

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,

Petitioner,

v.

DH INTERNATIONAL LTD.,

Patent Owner.

Case No. IPR2024-01322
U.S. Patent No. 9,022,294

STUART LIPOFF'S REPLY DECLARATION

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	MATERIALS CONSIDERED	2
III.	LEGAL STANDARDS	3
IV.	CLAIM CONSTRUCTION	3
A.	Activation Cue.....	4
B.	Data Conveyance Switching Element.....	6
C.	Data Exchange Device/External Data Exchange Device.....	7
D.	Close Proximity	8
V.	<i>MOONEY</i> DISCLOSES OR RENDERS OBVIOUS THE DISPUTED LIMITATIONS.....	10
A.	A POSITA Would Have Been Motivated to Look to <i>Mooney</i>	10
B.	Neither Disputed Element [1.a] nor Claim 1 as a Whole Requires Transmitting Stored Data	12
C.	<i>Mooney</i> 's Quality Bluetooth Signal Is an Activation Cue as Recited in [1.e]	14
1.	<i>Mooney</i> 's Quality Bluetooth Signal Is Recognized by the Cellular Phone as an Activation Cue	16
2.	Mr. Zaheer's Counterarguments Should Be Rejected	17
D.	<i>Mooney</i> Discloses [1.f] Because Its "Automatic Switch Over Module" Switches Between Two Modes Based on the Quality of the Bluetooth Signal.....	26
E.	<i>Mooney</i> 's User Dials a Phone Number to Establish a Call (Trigger an Invariable Action Command) as Recited in [1.h]	29
VI.	<i>MOONEY</i> DISCLOSES OR RENDERS OBVIOUS EACH OF REMAINING CLAIMS 2-20	32

A. Claims 5-7 32

B. Claims 8 and 16.....34

C. Claim 13 34

D. Claim Element [19.i] 36

VII. *MOONEY* AND *LEE* RENDER OBVIOUS CLAIMS 1-20 36

VIII. CONCLUSION.....40

I. INTRODUCTION

1. I have been retained by Google LLC (“Petitioner”) as an independent expert consultant in this proceeding before the Patent Trial and Appeal Board (“Board”) of the United States Patent and Trademark Office.

2. I previously prepared a declaration in support of Google’s Petition for *Inter Partes* Review of U.S. Patent No. 9,022,294 (Ex. 1001, “the ’294 patent”), which I understand was filed as Ex. 1003 (my “Opening Declaration”). In my Opening Declaration, I was asked to provide my opinions about the patentability of claims 1-20 (the “challenged claims”) of the ’294 patent. I incorporate my Opening Declaration by reference.

3. As I previously stated, I am over 18 years of age and, if I am called upon to do so, I would be competent to testify as to the matters set forth herein. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of any proceeding. And my background and qualifications may be found in at least paragraphs 9-23 of my Opening Declaration. Ex. 1003, ¶¶9-23.

4. I understand that the Board instituted review of the Petition (Paper 10, Institution Decision, “DI”) and that Patent Owner filed a Patent Owner’s Response (Paper 17, “POR”). The POR relies on several exhibits and the Declaration of Mr. Zaheer (Ex. 2001).

5. I have been asked by Petitioner to provide my opinion on Mr. Zaheer's opinions.

6. As I will explain in depth below, I believe that Mr. Zaheer relies on an incorrect construction of "activation cue" to argue that *Mooney* (Ex. 1005) does not render obvious the challenged claims. Ex. 2001, ¶¶46, 69-77. I also believe that Mr. Zaheer proposes a construction for "data conveyance switching element" that is at odds with the express disclosure of the '294 patent. Ex. 2001, ¶¶47, 54-57, 78-86. Finally, it is my opinion that Mr. Zaheer's positions related to claim elements [1.a], [1.e], [1.f], and [1.h] (the "disputed limitations") are flawed because they are predicated on improper claim constructions, fail to address the express mappings in my Opening Declaration, contradict the express disclosure of *Mooney*, and/or do not address my positions related to the motivation to combine *Mooney* and *Lee* (Ex. 1006). It is further my opinion that Mr. Zaheer's arguments regarding claims 2-20 fail for the same reasons.

II. MATERIALS CONSIDERED

7. In forming my opinions set forth herein, I considered the following materials in addition to those considered in my Opening Declaration, as well as my own experiences:

Exhibit	Description
Paper 7	Patent Owner's Preliminary Response

Exhibit	Description
Paper 10	Decision on Institution (“DI”)
Paper 17	Patent Owner’s Response (“POR”)
Ex. 2001	Declaration of Mr. Safwan Zaheer
Ex. 2002	Prosecution History of U.S. Patent No. 7,628,333
Ex. 2003	Bluetooth Specification Version 1.1, Part K:3, Cordless Telephony Profile

III. LEGAL STANDARDS

8. My Opening Declaration summarizes my understanding of the legal standards relevant to my analysis of the challenged claims. Ex. 1003, ¶¶28-52.

IV. CLAIM CONSTRUCTION

9. As in my Opening Declaration, I understand that, in this proceeding, the claims are construed according to their ordinary and customary meaning, in light of the specification and prosecution history, as understood by a person of ordinary skill in the art (“POSITA”) at the time of the invention. I understand that this is the same claim construction approach used in district court litigation. Ex. 1003, ¶59.

10. In my Opening Declaration, I provided my opinions on the following terms: “power means”/“means for providing power” (Ex. 1003, ¶¶61-62); “data conveyance switching element” (Ex. 1003, ¶¶63-64); “control device” (Ex. 1003,

¶¶65-66); and “data exchange device”/“external data exchange device” (Ex. 1003, ¶¶67-68).

11. I understand that Mr. Zaheer offered his opinions on the following terms: “activation cue,” “data conveyance switching element,” “data exchange device”/“external data exchange device,” and “close proximity.” Ex. 2001, ¶¶46-49.

12. I respond to his constructions below.

A. Activation Cue

13. In my opinion, and consistent with my Opening Declaration, “activation cue” should be given its plain and ordinary meaning. Based on the specification, this meaning is “a data communication of a specific type that will be recognized by the cellular phone as an activation cue received from a source external to the cellular phone.” I come to this conclusion because the ’294 patent discloses that the “activation cue is in the form of a data communication of a specific type which will be recognized by electronic device 10 as an activation cue, for example[,] a predetermined bit sequence.” Ex. 1001, 9:24-27. When read in the context of claim 1, which recites a “cellular phone,” electronic device 10 is the cell phone. Ex. 1001, 18:64-19:44.

14. Mr. Zaheer states that “activation cue” means “a predetermined indicator, such as ‘a predetermined bit sequence’ (Ex[. 1001, 6:1-3), that is

‘recognized by the electronic device as an activation cue’ [Ex. 1001, 6:1-13.] A POSITA would understand that the activation cue must be intended as a predetermined indicator and not a message or signal recognized as a message or signal for other action.” Ex. 2001, ¶46.

15. I disagree with this construction because it is unsupported by the specification and it narrows “activation cue” as claimed. As noted above, the ’294 patent discloses that the “activation cue is in the form of a data communication of a specific type which will be recognized by electronic device 10 as an activation cue, for example[,] a predetermined bit sequence.” Ex. 1001, 9:24-27. However, this language does not limit the claims to being “a predetermined bit sequence” because it only provides that as an “example.” Ex. 1001, 9:24-27. It also does not suggest that the ’294 patent requires that the activation cue be predetermined or “intended as” a predetermined indicator, or precludes messages or signals recognized as a message or signal for other action (including the Bluetooth signals of the prior art) from being an activation cue. *See* Ex. 2001, ¶46; Ex. 1001, 9:24-27. Further, the claims do not recite a “predetermined” activation cue, so it cannot be true that the claims are so limited.

B. Data Conveyance Switching Element

16. As detailed in my Opening Declaration, I believe that “data conveyance switching element” contains structural and functional language.

Ex. 1003, ¶¶63-64.

17. To reiterate, the '294 patent explains that a switching element “can be any type of device allowing data to be conveyed according to alternate data conveyance operations,” such as “a series of instructions programmed onto [a] microchip” or a “decisional logical circuit,” and “can be a physical structure, a virtual program, or both.” Ex. 1001, 9:28-41. Thus, in my opinion, a POSITA would have understood the corresponding structure for this claim term to be *a physical structure, a virtual program, or both*. I also understand the corresponding function to be switching between inactive and activated states based on the receipt of an activation cue, as recited in the claims. Ex. 1001, 2:4-9, 4:18-23, 5:48-53.

18. Mr. Zaheer proposes that “‘data conveyance switching element’ should be given its plain meaning, which is the switching of the data.” Ex. 2001, ¶47.

19. I disagree. The “data conveyance switching element” is not merely “switching of the data” because it is a device, such as “a series of instructions programmed onto [a] microchip” or a “decisional logical circuit,” e.g., “a physical structure, a virtual program, or both,” that switches between inactive and activated

states based on the receipt of an activation cue. Ex. 1001, 9:28-41, 2:4-9, 4:18-23, 5:48-53. In my opinion, defining this term as just a “data” switch would ignore the word “conveyance” from the term and go against the specification’s disclosures I describe above.

C. Data Exchange Device/External Data Exchange Device

20. As detailed in my Opening Declaration, I believe that “data exchange device” and “external data exchange device” contain structural and functional language, and there is not a basis for drawing any distinction between the two terms. Ex. 1003, ¶¶67-69.

21. To reiterate: the ’294 patent explains that the data exchange device “can be any sort of data exchange device comprising an electronic circuit . . . and a data transceiver,” such as a “portable electronic device,” “a computer,” or “an automatic teller machine.” Ex. 1001, 9:3-11. Thus, in my opinion, a POSITA would have understood the corresponding structure for these claim terms to be a *data transceiver coupled to a circuit*. I also understand the corresponding function to be “exchanging data,” as recited in the claims. Ex. 1001, 2:14-17, 4:7-14.

22. Mr. Zaheer opines that “[t]he data exchange device, by its plain meaning, which is consistent with the specification, is a device. . . . An external data exchange device is not a transceiver but a device with a transceiver.” Ex. 2001, ¶48.

23. Although there is a minor phrasing difference between our opinions, I find that our views of “data exchange device” and “external data exchange device” align. To the extent there is a difference between our constructions, my previous mapping of *Mooney* or *Mooney* and *Lee* would still apply.

D. Close Proximity

24. In my opinion, and consistent with my Opening Declaration, “close proximity” should be given its plain and ordinary meaning.

25. Claims 8 and 16 each recite that “the cellular phone is conveyed toward a *close proximity of the first external data exchange device.*” Ex. 1001, claims 8, 16 (emphasis added). The specification does not otherwise define “close proximity.”

26. Mr. Zaheer proposes that “[c]lose proximity means within a several-meter range.” Ex. 2001, ¶49. He points to the specification of the ’294 patent at “15:55-57,” “9:8-11,” and “13:36-37.” Ex. 2001, ¶49. I understand that Patent Owner proposes this same construction but also suggests other constructions, including “10 meters or less” and “at least less than 30 meters.” POR, 8-9.

27. I believe that these constructions are too narrow because none of the evidence that Mr. Zaheer and Patent Owner cite to mentions, let alone limits, “close proximity.” For example, the column 9 citation acknowledges that the data exchange device can be “a computer, an interface machine such as an automatic

teller machine, *or any other suitable data exchange device.*” Ex. 1001, 9:8-11

(emphasis added). In my opinion, this undercuts Mr. Zaheer’s construction because by stating that “any other suitable data exchange device” may be used, the specification suggests that “close proximity” for a given system depends on the selected data exchange device and its configuration. The column 15 citation does mention a several-meter range, but it uses three separate phrases to indicate that it is a nonlimiting example: “*In one embodiment*, first data transceiver 120 is a proximity transceiver that allows data transmission within a limited range, *such as* within several meters[,] *for example.*” Ex. 1001, 15:55-57 (emphases added).

Finally, the column 13 citation does not support such a narrow construction because it is about transactions specifically and does not provide any details about what “physically close to one another” includes. Ex. 1001, 13:36-37. Therefore, in my opinion, the specification suggests that “close proximity” for a given system depends on the selected data exchange device and its configuration.

28. Additionally, the plain language of the claims supports my opinion. For example, claims 8 and 16 explain that “close proximity” is “within a range to receive the activation cue to initiate the wireless data exchange.” Ex. 1001, claims 8, 16. No further construction is warranted in light of this plain language.

V. MOONEY DISCLOSES OR RENDERS OBVIOUS THE DISPUTED LIMITATIONS

29. As I thoroughly detailed in my Opening Declaration, *Mooney* alone discloses or renders obvious claims 1-20. Ex. 1003, ¶¶81-126, 136-158, 160-173, 175-178, 184-198, 200-211.

30. Mr. Zaheer contends that claims 1-20 are not obvious based on *Mooney* because “*Mooney* fails to teach or disclose at least one claim element of claims 1-20.” Ex. 2001, ¶52. This is not true, however, as I will discuss in detail below. I note now that he does not address [1.pre], [1.b], [1.c], [1.d], [1.g], and [1.i] as well as corresponding limitations in other independent claims, and dependent claims. As such, I focus my analysis on the disputed limitations.

A. A POSITA Would Have Been Motivated to Look to *Mooney*

31. As I detailed in my Opening Declaration, *Mooney* is relevant to the claimed invention. *See* Ex. 1003, ¶¶72-75, 81-126.

32. Mr. Zaheer suggests that a “POSITA would have no motivation to look to” *Mooney* because it is not directly related to transactions. Ex. 2001, ¶58. I disagree. In my opinion, a POSITA would have understood *Mooney* to be relevant to the claims of the ’294 patent for at least two reasons.

33. First, the challenged claims are not limited to financial transactions. As I briefly mentioned above, despite the specification discussing embodiments

related to transactions, nothing in the claims narrows them so. Ex. 1001, 18:64-23:22.

34. Second, *Mooney* is relevant to the claimed invention because it is in the same field of endeavor as the '294 patent—portable electronic devices capable of alternate data conveyance operations. *Mooney*, 1:50-2:4; Ex. 1001, 1:16-18, 12:6-18, 13:33-41, 14:49-59. *Mooney* also addresses a similar problem to the '294 patent—automating the switch of data conveyance. *Mooney*, 1:51-2:4; Ex. 1001, 1:16-18, 12:6-18. Therefore, in my opinion, a POSITA would have looked to *Mooney* because the reference grapples with how to switch data conveyance on an electronic device.

35. Mr. Zaheer further states that “[a] POSITA would not look to circuit-based PSTN networking of *Mooney* when considering ‘switching data conveyance.’” Ex. 2001, ¶60. He suggests that *Mooney* is inapplicable “when attempting to solve problems of a device being capable of communicating with ‘data exchange devices [that] can be any sort of data exchange device comprising an electric circuit...therein and a data transceiver 9a therein able to cooperate with transceiver 18 of device 10,[’] Ex[. 1001, 9:3-8, such as 104 of Fig. 1 of the '294 patent.” Ex. 2001, ¶61 (first alteration in original). This does not make sense because, as I detailed in my Opening Declaration, *Mooney* does disclose these

features. *See* Ex. 1003, ¶¶81-126. In my opinion, this assertion only highlights how the claimed invention is not limited to transactions as Mr. Zaheer suggests.

B. Neither Disputed Element [1.a] nor Claim 1 as a Whole Requires Transmitting Stored Data

36. As I detailed in my Opening Declaration, *Mooney* discloses [1.a]. *See* Ex. 1003, ¶¶72-75, 83-86. For example, *Mooney*'s "multimode cell phone" includes various electrically coupled electronic components, including conventional storage for storing data, "an appropriate processor" capable of processing data, and "multiple functional modes, e.g., a cell phone mode 100a, a piconet cordless telephone 100b, and a walkie-talkie mode 100c," and an "automatic switchover module" capable of data input and output (collectively, "an electronic circuit"). *Mooney*, 1:54-66, 3:52-63, 7:9-12.

37. Mr. Zaheer contends that I "erroneously assert[] [that] *Mooney* at 1:32-45 teaches storing all phone book data, calling history, and user preferences. But, the data in the claims of the '294 patent has to be able to be transferred." Ex. 2001, ¶66. He states that I "fail to explain . . . what data is explicitly being stored and what data is being input and output, and what is being switched. What is being described in *Mooney* is real-time voice data being transmitted between telephones over circuits in a PSTN." Ex. 2001, ¶66.

38. Mr. Zaheer's opinions are informed by a misreading of the challenged claims. As I described in my Opening Declaration, the '294 patent generally relates

to systems and methods for exchanging data using a portable device. Ex. 1001, 1:16-18, 7:13-18; Ex. 1003, ¶¶53-56. The '294 patent does not distinguish between voice data and data stored. Nor do the claims require “stored data,” as Mr. Zaheer suggests—only a device with the capability to store data. Ex. 2001, ¶¶63-68, 53-57.

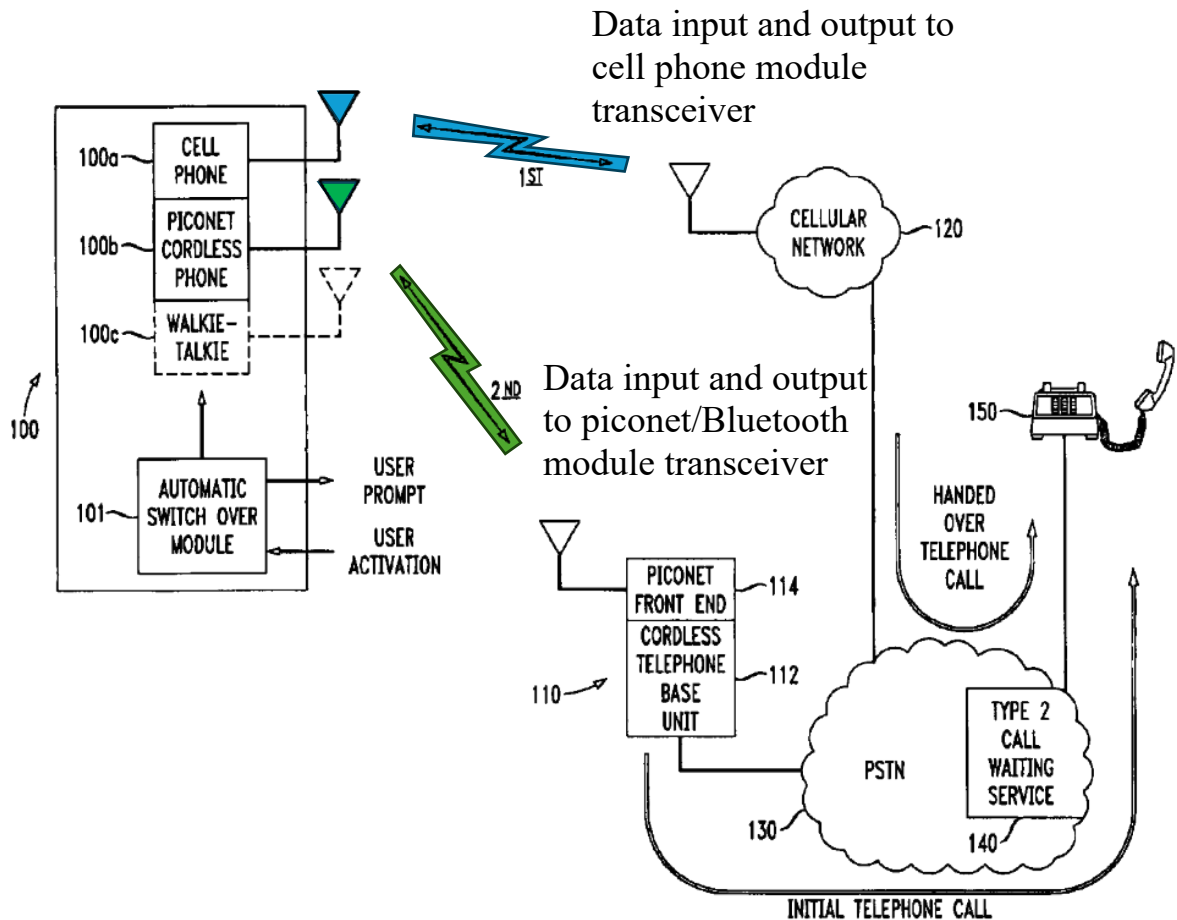
39. Mr. Zaheer’s proposition that the term “data” is stored data that “has to be able to be transferred” (Ex. 2001, ¶66) should be rejected because claim element [1.a] merely recites “an electronic circuit capable of *storing data* therein, capable of *processing data*, and capable of *data input and output*.” Ex. 1001, claim 1, [1.a] (emphases added). Not only are the three recitations of “data” untethered to one another, such that data for storing, data for processing, and data for input and output need not be the same, [1.a] does not require transmitting or transferring stored data. And contrary to Mr. Zaheer’s assertion, claim element [1.h] does not warrant an alternate, narrower interpretation because that element only requires “sending data from said electronic circuit,” not sending stored data. Ex. 1001, claim 1, [1.h]. Even if *Mooney*’s data only pertained to real-time voice or call data as Mr. Zaheer alleges (Ex. 2001, ¶¶53, 56, 66), it is my opinion that this “real-time data” would still meet the [1.h] limitation because nothing in the claims requires the transmission of stored data, as explained above.

40. Second, *Mooney* discloses the claimed electronic circuit capabilities.

Mooney, 1:13-22, 1:54-66, 3:52-63, 7:9-12. *Mooney*'s "multimode cell phone"

includes various electrically coupled electronic components (an electronic circuit).

Ex. 1003, ¶¶72-75, 83-86.



Mooney, Fig. 1 (excerpted, annotated).

C. *Mooney*'s Quality Bluetooth Signal Is an Activation Cue as Recited in [1.e]

41. As I detailed in my Opening Declaration, *Mooney* discloses [1.e]. See

Ex. 1003, ¶¶98-100. For example, *Mooney* discloses [1.e] because the first

transceiver (a cue receiver) is operatively linked to the piconet/Bluetooth cordless module and processor (electronic circuit) (as explained in [1.c], Ex. 1003, ¶¶91-93), and is also for receiving “quality” Bluetooth signals (an activation cue) from a “piconet front end” and “base unit” (source external to the cellular phone).

Mooney, 1:31-34, 2:36-47, 2:53-3:7, 3:13-25, 3:49-51, 4:6-15, 4:28-36, 6:14-25, 6:45-51. In my opinion, Mr. Zaheer’s declaration is based on his incorrect construction of “activation cue.”

42. While Mr. Zaheer presents several arguments described below, Mr. Zaheer’s opinions on [1.e] can be distilled down into two flawed conclusions. Ex. 2001, ¶¶69-77. The first being that *Mooney* does not describe an activation cue because “call data is transmitted before the alleged activation cue is received in the active state assigned.” Ex. 2001, ¶¶69-77. And the second being that *Mooney* does not describe an activation cue because “the timer for the at least two-minute time period is not received, rather it is internal to the cellular telephone timing the established link setup through the PSTN.” Ex. 2001, ¶¶69-77.

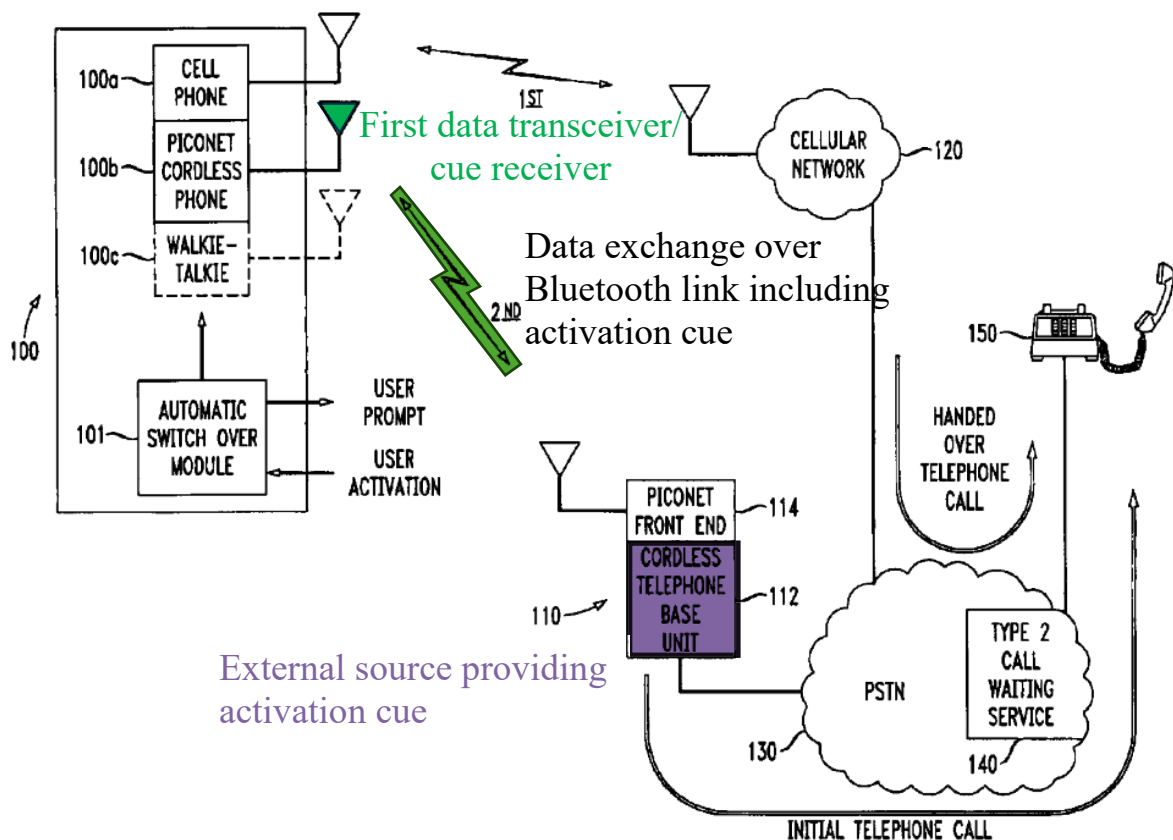
43. In my opinion, Mr. Zaheer’s conclusions and opinions fail because he ignores the express disclosure of *Mooney*, which plainly establishes that its multimodal phone is configured for “automatic detection of the quality of the RF link (e.g., the BLUETOOTH™ piconet link),” and that such detection triggers a switch from Bluetooth (cordless) mode to cellular mode when, e.g., “the quality of

the RF link (e.g., the BLUETOOTH™ piconet link) [falls] below a preset level.”

Mooney, 6:45-51, 6:18-25.

1. *Mooney’s Quality Bluetooth Signal Is Recognized by the Cellular Phone as an Activation Cue*

44. As explained in my Opening Declaration, *Mooney’s* multimodal phone includes a first transceiver (a cue receiver) that receives “quality” Bluetooth signals (an activation cue) from a “piconet front end” and “base unit” (source external to the cellular phone). Ex. 1003, ¶¶98-100.



Mooney, Fig. 1 (excerpted, annotated).

45. When a caller on the multimode cell phone is “within range of the cordless telephone base station that is matched to the cordless telephone mode of the 3-in-1 cell phone” and/or the “cordless telephone link (e.g., a piconet BLUETOOTH™ link of good quality) has been established with the cordless base for a given length of time (e.g., for at least two minutes),” the piconet/Bluetooth cordless module is informed of the signal quality (via its first transceiver/cue receiver) and a call may be established in cordless mode via the BLUETOOTH™ link. *Mooney*, 2:53-3:7, 4:34-37, 6:18-25, 1:31-34, 3:49-51, 4:12-15, 4:54-56, Figs. 1, 2; Ex. 1003, ¶¶99.

46. Thus, *Mooney* discloses receiving and recognizing an activation cue at the multimodal phone.

2. Mr. Zaheer’s Counterarguments Should Be Rejected

47. As an initial point, as I discussed in detail above, Mr. Zaheer’s proposed construction of activation cue (Ex. 2001, ¶¶69) is incorrect because it is unsupported by the specification and it narrows “activation cue” as claimed. *See* Section IV.A.

48. Mr. Zaheer disagrees with me that *Mooney* discloses the transmission of a quality Bluetooth signal. Ex. 2001, ¶¶69-74. In my opinion, this disagreement suggests a lack of understanding of Bluetooth and basic concepts of networking because a POSITA would have known that the establishment of a wireless link

between two devices involves a series of messages transmitted between the devices. For example, *Larsson* discloses aspects of establishing a wireless link in Bluetooth networking. Ex. 1007, 3:23-4:22. As shown in Figure 5, several messages are transmitted between devices in order to establish a connection. Ex. 1007, 3:23-4:22, Fig. 5.

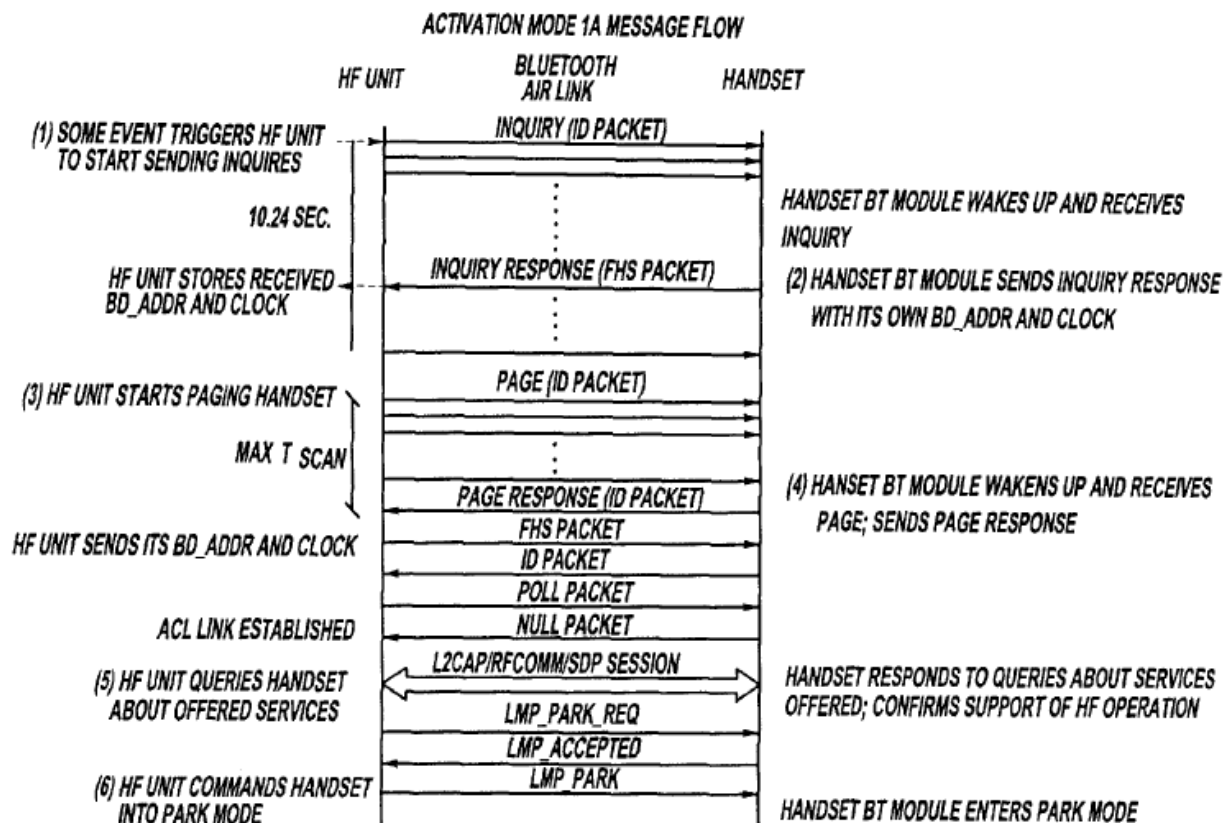


FIG - 5

Ex. 1007, Fig. 5. In my opinion, Mr. Zaheer's opinions turn a blind eye to the fact that a Bluetooth connection involves the constant transmission of message signals back and forth between devices. It is also my opinion that, as depicted in Figure 5, a POSITA would have understood that after the paging messages and before the

establishment of a call using the Bluetooth link, devices exchange message signals to set up an ACL link, which enables the creation of a reliable L2CAP connection. Ex. 1007, 7:56-58, 8:48-53; *see also* Ex. 2003, 108. Indeed, in the context of Bluetooth, a POSITA would have known that part of this series of messages involves the transmission of information that indicates the signal is of sufficient quality to support a reliable connection. For example, a POSITA would have known that the headers of L2CAP messages are monitored for errors. When no errors are detected, this indicates that there is a reliable connection, or in other words, that a quality Bluetooth signal has been received. In my opinion, a POSITA would have understood that *Mooney*'s disclosure of a quality Bluetooth link of good quality means that the devices are exchanging information about the quality of the connection. Accordingly, as I described in my Opening Declaration (Ex. 1003, ¶¶98-100), a POSITA would have understood that *Mooney* discloses an activation cue that is transmitted from the base unit to the multimode cell phone when a caller on the multimode cell phone is "within range of the cordless telephone base station that is matched to the cordless telephone mode of the 3-in-1 cell phone" and/or the "cordless telephone link (e.g., a piconet BLUETOOTH™ link of *good quality*) has been established with the cordless base for a given length of time (e.g., for at least two minutes)." *Mooney*, 2:53-3:7, 4:34-37, 6:18-25, Figs. 1, 2; *see also* 1:31-34, 3:49-51, 4:12-15, 4:54-56.

49. As an attempt to refute *Mooney*'s teachings, Mr. Zaheer relies on the Cordless Telephony Profile (Ex. 2003) that *Mooney* incorporates by reference to argue that *Mooney*'s quality Bluetooth link is not an activation cue. Ex. 2001, ¶¶72-77. In my opinion, Mr. Zaheer's interpretation of this standard is wrong because it conflates the establishment of a Bluetooth connection with a call and also confuses the paging steps for the support of reliable L2CAP messages.

50. The passage relied on by Mr. Zaheer does not negate (or otherwise undermine) the express disclosure of *Mooney* because *Mooney*'s multimodal phone is not restricted to the functionalities outlined in the profile. Ex. 2001, ¶72 (citing Ex. 2003, 111). For example, *Mooney* describes how its devices are *capable* of implementing the functionalities described in the profile and seek to *improve* upon conventional multimodal phones. *Mooney*, 1:46-48. *Mooney* states that "[t]here is a *need* in a 3-in-1 cell phone which provides smooth switchover and interaction between separate modes of operation." *Mooney*, 1:46-48 (emphasis added). *Mooney* suggests that "the multimode 3-in-1 cell phone includes the Cordless Telephony Profile of BLUETOOTH™ *capability*." *Mooney*, 3:22-25 (emphasis added). And it goes on to describe various functionalities that conventional multimodal phones and the profiles do not account for, but that *Mooney*'s devices do. *Mooney*, 3:34-47.

51. Contrary to Mr. Zaheer’s assertions, it is irrelevant whether *Mooney*’s multimodal phone “pings” the base unit first “to notify the cordless telephone base unit it is in range” (Ex. 2001, ¶72) because my opinions relied on the *base unit*’s *communication* to disclose the claimed “activation cue” (Ex. 1003, ¶¶98-100), and the claims only require that such a cue be “received” (Ex. 1001, claim 1, [1.f]). Indeed, as I demonstrated above with *Larsson*’s Figure 5, Bluetooth links involve the two-way transmission of message signals. The “pings” (or what *Larsson* (Ex. 1007, 3:23-4:22, Fig. 5) and the Cordless Telephony Profile (Ex. 2003, 111) call pages) described in the Cordless Telephony Profile are not messages that transmit information about the quality of the Bluetooth signal when the multimodal phone is within range. My opinion is based on the quality Bluetooth signal that is sent from the base unit to the multimodal phone, not the other way around. And it is further my opinion that the transmission of the quality Bluetooth signal from the base unit to the multimodal phone would constitute an activation cue regardless of whether it was the first message or a response to a message from the multimodal phone.

52. Moreover, as Mr. Zaheer confirms, the activation cue need only be “recognized by the electronic device as an activation cue.” Ex. 2001, ¶¶46, 69. This is precisely what *Mooney* discloses. *Mooney*, 6:17-25, 6:45-51 (attributing changes in Bluetooth link quality to user proximity to the base unit). Indeed,

Mr. Zaheer acknowledges that even the Cordless Telephony Profile explains that the gateway (GW) (alleged base unit equivalent) “respond[s]” to the user terminal (TL) (alleged multimodal phone equivalent) after the TL pings the GW. Ex. 2001, ¶73 (citing Ex. 2003, 111). Indeed, as I describe above, establishing a Bluetooth link involves a series of messages between two devices. And a connection in any capacity is not established until there is a response. Even if *Mooney*’s multimodal phone “pings” the base unit first, a POSITA would have understood that it is the response from the base unit that solidifies any link.

53. Mr. Zaheer’s contention that *Mooney*’s Bluetooth link is a phone call and not the Bluetooth connection itself (Ex. 2001, ¶¶73-74) contradicts its own evidence and *Mooney*’s express disclosure. For example, and although nonlimiting on *Mooney*’s express functionalities, the Cordless Telephony Profile provides that,

in order to avoid the paging delay at call set-up and to enable broadcasted messages, the TL establishes a L2CAP connection to the GW when it comes into range, and not before every call. This L2CAP connection remains until the radio link is lost or the TL stops being active in this profile. This means that the L2CAP connections used may be idle (i.e., not used to transfer data) for long periods of time.

Ex. 2003, 115. In other words, this statement shows that a Bluetooth link is established independent from a call. This part of the Cordless Telephony Profile

also directly contradicts Mr. Zaheer’s opinion that the “Bluetooth link between the cellular telephone and the cordless base unit is established when in active use” (Ex. 2001, ¶73) because it demonstrates that the link persists even when not in active use. Furthermore, the Cordless Telephony Profile also describes interactions between a TL and GW in which a “SETUP” acknowledgement is transmitted from the GW to the TL *before* call information is shared or a call proceeds. Ex. 2003, 134 (Fig. 10.2).

10.2 OUTGOING EXTERNAL CALL WITH POST-DIALLING

The following sequence shows the successful case when post-dialling is used.

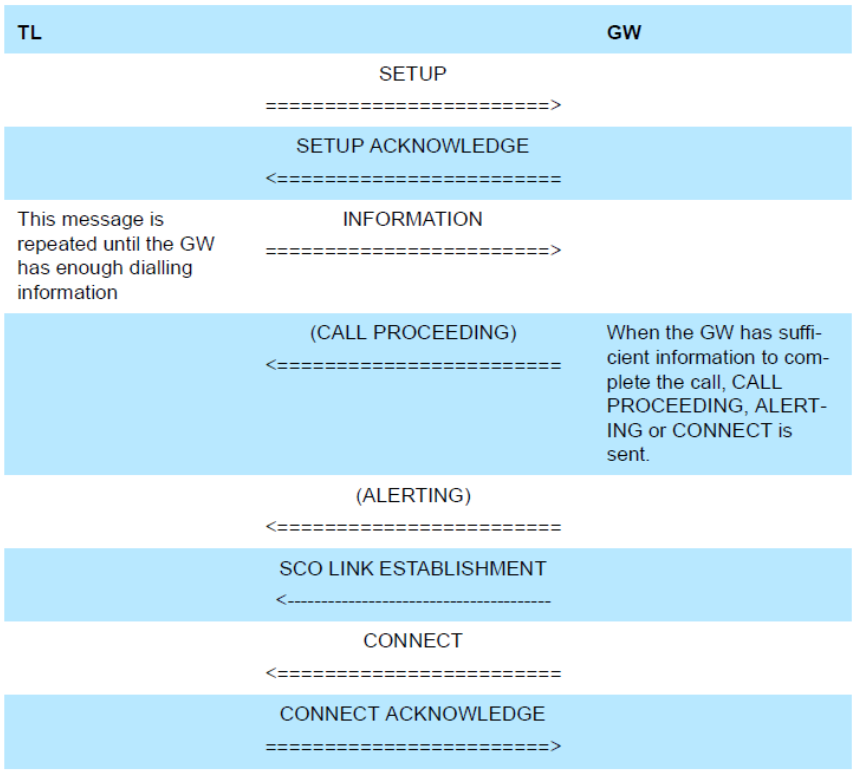


Figure 10.2: Outgoing external call with post-dialling

Ex. 2003, 134 (Fig. 10.2).

54. Mr. Zaheer’s opinions further conflict with *Mooney*’s disclosure. It cannot be true that *Mooney*’s quality Bluetooth link “*is a call*” (Ex. 2001, ¶74 (emphasis added)) because *Mooney* expressly discloses that calls are “*establish[ed]*” over either “a wireless cell phone network, *or* with a local cordless telephone, depending upon which mode the phone is in.” *Mooney*, 1:31-34 (emphases added); *see also Mooney*, 1:56-61, 4:54-56 (“[A] cordless telephone *call is established using a cordless telephone mode* of the multimode cell phone 100.” (emphasis added)). Thus, *Mooney*’s prescribed link or communication path is established in advance of the call, and the quality Bluetooth link is not the call itself.

55. Mr. Zaheer’s first conclusion—that *Mooney* fails to teach an activation cue because “call data is transmitted *before* the alleged activation cue is received” (Ex. 2001, ¶77)—fails for these same reasons that I noted above. That the nonlimiting Cordless Telephony Profile states that “[a] TL that is within range of a GW shall *normally be* in park mode when it is not engaged in calls,” as argued by Mr. Zaheer, is not determinative of how *Mooney*’s multimodal device actually functions. Ex. 2001, ¶73 (emphasis added) (quoting Ex. 2003, 111).

56. Mr. Zaheer’s second conclusion—that “the timer for the at least two-minute time period is not received, rather it is internal to the cellular telephone timing the established link setup through the PSTN” (Ex. 2001, ¶¶75-77)—misses

the mark because my opinions did not map the claimed “activation cue” to a two-minute timer located in the multimodal phone. Ex. 1003, ¶¶98-100. I opined that

a POSITA would have understood that *a “good quality” Bluetooth signal originating from the base unit (e.g., one that is “within range” and/or “has been established with the cordless base for a given length of time”), is an activation cue* that informs the multimode cell phone’s first transceiver/cue receiver of its ability to establish a call in piconet/Bluetooth cordless mode. *Mooney*, 1:31-34, 3:49-51, 4:6-15, 4:28-36, 6:14-25, 6:45-51.

Ex. 1003, ¶100. This explains that *Mooney*’s multimodal phone includes a first transceiver (a cue receiver) that receives “quality” Bluetooth signals (an activation cue) from a “piconet front end” and “base unit” (source external to the cellular phone). Ex. 1003, ¶¶98, 100. And, in other words, a POSITA would have understood that *Mooney*’s “two minute” disclosure is merely an example of a series of received quality Bluetooth signals that would trigger a switch. Lipoff, ¶¶98-100. Moreover, even if the length of time a quality signal has been established is measured in *Mooney*’s multimodal phone, a POSITA would have understood that this measurement is based on the receipt of a quality signal from the base unit. Thus, a POSITA would have understood *Mooney*’s multimodal phone “recognize[s]” the signal received at two-minutes (for example) as a sign to switch states. Ex. 1001, 9:24-27.

57. Therefore, in my opinion, Mr. Zaheer's opinions and conclusions here are not how a POSITA would have interpreted *Mooney* or Cordless Telephony Profile.

D. *Mooney* Discloses [1.f] Because Its “Automatic Switch Over Module” Switches Between Two Modes Based on the Quality of the Bluetooth Signal

58. As detailed in my Opening Declaration (Ex. 1003, ¶¶101-110), *Mooney* discloses [1.f] because the multimode cell phone includes an “automatic switch over module” (data conveyance switching element) operatively connected to the processor, piconet/Bluetooth cordless module, and cell phone module (electronic circuit) that is assigned (1) a “piconet cordless telephone mode” (first state) when a quality Bluetooth signal is received by the piconet module transceiver (upon an activation cue having been received by the cue receiver); or (2) a “cell phone mode” (second state) when no quality Bluetooth signal is received by the piconet module transceiver (when no activation cue was received by said cue receiver). *Mooney*, 1:53-61, 2:36-47, 2:53-64, 2:65-3:7, 3:13-25, 3:55-62, 3:64-4:1, 4:6-10, 4:28-36, 4:56-57, 5:7-20, 5:21-61, 5:57-61, 6:14-40, 7:9-12, Figs. 1-2.

59. First, Mr. Zaheer does not comment on my opinions that *Mooney* discloses a data conveyance switching element operatively linked to said electronic circuit. Ex. 2001, ¶¶78-86, 54-57. Instead, he appears to only take issue with

whether *Mooney* switches states based on the receipt of an activation cue.

Ex. 2001, ¶¶78-86, 54-57.

60. Mr. Zaheer believes that *Mooney* does not disclose the switching of states based on the receipt of an activation cue because “[t]ransferring from a cordless telephone to cellular telephone is not necessarily automatic” (Ex. 2001, ¶82), and “change of state only occurs in *Mooney* after 1) successfully setting up a second path and 2) successfully transferring over to the new path” (Ex. 2001, ¶¶83-86).

61. In my opinion, Mr. Zaheer is incorrect for the reasons I discussed in my Opening Declaration related to [1.f]. Ex. 1003, ¶¶101-110. In addition to those reasons, Mr. Zaheer’s comments do not take into account all of *Mooney*’s disclosures. For example, he only focuses on the embodiments in which a multimodal phone switches communication paths *mid-call* based on a *user prompt*. Ex. 2001, ¶¶83-86. He does not address the other embodiments detailed in my Opening Declaration, let alone my opinions that the *automatic* switching module selects a communication *before* a call is established. Ex. 1003, ¶¶103-110.

62. As I detailed in my Opening Declaration, “*Mooney*’s automatic switch over module (data conveyance switching element) is assigned, by the processor, to a first state (piconet/Bluetooth connection for cordless telephone mode) upon coming in range of the base unit 110 *and receiving at the piconet module*

transceiver (cue receiver) a quality Bluetooth signal (activation cue) indicating that the phone is capable of establishing a call in piconet/Bluetooth cordless mode.” Ex. 1003, ¶106; *Mooney*, 5:8-11, 6:14-24. I further explained that a POSITA would have understood that *Mooney*’s automatic switch over module is also assigned, by the processor, to a second state (cellular network for cell phone mode) when no quality Bluetooth signal (no activation cue) is received by the first transceiver (cue receiver) of the piconet cordless module. Ex. 1003, ¶109; *Mooney*, 4:17-30, 4:57-58, 6:45-51, 7:9-12. This is because *Mooney* discloses (among other things) that its automatic switch over module switches to cell phone mode when the multimode cell phone 100 “senses” that it has extended beyond an “acceptable” Bluetooth range, and further explains that “the multimode cell phone 100 may switch from cordless mode to cell phone mode” when “the need (or desire) to change communication modes to a cellular mode is determined,” due to “automatic detection of the quality of the RF link (e.g., the BLUETOOTH™ piconet link) below a preset level.” Ex. 1003, ¶108 (quoting *Mooney*, 4:57-58, 6:45-51).

63. I also explained that,

because the determination of whether the data is to be conveyed to a “cordless telephone [Bluetooth] base unit” (first external data exchange device) using a “Bluetooth link,” or a “cellular network” (second external data exchange device) over a “cell phone link,” has already been made when the user dials a far end telephone number

(upon triggering an invariable command, as explained in [1.b]), a POSITA would have also understood that *the automatic switch module is assigned to the piconet/Bluetooth mode (first state) or the cell phone mode (second state) before the call is “established” (data is exchanged)*

Ex. 1003, ¶110 (alteration in original) (emphasis added).

64. Just because *Mooney* also describes switching between Bluetooth cordless and cellular modes during a call (Ex. 1003, ¶¶104-109) does not negate that fact that *Mooney*’s device also determines which path to *initiate* a call with or that the path may be switched *prior to establishing* the call using an entirely automated process. As I explained in Section IV.C, “*establishment* of a telephone call with a wireless cell phone network, *or* with a local cordless telephone, *depend[s] upon which mode the phone is in.*” *Mooney*, 1:31-34 (emphases added). Mr. Zaheer’s hypothetical—that “[t]he change of state . . . may never occur[] [i]f the setup of the call path is not successful due to the far-end phone refusing to accept” (Ex. 2001, ¶84)—also misses the mark because it presumes that the state is selected after the call is established, as explained in Section IV.C.

E. *Mooney*’s User Dials a Phone Number to Establish a Call (Trigger an Invariable Activation Command) as Recited in [1.h]

65. As detailed in my Opening Declaration, *Mooney* discloses or renders obvious [1.h] because when the automated switch module (switching element) is in piconet/Bluetooth cordless mode (the first state), and the user initiates a phone call

by dialing a telephone number on the keypad (upon said control device being selectively triggered by the user to issue said invariable activation command), call data is communicated (conveyed) from the piconet/Bluetooth module (electronic circuit element) through its corresponding first transceiver to the piconet/Bluetooth base unit (first external data exchange device) over the “Bluetooth link” (first communication link). *Mooney*, 1:34-38, 4:41-49, 5:8-11, 6:14-24, 7:9-12; Ex. 1003, ¶¶116-126 (also discussing how *Mooney* discloses or renders obvious [1.i]).

66. Mr. Zaheer’s positions appear to be based on a misreading or misunderstanding. Ex. 2001, ¶¶87-94. He contends that “dialing a telephone number is not an invariable action command.” Ex. 2001, ¶93. He arrives at this conclusion because “[d]ialing a phone number is not ‘invariable’ and a second phone number can be dialed while the call to the first number is active. Further[,] both calls can be connected[,] demonstrating a second activation can be selected when a first activation has occurred.” Ex. 2001, ¶92. But I did not designate “dialing a telephone number” as the invariable activation claim. As I detailed in [1.b] and repeated in [1.h] of my Opening Declaration, calls are “initiated” or “established” (an invariable activation command) by a user operating *Mooney*’s multimode cell phone when the user dials a telephone number on a keypad thereof (a user-triggered control device is operated by a user to issue the command).

Ex. 1003, ¶¶87-90, 121-122. Thus, contrary to Mr. Zaheer’s characterization of the argument, dialing the phone number corresponds to the claimed “trigger[],” and the establishment of the call that ensues corresponds to the claimed “invariable action command.” Ex. 1003, ¶¶87-90, 121-122.

67. I also disagree with Mr. Zaheer’s characterization of my positions in [1.h] as being an admission that “the first state is not dependent upon an activation cue, but rather simply the connection to the cordless telephone base. If, as asserted by the Petitioner (Pet. 36) for element 1.h, simply connecting the cellular telephone to the base unit and dialing numbers are triggering” Ex. 2001, ¶89. As explained in my Opening Declaration, a first state is assigned after an activation cue is received. Ex. 1003, ¶¶101-110.

68. Although the ’294 patent does not define “invariable action command,” it does explain that “[t]he same invariable activation command will . . . issue[] upon control device 12 being triggered, and it is the state of switching element 44*b*, resulting from the receipt or non-receipt of an activation cue by portable electronic device 10” Ex. 1001, 10:46-51. This is precisely what *Mooney* discloses—Mr. Zaheer does not and cannot dispute that *Mooney*’s device will establish a phone call (the same invariable command will issue) once a number is dialed (upon the device being triggered). Thus, *Mooney* discloses the claimed trigger and ensuing invariable action command. Mr. Zaheer’s other points

in his declaration related to [1.h] repeat his earlier ideas that *Mooney* does not disclose the claimed activation cue. Ex. 2001, ¶¶87-90. These points fail for the same reasons I discussed above in [1.e]. *See* Section V.C.

VI. *MOONEY* DISCLOSES OR RENDERS OBVIOUS EACH OF REMAINING CLAIMS 2-20

69. As detailed in my Opening Declaration, *Mooney* discloses or renders obvious claims 1-20. Ex. 1003, ¶¶81-126, 136-158, 160-173, 175-177, 184-198, 200-211.

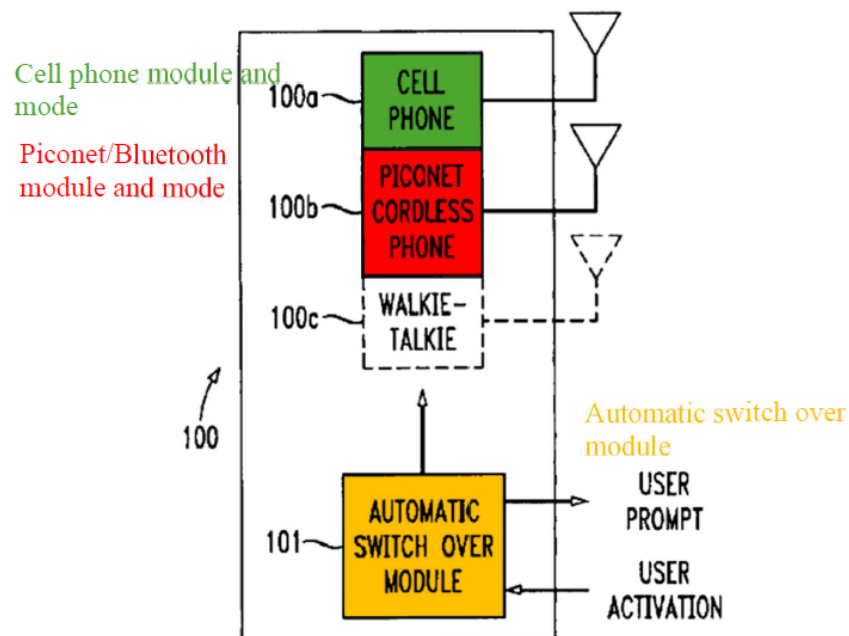
70. Mr. Zaheer generally argues that *Mooney* does not disclose or render obvious claims 2-20 because *Mooney* does not disclose the disputed limitations that I discussed in depth above. Ex. 2001, ¶¶95-180. Mr. Zaheer’s opinions fail for the reasons I provided in my Opening Declaration and because *Mooney* discloses the disputed limitations as articulated in Section V.

71. Mr. Zaheer’s elaboration on claims 5-8, 13, 16, and 19 are unavailing.

A. Claims 5-7

72. Mr. Zaheer contends that these claims are not unpatentable over *Mooney* because “Petitioner fails to identify where the switching element is, as defined in claim 1.” Ex. 2001, ¶¶106, 110, 114. But the claims do not require or prescribe a precise location—rather, they only require that the data conveyance switching element be “operatively linked to said electronic circuit.” Ex. 1001, claim 1, [1.f]. In my opinion, Mr. Zaheer’s point describes unclaimed features.

73. That being said, and as I provided in my Opening Declaration, *Mooney*'s "multimode cell phone includes an 'automatic switch over module' (data conveyance switching element) operatively connected to the processor, piconet/Bluetooth cordless module, and cell phone module (electronic circuit)." Ex. 1003, ¶¶101-103. Annotated Figure 1 below illustrates the operative connection between the "automatic switch module" and cell phone and piconet cordless modules that correspond to the cell phone and piconet cordless modes, respectively.



Mooney, Fig. 1 (excerpted, annotated). Therefore, in my opinion, I explained where the claimed "data conveyance switching element" is located, to the extent "location" is required by the claims.

B. Claims 8 and 16

74. Mr. Zaheer suggests that *Mooney* does not disclose being within *close* proximity to its cordless base station. EX2001, ¶¶116-120, 156-159. In my opinion, Mr. Zaheer's opinions here are infected by his narrow construction of "close proximity." *See* Section IV.D.

75. As explained in my Opening Declaration, *Mooney* discloses or renders obvious claims 8 and 16 because *Mooney*'s first data transceiver (a cue receiver) receives "quality" Bluetooth signals from a "piconet front end" and "base unit" (first external data exchange device) when in close proximity to the base unit. Ex. 1003, ¶¶144-145, 192. *Mooney* explains that when a caller on the multimode cell phone is "*within range* of the cordless telephone base station that is matched to the cordless telephone mode of the 3-in-1 cell phone," the piconet/Bluetooth cordless module is informed of the signal quality (via its first transceiver/cue receiver), and a call may be established in cordless mode via the BLUETOOTH™ link. *Mooney*, 2:53-3:7, 4:34-37 (emphasis added), 6:18-25, Fig. 2; Ex. 1001, claim 1, [1.h].

76. Therefore, *Mooney* discloses or renders obvious claims 8 and 16.

C. Claim 13

77. In my opinion, Mr. Zaheer's comments about claim 13 (Ex. 2001, ¶¶146-149) do not address my opinions on the obviousness of claim 13. Ex. 1003,

¶¶184-187. For example, Mr. Zaheer fails to mention anything about “forwarding third data to and displaying said third data on a display screen provided on said cellular phone, wherein said third data is representative of the content of said first data,” as recited in claim 13. Ex. 1003, ¶¶184-187; Ex. 1001, claim 13.

78. As I provided in my Opening Declaration, *Mooney* further discloses forwarding audio tones (third data representative of the content of the first data) to the user of the multimode phone to notify the user when the multimode cell phone is about to use piconet/Bluetooth mode. For example, “the multimode cell phone 100 may send, e.g., a quick DTMF ‘7’ followed by a DTMF ‘9’ (i.e., representing the characters ‘SW’) notifying the near end user . . . that a switch is about to happen,” i.e., what mode the call is to be placed in. *Mooney*, 6:26-30. Because the audio tone represents that the call (first data) will occur over a particular communication pathway (Bluetooth), a POSITA would have understood that the audio tone is also representative of the content of first data because it informs the user which pathway will be used to place the call. Ex. 1003, ¶185. A POSITA would have been motivated and found it obvious to forward one or more kinds of notifications (third data) to ensure that the user is properly notified with a reasonable expectation of success for the reasons discussed in Ex. 1003, ¶¶186-187.

D. Claim Element [19.i]

79. Similar to claim 13, Mr. Zaheer misunderstands the obviousness positions presented in my Opening Declaration and in the Petition, concluding that they rely on the “same audio tones” to map different claim elements and alleges that audio tones do not “represent data.” Ex. 2001, ¶¶175-177. As I outlined in my Opening Declaration, because *Mooney* describes first data and second data, the audio tones that *Mooney* discloses constitute third data when associated with first data and fourth data when associated with second data. Ex. 1003, ¶¶204-206, 186-187.

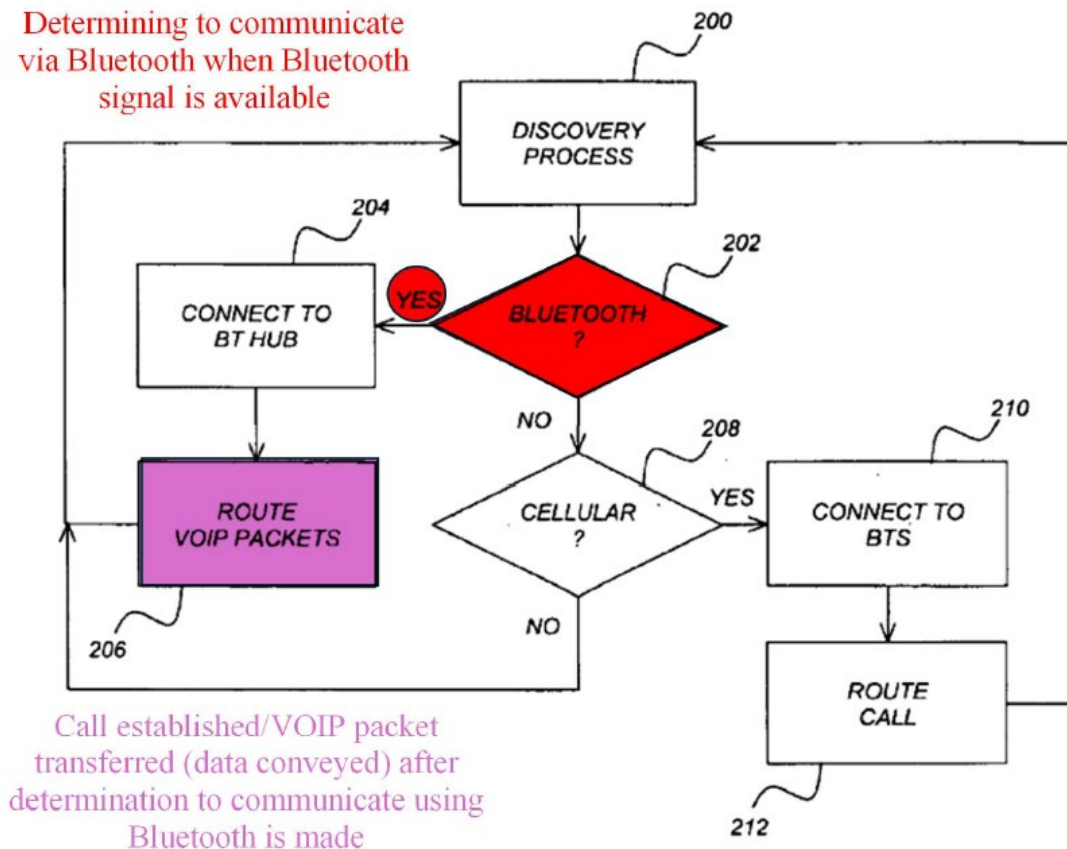
VII. MOONEY AND LEE RENDER OBVIOUS CLAIMS 1-20

80. As detailed in my Opening Declaration, *Mooney* and *Lee* also render obvious claims 1-20. Ex. 1003, ¶¶129-135 (elements [1.h]-[1.i]), 158-159 (elements [10.h] and [10.i]), 173-174 (elements [11.k] and [11.l]), 181-183 (elements [12.c]-[12.d]), 191, 198-199 (elements [19.c] and [19.d]).

81. Mr. Zaheer does not discuss my opinions that “*Lee* discloses ‘a discovery and/or registration process’ through which its device’s internal logic determines whether to use a cellular or Bluetooth network *prior* to transmitting data,” as set forth in my Opening Declaration. Ex. 1003, ¶131; *Lee*, 4:56-5:6, Fig. 2, claim 20. Rather, he asserts that *Lee*’s “discovery and/or registration process” is not about updating the location of the device, it is about a device’s internal logic

determining whether to use a cellular or Bluetooth network. Ex. 2003, ¶¶197-199.

And Mr. Zaheer also does not discuss my opinions that annotated Figure 2 below illustrates a process by which the logic determines whether to connect to a Bluetooth or cellular network based on Bluetooth signal availability.



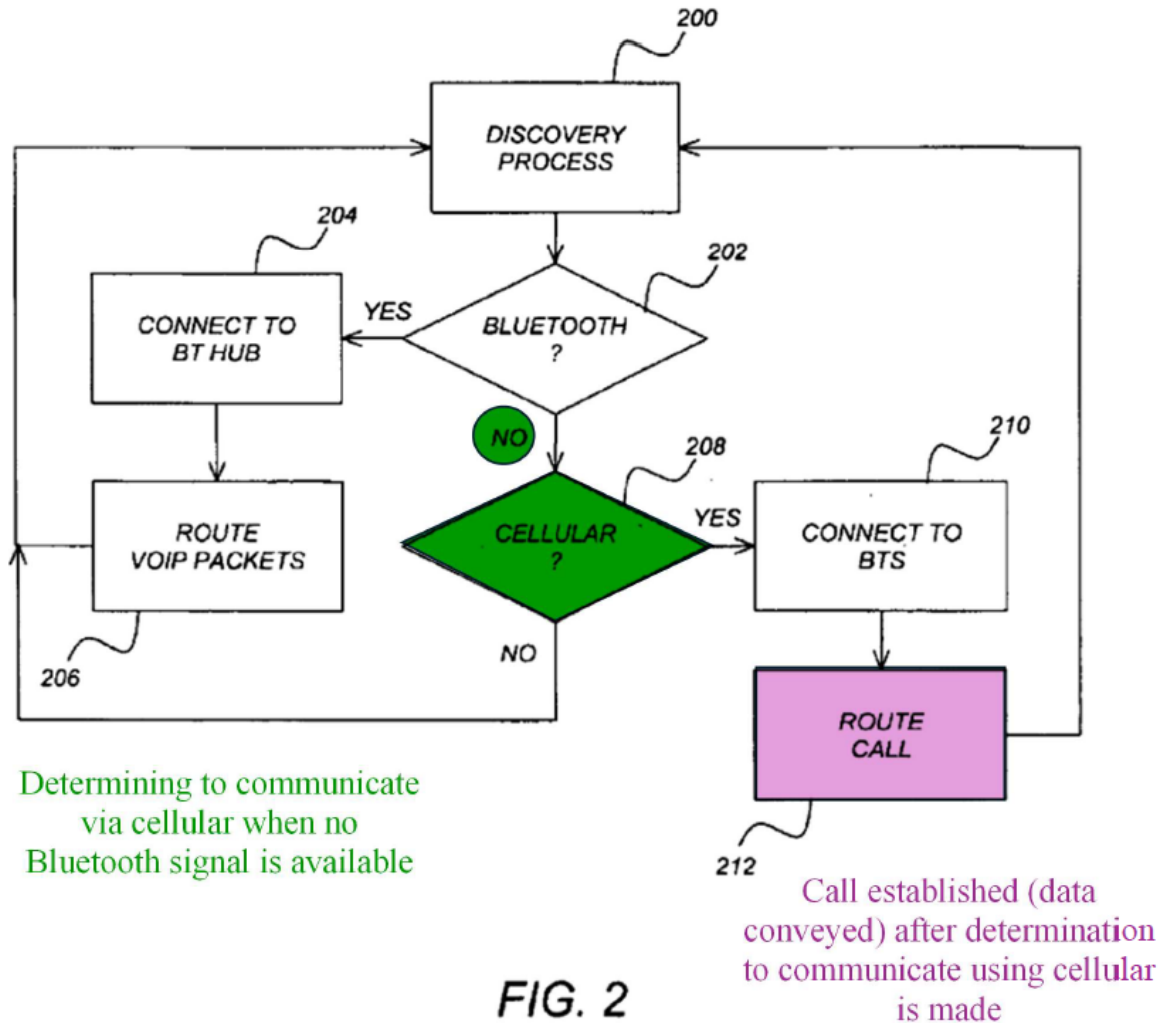


FIG. 2

Lee, Fig. 2 (annotated); Ex. 1003, ¶¶131-133.

82. Mr. Zaheer seems to suggest that there is no motivation to combine *Lee* and *Mooney* because (1) *Mooney* is dependent upon a PSTN network, while *Lee*'s cellular system would have no need for *Mooney*'s teachings; and (2) congestion is not a problem in *Mooney*. Ex. 2001, ¶194. In my opinion, Mr. Zaheer is wrong.

83. In my opinion, Mr. Zaheer's comments do not actually discuss how I proposed to combine *Mooney* and *Lee*. Ex. 2001, ¶¶182-190, 194. The proposed combination does not seek to integrate *Lee*'s networks, VoIP functionality, or other features, as Mr. Zaheer suggests. Ex. 2001, ¶¶182-190, 194. As explained above, I opined that the combination is the implementation of *Lee*'s "discovery" process/logic such that *Mooney*'s modified device determines whether to use a cellular or Bluetooth network prior to transmitting its call data. Ex. 1003, ¶¶129-135.

84. Mr. Zaheer also states that there would be "no advantage to using the approach of *Lee* to increase capacity or reduce congestion in *Mooney*, as network resources still have to be reserved." Ex. 2001, ¶¶191-194. According to Mr. Zaheer, "[c]ongestion is not even an issue in *Mooney*." Ex. 2001, ¶192. That *Mooney* does not expressly identify congestion does not demonstrate that a POSITA would not have recognized the potential for such a problem or have been motivated to address it. In fact, a POSITA would have appreciated that congestion is relevant to *Mooney* because Bluetooth operates on an unprotected license free spectrum. A POSITA would have understood that because Bluetooth operates an unprotected license free spectrum that the connections often suffer from congestion from other license free Bluetooth, WiFi, and other unlicensed devices competing to use the same frequency range. Moreover, Cordless Telephony Profile (Ex. 2003)

states that “[w]ith respect to this profile, the gateway may have the functionality to support multiple terminals being active at once...” Ex. 2003, 109. This indicates that congestion would be a problem because multiple terminals could be using a gateway at the same time.

85. Nothing in *Mooney* precludes multiple cell phones from connecting to the base unit (and thus sharing the same resource and causing congestion) or suggests that congestion is impossible.

86. Accordingly, the combination of *Mooney* and *Lee* renders obvious claims 1-20, as I reiterated above.

VIII. CONCLUSION

87. For the reasons explained above and in my Opening Declaration, it is my opinion that one skilled in the art would have found claims 1-20 of the '294 patent obvious over *Mooney* or *Mooney* and *Lee*.

88. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

89. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and 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.

Date: August 25, 2025

Respectfully submitted,

A handwritten signature in black ink, reading "Stuart J. Lipoff". The signature is written in a cursive, flowing style.

Stuart J. Lipoff