

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UBER TECHNOLOGIES, INC.
Petitioner,

v.

ENOVSYSLLC,
Patent Owner.

Case IPR2024-00826
Patent 6,441,752

EXPERT DECLARATION OF JOSEPH C. M^cALEXANDER, III
IN SUPPORT OF RESPONSE TO PETITION OF
***INTER PARTES* REVIEW OF U.S. PATENT NO. 6,441,752**

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I. INTRODUCTION

1. I, Joseph C. McAlexander ^{III} submit this Declaration in support of the Patent Owner's Preliminary Response to the Petition filed by Patent Owner Enovsys LLC ("Patent Owner" or "Enovsys").

2. I have been retained on behalf of Enovsys for the above-captioned *inter partes* review (IPR) proceeding. I am being compensated for my time in connection with this IPR at my standard hourly consulting rate. I understand that this proceeding involves U.S. Patent No. 6,441,752 ("the '752 Patent") titled "Method and apparatus for Locating Mobile Units Tracking Another or Within a Prescribed Geographic Boundary" by Mundi Fomukong, and that the '752 Patent is currently assigned to Enovsys.

3. I have reviewed and am familiar with the specification of the '752 Patent filed December 30, 2000. I understand that the '752 Patent has been provided as Ex-1001.

4. I have reviewed and am familiar with the file history of the '752 Patent. I understand that the file history has been provided as Ex-1004.

5. As part of this engagement, I have been retained to review and evaluate specific claims of the '752 Patent. In particular, I have been asked to provide my opinion regarding the meaning of certain claim terms, as well as whether a person of ordinary skill in the art ("POSA") in the subject matter of the claims would find

them anticipated or obvious over certain publications that Uber Technologies, Inc. used as their bases for the grounds set forth in the Petition for *Inter Partes* Review of the '752 Patent.

6. In the preparation of this declaration, I have reviewed the relevant papers submitted in this proceeding and the '752 Patent and its file history, including the prior art cited and discussed by the Examiner and cited by the Applicant in the specification of the '752 Patent.

7. In forming my opinions expressed below, I have considered the documents listed above, and my knowledge, education, and experience based upon my work in this area as described below.

8. My experience and education are detailed in my curriculum vitae ("CV"), which I understand has been submitted into the record of this proceeding as Ex-2002. My CV also lists publications on which I am a named author and identifies parties on behalf of whom I have previously provided expert testimony.

9. I have technical experience in a number of areas, with specialized expertise in electronics, security systems, and related technologies. My background includes work on wireless communication systems and object locating technologies, such as GPS tracking. This expertise is directly relevant to cell phone networks and location-related technologies similar to the '752 Patent. For example, as CEO of MDFHoldings, Inc., I oversaw the development of IP related to GPS tracking

systems. Additionally, my work with Guardian Technologies, LLC involved managing patents related to RFID tracking, underscoring my proficiency in technologies that underpin modern cell phone networks and location services.

II. QUALIFICATIONS

10. In formulating my opinions, I have relied upon my training, knowledge, and experience in the relevant art.

11. I am the Founder and President of M^cAlexander Sound, formerly the IP Director of CCI and Vice President of EPI Technologies and have 52 years of experience in microcircuit and semiconductor technologies, including device design, fabrication, assembly, testing, and marketing, and control system design, analysis, quality, reliability, and defect/failure analysis at Texas Instruments.

12. I am a technical expert in the subject matter areas relevant to this *inter partes* review, including design and testing of circuits and systems related to control systems, including wireless communication protocols and operation, information storage and transfer, user interfaces, information signal processing, applications and operating systems, and electronic device hardware and firmware design and control.

13. I am a Registered Professional Engineer (#79454) in the State of Texas and hold a Bachelor of Science degree in Electrical Engineering from North Carolina State University.

14. I am an inventor on 31 U.S. patents and a number of foreign patents, and I am familiar with the patent process. Five of the 31 patents (3 U.S. and 2 EP) are directed to MEMs technology for used as sensors for conditions that may require, *e.g.*, vehicle air bag sensor deployment. Nineteen of the 31 patents (18 U.S. and 1 EP) are directed to mobile device tracking, such as is used to track vehicles.

15. I have been an expert witness and technical consultant for the past 35 years in IP matters related to product/process analysis and investigation.

16. All the opinions included herein are based on my personal knowledge, my education, and my professional experience and judgment in consideration of the documents submitted in this IPR proceeding, the papers and exhibits submitted by both parties, the documents discussed in the body of this Declaration, including the Declaration of Petitioner's expert witness Mr. Scott Andrews.

17. I am qualified to reach the opinions and conclusions stated in this report.

III. LEGAL STANDARDS

18. The paragraphs in this section present an overview of some basic legal principles that counsel has explained to me, and which I have applied in arriving at my conclusions. I am not an attorney or a legal expert, and I offer no opinions on the law.

A. Person Of Ordinary Skill In The Art (POSA)

19. I have been informed that patents are not written to be understandable by experts or by the general public. Instead, they are written to be understandable to a person having ordinary skill in the appropriate art. I understand that factors that may be considered in determining the ordinary level of skill in the art include: 1) the types of problems encountered in the art, 2) the prior art solutions to those problems, 3) the rapidity with which innovations are made, 4) the sophistication of the technology, and 5) the educational level of active workers in the field.

20. In determining the characteristics of a hypothetical person of ordinary skill in the art of the patents-at-issue at the time of the claimed inventions, I considered these factors. It is my understanding that not all such factors may be present in every case, and one or more of them may predominate.

B. Anticipation

21. I have been informed that for prior art to anticipate a claim under 35 U.S.C. § 102, the reference must disclose every element of the claim, either explicitly or inherently (*i.e.*, necessarily present or implied).

C. Obviousness

22. I have been informed that a claimed invention is not patentable under 35 U.S.C. § 103 if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious to a POSA at the time

the invention was made. I also understand that the obviousness analysis takes into account factual inquiries including the level of ordinary skill in the art, the scope and content of the prior art, the differences between the prior art and the claimed subject matter, and any secondary considerations which may suggest the claimed invention was not obvious.

23. I have been informed that a claim can be obvious in light of a single prior art reference or a combination of references that either expressly or inherently (*i.e.*, necessarily present or implied) disclose all limitations of the claimed invention. I understand that, where a prior art does not identically disclose all of the limitations of a given patent claim, that patent claim is invalid if the differences between the claimed subject matter and the prior art are such that the claimed subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.

24. I have been informed by legal counsel that the Supreme Court has recognized several rationales for combining references or modifying a reference to show obviousness of claimed subject matter. I understand some of these rationales include the following: combining prior art elements according to known methods to yield predictable results; simple substitution of one known element for another to obtain predictable results; use of a known technique to improve a similar device, method, or product in the same way; applying a known technique to a known device,

method, or product ready for improvement to yield predictable results; choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; and some teaching, suggestion, or motivation in the prior art that would have led a person of ordinary skill to modify the prior art reference, or to combine prior art reference teachings to arrive at the claimed invention.

25. It is my understanding that the question of obviousness is to be determined based on:

- The scope and content of the prior art;
- The difference or differences between the subject matter of the claim and the prior art (whereby in assessing the possibility of obviousness one should consider the manner in which a patentee and/or a Court has construed the scope of a claim);
- The level of ordinary skill in the art at the time of the alleged invention of the subject matter of the claim; and
- Any relevant objective factors (the “secondary indicia”) indicating non-obviousness, including evidence of any of the following: commercial success of the products or methods covered by the patent claims; a long-felt need for the alleged invention; failed attempts by others to make the alleged invention; copying of the alleged invention by others in the field; unexpected results achieved by the alleged invention; praise of the

alleged invention by the alleged infringer or others in the field; the taking of licenses under the patent by others and the nature of those licenses; expressions of surprise by experts and those skilled in the art at the subject matter of the claim; and whether the patentee proceeded contrary to accepted wisdom of the prior art.

26. It is further my understanding that, for purposes of an obviousness determination, it is impermissible to rely on 20/20 hindsight reconstruction.

27. And still further, it is my understanding that a patent claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was independently known in the prior art. There must be an apparent reason why it would have been obvious to modify the prior art to arrive at the claimed invention. I understand that, to avoid impermissibly applying hindsight, it is helpful to determine whether there is a teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the elements. When there is no suggestion, teaching, or motivation for the proposed combination, or when the prior art suggests something other than the combination, this weighs against a finding of obviousness. The patent challenger has the burden to show that a person of ordinary skill in the relevant field had a reason to combine the elements in the manner claimed when asserting obviousness in view of a combination of references.

28. It is my understanding that evidence of secondary considerations must be considered when determining obviousness and cannot be discounted, as they play a critical role in the obviousness analysis. Evidence of secondary considerations can weigh against a finding of obviousness and are often relied upon to provide guides against the forbidden use of hindsight.

D. Claim Construction

29. I have been informed that the terms of a patent-at-issue should be construed under the same claim construction standard that would be used to construe the claim in a civil action. I have also been informed that the meaning of a term may be evidenced by a variety of sources, including the words of the claims, the specification, drawings, file history, and prior art.

30. I understand that extrinsic evidence may be consulted for the meaning of a claim term if it is not used to contradict claim meaning that is unambiguous in light of the patent's intrinsic evidence.

IV. LEVEL OF SKILL IN THE ART

31. I understand that Petitioner contends that a POSA “would have had a bachelor’s degree in electrical engineering, computer engineering, computer science, or a related field, and at least two years of experience in the research, design, development, and/or testing of GPS and related location tracking techniques, or the equivalent, with additional education substituting for experience and vice versa.”

(Paper 2, p. 8). For the purposes only of this declaration, I do not dispute this contention because it would not affect my analysis. I reserve the right to render a further opinion when it would have any substantive impact on my opinion.

V. SUMMARY OF OPINIONS

32. My opinions are set forth in the body of this Report. Without intending to limit in any way the opinions expressed in this Report, the following is a summary of my opinions.

33. The Challenged Claims are not invalid for any of the reasons asserted by Mr. Scott Andrews and the Petition. Specifically:

Ground 1: Claim 1 is not rendered obvious over *Layson*'757 in view of *Layson*'213.

Ground 2: Claim 4 is not rendered obvious by *Layson*'757 and *Layson*'213 in view of *Wang*.

Ground 3: Claims 9 and 14 are not rendered obvious by *Layson*'757 and *Layson*'213 in view of *IllinoisLaw*.

Ground 4: Claim 15 is not rendered obvious by *Layson*'757, *Layson*'213, *IllinoisLaw*, and *Wang*.

Ground 5: Claim 6 is not rendered obvious by *Suarez* in view of *Mintz*.

VI. OVERVIEW OF THE '752 PATENT

34. The '752 Patent was filed on December 30, 2000 and is titled “Method and Apparatus for Locating Mobile Units Tracking Another or Within A Prescribed Geographic Boundary.” The '752 Patent relates generally to systems and methods to be used by the wireless telecommunication industry, and particularly systems and methods to be used in providing location-based services using the cellular infrastructure of that industry. In such system and methods, the network includes cells that can be polled for the location information only of mobile phones (or other hand carried wireless communication devices using such cellular infrastructure in the industry (“PRUs”)) that are currently located within that particular network geographic boundary. In this manner, only the small set of subscribed PRUs currently located in the geographic boundary are queried for location while subscribed PRUs in other pollable geographic boundaries are not part of the request. A source can request and receive the location of mobile targets within a specific geographic boundary and send notices to such mobile targets. The system includes features for detecting if a target is tracking the source by monitoring proximity and for polling only units in specific geographic areas. The system ensures safety and efficient use of network resources for making proximity and tracking determinations.

35. More particularly, the '752 Patent recognizes that “[t]he wireless industry is currently gearing towards the provision of a wide range of location-based services [that] will include utilizing the location of a subscriber’s portable remote unit to channel a wide range of location-based services to the subscriber.” (Ex-1001, 1:11-15). It also recognizes that “[f]or such a service to be successful the remote unit must be able to obtain and relay its location information to other communication targets of the network requesting such information.” (*Id.*, 1:15-19). The '752 Patent observes that while such services could be “quite beneficial to the general public if safely implemented,” a potential problem exists in the wireless industry; because the mobile phones are “small, compact and lightweight” such devices “could easily be concealed to reveal the location of a mobile user without the user knowing or authorizing the disclosure of their location” (*Id.*, 1:54-60), causing safety and privacy issues.

36. For example, the location of a wireless consumer could be tracked by a “clandestine unit concealed in an object such as a car or luggage” without their knowledge and against their wishes. (*Id.*, 1:60-64) Therefore, a need exists for “location reporting devices in a specific geographic region to reveal their location upon request” so that “[i]n situations where a user is being tracked, the network would be able to determine which units are tracking the user by querying for the

location of remote units within a specified radius of the user or tracked unit” according to the described techniques. (*Id.*, 2:3-11).

37. The ’752 Patent also recognizes that a need can exist for a mobile user to know of and get help from another mobile party “at that geographic location” where the latter is “not too far away.” (*Id.*, 2:12-16). In such situations, the network can “pag[e] for locations of portable remote units (PRU) within the stranded area” or the “network may split that geographic area” and send pages to “specific areas in order to obtain the location of portable remote units in that geographic area” where “[t]he location of any mobile location-reporting unit” that is “closest to the user will be revealed to the user.” (*Id.*, 2:16-25). The patent also teaches that a pollable geographic area is associated with one or more ground servers that processes a request for the location of portable remote units within that geographic boundary:

As shown in FIG. 3, a distressed mobile user M_1 may need to find where another party might exist in that geographic region. The user could initiate a page from their PRU for the closest available PRUs ***that could be found in that geographic jurisdiction***. Looking at FIG. 3, mobile user M_1 will provide its location, latitude and longitude (X_o , Y_o) to the closest available ground station serving area C_1 or grid G_1 . As stated earlier, appropriate terrestrial technology will be scattered in that region ***to serve the PRUs in that area as shown in FIG. 1***. Once a ground station picks up this signal, it sends a page for all location reporting devices in the specified boundary surrounding mobile unit M_1 , FIG. 3 to disclose their location. Such boundary information could simply be specified by the latitude and longitude of unit M_1 and appropriate radii information.”

(7:22-36) (emphasis added).

38. The '752 Patent further observes that such services may be “lucrative to a service provider” because “users of the system may be charged a fee each time the location of another PRU at the requested geographic boundary is provided to the user” or each time a subscriber’s “location is provided to a distressed individual.” (Ex-1001, 2:26-35). The '752 Patent also recognized that industry standards could be set to define clandestine tracking based upon “both units have traveled a certain distance over a pre-specified period of time with the tracking unit maintaining a proximity to the source during that period.” (*Id.*, 2:37-44).

39. With the purpose of “preventing unnecessary overloading of shared network resources” the network “determines where and how a search for relevant communication targets should be initiated” so that targets in a specified geographic boundary are “interrogated for location disclosure.” (*Id.*, 3:31-35). The '752 Patent therefore proposes to divide the network into “standard geographic areas”, *e.g.*, 201-204 that may have present one or more portable mobile users 701-709 as shown in Fig. 1, wherein the boundary of each of the geographic regions may be defined by a longitude, latitude, and radius or by specific latitude/longitude points as shown in Fig. 3. (*Id.*, 4:4-13). To accomplish this, the system takes advantage of the existing cell phone network infrastructure, including for “determining which transmitters to employ to complete a call and how to prevent portable remote units from receiving

calls when they are out of jurisdiction.” (*Id.*, 4:18-22). The system also takes advantage of “general internal circuitry of a portable remote unit or PRU” including its “antenna 20 and a transceiver circuitry” which is used to receive and transmit to the network information processed by a “control unit 22” of the PRU. (*Id.*, 4:36-45).

40. For example, as the ‘725 Patent explains, a distressed wireless customer may wish to have another wireless customer who is nearby pick them up. The network can send a message only to those wireless customers that are serviced by the same or adjacent cell phone towers. *See, e.g., id.*, 7:22-34 (“As shown in FIG.3, a distressed mobile user M may need to find where another party might exist in that geographic region. The user could initiate a page from their PRU **for the closest available PRUs that could be found in that geographic jurisdiction**. Looking at FIG. 3, mobile user M will provide its location, latitude and longitude (X_o , Y_o) to the closest available ground station serving area C or grid G. As stated earlier, appropriate terrestrial technology will be scattered in that region **to serve the PRUs in that area** as shown in FIG. 1. Once a ground station picks up this signal, it sends a page for all location reporting devices in the specified boundary surrounding mobile unit M, FIG. 3 to disclose their location.”); 7:34-44 (“Such boundary information could simply be specified by the latitude and longitude of unit M and appropriate radii information. For the very first request, such radii information would be the distance R as shown in FIG. 3. **A PRU within that area will pick up**

the signal and determine if it is within the specified radii. Also, if the ground station specifies grid information for the first cell, G_1 , a PRU will have to determine if it lies within the grid G_1 (sic) boundary, P_1 , P_2 , P_3 and P_4 . According to FIG. 3, **when a ground station sends a page for the location of PRUs in cell C_1 or grid G_1 only mobile unit M_1 may respond.**"); 8:1-12 ("Considering that mobile unit M is initiating a search for possible portable remote units in its immediate area, a relevant ground control station will send three pages. The first page will cover cell C_1 or grid G_1 . As no units are available in the area a second page will be sent to cover cell C_2 , or grid G_2 . **Examining FIG. 3, the next PRUs exist only in cell C_3 or grid G_3 . Once a page is sent out for cell C_3 . PRU, M_2 , and M_3 will respond. If grid G_4 is specified PRU M_2 , M_3 , M_4 , and M_5 will respond. The ground control station will next select the unit closest to PRU M_1 , which is M_2 , in this instance. The location of PRU M_2 will then be forwarded to PRU M_1 .**"); 10:19-32 ("A PRU may choose to instruct the network to relay certain information to mobile units in a specific geographic region. That information would then be appended to the geographic boundary information and beamed in the specified geographic region. The target PRUs would determine if they are in the specified boundary before alerting a subscriber as to the content of the message. In circumstances where a subscriber in possession of the PRU is in motion and a request is received for the location of the PRU if within a specified region, the PRU may provide this

information and also may provide additional information such as its velocity to the network. This might help a party seeking help to establish if they would be able to catch up with another subscriber in the region which help was sought.”) (emphasis added in all instances).

41. In implementing the tracking mode, several parameters are used to determine whether tracking exists, such as tracking radii, minimum distance travelled and elapsed time, which could be “set as a standard by the industry.” (Ex-1001, 5:12-19). First, “the geographic location of the tracked unit, FIG. 1, 501, is utilized to determine the geographic boundary where a search for possible tracking units 510 could be initiated.” (*Id.*, 5:26-30). Then, “[o]ver a period of pre-determined time intervals a page is sent to the geographic location 201 where the tracked unit 501 resides for all location-reporting units within that geographic boundary to disclose their location.” (*Id.*, 5:51-55). Thereafter the tracking parameters are applied to determine whether any tracking unit exists within that geographic boundary such those “within a 5 meter radius of the tracked unit over a 1 mile stretch.” (*Id.*, 5:32-34). The steps of an exemplary process are shown in FIG. 5 and described as including timing information to help eliminate errors whereby the tracking process is “done at fixed time intervals and over a pre-determined time period” whereby a list is generated of possible tracking units that were not eliminated as false positives using the tracking parameters. (*Id.*, 5:11-62).

42. The '752 Patent sometimes refers to a “tracking boundary” or “geographic boundary required to establish tracking.” A POSA reading the entire specification of the '752 Patent would understand that these two terms refer to the “pre-specified radius of the tracked PRU” or the “tracking radii” used to identify tracking units and does not refer to the wireless network geographic boundary being polled for the location of possible tracking units. This is important because, upon receiving a request to search for a PRU in a geographic area, the wireless network polls one or more network boundaries to make further determinations regarding the locations of PRUs currently within that boundary and within a specified distance of a given PRU. *See, e.g., id.*, 6:56-60 (“By specifying the required location and further information such as radii information, the network may provide a portable remote unit with the location portable remote targets that are closest to the PRU **and** in the geographic areas specified by the PRU”); 6:61-64 (“For a simple search where the geographic region does not exceed a pre-specified limit, a page may simply be sent to the required region for all units in the region to disclose their location); Fig. 6; *generally* 6:61-9:07 and *specifically* 7:01-18, 8:1-31, 8:41-46; 10:25-47) (the system queries individually pollable geographic boundaries of the network, such as within the range of a ground station serving the boundary). By limiting its search in this manner, the system thus gains efficiency as all the portable units associated with the system are not polled, just those in individual geographic boundaries of the network

that are specifically searched. From the reported locations of the set of units within the polled network boundaries, the network can make additional determinations according to various additional parameters such as proximity, direction of travel and velocity (*Id.*, 9:50-53, 10:28-30).

43. Furthermore, the '752 Patent teaches that all actions that a PRU cannot perform may be performed by the network (*Id.*, 10:43-47).

44. In sum, the '752 Patent recognized that the wireless telecommunication industry would soon support the ability for third parties sought to provide location-based services. It provides technical solutions in making efficient proximity and tracking determinations given that such systems may include millions of network users. These solutions included dividing the network into individually pollable geographic areas and limiting algorithms used in making tracking and proximity determinations to only units currently located within a relevant one or more of such individually pollable boundaries to provide improvements in making tracking and proximity determinations involving mobile phone users to reduce the amount of processing needed to make these determinations with specific algorithms.

VII. CLAIM CONSTRUCTION

45. I understand that, in *inter partes* review, the U.S. Patent and Trademark Office applies the plain and ordinary meaning of claim terms, in view of the specification, as would have been understood by a POSA.

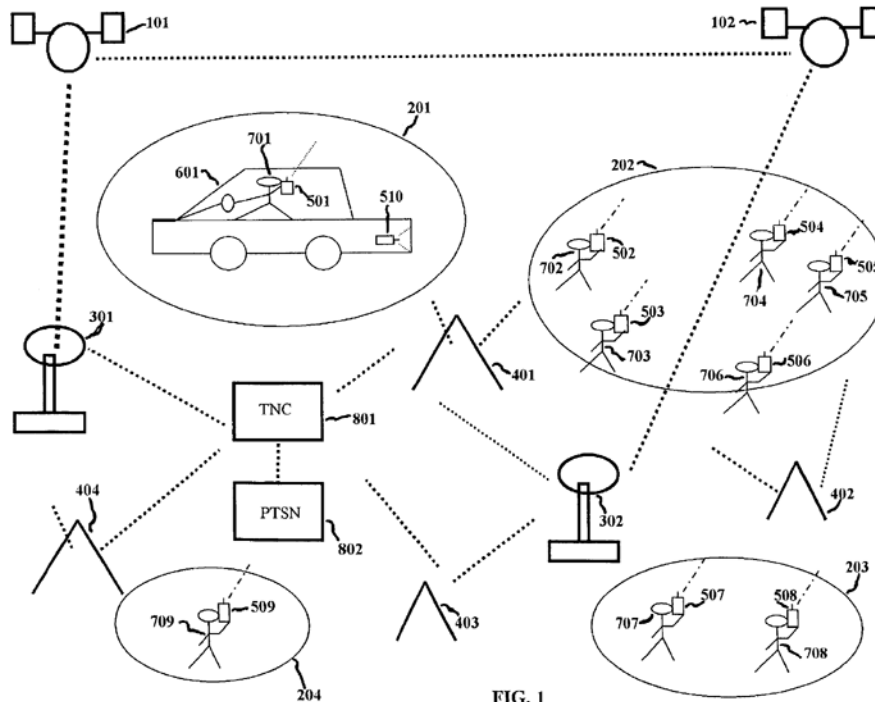
A. “portable mobile remote unit”/“mobile remote unit”/“communication unit”/“remote unit”/“mobile consumer” (Claims 1, 4, 6, 9, 14, 15)

46. Petitioner offers no constructions for these terms. These terms are used interchangeably in the claims. For example, Claim 1 refers to “portable mobile remote units” interchangeably with “mobile remote units” *Compare, e.g.,* Ex-1001, 10:48-52 (“providing the location of a *portable remote unit* to a wireless consumer requesting the location of portable remote units that are maintaining close proximity to the wireless consumer in the geographic area”) *with* 10:62-65 (“forwarding the location of at least a mobile remote unit to the mobile consumer upon determination that the *remote unit* maintained close proximity to the mobile consumer”). Claim 4 depends from Claim 1 and refers to the same things as a “remote unit.” *Id.*, 11:34-35 (“determining that the *remote unit* is not in the exclusion region before providing the location of the remote unit”). Claim 6, likewise, uses “portable remote units” interchangeably with “mobile remote units” and “remote units.” *Compare*, 11:50-53 (“A method for providing the location of *portable remote units* that exist within a prescribed geographic boundary to a wireless consumer requesting that information”) *with* 11:53-55 (“receiving at the network a wider than normal prescribed geographic boundary to query for *mobile remote units* from the wireless consumer”) *and* 12:01-03 (“providing to the network and from the list of (v) the location of at least a *remote unit* that revealed its location in the sub region.”) Claim

9 refers interchangeably to “portable remote unit” and “communication unit.” *Compare*, 12:21-23 (“A method for determining that a *first portable remote unit* associated with a network is being tracked by at least a *second portable remote unit* over a tracking period”) *with* 12:27-29 (“obtaining the location of the at least a *second communication unit* or tracking unit that is within proximity ore a pre-specified radius of the tracked unit”). Claim 15, dependent from Claim 14, similarly refers to “remote unit” interchangeably with “portable mobile remote unit.”

47. A POSA reading the '752 patent understands that each of these terms refer to the same thing: “cell phones or other hand-carried wireless telecommunication devices used to communicate via cellular telecommunication networks available to the general public.” Ex-1001, Figure 1 (depicting the portable remote units 501-508 of the '752 patent are cell phones using cellular infrastructure with wireless consumer subscribers 701-709 with their cell phones 501-509 located in different cells 201-204 of the cellular network serviced by different cell towers

401-404 and other cellular telecommunication infrastructure 801 (as also described 3:66-4:35).



See also, 1:7-12 (describing the system is directed to “telecommunication services and systems” in the “wireless industry”), 2:26-44 (referring to “wireless subscribers”); 2:54-3:7 (referring to a “mobile telecommunication system”).

48. The '752 patent specifically states that the “wireless industry is currently gearing towards the provision of a wide range of location based services...utilizing the location of a subscriber’s portable remote unit” (1:11-14). It explains further that “in today’s market, such mobile units are usually small, compact and lightweight” and “could easily be concealed to reveal the location of a mobile user” (1:56-60). Giving the example of someone placing their mobile phone

into someone else's car or luggage to surreptitiously track the individual's location, the specification observes "[t]he risk of abuse clearly exists and must be handled appropriately by wireless vendors." (1:65-66). Likewise, the specification gives an example how the methods and systems can be used to provide assistance to a subscribed mobile phone user by using the location of their PRU to page PRU in the same geographic area of the network to locate another subscriber's PRU who can help and provide their location. *Id.*, 2:12-25.

B. "geographic region of a wireless network" (Claim 1)

49. Petitioner offers no construction of this term. A POSITA would understand this term to refer to a specific coverage area of a wireless network that may be individually polled or queried for PRU information, such as location. As the '752 Patent explains, specific geographic regions of the network are polled for the locations of PRU. For example, "[a] PRU may choose to instruct the network to relay certain information to mobile units in a specific geographic region. That information would then be appended to the geographic boundary information and beamed in the specified geographic region." Ex.1001, 10:19-23. A POSITA reading the '752 Patent would understand that "beamed in the specified geographic region" refers to the message being transmitted for consumption within a specific coverage area of the network, such as the area within the range of a specific cell tower utilized by the network. As previously discussed, an exemplary embodiment demonstrates

how notifications, location requests for proximity and tracking determinations are directed to specific geographic areas within the coverage area of the network such that locations from the PRUs currently within those areas are involved in making tracking or proximity determinations and/or only PRUs currently within those areas receive the message.

C. **f“means to obtain the location of the portable mobile remote unit”**
(Claim 14)

50. The function of this claim element is “to obtain the location of the portable remote unit.” A POSA would understand that the minimum structure for performing the recited function is “a control unit programmed to collect location data of a portable remote unit, and equivalents thereof.” Such an interpretation is supported by the ’752 Patent’s specification and a POSA reading the ’752 Patent’s specification would understand that the required function is being performed at a control unit of the network. As shown in Fig. 5 (reference 3) and Fig. 6 (reference 2); 3:57-59, 9:63-10:11 (the PRU may obtain location information and report it to network); 4:36-4:45 (control unit controls the action of the PRU and interacts with transceiver and antenna) 10:43-47 (the network may perform any function of the PRU).

51. As shown in Fig. 5 (reference 3, 6:2-3) and Fig. 6, reference 2, the basic function to obtain the location of a portable remote unit is carried out by the

programmed control unit. The PRU itself already includes an antenna that could be used to receive GPS and cell tower signals as well as operating system programming to determine its current location (*e.g.*, longitude and latitude coordinates) from such signals and also the hardware to store the GPS coordinates, and a transceiver. *See, e.g.*, Ex-1001, Fig. 2 (showing receiver circuitry 21 and memory means 26 used by control unit 22); *Id.* at 4:39-45 (explaining that the control unit 22 processes the information whereas the transceiver 21 receives and transmits information to the network via the PRU's antenna 20); Fig. 7 (showing the programming algorithm used by a control unit to query specific geographic boundaries of the network). The specification is also very clear that the portable remote unit (PRU) can obtain its location from "whatever technique" (*Id.*, 6:46-49), which may or may not require an antenna, and the basic function of obtaining a location by a network control unit does not require an antenna. Therefore, to implement the means plus function claim elements in the '752 Patent's claims, including this claim element, a POSA would understand that they only need to add a control unit programmed to perform the function according to the algorithms described in the '752 specification. A transceiver is not needed because the control unit at the PRU or at the network can obtain the stored location information via a wired line.

D. “means to obtain geographic boundary information in order to disclose a global location at the network” (Claim 14)

52. The function of this claim element is “to obtain geographic boundary information in order to disclose a global location to the network.” A POSA would understand that the minimum structure for performing the recited function is “a network control unit programmed to receive information that identifies a contiguous area on earth, within the coverage area of the network, that can be individually queried to disclose a PRU’s global location located within that coverage area of the network, and equivalents thereof.” Ex-1001, Fig 6, reference 1 shows a basic function to obtain geographic boundary information by a control unit that is programmed to do so (*Id.*, 6:40-42). Also Fig. 7, at reference 1, shows such support as well.

53. Such an interpretation is supported by the ’752 Patent’s specification, which describes that the network is divided into individually pollable areas so that query or search only involves the PRUs currently located in such areas and not all the PRUs participating in the network wherever they may be located. For example, as the ’752 Patent explains, a distressed wireless customer may wish to have another wireless customer who is nearby pick them up. The network can send a message only to those wireless customers that are serviced by the same or adjacent cell phone towers. *See, e.g.*, Ex-1001, 7:22:34 (“As shown in FIG.3, a distressed mobile user

M may need to find where another party might exist in that geographic region. The user could initiate a page from their PRU **for the closest available PRUs that could be found in that geographic jurisdiction.** Looking at FIG. 3, mobile user M will provide its location, latitude and longitude (X_o , Y_o) to the closest available ground station serving area C or grid G. As stated earlier, appropriate terrestrial technology will be scattered in that region **to serve the PRUs in that area** as shown in FIG. 1. Once a ground station picks up this signal, it sends a page for all location reporting devices in the specified boundary surrounding mobile unit M, FIG. 3 to disclose their location.”); 7:34-44 (“Such boundary information could simply be specified by the latitude and longitude of unit M and appropriate radii information. For the very first request, such radii information would be the distance R as shown in FIG. 3. **A PRU within that area will pick up the signal and determine if it is within the specified radii.** Also, if the ground station specifies grid information for the first cell, G_1 , a PRU will have to determine if it lies within the grid GI (sic) boundary, P_1 , P_2 , P_3 and P_4 . According to FIG. 3, **when a ground station sends a page for the location of PRUs in cell C1 or grid G1 only mobile unit M1 may respond.**”); 8:1-12 (“Considering that mobile unit M is initiating a search for possible portable remote units in its immediate area, a relevant ground control station will send three pages. The first page will cover cell C_1 or grid G_1 . As no units are available in the area a second page will be sent to cover cell C_2 , or grid G_2 . **Examining FIG. 3, the next**

PRUs exist only in cell C₃ or grid G₃. Once a page is sent out for cell C₃. PRU, M₂, and M₃ will respond. If grid G₄ is specified PRU M₂, M₃, M₄, and M₅ will respond. The ground control station will next select the unit closest to PRU M₁, which is M₂, in this instance. The location of PRU M₂ will then be forwarded to PRU M₁.”); 10:19-32 (“A PRU may choose to instruct the network to relay certain information to mobile units in a specific geographic region. That information would then be appended to the geographic boundary information and beamed in the specified geographic region. The target PRUs would determine if they are in the specified boundary before alerting a subscriber as to the content of the message. In circumstances where a subscriber in possession of the PRU is in motion and a request is received for the location of the PRU if within a specified region, the PRU may provide this information and also additional information such as its velocity to the network. This might help a party seeking help to establish if they would be able to catch up with another subscriber in the region which help was sought.”) (emphasis added in all instances).

54. Furthermore, a POSA reading the '752 Patent's specification would understand that the required function may be performed at a control unit of the system. Ex-1001, 10:43-47 (“In situations where a PRU cannot perform any of the tasks described herein, the network may obtain its location information and the

required functions [are] performed at the network and forwarded to the appropriate communication target on completion.”)

55. The claimed function is not “to transmit location information,” but to obtain information that identifies a geographic boundary which can be individually polled to disclose a PRU’s location, which does not necessitate transmitting the location information. Therefore, this claim element does not require “transceiver circuitry” since that circuitry is used for another purpose, to receive or send wireless signals.

E. **“means to provide the location of the portable mobile remote unit to the network upon determination that the portable mobile remote unit is within the geographic boundary obtained at the network” (Claim 14)**

56. The function of this claim element is “to provide the location of the portable mobile remote unit to the network upon determination that the portable mobile remote unit is within the geographic boundary obtained at the network.”

57. A POSA would understand that the minimum necessary structure for performing the recited function is “a controller programmed to determine whether the location of a portable remote unit is within a specified contiguous area on earth and, upon such determination, provide the location of the portable remote unit to another network component, and equivalents thereof.” Such an interpretation is supported by the ’752 Patent’s specification. A programmed control unit in the

system performs this basic function. See, Ex-1001, Fig 7 at ref 4 and 5 and 8:32-54, esp. 8:46-48, and Fig. 6 at reference 1,3,7. A POSA reading the '752 Patent's specification would thus understand that the required function may be performed at a control unit. Moreover, nothing in this claim element requires there to be "transceiver circuitry" because a POSA would understand that this claim element does not require a limitation that is drawn to the structure used for communication of the position information. Additionally, a POSA understands that one control unit can provide the location to another control unit, which can utilize, for example, a hardwire connection between the two control units. This claim element does not distinguish between the two forms of transmissions or the location which constitutes the source of the information to the network. Moreover, that the claim requires "the geographic boundary" is "obtained at the network" further suggests to the POSA that this element may be entirely performed by a control unit at the control station.

F. "means to determine and report to the system upon request that, another mobile remote unit of the network has tracked the portable mobile remote over a period of time" (Claim 14)

58. The function of this claim element is "to determine and report to the system upon request that, [sic] another mobile remote unit of the network has tracked the portable mobile remote over a period of time." A POSA would understand, after having read the '752 Patent specification, that the minimum necessary structure to perform the recited function is "a control unit programmed to identify that another

PRU within the same network boundary as the PRU has moved with the PRU over a pre-specified distance while remaining within a pre-specified radius of it over a pre-defined time period, and equivalents thereof.” A control unit of the patent is programmed to perform this function (Ex. 1001, Fig. 5 at ref 10, 11, and 12 with 5:43-6:22). This is consistent with the algorithm described in the ’752 Patent’s specification. *See, e.g.*, Ex-1001, Fig. 5 (reproduced below) and at 5:12-39 (“In tracking mode, a tracked PRU, FIG. 1, 501, may simply alert a user in possession of the tracked PRU with the location information of any tracking device PRU 510 that has resided within a pre-specified radius of the tracked PRU, with both units having traveled a minimum distance. Parameters such as elapse time, minimum distance traveled and tracking radii could be set as a standard by the industry. The tracking feature could be invoked by the tracked PRU or a request could simply be forwarded to the closest ground control station so that the operation is performed for the tracked PRU. In tracking mode, the geographic location of the tracked unit, FIG. 1, 501, is utilized to determine the geographic boundary where a search for possible tracking units 510 could be initiated. Over a period of time and at pre-determined time intervals a page is sent to the geographic location 201 where the tracked unit 501 resides for all location-reporting units within that geographic boundary to disclose their location. The geographic boundary required to establish tracking could be set as a standard by the industry. For instance, it could [be] agreed upon that a unit could

be deemed as tracking another it stays within a 5 meter radius of the tracked unit over a 1 mile stretch. As the tracked unit 501 is moving, that unit or an appropriate network unit, may page for the location of other communication units within the tracking boundary of the tracked unit to disclose their location. Only communication units within that geographic boundary would disclose their location.”) *See also, id.*, 5:43-6:38 (reiterating that any tracking PRUs are within the set of PRU units whose locations were polled in a specific geographic boundary of the wireless network).

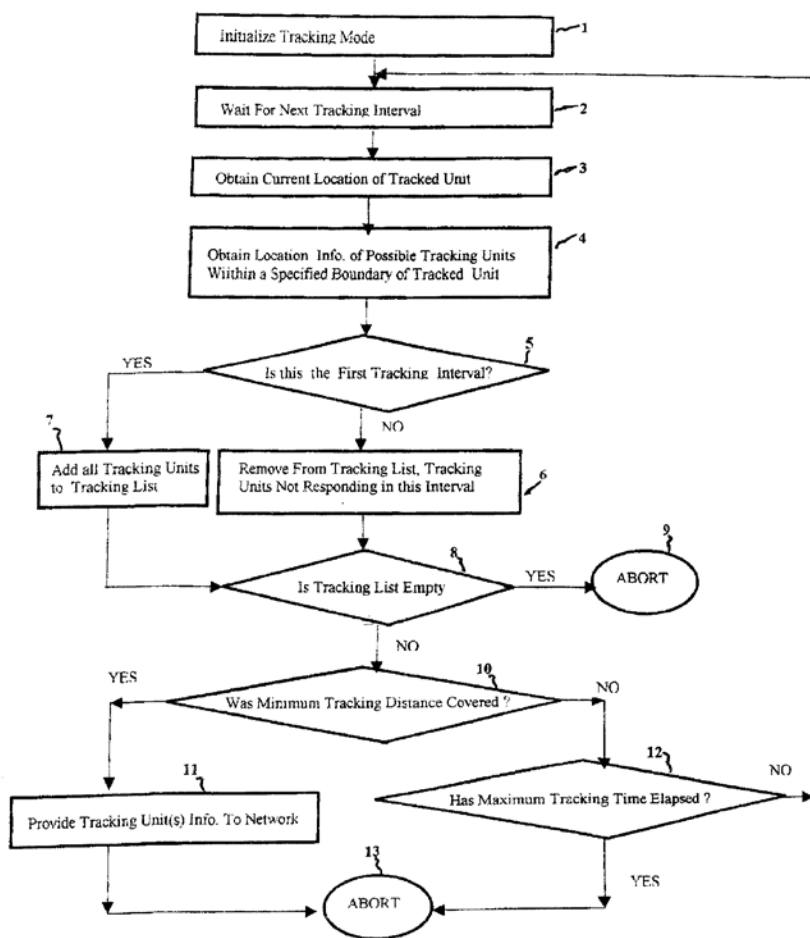


FIG. 5

59. Therefore, I do not agree with Mr. Andrews' step (3) because it improperly conflates the network boundary that is being polled with the tracking radius that is used to make the tracking determination. This is contrary to the specification and is not logical because one PRU simply being located within the same polled network boundary as another PRU, so that the former can be considered by the network as a possible tracking candidate, does not in itself establish that the former is tracking the latter. Rather, a POSA would understand from the '752 specification that first the page is directed to a specific region of the network for possible candidates and from that set of candidates determinations are made as to whether one PRU within that network boundary is also maintaining a tracking radius of the tracked PRU over a pre-defined period of time while both are in motion over a pre-defined distance.

60. I also disagree that the minimum necessary structure requires a transmitter to the extent that such a term implies wireless transmission because a POSA would understand that determining and reporting to the system, upon request that another mobile remote unit of the network has tracked the portable mobile remote over a period of time, takes place at the network control center and that the claimed reporting may be from one control unit at the network control center to

another control unit located therein. Therefore, the minimum required structure does not require a “transmitter.”

G. “means to further determine if location disclosure for the remote unit is prohibited at a specific geographic boundary before sending its location to the network” (Claim 15)

61. The function of this claim element is “to determine if location disclosure for the remote unit is prohibited at a specific geographic boundary before sending its location to the network.” A POSA would understand, after having read the ’752 Patent specification, that the minimum necessary structure to perform the recited function is a control unit programmed to: prior to sending a location of a remote unit to another network component, determining if the location of the remote unit is within a specified contiguous area on earth where disclosure of the remote unit’s location is prohibited, and equivalents thereof. (Ex-1001, Fig. 6, 9:63-10:11, especially references 3, 4, 5, 6, and 7).

VIII. TECHNOLOGY BACKGROUND PRESENTED BY MR. ANDREWS

62. Mr. Andrews provides technological background at Ex-1002, Section VIII. I will not presently offer any separate opinions regarding the background because it is largely not asserted or relied upon by Petitioner in the Grounds 1-5 and generally does not affect my opinions. To the extent any of this technology is relied upon in Grounds 1-5, I will address it specifically in my opinions regarding the same.

IX. OVERALL OBSERVATIONS REGARDING PRIOR ART

63. The patented technology requires requesting the location of a cellular phone or pager (“PRU”) within a specific pollable geographic boundary of telecommunication networks in the wireless industry to make proximity and tracking determinations amongst such devices so that location-based services can be scalably and efficiently provided in networks that may have tens of millions of customers across the nation and even internationally.

64. Participating wireless customers reporting their cell phone locations to the system specify a **pollable** geographic boundary within the coverage area of the network, which send a query **within that pollable boundary** for the location of cell phones of another participating wireless customer currently within the boundary. In this manner, the network efficiently facilitates the identification of the location of nearby wireless customer’s cell phones. The system also applies a specific tracking algorithm that determines that two cell phones within the same **pollable** geographic boundary of the network are moving in tandem with each other within a pre-defined distance of each other over a pre-specified tracking distance during a pre-specified tracking time period.

65. In contrast, each of the asserted references either poll only individual units or poll all units and instruct them to report their location back to the network when they meet a location criterion. Additionally, none disclose the specific

tracking methodology of the '752 Patent, which is directed to determining whether two cell phones are moving in tandem during a tracking period.

66. Additionally, at the time of the invention, the ability to request the location of a wireless customer's cellular phone or pager from a carrier's network was not readily or uniformly available. In 1996, the FCC mandated that all US wireless telecommunication carriers to enable requests for the location of a cellular phone or pager from their networks for at least emergency purposes by 2001.¹ Further, the Location Interoperability Forum was created in 2000 by the world's 12 largest telecom operators to provide standards to make such requests possible.²

¹ On July 26, 1996, the FCC issued a Report and Order and Further Notice of Proposed Rulemaking. 11 FCC Rcd 18676, 18678, 1996 FCC LEXIS 3966, *1, 3 Comm. Reg. (P & F) 967. Accessible at: <https://transition.fcc.gov/Bureaus/Wireless/Orders/1996/fcc96264.txt> ("Report & Order"). The Report & Order recognized that, at the time, wireless carriers did not yet have the equipment or infrastructure that would allow them to reliably determine the precise location of a mobile device within their networks and report that location to emergency services. The Report & Order required covered carriers to achieve the capability to identify and accommodate requests for the latitude and longitude of a mobile unit making a 911 call, within a radius of no more than 125 meters in 67 percent of all cases.

² See <https://www.zdnet.com/article/forum-sets-standards-for-location-based-services/>

67. Uber asserts that a POSITA, with only *a bachelor's degree in electrical engineering, computer engineering, computer science, or a related field, and at least two years of experience in the research, design, development, and/or testing of GPS and related location tracking techniques, or the equivalent*” would have found obvious the claimed inventions obvious based upon references that did not and could not have used the systems and methods of the Challenged Patents and had no description of how individual polling of network boundaries or cells could be implemented. I disagree. The asserted references did not teach a POSA the methods and systems of the Challenged Claims given the state of the art and the fact that these systems did not use cellular infrastructure in the manner disclosed in the Challenged Patents.

X. BRIEF OVERVIEW OF ASSERTED PRIOR ART

A. U.S. Patent No. 5,731,757 (Layson'757) (Ex-1007)

68. Layson'757, in contrast, is directed to an offender/victim correlation system directed to preventing crimes by alerting victims, offenders and law enforcement when an associated offender is within a certain perimeter of a specific victim. This system enhances traditional electronic monitoring, which was previously limited to fixed locations such as residences. (Ex-1007, Abstract).

69. FIG. 1 illustrates an overall system 10 incorporating a portable tracking device 12 which receives communication signals from a global position satellite

(GPS) 14 to determine the location of the subject (offender 16 or victim 18). When continuous location of the offender 16 is desired, the offender 16 is fitted with a body-worn device 20 which is non-removable by the offender 16 and provides tamper detection to generate alarms should the offender 16 attempt to remove the body-worn device 20. When the continuous location for the victim 18 is desired, the victim 18 can be provided a portable tracking device 12 and the body-worn device 20 can be a garment clip-on version or an actual body-worn device. (*Id.*, 2:45-57).

70. The communication from the subject's portable tracking device 12 is routed to the central data-base system 22 where response decisions for notification to parole and probation 30, victims 18 and law enforcement 32, are made based on schedule rules and location constraints provided by the supervising agency such as parole and probation 30. The central database system 22 communicates to the subject's portable tracking device 12 via the wireless communication link 24 to load updated schedule rules and location constraints. Data and voice messages can be sent to the subject based either on a schedule from the central data-base system 22, in response to central data-base system data fusion (such as encounters based on the dynamic movements of offenders and victims) or direct input from probation and parole 30 and law enforcement 32. At any time, the central data-base system 22 may be commanded by law enforcement 32 or other agencies, such as parole and probation 30, to query the portable tracking device 12 to ascertain the immediate

status of the portable tracking device 12 and the location of the offender 16 or victim 18. Queries for location history data can be performed by law enforcement 32 and parole and probation 30 to identify offenders 16 in the vicinity at the time a crime was committed. (*Id.*, 3:3-27).

71. Once the status of the body-worn device has been established 138, the current location is compared [by the portable tracking device 12] to the schedule rules and location constraints 140 of the subject. If the current location complies with the schedule rules and the location constraints 142 for the subject, then the location and status data is stored 144 in the portable tracking apparatus to be transmitted to the central data-base system on the next scheduled communication 146. If the current location violates the schedule rules and location constraints of the subject, then the subject is notified 148 and the response to the central data-base system is evaluated against the schedule rules and location constraints 150 for the subject. (*Id.*, 7:3-14).

72. The central database system examines the present and past locations of subject 212 since the previous data transfer. If any of the locations are violations, the central database system examines the profile of subject 213 to determine if any further violation notification is required. An offender's current position relative to any associated victim's current position is analyzed by data fusion 215 to determine if any alarms to law enforcement or corrections, commands to the offender and

warnings to the victim are required based on the dynamic movements of the offender and victim. The central database system then builds reports based on the data received. (*Id.*, 8:9-20).

73. Thus, *Layson*'757 introduces a portable tracking device that processes scheduling rules and location constraints for an offender including processing intelligence relative to an associated victim.

B. U.S. Patent No. 6,405,213 (“*Layson*’213”) (Ex-1008)

74. *Layson*'213 is a crime/offender location correlation system that correlates the locations and times of crimes to identify possible offender suspects. The system includes a computer to correlate crime incident data with the locations of subjects. By inputting information about the location and time of crimes and the locations of various offenders at different times into a correlation database, the system can determine if any of the offenders are likely suspects. This determination is based on whether an offender was near the crime scene at the time the crime occurred. (Ex.-1008, Abstract).

75. More specifically, the invention involves recording the movements of offenders under court-ordered supervision using a body-worn, tamper-resistant location recording device. Integrated with a communications network, law enforcement, and criminal justice systems, it correlates crime incident data with the offenders' location histories to determine if any of them were near a crime scene at

the time of the incident. The system supports investigative queries by matching location histories with crime data. The device transfers movement data to a central database via a residence interface unit connected to a landline at the subject's residence or other locations in the community. (*Id.*, 1:20-42).

76. *Layson*'213 addresses creating a cost-effective, body-worn location recording device for subjects under supervision. (*Id.*, 6:40-67). It also addresses power consumption and wireless transfer costs by using low-power infrared communication to transfer data to a nearby residence interface unit, which then connects to a low-cost communications network. (*Id.*, 7:01-25).

77. FIG. 1 depicts the end-to-end crime incident/offender location correlation system and component subsystems. The crime incident/offender location correlation database 1 is a relational database that receives crime incident data 2 and offender location data 3 on a continuous basis. (*Id.*, 8:27-31). Crime incident data 2 is comprised of crime incident dispatch data 7 obtained from computer aided dispatch (CAD) 6 systems and crime incident investigative data 9 from record management systems (RMS) 8 within law enforcement agencies. (*Id.*, 8:39-43).

78. Each offender's data from an offender location monitoring system 220 is correlated against any violations of exclusion zone criteria 221 from offender sentencing data in IMS 34 and exclusion zone violations reported by the offender location monitoring system 220. (*Id.*, 19:45-50). Each offender's data from an

offender location monitoring system 220 is correlated against any crime incidents 225 from CAD 6 and RMS 8 systems. (*Id.*, 19:61-63). Law enforcement and corrections / community supervision agency personnel use query terminal 37, 39 for structured queries. (*Id.*, 20:40-42).

C. U.S. Patent No. 5,365,451 (“Wang”) (Ex-1009)

79. *Wang* teaches a fleet tracking system in which a remote vehicle reports its current location to a central network station and, based thereupon, the central station sends to each vehicle a “border” that defines a fixed perimeter. When the vehicle has moved outside of that fixed perimeter, it again reports its location to the central station. The size of the “border” depends upon how far the vehicle’s currently reported location is to a jurisdictional line separating one region from another, *e.g.*, a state line. The further away the vehicle is from the state line, the larger the border; the closer the vehicle is, the smaller the border. In this manner, the system more precisely knows the vehicle’s location the closer the vehicle is to the state line so that the central station can determine precisely when the vehicle has crossed the state line where new regulations or tariffs may apply. This conserves power and network resources. (*See*, Ex-1009, 1:38-52, 3:50-56, 6:20-24).

D. 720 Ill. Comp. Stat. Ann. 5/12-7.3, as amended by 1995 Ill. Legis. Serv. P.A. 89-377 (H.B. 1792), eff. Aug. 18, 1995 (“IllinoisLaw”) (Ex-1010)

80. *IllinoisLaw* is a portion of a legal code that defines criminal conduct. I do not consider this a technical reference for which a POSA would have knowledge. Of interest here, it defines “places a person under surveillance” as “remaining present outside the person’s school, place of employment, vehicle, other place occupied by the person, or residence other than the residence of the defendant.” It also defines “follows another person” as (i) to move in relative proximity to a person as that person moves from place to place or (ii) to remain in relative proximity to a person who is stationary or whose movements are confined to a small area. It also exempts from the definition “following within the residence of the defendant.”

E. U.S. Patent No. 6,212,393 (“Suarez”) (Ex-1013)

81. *Suarez* teaches a system to dispatch vehicles from a fleet of vehicles 14, such as taxicabs. (See Ex-1013, FIG. 1, 2:65-66; Ex-1002, ¶¶ 137-139). The system comprises a message input device 24, such as a telephone or computer terminal in communication with a dispatch center 16 for providing information about ride requests such as customer location, name, *etc.* The dispatch center 16, upon receiving the ride request information, generates and transmits an assignment message, which includes the assignment (pick-up) location and a criteria parameter, to all the vehicles 14 in the system. (Ex-1013, FIGS. 1 & 15; 5:7-17, 10:9-13). When

the fleet vehicle's wireless communication device 36 receives the assignment message, it compares the vehicle's current location to the assignment address and determines whether it is within the criteria parameter and responds if it is therewithin. If no vehicle responds, the system sets a larger perimeter for the search and again sends the assignment message out to the entire fleet until a response is received. (*Id.* 5:35-54, 9:45-10:25-28) ("The assignment message 32 is then sent to the vehicles 14 of the fleet 12 which each receive the assignment message 32 using the wireless communication device 36.").

82. Thus, vehicle dispatch system 10 comprises message input device 24 that communicates a dispatch request 28 ("request for dispatch") to a dispatch center 16 which encodes and sends an assignment message 32 to each vehicle 14 of the fleet 12 on a first radio frequency (RF) channel. *Id.* at 3:1-33; 10:21-28 (explaining that the assignment message 32 is sent to "each vehicle 14 of the fleet 12" on the first communication channel which each receive the assignment message 32 using the wireless communication device 36).

83. Each communication device 36 has its own device address and can process the assignment messages and reply on a second channel. (*Id.*, 3:40-49). Each assignment message 32 includes the device's address 48 and data 52, including an assignment location and all details of the assignment such as customer name, number of passengers, the required time of pick-up, *etc.* (*Id.*, 3:65-4:8).

84. Wireless communication device 36 includes assignment manager 58 that determines whether a pre-set criteria parameter 62 is met. If so, the assignment message 32 is stored and the driver is informed of the assignment via device 64. (*Id.*, 4:40-56). More specifically, the assignment manager compares the assignment address with the vehicle's current location to determine whether the pre-set criteria parameter 62 is met. (*Id.*, 5:7-22). This criteria parameter is used to filter out assignments outside the driver's range of assignment acceptance and may be changed by the driver or by the fleet manager as required. Further, by placing the decision within the vehicle, the dispatch center is alleviated of the task of tracking each vehicle in the fleet, greatly simplifying the operation of the dispatch center and at the same time reducing traffic congestion on the communication channels.³ (*Id.*, 5:23-35).

F. U.S. Patent No. 5,532,702 (“*Mintz*”) (Ex-1014)

85. *Mintz* is directed to “a method of receiving information from a plurality of remote stations, the stations having varying attributes related to the information comprising the steps of: (a) determining, at each of the stations, of a characteristic

³ The criteria parameter 62 may alternatively be contained in the assignment message. (9:65-10:1). If no vehicle has responded to the original assignment message, another one with a more related criteria parameter may be sent, such as a greater radius to the assignment address, and the process iteratively repeated until a response is received. (10:28-11:20).

according to a predetermined protocol for the respective station in response to the call; and (b) transmitting, by the stations, of a non-information bearing signal at a predetermined time and frequency slot, wherein said slot is indicative of the determined characteristic.” (Ex-1014, Abstract).

86. “In one embodiment of the invention, **all of the stations** broadcast or transmit at the same frequency, *i.e.*, all of the slots have the same frequency whereby the slot time is determined by the characteristic. In a second embodiment of the invention, more than one frequency is used for communication and both the time and frequency indicate the value of the characteristic. In a third embodiment of the invention, **all of the stations** transmit at the same time, and the characteristic is indicated by the frequency of transmission only.” (*Id.*, 3:31-40) (emphasis added).

87. *Mintz* discloses a dispatch system shown in Fig. 1 within a geographical area 10 which includes “a control center (base station) 12. Area 10 may include a plurality of taxi stands 13, 14 and 15 which may forward a customer request to control center 12. Stationary taxis 18 and 19 are located at some of the taxi stands 13 and 15. Also, moving taxis 20-24 are circulating within area 10.” (*Id.*, 6:57-7:10).

88. Customer 25 calls the control center 12 which, in turn, broadcasts an invitation message to **all participating taxis** in area 10. (*Id.*, 7:12-15). The call message informs **the participating taxis** that a priority must be determined for

responding to a pending request for service. The criteria for determining the priority may be sent together with the call or, alternatively, may be part of a preset protocol used for all such determinations. (*Id.*, 8:18-24). Responsive to the call, **each of the taxis** uses the selection criteria to determine its own priority in accordance with the protocol. The protocol also includes a plurality of ranges of priority values and a communication protocol which subdivides a time period and/or a frequency range into a plurality of time or time/frequency slots each of which is associated with one of the ranges of priorities. (*Id.*, 8:31-37). The control center sends another broadcast targeting those responding taxis having the highest priority range in respect of which a valid indication signal has been received. (*Id.*, 9:11-15).

89. If the predetermined criteria for stopping the targeting phase have not been reached, an additional call is broadcast requesting all those taxis which have a priority within the highest priority range to respond. The response of the taxis is like that sent in the previous step except that the time or time/frequency slots now represent sub-ranges within the highest indicated priority range or ranges. In general, the call will include this range and may include an indication of the protocol for dividing the slots among the priorities. (Ex-1014, 9:16-24).

90. For example, in a dispatching system, the priority scale may extend 10 km from the customer location and the initial priority resolution may be 1 km which is reduced during two successive iterations to 100 m and finally to 1 m. At such a

fine priority resolution it is not to be expected that more than a small number of taxis will be targeted so a fast-converging identification phase having only a few time slots ought to be sufficient for identifying one of the targeted participants. (*Id.*, 10:16-25).

91. *Mintz* describes a method and system for transmitting information from multiple remote stations by requiring each transmission to occupy a separate time or frequency channel. Each station determines a characteristic value based on its attributes and transmits a (non-information bearing) signal within a specified time and/or frequency slot indicative of this characteristic. The system prioritizes transmissions based on these characteristics, allowing for targeted communication and resource allocation without the need for individual station identification in every transmission slot.

92. For example, in FIG. 3, a customer 25 requests a taxi within a circular target area 40 centered around them. Vehicles Va, Vb, Vc, and Vd, located within different sectors defined by boundary 35, are potential candidates for the task. Vehicles Vb and Vc in the innermost sector 42 are closest to the customer and thus transmit a response back indicating they have the highest priority compared to priority of vehicles in outermore sectors. (*Id.*, 10:57-67, 11:01-23). Each participating taxi determines its priority based on distance from the customer within

radius R_{max} . Vehicles Vb and Vc, being closest, transmit their indication signals first, followed by Vd and Va. (*Id.*, 11:30-63).

93. *Mintz*, similar to *Suarez*, teaches the use of a message broadcasted by a control station to all taxis (participants) to search for those in a particular geographic area in two phases, *i.e.*, targeting and identification phases. The broadcast message is sent to all taxis in the network and includes various perimeter criteria, each having an associated priority level. Each taxi's wireless device determines its priority based upon its current location and responds in a specific time/frequency slot that indicates its priority. Depending on responses received in each time/frequency slot, the control station may choose to re-broadcast another message with different perimeter criteria until a taxi in the desired highest priority time/frequency slot responds to the request. At that point, the controller can request the identity of a participant if they meet its final criteria and assign it to the customer.

G. General Observations Regarding *Layson*'757, *Layson*'213, *IllinoisLaw*, *Wang*, *Suarez* & *Mintz*

94. None of the asserted references disclose a network that provides location- based services to participating wireless customers that report their cell phone location to the system whereby one participating wireless customer can specify a geographic boundary within the coverage area of the network for the system to query for the cell phone location of another participating wireless

customer. None of the asserted references divide the network into individually pollable geographic boundaries to facilitate the identification of the location of nearby wireless customer's cell phones. None of the asserted references disclose a system that applies a tracking algorithm that determines whether two cell phones within the same geographic boundary of the network are both moving within a pre-defined distance of each other over a pre-specified tracking distance during a pre-specified tracking time period. In sum, none of the asserted references, alone or together, provide systems and methods wherein only PRUs within a specific geographic boundary of the network are polled in making proximity and tracking determinations so that location-based services can be scalably and efficiently provided in wireless communication networks that may have tens of millions of customers across the nation and even internationally.

XI. OPINIONS REGARDING PETITION

A. GROUND 1: Claim 1 Is Not Rendered Obvious Over *Layson*'757 In View Of *Layson*'213

95. *Layson*'757 is directed to an offender/victim correlation system to prevent crimes by alerting victims, offenders and law enforcement when an associated offender is within a certain perimeter of a victim. *Layson*'213 is a crime/offender location correlation system that correlates the locations and times of crimes to identify possible offender suspects. I see no reason provided by Mr.

Andrews why a POSA would attempt to use victim location in a crime/offender correlation database in *Layson*'213's system, because a crime has to first occur and be reported before its details are logged in the database. In contrast, a perimeter violation in *Layson*'757 is reported before any crime has occurred and is intended to prevent a crime from occurring.

96. Also, as discussed further below, Uber injects its own purported loiter time functionality, wherein two or more "loiter time" violations must occur for both the victim's and offender's PRU before any location violation alert is reported to the system and law enforcement. See, Ex-1002, ¶¶ 196, 198 ("In particular, a POSITA implementing *Layson*'757's system would have been motivated to include *Layson*'213's loiter time as part of *Layson*'757's 'guidelines' for reporting a violation described above, such that *Layson*'757's central database only sends reports to law enforcement/victims indicating that the offender's tracking device is in violation of the buffer/exclusion zone around the victim's tracking device after determining that the offender device has maintained close proximity to the victim's tracking device for a duration of a loitering time period.").

97. But modifying *Layson*'757 to wait for a "loiter time" before reporting perimeter violations violates its own teaching that calls for "immediate" alerts. Ex-1007, 9: 48-54 ("The portable tracking apparatus notifies the subject and the central data-base system immediately when a violation occurs."). Depending on the amount

of loiter time, this modification puts the victim in potential danger. For example, a victim may be in their office and have already reported their location as being in the office. Under Uber's new proposed rules, because the location is a place that the victim may be for a while, there may be no reporting of its location for the duration that the victim remains in that location. Furthermore, an offender can be at the victim's location for some time before both devices perform another location update. Therefore, Uber does not demonstrate how a POSA would have been motivated to make this modification or, if so, how the POSA would balance reporting, non-reporting, and loiter time. Furthermore, Uber does not address how a POSA would produce a workable system without undue experimentation given making each victim's location a crime event (and each time it is updated) would likely require orders of magnitude of additional processing if comparisons were to be made against offender locations, including offenders that are not associated with the victim. Nor does Uber explain what good it would do after the fact. Uber's proposal, therefore, not only violates the teachings of *Layson*, but requires substantial modifications not disclosed in either *Layson* patent for this modification to even potentially work.

98. The proposed modification also makes little sense because there are other simpler ways to solve Uber's purported loiter time problem. For example, loiter time in *Layson*'213 is simply a minimum time period that can be used as a search criteria to check for location violations. *Schipper*, applied by the USPTO

during the '752 Patent's prosecution, also confirms that this simpler mechanism can be used to determine how long a portable mobile remote unit has been within a geographic boundary without use of the patented technology features. Because simpler ways exist to solve Uber's purported loiter problem without attempting to recreate the invention, I do not agree with Mr. Andrews' arguments about combining *Layson*'757 with *Layson*'213.

99. Claim 1 is not rendered obvious over *Layson*'757 in view of *Layson*'213 because the combined *Layson* system does not allow a victim in a geographic region of the network to request the location of offender units in that geographic region of the network that are maintaining close proximity to that victim, and it does not provide the location of such offenders. Nor does the combined *Layson* system disclose the claimed steps as explained element-by-element below.

1. Independent Claim 1

100. Independent Claim 1 recites:

1. A method for providing the location of a portable mobile remote unit in a geographic region of a wireless network to a wireless consumer requesting the location of portable mobile remote units that are maintaining close proximity to the wireless consumer in the geographic region comprising:
 - i) obtaining the location of the wireless consumer at intervals over a period of time;

ii) requesting at each interval, at the network, that all mobile remote units within close proximity of the wireless consumer disclose their location to the network;

iii) maintaining a list of mobile remote units that provided their location at each interval after the request of (ii);

iv) from the list of (iii), forwarding the location of at least a mobile remote unit to the mobile consumer upon determination that the remote unit maintained close proximity to the mobile consumer over the period of time of (i).

a. **Element 1[pre]: A method for providing the location of a portable mobile remote unit in a geographic region of a wireless network to a wireless consumer requesting the location of portable mobile remote units that are maintaining close proximity to the wireless consumer in the geographic region comprising:**

101. Petitioner does not take a position whether the preamble is limiting or not and I would suggest that it is limiting because a POSA would find the preamble provides structure or steps that are necessary to give life, meaning and vitality to the claims because it requires that the claimed method is performed *in response to a request by a wireless consumer in a specific geographic region of a wireless network for the location of portable mobile remote units in that geographic region and that are maintaining close proximity to the wireless consumer.*

102. First, a POSA reading the '752 Patent understands that this claim is directed to cell phones or other hand-carried wireless telecommunication devices used to communicate via cellular telecommunication networks available to the

general public. *Layson*'757-*Layson*'213 in contrast, is directed to law enforcement systems utilizing specialized offender/victim portable tracking devices "that communicates with body-worn device 20" which has "tamper detection" and has a "panic button 86" that generates an alarm in a specialized victim/criminal offender tracking system. See Ex-1007, 2:46-65 and generally 3:29-6:52 (describing the specifications of the portable tracking devices and their associated body-worn devices for the law enforcement system).

103. Second, a POSA reading the '752 Patent understands that it teaches that one unit is considered to "maintain close proximity" another when it moves in tandem with the other unit while maintaining a distance within a pre-specified radius of the other unit over a pre-specified distance during a tracking period. *Layson*'757-*Layson*'213- does not teach such a method of tracking. Rather, there is only the disclosure of a location constraint that is provided to an offender's portable tracking device that is used by the device to immediately report an alert to the network if and when the location constraint is violated. (*Id.*, 7:3-14, 8:28-30, 9:45-50).

104. While I agree with Mr. Andrews (Ex-1002, ¶ 169) that the network may send to the offender's device a dynamically updated location constraint based upon an updated associated victim's location, this is different from the tracking of the '752 Patent because there is no requirement for the offender and the victim to be moving together within a pre-specified proximity over a pre-specified distance during a

tracking period. Indeed, there is no tracking “period of time” of any kind disclosed by either of *Layson*’s systems. Moreover, the “loiter time” Mr. Andrews discusses regarding Element 1[A] is not a tracking “period of time” as will be discussed in connection with element.

105. There is also no disclosure in *Layson*’757 of a victim being able to request the location of even an associated offender, let alone an unrelated one who happens to be in the victim’s area. Uber cannot adequately explain how a POSA would have been motivated to allow a victim to be able to make such a request much less the details of how a POSA would implement such a system with reasonable expectation of success and without undue experimentation.

106. Additionally, Mr. Andrews does not (and cannot) show that *Layson*’757-*Layson*’213 polls geographic areas of the network or that a victim in a geographic region of the network can request the location of other portable mobile remote units that are tracking (maintaining close proximity) to the requesting wireless consumer’s PRU in that geographic region of the network.

107. Mr. Andrews argues (Ex-1002, ¶ 157) that “victim 18’s portable tracking device 12 communicates wirelessly with ‘central data-base system 22’” and therefore “[v]ictim 18 is thus located in a geographic region served by the network cell cite 26.” While Mr. Andrews is correct that each victim will be in a geographic region of the network (*e.g.*, the geographic region serviced by network cell cite 26

for victim 18), this fact does not imply that the combined *Layson* system teaches polling specific geographic region of the network for PRUs currently located therein, let alone that a victim 18 can request for offender PRU locations in that geographic region of the network.

108. Mr. Andrews argues that, because some victims elect to use a PRU to report their location to the network, this inherently constitutes a request for any offender's location. I do not agree because nothing in the disclosure of a combined *Layson* system demonstrates the system treats the message via which a victim's PRU reports its location to the network as a location request whereby the system provides the victim with any offender locations. Indeed, I have found no disclosure in which the system will provide the victim with the offender's location; and Mr. Andrews does not demonstrate that the victim actually receives location information of an offender, much less an offender's location that maintains close proximity to the victim as determined from a list of all offenders currently located within the "geographic region served by the network cell cite 26."

109. Unlike the '752 Patent's system, *Layson's* combined victim-offender systems are not intended to consider the locations of all offenders' PRUs located within the same "geographic region served by the network cell cite" as that of the victim as required by the claimed steps. Rather, the system is only designed to track the location of an offender's PRU relative to an associated victim's PRU. Mr.

Andrews also acknowledges that “*Layson*’757 teaches tracking offenders 16 and *corresponding* victims.” (Ex-1002, ¶ 146). *See*, Ex-1007, 1:45-49 (“There exists a need to improve known house arrest systems to locate subjects such as criminal offenders and monitor their movements with respect to any associated victims or off-limit areas at all times.”), 8:13-19 (“An offender’s current position relative to any associated victim’s current position is analyzed by data fusion 215 to determine if any alarms to law enforcement or corrections, commands to the offender and warnings to the victim are required based on the dynamic movements of the offender and victim.”).

b. Element 1[A]: i) obtaining the location of the wireless consumer at intervals over a period of time;

110. *Layson*’757-*Layson*’213 does not disclose this claim element. First, as explained regarding Element 1[pre], the portable tracking devices in the combined *Layson* system are not the claimed portable mobile remote units. Second, while a victim can elect to report their PRU’s location to the system in *Layson*’757, it does not disclose the required “at intervals over a period of time” in light of the other claim elements because they are not used for a tracking period.

111. *Layson*’213 discloses that a user may query the correlation database for exclusion zone violations wherein a “loiter time” may be used as a criterion for querying the database for an exclusion zone violation. *See* Ex-1008, 23:31-38

(explaining that the database “user” is prompted for a buffer distance surrounding the exclusion location thereby creating an exclusion zone, and further prompted for a loiter time since passing through an exclusion zone is permitted but loitering is not). However, there is no disclosure in *Layson*’213 of the correlation database monitoring a victim’s location or the use of the “loiter time” having anything to do with the victim’s location.

112. Uber asserts that a POSA would have been motivated to modify the use of the loiter time taught in *Layson*’213 (Ex-1002, ¶ 170) and instead use it in the *Layson*’757 system in reporting location constraint violations relative to a victim. Further, Uber asserts that the POSA would have been further motivated to report an offender’s location only after “at least two or more intervals” of loiter time intervals passed while an offender’s PRU detected that it was unacceptably close to a victim’s device.

113. But Uber cannot explain why a POSA would not have used a simpler technique, such as just measuring a minimum time period in an unpermitted area, to make sure that the offender was not just “passing through” the unpermitted area.

114. According to Uber’s concocted loitering theory, the *Layson*’757 victim PRU device will either know that they are in a loitering period and start synching their location reporting with the offender’s device so that a modified *Layson*’757 system only reports a location constraint violation when there are two offender-

victim location updates in the same time period, which does not even take place in Uber's proposed system until there are location constraint violations reported by each PRU. This makes no sense because it would introduce delay in reporting alerts regarding location violations between an offender and an associated victim. The *Layson*'757 patent was designed to prevent a crime by promptly alerting the victim when the offender was in their area—its purpose would not be served by delaying such an alert.

115. As Mr. Andrews acknowledges (Ex-1002, ¶ 149), *Layson*'213 does not disclose receiving the victim's location at intervals over a period of time. It receives only crime data and offenders' locations. Uber proposes that a POSA would be motivated to modify *Layson*'213's correlation database so that victim locations are reported thereto and synched up with offenders' location reporting time intervals. But this contradicts *Layson*'s teachings and destroys the purpose of the existing functionality. *Layson*'213's correlation database is used to correlate an offender's location with a reported crime. But a victim's location is not a crime. Additionally, adding a new crime incident into the correlation database for each updated victim location to compare it to all offenders' locations also makes no sense because it would thwart the mission of crime incident-offender location correlation by forcing the database to make unnecessary comparisons where no crime has occurred and would also increase the complexity of the system multi-fold because each victim's

location would be compared against all offender locations. The *Layson* patents are by the same inventor, who did not combine the teachings of both the '757 and '213 patents in the manner suggested by Mr. Andrews because it is not a workable solution.

- c. **Element 1[B]: ii) requesting at each interval, at the network, that all mobile remote units within close proximity of the wireless consumer disclose their location to the network;**

116. *Layson*'757-*Layson*'213 does not teach Element 1[B].

117. The claimed step requires requesting at each interval that all mobile remote units within close proximity of the wireless consumer disclose their location to the network. So, as Mr. Andrews recognizes, all portables within the geographic boundary of the victim's portable should disclose their location within the two or more reporting intervals. See EX-1002, ¶ 170. But there is no such feature in the asserted combination.

118. Rather, in *Layson*'757, only an offender associated with the victim receives a buffer zone around that victim. Ex.1007, 3:3-27, 7:3-14, 8:9-20.

119. Uber incorrectly asserts (Ex-1002, ¶¶ 172 -175) that the victim's unit requests the location of "each of *Layson*'757's offender portable tracking devices" within the close proximity geographic boundary of the victim. See also ¶ 174 (explaining that, upon receipt of a victim's location, "the central location requests

that all offender portable tracking devices associated with the victim and located inside the victim's buffer zone ('within close proximity') send their location to the database."); *see also* ¶ 175 (explaining that "requesting at each interval" is performed by sending updated location constraints to each offenders portable tracking device.). There is no basis for any of these statements. In Layson'757 only an offender associated with a victim receives a location constraint. , particularly since, in any meaningful offender/victim system, only an offender associated with a victim would have their location constraint updated based upon the victim's location and it would make no sense to send an unrelated offender (who may also be far away from a victim) an updated location constraint.

120. Also, assuming the *Layson*'757 victim's device remains at the same location, then even under Uber's theory no new location and constraint will be sent by the central database to any offender device. *See* ¶ 175 and *Layson*'757 (Ex-1007, 3:9-13) (explaining only updated constraints are sent). Therefore, there is no request for the location of all offenders' PRUs in proximity to the victim, as required by the claim. Uber acknowledges (*See* Ex-1002, ¶¶ 147, 186; Ex-1007, 7:5-29, 9:48-50) that, in *Layson*'757, the PRU only discloses its location when scheduled to do so and depending on location constraints set by central station. Thus, in actual operation, if an offender PRU is in close proximity to an unrelated victim, most PRUs will not be reporting their location. This is for good reason, as the *Layson* systems have no

need to track each offender's device relative to every victim's device, as most offenders have nothing to do with an arbitrary victim and no location constraint relative to that victim. Moreover, they may not be scheduled to disclose location during the purported loitering period.

121. *Layson* simply does not request, during each time interval of UBER's purported loitering period, that "all mobile remote units within close proximity of the wireless consumer disclose their location to the network," particularly since some of the devices would not even have had a loiter time violation. And, again, Uber does not adequately address how a POSA would implement successfully a loiter time without undue experimentation when the system requires immediate alerts to prevent a crime.

122. *Layson*'757-*Layson*'213 thus does not teach Element 1[B] because there is no disclosure in which the network requests, at each interval, the location of all offender PRUs in proximity to the victim's PRU. Mr. Andrews argues that "*Layson*'757's central database performs the claimed 'requesting at each interval,' by transmitting updated location constraints to the offender's portable device based upon victim's location." (Ex-1002, ¶ 172) But there are at least two problems with that argument. First, to the extent that they can be considered location requests, there is no disclosure in *Layson*'757 that the updated location constraints are sent to all offender PRUs in close proximity to the victim. Rather, the consistent teaching of

Layson'757 is that the only proximity analysis is between a victim's PRU and an associated offender's PRU. (Ex-1002, 1:45-48, 8:9-21, 9:41-44).

123. Second, there is nothing in *Layson*'757 that suggests that sending an offender's PRU an updated location constraint would result in the network obtaining the offender's PRU location for the same time intervals as the victim's PRU reported its location. Even if the offender's PRU reported its location when sending a location constraint violation to the network, such would be sent only when, if ever, the updated location constraint was violated.

124. Mr. Andrews hypothesizes (Ex-1002, ¶ 173) that "*Layson*'757-*Layson*'213's system may include multiple offenders, and each offender may be associated with multiple corresponding victims." But even if a victim has more than one associated offender, or an offender has more than one associated victim, this does not meet the claim element because the network still does not request the location of all offenders (including the unassociated ones). To the extent that Petitioner is asserting here that every offender in the system could hypothetically be associated with every victim in the system, such a hypothesis would be directly contrary to *Layson*'s express teachings of *Layson*'s offender-victim systems which explicitly teaches that specific offenders are associated with specific victims. See *Layson*'757 (Ex-1007, 1:46-49) ("There exists a need to improve known house arrest systems to locate subjects such as criminal offenders and monitor their movements

with respect to *any associated victims* or off-limit areas at all times.”); *Id.* at 8:13-16 (“An offender’s current position *relative to any associated victim’s current position* is analyzed by data fusion 215 ...”). *See also*, *Layson*’213 (Ex-1008, 19:29) (referencing “associated victim information” for the offender).⁴

125. In Ex-1002 ¶ 174, Mr. Andrews argues that, in *Layson*’757, “the central location requests that all offender portable tracking devices associated with the victim ... send their location to the database ... [w]here the offender devices associated with a given victim are the only mobile units in close proximity to the victims [sic] device.” But this scenario only serves to highlight that *Layson*’s network does not obtain or consider the locations of all offenders’ PRUs in close proximity to the victim’s PRU. Because *Layson* is a law enforcement tool, its purposes would be frustrated by considering the location of all nearby offenders rather than only an associated offender.

126. *Layson*’s lack of disclosure of this claim element is, therefore, understandable given the fundamental differences between the respective systems of the ’752 Patent and *Layson*. The former considers all participating PRUs reporting a location in close proximity to the requesting wireless consumer because any one

⁴ The addition of citations to Taylor (Ex.-1011) do not help. First, Taylor is not part of the asserted combination of Ground 1. Second, Taylor adds nothing because *Layson* already discloses that a victim may have more than one associated offender and Taylor is merely cumulative of that teaching.

of those PRUs may be able to offer assistance (such as a ride) to the requesting PRU. The latter, in contrast, is only interested in considering a specific offender's PRU location relative to an associated victim's PRU location. Therefore, no need exists for practicing this claim element in *Layson's* systems and it would confound *Layson's* purposes and add undue complexity to consider the locations of all offenders, including many unrelated offenders, in making proximity and tracking determinations relative to a victim. Mr. Andrews does not adequately explain how a request at each interval, during his proposed loitering period, is generated to ensure that "all mobile remote units within close proximity of the wireless consumer disclose their location to the network" when "all mobile remote units" are not in loitering mode and wherein location reporting is required immediately to prevent a crime.

127. In sum, *Layson'757-Layson'213* does not teach requesting at each interval, at the network, that all mobile remote units within close proximity of the wireless consumer disclose their location to the network.

Element 1[C]: iii) maintaining a list of mobile remote units that provided their location at each interval after the request of (ii);

128. *Layson'757-Layson'213* does not teach [the network] maintaining a list of mobile remote units that provided their location at each interval after the request of (ii), as required by Element 1[C]. Mr. Andrews argues (Ex-1002, ¶¶ 188-190) that

the combined *Layson* system database be used to store the required reported locations. However, the claimed step depends on storing location provided after the request in step (ii). As previously noted, *Layson* does not teach step (ii) and *Layson*, therefore, does not meet this limitation under Uber's purported "loitering" time modification.

129. *Layson*'s system operates on different principles and for different purposes from the '752 Patent, and the two address different challenges. The '752 Patent is interested in considering all units in close proximity to a PRU that has requested the location of other PRUs that are maintaining close proximity to it, and therefore in order to decrease network load it divides the network into geographic areas so that the network can request the locations of all participating PRUs in close proximity to the requesting PRU within a given time period. The network, therefore, maintains a list of those PRUs that have reported a location in close proximity to the requesting PRU at each time interval of the time period after the request.

130. *Layson*'757-*Layson*'213 has no such analog. As discussed previously, there is no network request of any kind in *Layson*'757-*Layson*'213 for the location of all offender PRUs within close proximity to a requesting victim's PRU (and there is in fact no request for an offender's location from a victim's PRU). Therefore, there is no list maintained by the network for all offenders' PRUs reporting a location

within close proximity to the victim's PRU at time intervals after any such network request.

131. I have reviewed ¶¶ 189-190 of Mr. Andrews' declaration (Ex-1002). These paragraphs do not provide the required support for this claim element being present in *Layson*'757-*Layson*'213. Rather, they only show that the central databases maintain records of offender's exclusion zone violations based upon reported violations from the offenders PRUs and through the network's data fusion analysis. They do not show where the network, in response to a network request for the locations of all offenders' PRUs within close proximity to a victim's PRU, creates a list of those offenders PRUS that reported a location at each interval for a time period after the network request. There is no disclosure of any such list (or any such network request).

e.

Element 1[D]: iv) from the list of (iii), forwarding the location of at least a mobile remote unit to the mobile consumer upon determination that the remote unit maintained close proximity to the mobile consumer over the period of time of (i).

132. *Layson*'757-*Layson*'213 does not teach [the network] from the list of (iii), forwarding the location of at least a mobile remote unit to the mobile consumer upon determination that the remote unit maintained close proximity to the mobile consumer over the period of time of (i).

133. Here again, claim 1 emphasizes the real-time nature of its method. First, a mobile consumer's PRU has made a request for the location of other PRUs within the same geographic area of the network that are maintaining close proximity to it, as set forth in the preamble. Then the network receives the location of the requesting PRU at intervals. Then the network requests the locations of all other PRUs within close proximity in the same intervals. Then it makes a list of those PRUs [from the requested set of PRUs] that reported a location in the intervals for a time period after the request. Then, from that list, the network determines which of those PRUs has maintained close proximity over that period of time and reports the location of at least one such PRU to the requesting PRU.

134. *Layson's* network performs none of these steps. As discussed previously, there is no network request of any kind in *Layson'757-Layson'213* for the location of all offenders' PRUs within close proximity to a requesting victim's PRU (and there is in fact no request for an offender's location from a victim's PRU.) Therefore, there is no list maintained by the network for all offenders PRUs reporting a location within close proximity to the victim's PRU at time intervals after any such network request.

135. Uber argues (Ex-1002, ¶¶ 191-198) that a POSA would be motivated to have at least two intervals of offender and victim location reporting during the "loitering" time period so that the system knows whether an offender is merely

passing through the vicinity of a victim and due to an edge case. This again fails for the reasons below.

136. As discussed similarly above, there are simpler ways to determine whether an offender is simply passing through a perimeter of the victim, such as using a minimum time period in the exclusion area. Indeed, *Layson*'213 discusses that timing information is sent with an offender's location so the user can determine how long they were in each area. See, e.g., Ex-1008, 9:18-21, 9:31-34, 10:8-11, 23:33-36, 25:13-24, 25:50-57. Therefore, the proposed modified system can determine how long an offender has been in each area without relying on the patented method. Also, the *Schipper* prior art applied by the USPTO during prosecution, offers use of a timer to determine how long an offender has been in an area, without using the patented steps. I, therefore, do not agree that a POSA would need to capture the location of an offender and victim during two intervals of the loitering period.

137. To the contrary, *Layson*'757 seeks to prevent a crime and, therefore, requires an immediate alert when a violation occurs. Adding a loiter time that requires the location of two portables to be collected at intervals over a time period will increase the delay and reduce the chance of a preventing crime, as it will require multiple simultaneous location constraint violations for both to be reporting locations during the same or overlapping time intervals. If the *Layson*'757 victim

does not report a change in location, *i.e.*, is in the same area, then no new constraint will be sent to the offender to report its location, and no law enforcement or agency intervention is possible.

138. ¶¶ 191-199 of Mr. Andrews' declaration (Ex-1002), therefore, do not provide the required support for this claim element being present in *Layson*'757-*Layson*'213. Specifically, *Layson*'213's teaching of a "loiter time" adds none of the missing matter in *Layson*'757. Rather, *Layson*'213 only teaches that the correlation database may be queried so that it only reports a violation to the central database if the offender's PRU is in an exclusion zone for more than the loiter time. This has nothing to do with a victim's location.

139. Even if in the combined *Layson*'757-*Layson*'213 system did send an offender's location to a corresponding victim's PRU and updated the offender's "schedule rules" with a specified "loiter time," as Mr. Andrews posits at ¶ 196 of his declaration, such an occurrence would still not meet the limitations of claim 1. Particularly, such a system would still not be making a request for all offenders' PRU locations in close proximity to the victim's PRU, nor would it be making a list of those PRUs that reported a location at each interval for a given time period, nor would such a system be identifying from such a list the set of those PRUs that reported a location indicating that they were maintaining close proximity to the victim's PRU over that time period, nor would such a system be identifying at least

one such offender's PRU from that set of PRUs and sending that location to the victim in response to a request from that victim's PRU. Rather, at best, such a system would update the exclusion zone for a given offender's PRU, determine whether the offender's PRU was in the exclusion zone for a time in excess of the loiter time, and, when and if this was ever the case at some point in time, only then report a violation to the central database at that time.

140. I also disagree with Mr. Andrews' argument in his ¶ 196 that "*Layson*'213's loiter time would have been chosen to cover two or more intervals over which the victim's and offender's locations are reported." Putting aside that there is no such disclosure in *Layson*'757-*Layson*'213, this idea is nonsensical because the intervals would never match, for the reasons already stated.

141. Mr. Andrews cites Taylor for the proposition that the offender's location would have been sent to the victim. While Taylor is not part of the *Layson*'757-*Layson*'213 combination, I will address the fact that while Taylor does disclose the possibility of reporting the offender's location to the victim, a POSA would also have good reason not to provide the offender's location for safety reasons as well. For example, the victim knowing the offender's location may be motivated to confront the offender. In order to avoid provoking an incident, the POSA may not wish to report the offender's location to the victim. In any event, even if the offender's location was reported to the victim if there was a location restraint

violation, such would not be the result of the claimed steps for the reasons I have previously explained.

142. In sum, *Layson*'757-*Layson*'213 does not disclose Claim 1 of the '752 Patent, nor render it obvious.

B. GROUND 2: Claim 4 is not rendered obvious by *Layson*'757, *Layson*'213 in view of *Wang*

1. A POSA has No Motivation to Combine *Layson*'757-*Layson*'213 with *Wang* With a Reasonable Expectation of Success In Arriving at the Claimed Method

143. *Wang* does not reasonably combine with the purported *Layson*'757-*Layson*'213 combined system (which itself does not combine and offers no new relevant teaching beyond what was already considered during '752 Patent's prosecution) because it renders both solutions unworkable.

144. As *Wang* requires that a mobile device provides its location when it enters a region, it does not support use of an exclusion region where a mobile device is prevented from updating its location when in that region. In fact, *Wang* only prevents the mobile remote unit from updating its location to the network after it has already done the update within that region. Additionally, *Layson*'757 requires a continuous update of offender and victim location to provide immediate updates of location perimeter violations. Therefore, a POSA would not be motivated to modify the purported combined *Layson*'757-*Layson*'213 system to make this change for the

same reason that they would not be motivated to incorporate loiter time: the lack of location reporting until there have been multiple location constraint violations could put the victim at risk by delaying an alert to the system (and ultimately to the victim) and possible intervention by law enforcement. Specifically, by incorporating *Wang*, there would be areas where the offender's and victim's location are not reported at all for possibly large periods of time. Not only would incorporating *Wang*, therefore, put the victim in danger in the proposed *Layson* combined system, but it would interfere with the operation of *Layson*'213's correlation database because there will swaths of time where the offender's location will not be known to the system and there will be no confirmation that the offender can be eliminated as a suspect, *e.g.*, that the offender really was at home or work at the time a crime occurred. *Wang*'s unsuitability for incorporation into a victim/offender/crime correlation system is not addressed by Mr. Andrews.

145. Because *Wang* teaches a mobile unit that repetitively determines its current location on a regular schedule and updates its location to the network only when it leaves a prior system-provided border, *Wang*'s PRU only provides its location once within any system-provided border. Mr. Andrews asserts a POSA would combine *Wang* with Uber's purported combined *Layson* system. (Ex-1002, ¶ 210). However, he also acknowledges that, in the purported combined *Layson* system, both the victim and offender must report at least two locations during at least

two overlapping time intervals. (*Id.*) Moreover, *Layson*'757 teaches that an offender's device must report a location constrained immediately upon violation of the location constraint. Accordingly, *Layson* and *Wang* teach away from each other and a POSA would not be motivated to combine them in the manner Uber suggests, let alone with any reasonable expectation of success and without undue experimentation.

146. First, *Layson*'757-*Layson*'213 does not disclose Claim 1, which I have already addressed. Second, Mr. Andrews asserts that a POSA would have been motivated to modify *Layson*'757-*Layson*'213, based on *Wang*'s teachings, such that *Layson*'757's portable monitoring devices do not store and/or report their locations to the central database when located within a permitted region (analogous to the region defined by *Wang*'s border), as specified in the offender's location constraints." Ex-1002, ¶ 205. I disagree. The POSA would not be motivated to eliminate location reporting from a permitted location (such as the offender's home or workplace) because the *Layson*'757 system wishes to continuously track the offender's location. (Ex-1007, Title, Abstract, 2:50-58). To eliminate reporting in any area would lead to gaps that may be important later, for example, in knowing the offender's location with certainty when being compared to known crime events in the correlation database of *Layson*'213.

147. Mr. Andrews' arguments also require a series of speculative assumptions nowhere found in *Layson*'757-*Layson*'213. There is nothing therein, for example, regarding the overlap of "permitted and prohibited regions" nor is there any teaching that "notifying the authorities of the offender's presence in such an overlapping area would correspond to a false alarm." Ex-1002, ¶ 206. Nor does it make any sense that the offender would be in violation of their location constraints simply because the victim happened to be near the offender's home or workplace, since those are locations that the offender is always permitted to be within.

148. Mr. Andrews suggests that "[t]o avoid such false alarms, a POSITA would have been motivated to modify *Layson*'757-*Layson*'213, based on *Wang*'s teachings, such that *Layson*'757's portable monitoring devices do not provide their locations to the central database when located within a permitted region (analogous to the region defined by *Wang*'s border), as specified in the offender's location constraints." Ex-1002, ¶ 207. But this is contrary to *Layson*'s teaching of continuous location monitoring and Mr. Andrews does not address why *Layson*'757-*Layson*'213 system would stop an offender's location reporting, particularly when an associated victim happens to be in close proximity to the offender, versus just reducing the time intervals of location reporting when in those locations.

149. While perhaps not relevant to his conclusion, I will note my disagreement with Mr. Andrews' speculation (Ex-1002, ¶ 208) that a victim may

have location constraints. His basis for such a conclusion is that *Layson*'757, in a couple of places, suggests that the "subject" may refer to either the victim or the offender. While it is true that both an offender or a victim can report their location to the network, the location constraints in *Layson*'757-*Layson*'213 are exclusively described with regard to an offender's subject device. Even though a subject device may be employed as an offender or victim device, *Layson* does teach use of constraints to be applied on any victim device. Additionally, *Layson*'757 refers at times to only the offender as the "subject." See, e.g., Ex-1007 at 5:47-49 (describing body-worn device housing 88 being formed to conform to the shape of the subject's leg); 6:6-11 (describing body-worn device as having tamper logic that generates alarms). Therefore, I disagree with Mr. Andrews' assertion that a POSA would be motivated to implement locations restraints on a victim since they have no restrictions on their freedom of movement. I, therefore, disagree with his supposition that a victim would have location constraints, let alone dynamically updated ones based upon an offender's movements.

150. I also do not agree with Mr. Andrews' reasoning that a POSA would be motivated to not collect and disclose a victim's location when they are at their home or work because, at a minimum, such data would be important to the network in determining whether or not the victim and the associated offender are in close proximity. A POSA would not be motivated to give up safety considerations in a

system designed to determine when the victim and an associated offender are in proximity, particularly where the victim is at home or work, given the victim has already consented to have their PRU's location continuously reported to the network. Therefore, I do not see a reasonable basis for combining *Wang* with *Layson*'757-*Layson*'213.

151. Furthermore, *Layson*'757-*Layson*'213-*Wang* does not result in the practice of Claim 4 because it does not alleviate any of the deficiencies of *Layson*'757-*Layson*'213 not practicing Claim 1 and does not result in the practice of Claim 4, as I will now address.

2. Claim 4

a. **(1) Element 4[pre]: A method according to claim 1 utilized to further limit the provision of remote unit location to the network comprising:**

152. Petitioner does not assert that the preamble of claim 4 is not limiting and I would suggest that the claim 4 preamble is limiting because it breathes life into claim by explaining to the POSA that the provision of remote unit location to the network is being limited by the claimed steps. *Layson*'757-*Layson*'213 does not disclose Claim 1[pre] because its devices are not cell phones or other handheld mobile telecommunication devices that use cellular telecommunication networks available to the general public. Rather, as previously discussed, these are specialized devices used in law enforcement systems.

Element 4[A]: obtaining at the network, exclusion region information within which the remote unit should not provide its location [to] the network;

153. ^{b.} As previously noted, *Layson*'757 requires the victim and offender devices continuously update their location to the central database system. Accordingly, using an "exclusion region" "within which the remote unit should not provide its location [to] the network" will cause each of these systems to fail because there will be periods of time where the system will not know either the offender's or the victim's location (or both) and thereby will not be able update location constraints or correlate an offender as a suspect in the *Layson*'213 crime-offender database. Further, *Wang* requires a device to update the system one time in any given boundary therefore does not meet the claim element which prevents the unit from reporting to the system at all (if within the exclusion zone), as further reflected in the next claim element.

Element 4[B]: determining that the remote unit is not in the exclusion region before providing the location of the remote unit to the network.

154. As previously noted, there is simply no region within either *Layson* patent wherein it is desirable to have no indication of where a portable device is located. To have an area where an offender's or victim's PRU never provides its location to the system violates the respective teachings of those patents because there

will be time periods where the system does not know where the offender is located and, therefore, cannot eliminate that offender as a suspect with certainty.

155. Mr. Andrews' proposed combination also does not make sense because, if an offender is always permitted in the inclusion region (like their home or workplace), there is never a location constraint violation and there would be no overlap between the inclusion region and a victim's "buffer region." (Ex-1002, ¶ 216) Therefore, Mr. Andrews' assertion that it would be beneficial to alert the victim when they are near the offender's home or work also makes little sense. Nor do I agree with Mr. Andrews' statement that a POSA would impose location constraints on a victim but, even if so, this does not provide any motivation to not have the offender's PRU report their location. Indeed, Mr. Andrews' scenario makes much more sense, if any, if the victim were to have location constraints near the offender's home or work only when the offender was located there, which would require the reporting of the offender's location and not the blocking of such reporting. Even were the POSITA motivated to reduce network communication, they could simply reduce the intervals at which location updates were made in inclusion regions instead of adding the complexity of *Wang's* different sized "borders."

156. For all the foregoing reasons, *Layson'757-Layson'213-Wang* provides no reasonable basis to conclude this element of Claim 4 was obvious because a POSA would not be motivated to combine *Layson'757-Layson'213* with *Wang*.

Additionally, because *Layson*'757-*Layson*'213-*Wang* does not teach Claim 1, Mr. Andrews does not demonstrate this element Claim 4 taught by the asserted combination.

C. GROUND 3: Claims 9 and 14 are not rendered obvious by *Layson*'757, *Layson*'213 in view of *IllinoisLaw*.

1. A POSA has No Motivation to Combine *Layson*'757-*Layson*'213-*IllinoisLaw* With a Reasonable Expectation of Success In Arriving at the Claimed Systems and Methods

157. Mr. Andrews asserts (Ex-1002, ¶¶ 222-235) that claim 9 and 14 of the '752 Patent is obvious in view of its purposed combined *Layson* system in further view of *IllinoisLaw*. But a POSA would not have been motivated to combine the two *Layson* systems for the reasons previously discussed. Additionally, the proposed further modification does not realize the claimed invention as now I will now address on a claim element-by-claim element basis.

158. As an initial matter, I disagree fundamentally with the premise of Mr. Andrews' lengthy explanation of how a POSA would be motivated to combine these references with a reasonable expectation of success. *Layson*'213's correlation database has nothing to do with victims' locations. Rather, *Layson*'213's correlation database correlates reported crimes with offender's locations. *Layson*'213 clearly describes that the crime incident data 2 is comprised of crime incident dispatch data 7 obtained from computer aided dispatch (CAD) 6 systems and crime incident

investigative data 9 from record management systems (RMS) 8 within law enforcement agencies. Layson'213, 8:39-43. It correlates these reported crimes with offenders' locations to determine whether any offenders are possible suspects. *See, e.g.,* Ex-1008 at 20:63-21:4.

159. I also disagree with Mr. Andrews' assertion that it is reasonable to modify Layson'213's crime/offender correlational database "to identify potential stalkers from the set of offenders for whom the system stores location data, by providing the system with the victim's location(s) as 'crime incidents.'" (Ex-1002, ¶ 225)

160. This completely changes that correlation database in an unworkable manner, and it would not occur to the POSA to enter into the database the location of a victim because a victim's location is not a crime, even if they suspect that they are being stalked. Additionally, to be meaningful, trying to use the correlation database this way would require a processor performing a continuous comparison of continuously updated victim location data with the location of every tracked offender. A POSA would not be motivated to add this feature, nor would they have any reasonable expectation of success in doing so because of the complexity of the processing burden and required power consumption. Such a modification is contrary to Layson's teachings that the location of a victim is only used to update location constraints of an associated offender. Such a modification is contrary to Layson's

goal of power and cost reduction and to distribute as much processing as possible to the PRU and away from the network. It would be inordinately complicated, far beyond the scope addressed by Layson, to consider the location of every offender and compare the location of each victim, regardless of whether or not the offender was associated with the victim or even located near the victim.

161. At a minimum, to be feasible, the system would have to limit the location data it obtained to that from a PRU within a specified radius of the victim, as required by the claim. Mr. Andrews does not even make any suggestion that his proposed combined system teaches limiting the data in this manner. Rather, he posits quite the opposite, that the combined system: “could be used to identify potential stalkers from the set of offenders for whom the system stores location data.” (Ex-1002, ¶ 225)

162. Even more far-fetched is the idea that the current location of a victim would be separately entered as a new “crime incident” into the correlation database each time the location was updated. Mr. Andrews, I believe with good reason, does not address the feasibility of such a modification because it would not be feasible. The correlation database is designed to receive reported actual crime incidents from local authorities. There is a massive amount of data that is cross-indexed to the crime incident, including the location of offenders. For the system to run a cross comparison against the victim’s location, even just on the basis of user queries,

would magnify the required processing by orders of magnitude if any (let alone every) victim's location is treated as a separate crime incident in the system each time its location is updated "as the victim traveled from one place to another," as Mr. Andrews suggests. (Ex-1002, ¶¶ 229, 230). Therefore, a POSA would not be motivated to make such a modification to the Layson combined system or have a reasonable expectation of success in doing so.

163. Even were the POSA both motivated to make the proposed modification with a reasonable expectation of success, it would not lead to the practice of the claimed invention because the network would not be comparing the victim's location to only offenders' locations within a given radius of the victim and only for a pre-specified time period over a pre-specified minimum distance. To the contrary, merely adding the victim's location to the correlation database as the location of a crime incident would still result in the network making a comparison of the victim's location to all offender locations, over open-ended distances and over open-ended periods of time.

164. Rather, as he must, Mr. Andrews only suggests that "[l]aw enforcement could then instruct Layson'213's correlation database (e.g., through a manual query) to use those captured locations as a series of 'multiple crime incidents.' Layson's correlation database would then output a table report identifying one or more offenders (potentially unknown to the potential staking victim), but subject to

location monitoring as a result of a prior arrest) who were located in proximity to two or more of the potential victim's positions at or around the same time as the victim." (Ex-1002, ¶ 230).

165. But a POSA would understand that this involves comparing each of the victim's locations against each of the offender's locations. Unlike the claim, the modified combined Layson system posited by Mr. Andrews does not obtain just the offenders' locations within a pre-specified radius of the victim. It has to check the victim's location to each of the offenders' locations to determine which from the entire set may in fact be a stalker.

166. Likewise, Mr. Andrews does not suggest that his posited system actually has a pre-specified minimum tracking distance and tracking period that it applies in making tracking determinations, as required by Claim 9. He only suggests that "a POSITA would have included a 'minimum distance' threshold in Layson'757's system, as taught by IllinoisLaw..." But IllinoisLaw does not teach a pre-specified minimum distance in the manner of the '752 Patent as required by Claim 9. Rather, as Mr. Andrews acknowledges (¶ 234), IllinoisLaw only defines stalking generally in terms of "following and maintaining surveillance as the victim moves from place to place." Mr. Andrews does not satisfactorily address how the posited modified system would actually have a predefined tracking time period and distance in order to determine if actual stalking occurred.

167. For example, the victim may have been shopping in a store in a mall for an hour with the stalker watching the entrance with binoculars. When the victim left to go to another store, the stalker may not have even moved, only to follow the victim, outside of any pre-specified radius, as they left the mall for another location. The '752 patent is only concerned with making tracking determinations regarding the relative movement of two PRUs (to see if the two are moving together while maintaining proximity) and, therefore, may practicably utilize pre-determined maximum spacings and tracking periods and minimum distances of having travelled together. In contrast, Mr. Andrews does not explain how a POSA would arrive at such parameters without undue experimentation just on the basis of Illinois Law in order to have any reasonable expectation of success with regard to capturing an occurrence of stalking.

168. The problems with Mr. Andrews' analysis are only exacerbated by the complex scenarios he describes in Ex-1002 ¶ 235. Such scenarios only raise questions, such as how wide of a buffer zone around the victim should there be if you are trying to capture stalking, and should there be one? Can it be uniform for every victim? How does a minimum distance requirement of an offender's restraining order against a particular victim relate to a buffer zone for unrelated victim and how do these actually relate to stalking? How does the loiter time in connection with specific offender being in an unpermitted location apply to an

unrelated victim? How do you determine a pre-specified tracking period for stalking based upon a loiter time that applies to a specific offender or a particular location?

169. Therefore, in sum, I do not agree that a POSA would be motivated to make Mr. Andrews' posited modification to the combined Layson system in an effort to capture stalking per IllinoisLaw; nor do I believe that a POSA, attempting to implement the posited modification to the combined Layson system, would have any reasonable expectation of success without undue experimentation for at least all of the reasons I have given above.

170. Furthermore, the posited combination does not yield the practice of Claim 9 because there is no actual pre-specified tracking period being applied, nor is there a maximum radius within which the tracking unit must be for the tracking period over a pre-specified minimum distance, as I will now discuss on an element-by-element basis.

2. Independent Claim 9

171. Claim 9 recites as follows:

(1) Element 9

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[pre]
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: A method for determining that a first portable remote unit associated with a network is being tracked by at least a second portable remote unit over a tracking period comprising:

(2) Element 9

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[A]
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: obtaining the location of the first portable remote unit or tracked unit;

- (3) Element 9[B]: obtaining the location of the at least a second communication unit or tracking unit that is within proximity or a pre-specified radius of the tracked unit;
- (4) Element 9[C]: verifying whether the tracking and tracked unit(s) have traveled a minimum pre-specified distance over the tracking period;
- 5) Element 9[D]: forwarding the result of the verification to the network at the end of the tracking period.

- a. **Element 9[pre]: A method for determining that a first portable remote unit associated with a network is being tracked by at least a second portable remote unit over a tracking period comprising:**

172. Petitioner does not assert that the preamble of claim 9 is not limiting and I would suggest that it is limiting. For example, the preamble explains to a POSA that the claimed method involves a tracking period, and a determination is being made as to whether one PRU associated with the network is being tracked by another PRU, which the claim goes on to define.

173. *Layson'757-Layson'213-IllinoisLaw* does not disclose this element because it does not teach a method for determining that a victim's portable tracking device (first portable remote unit) is being tracked by one or more offender portable tracking devices (at least a second portable remote unit) over a tracking period in the manner required by the claim.

Element 9[A]: obtaining the location of the first portable remote unit or tracked unit;

174. *Layson*'757-*Layson*'213-*IllinoisLaw* does not teach obtaining the location of the first portable remote unit or tracked unit as a crime incident at the correlation database, as required by Element 9[A]. I have explained why a POSA would not have been motivated to modify *Layson*'213 to include a victim's current location as a new crime incident each time it was updated because the victim's location is not a crime. I also explained that the correlation database is designed to have actual crime incidents reported from local authorities and a POSA would also not have had a reasonable expectation of success to add the victim's location so that it can be compared against each such offender's location because such would increase the amount of processing by orders of magnitude and not be feasible without undue experimentation.

c.

Element 9[B]: obtaining the location of the at least a second communication unit or tracking unit that is within proximity or a pre specified radius of the tracked unit;

175. *Layson*'757-*Layson*'213-*IllinoisLaw* does not teach obtaining the location of the at least a second communication unit or tracking unit that is within proximity or a pre-specified radius of the tracked unit as required by Element 9[B]. Rather, under the proposed combination, each offender's location that has been

entered into the correlation database is considered in making the stalking determinations.

Element 9[C]: verifying whether the tracking and tracked unit(s) have traveled a minimum pre-specified distance over the tracking period;

176. dUber submits that the victim's PRU in *Layson*'757 is the tracked/first unit and the offender's PRU is the tracking/second unit (Ex-1002, ¶¶ 241-244). Uber next submits (*Id.*, ¶¶ 246-247) that "the tracking period" could be a time period where offenders location within a victim's buffer distance is identified or when a first indication of a potential stalking incident occurs. However, there is no such disclosure in the *Layson* patents. Uber cites *Layson*'213 at 21:37-39 for this proposition. But the cited passage only discusses when a crime was committed. There is no disclosure of capturing and maintaining the location of the victim and offender portable devices over a period of time. Rather, the *Layson*'213 system only tracks the location of an offender portable for correlation with reported crime data fed by third party agencies.

177. Therefore, Uber incorrectly submits (Ex-1002, ¶ 248) that all that is missing is "verifying whether the tracking and tracked unit(s) have traveled a minimum pre-specified distance over the tracking period." For the reasons previously discussed, Uber offers that a POSA would have been motivated to load the victim's location into the crime-offender correlation database as a separate crime

each time the victim's location is updated. Uber provides no explanation of how many orders of magnitude the amount of data stored by the database would increase by their proposed modification, and how much more processing it would entail to run comparisons between all offenders' locations and all victims' locations (or even one), or how a POSA could reasonably expect to successfully implement such a system without undue experimentation. Nor does Uber offer any reasonable explanation as to why a POSA would modify a database designed to correlate reported crimes with offender's location data to add the victim's location—particularly when such a location is not in any sense considered a crime.

178. Furthermore, Uber does not explain how a POSA would then be further motivated to modify the database to implement “an additional check for a minimum pre-specified distance of joint travel over that period of time,” particularly as an offender could “move from place to place” following a victim without ever moving at the same time as victim, let alone simultaneously over a pre-specified distance. For example, checking a time stamp of when a victim leaves their home and time when they arrive at work against that of the offender can confirm the same without using a minimum distance.

179. *Layson'757-Layson'213-IllinoisLaw* does not teach verifying whether the tracking and tracked unit(s) have traveled a minimum pre-specified distance over the tracking period as required by Element 9[C]. Here, a POSA would understand

that this analysis is made on the locations only of units in proximity to the subject obtained from the prior step to verify whether both it and the tracked unit have travelled a pre-specified distance over a tracking period, such as when someone has placed their PRU associated with the network in the trunk of the car of another person having a PRU associated with the network. *IllinoisLaw* does not require the stalker and the victim maintain a pre-specified distance or tracking period.

180. Therefore, in addition to the fact that every offender location is considered in making the determination, contrary to the teachings of the '752 Patent and to the requirements of Claim 9, a POSA would be faced with no reasonable expectation of success without undue experimentation to make a modification of the *Layson* combined system to address stalking. In particular, a POSA would not know how to determine what pre-specified spacing, pre-specified distance or tracking period to use to determine stalking, which is a much more complex goal than merely efficiently determining whether devices have maintained proximity over a pre-specified distance for a pre-specified tracking period. Moreover, a query involving “correlating ‘multiple crime incidents with offender(s) locations’” does not teach these parameters. (Ex-1002, ¶ 246).

181. Even if a POSA could have come up with parameters without undue experimentation, still the claim element would not be met because this analysis is done on the tracking unit locations obtained in the prior step, *i.e.*, those only in close

proximity to the tracked unit. Therefore, the modified combined *Layson* system would not meet this step in any event because it does not perform this verification only on the offender PRU locations in proximity to the victim as required by Claim 9.

182. Finally, Mr. Andrews' explanation (Ex-1002, ¶ 247) that "where an offender and victim remain relatively stationary over time, their locations may correlate with one another, even though the offender is not stalking the victim" only underscores that Claim 9 is directed to different problems/solutions than those facing a POSA as how to implement the modified combined *Layson* system to stalking because a potential stalker and potential victim may indeed be stationary over a large period of time. The stalker also may not be moving at the same time as the victim even if they are ultimately covering the same distance, such as when the victim moves from one store to another and the stalker waits a few minutes before updating their location. Conversely, the '752 Patent teaches a system that requires that the two units both move over a pre-specified distance during the tracking period while within proximity or a pre-specified radius of each other.

183. Mr. Andrews is also mixing apples and oranges in his posited system because the loiter time taught in *Layson* is not a tracking time period. Rather, it is used to prevent false positives of a location constraint violation. For example, if the offender is not allowed to be within 100 feet of a victim's home, a loiter time can be

used to eliminate a false positive if the offender is merely driving on a street that passes the victim's house on their way elsewhere. But the tracking period of the claim is for a different purpose, mainly to see whether two proximate units moved substantially together over the tracking period. Therefore, I do not believe Mr. Andrews gives an adequate explanation regarding how loiter time would apply to stalking.

184. *Layson'757-Layson'213-IllinoisLaw* does not teach this element even if a POSA was motivated to make the posited combination because (a) being in proximity over a period of time does not require movement let alone movement together over a pre-specified distance; and (b) using a loiter time to eliminate false positives for a location constraint violation does not mean stalking cannot happen if the loiter time is not exceeded. For example, the stalker could get within a pre-specified distance of the victim to observe them, and then quickly move outside of that pre-specified distance to avoid detection. A stalker can, therefore, follow a victim from place to place without moving together over a pre-specified distance at the same time as the victim.

Element 9[D]: forwarding the result of the verification to the network at the end of the tracking period.

185. *Layson*'757-*Layson*'213-*IllinoisLaw* does not forward the result of the verification⁵ to the network at the end of the tracking period as required by Element 9[D].

186. Mr. Andrews does not explain how his modified combined *Layson* system would forward a report of such verification after the tracking period has ended. The report would be generated after a network operator has made a query to the database. But the time that a database query is performed is not a tracking period. For example, the database query may be made on Monday at 9 am and the query may be made for all potential stalking from midnight Saturday to 6 am Sunday. Thus, the time of the query is not clearly the tracking period required by the claim.⁵ For this reason additionally, *Layson*'757-*Layson*'213-*IllinoisLaw* does not teach Claim 9, which is directed to an efficient method of determining whether two PRUs are substantially co-located while moving together.

⁵ Indeed, the fact that an operator can enter any selected tracking period shows how unworkable the posited system is because it would require the conditions for stalking to change based upon how long of a "tracking period" was selected. For example, if a four-hour period was selected that would necessarily entail different stalking criteria than if a one hour period was selected. Said differently, the posited modified combined *Layson* system is orthogonal to the '752 Patent's goals, teachings and claimed systems and methods.

3. Independent Claim 14

Element 14[pre]: A communication system comprising:

187. I do not dispute that posited *Layson*'757-*Layson*'213-*IllinoisLaw* teaches a communication system that includes a network of communication sources and targets managed by one or more control stations that includes the central database system 22 that can query the tracking devices, send messages, and load rules and constraints. I dispute only that it discloses the claimed system, as set forth in the element-by-element below.

Element 14[A]: a portable mobile remote unit;

b.

188. I do not dispute that *Layson*'757-*Layson*'213-*IllinoisLaw* teaches Element 14[A] because *Layson*'757's victim portable tracking device corresponds to the claimed "portable mobile remote unit," since it is hand carried and obtains and transmits position information to the central location as the monitored person moves about.

c.

Element 14[B]: a network of communication units;

189. I do not dispute that *Layson*'757-*Layson*'213-*IllinoisLaw* teaches Element 14[B] or that each of *Layson*'757's portable tracking devices is a "communication unit" because it can send and receive communications and because the central data-base system 22 is also a network component that communicates (at least data) with the subject's portable tracking device 12. I also agree that the central

database system and *Layson*'757's portable tracking devices form "a network of communication units," because each tracking device is communicatively connected to the central database system.

Element 14[C]: means to obtain the location of the portable mobile remote unit;

190. First, I disagree with Petitioner's construction. A POSA would understand that the claimed "means" is a "control unit" programmed to obtain the location of a portable remote unit. For example, the central database 22 of *Layson*'757 is a control unit that obtains the locations of offender's PRUs as well as the PRUs of each victim that has agreed to report their location to the network for the "data fusion" procedure. The central database does not require a GPS antenna or GPS receiver to carry out this function. This is consistent with the specification, which explains that the network can perform any function that the PRU cannot and refers to network components as control units. The network control units do not require GPS antenna or GPS receivers to acquire GPS signals because the portable remote units already have them and do the job of determining their GPS coordinates. (See also '752 patent, Ex-1001, Figs. 5 & 6 depicting algorithms implemented by a control unit obtaining location of a remote unit.). The PRU is already in a cellular network and is able to use it to communicate the GPS coordinates to control units at the network.

191. While I disagree with Petitioner's proposed construction, I do not dispute that the requisite means exists in the combined *Layson* system because both the central database systems obtain PRU location data.

Element 14[D]: means to obtain geographic boundary information in order to disclose a global location at the network;

192. ^{e.} *Layson*'757-*Layson*'213-*IllinoisLaw* does not teach Element 14[D].

193. Uber describes this claim element to include an antenna of the PRU. However, the '752 Patent's specification confirms that a network control station can also perform any function of the PRU. claim also locates this means "at the network," which a POSA would understand to mean at a control unit of the network, for example at the control station. The function of this means is "obtaining geographic boundary information in order to disclose a global location." As a POSA would understand from the '752 Patent's specification, this term relates to the network's ability to obtain a geographic boundary to apply to selectively disclose (for further processing) PRU locations located in a certain geographic boundary. The '752 Patent explains that certain functions may be carried out by the network instead of the PRU, including this function. The minimum structure required to carry out the function of this claim element does not require either an antenna or transceiver circuitry. Rather, this element only requires a control unit programmed to execute the function. (See also '752 patent, Ex-1001, Figs. 6 & 7 depicting

algorithms implemented by a control unit requiring obtaining geographic boundary information). As Mr. Andrews also confirms (Ex-1002, ¶ 281), the control unit could be at the central database system that also obtains geographic boundary information, there is no need for this element itself to include the antenna.

194. At Ex-1002, ¶¶ 268-273, Uber attempts to show that a victim's device receives location constraints about an offender and checks its location against those constraints to report an alert to the central database. However, *Layson* discusses only offender location constraints because it is the agencies and institutions that set guidelines for any geographic boundary violations of the offender to be reported back to them. Mr. Andrews cites Ex-1007 at 8:36-43, but that passage does not describe a victim receiving a buffer zone around an offender's location. There are no agency rules in *Layson* to support this function.

195. There is no disclosure in the combined *Layson* system in which the network includes a control unit that receives a geographic boundary in order to disclose the location of a PRU. Therefore, I do not agree with Mr. Andrews' speculation in paragraphs 268-270 of his declaration. First, there is no suggestion in *Layson* that a victim's PRU has any location constraints imposed upon it, and such would be inconsistent with the fact that the victim has not has his freedom limited. Therefore, Mr. Andrews' assertion that "the victim device would receive the

associated offender's location and 'buffer zone' around the that location" (Ex.-1002, ¶ 268) is unfounded.

196. Mr. Andrews cites Ex-1007 at 8:36-43 in support of this statement but that passage only states that the offender may have a buffer zone around the location constraint on it so that a notification can be sent to the victim earlier. It does not state that the offender's location and 'buffer zone' would be sent to the victim. Rather, *Layson*'757 states that the network receives an alert from the offender's PRU and determines what, if anything, to report to the victim. *See id.* at 8:14--20 (explaining that the offender's current location is analyzed relative to "any associated victim's current position...to determine if any alarms to law enforcement or corrections, commands to the offender and warmings to the victim are required.").

197. *Layson* includes no disclosure of either the offender being notified of the victim's location (or vice versa) for good reason: because such information could allow either party to escalate the situation. Therefore, I do not believe a POSA would have been motivated to modify the combined *Layson* system in the manner Mr. Andrews posits.

198. Moreover, even if there had been motivation for the victim's PRU to have location constraints and a buffer zone around the offender's location, such would not be a geographic boundary for the victim to report their location to the system. Indeed, *Layson* explains that both the victim's location and associated

offender's location are routinely provided to the network and that the location constraints provided to the offender's PRU are simply to provide the network with a separate or advance notice of a location violation for the network to decide how to act upon it. *See* Ex.-1007, 8:1-20.

199. The offender's PRU already has a location constraint which dynamically updates based upon the victim's location. Moreover, the offender's location constraint already includes a buffer zone so that the offender's PRU reports a violation to the network even before the offender and victim are in close proximity. Mr. Andrews nonetheless posits a POSA would have modified the system by having the victim be provided with the offender's location because of a narrow edge case where the offender's PRU was not sent an updated buffer zone based upon victim's movement even though the victim had in fact moved closer to the offender's location. Mr. Andrews provides no sense of how often such an event would occur or otherwise quantifies how big of a problem that scenario would be and why that problem was not better addressed by a more frequent update of the victim's location to the network so that the network would more frequently update the buffer zone sent to the offender's PRU. I, therefore, do not agree that a POSA would have been motivated to add additional complexity to the system because of this edge case.

200. Because *Layson*'757's purpose is to alert authorities when an offender has entered a geographic boundary of a victim, there is simply no motivation for a

POSA to make the purported modifications to restrict a victim's location, let alone due to an edge case in which the victim has moved towards the offender but the offender has not received updated location constraints. This problem with Uber's proposed modification does not supply a POSA with motivation to contradict *Layson's* teachings and make a complicated change to the system.

201. *Layson'757* teaches that the associated offender's and victim's locations are continuously provided to the network for data fusion and the offender's buffer zones exist only to notify the network of a location constraint violation sooner than it would have become aware of it from the data fusion process. There is simply no disclosure (or motivation to a POSA for a modification) to impose location constraints on a victim's PRU for it to make a separate determination whether or not to transmit its location to the central database.

202. I, therefore, disagree that this claim element is rendered obvious by the asserted combination.

Element 14[E]: means to provide the location of the portable mobile remote unit to the network upon determination that the portable mobile remote unit is within the geographic boundary obtained at the network;

203. *Layson'757-Layson'213-IllinoisLaw* does not teach a system that includes means to provide the location of the portable mobile remote unit to the

network upon determination that the portable mobile remote unit is within the geographic boundary obtained at the network, as required by Element 14[E].

204. At Ex-1002 ¶¶ 280- 282, Mr. Andrews relies on the same imagined theories as under 14[D] to recreate the above limitation. There is no disclosure of *Layson* including a means to determine upon request that an offender unit has moved along with the victim's unit a minimum distance over the same period of time. Indeed, the purpose of the *Layson*'757 system is to alert law enforcement before any crime, such as stalking, takes place and a buffer zone is placed around the victim's location precisely for such purpose. Therefore, there is no reason to believe that a POSA would have been motivated to modify *Layson*'757's system in such a manner that would meet this claim requirement.

205. As an initial matter, here again I disagree with the Petitioner's proposed construction. The '752 Patent explains that certain functions that are performed at the PRU can be performed at the network instead, including making the determination that a PRU is within a geographic boundary and, if so, providing that location to another control unit. Ex-1001, 10:43-47. Consequently, a POSA would understand that a control unit at the network can be programmed to perform the function of providing the location of a PRU determined to be within a geographic to another control unit. Therefore, I do not believe that the minimum structure to

perform this function requires the antenna and transceiver because the structure to perform this function can include hardwired communication.

206. While Mr. Andrews states “[n]otifying the central database of the violation would have entailed the victim’s portable tracking device providing its current location to the central database, for use in dynamically updating the offender’s location constraints,” citing to Ex-1007, 9:43-48, I disagree that any such teaching is actually in the cited passage or elsewhere in *Layson*’757. There is simply no teaching of the victim’s PRU having location constraints, and a POSA would not have any genuine reason to impose such constraints on a victim. Even if there were, I see no actual motivation for a POSA to modify the design of the *Layson* systems to report the victim’s location to an offender when there was such a violation as such would create a potential safety issue.

207. Therefore, I do not believe the Petitioner has demonstrated that this element is taught or rendered obvious over the asserted combination.

Element 14[F]: means to determine and report to the system upon request that, another mobile remote unit of the network has tracked the portable mobile remote over a period of time.

208. *Layson*’757-*Layson*’213-*IllinoisLaw* does not teach means to determine and report to the system upon request that another mobile remote unit of

the network has tracked the portable mobile remote over a period of time as required by Element 14[F].

209. However, I do agree that *Layson*'757's "central data-base system" is a control unit of a network because it "implements distributed and parallel processing in order to perform event processing for the multiple portable tracking apparatus in real-time." (Ex-1007, 7:35-39)

210. I agree *Layson*'757's central database continuously receives at intervals both the locations of participating offender and victim PRUs. However, it does not "receive the location of the victim portable tracking device ('tracked' unit) at intervals when an offender device is in proximity of the victim device." (Ex-1002, ¶ 281). Nor does it receive "the locations of offender tracking devices ('other' mobile units) during such intervals." *Id.* Nor does *Layson*'757 disclose that its "central database maintains a list of offenders tracking devices (such 'other' units) located within a buffer region surrounding the victim tracking device." *Id.* Nor does the asserted combination disclose that the central database determines "that such offender devices maintained close proximity to the victim device while the devices traveled a minimum distance threshold, for a period of time, to identify and report potential stalking behavior." *Id.* All of this is fiction.

211. I agree that *Layson*'757's central database is necessarily connected to a transmitter to enable it to communicate information to control units at the PRUs or

to other communication targets that require wireless communication. It is also necessarily connected by hardwire or other communication channels to other control units at the network, such as the correlation database, in order to enable it to communicate therewith and act as a control station.

212. I disagree that *Layson*'213's disclosure of loiter time teaches this claim element. The loiter time is only a minimum time period used to search the crime incident-offender location database used to determine whether an offender was in a restricted area for an unacceptable amount of time. This does not teach that the offender and victim moved together during the same time period for a minimum amount of time over a minimum distance. Moreover, *IllinoisLaw* does not specify this claim element because stalking can take place with the stalker following the victim whereby the victim first moves to one place and the stalker moves to that same place a short time later, *i.e.*, the stalker moves at different time intervals than the victim so that they are not moving together during the same pre-specified time period over a pre-specified distance.

213. Therefore, *Layson*'757-*Layson*'213-*IllinoisLaw* does not teach Element 14[F].

D. GROUND 4: Claim 15 is not rendered obvious by *Layson*'757, *Layson*'213, *IllinoisLaw*, and *Wang*.

214. Mr. Andrews asserts that claim 15, like claim 4, of the '752 Patent is obvious in view of the asserted *Layson* prior art, *Wang*, and *IllinoisLaw*. (Ex-1002 at ¶¶ 283-287). I disagree. A POSA would not have been motivated to combine *Layson*'757-*Layson*'213-*IllinoisLaw* with *Wang*, with a reasonable expectation of success, for the reasons I explained in connection with Claim 4.

215. Further, I do not believe a POSA would be motivated to modify *Layson*'757's comparison step by "combining aspects of Figures 6A and 6B of *Layson*'757, with step 78 of *Wang*'s Figure 6" (Ex-1002, ¶ 286) because the two situations are diametrically opposed. In *Layson*'757, a violation alert is sent when the offender's PRU determines a location violation has occurred. In *Wang*, there are no prohibited area—only areas within which location reporting occurs only once. Therefore, if the POSA had any need to report a location to the network associated with an alert in *Layson*'757, the modification would be to report the location when the location constraint has been violated. This is the opposite of step 78 of *Wang*, which teaches to report a location only once when in a specified area.

216. I further disagree that a POSA would have been motivated to suspend offender reporting if the offender was in a permitted area. *Layson*'757 teaches that the network is designed to keep a continuous record of the offender's (and any

associated participating victim's) reported location so that it performs data fusion or to dynamically update an offender's location constraint. *Layson*'213 teaches correlating offenders' locations with reported crimes in *Layson*'213's correlation database. Therefore, the POSA would not have been motivated to stop the offender's location reporting even when in a permitted area because having the location would allow the correlation database to place the offender in the vicinity of crime or eliminate the offender as a suspect, as the case may be. Rather, any concerns about reducing data traffic could be addressed by having the location reporting take place at a larger time interval when in a permitted area without losing confirmation of the victim or associated offender's location for any large period of time.

E. GROUND 5: Claim 6 is not rendered obvious by *Suarez* in view of *Mintz*.

217. Claim 6 is not rendered obvious by *Suarez* in view of *Mintz*. First, a POSA would not have been motivated to combine *Suarez* with *Mintz* and would not have had a reasonable expectation of success in doing so, for the reasons set forth below. Moreover, even had such been the case, the combined system would not disclose Claim 6 for the reasons also set forth below.

1. Independent Claim 6

Element 6[pre]: A method for providing the location of portable remote units that exist within a prescribed geographic boundary to a wireless consumer requesting that information comprising:

218. ^{a.} Petitioner does not assert that the preamble of claim 6 is not limiting and I suggest that it is limiting because it provides the POSA with essential context: the claimed method is responding to (1) a request (2) from a wireless consumer (3) for the location of portable remote units (4) within a prescribed geographic boundary by (5) providing the locations of such portable remote units using the recited steps.

219. *Suarez* is directed to a dispatch system for traditional fleets such as taxicabs. There is no request from a wireless consumer for the location of portable remote units that exist within a prescribed boundary. A taxicab customer requests the dispatch of a taxicab through the message input device. This is not a request for the location of portable remote units that exist within a prescribed boundary and there is no disclosure that *Suarez* provides such locations to the taxicab customer.

220. Rather, dispatch center 16 receives the dispatch request 28 and generates an assignment message 32 that is sent to each vehicle in the network, regardless of geographic boundary. *See also* Ex-1002, ¶ 288 (“*Suarez*’s dispatch controller receives a ‘request for dispatch’ and transmits an assignment message to a fleet of vehicles **so that each available vehicle** replies to the assignment message.”

(citing Ex-1013, Abstract, 3:20-25, 7:19-26.); *see also* 10:21-25 (Referring back to FIG. 13, in Step 128 the dispatch controller 18 sends a command to the dispatch transmitter 20 to transmit the assignment message 32 via the transmit antenna 34 **to each vehicle** 14 of the fleet 12 on the first communication channel 35.)).

221. Critically, I disagree with Mr. Andrews’ singular statement that “the wireless consumer who submitted the request for dispatch would be provided with the appropriate nearby service provider’s location by the dispatch center.” (Ex-1002, ¶ 293). Mr. Andrews offers no explanation or citation to *Suarez* for this statement, and there is no support within *Suarez* for it. Back in 1999, calling for a cab was just that—calling for a cab and hoping it would show up. There was no reporting of the cab’s location back to the customer.

222. Additionally, the ’752 Patent is directed to PRUs such as cell phones that a wireless consumer can use to take advantage of location-based services to be advised whether a nearby wireless consumer exists who can render them assistance or whether another PRU is tracking them.

223. Uber reads *Suarez* or *Mintz*’s remote units as a portable mobile device. *See* Ex-1002, ¶¶ 291-293. However, there is no evidence that such devices are cell phones or other communication devices designed to be carried by a human being when moving about, as in the ’752 Patent, versus being vehicle mounted.

Element 6[A]: i) receiving at the network a wider than normal prescribed geographic boundary to query for mobile remote units from the wireless consumer;

224. Mr. Andrews asserts “[a] POSITA would have understood that the network would have received, either from the user or a dispatcher, request details, such as the user’s location and other details like search region, as one typically does when calling for taxi.” (Ex-1002, ¶ 295). I disagree. Requesting a cab does not require a search region and *Suarez* does not disclose otherwise. Calling for a taxi in 1999 typically involved providing a pickup address, not a search region.

225. Also, I disagree that a POSA would understand “receiving at the network” to mean “receiving at the PRU” because the ’752 Patent distinguishes between actions performed at a control station or control unit of the network versus a control unit of the PRU. Therefore, I do not believe *Suarez*’s wireless communication device 36 parsing an assignment message meets this limitation.

226. Nor is there any disclosure in *Suarez* that the request for dispatch includes any request for the location of multiple PRUs in a geographic boundary, let alone a wider than normal geographic boundary. Rather, the dispatch center receives a request for dispatch with a pickup location and generates an assignment message with search parameters, wherein vehicles matching the search parameters respond. I agree that *Suarez* discloses an iterative process wherein the search parameters are relaxed when there are no matching vehicles to the narrower search parameters.

227. Therefore, even though I agree with Mr. Andrews that a POSA “would have understood that the assignment message’s location parameter 50 and criteria parameter 62 teach a prescribed geographic boundary” (Ex-1002, ¶ 301), *Suarez* does not disclose the dispatch center (or any control unit thereof) receiving a wider than normal prescribed geographic boundary. Therefore, I do not believe this element is disclosed.

228. I also disagree with Mr. Andrews that a maximum radius from a pickup location is “the same type of ‘geographic boundary’ envisioned by the ’752 Patent.” (Ex-1002, ¶ 303). While Mr. Andrews is correct that the ’752 Patent divides the network into cells (C1-Cn) or grids (G1-GN) where each cell or grid is a geographic region of the network, he overlooks that the ’752 Patent (Ex-1001, 7:22-34) only polls for the location of other cell phone users in a specified boundary:

As shown in FIG. 3, a distressed mobile user M_1 may need to find where another party might exist in that geographic region. The user could initiate a page from their PRU for the closest available PRUs that could be found in that geographic jurisdiction. Looking at FIG. 3, mobile user M_1 will provide its location, latitude and longitude (x_0, y_0) to the closest available ground station serving area C_1 or grid G_1 . As stated earlier, appropriate terrestrial technology will be scattered in that region **to serve the PRUs in that area as shown in FIG. 1. Once a ground station picks up this signal, it sends a page for all location reporting devices in the specified boundary** surrounding mobile unit M_1 , FIG. 3 to disclose their location. (emphasis added)

229. There is no similar teaching in *Suarez* because all remote units are polled in *Suarez*, regardless of their location. Because *Suarez* does not receive at the

network any geographic boundary to query, let alone a wider than normal prescribed geographic boundary, for mobile remote units, it does not disclose this claim element.

230. This problem is not rectified by *Mintz*. In *Mintz*, the “geographic area 10 is defined by a boundary 11 within which a system according to the invention is operational.” Ex.-1014, 6:57-61. So, like *Suarez*, *Mintz* does not divide its network into distinct geographic boundaries wherein each boundary can be individually polled for a set of PRUs currently located therewithin. Rather, as Mr. Andrews acknowledges, in *Mintz* “**each participating taxi** determines its location relative to ‘the customer and within the maximum radius R_{max} .’” (Ex-1002, ¶ 304) (emphasis added)

231. A good overview of *Mintz* spans 8:14-38, which states:

FIG. 2, shows a flow diagram of the operation of a preferred system of the invention. The left portion of the flow diagram comprises operation of a first, targeting, phase and the right portion of the flow diagram comprises operation of a second, identification phase. **The targeting phase starts with the broadcasting of a call message to all of the participating taxis informing them that a priority must be determined for responding to a pending request for service.** The criteria for determining the priority may be sent together with the call or, alternatively, may be part of a preset protocol used for all such determinations. Alternatively, there may be several such protocols one of which the call identifies by a code. In the very simple case of a dispatching system wherein distance of a taxi from a specified location is the only selection criterion, there is no need to inform the taxi of the selection criterion each time an invitation message is transmitted. **Responsive to the call, each of the taxis uses the selection criteria to**

determine its own priority in accordance with the protocol. The protocol also includes a plurality of ranges of priority values and a communication protocol which subdivides a time period and/or a frequency range into a plurality of time or time/frequency slots each of which is associated with one of the ranges of priorities.

(emphasis added)

232. Thus, *Mintz*, like *Suarez*, queries all participating taxis. Mr. Andrews asserts that an iterative approach may be used so that *Mintz* can “request a response from taxis that are 0-5 km from the customer before requesting responses from taxis in the range of 5-10 km, such that the maximum radius (10 km) is divided into ranges.” (Ex-1002, ¶ 304).

233. That is correct, but beside the point because all it is saying is that a narrower search radius may be first applied before a broader one. That is different from the claim requirement, because every vehicle in the *Mintz* system is still polled to determine whether it is within the search radius or what priority it has if multiple radii are used as search criteria. Just fewer respond. In contrast, the '752 Patent teaches only querying in a specific geographic boundary. Again, this is an important distinction because, in a cell phone network, there may be tens of millions of users across the country. Polling each participating mobile device per *Suarez* or *Mintz* is not feasible. The '752 Patent makes providing location-based services feasible by polling for other cell phone locations in the service range of the same cell phone tower of the requesting cellular user and other nearby towers if none are located in

that range of that cell phone tower. This is a different approach than the prior art polling all participating vehicles and having each of them compare their respective locations to whatever criteria they are given.

234. Therefore, even if “a POSITA would have been motivated to include *Mintz*’s maximum radius $R_{\max}$ when implementing *Suarez*’s third ($N=3$) or highest criteria parameter” this would not result in the practice of this claim element.

235. Mr. Andrews notes that *Suarez* and *Mintz* receive search areas from a source (Ex-1002, ¶¶ 295-305) and argues (*Id.*, ¶ 304) that, because *Mintz* request for taxis that are closest in range to the requester before requesting for other taxis farther away, it could be deemed as the network receiving a wider boundary.

236. But neither *Suarez* nor *Mintz* identify a wider than normal region received that is received at the network to be split as mentioned. For this reason alone, I believe Mr. Andrews has not shown this claim is obvious.

Element 6[B]: ii) splitting the geographic boundary of (i) into sub geographic regions to constitute the prescribed geographic boundary;

237. *Suarez* and *Mintz*, like the prior art asserted during prosecution, receives a request to search for a taxi and can in turn recursively generate a request to every taxi in the network to only respond their location when in the received boundary prescribed. (Ex-1002, ¶¶ 306-308).

238. But this claim element requires a split into sub regions to constitute the prescribed wide boundary received at the network. Accordingly, there is no such disclosure in *Suarez* nor *Mintz*.

Element 6[C]: iii) requesting in the sub geographic region(s), the location of remote units that are present in each sub region;

d.
239. Here again, Mr. Andrews verifies that *Suarez-Mintz* requests the location of all of the remote units present in the fleet. EX-1002, ¶ 309 (“*Suarez* encodes inbound requests from input device 24 into outbound assignment messages 32 which are then sent to the wireless communication devices of vehicles 14 in fleet 12.”).

240. This is different from what is taught in the ’752 Patent, which allows the system to direct queries to units within specific sub geographic regions of the wider received region, *i.e.*, “request[] in the sub geographic region(s), the location of remote units that are present in each sub region.” ’752 Patent, Claim 6.

241. As previously discussed, both *Suarez* and *Mintz* poll all vehicles and do not break their network into individually pollable regions and subregions to obtain the relevant remote unit locations.

242. I agree with Mr. Andrews (Ex-1002, ¶ 309) that:

“[t]he assignment message includes location parameter 50 and criteria parameter 62. Using these parameters, wireless communication device 36 replies with the vehicle’s current location to the dispatch center (Ex-1013,

7:23-35) when the vehicle's current location "affirmative[ly] match[es]" the location parameter 50 using the criteria parameter 62." (citations omitted).

243. However, this does not meet the claim element since neither *Suarez* nor *Mintz* sends requests in specific sub boundaries but rather send the request to all vehicles in the network, regardless of their location. Each vehicle applies the distance criteria and makes a determination. The location and criteria do not limit the request being sent in a region or sub region of the network as taught by the '752 Patent and required by Claim 6

244. Mr. Andrews states (Ex-1002, ¶ 310) that "the assignment message is 'seen only by the vehicles 14 within the fleet 12 that meet the specified criteria'" and "the dispatch controller 18 uses the wireless communication device addresses to transmit the assignment message 'only to the addressed wireless communication device 36.'" Neither of these statements teaches sending a request in specific boundary or sub-boundary. Rather, all *Suarez* is saying is that the assignment messages are individually addressed to each remote unit in the fleet and the driver is not notified of the assignment message unless the criteria are met.

245. In conclusion neither *Suarez* nor *Mintz*, individually or when combined, teaches breaking the network into individually pollable regions in which requests may be directed. Therefore, I disagree that the combination discloses this element.

The only teaching limiting “where the request is sent” is in the ’752 Patent and I do not agree that this would have been obvious to a POSA.

Element 6[D]: iv) verifying after each request of (iii) in a sub region whether at least a portable remote unit disclosed a global location in the region;

246. *Suarez-Mintz* does not divide its network into individually pollable regions or sub regions and cannot make a request “in a subregion.” Therefore, it also does not disclose verifying after each such request “whether at least a portable remote unit disclosed a global location in the region.” Again, Mr. Andrews attempts to read this claim onto sending parameters to all vehicles in the regions and having only those vehicles that meet the criteria respond but that is different from what this claim element covers for all the previously discussed reasons.

f.

Element 6[E]: v) maintaining a list of all remote units that disclosed their location after each request from the verification of step (iv);

247. I do not dispute that *Suarez-Mintz* discloses to a POSA that the dispatch center maintains a list of all remote units that matched the search criteria (with different degrees of priority) and replied to the assignment message. Nor do I dispute that the reply includes the vehicle’s identification, current location and may also include an estimated travel time to the assignment location.

248. However, this claim element is also not met for the same reasons as steps (iii) and (iv) because *Suarez-Mintz* does not make requests in sub geographic

region(s) of a geographic region. Rather, the network makes the request to the remote unit of every vehicle in the network, which each then must determine whether and to what degree of priority it matches the criteria. Consequently, there is no list of remote units that responded to the claimed request.

Element 6[F]: vi) providing to the network and from the list of (v) the location of at least a remote unit that revealed its location in the sub region.

g.

249. I do not dispute that in *Suarez-Mintz* the dispatch center will have at least the location of one PRU that matched the criteria. However, there is no disclosure in *Suarez-Mintz* of the dispatch center further reporting that location to another component of the network. Mr. Andrews switches gears here and asserts that “once each wireless communication device in *Suarez* verifies that it is in the specified geographic location (*i.e.*, the claimed sub region), it will reply to the dispatch center with an ‘affirmative indication’ with its vehicle’s identification, current location, and estimated travel time in order to fulfill the assignment.” (Ex-1002, ¶ 314). But if he is reading that this step is met by an action of the remote unit in *Suarez-Mintz*, then the list must also be at the remote unit. There is no disclosure in *Suarez-Mintz* of the remote unit making a list of other units in the same network region or sub region.

250. That said, a POSA would understand that this claim element is directed to acts at a network control center because that is where any list of matching remote

units would be maintained--not at a remote unit. *Suarez-Mintz* has no disclosure of any control unit at the dispatch center communicating a location to another control unit. Nor is there any disclosure of the dispatch center sending a location of a matching unit to input device that made the dispatch request. There is no reason taught for the dispatch center to send the location of the matching vehicle back to it. Even if the location is displayed on a map, that map made no location request.

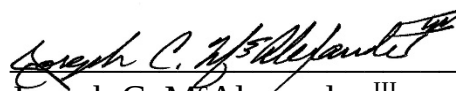
XII. CONCLUSION

251. It is thus my opinion that Claims 1, 4, 6, 9, 14 and 15 of the '752 Patent would not have been obvious and should not be canceled as unpatentable over the prior art and grounds raised by the Petitioner.

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

Executed this August 25, 2024.

Respectfully submitted,


Joseph C. McAlexander III