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.

IPR2024-00537 (USP 8,737,933)
IPR2024-00538 (USP 9,173,054)

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REPLY DECLARATION OF PETER RYSAVY

MICROSOFT EXHIBIT 1286
Microsoft v. InterDigital
IPR2024-00537

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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 two above-identified *Inter Partes* Reviews ("IPRs"), to provide my analyses and opinions on certain technical issues related to U.S. Patent No. 8,737,933 (hereinafter "the '933 Patent") and U.S. Patent No. 9,173,054 (hereinafter "the '054 Patent").

2. I provided an initial declaration in each of these IPRs, both of which are dated February 8, 2024 (the "First Declarations"), which I understand were submitted as Exhibit 1203. I now submit this Reply Declaration addressing other issues that I have been asked to opine on, including certain opinions provided by Dr. George Edwards in the below-noted paragraphs in his declaration submitted as Exhibit 2014 in both IPRs.

II. BACKGROUND AND QUALIFICATIONS

3. I describe my education and professional background in paragraphs 4-14 of my First Declarations.

III. UNDERSTANDING OF PATENT LAW

4. As noted in paragraphs 25-26 of my First Declarations, I understand that for an application to provide written description support for a claim, the application must convey with reasonable clarity to a POSITA that the inventors had

possession of the claimed subject matter. I understand that, among other things, this requires that the application describe the *claimed* invention in sufficient detail that a POSITA would understand the named inventor actually invented the invention claimed. In addition, for each claim limitation, the POSITA must be able to immediately discern the limitation from the disclosure in the application. The question is not whether a claimed invention is an obvious variant of that which is disclosed in an application. Rather, an application itself must describe what is claimed, and do so in sufficient detail that one skilled in the art can clearly conclude that the inventor invented what is claimed.

IV. MATERIALS CONSIDERED AND INFORMATION RELIED UPON

5. Paragraph 15 of my First Declarations notes the materials I have considered in forming my opinions in this matter. In preparing this Reply Declaration, I also considered the Declaration of George Edwards, which is marked as Exhibit 2014 in both IPRs, and new exhibit 1287 entitled "Bluetooth and Wi-Fi Wireless Protocols: a Survey and a Comparison."

V. THE '948 AND '650 ANCESTOR APPLICATIONS DO NOT PROVIDE WRITTEN DESCRIPTION SUPPORT FOR THE CLAIMED METHOD

6. For the reasons explained in my First Declarations, it remains my opinion that the '650 application (EX1281 in both IPRs) does not convey with reasonable clarity to a POSITA that the inventors were in possession of the claims'

specific method that includes using Bluetooth to detect other WTRUs and Wi-Fi to transfer media to a Bluetooth-detected WTRU. Moreover, the ’650 application is representative of the ’948 application (EX1282 in both IPRs), as the two are materially indistinguishable for purposes of this issue,[1] and thus the ’948 application also similarly also fails to convey with reasonable clarity that the inventors were in possession of the claims’ specific method.

A. To Show Possession of the Claimed Method Would Have Required Much More Than What Each Ancestor Application Discloses

7. I disagree with Dr. Edwards’ opinion that the “the disclosure of the ’948 Application informs a POSITA that the inventors had possession of the claimed subject matter.” EX2014, ¶74. For example, neither the ’650 nor the ’948 application describes a device detecting other devices using one protocol and then switching to a different protocol to transfer content to one of the detected devices, let alone the specific claimed method that switches from Bluetooth to Wi-Fi. Rather than pointing to disclosure of a transition from one communication protocol to another with the same process or method, Dr. Edwards appears to reason that this would have been obvious based on Wi-Fi’s known “advantage of higher bandwidth” and Bluetooth’s

[1] Unless otherwise noted, any discussion of the ’948 application applies equally to the ’650 application and vice versa, given that the two are materially indistinguishable.

known "advantage of lower power consumption." EX2014, ¶87; *see also id.*, ¶¶83-84, 86. As noted above, however, my understanding is that obviousness does not satisfy the written description requirement. Dr. Edwards' analysis is wrongly premised on the unsupported—and mistaken—assumption that the '948 application contemplates a switch between different communications technologies among a single data transfer method. The application discloses no such method involving such a switch. As I explain below, a POSITA would have expected more disclosure if the inventors truly had possession of the claimed method when filing the ancestor applications, namely the '948 application in 2009 and the '650 application in 2012.

8. In my opinion, written description support for the claims would have required more than what can be found in the '948 application. For example, a POSITA would have expected the application to at least expressly disclose using a different protocol for data transfer than for device detection and to specifically disclose using Bluetooth for detection and Wi-Fi for data transfer, which would have only required a sentence or two at most. The numerous Bluetooth-to-Wi-Fi background references cited in paragraphs 38-45 of my First Declarations include such descriptions, confirming what a POSITA would have expected from an application that showed possession of a method involving such a switch. For example:

- **Mckillop** discloses: "[T]he portable device includes circuitry for providing wireless communications utilizing a low power, relatively slow communications protocol, such as Bluetooth, to establish a communications path between two wireless devices. When high speed communications are preferred, the two devices can agree to switch to a different, high speed protocol, such as Wi-Fi, for communications." EX1205, Abstract. *See also id*., [0002], [0006-7], [0013-18], [0034], [0038], [0042-47], claims 2-4, FIGS. 2, 4.
- **Hoddie** discloses: A device "searches for other devices available for communication using Bluetooth." EX1206, 3:30-31. The device "sends the file to the [other device] across [a] Wi-Fi connection." *Id*., 4:21. *See also id*., 3:16-3:29, 3:31-4:20, 4:22-6:11, 9:9-14:9, claims 2, 4, FIGS 3-4.
- **Banerjea** discloses: "First, a Bluetooth connection (BT connection) 110 may be established between the mobile communication devices 102 and 104 through a Bluetooth scanning and discovery process …. Once the BT connection 110 is established … a WiFi connection 112 may be established between the mobile communication devices 102 and 104." EX1210, [0026]. "Multimedia data may be transmitted over

the WiFi connection 112." *Id*., [0027]. *See also id*., [0008-10], [0037-47].

- **Kapur** discloses: "[T]he Bluetooth® device 1002 may utilize its Bluetooth® protocol stack to discover the second Bluetooth® device 1004. The Bluetooth® device 1002 and 1004 may be enabled to communicate via a Bluetooth® connection 1006 and/or a high-speed data connection 1008. The high-speed data connection 1008 may comprise an 802.11 [(Wi-Fi)] connection. … Once the high-speed data link 1008 is established, data may be communicated between the Bluetooth® devices 1002 and 1004 using data rates that may be higher than the data rates supported by the Bluetooth® connection 1006." EX1212, [0066]. *See also id*., [0022], [0029], [0065].
- **Adler** discloses: "[E]stablishing a first connection between a first device and a second device with a first networking standard … establishing a second connection between the first device and the second device with a second networking standard … [and] transferring data between the first and second devices using the second networking standard … [wherein] the first networking standard is a Bluetooth networking standard and the second networking standard is a WiFi

networking standard." EX1213, Abstract. *See also id*., [0006-8], [0038-56], claim 5.

9. Each of these other patents or applications provide detailed descriptions of using Bluetooth to detect other devices and then Wi-Fi to transmit data to a detected device. The '948 application lacks even a single sentence suggesting that the named inventors might have contemplated such a method.

10. My opinion is unchanged by the vaguely described "transmission instructions" discussed by Dr. Edwards. *E.g.*, EX2014, ¶¶80-81 (citing EX1282, [0039] & [0042]); *see also id.*, ¶65. The '948 application does not suggest that these transmission instructions are used for Wi-Fi communications, much less that they lead to a switch in communications protocols. There is no support for Dr. Edwards' unexplained assertion that a POSITA would understand the '948 application to disclose "that transmission instructions can indicate that WiFi should be used to transfer data to the target WTRU" and he cites nothing in making this assertion. *Id.*, ¶81. The next sentence of his declaration discusses "configuration information" but the cited application paragraph makes no mention of a switch or transmitting using Wi-Fi. *Id.* (citing EX1282, [0039]). He also cites claim 2 of the '948 application, focusing on "detected service information," but the application makes clear that this service information relates not to communications protocols but rather to other "services supported." *E.g.*, EX1282, [0034] ("[T]he services (e.g. TapAPP as

described herein) …"); *see also* EX1214, 23 (showing that the Bluetooth Service Discovery Protocol (SDP) is above the communication layers).

11. Moreover, if the transmission instructions related to a switch, then, barring express disclosure of such a switch, one would at least expect disclosure of a change in an attribute that necessarily implicates a change in protocol, such as a change in the radio signal transmission and/or multiplexing techniques at Layer 1 (the physical layer). EX1287, 12, 14, 16-17, 21. For example, Bluetooth and Wi-Fi use completely different radio signal multiplexing techniques: Bluetooth uses a frequency hopping spread spectrum (FHSS) with 1 MHz wide channels, while Wi-Fi uses different direct sequence spread spectrum (DSSS), complementary code keying (CCK), and orthogonal frequency-division multiplexing (OFDM) with about 16 MHz wide channels. *Id*., 12 ("The [Bluetooth and Wi-Fi] standards cover different techniques at the physical layer: infrared communications … and different radio signal multiplexing techniques: frequency hopping spread spectrum (FHSS), used by Bluetooth devices, direct sequence spread spectrum (DSSS), complementary code keying (CCK), and orthogonal frequency-division multiplexing (OFDM), used in IEEE 802.11 commercial devices."), 14 ("Bluetooth devices use the 2.4 GHz band …. 79 1-MHz-wide channels are allocated …. The channels are accessed using an FHSS technique, with a signal rate of 1 Mb/s, using Gaussian shaped frequency shift keying (GFSK) modulation."), 16 ("Figure 5

illustrates all the typical components of a Wi-Fi network. … The available bandwidth is divided into 14 partially overlapping channels, each 22 MHz wide … All the devices in the same BSS (either infrastructured or ad hoc) use the same channel. One of three techniques is used for multiplexing: DSSS, which uses a Barker sequence, is adopted for the 1 and 2 Mb/s signal rates. CCK, defined in 802.11b, is used for the 5.5 and 11 Mb/s signal rates. OFDM, defined in 802.11a and also used in 802.11g, is used for 6, 9, 12, 18, 24, 36, 48, and 54 Mb/s), 17 ("DSSS uses an 11-bit Barker sequence, so each sequence of 11 chips codifies a single information bit. The modulation rate is 1 Msymbol/s using either binary phase shift keying (BPSK) or quadrature phase shift keying (QPSK), for transmission rates of 1 or 2 Mb/s, respectively. With CCK, a 16-bit sequence transmitted on the channel codifies either 4 or 8 information bits. The modulation is QPSK at 1.375 Msymbol/s, for signal rates of either 5.5 or 11 Mb/s. Note that in both DSSS and CCK the chip rate is 11 Mchip/s, which means that the lowest layer of the radio section is the same; the difference lies in the modulation and multiplexing. OFDM uses a comb of 52 subcarriers (48 for data) with a spacing of 0.3125 MHz and a symbol duration of 4 μs, for a total of 12 Msymbol/s. Each symbol is protected with a convolutional code of either 3/4, 2/3, or 1/2 rate, using M-ary quadrature amplitude modulation (M-QAM) with *M* being 2, 4, 16, or 64. The resulting combinations provide signal rates of 6, 9, 12, 18, 24, 36, 48, and 54 Mb/s."), 21 ("Both protocols use a spread spectrum

technique in the 2.4 GHz band, which ranges from 2.4 to 2.4835 GHz, for a total bandwidth of 83.5 MHz. Wi-Fi can also use the 5 GHz band. Bluetooth uses frequency hopping (FHSS) with 1 MHz wide channels, while Wi-Fi uses different techniques (DSSS, CCK, OFDM) with about 16 MHz wide channels.”). The ’948 application, however, does not mention any change in the radio signal transmission and/or multiplexing techniques at Layer 1, leading a POSITA to understand that there is no protocol switch, and that instead, the same protocol that was used for detection is also used for data transfer.

12. In sum, if Patent Owner truly possessed a method for data transfer that involved using Bluetooth for detection and Wi-Fi for data transfer, then the application could easily have said so, even if just with a sentence or two. The application is silent, however, and a POSITA would reasonably understand that the same communications protocol was used for both detection and data transfer. Thus, the ’948 application does not convey with reasonable clarity that the inventors were in possession of the claimed Bluetooth-to-Wi-Fi method.

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 23, 2024

Peter Rysavy

Peter Rysavy