another WTRU;	Apple AirDrop products comprise circuitry configured to detect, by the WTRU over bluetooth, another WTRU. Apple AirDrop products have Bluetooth 5.3 capability that detects devices in their proximity. Ex-2013 IDG1373_0018174–18188, at -18182.

iPhone 14 Pro | iPhone 15 Pro

Cellular and Wireless

iPhone 14 Pro	iPhone 15 Pro
GSM/EDGE	GSM/EDGE
UMTS/HSPA+	UMTS/HSPA+
DC-HSDPA	DC-HSDPA
5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]	5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]
Gigabit LTE[6]	Gigabit LTE[6]
Wi-Fi 6	Wi-Fi 6E[10]
Bluetooth 5.3	Bluetooth 5.3
Ultra Wideband chip[11]	Second-generation Ultra Wideband chip[11]

Ex-2013 IDG1373_0018174–18188, at -18182.

As shown below, when a user selects AirDrop as the method for sharing an item, the user's device emits a Bluetooth signal. "Other Apple devices that are awake, ***in close proximity***, and have AirDrop turned on, detect the signal and respond using peer-to-peer Wi-Fi, so that the sending device can ***discover the identity of any responding devices***." Ex-2014 IDG1373_0003862–3863, at -3863 (all emphases added); Ex-2020 IDG1373_0024231 at -24232 ("When you've got something you want to share, ***AirDrop shows you your contacts close by***.").

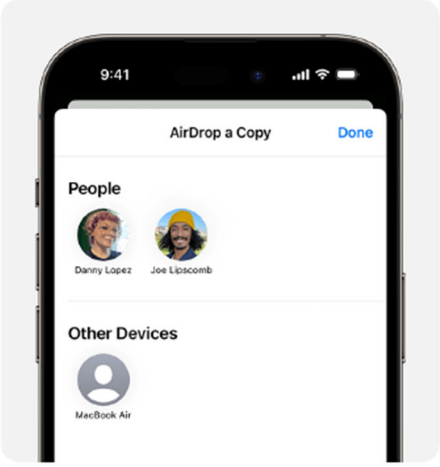
AirDrop operation

AirDrop uses iCloud services to help users authenticate. When a user signs in to iCloud, a 2048-bit RS identity is stored on the device, and when the user turns on AirDrop, an AirDrop short identity hash is created based on the email addresses and phone numbers associated with the user's Apple ID.

When a user chooses AirDrop as the method for sharing an item, the sending device emits an AirDrop signal over BLE that includes the user's AirDrop short identity hash. Other Apple devices that are awak close proximity, and have AirDrop turned on, detect the signal and respond using peer-to-peer Wi-Fi, that the sending device can discover the identity of any responding devices.

Ex-2014 IDG1373_0003862–3863, at -3863.

	See below documentation instructing users to "[c]heck that you and the person you're sending to have Wi-Fi and Bluetooth turned on" in order to use AirDrop. How to use AirDrop on your iPhone or iPad Use AirDrop to share and receive photos, documents, and more with other Apple devices that are nearby. Before you begin • Make sure that the person you're sending to is nearby and within Bluetooth and Wi-Fi range. • Check that you and the person you're sending to have Wi-Fi and Bluetooth turned on. If either of you have Personal Hotspot on, turn it off. • Check if the person you're sending to has their AirDrop set to receive from Contacts Only. If they do, and you're in their Contacts, they need to have your Apple ID's email address or mobile number in your contact card for AirDrop to work. • If you're not in their Contacts, have them set their AirDrop receiving setting to Everyone in order to receive the file. You can put your AirDrop receiving setting to Contacts Only or Receiving Off at any time to control who can see your device and send you content in AirDrop. Ex-2016 IDG1373_0003864–3866, at -3864 (How to use your iPhone or iPad) (annotated).
23[c] the circuitry further configured to process another input from the touch display to select the another WTRU;	Apple AirDrop products comprise circuitry further configured to process another input from the touch display to select the another WTRU. For example, once potential AirDrop recipients are displayed on the user's device, a user can select the AirDrop recipient with whom they want to share media. Ex-2020 IDG1373_0024231 at -24232 ("Just ***select who you want to share with*** and AirDrop does the rest."). As shown below, Apple users are instructed to "***[t]ap the AirDrop*** user that you want to share with."

	3. Tap the AirDrop user[1] that you want to share with. Or you can use AirDrop between your own Apple devices.  If you see a red numbered badge on the AirDrop button, there are multiple devices nearby that you can share with. Tap the AirDrop button, then tap the user that you want to share with. Learn what to do if you don't see the AirDrop user or your other device. Ex-2015 IDG1373_0018170–18173, at -18171.
23[d] circuitry configured to send, by the WTRU to the selected another WTRU, a message to transfer the selected media;	Apple AirDrop products comprise circuitry configured to send, by the WTRU to the selected another WTRU, a message to transfer the selected media. For example, as shown below, "[w]hen someone shares something with you using AirDrop, ***you see an alert***" showing the proposed transfer, which the user can "tap [to] Accept or Decline."

	How to accept AirDrop When someone shares something with you using AirDrop, you see an alert. You can tap Accept or Decline. Ex-2015 IDG1373_0018170–18173, at -18171.
23[e] circuitry configured to receive, by the WTRU, an acceptance to transfer the selected media; and	Apple AirDrop products comprise circuitry configured to receive, by the WTRU. For example, as shown below, "[w]hen someone shares something with you using AirDrop, you see an alert," which the user can "tap [to] Accept or Decline." Then, "***if you tap Accept, the AirDrop will come through*** within the same app it was sent from."

<table>
<tr><td></td><td>

How to accept AirDrop

When someone shares something with you using AirDrop, you see an alert. You can tap Accept or Decline.

For most apps, if you tap Accept, the AirDrop will come through within the same app it was sent from. For example, photos appear in the Photos app and websites open in Safari. App links open in the App Store so you can download or purchase the app.

Ex-2015 IDG1373_0018170–18173, at -18171.
</td></tr>
<tr><td>23[f] circuitry configured to transfer, by the WTRU to the selected another WTRU over WiFi, the selected media.</td><td>

Apple AirDrop products comprise circuitry configured to transfer, by the WTRU to the selected another WTRU over WiFi, the selected media.

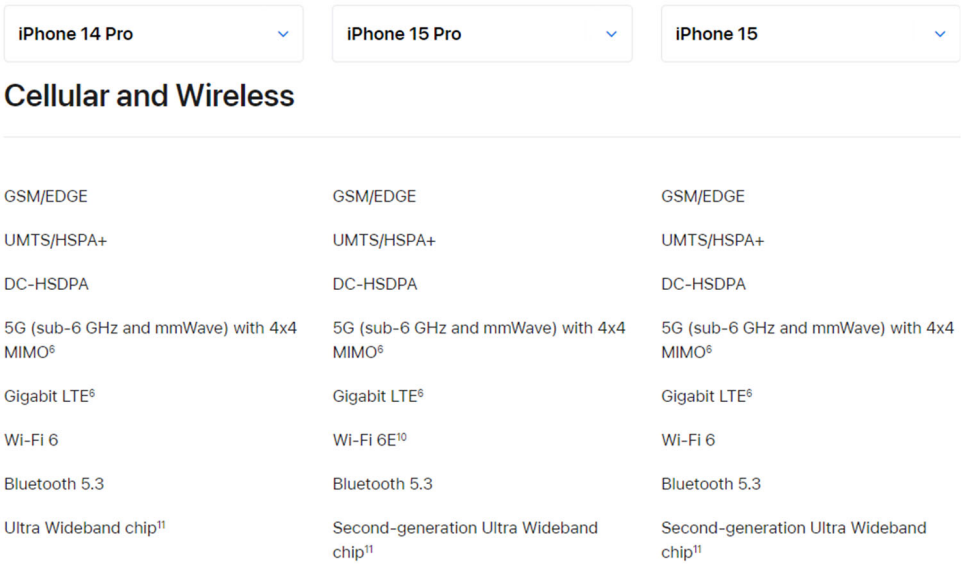
For example, as shown below, AirDrop uses “Apple-created peer-to-peer ***Wi-Fi technology to send files and information to nearby devices***, including AirDrop-capable iOS devices.”

AirDrop security

Apple devices that support AirDrop use Bluetooth Low Energy (BLE) and Apple-created peer-to-peer Wi-Fi technology to send files and information to nearby devices, including AirDrop-capable iOS devices and iPad devices running iOS 7 or later and Mac computers running OS X 10.11 or later. The Wi-Fi radio is used to communicate directly between devices without using any internet connection or wireless access point (AP). This connection is encrypted with TLS.

Ex-2014 IDG1373_0003862–3863, at -3863 (Apple Platform Security) (annotated).
</td></tr>
</table>

Apple AirDrop products have at least Wi-Fi 6 capability.



iPhone 14 Pro	iPhone 15 Pro	iPhone 15
Cellular and Wireless		
GSM/EDGE	GSM/EDGE	GSM/EDGE
UMTS/HSPA+	UMTS/HSPA+	UMTS/HSPA+
DC-HSDPA	DC-HSDPA	DC-HSDPA
5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]	5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]	5G (sub-6 GHz and mmWave) with 4x4 MIMO[6]
Gigabit LTE[6]	Gigabit LTE[6]	Gigabit LTE[6]
Wi-Fi 6	Wi-Fi 6E[10]	Wi-Fi 6
Bluetooth 5.3	Bluetooth 5.3	Bluetooth 5.3
Ultra Wideband chip[11]	Second-generation Ultra Wideband chip[11]	Second-generation Ultra Wideband chip[11]

Ex-2013 IDG1373_0018174–18188, at -18182.

c. Recognizing that its Products Embody the Challenged Claims, Apple Took a License to the ’054 Patent in 2022

Apple, recognizing that its Apple AirDrop products may embody the inventions recited in the Challenged Claims, took a license to the ’054 Patent in 2022. Evidence of that license can be found in public SEC filings. Ex-2017, 2 (InterDigital 8-K, October 3, 2022) (“On September 30, 2022, InterDigital, Inc. (the “Company”) renewed a patent license agreement with Apple, Inc. The Company expects to recognize approximately $134 million in revenue each year over the seven-year term of the license, which commenced on October 1, 2022.”); Ex-2018,

8 (InterDigital 10-K, February 15, 2023) ("During third quarter 2022, we [Patent Owner] renewed a multi-year, royalty-bearing, worldwide and non-exclusive patent license agreement with Apple (the "Apple PLA"). The term of the Apple PLA extends through September 30, 2029.Ex-2018, 8 ("Apple plans to spend nearly $1 billion over the next seven years for a license to InterDigital's patents."). Petitioner and its RPIs are aware of this license and it has been produced in the related ITC proceeding.

As demonstrated in the foregoing tables, Apple AirDrop products embody each and every element of at least Claims 1 and 23 of the '054 Patent. These challenged independent claims—the only independent claims included in the '054 Patent—and the manner in which the Apple AirDrop products embody each and every claim element, definitively demonstrate the nexus between the claimed invention, the merits of the claimed invention, and the following discussion of other secondary considerations of non-obviousness.

2. Commercial Success and Industry Praise

Evidence of commercial success and industry praise can be presented as secondary evidence of non-obviousness. *Graham*, 383 U.S. at 17. Here, Apple's AirDrop system and products have been a commercial success and demonstrate that the patented features recited in the Challenged Claims are not obvious.

Apple does not publicly release financial figures directly attributable to

AirDrop because it is a functionality embedded within Apple devices like the iPhone, iPad, and Mac desktop and laptop computers. However, the commercial success of AirDrop is evident from industry commentary.

Apple first unveiled AirDrop for mobile devices to the public in 2013, and it was met with widespread praise. *Graham*, 383 U.S. at 17-18 ("Against this background, the obviousness or nonobviousness of the subject matter is determined. such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.")). *See* Ex-2001 (Edwards Decl.) at ¶115-116. Headlines read, "How iOS 7's AirDrop Could Transform the Way We Share," and told of how "AirDrop possesses the potential to spur new forms of sharing digital content and thus, potential new applications and even new businesses could spring from AirDrop." Ex-2023, 1, 5. Reviewers called AirDrop, "a fantastic technological implementation of frictionless file sharing," (Ex-2024, 4) and a "great way to share files between systems, even big ones like video files or Photoshop files," (Ex-2025, 1) even going as far as saying, "[w]e've never encountered any system that makes it so easy to pass a file from one device to another." Ex-2024, 4.

AirDrop met an unresolved need in the industry for quick and simple media sharing between devices. *Graham*, 383 U.S. at 17. It differentiated itself from

anything else in the industry by utilizing Bluetooth detection to create a peer-to-peer system for Wi-Fi transmission of media between devices. One of the many reasons that AirDrop grew to become a "staple iOS feature that iPhone users love," (Ex-2026, 1) and a feature coveted by non-iPhone users is the fact that "[u]nlike similar Android and Windows Phone solutions that require back-to-back NFC contact of your phones, AirDrop works entirely wirelessly over Bluetooth." Ex-2027, 1. Apple recognized that the current state of data transfer between devices was stunted both by a lack of speed and a lack of convenience—most notably, data transfer in the industry preceding AirDrop almost entirely depended upon a service called Bump, "which let users tap phones together to share contacts and other files." Ex-2028, 1. However, it was inefficient and inconsistent, or as the publication Android Community put it, "[t]o be honest, nobody taps two smartphones together anymore." Ex-2029, 1. So Apple innovated and developed its own solution to the problem, Apple AirDrop, which has now been pursued as an alternative to "bump" technology, a lead which has been followed by competitors in the wireless industry.

3. Industry Competitors Sought to Develop AirDrop Alternatives of Their Own, Reflecting the Need to Copy AirDrop's Vast Commercial Success to Satisfy Their Customers' Long-Felt but Unresolved Needs

Where Apple led, the industry has followed, and others in the industry have now announced the incorporation of the claimed technology in their products

because Apple's innovation worked flawlessly. Ex-2030, 1 ("[AirDrop] has been robust and reliable, almost a second nature for sharing content among Apple device users."); *see also* Ex-2001 (Edwards Decl.) at ¶¶117-130.

a. Google Pursues Bump as an AirDrop Alternative

So flawlessly, in fact, that shortly after Apple released AirDrop, Google decided to purchase Bump, another entity working at developing contactless data transfer, in September of 2013. Ex-2031, 1. *See* Ex-2001 (Edwards Decl.) at ¶123. Many speculated that Google's "decision to buy Bump seems to have been partly driven by the impending release of Apple's iOS 7 . . . [which] introduces a technology called AirDrop." Ex-2032, 1. However, even before Google's purchase of Bump, Bump began to feel the pressure of their system compared to AirDrop—"Bump must feel bumped by AirDrop." Ex-2033, 2. Comparing the two, most analysts determined that "AirDrop on iOS 7 could make Bump unnecessary on its own platform." Ex-2032, 1. That's exactly what happened as "[Bump] failed to monetize successfully as other easy, mobile-friendly ways to share information were developed, most notably Apple's AirDrop for iOS 7." Ex-2028, 1. By December 31, 2013, just a few months after Google's purchase of Bump and Apple's release of AirDrop, Google announced it was shutting down Bump. *Id*. This failure to capitalize on the long-felt need symbolized the long road ahead for companies like Google, Samsung, and others as they attempted to develop the product Android users

begged for: seamless file transfer akin to AirDrop.

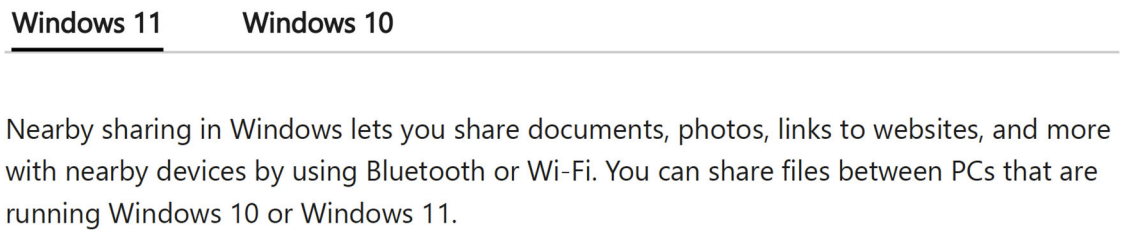
b. Google Tries Again with "Files Go"

While consumers hailed "AirDrop [] as one of the biggest advantages of sticking within the Apple ecosystem," (Ex-2034, 1) and it became "second nature for sharing content among Apple device users," (Ex-2030, 1) Apple competitors worked tirelessly to replicate its widespread success. In late 2017, it was reported that Google began "working on a new app called Files Go that'll work as a way to manage, clean up, and share files." Ex-2035, 1 ("It's that last [feature] that seems the most interesting here: Files Go seems to have a feature that works a lot like Apple's AirDrop, letting you easily send files to nearby Android phones over Bluetooth."). *See* Ex-2001 (Edwards Decl.) at ¶124. However, according to industry reviews, Google's "file-transfer feature doesn't appear to work quite as smoothly as AirDrop," leaving Android Beam's tapping mechanism as the "best way to send a file to a nearby phone." *Id*. ("Both people need to have the Files Go app open, whereas AirDrop lets you send files from any app to any nearby contact, even if they don't have the same app. Still, it'd be a nice addition to Android if Google began shipping this as a stock app. Right now, the best way to send a file to a nearby phone is by using Android Beam, which requires tapping the two phones together to make an NFC connection. It works, but it's an odd interaction that a lot of people don't seem to know about."). Android Beam, however, could not meet the industry need

created by AirDrop and would eventually be deprecated in December 2018. Ex-2029, 1.

c. Microsoft Develops "Nearby Sharing"

While Google fell short, Petitioner Microsoft also tried its hand at creating an AirDrop clone in late 2017, called "Near Share," where "[l]ike AirDrop, Near Share [] let Windows 10 PCs share documents or photos to PCs nearby via Bluetooth." Ex-2036, 1;[6] *see also* Ex-2001 (Edwards Decl.) at ¶128. For example, Microsoft Nearby Sharing devices, operating on the Windows 10 or Windows 11 operating systems, "lets you share documents, photos, links to websites, and more ***with nearby devices by using Bluetooth or Wi-Fi***." Ex-2049, 1 (emphasis added). Nearby devices can be detected using Bluetooth.



Id. When Nearby Sharing is turned on, Bluetooth is automatically turned on, as shown below, enabling a user to identify a target with which they want to share information.

[6] "Near Share," as referenced in the article, was branded "Nearby Sharing" when launched by Microsoft in 2018. Ex-2049.

> **Notes:**
>
> - To use nearby sharing, you don't need to pair both PCs over Bluetooth first. Both PCs just need to have nearby sharing turned on. (When nearby sharing is turned on, Bluetooth is turned on.)
> - In general, it takes more time for files to be transferred over Bluetooth compared to Wi-Fi. When sharing files over Bluetooth using nearby sharing, make sure large amounts of data aren't already being sent over Bluetooth, such as streaming audio over a Bluetooth speaker.

Ex-2050, 2. Moreover, Nearby Sharing ***enables recipients to "choose whether to accept an item a user want to share.***" Ex-2051, 20 n.4 (emphasis added). Once a recipient accepts, then the information can be shared via Wi-Fi. Ex-2050, 1 ("If the PC you're sharing from is running the latest version of Windows 11, ***you can share over Wi-Fi*** if the Windows 10/11 PC you're sharing to is connected to the same private Wi-Fi network.") (emphasis added).

It's no surprise, then, that reviewers of Nearby Sharing considered it "a Windows 10 take on Apple's AirDrop." Ex-2053, 1. Nearby Sharing was officially released in a Windows 10 update in April of 2018, and its users, many of which had "long been [] fan[s] of Apple's AirDrop feature," met its implementation with excitement because "[n]ow Windows users can enjoy the same convenience." Ex-2054, 1-2. Utilizing a similar functional design to AirDrop—that is, "Bluetooth and peer-to-peer Wi-Fi—," Nearby Sharing demonstrated that AirDrop remained the preeminent design for quick and easy file sharing between devices. *Id*. Still,

AirDrop's success far surpassed that of Nearby Sharing because AirDrop allowed sharing between both handheld and non-mobile devices, including iPhones, Macs, and iPads, while Nearby Sharing was limited to sharing between PCs only. *Id.* The industry's quest to enable sharing between different types of devices, like Apple accomplished in 2013, would spur on a race to meet that need in the ensuing years.

d. Google Turns to "Fast Share" and "Nearby Share"

In 2019, Google, following both Windows Nearby Sharing's moderate success with its AirDrop-like features *and* following its own failure in Android Beam, began work on yet another file sharing service called Fast Share, "which looks like . . . a competitor to Apple's AirDrop." Ex-2037, 1. However, unlike its previous failures to innovate in the space, Google decided it was best to simply mimic the AirDrop technology that "just works within Apple's ecosystem." Ex-2038, 1 ("The absence of a true Airdrop competitor on Android prompted Xiaomi, Oppo, and Vivo to come together to announce their own cross-device file transfer solution. On the other hand, Google is also working on its own solution in the form of Fast Share, which was originally spotted back in June 2019."). Accordingly, Fast Share functioned almost identically to AirDrop: "Rather than NFC, the service uses Bluetooth to initiate a handshake and then subsequently transfers files over a direct Wi-Fi connection." *Id*. ("This will allow for larger files to be transferred much more quickly than Android Beam. Fast Share even allows you to give your device

'Preferred Visibility' to nearby devices, which lets those devices 'always see your device when you're nearby, even if you're not using Fast Share.'").

Using Apple's proven model of Bluetooth device detection and Wi-Fi data transfer, Google began to have some success with Fast Share, which it renamed "Nearby Share." Ex-2052, 1. "After years of Apple standing alone," (Ex-2034, 1) the industry recognized that "Android is getting a feature that's been beloved among iPhone users for years." Ex-2039, 1 ("Google, which makes the Android mobile operating system, on Tuesday said it's launching a tool called Nearby Share that lets people quickly send files to the devices of people around them. The feature is similar to Apple's AirDrop, which debuted for Mac computers in 2011, then came to iPhones two years later. Google said the feature spent 'years in development[.]'"). The result was that "Android users everywhere rejoiced [because] [t]hey finally had a tool to rival Apple's Airdrop[.]" Ex-2040, 1 ("When Google launched Nearby Share in 2020, Android users everywhere rejoiced. They finally had a tool to rival Apple's AirDrop, a simple way to move files between devices without having to attach them to an email or upload them to Google Drive just to download them again on a new device.").

e. Samsung Sought to Satisfy the Same Long-Felt Need by Following the Pattern of Apple's Success

Samsung, meanwhile, seeing that Apple's seamless software experience of

AirDrop had resulted in massive commercial success being pursued by competitors throughout the industry, took heed of the fact that "[t]he area of real competition now is with software, and the software experience can now make or break purchase decisions," and it began "trying to match Apple's features." Ex-2041, 1; *see also* Ex-2001 (Edwards Decl.) at ¶129. Following suit with the rest of the industry, Samsung began developing its own "AirDrop-like file sharing service for Galaxy smartphones," called "Quick Share" in 2020. *Id*. Quick Share "fill[ed] a gap [for easily sharing files between Samsung devices] in Samsung's lineup that the iPhone has offered for years." Ex-2042, 1 ("Samsung's new Galaxy S20 lineup comes with two new features that may sound familiar to iPhone owners: video chatting that's built directly into the phone app, and the ability to quickly share files wirelessly. That's because the phones . . . will also support a new feature called Quick Share for easily sharing files between Samsung devices. Both additions fill a gap in Samsung's lineup that the iPhone has offered for years."). The announcement of Quick Share came as "good news" for "Android user[s] who ha[d] long envied Apple's AirDrop." Ex-2043, 1. Like AirDrop and Nearby Share, Quick Share functioned similarly, allowing users to "share everything with your friends instantly." Ex-2044, 2. The Bluetooth detection and Wi-Fi data transfer paradigm of Apple AirDrop had now been repeated multiple times, by multiple competitors throughout the telecommunications industry.

f. Google and Samsung Efforts to Achieve the Success of AirDrop have Continued—*Even after Microsoft Filed this Petition*

Google and Samsung partnered to bridge the gap to AirDrop, and "Google's new AirDrop clone [Nearby Share]," Window's AirDrop clone Nearby Sharing, and Samsung's AirDrop clone Quick Share continued to be refined to match the simple fact that "[i]t's easy to send files to and from Apple devices, thanks to AirDrop." Ex-2045, 1; *see also* Ex-2001 (Edwards Decl.) at ¶126.

On January 9, 2024, ***three weeks after Microsoft filed this Petition*** and in another attempt to match the ease of transferring media between Apple devices with AirDrop, "Google announced … at CES that it has collaborated with Samsung to combine their sharing solutions into a singular cross-Android solution under the Quick Share name." Ex-2046, 1. "Apple's AirDrop feature has been popular for a long time due to its ease of sharing contacts, images, files, etc," and while this generated massive commercial success and praise for Apple, it also created an unresolved need in the rest of the industry to "bring a similar feature." Ex-2047, 1 ("Apple's AirDrop feature has been popular for a long time due to its ease of sharing contacts, images, files, etc. Android smartphone companies including Google and Samsung have been trying to bring a similar feature. And now, Google has rolled out a file-sharing feature called Quick Share which makes transferring files easy from one Android device to another. The Quick Share feature was created with the

efforts of Samsung and Google.").

4. Apple's AirDrop Product, Built on Patent Owner's Solution of Bluetooth Detection and Wi-Fi Data Transfer, Served as the Paradigm for the Industry

After much trial and error over the past ten years, companies like Google, Microsoft, and Samsung found that the best way for them to fill this void for their customers was to mimic the functionality that has proven to be such a huge success for AirDrop. *See e.g.*, Ex-2001 (Edwards Decl.) at ¶131-132.

All of these efforts demonstrate the strength of the secondary considerations of non-obviousness associated with Apple AirDrop, a detection and data transfer system built upon the inventions recited in the Challenged Claims of the '054 Patent. Nexus has been demonstrated above, and for these reasons institution should be denied.

5. Additional Evidence of Long-Felt but Unresolved Need

Further evidence of non-obviousness is long felt but unresolved need. *Graham*, 383 U.S. at 17. Petitioner cites prior art that allegedly predates the priority of the Challenged Claims of the '054 Patent. Nevertheless, Petitioner does not explain why ***no one in the wireless communication industry***, including Apple, sought to implement the patented inventions in WTRUs prior to Patent Owner. Thus, despite Petitioner's arguments regarding the alleged prior art and the alleged knowledge of a POSITA, ***no one satisfied the long felt but unresolved need*** for the

patented inventions claimed in the '054 Patent until Apple, an industry leader, announced the inclusion of AirDrop in iOS 7. In view of this reality, Petitioner's lengthy discussion of the "State of the Art" (Petition, 3-11) actually cuts against Petitioner's obviousness case because it demonstrates that ***only Patent Owner InterDigital*** invented the concepts recited in the Challenged Claims.

The Board should discount the manner in which Petitioner has, through its selective discussion of the "State of the Art," sought to create a trail of hindsight-based bread crumbs to suggest that the Challenged Claims are obvious, and secondary considerations are intended to prevent that approach by serving as a "guard … against hindsight bias." *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063 at 1079. Secondary considerations serve to avoid having the Board "develop a hunch that the claimed invention was obvious, and then construct a selective version of the facts that confirms that hunch." *Id*. Here Petitioner has selectively presented its allegations in a manner that seeks to lead the Board to a seemingly inevitable conclusion that the Challenged Claims are unpatentable, but the evidence presented above shows that ***only Patent Owner InterDigital arrived at the solution*** to a problem the telecommunications industry has been facing for over a decade. Specifically, Patent Owner, and licensee Apple, arrived at the accepted solution for media sharing using handheld devices, and the rest of the industry is still struggling to catch up. If the Challenged Claims were truly

as obvious as Petitioner suggests, that would not be the case.

As noted above, the ’054 Patent issued on October 27, 2015, but claims priority to a provisional application filed on December 23, 2008. Apple implemented AirDrop, potentially the first commercial embodiment of the claims of the ’054 Patent in iOS 7, which was announced and launched on September 18, 2013. Up until that time, no one implemented the subject matter of Patent Owner’s claims, demonstrating a long felt but unresolved need for the claimed invention.

IV. CONCLUSION

For the reasons identified above, the Board should exercise its discretion and deny institution under *Fintiv*. Petitioner and RPI Lenovo ignore the true purpose of the America Invents Act—efficiency, simplification of issues, and cost reduction—and seek multiple challenges to the validity of the Challenged Claims without offering any stipulation concerning the use of identical prior art in the Petitions, the ITC proceeding, and the underlying district court litigation.

Moreover, as demonstrated in the foregoing argument, Apple AirDrop products embody each and every element of at least Claims 1 and 23 of the ’054 Patent and show that the Challenged Claims are not obvious in view of compelling secondary considerations. These challenged independent claims—the only independent claims included in the ’054 Patent—and the manner in which the Apple AirDrop products embody each and every claim element, definitively demonstrate

the nexus between the claimed inventions. The success of AirDrop, and competitors' efforts to mimic the success of AirDrop by relying on the very elements recited in the claims of the '054 Patent, demonstrate commercial success, industry praise (and acceptance), and the efforts of others in the industry to satisfy a long felt but unresolved need for the patented inventions.

For these reasons, Petitioner has failed to show that Challenged Claims 1 and 23 of the '054 Patent are unpatentable. Challenged dependent claims 3-10, 12, 14-15, 21, 25-32, 34, 36-37, 43, 46-47, and 49-50, which depend from Claims 1 and 23, are patentable for the same reasons.

For any or all of the above-described reasons, Patent Owner respectfully requests that the Board deny institution.

Dated: March 28, 2024

Respectfully submitted,

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE** specified in 37 C.F.R. § 42.24 have 9,967 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24(b)(1). This word count was prepared using Microsoft Word 2010.

Date: March 28, 2024

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Reg. No. 45,882

CERTIFICATION OF SERVICE

The undersigned hereby certifies that the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE** is being served on counsel for petitioner via electronic mail on, in its entirety on the following counsel of record for Petitioner:

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Respectfully submitted,

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