

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

**SOVEREIGN PEAK
VENTURES, LLC,
Plaintiff,**

v.

**HMD GLOBAL and HMD
GLOBAL OY,
Defendants.**

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§

CASE NO. 6:23-cv-759

JURY TRIAL

COMPLAINT AND JURY DEMAND

Plaintiff Sovereign Peak Ventures, LLC (“SPV”) brings this action against HMD Global and HMD Global Oy (collectively, “HMD Global”) for infringement of U.S. Patent Nos. 8,902,871, 9,357,441, 10,039,144, 9,620,282, and 10,468,913 and alleges the following:

THE PARTIES

1. Plaintiff, Sovereign Peak Ventures, LLC, is a Texas Limited Liability Company with its principal place of business in Allen, Texas.
2. Upon information and belief, Defendant HMD Global is a company organized and existing under the laws of Finland, with its principal place of business located at Bertel Jungin aukio 9, 02600, Espoo, Finland. HMD Global may be served pursuant to the provisions of the Hague Convention.
3. HMD Global is a leading manufacturer and seller of smartphones.


HMD Global markets and distributes smartphones in Texas and throughout the United States directly or through intermediaries, and offers its products and/or services, including those accused of infringing SVP's patents, to customers and potential customers in Texas and in this judicial district.

4. On information and belief, HMD Global OY is a company organized and existing under the laws of Finland, with its principal place of business located at Bertel Jungin aukio 9, 02600, Espoo, Finland. HMD Global may be served pursuant to the provisions of the Hague Convention.

5. HMD Global OY is a leading manufacturer and seller of smartphones. HMD Global markets and distributes smartphones in Texas and throughout the United States directly or through intermediaries, and offers its products and/or services, including those accused of infringing SVP's patents, to customers and potential customers in Texas and in this judicial district.

6. HMD Global's authorized sellers and sales representatives offer, sell, and distribute products accused of infringing SPV's patents to consumers in this judicial district. HMD Global's authorized sellers and sales representatives include Best Buy, 4627 S Jack Kultgen Expressway, Waco, Texas 76706, and T-Mobile, 100 N New Road, Suite 110, Waco, Texas 76710.

 (254) 399-0856

 100 N New Rd
Ste 110
Waco, TX 76710

 This location does not support Sprint services.


More at T-Mobile Franklin & New Rd:

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[T-Mobile Prepaid](#)

[T-Mobile For Business](#)

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Nokia ★★★★★ 3

G310 5G

Starting at	Today
\$7.75/mo.	\$0.00
for 24 months	down + tax

Full price: \$186.00

 In stock





Nokia - C300 32GB (Unlocked) - Blue

Model: TA-1515 **SKU:** 6540268

★★★★☆ (29)

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JURISDICTION AND VENUE

7. SPV brings this action for patent infringement under the patent laws of the United States, namely 35 U.S.C. §§ 271, 281, and 284-285, among others. This Court has subject-matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. This Court has specific and personal jurisdiction over Defendants consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. Defendants have sufficient minimum contacts with the forum because they transact substantial business in the State of Texas and in this judicial district. HMD Global purposefully and voluntarily placed their products, including products accused of infringing SPV's patent claims, into the stream of commerce with the expectation that they will be purchased and used by customers located in Texas. HMD Global have, directly or through subsidiaries or intermediaries, committed and continue to commit acts of infringement in Texas and in this judicial district as alleged in this Complaint.

9. HMD Global and HMD Global Oy are foreign entities. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391(c)(3). Through their own acts and/or through the acts of others, HMD Global and HMD Global Oy sell, offer to sell, and/or use infringing products in the United States and in this judicial district, and/or import infringing products into the United States. HMD Global

regularly transacts and solicits business in this judicial district and has the requisite minimum contacts with Texas and this judicial district such that this venue is fair and reasonable.

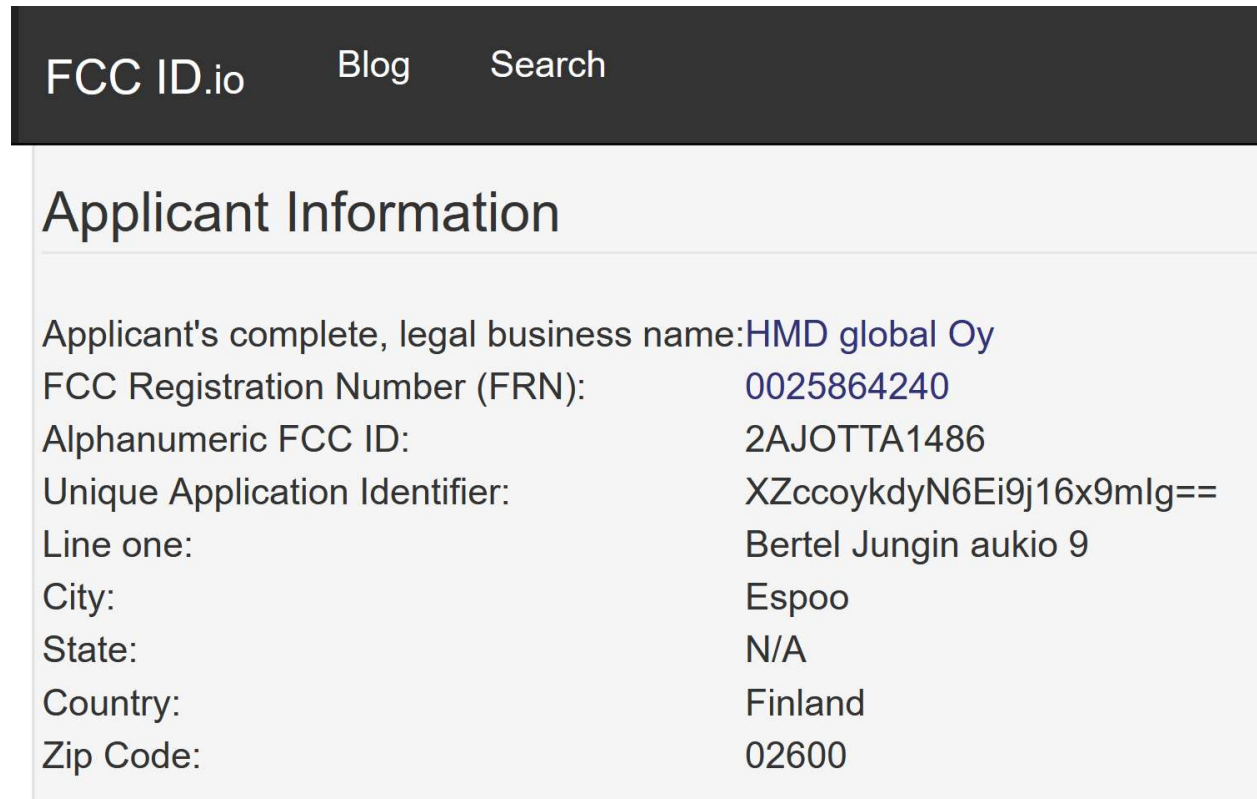
10. Upon information and belief, Defendants have admitted, consented to, or not contested proper venue in the Western District of Texas.

11. HMD Global and HMD Global OY purposefully avail themselves of the privilege of conducting business activities in Texas and this judicial district, and thus, submit to the jurisdiction of this Court. Defendants contract with and engage in persistent conduct targeting residents of Texas and this district, deriving substantial revenue from goods and services offered for sale, sold, and/or imported to and targeting residents of Texas and this district directly and through or in concert with intermediaries, agents, distributors, importers, customers, subsidiaries and/or consumers. HMD Global sells and offers for sale infringing products to residents of Texas and this judicial district under the Nokia brand. HMD Global advertises “Nokia-branded products offered by HMD Global Oy.”

 **United States** Español

HMD © 2023 HMD Global. All rights reserved. HMD Global Oy is a licensee of the Nokia brand for phones & tablets. Nokia is a registered trademark of Nokia Corporation. Nokia Corporation is not a manufacturer, importer, distributor or retailer of the Nokia-branded products offered by HMD Global Oy. Bertel Jungin aukio 9, 02600 Espoo, Finland. Business ID 2724044-2

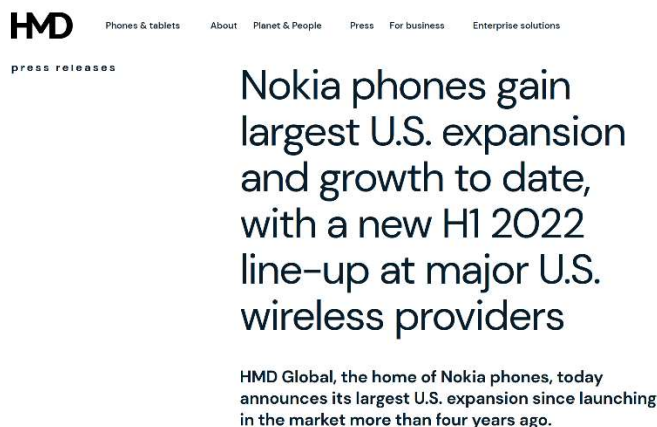
12. To sell the accused products in the United States, HMD Global Oy applied for and obtained registrations from the United States Federal Communications Commission (FCC). *See, e.g.*, <https://fccid.io/2AJOTTA-1486>.



The screenshot shows the FCC ID.io website interface. At the top, there is a dark navigation bar with 'FCC ID.io', 'Blog', and 'Search' in white text. Below this is a light gray section titled 'Applicant Information'. The information is presented in a list format with labels on the left and values on the right:

Applicant's complete, legal business name:	HMD global Oy
FCC Registration Number (FRN):	0025864240
Alphanumeric FCC ID:	2AJOTTA1486
Unique Application Identifier:	XZccoykdyN6Ei9j16x9mlg==
Line one:	Bertel Jungin aukio 9
City:	Espoo
State:	N/A
Country:	Finland
Zip Code:	02600

13. In January 2022, HMD Global announced its largest-ever expansion in the United States:



The screenshot shows the HMD Global website header with the logo and navigation links: 'Phones & tablets', 'About', 'Planet & People', 'Press', 'For business', and 'Enterprise solutions'. Below the header is a 'press releases' section. The featured release has the following text:

Nokia phones gain largest U.S. expansion and growth to date, with a new H1 2022 line-up at major U.S. wireless providers

HMD Global, the home of Nokia phones, today announces its largest U.S. expansion since launching in the market more than four years ago.

14. HMD Global publishes user guides and manuals on its website (https://www.nokia.com/phones/en_us/site-terms) for access by consumers in Texas and this judicial district. Access to product information, however, is conditioned upon contracting with HMD Global Oy.

Site Terms

Effective date 14th of October 2016

Nokia.com/phones is operated by HMD Global Oy ("HMD Global"), the exclusive licensee of the Nokia brand for phones and tablets.

By accessing HMD Global World Wide Web pages you agree to the following terms. If you do not agree to the following terms, please notice that you are not allowed to use the site.

The contents of HMD Global World Wide Web pages are Copyright © HMD Global 2016. Any rights not expressly granted herein are reserved. Reproduction, transfer, distribution or storage of part or all of the contents in any form without the prior written permission of HMD Global is prohibited except in accordance with the following terms. HMD Global consents to you browsing HMD Global World Wide Web pages on your computer or printing copies of extracts from these pages for your personal use only and not for redistribution unless consented to in writing by HMD Global. Individual documents in our World Wide Web pages may be subject to additional terms indicated in those documents.

THE SOVEREIGN PEAK VENTURES PATENTS AND HOW HMD GLOBAL INFRINGES THEM

15. SPV owns a portfolio of patents invented by employees of Panasonic Corporation. Since its founding in 1918, Panasonic has been at the forefront of the electronics industry for over a century. Since acquiring the Panasonic portfolio, SPV has promoted adoption of technologies claimed in the Panasonic portfolio and has entered into license agreements with numerous companies.

16. Over the years, Panasonic has innovated in the home appliance, battery, mobile phone, and television industries. Panasonic's invention of the "Paper Battery" in 1979 is widely credited as enabling the compact electronics of today. In 1991, Panasonic released the Mova P, the smallest and lightest mobile phone on the market, which revolutionized the industry by demonstrating the

public’s demand for a compact, lightweight device. Panasonic also produced the first wide-format plasma display and developed the first digital television for the U.S. market.

17. Panasonic’s history of innovation is borne out by its intellectual property. Searching the Patent Office’s database for Panasonic as patent assignee yields more than 27,000 matches.

18. Marking its centennial in 2018, Panasonic opened the Panasonic Museum to showcase its history of design philosophy and innovation.



HMD GLOBAL Infringes U.S. Patent Nos. 8,902,871, 9,357,441, and 10,039,144.

19. The Patent Office issued U.S. Patent No. 8,902,871, titled “Wireless Base Station and Wireless Communication Terminal and Wireless Communication System,” on December 2, 2014, after a thorough examination and determination

that the subject matter claimed is patentable.

20. HMD Global Accused Products with respect to the '871 patent include smartphones that support Wi-Fi Direct including the Nokia 3V, 4.2, 3.1A, 3.1C, 3.1 Plus, C300, G400, XR21, and 2V.

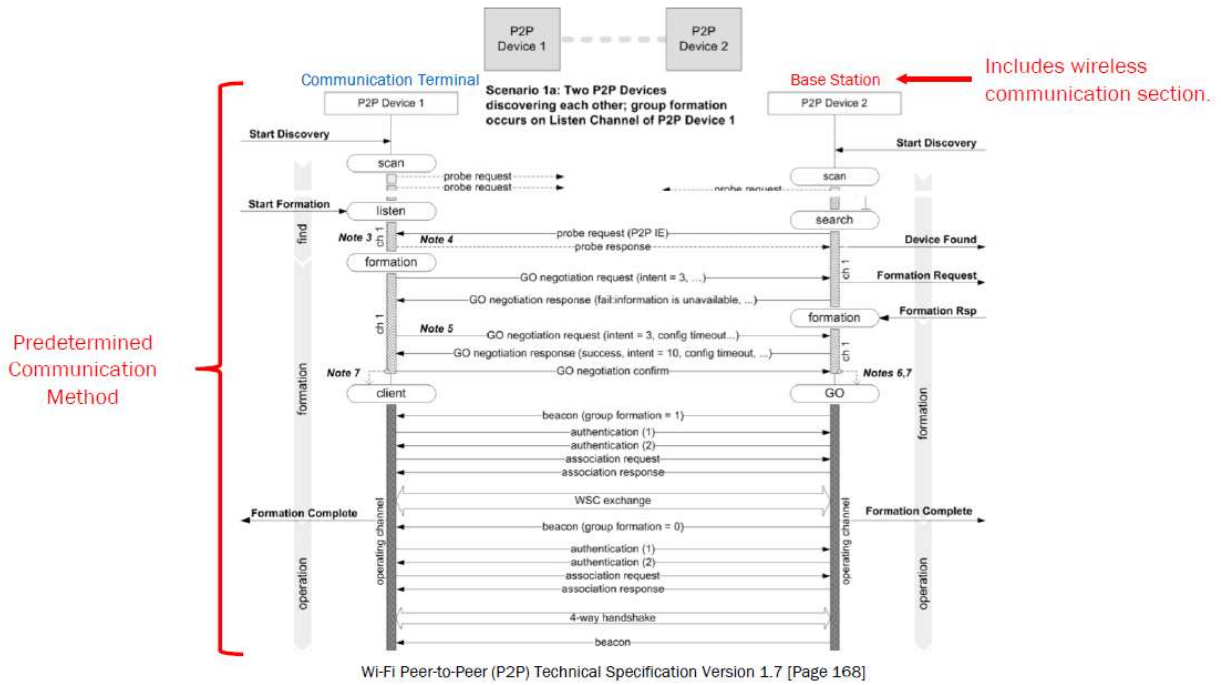
21. In Wi-Fi Direct, one Wi-Fi peer acts as a “communication terminal” and another Wi-Fi Direct peer acts as a “base station.”

1.4 Definitions

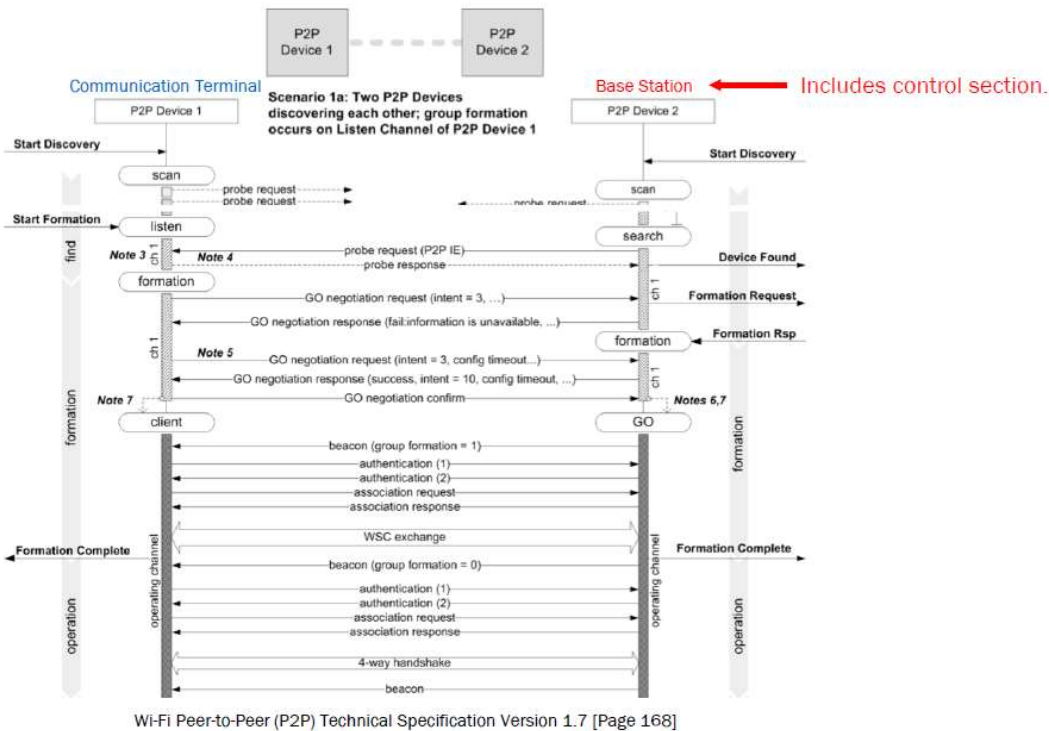
- Wi-Fi Direct Peer → **P2P Device:** Wi-Fi P2P device that is capable of acting as both a P2P Group Owner and a P2P Client.
- Communication Terminal → **P2P Client:** A P2P Device that is connected to a P2P Group Owner.
- Base Station → **P2P Group Owner:** An “AP-like” entity, when not operating within DMG, or PCP, when operating within DMG, that may provide and use connectivity between Clients.

Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Page 14-17]

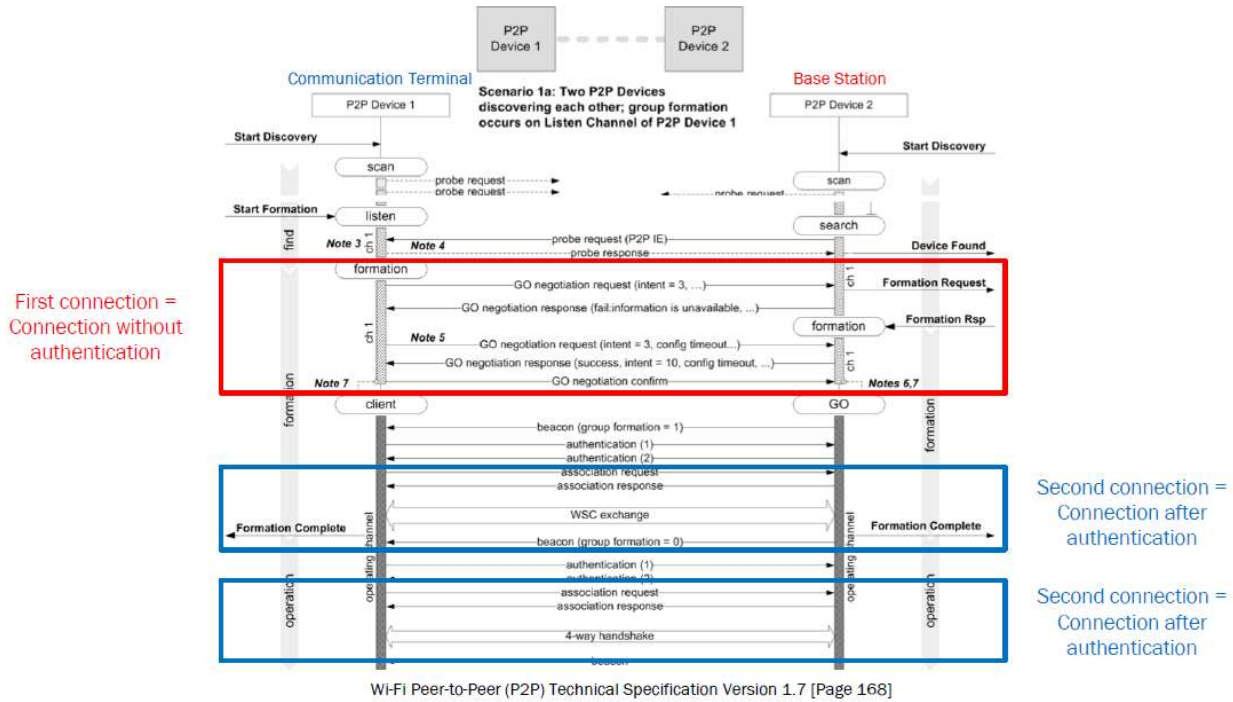
22. W-Fi Direct connects a wireless base station (one Wi-Fi Direct peer device) to a wireless communication terminal (another Wi-Fi Direct peer device).



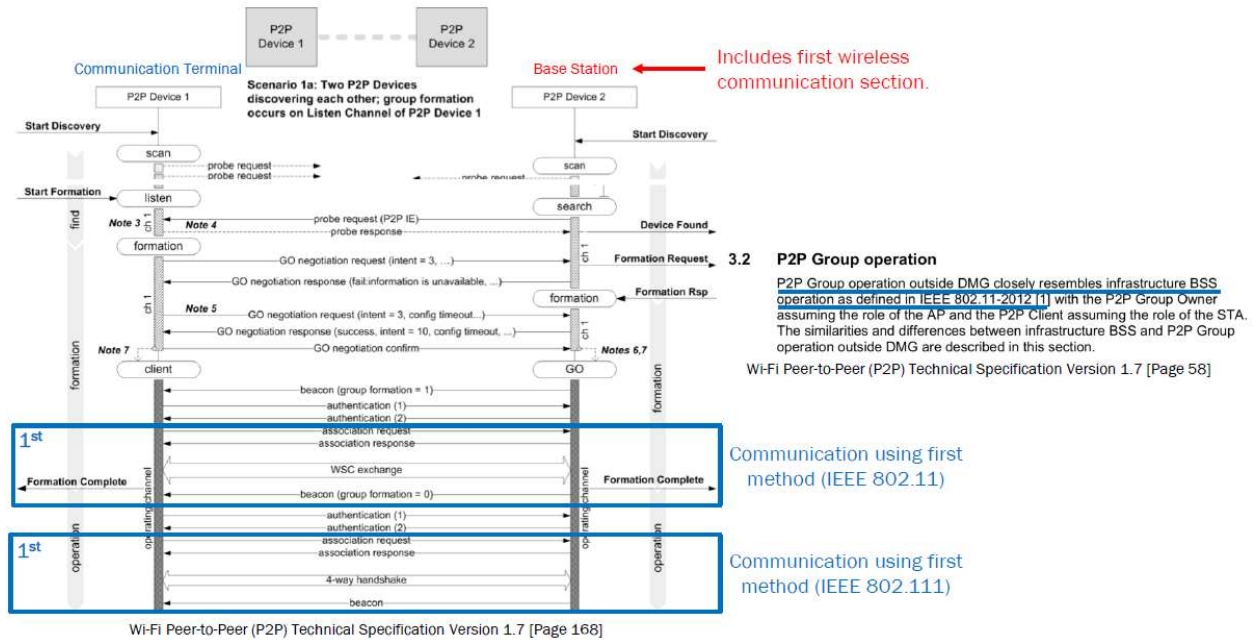
23. A Wi-Fi Direct peer device has a control section (e.g., Wi-Fi module processor) that controls the wireless communication section.



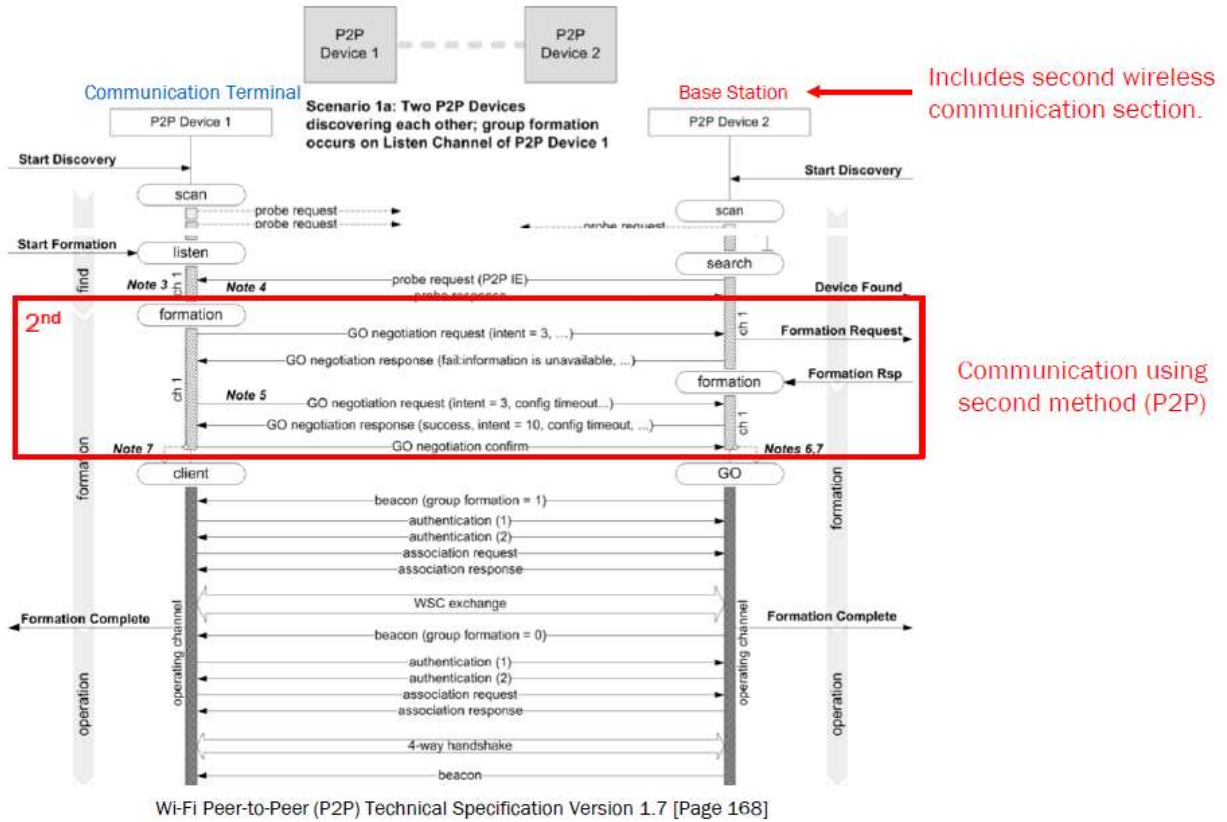
24. A Wi-Fi Direct peer device can establish a connection with another Wi-Fi Direct peer device using a connection that does not require authentication or a connection that does not require authentication.



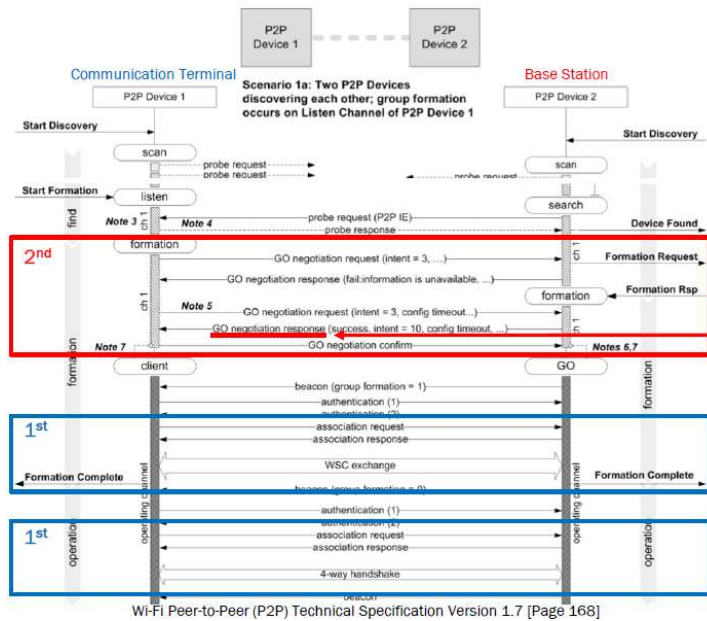
25. A Wi-Fi Direct peer device has a first wireless communication section (e.g., IEEE 802.11 portion of Wi-Fi module) that communicates with another Wi-Fi Direct peer device using a first method (e.g., IEEE 802.11).



26. A Wi-Fi Direct peer device has a second wireless communication section (e.g., P2P portion of Wi-Fi module) that communicates with another Wi-Fi Direct peer device using a second wireless communication method (e.g., P2P protocol described in the “Wi-Fi Peer-to-Peer (P2P) Technical Specification”).



27. A Wi-Fi Direct peer device receives from another Wi-Fi Direct peer device, via the first method (e.g., P2P) profile information (e.g., operating channel attributes) necessary for the devices to communicate via the second method (e.g., IEEE 802.11).



3.1.4.2 Group Owner Negotiation

Group Owner Negotiation is a three way frame exchange used to agree which P2P Device shall become P2P Group Owner and to agree on characteristics of the P2P Group, as illustrated in Figure 11. The details of those three frames are described in the following sections.



Profile information

3.1.4.2.2 GO Negotiation Response

The P2P Device receiving a GO Negotiation Request frame shall examine the received information and respond with a GO Negotiation Response frame.

...

A P2P Device that will become the P2P Group Owner constructs the GO Negotiation Response frame corresponding to the following rules. The Channel List attribute shall indicate the channels that the P2P Device may use as Operating Channel of the P2P Group. The channels indicated in the Channel List shall only include channels from the Channel List attribute in the GO Negotiation Request frame. The Operating Channel attribute shall indicate the intended Operating Channel of the P2P Group. The channel indicated in the Operating Channel attribute shall be one of the channels in the Channel List

Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Page 49, 50]

28. The Patent Office issued U.S. Patent No. 9,357,441, titled “Wireless Base Station and Wireless Communication Terminal and Wireless Communication System,” on May 31, 2016, after a thorough examination and determination that the subject matter claimed is patentable.

29. HMD Global Accused Products with respect to the '441 patent include smartphones that support Wi-Fi Direct including the Nokia 3V, 4.2, 3.1A, 3.1C, 3.1 Plus, C300, G400, XR21, and 2V.

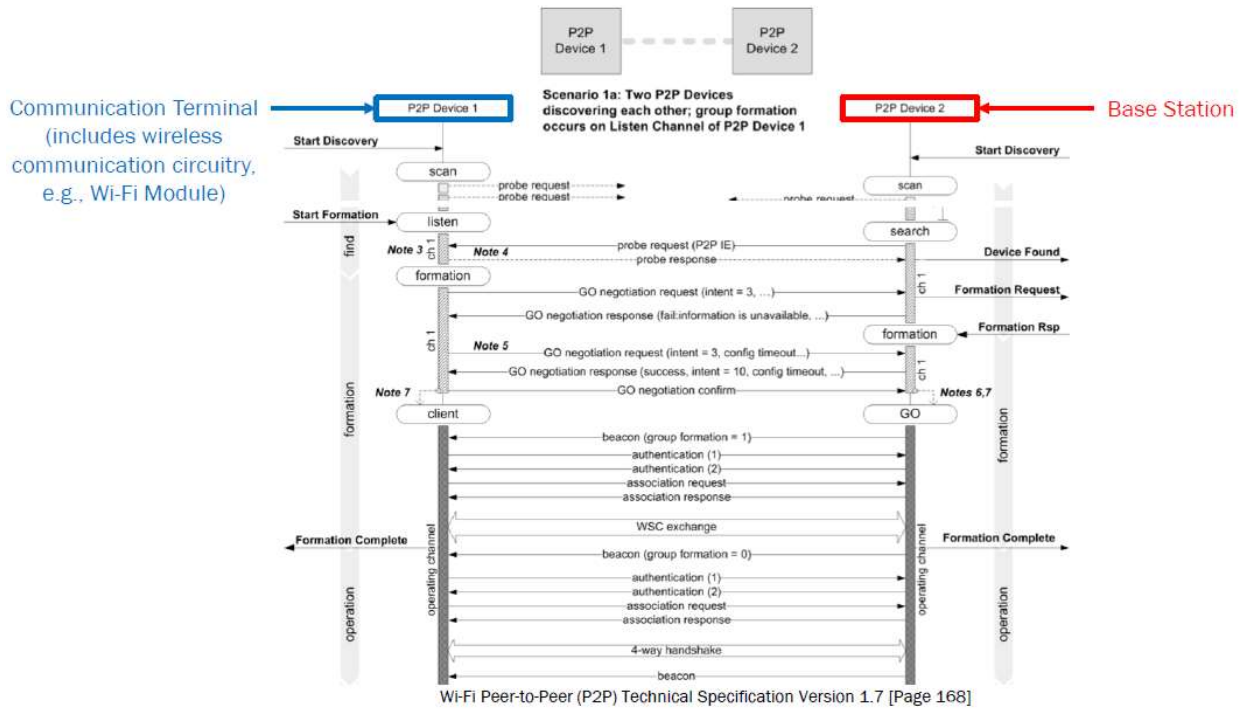
30. In Wi-Fi Direct, one Wi-Fi peer acts as a “communication terminal” and another Wi-Fi Direct peer acts as a “base station.”

1.4 Definitions

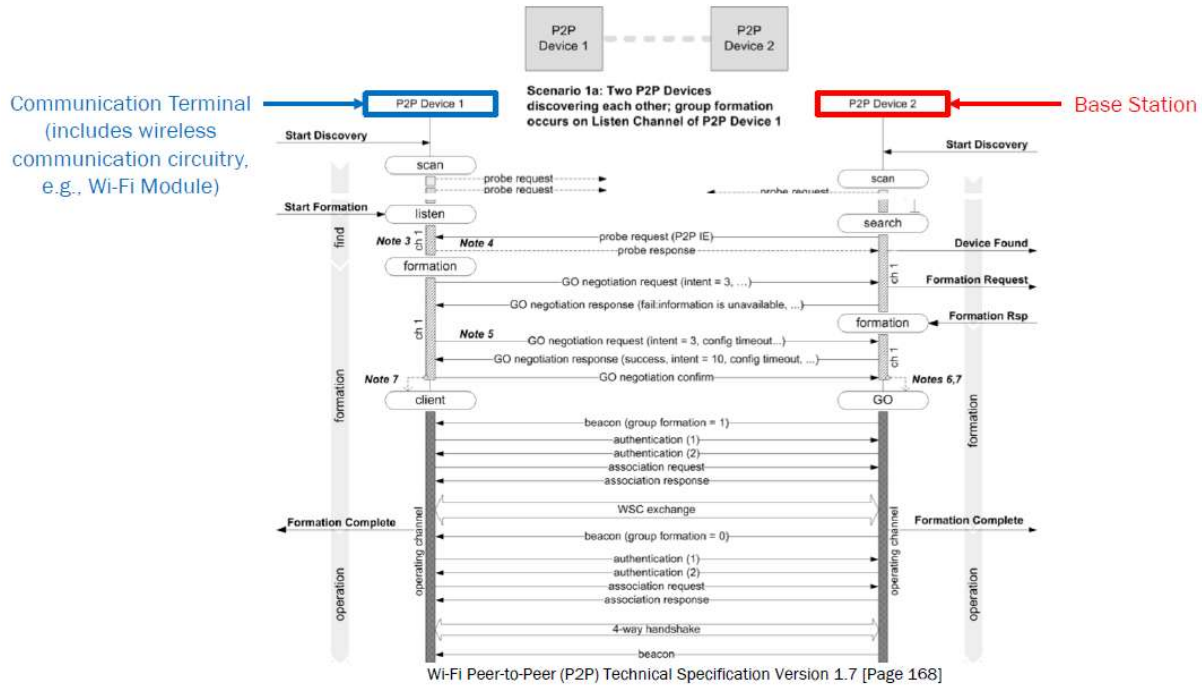
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Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Page 14-17].

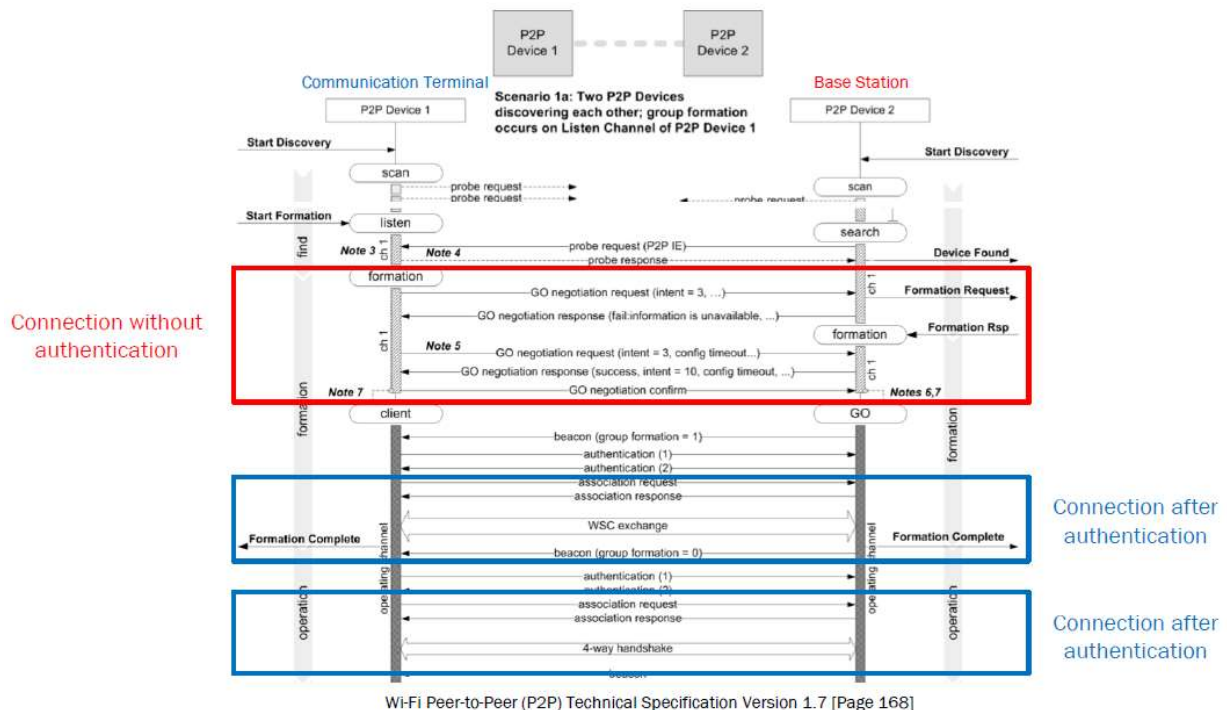
31. A Wi-Fi Direct peer has wireless communication circuitry (e.g., Wi-Fi module) that communicates with another Wi-Fi Direct peer.



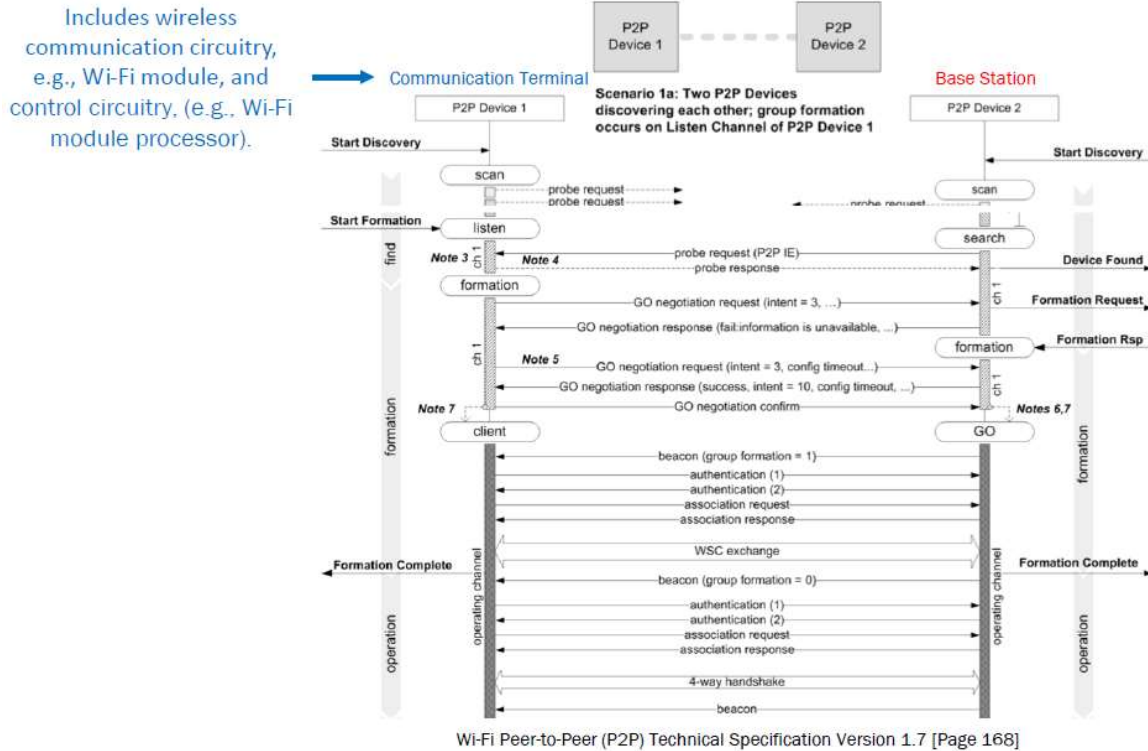
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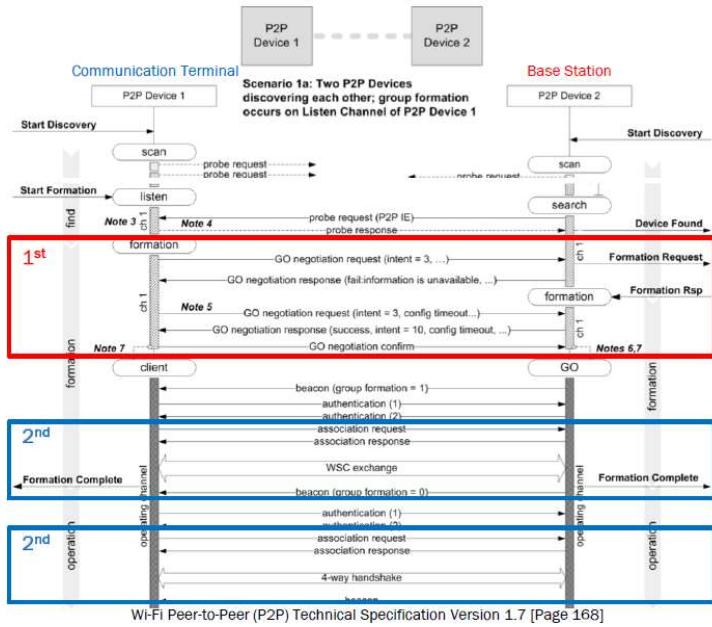
33. A Wi-Fi Direct peer device can establish a connection with another Wi-Fi Direct peer device using a connection that does not require authentication or a connection that does not require authentication.



34. A Wi-Fi Direct peer device has control circuitry (e.g., Wi-Fi module processor) that controls the wireless communication circuitry.



35. A Wi-Fi Direct peer device receives from another Wi-Fi Direct peer device, via the first method (e.g., P2P) communication channel information (e.g., channel list and operating channel attributes) necessary for the devices to communicate via the second method (e.g., IEEE 802.11).



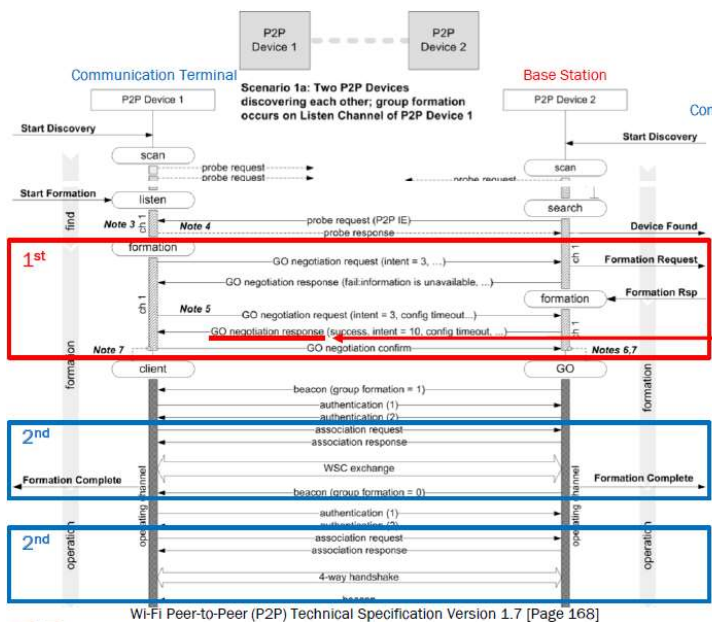
Communication using first method (P2P)

Communication using second method (IEEE 802.11)

3.2 P2P Group operation

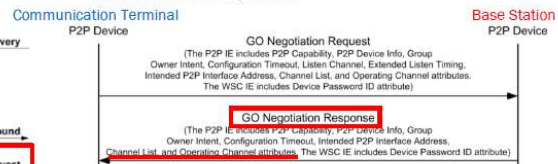
P2P Group operation outside DMG closely resembles infrastructure BSS operation as defined in IEEE 802.11-2012 [1] with the P2P Group Owner assuming the role of the AP and the P2P Client assuming the role of the STA. The similarities and differences between infrastructure BSS and P2P Group operation outside DMG are described in this section.

Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Page 58]



3.1.4.2 Group Owner Negotiation

Group Owner Negotiation is a three way frame exchange used to agree which P2P Device shall become P2P Group Owner and to agree on characteristics of the P2P Group, as illustrated in Figure 11. The details of those three frames are described in the following sections.



Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Page 47]

Communication channel information

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Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Page 49, 50]

36. The Patent Office issued U.S. Patent No. 10,039,144, titled “Wireless Base Station and Wireless Communication Terminal and Wireless Communication System,” on July 31, 2018, after a thorough examination and determination that the subject matter claimed is patentable.

37. HMD Global Accused Products with respect to the '144 patent

include smartphones that support Wi-Fi Direct including the Nokia 3V, 4.2, 3.1A, 3.1C, 3.1 Plus, C300, G400, XR21, and 2V.

38. In Wi-Fi Direct, one Wi-Fi peer acts as a “communication terminal” and another Wi-Fi Direct peer acts as a “base station.”

1.4 Definitions

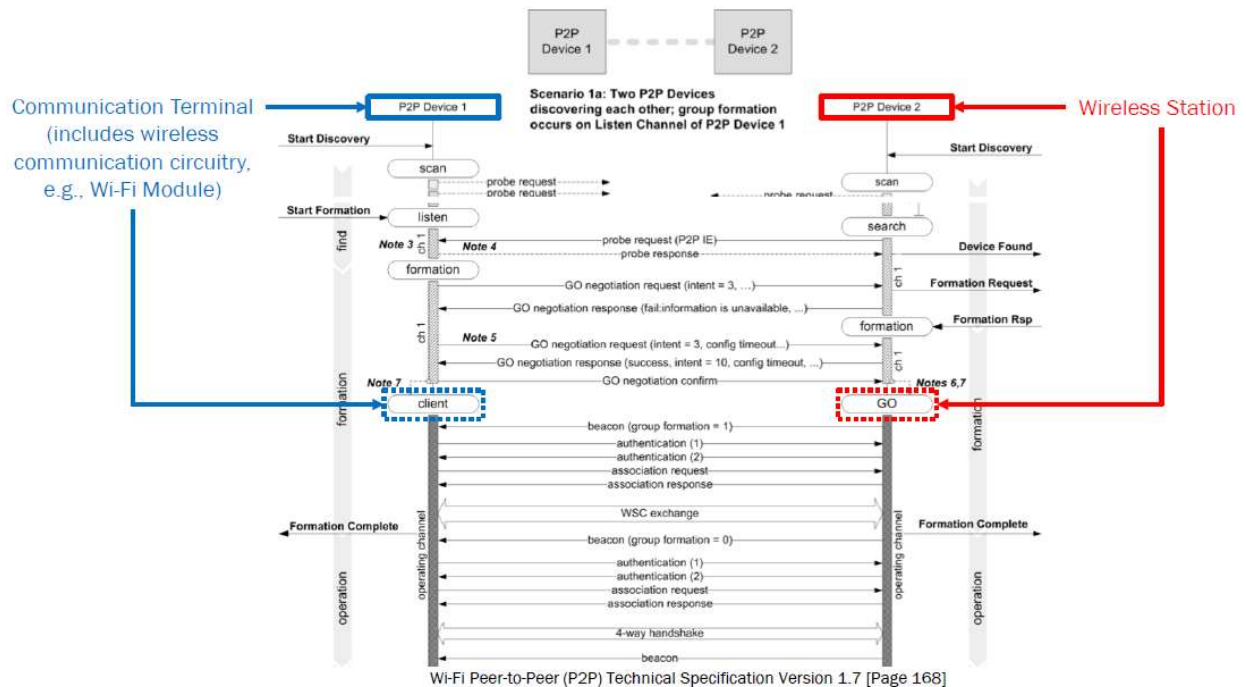
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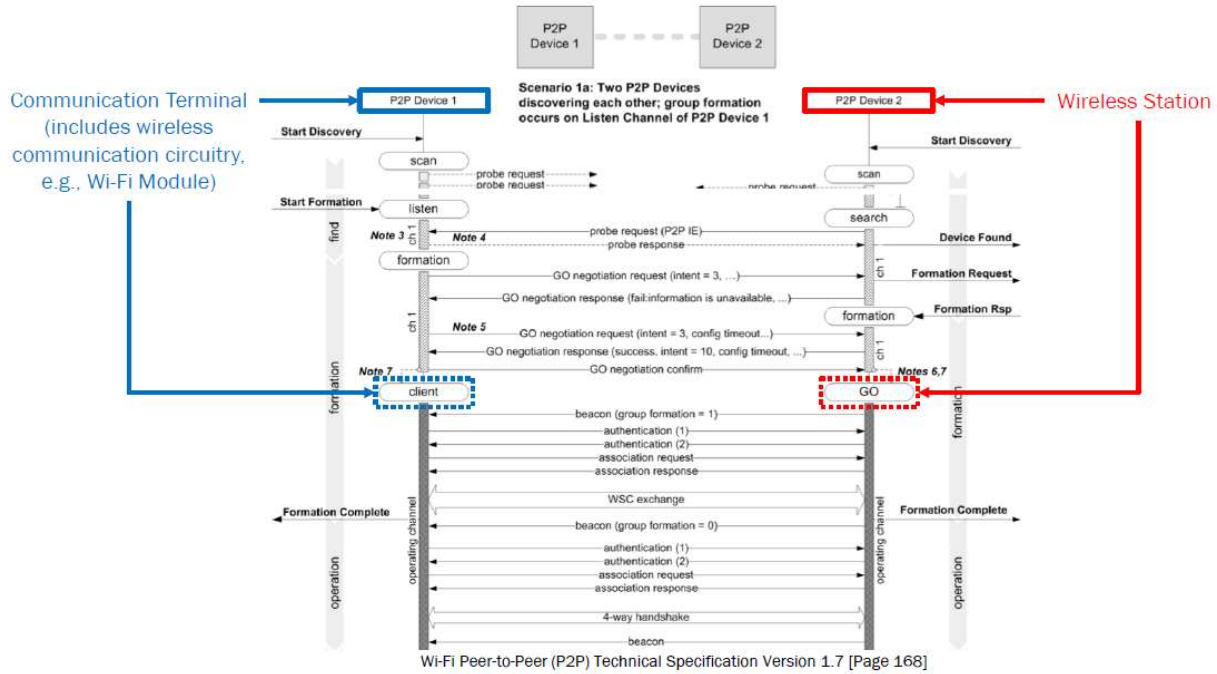
Base Station → **P2P Group Owner:** An “AP-like” entity, when not operating within DMG, or PCP, when operating within DMG, that may provide and use connectivity between Clients.

Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Page 14-17].

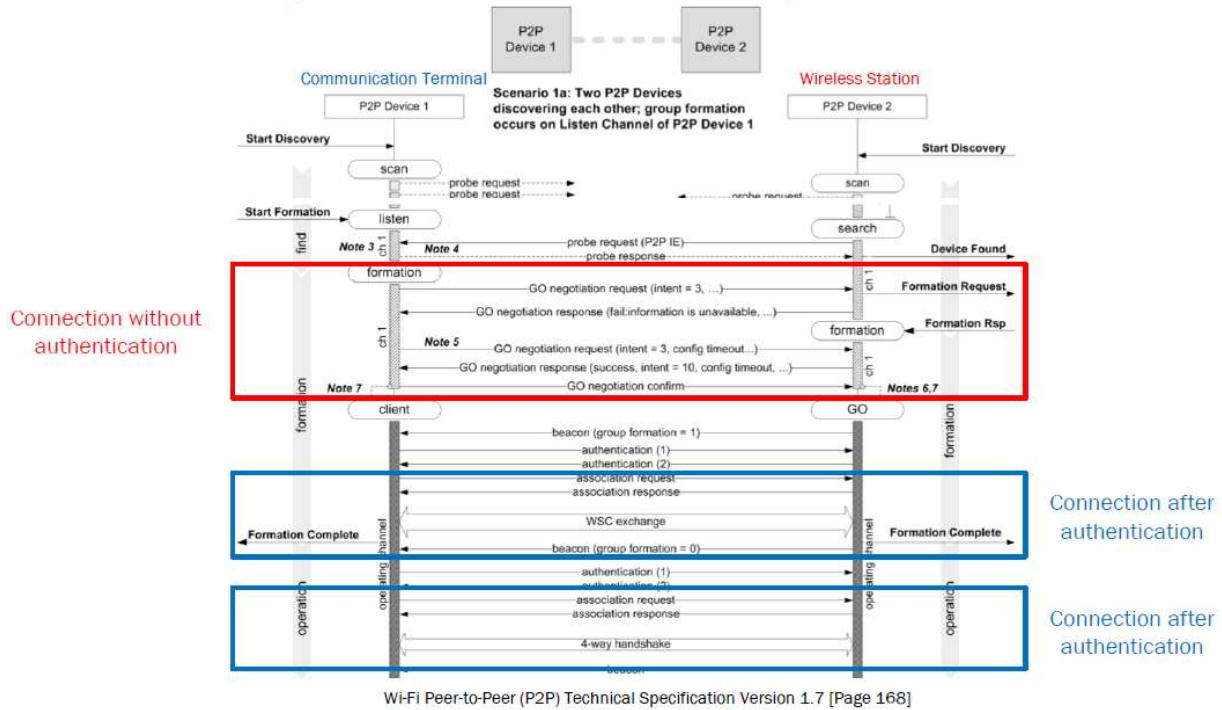
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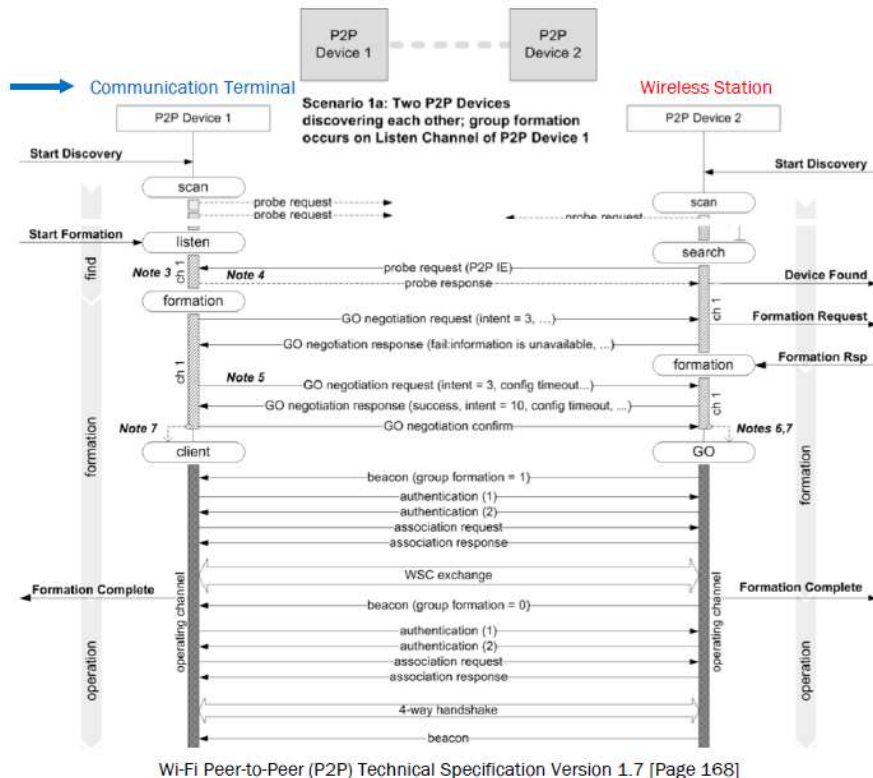


41. A Wi-Fi Direct peer device can establish a connection with another Wi-Fi Direct peer device using a connection that does not require authentication or a connection that does not require authentication.

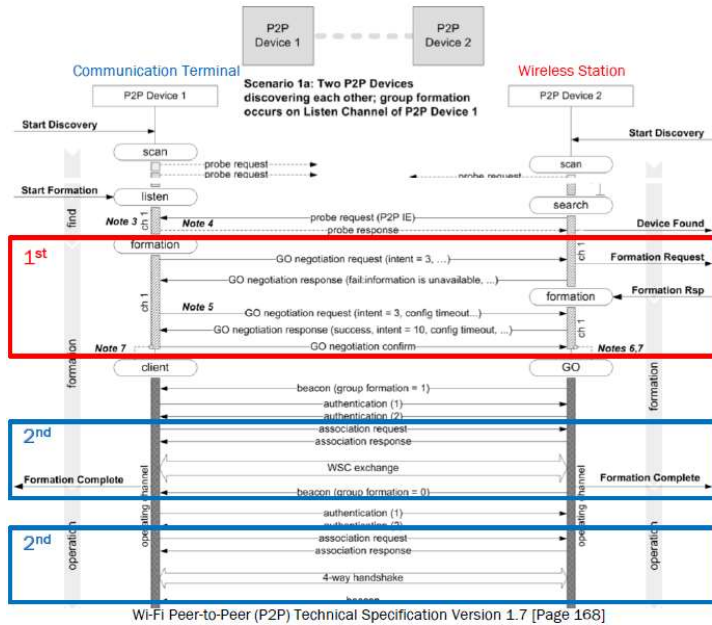


42. A Wi-Fi Direct peer device has control circuitry (e.g., Wi-Fi module processor) that controls the wireless communication circuitry.

Includes wireless communication circuitry, e.g., Wi-Fi module, and control circuitry, (e.g., Wi-Fi module processor).



43. A Wi-Fi Direct peer device receives from another Wi-Fi Direct peer device, via the first method (e.g., P2P) profile information (e.g., channel list and operating channel attributes) necessary for the devices to communicate via the second method (e.g., IEEE 802.11).



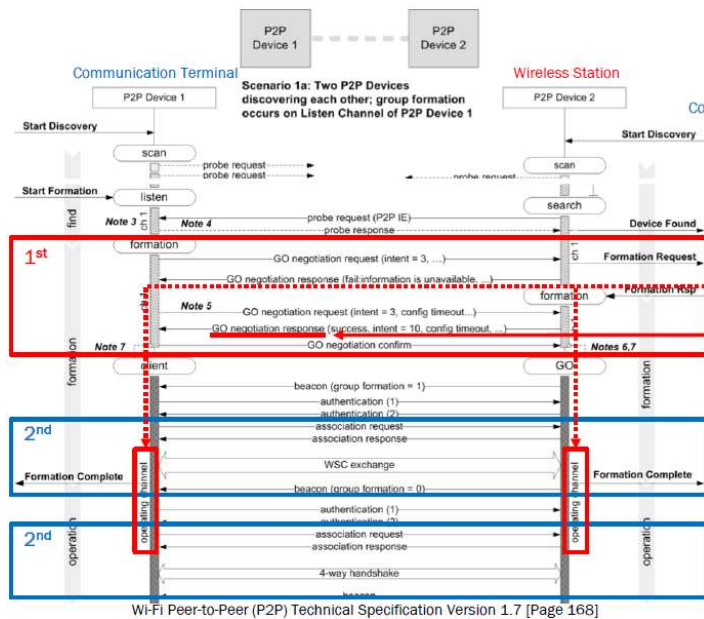
Communication using first method (P2P)

Communication using second method (IEEE 802.11)

3.2 P2P Group operation

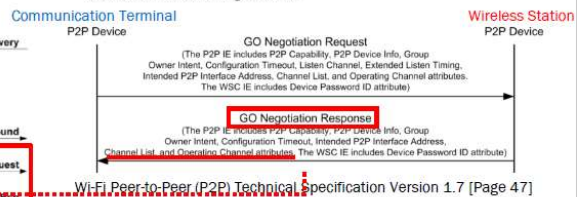
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Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Page 58]



3.1.4.2 Group Owner Negotiation

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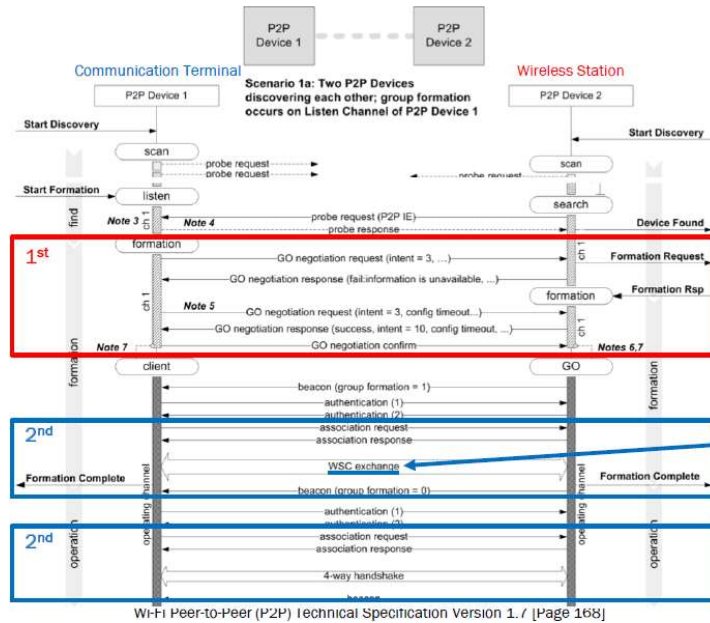


3.1.4.2.2 GO Negotiation Response

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 Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Page 49, 50]

44. A Wi-Fi Direct peer device receives content (e.g., WSC Exchange

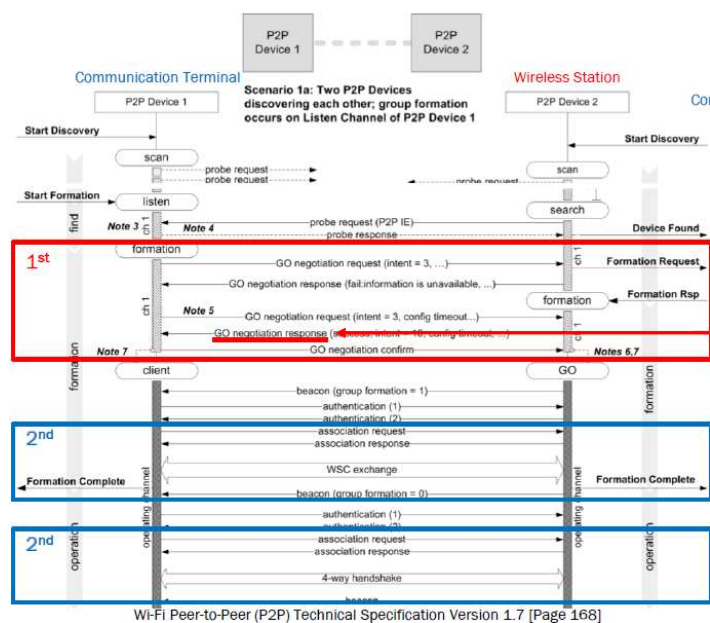
data, such as a Device Password) from another Wi-Fi Direct peer device, via the second method (e.g., IEEE 802.11).



If a P2P Group Owner is transmitting the Invitation Request frame after NFC Static Handover, and intends to use the Device Password read from the NFC Tag in the subsequent WSC exchange, then it also shall include a WSC IE in its P2P Invitation Request and places the Device Password ID read from the NFC Tag in a Device Password ID attribute within the WSC IE.

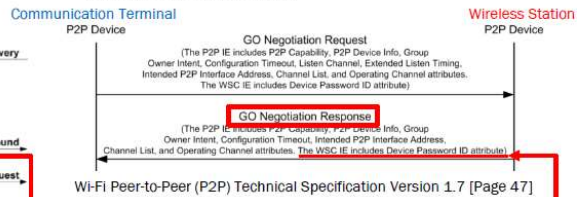
Wi-Fi Peer-to-Peer (P2P) Technical Specification Version 1.7 [Pages 55-56]

45. A W-Fi Direct peer device receives information that is related to the content (e.g., WSC IE data, such as a Device Password ID) from another Wi-Fi Direct peer device, via the first method (e.g., P2P).



3.1.4.2 Group Owner Negotiation

Group Owner Negotiation is a three way frame exchange used to agree which P2P Device shall become P2P Group Owner and to agree on characteristics of the P2P Group, as illustrated in Figure 11. The details of those three frames are described in the following sections.



The WSC IE that is included in the GO Negotiation Response frame contains the Device Password ID and other attributes as shown in Table 65. The value of Device Password ID attribute shall be set to the specific configuration method that the P2P Device is currently using.

Table 65—WSC IE in the GO Negotiation Response frame

Attribute	R/O	Allowed Values
Version	R	0x10 = version 1.0, 0x11 = version 1.1, etc.
Device Password ID	R	The value of Device Password ID attribute shall be set to the specific configuration method that the P2P Device is currently using. See Section 12 (Data Element Definitions) of the WSC Specification [2].
-other...-	O	Multiple attributes are permitted.

HMD GLOBAL Infringes U.S. Patent No. 9,620,282

46. The Patent Office issued U.S. Patent No. 9,620,282, titled “Noncontact connector apparatus and system using inductive coupling between coils,” on April 11, 2017, after a thorough examination and determination that the subject matter claimed is patentable.

47. HMD Global Accused Products with respect to the ’282 patent include smartphones and tablets that support wireless charging including the Nokia 9 PureView.

Nokia reveals new Nokia 9 PureView featuring wireless charging at MWC 2019

Feb 26, 2019

Featuring high-end specs and the first quintuple camera system in a smartphone, the Nokia 9 PureView confirms the Nokia's long-time commitment to [Qi wireless charging](#) which it was first introduced back in 2012 in two of their [Lumia handsets](#), the 920 and 928.

Utilising the universal standard for wireless charging - Qi, the Nokia 9 PureView can be charged on any [Qi-certified wireless charger](#) for the home and in [public venues](#).

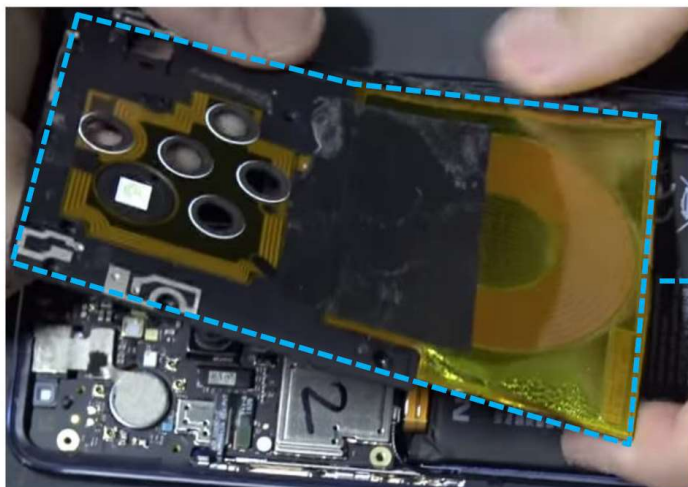


48. The ’282 Accused Products are power transfer apparatuses according to at least claim 10.

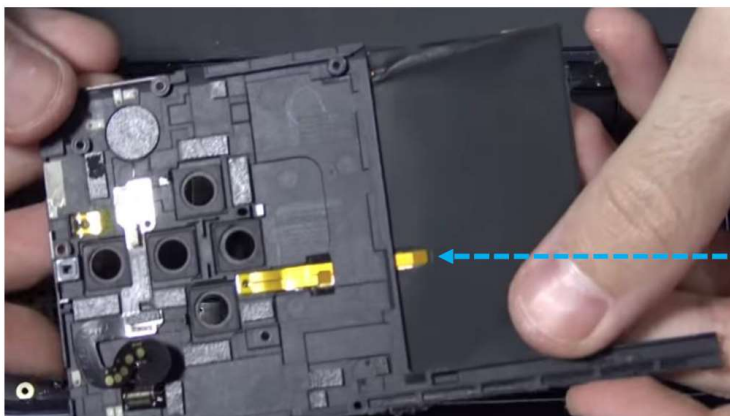
49. HMD Global Qi-compatible devices contain wireless power receiver circuitry that controls the received power from an induced current.

50. HMD Global Qi-compatible devices include a a noncontact connector

apparatus connected to the power receiver circuit. The device's wireless charging



Noncontact connector apparatus in the form of a wireless charging module



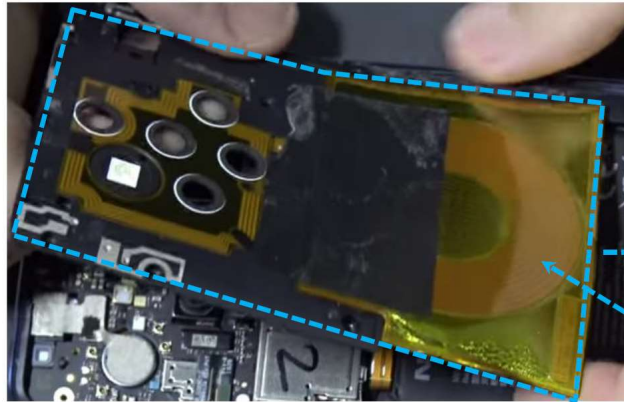
Leads from wireless charging coil into power receiving circuit (underside of module)

module is connected to the power receiving circuit as shown below:

51. The noncontact charging module comprises a receiver coil that is electromagnetically coupled to a transmitter coil when the device is placed onto a wireless charging pad.

52. The charging coil is provided adjacent so as to be electronically coupled to a transmitter coil of a wireless charger.

53. The receiver coil includes a winding wound on a second plane opposed to be adjacent to a first plane on which the transmitter coil is provided.



Noncontact connector apparatus in the form of a wireless charging module

Receiver coil (wireless charging coil of phone)

<https://www.youtube.com/watch?v=03ekj09FiJg> (Nokia 9 PureView Disassembly Teardown Repair Guide)

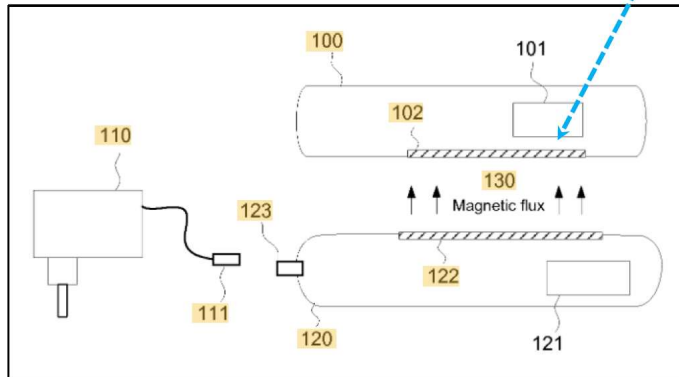
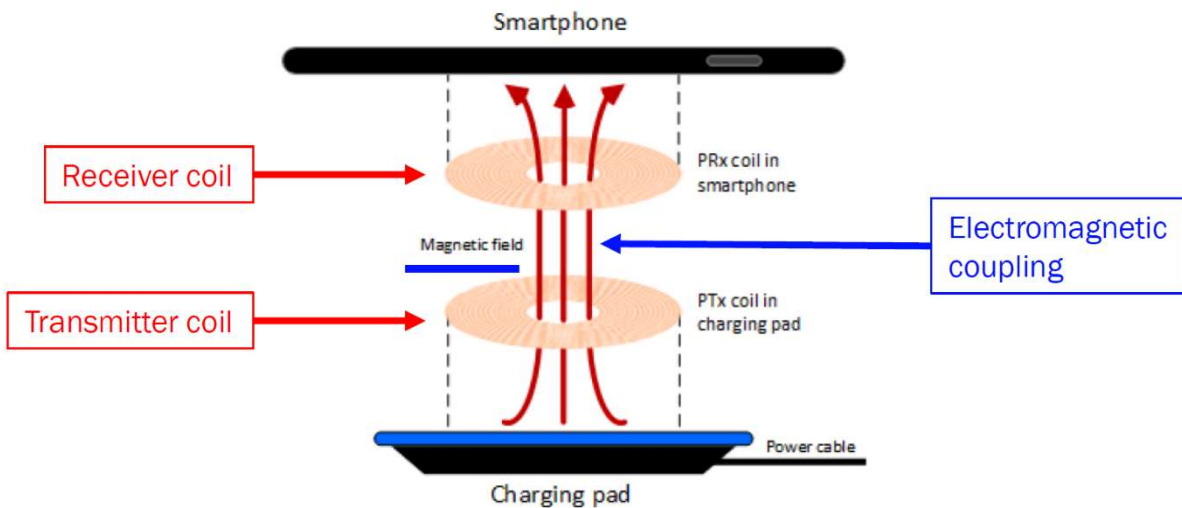


FIG. 1 illustrates an example of a wireless power transfer system, where energy can be transferred through electromagnetic induction.

<https://patents.google.com/patent/US9948149B2/en?q=9948149>

A critical feature of the magnetic field is that it can transfer through any non-metallic, non-ferrous materials, such as plastics, glass, water, wood, and air. In other words, wires and connectors are not needed between the power transmitter and power receiver.

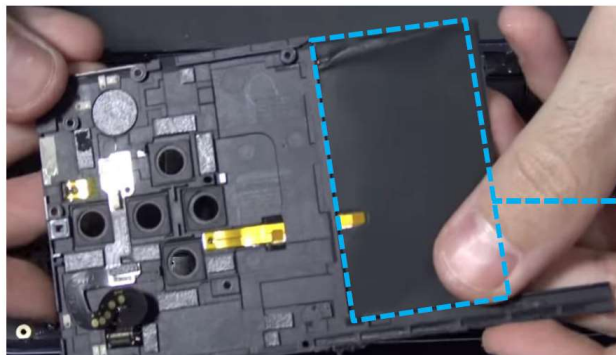
Figure 6. Qi wireless power transfer using magnetic induction



54. The noncontact charging module comprises a receiver coil that is

electromagnetically coupled to a transmitter coil

55. The wireless charging module comprises shielding material (a second magnetic body), highlighted in the image below. This shielding material is adjacent and electromagnetically coupled to the phone's receiving coil and covers at least part of the coil winding.



Electromagnetic shielding of phone's wireless charging module (a second magnetic body)

<https://www.youtube.com/watch?v=03ekj09FiJg> (Nokia 9 PureView Disassembly Teardown Repair Guide)

56. In the receiver coil, self-inductance will increase due to existence of a magnet. Thus, a coupling coefficient (k) between the transmitter coil and the receiver coil will be set to be decreased according to the following equation (*see also col. 7 of the '282 Specification*):

$$k = \frac{M}{\sqrt{L1} \times \sqrt{L2}} \text{ for } 0 \leq |k| \leq 1,$$

where M represents an mutual inductance between the transmitter coil 1 and the receiver coil 2, $L1$ represents the self-inductance of the transmitter coil 1, and $L2$ represents the self-inductance of the receiver coil 2.

57. When k is high, wide-band operation cannot be achieved because the

frequency response (i.e., “frequency characteristics”) of the transmission efficiency has a double peaked narrow band response. Therefore, to achieve wide band operation k should be lowered by increasing self-inductances of each of the transmitted coil and the receiver coil.

The total power transfer function from transmitter driving stage to receiver rectifier will show a resonance curve according Figure 10. The A11 transmitter operating frequency can be controlled between 110kHz and 205kHz range, staying at the right side of the resonance. Due to the slope of the resonance curve, the receiver rectifier output voltage can be controlled by changing the transmitter power signal frequency.

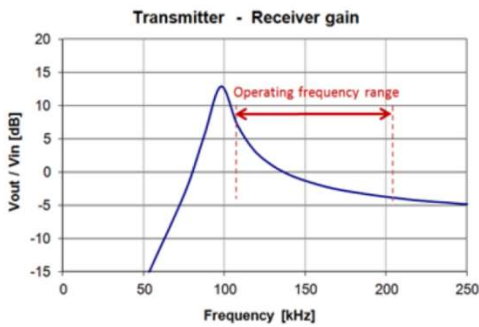


Figure 10 : Tx-Rx transfer curve

Note that the peak amplitude in the curve is dependent on the quality factor of the LC circuit. It is also load dependent. To ensure sufficient voltage gain between transmitter and receiver in all load conditions, the power stage components should be selected based on WPC1.1 requirements.

However, when Qi-compliant (i.e., WPC-compliant) components are selected, the k is lowered and the frequency response (i.e., “frequency characteristic”) of the transmitter-receiver gain (i.e., “transmission efficiency”) changes from a double-peak narrow-band response to a single-peaked wide-band response.

QI WIRELESS POWER CONSORTIUM
The Qi Wireless Power Transfer System Parts 1 and 2: Interface Definitions Power Class 0 Specification
Version 1.2.3 Power Receiver design guidelines (informative)

Annex C Power Receiver design guidelines (informative)

C.1 Large-signal resonance check

In the course of designing a Power Receiver, it should be verified that the resonance frequency f_s of the dual resonant circuit remains within the tolerance range defined in Section 3.1.1, *Dual resonant circuit*, under large-signal conditions. The test defined in this Annex C.1 serves this purpose.

Step 1. Connect an RF power source to the assembly of Secondary Coil, Shielding and other components that influence the inductance of the Secondary Coil—e.g. a magnetic attractor, see Figure 7 on page 28—and series resonant capacitance C_s ; see Figure 56. The presence of the parallel capacitance C_p is optional.

Figure 56. Large signal secondary resonance test

Step 2. Position the assembly and an appropriate spacer on primary Shielding material, as shown in Figure 7.

Step 3. Measure the input voltage V_{in} as a function of the frequency of the RF power source in the range of 90...110 kHz, while maintaining the input current I_{in} at a constant level, preferably at about twice the maximum value intended in the final product.

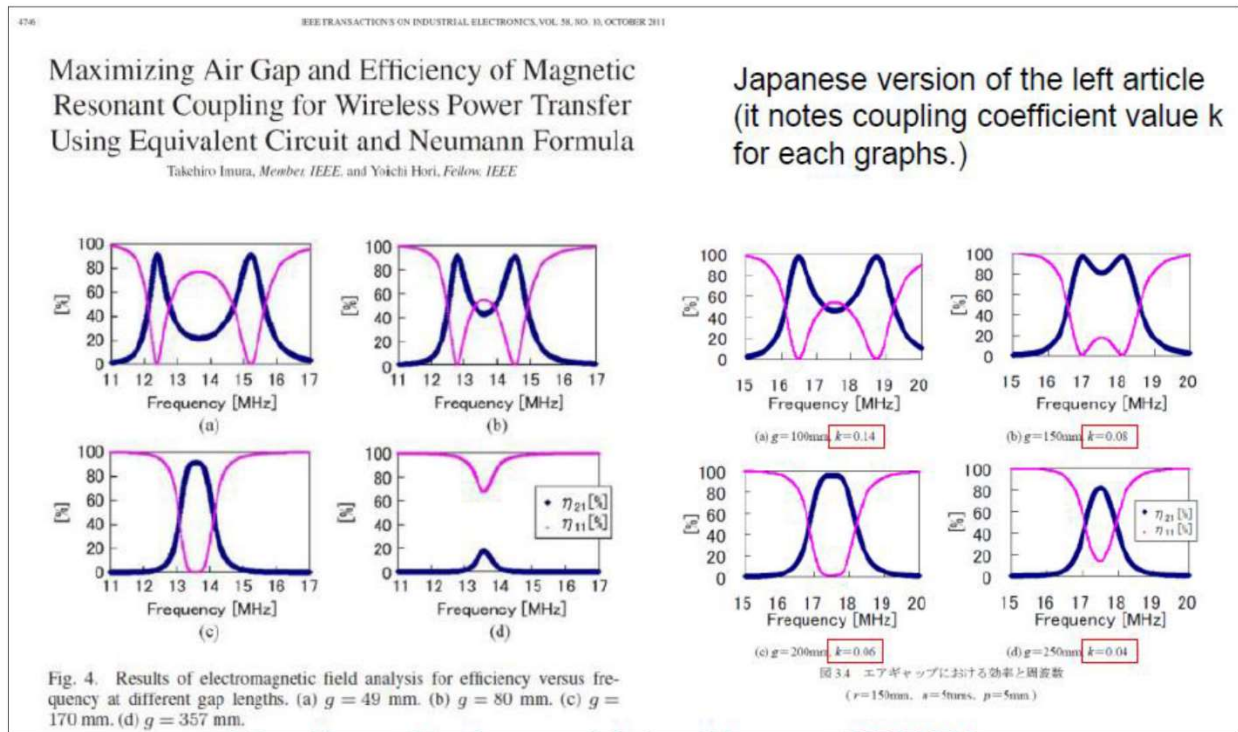
Step 4. Verify that the frequency at which the measured V_{in} is at a minimum, occurs within the specified tolerance range of the resonance frequency f_s .

The above results are observed when the frequency response is measured using Qi (i.e., WPC) guidelines.

Wireless Power Consortium Qi Specification Version 1.2.3

58. The center frequency of the double peaked narrow band characteristic is lower than a center frequency of the single peaked wide band characteristic.

10



HMD GLOBAL Infringes U.S. Patent No. 10,468,913

59. The Patent Office issued U.S. Patent No. 10,468,913, titled “Electronic device including non-contact charging module,” on November 5, 2019, after a thorough examination and determination that the subject matter claimed is patentable.

60. HMD Global Accused Products with respect to the ’913 patent include smartphones and tablets that support wireless charging including the Nokia 9 Purview.



Nokia 9 PureView

BATTERY LIFE

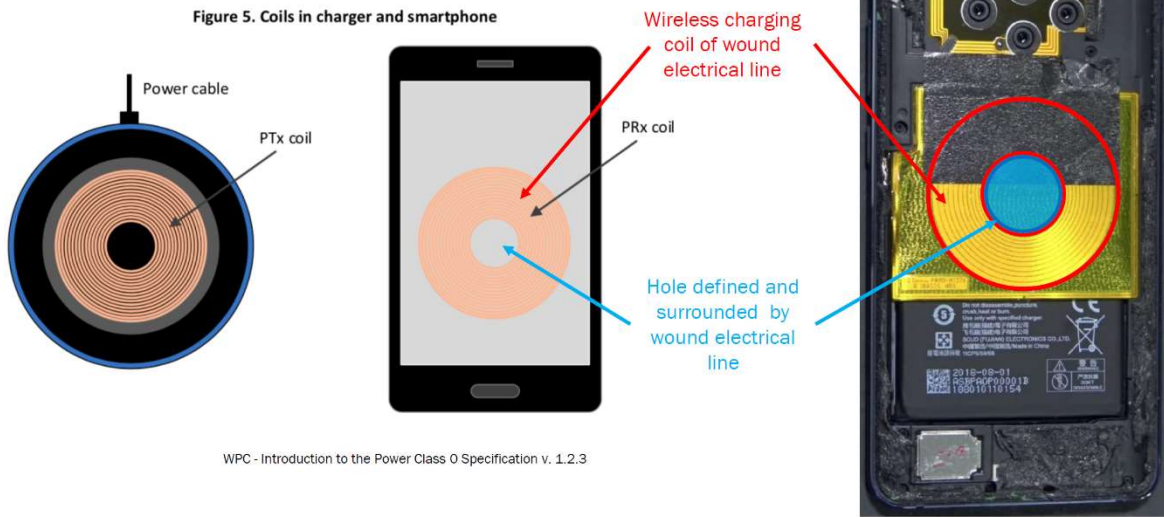
- Battery type Integrated 3320 mAh⁵
- Charging Qi Wireless charging

61. HMD Global '913 Accused Product have communication capability and feature a housing having a surface in a plan view, and a Qi power receiver module (PRx) (i.e., “non contact charging module”) that receives electric power through electromagnetic induction.

62. The non-contact charging module includes a wireless charging coil comprised of an electrical line wound to define a hole surrounded by the wound electrical line and a magnetic material opposing the wireless charging coil for external shielding.

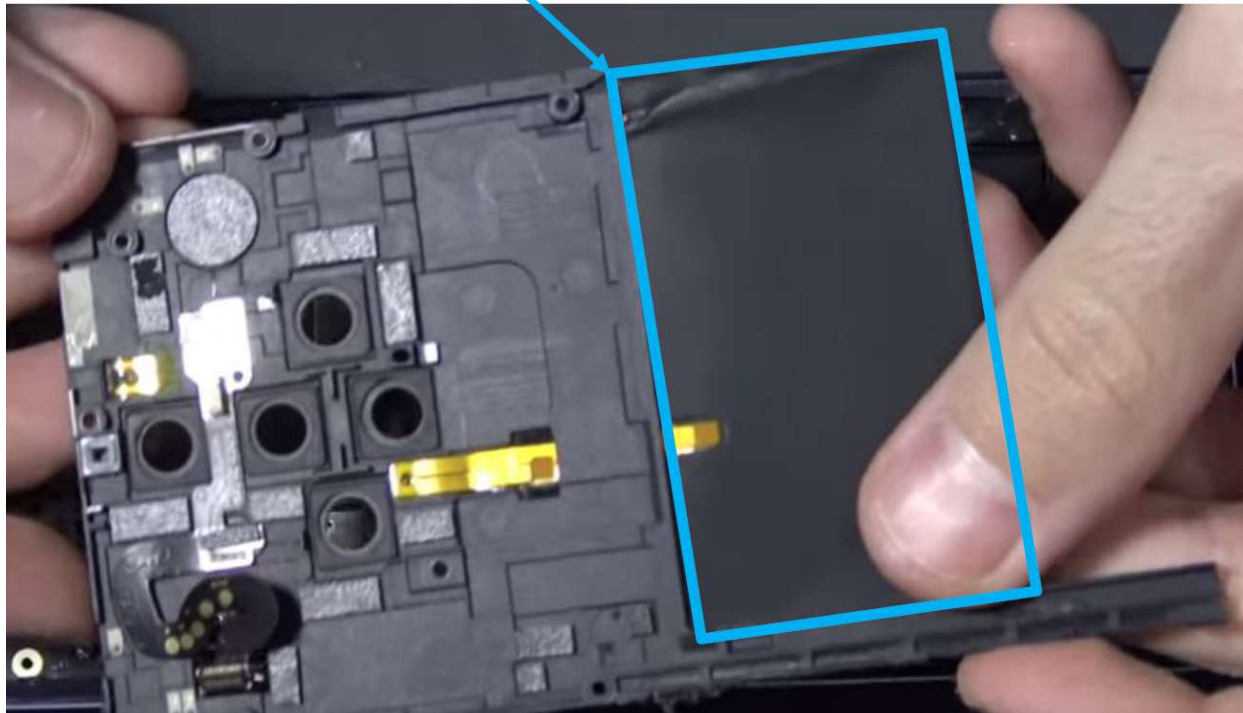
Both the PTx and PRx subsystems contain coils, as shown in the conceptual diagram in Figure 5, as well as circuitry that handles the communication and power transfer between them.

Figure 5. Coils in charger and smartphone

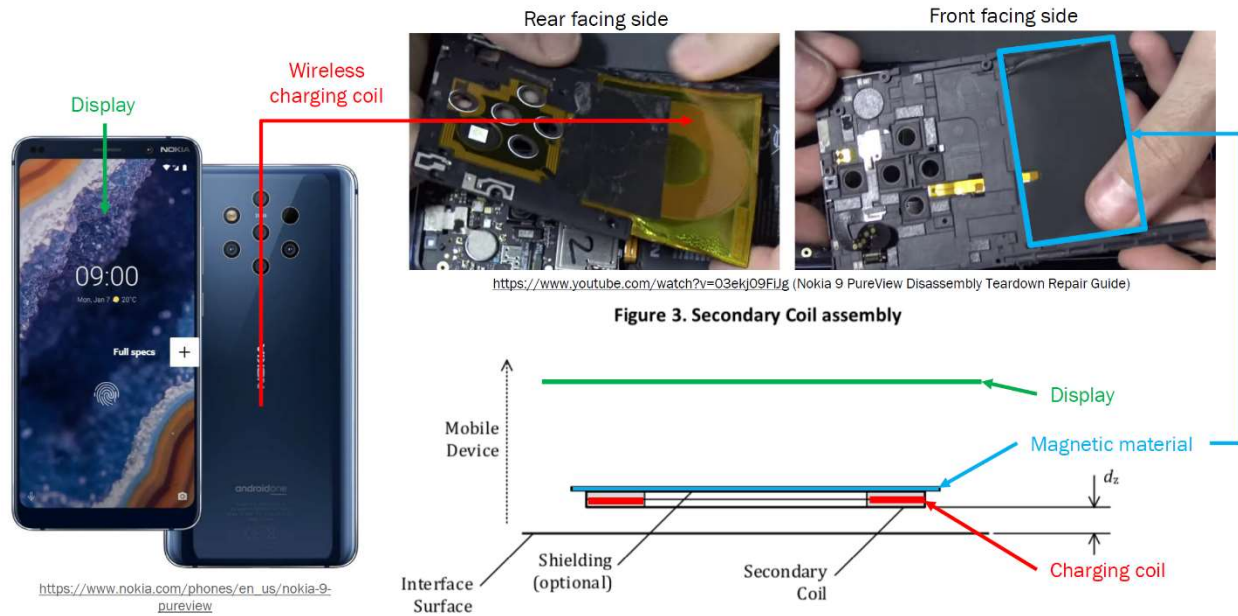


Magnetic material

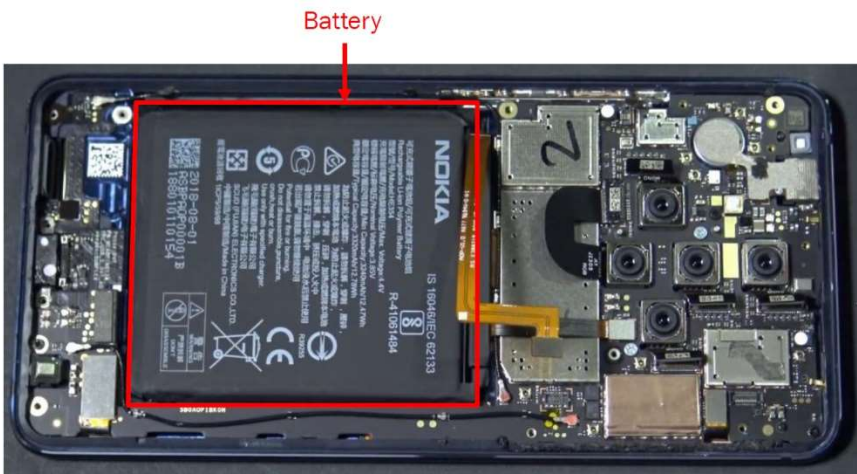
Charging coil



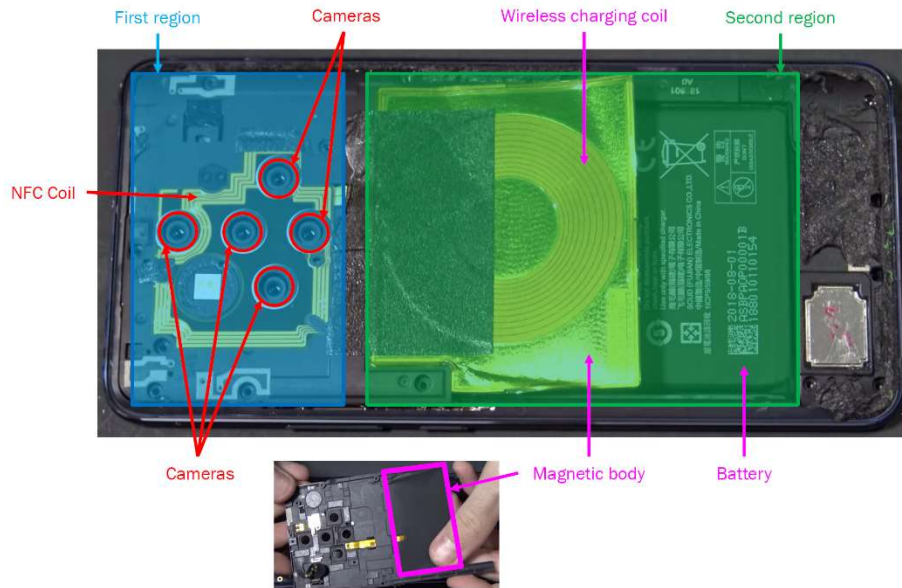
63. A display is arranged at the front of the HMD Global Accused Products, and the wireless charging coil is arranged at the rear with magnetic material interposed between the display and the wireless charging coil.



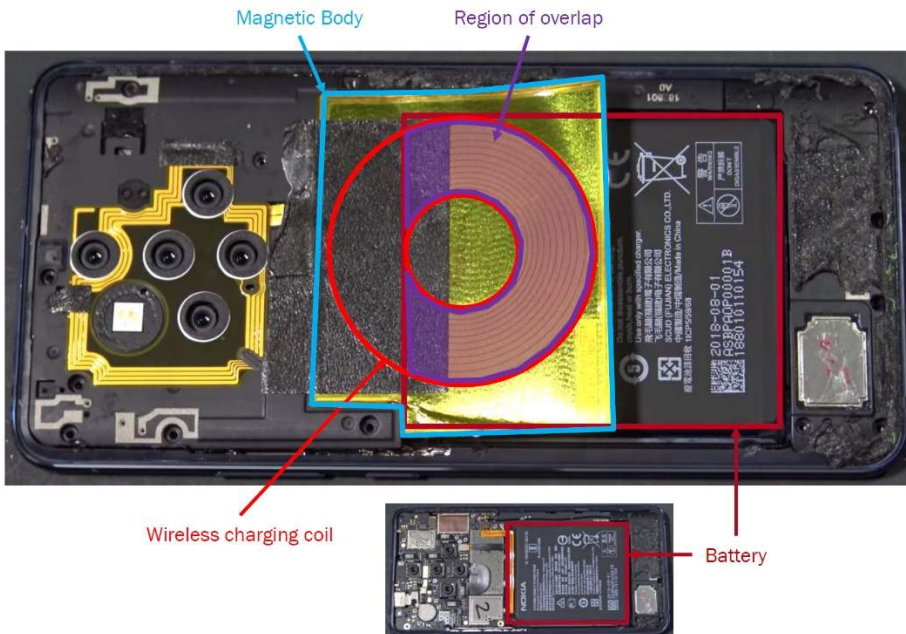
64. The '913 Accused Products include a battery that receives and stores power from the wireless charging coil, a camera, and a communication coil (e.g., an NFC antenna) that is electrically isolated from the wireless charging coil.



65. As shown below, the battery, the wireless charging coil, and the magnetic body are arranged in a second region of the plan view, and the first and second regions are separated from each other in the plan view.



66. The wireless charging coil and the magnetic body overlap with the battery in the plan view, as shown below:



NATURE OF THE ACTION

67. SPV asserts that HMD Global infringes, directly and indirectly, certain claims of U.S. Patent Nos. 8,902,871, 9,357,441, 10,039,144, 9,620,282, and 10,468,913 (the “Asserted Patents”).

COUNT 1 INFRINGEMENT OF U.S. PATENT NO. 9,620,282

68. SPV realleges and incorporates by reference the allegations set forth above as if restated verbatim here.

69. SPV is the owner, by assignment, of U.S. Patent No. 9,620,282. As the owner of the ’282 Patent, SPV holds all substantial rights in and under the ’282 Patent, including the right to grant licenses, exclude others, and to enforce, sue, and recover damages for past and future infringement.

70. The ’282 Patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

71. SPV alleges that HMD Global has infringed, and continues to infringe, the ’282 Patent including at least claim 10, by making, selling, and offering to sell in the United States, and/or importing into the United States the Accused Products, which include all HMD Global products substantially similar (i.e., featuring wireless charging) to those specifically identified.

72. The HMD Global Accused Products are designed, manufactured, and intended to be used in normal operation to practice the ’282 Patent and feature

functionality described above.

73. Defendants have used and tested the Accused Products in the United States, and all infringing acts by Defendants were committed without authorization under the '282 Patent.

74. HMD Global's users, customers, agents and/or other third parties (collectively, "third-party infringers") infringed and continue to infringe the asserted claims including under 35 U.S.C. § 271(a) by using the Accused Products according to their normal and intended use.

75. HMD Global has, since at least as early as August 10, 2023, known or been willfully blind to the fact that the third-party infringers' use of the Accused Products directly infringes the '282 Patent.

76. HMD Global's knowledge of the '282 Patent extends to its knowledge that the third-party infringers' use of the Accused Products directly infringes the '282 Patent, or, at the very least, rendered Defendants willfully blind to such infringement.

77. With knowledge of or willful blindness to the fact that the third-party infringers' use of the Accused Products in their intended manner such that all limitations of the asserted claims of the '282 Patent are met directly infringes the '282 Patent, Defendants have actively encouraged and induced the third-party infringers to directly infringe the '282 Patent by making, using, testing, selling,

offering for sale, importing and/or licensing the Accused Products, supporting and managing the third-party infringers' use of wireless charging functionalities, providing technical assistance to the third-party infringers during their continued use of the Accused Products such as by, for example, publishing instructional information, and directing and encouraging third-party infringers how to make and use the Accused Products.

78. Defendants specifically intend to induce, and did induce, third-party infringers to practice the '282 Patent, and in response, the third-party infringers acquire and operate the Accused Products in an infringing manner. Based upon the foregoing facts, among other things, HMD Global has induced and continues to induce infringement of the asserted claims of the '282 Patent under 35 U.S.C. § 271(b).

79. Upon information and belief, HMD Global's acts of infringement of the '282 Patent continue since notice and since this complaint was filed and are, therefore, carried out with knowledge of the asserted claims of the '282 Patent and how the Accused Products infringe them. Rather than take a license to the '282 Patent, HMD Global's ongoing infringing conduct reflects a business decision to "efficiently infringe" the asserted claims and in doing so constitutes willful infringement under the standard of *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016).

80. HMD Global's acts of direct and indirect infringement have caused and continue to cause damage to SPV for which SPV is entitled to recover damages sustained as a result of HMD Global's infringing acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court, pursuant to 35 U.S.C. § 284.

COUNT 2
INFRINGEMENT OF U.S. PATENT NO. 10,468,913

81. SPV realleges and incorporates by reference the allegations set forth above as if restated verbatim here.

82. SPV is the owner, by assignment, of U.S. Patent No. 10,468,913. As the owner of the '913 Patent, SPV holds all substantial rights in and under the '913 Patent, including the right to grant licenses, exclude others, and to enforce, sue, and recover damages for past and future infringement.

83. The '913 Patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

84. SPV alleges that HMD Global has infringed, and continues to infringe, the '913 Patent including at least claim 1, by making, selling, and offering to sell in the United States, and/or importing into the United States the Accused Products, which include all HMD Global products substantially similar (i.e., featuring wireless charging) to those specifically identified.

85. The HMD Global Accused Products are designed, manufactured, and

intended to be used in normal operation to practice the '913 Patent and feature functionality described above.

86. Defendants have used and tested the Accused Products in the United States, and all infringing acts by Defendants were committed without authorization under the '913 Patent.

87. HMD Global's users, customers, agents and/or other third parties (collectively, "third-party infringers") infringed and continue to infringe the asserted claims including under 35 U.S.C. § 271(a) by using the Accused Products according to their normal and intended use.

88. HMD Global has, since at least as early as August 10, 2023, known or been willfully blind to the fact that the third-party infringers' use of the Accused Products directly infringes the '913 Patent.

89. HMD Global's knowledge of the '913 Patent extends to its knowledge that the third-party infringers' use of the Accused Products directly infringes the '913 Patent, or, at the very least, rendered Defendants willfully blind to such infringement.

90. With knowledge of or willful blindness to the fact that the third-party infringers' use of the Accused Products in their intended manner such that all limitations of the asserted claims of the '913 Patent are met directly infringes the '913 Patent, Defendants have actively encouraged and induced the third-party

infringers to directly infringe the '913 Patent by making, using, testing, selling, offering for sale, importing and/or licensing the Accused Products, supporting and managing the third-party infringers' use of wireless charging functionalities, providing technical assistance to the third-party infringers during their continued use of the Accused Products such as by, for example, publishing instructional information, and directing and encouraging third-party infringers how to make and use the Accused Products.

91. Defendants specifically intend to induce, and did induce, third-party infringers to practice the '913 Patent, and in response, the third-party infringers acquire and operate the Accused Products in an infringing manner. Based upon the foregoing facts, among other things, HMD Global has induced and continues to induce infringement of the asserted claims of the '913 Patent under 35 U.S.C. § 271(b).

92. Upon information and belief, HMD Global's acts of infringement of the '913 Patent continue since notice and since this complaint was filed and are, therefore, carried out with knowledge of the asserted claims of the '913 Patent and how the Accused Products infringe them. Rather than take a license to the '913 Patent, HMD Global's ongoing infringing conduct reflects a business decision to "efficiently infringe" the asserted claims and in doing so constitutes willful infringement under the standard of *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S.

Ct. 1923 (2016).

93. HMD Global's acts of direct and indirect infringement have caused and continue to cause damage to SPV for which SPV is entitled to recover damages sustained as a result of HMD Global's infringing acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court, pursuant to 35 U.S.C. § 284.

COUNT 3
INFRINGEMENT OF U.S. PATENT NO. 8,902,871

94. SPV realleges and incorporates by reference the allegations set forth above as if restated verbatim here.

95. SPV is the owner, by assignment, of U.S. Patent No. 8,902,871. As the owner of the '871 Patent, SPV holds all substantial rights in and under the '871 Patent, including the right to grant licenses, exclude others, and to enforce, sue, and recover damages for past and future infringement.

96. The '871 Patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

97. HMD Global has infringed, and continues to infringe, the '871 Patent including at least claim 1, by making, selling, and offering to sell in the United States, and/or importing into the United States the Accused Products, which include all HMD Global products substantially similar (i.e., featuring WiFi Direct) to those specifically identified.

98. The HMD Global Accused Products are designed, manufactured, and intended to be used in normal operation to practice the '871 Patent and feature functionality described above.

99. Defendants have used and tested the Accused Products in the United States, and all infringing acts by Defendants were committed without authorization under the '871 Patent.

100. HMD Global's users, customers, agents and/or other third parties (collectively, "third-party infringers") infringed and continue to infringe the asserted claims including under 35 U.S.C. § 271(a) by using the Accused Products according to their normal and intended use.

101. HMD Global has, since at least as early as August 10, 2023, known or been willfully blind to the fact that the third-party infringers' use of the Accused Products directly infringes the '871 Patent.

102. HMD Global's knowledge of the '871 Patent extends to its knowledge that the third-party infringers' use of the Accused Products directly infringes the '871 Patent, or, at the very least, rendered Defendants willfully blind to such infringement.

103. With knowledge of or willful blindness to the fact that the third-party infringers' use of the Accused Products in their intended manner such that all limitations of the asserted claims of the '871 Patent are met directly infringes the

'871 Patent, Defendants have actively encouraged and induced the third-party infringers to directly infringe the '871 Patent by making, using, testing, selling, offering for sale, importing and/or licensing the Accused Products, supporting and managing the third-party infringers' use of wireless charging functionalities, providing technical assistance to the third-party infringers during their continued use of the Accused Products such as by, for example, publishing instructional information, and directing and encouraging third-party infringers how to make and use the Accused Products.

104. Defendants specifically intend to induce, and did induce, third-party infringers to practice the '871 Patent, and in response, the third-party infringers acquire and operate the Accused Products in an infringing manner. Based upon the foregoing facts, among other things, HMD Global has induced and continues to induce infringement of the asserted claims of the '871 Patent under 35 U.S.C. § 271(b).

105. Upon information and belief, HMD Global's acts of infringement of the '871 Patent continue since notice and since this complaint was filed and are, therefore, carried out with knowledge of the asserted claims of the '871 Patent and how the Accused Products infringe them. Rather than take a license to the '871 Patent, HMD Global's ongoing infringing conduct reflects a business decision to "efficiently infringe" the asserted claims and in doing so constitutes willful

infringement under the standard of *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016).

106. HMD Global's acts of direct and indirect infringement have caused and continue to cause damage to SPV for which SPV is entitled to recover damages sustained as a result of HMD Global's infringing acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court, pursuant to 35 U.S.C. § 284.

COUNT 4
INFRINGEMENT OF U.S. PATENT NO. 9,357,441

107. SPV realleges and incorporates by reference the allegations set forth above as if restated verbatim here.

108. SPV realleges and incorporates by reference the allegations set forth above as if restated verbatim here.

109. SPV is the owner, by assignment, of U.S. Patent No. 9.357,441. As the owner of the '441 Patent, SPV holds all substantial rights in and under the '441 Patent, including the right to grant licenses, exclude others, and to enforce, sue, and recover damages for past and future infringement.

110. The '441 Patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

111. HMD Global has infringed, and continues to infringe, the '441 Patent

including at least claim 1, by making, selling, and offering to sell in the United States, and/or importing into the United States the Accused Products, which include all HMD Global products substantially similar (i.e., featuring WiFi Direct) to those specifically identified.

112. The HMD Global Accused Products are designed, manufactured, and intended to be used in normal operation to practice the '441 Patent and feature functionality described above.

113. Defendants have used and tested the Accused Products in the United States, and all infringing acts by Defendants were committed without authorization under the '441 Patent.

114. HMD Global's users, customers, agents and/or other third parties (collectively, "third-party infringers") infringed and continue to infringe the asserted claims including under 35 U.S.C. § 271(a) by using the Accused Products according to their normal and intended use.

115. HMD Global has, since at least as early as August 10, 2023, known or been willfully blind to the fact that the third-party infringers' use of the Accused Products directly infringes the '441 Patent.

116. HMD Global's knowledge of the '441 Patent extends to its knowledge that the third-party infringers' use of the Accused Products directly infringes the '441 Patent, or, at the very least, rendered Defendants willfully blind to such

infringement.

117. With knowledge of or willful blindness to the fact that the third-party infringers' use of the Accused Products in their intended manner such that all limitations of the asserted claims of the '441 Patent are met directly infringes the '441 Patent, Defendants have actively encouraged and induced the third-party infringers to directly infringe the '441 Patent by making, using, testing, selling, offering for sale, importing and/or licensing the Accused Products, supporting and managing the third-party infringers' use of wireless charging functionalities, providing technical assistance to the third-party infringers during their continued use of the Accused Products such as by, for example, publishing instructional information, and directing and encouraging third-party infringers how to make and use the Accused Products.

118. Defendants specifically intend to induce, and did induce, third-party infringers to practice the '441 Patent, and in response, the third-party infringers acquire and operate the Accused Products in an infringing manner. Based upon the foregoing facts, among other things, HMD Global has induced and continues to induce infringement of the asserted claims of the '441 Patent under 35 U.S.C. § 271(b).

119. Upon information and belief, HMD Global's acts of infringement of the '441 Patent continue since notice and since this complaint was filed and are,

therefore, carried out with knowledge of the asserted claims of the '441 Patent and how the Accused Products infringe them. Rather than take a license to the '441 Patent, HMD Global's ongoing infringing conduct reflects a business decision to "efficiently infringe" the asserted claims and in doing so constitutes willful infringement under the standard of *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016).

120. HMD Global's acts of direct and indirect infringement have caused and continue to cause damage to SPV for which SPV is entitled to recover damages sustained as a result of HMD Global's infringing acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court, pursuant to 35 U.S.C. § 284.

COUNT 5
INFRINGEMENT OF U.S. PATENT NO. 10,039,144

121. SPV realleges and incorporates by reference the allegations set forth above as if restated verbatim here.

122. SPV is the owner, by assignment, of U.S. Patent No. 10,039,144. As the owner of the '144 Patent, SPV holds all substantial rights in and under the '144 Patent, including the right to grant licenses, exclude others, and to enforce, sue, and recover damages for past and future infringement.

123. The '144 Patent is valid, enforceable and was duly issued in full

compliance with Title 35 of the United States Code.

124. HMD Global has infringed, and continues to infringe, the '144 Patent including at least claim 1, by making, selling, and offering to sell in the United States, and/or importing into the United States the Accused Products, which include all HMD Global products substantially similar (i.e., featuring WiFi Direct) to those specifically identified.

125. The HMD Global Accused Products are designed, manufactured, and intended to be used in normal operation to practice the '144 Patent and feature functionality described above.

126. Defendants have used and tested the Accused Products in the United States, and all infringing acts by Defendants were committed without authorization under the '144 Patent.

127. HMD Global's users, customers, agents and/or other third parties (collectively, "third-party infringers") infringed and continue to infringe the asserted claims including under 35 U.S.C. § 271(a) by using the Accused Products according to their normal and intended use.

128. HMD Global has, since at least as early as August 10, 2023, known or been willfully blind to the fact that the third-party infringers' use of the Accused Products directly infringes the '144 Patent.

129. HMD Global's knowledge of the '144 Patent extends to its knowledge

that the third-party infringers' use of the Accused Products directly infringes the '144 Patent, or, at the very least, rendered Defendants willfully blind to such infringement.

130. With knowledge of or willful blindness to the fact that the third-party infringers' use of the Accused Products in their intended manner such that all limitations of the asserted claims of the '144 Patent are met directly infringes the '144 Patent, Defendants have actively encouraged and induced the third-party infringers to directly infringe the '144 Patent by making, using, testing, selling, offering for sale, importing and/or licensing the Accused Products, supporting and managing the third-party infringers' use of wireless charging functionalities, providing technical assistance to the third-party infringers during their continued use of the Accused Products such as by, for example, publishing instructional information, and directing and encouraging third-party infringers how to make and use the Accused Products.

131. Defendants specifically intend to induce, and did induce, third-party infringers to practice the '144 Patent, and in response, the third-party infringers acquire and operate the Accused Products in an infringing manner. Based upon the foregoing facts, among other things, HMD Global has induced and continues to induce infringement of the asserted claims of the '144 Patent under 35 U.S.C. § 271(b).

132. Upon information and belief, HMD Global's acts of infringement of the '144 Patent continue since notice and since this complaint was filed and are, therefore, carried out with knowledge of the asserted claims of the '144 Patent and how the Accused Products infringe them. Rather than take a license to the '144 Patent, HMD Global's ongoing infringing conduct reflects a business decision to "efficiently infringe" the asserted claims and in doing so constitutes willful infringement under the standard of *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923 (2016).

133. HMD Global's acts of direct and indirect infringement have caused and continue to cause damage to SPV for which SPV is entitled to recover damages sustained as a result of HMD Global's infringing acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court, pursuant to 35 U.S.C. § 284.

134. Damages sustained as a result of HMD Global's infringing acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court, pursuant to 35 U.S.C. § 284.

NOTICE

135. SPV does not currently distribute, sell, offer for sale, or make products embodying the Asserted Patents.

136. HMD Global had notice of infringement of the Asserted Patents prior to filing of this complaint. On August 10, 2023, SPV provided a data room to HMD Global informing that it contained copies of the Asserted Patents and claim charts detailing how the Accused Products infringe them. HMD Global refused to discuss the matter with SPV and responded, “to be clear, we will not open the below link you sent to us.”

137. SPV has complied with all notice requirements of 35 U.S.C. § 287.

NOTICE OF REQUIREMENT OF LITIGATION HOLD

138. HMD Global is hereby notified it is legally obligated to locate, preserve, and maintain all records, notes, drawings, documents, data, communications, materials, electronic recordings, audio/video/photographic recordings, and digital files, including edited and unedited or “raw” source material, and other information and tangible things that HMD Global knows, or reasonably should know, may be relevant to actual or potential claims, counterclaims, defenses, and/or damages by any party or potential party in this lawsuit, whether created or residing in hard copy form or in the form of electronically stored information (hereafter collectively referred to as “Potential Evidence”).

139. As used above, the phrase “electronically stored information” includes without limitation: computer files (and file fragments), e-mail (both sent and

received, whether internally or externally), information concerning e-mail (including but not limited to logs of e-mail history and usage, header information, and deleted but recoverable e-mails), text files (including drafts, revisions, and active or deleted word processing documents), instant messages, audio recordings and files, video footage and files, audio files, photographic footage and files, spreadsheets, databases, calendars, telephone logs, contact manager information, internet usage files, and all other information created, received, or maintained on any and all electronic and/or digital forms, sources and media, including, without limitation, any and all hard disks, removable media, peripheral computer or electronic storage devices, laptop computers, mobile phones, personal data assistant devices, Blackberry devices, iPhones, video cameras and still cameras, and any and all other locations where electronic data is stored. These sources may also include any personal electronic, digital, and storage devices of any and all of HMD Global's agents, resellers, distributors or employees if HMD Global's electronically stored information resides there.

140. HMD Global is hereby further notified and forewarned that any alteration, destruction, negligent loss, or unavailability, by act or omission, of any Potential Evidence may result in damages or a legal presumption by the Court and/or jury that the Potential Evidence is not favorable to HMD Global's claims and/or defenses. To avoid such a result, HMD Global's preservation duties

include, but are not limited to, the requirement that HMD Global immediately notify its agents, distributors, and employees to halt and/or supervise the auto-delete functions of HMD Global's electronic systems and refrain from deleting Potential Evidence, either manually or through a policy of periodic deletion.

JURY DEMAND

SPV hereby demands a trial by jury on all claims, issues, and damages so triable.

PRAYER FOR RELIEF

SPV prays for the following relief:

- a. That HMD Global be summoned to appear and answer;
- b. That the Court enter judgment that HMD Global has infringed U.S. Patent Nos. 8,902,871, 9,357,441, 10,039,144, 9,620,282, and 10,468,913.
- c. That the Court grant SPV judgment against HMD Global for all actual, consequential, special, punitive, increased, and/or statutory damages, including, if necessary, an accounting of all damages; pre- and post-judgment interest as allowed by law; and reasonable attorney's fees, costs, and expenses incurred in this action;
- d. That HMD Global's infringement be found to have been willful;
- e. That this case be found to be exceptional under 35 U.S.C. § 285; and
- f. That SPV be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: November 9, 2023

Respectfully submitted,

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