UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MICROSOFT CORPORATION,
Petitioner,

v.

INTERDIGITAL PATENT HOLDINGS, INC.,
Patent Owner.

IPR2024-00305
Patent 8,737,933

_____

REPLY DECLARATION OF PETER RYSAVY

MICROSOFT EXHIBIT 1086
Microsoft v. InterDigital
IPR2024-00305

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I, Peter Rysavy, do hereby declare as follows:

I. INTRODUCTION AND ENGAGEMENT

1. I have been retained as an independent expert on behalf of Microsoft Corporation, in connection with the above-noted Inter Partes Review ("IPR"), to provide my analyses and opinions on certain technical issues related to claims 1-9, 11, 13-14, 20-31, 33, 35-36, and 42-44 (collectively, the "challenged claims") of U.S. Patent No. 8,737,933 (hereinafter "the '933 patent").

2. This Reply Declaration is in addition to my initial declaration (EX1003) dated December 20, 2023 (the "First Declaration").

II. BACKGROUND AND QUALIFICATIONS

3. My First Declaration includes my CV, and describes my education and professional background in paragraphs 4-14.

III. MATERIALS CONSIDERED AND INFORMATION RELIED UPON

4. In preparing this declaration, in addition to the material referenced in paragraph 15 of my First Declaration, I have reviewed the following materials and any other materials discussed below in stating my opinions:

No.	Description
2001	Declaration of George Edwards, dated March 28, 2024
2007	iOS 7: What's new, https://web.archive.org/web/20130918185729/https://www.apple.com/ios/whats-new/

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2008	OS X: How to use AirDrop, https://support.apple.com/enus/HT203106
2009	Use AirDrop on your iPhone, iPad, or iPod touch, https://support.apple.com/en-us/HT204144
2011	About Bluetooth, Wi-Fi, and cellular on your iPhone, iPad, or iPod touch, https://support.apple.com/en-us/HT204681
2012	Use AirDrop on your Mac, https://support.apple.com/enus/HT203106
2013	Compare iPhone models, https://www.apple.com/iphone/compare/?modelList=iphone-14-pro,iphone-15-pro,iphone-15
2014	Apple Platform Security, AirDrop security, https://support.apple.com/guide/security/airdrop-security-sec2261183f4/1/
2015	How to use AirDrop on your iPhone or iPad, https://support.apple.com/en-us/HT204144
2016	How to use AirDrop on your iPhone or iPad, IDG1373_0003864– 3866
2023	Brian Hall, *How iOS 7's AirDrop Could Transform the Way We Share*, ReadWrite, June 28, 2013, https://readwrite.com/ios-7s-airdrop-has-the-potential-to-dramatically-change-how-we-share-content/
2024	Lucy Hattersley, *AirDrop Review*, Macworld, Sept. 29, 2013, https://www.macworld.com/article/667098/airdrop-review.html
2025	Adrian Kingsley-Hughes, *5 Thing Apple Needs to Fix in iOS, OS X and iCloud*, Forbes, Apr. 17, 2013, https://www.forbes.com/sites/adriankingsleyhughes/2013/04/17/5-things-apple-needs-to-fix-in-ios-os-x-andicloud/?sh=5fc4eb5b49c0
2026	Georgi Zarkov, *With Samsung's Answer to AirDrop, You Can Even Send Files to Your Fridge*, Phone Arena, Jan. 24, 2020
2027	Chris Hoffman, *AirDrop 101: Easily Send Content Between Nearby iPhones, iPads, and Macs*, How-To-Geek, Jan. 31, 2015, https://www.howtogeek.com/208143/use-airdrop-to-wirelesslysend-content-between-nearby-iphones-ipads-and-macs/

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2028	Catherine Shu, *Google to Close Bump and Flock, Its Recently Acquired File Sharing Apps*, Tech Crunch, Jan. 1, 2014, https://techcrunch.com/2013/12/31/google-to-close-bump-andflock-its-recently-acquired-file-sharing-apps
2029	Padla Rei, *Android Beam API Being Deprecated by Google*, Android Community, Dec. 20, 2018, https://androidcommunity.com/android-beam-api-beingdeprecated-by-google-20181220/
2030	Pratik Ghone, *How to Nearby Share? Apple has AirDrop; Android has Nearby Share*, Exhibit.tech, Feb. 20, 2024, https://www.exhibit.tech/trending-tech-news/how-to-nearby-shareapple-has-airdrop-android-has-nearby-share
2031	Tomio Geron, *Google Acquires Bump Mobile App*, Forbes, September 16, 2013, https://www.forbes.com/sites/tomiogeron/2013/09/16/googleacquires-bump-mobile-app/?sh=30f58b322975
2032	Charles Arthur, *Google Buys Smartphone File-Swapping App Bump as Sharing Grows*, The Guardian, Sept. 17, 2013, https://www.theguardian.com/technology/2013/sep/17/google-bump-smartphone-apple-airdrop
2033	Anthony Wing Kosner, *Apple Has Developers (Mostly) Convinced That iOS 7 Will Make Them More Money*, Forbes, June 12, 2013, https://www.forbes.com/sites/anthonykosner/2013/06/12/applehas-developers-mostly-convinced-that-ios-7-will-make-themmore-money/?sh=299b3ced71d7
2034	Christopher de Looper, *Android's Nearby Share Just Can't Compete With AirDrop*, DigitalTrends, Feb. 9, 2021, https://www.digitaltrends.com/mobile/android-nearby-sharestacks-up-against-apple-airdrop/
2035	Jacob Kastrenakes, *Google's Files Go App is Kind of Like AirDrop for Android*, The Verge, Nov. 7, 2017, https://www.theverge.com/2017/11/7/16617380/google-files-go-app-android-airdrop-file-management

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2036	Tom Warren, *Windows 10's Version of AirDrop Lets You Quickly Share Files Between PCs*, The Verge, Nov. 8, 2017, https://www.theverge.com/2017/11/8/16625130/microsoftwindows-10-airdrop-near-share-feature
2037	Mishaal Rahman, *Google's Fast Share is an Upcoming AirDroplike File Sharing Tool for Android*, XDA Developers, June 29, 2019, https://www.xda-developers.com/fast-share-android-beamairdrop-android/
2038	Aamir Siddiqui, *Fast Share, Google's Upcoming AirDrop-like Service, Gets Renamed to Nearby Sharing Ahead of Release*, XDA Developers, Jan. 13, 2020, https://www.xda-developers.com/fastshare-google-upcoming-airdrop-service-renamed-nearby-sharing/
2039	Richard Nieva, *Android is Finally Getting Its Version of Apple's AirDrop*, CNet, Aug. 4, 2020, https://www.cnet.com/tech/mobile/android-is-finally-getting-itsversion-of-apples-airdrop-called-nearby-share/
2040	David Pierce, *Google's AirDrop Competitor, Nearby Share, is Reportedly Getting a Big Upgrade*, The Verge, Apr. 19, 2022, https://www.theverge.com/2022/4/19/23032545/google-nearbyshare-airdrop-update-android
2041	Max Weinbach, *Quick Share is Samsung's Alternative to AirDrop for Galaxy Phones*, XDA Developers, Jan. 23, 2020, https://www.xda-developers.com/quick-share-samsung-alternativeairdrop-galaxy-phones/
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2043	Steven Musil, *Samsung Reportedly Working on Quick Share, an AirDrop-like Sharing Feature*, CNet, Jan. 23, 2020, https://www.cnet.com/tech/mobile/samsung-reportedly-workingon-quick-share-an-airdrop-like-sharing-feature/

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2044	Chris Welch, *Samsung Confirms its AirDrop-like 'Quick Share' is Launching on the Galaxy S20*, The Verge, Feb. 11, 2020, https://www.theverge.com/2020/2/11/21133825/samsung-galaxys20-quick-share-airdrop-easy-sharing-feature
2045	Nelson Aguilar, *AirDrop for Windows? Check Out Android's New File-Sharing Tool for the PC*, CNet, July 20, 2023, https://www.cnet.com/tech/services-and-software/airdrop-forwindows-check-out-androids-new-file-sharing-tool-for-the-pc/
2046	Aisha Malik, *Google and Samsung are Merging Nearby Share and Quick Share into a Singular Cross-Android Solution*, Tech Crunch, Jan. 9, 2024, https://techcrunch.com/2024/01/09/google-andsamsung-are-merging-nearby-share-and-quick-share-into-a-singlesharing-solution/
2047	*Google Announces AirDrop-Like Feature Called Quick Share for Pixel Phones; Know How it Will Work*, The Bus. Standard, Feb. 1, 2024, https://www.tbsnews.net/tech/google-announces-airdropfeature-called-quick-share-pixel-phones-know-how-it-will-work-785766
2048	Order No. 18: Initial Determination Granting-in-Part Joint Motion to Amend the Procedural Schedule and Extend the Target Date by One Month, *Certain Electronic Devices, Including Smartphones, Computers, Tablet Computers, and Components Thereof*, Investigation No. 337-TA-1373 (ITC Dec. 20, 2023)
2049	Microsoft Support, Sharing things with nearby devices in Windows, https://support.microsoft.com/en-us/windows/sharethings-with-nearby-devices-in-windows-0efbfe40-e3e2-581b-13f4-1a0e9936c2d9
2050	Microsoft Support, Fix problems with nearby sharing in Windows, https://support.microsoft.com/en-us/windows/fix-problems-withnearby-sharing-in-windows-e6f5db3a-48c3-04f6-13d6-84db6f821455
2051	Windows Experience Blog, What's New in the Windows 10 April 2018 Update, https://blogs.windows.com/windowsexperience/2018/04/30/whatsnew-in-the-windows-10-april-2018-update/

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2052	Kevin Parrish, *How to Use Nearby Share on Android Devices*, DigitalTrends, Feb. 26, 2021, https://www.digitaltrends.com/mobile/how-to-use-nearby-shareon-android/
2053	Ed Bott, *Windows 10 Tip: Use Nearby Sharing to Transfer Files, Photos, and More*, ZDNet, July 14, 2018, https://www.zdnet.com/article/windows-10-tip-use-nearbysharing-to-transfer-files-photos-and-more/
2054	Michael Muchmore, *How to Use Nearby Sharing in Windows 10*, PCMag, May 4, 2018, https://www.pcmag.com/how-to/how-touse-nearby-sharing-in-windows-10
2055	Declaration of Nathaniel E. Frank-White, dated July 25, 2024
1087	Amritanshu Mukherjee, *AirDrop vs. Nearby Share vs. Quick Share: Which is the Best File Transferring Service for Devices?* (July 20, 2023) https://www.augustman.com/in/gear/tech/airdrop-vs-nearby-share/ (Dr. Edwards cites to this webpage in paragraphs 128 and 131 of his declaration (EX2001). I understand that Petitioner is submitting a copy of this webpage as EX1087)

IV. UNDERSTANDING OF PATENT LAW

5. As explained in paragraph 23 of my First Declaration, I understand that certain factors, sometimes called "secondary considerations," may support or rebut the obviousness of a claim. I understand that such secondary considerations include, among other things, commercial success of the patented invention, skepticism of those having ordinary skill in the art at the time of invention, unexpected results of the invention, any long-felt but unsolved need in the art that was satisfied by the

alleged invention, the failure of others to make the alleged invention, praise of the alleged invention by those having ordinary skill in the art, and copying of the alleged invention by others in the field.

6. I further understand that a patent owner must show a nexus—a connection—between any supposed evidence of secondary considerations and the alleged invention as claimed. A patent owner may show a presumption of nexus by showing that a specific product both: (1) embodies the claimed features, i.e., meets all claim limitations and (2) is coextensive with the claimed features, e.g., does not include any significant unclaimed features. I further understand that unclaimed features are significant, for example, if they materially impact the functionality of the product. Alternatively, a patent owner may show nexus by establishing with evidence that the alleged secondary considerations are a direct result of the claimed invention and not from something in the prior art.

A. <u>AirDrop Uses Wi-Fi, Not Bluetooth, For Detection</u>

7. Claim elements [1.3] and [23.3] of the '933 patent require that a sending device detects other devices using Bluetooth, e.g., element [1.3] recites, "detecting, by the WTRU using Bluetooth, a plurality of WTRUs in proximity to the WTRU." EX1001, 10:58-59; *see also id.* at 12:11-12 ("circuitry configured to detect, using Bluetooth, a plurality of WTRUs in proximity to the WTRU").

8. Dr. Edwards opines that "Apple's licensed AirDrop products include the functionality recited in the Challenged Claims" (EX2001, ¶69) and that "[e]ach Apple AirDrop product has Bluetooth 5.3 capability that detects devices in their proximity" (EX2001, ¶81 (citing EX2013, 9); *see also* ¶¶82-83).[1] I disagree with Dr. Edwards because the exhibits cited do not support this conclusion and actually describe that, to the extent an AirDrop sending device detects other devices, it does so using Wi-Fi not Bluetooth. In offering his opinion, Dr. Edwards quotes from the following passage:

> When a user chooses AirDrop as the method for sharing an item, the sending device emits an AirDrop signal over [Bluetooth Low Energy] …. *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.*

EX2014, 2 (quoted by EX2001, ¶82) (emphasis added). As this passage explains, *other* nearby devices "detect the [Bluetooth] signal"—not the sending device, as required by the claims. Instead, the sending device may "discover the identity of"

[1] I note that Dr. Edwards only analyzes independent claims 1 and 23 against AirDrop, and provides no analysis as to other challenged claims. EX2001, ¶¶68-112.

(i.e., detect) other devices based on responses sent using "peer-to-peer Wi-Fi." A POSITA would understand that discovering the identity of other devices is the same as detecting those other devices. This shows that any detection of nearby devices occurs using Wi-Fi, not Bluetooth.

9. At best, the Bluetooth signal emitted by the sending device *solicits* nearby devices to respond using peer-to-peer Wi-Fi. Any detecting by the sending device occurs separately, using identity information sent over peer-to-peer Wi-Fi. If the sending AirDrop device does not detect a Wi-Fi response, then no detection has occurred.

10. The '933 patent shows that solicitation and detection are distinct acts, and thus using Bluetooth for solicitation is not the same as using Bluetooth for detection. For example, FIG. 4 shows that detection of other WTRUs occurs "in response to solicitation":

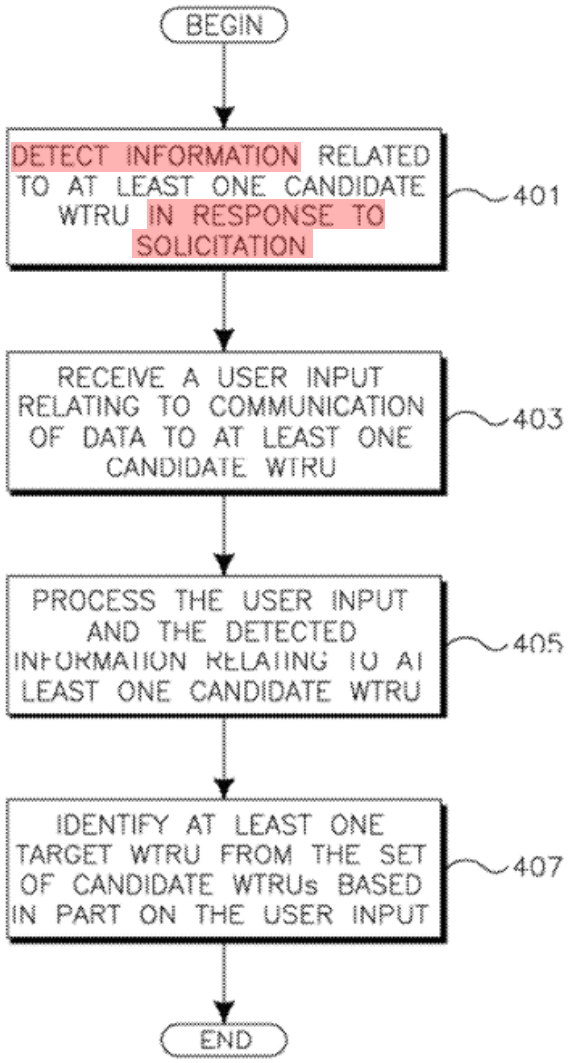

FIG. 4

EX1001, Fig. 4 (highlighting added). The '933 patent consistently describes that environment information on nearby devices is solicited and then, subsequently in a separate act, detected: "Environment information 301 is *solicited* and information related to at least one candidate WTRU 101c … is *detected* 401." *Id.*, 7:8–11 (emphasis added).

11. As written, the claims require detecting using Bluetooth, not performing some other preceding step (such as solicitation) using Bluetooth: "detecting, by the WTRU using Bluetooth, a plurality of WTRUs in proximity to the WTRU." EX1001, 10:58-59; *see also id.*, 12:11-12. Within this claim language, "the WTRU" is clearly the sending device. Thus, the sending device must detect using a received Bluetooth signal. This confirms that a POSITA reading the claims would understand that the claimed detecting occurs at the sending device using messages received from other nearby devices, as distinct from any soliciting or inquiring messages transmitted from the sending device to other devices.

12. This understanding of the claimed subject matter as using Bluetooth for detection is consistent with other claims and the written description of the '933 patent. For example, dependent claims 8 and 9 recite detecting using Bluetooth discovery (claim 8) wherein the discovery is provided using a service discovery protocol (SDP) (claim 9). Similarly, the written description describes using Bluetooth for discovery (*e.g.*, EX1001, 5:38-6:3) but makes no mention of using Wi-Fi for discovery or detection.

13. Thus, given all the foregoing information, a POSITA would understand that the '933 claim language "detecting, by the WTRU using Bluetooth, a plurality of WTRUs in proximity to the WTRU" (EX1001, 10:58-59; *see also id.*, 12:11-12) requires that the sending device detect another device using a Bluetooth signal from

that other device. The POSITA would understand that this claim language is not met by the sending device *emitting* a Bluetooth signal for solicitation or some other similar purpose.

14. Because the exhibit relied on by Dr. Edwards in mapping this claim element shows that an AirDrop sending device at best detects other devices using Wi-Fi, that exhibit shows that AirDrop does not practice claims 1 and 23 of the '933 patent. I understand that all other challenged claims depend from claims 1 and 23 and thus those other claims also are not practiced by AirDrop.

B. AirDrop Includes Significant Features <u>That Are Not Found In The Challenged Claims</u>

15. AirDrop includes significant, unclaimed features—including privacy (e.g., the ability to restrict device visibility by using iCloud services to help users authenticate), security (encryption), the Apple ecosystem, and other features material to AirDrop's functionality.

16. With its privacy (visibility) feature, "[b]y default, AirDrop only makes you discoverable to people who are in your contacts list.… This feature ensures you won't just appear in other people's AirDrop panels as you walk around …. Only those in your contacts will have permission to see you." EX2027, 2. Dr. Edwards acknowledged the importance of this feature as "[d]evice visibility was also important to give users the sense that they could still control their privacy." *See* EX2001, ¶137; *see also id*., ¶60 (AirDrop has "the ability to limit access to a user's

AirDrop whether based on contacts, open to everyone, or completely disabled"); EX2009, 5 ("Contacts Only: Only your contacts can see your device.") (cited by EX2001, ¶60). This visibility feature is material to the functioning of AirDrop because it gives users the peace of mind that they can prevent their devices from appearing to every other nearby device. In addition, this visibility feature shows that AirDrop leverages and relies on iCloud information (EX2014, 2) and thus that integration with iCloud is also material to the functioning of AirDrop. Dr. Edwards has not suggested that this visibility feature or the integration with Apple's iCloud is claimed by the '933 patent and in my opinion neither is claimed by the '933 patent.

17. As for security features, AirDrop's file-sharing is "'fully encrypted'" to address users' "security concerns" over wirelessly sharing files with nearby devices. EX2023, 5. "iCloud identity certificates," also unclaimed, are used as part of initiating the encrypted connection. EX2014, 2. Dr. Edwards confirmed this feature's importance, stating that AirDrop's "encryption on the peer-to-peer connection [] prevents unauthorized access or interception of shared files." EX2001, ¶59. This security is material to the functioning of AirDrop because it also gives users the peace of mind that their transmitted files cannot be intercepted and viewed by other nearby devices. This also reinforces the importance of the iCloud integration to AirDrop's functionality, which I also discuss in the immediately

preceding paragraph. Dr. Edwards has not suggested that this security feature is claimed by the ’933 patent and in my opinion it is not claimed by the ’933 patent.

18. Another distinguishing, critical feature of AirDrop is its integration within the Apple ecosystem. One exhibit attributed any AirDrop success to “leverag[ing] the core strengths of Apple’s unified ecosystem.” EX2023, 2-3; *see also id.*, 4 (“Apple’s ecosystem control delivers enhanced benefits to users”). It discusses the Apple “Ecosystem Benefits,” noting that AirDrop advantageously “comes pre-installed,” that “[e]very device with AirDrop will offer the same user experience,” that AirDrop could “transfer files one-to-many” (*id.*, 3) and that AirDrop “works by moving media through the cloud” (*id.*, 4). It also notes the lack of “common experience” for other non-Apple devices, showing how important this feature in giving AirDrop an edge. *Id.* It also emphasizes Apple’s “massive potential user base.” *Id.* (“[A]t least 550 million devices are now running iOS 6.”). This results from being part of the large Apple ecosystem and is material to AirDrop’s functionality because it means that AirDrop users will generally have far more other devices to share with, whether it be a user’s own Apple devices or friends or family with Apple devices. Dr. Edwards agreed that this exhibit described AirDrop’s success as “a function of Apple's importance in the marketplace as opposed to a technical difference.” EX1088, 15:21-23. Other exhibits also explain how “Apple is really the only company that offers a complete device ecosystem” and how that

means other companies' "prospects for competing with AirDrop are slim." EX2034, 2. The Apple ecosystem and AirDrop's tight integration with that ecosystem, including through preinstallation on Apple devices, is unclaimed by the '933 patent.

19. On other aspects of AirDrop usability, Dr. Edwards explained that several features—none claimed by the '933 patent—supposedly make AirDrop superior to competing technologies that allegedly use Bluetooth for detection and Wi-Fi for transfer, such as Google's Files Go and Nearby Share. EX2001, ¶¶115-116, 118, 124, 126-128. These features also materially impact the functionality of AirDrop, as they supposedly distinguish it from others.

20. First, AirDrop does not require user setup, i.e., users do not have to download a file transfer-specific application like they do for Nearby Share on Windows. It is material to the functioning of AirDrop because, AirDrop comes pre-installed on a user's device such that it is ready for use without further user action. EX2001, ¶116 (AirDrop requires "no setup"); *id.*, ¶128 (citing EX1087[2]); EX1087, 2 ("[U]nlike Apple's AirDrop … the [Nearby Share] app needs to be downloaded separately on Windows devices."). Dr. Edwards has not suggested that pre-

[2] Dr. Edwards cites to this webpage, a copy of which I understand is being submitted by Petitioner as EX1087.

installation is claimed by the ’933 patent and in my opinion it is not claimed by the ’933 patent.

21. Second, unlike Nearby Share and Files Go, AirDrop features tight integration with the Apple operating system such that users do not have to open a file transfer-specific application to locate other devices or initiate a transfer. EX2001, ¶128 (citing EX1087); *see also* EX1087, 2 (“[U]nlike Apple’s AirDrop, users [] need to open the Nearby Share app on Windows every time they want to share files.”). This feature is material to the functioning of AirDrop because users do not need to wait for intended recipients to also open the application because “AirDrop lets you send files from any app to any nearby contact, even if they don’t have the same app.” EX2035, 2 (quoted by EX2001, ¶124); *id.* (contrasting with Google, where “[b]oth people need to have the Files Go app open”). Dr. Edwards has not suggested that integration with the Apple operating system is claimed by the ’933 patent and in my opinion it is not claimed by the ’933 patent.

22. Relatedly, AirDrop’s operating system integration allows users to send and receive items from the application specific to the type of file instead of having to open a separate application, e.g., “photos appear in the Photos app and websites open in Safari.” EX2015, 2-3 (“[T]he AirDrop will come through within the same app it was sent from. App links open in the App Store so you can download or purchase the app.”). In my opinion, this feature greatly enhances the usability of

AirDrop because received files are automatically opened using the native application rather than leaving the user to figure out what application might be best for the received content. For example, if a user were to AirDrop an Apple news article to another user, then the news article would open in the Apple news application on that other user's device. Dr. Edwards has not suggested that this functionality is claimed by the '933 patent and in my opinion it is not claimed by the '933 patent.

I, Peter Rysavy, do hereby declare and state, that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: December 19, 2024

Peter Rysavy

Peter Rysavy