

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UBER TECHNOLOGIES, INC.
Petitioner,

v.

ENOVSYN LLC,
Patent Owner.

Case IPR2024-00825
Patent 7,199,726

EXPERT DECLARATION OF JOSEPH C. M^cALEXANDER, III
IN SUPPORT OF RESPONSE TO PETITION OF
***INTER PARTES* REVIEW OF U.S. PATENT NO. 7,199,726**

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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. 7,199,726 ("the '726 Patent") titled "Method and Apparatus for Locating Mobile Units Tracking Another or Within a Prescribed Geographic Boundary" by Mundi Fomukong, and that the '726 Patent is currently assigned to Enovsys.

3. I have reviewed and am familiar with the specification of the '726 Patent, having an undisputed priority date of December 30, 2000. I understand that the '726 Patent has been provided as Ex-1001.

4. I have reviewed and am familiar with the file history of the '726 Patent. I understand that the file history has been provided as Ex-1006.

5. As part of this engagement, I have been retained to review and evaluate specific claims of the '726 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 ’726 Patent.

6. In the preparation of this declaration, I have reviewed the relevant papers submitted in this proceeding and the ’726 Patent and its file history.

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 ’726 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 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 in order 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, in order 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 the patents-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 as long as 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 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 if and 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 of the '726 Patent are not shown to be invalid for any of the reasons asserted by Mr. Scott Andrews and the Petition. Specifically:

Ground 1: Claims 12 and 13 of the '726 Patent are not shown to be obvious and are not rendered obvious by U.S. Patent No. 6,212,393 (“*Suarez*,” Ex-1013);

Ground 2: Claim 8 of the '726 Patent is not shown to be obvious and is not rendered obvious by *Suarez* in view of AU 200037767 (“*Mezhvinsky*,” Ex-1017);

Ground 3: Claims 8, 12, and 13 of the '726 Patent Claims are not shown to be obvious and are not rendered obvious by German Patent

Application Publication DE 19751741A1 (“*Heedfeld*,” Ex-1018);¹

Ground 4: Claim 1 of the ’726 Patent is not shown to be nor is rendered obvious by U.S. Patent No. 5,731,757 (“*Layson*’757,” Ex-1007) in view of U.S. Patent No. 6,405,213 (“*Layson*’213,” Ex-1008) in further view of 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);

Ground 5: Claim 2 of the ’726 Patent is not shown to be nor is rendered obvious by *Layson*’213 in view of *IllinoisLaw* in further view of U.S. Patent No. 5,365,451 (“*Wang*,” Ex-1009).

34. 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 pollable geographic boundary within the coverage area of the network for the system to query for the cell phone location of another participating wireless customer within that pollable boundary.

35. Moreover, none of the asserted references disclose a system that applies a tracking algorithm that determines whether two cell phones within the same

¹ I rely upon Uber’s certified translation.

pollable 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.

36. 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 be provided in wireless communication networks that may have tens of millions of customers across the nation and even internationally.

VI. OVERVIEW OF THE '726 PATENT

37. The '726 Patent was filed on June 28, 2004 and is titled “Method and Apparatus for Locating Mobile Units Tracking Another or Within A Prescribed Geographic Boundary.” The '726 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.

38. More particularly, the '726 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, 1:17-24). 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.*, 1:24-28). The '726 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.*, 1:62-2:1), causing safety and privacy issues.

39. 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.*, 2:1-6). 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.*, 2:14-19).

40. The ’726 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.*, 2:20-24). In such situations, in one exemplary embodiment, the network “pag[es] 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.*, 2:24-33). 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.

(*Id.*, 7:47-61) (emphasis added).

41. The '726 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.” (*Id.*, 2:34-43). The '726 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.*, 2:45-52).

42. With the purpose of “preventing unnecessary overloading of shared network resources” the network “poll[s] directly for the location information of targets in a specified geographic boundary” so that targets in a specified geographic boundary are “interrogated for location disclosure.” (*Id.*, 3:56-60). The ’726 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.*, 4:24-33). To accomplish this, the system takes advantage of the existing cell phone network infrastructure, including for “determining which transmitters to employ to compete a call and how to prevent portable remote units from receiving calls when they are out of jurisdiction.” (*Id.*, 4:38-48). The system also takes advantage of “general internal circuitry of a portable remote unit or PRU” including its “antenna 20 and transceiver circuitry” which is used to receive and transmit to the network information processed by a “control unit 22” of the PRU. (*Id.*, 4:61-5:3).

43. For example, as the ’726 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.*, 7:47-59 (“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.”); 7:59-8:2 (“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**.”); 8:26-37 (“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

C₁ or grid G₁. As no units are available in the area a second page will be sent to cover cell C₂, or grid G₂. **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.**"); 10:45-58 ("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).

44. 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, 5:37-44). First, the geographic location of the tracked unit is used to determine the geographic boundary “where a search for possible tracking units 510 could be initiated.” (*Id.*, 5:48-51). 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 PRU within that geographic boundary is tracking the unit such those “within a 5 meter radius of the tracked unit over a 1 mile stretch.” (*Id.*, 5:57-59). 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 are using the tracking parameters. (*Id.*, 5:59-6:47).

45. The '726 Patent sometimes refers to a “tracking boundary” or “geographic boundary required to establish tracking.” A POSA reading the entire specification of the '726 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 network geographic boundary being polled for the location of possible tracking units. This is important because the wireless

network polls one or more individually pollable wireless 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.*, 7:14-18 (“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”); 7:19-22 (“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; 7:47-8:41,8:57-9:32; 10:1-11:6 (the system queries individually pollable geographic boundaries of the network. 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.*, 10:8-11, 55-56; 11:37-40).

46. Furthermore, the ’726 Patent teaches that all actions that a PRU cannot perform may be performed by the network (*Id.*, 11:2-5).

47. In sum, the '726 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 include dividing the network into individually pollable geographic areas and limiting algorithms used to 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

48. 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.

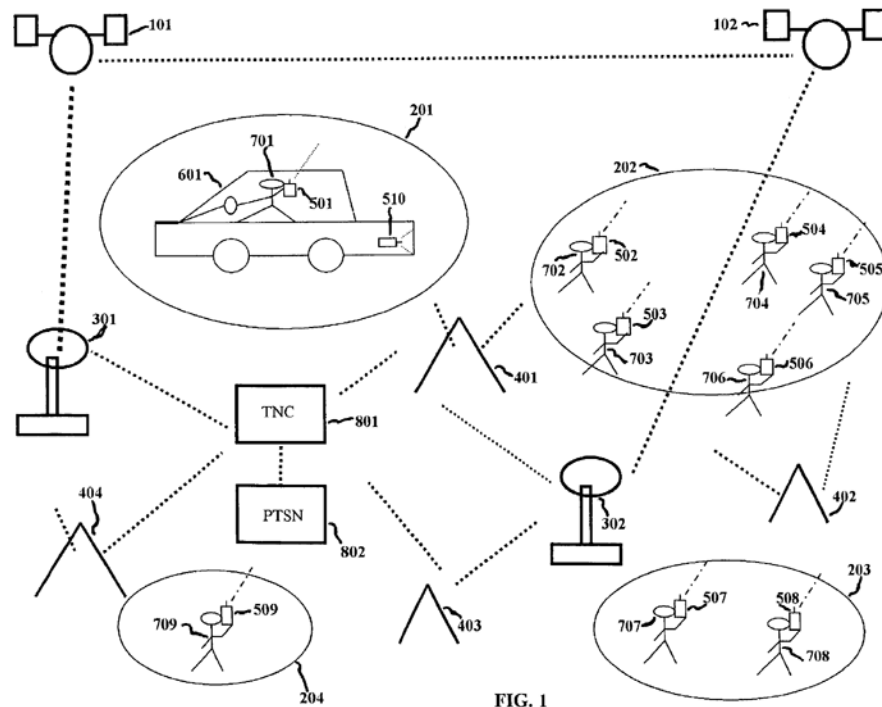
A. “portable mobile remote unit”/“mobile remote unit”/“portable communication unit”/“remote unit” (Claims 1, 2, 8, 12, 13)

49. Petitioner offers no constructions for these terms. A POSA would understand from the claims and specification that these terms are used interchangeably in the claims. For example, Claims 1 and 2 refer to “portable mobile remote units” interchangeably with “remote units” since Claim 1 refers to “portable remote units”

and Claim 2, which depends from Claim 1, refers to the same thing as “remote units.” Claim 8, likewise, uses “portable remote unit” interchangeably with “portable mobile remote unit.” *Compare*, claim element (ii) (“a pool of portable mobile remote units that are able to communicate with the network...”) *with* claim element (iv) “...means to verify whether the portable remote unit exists...”). *See also*, Claim 12 (referring to portable mobile remote units in preamble and elements (i), (ii) and (iii), then referring to the same thing as “portable remote units” in step (iv)). Claim 13, which depends from Claim 21, reverts back to the use of “portable mobile remote unit.”

50. A POSA reading the '726 patent understands that each of these terms refer to the same thing in the specification and refer to “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 '726 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 3:67-4:35).



See also, 1:17-22 (describing the system is directed to “telecommunication services and systems” in the “wireless industry”), 2:1-7 (referring to “wireless consumers”), 2:20-26 (referring to “mobile users”), 2:34-52 (referring to “wireless subscribers”); 3:3-29 (referring to a “mobile telecommunication system”).

51. The '726 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.” (1:57-66). 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)

52. Petitioner offers no construction of this term. However, a POSA would understand this term to refer to “a specific coverage area of a wireless network that may be individually queried for PRU information, such as location.” This is consistent with the specification. As the ’726 Patent explains, 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, 10:47-49). A POSA reading the ’726 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. *See also*, Ex-1001, Fig. 1, 1:11-22, 1:56-66, 2:1-52, 3:3-60, 4:24-5:3, 7:47-9:32, 10:1-11:6; and ¶¶ 40-43, 50 above, for specification support showing, in an exemplary embodiment, that location requests for proximity and tracking determinations and other messages 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. **“ii) means for a wireless consumer to specify and forward to the network, geographic boundary information describing a region within a coverage area of said network where a notification should be sent to one or more of said portable mobile remote units within said region” (Claim 8)**

53. The function of this claim element is “for a wireless consumer to specify and forward to the network, geographic boundary information describing a region within a coverage area of said network where a notification should be sent to one or more of said portable mobile remote units within said region.” A POSA would understand that the minimum structure for performing the recited function is “a control unit programmed to communicate to another network component information which identifies a specified contiguous area on earth, within the

coverage area of the network, within which a notification should be sent only to one or more PRUs currently located within that area of the network, and equivalents thereof.” Such an interpretation is supported by the ’726 Patent’s specification and a POSA reading the ’726 Patent’s specification would understand that the required function may be performed at a control unit at the control station. *See* Fig. 7, specifically references 1-3, 5-6, and 8:32-54 describing that a control unit programmed to execute this function receives a specified geographic boundary where a notice should be forwarded to PRUs to disclose their location and sends the notice/message only to specific regions within the system. For example, as the ’726 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 in the same network boundary as the distressed subscriber. *See, e.g.*, Ex-1001, 7:47- 8:2, 8:26-37, 10:45-58.

54. I disagree that this claim element, or any of the means plus function terms in the ’726 Patent’s claims, requires an antenna, transceiver or GPS equipment. The PRU itself already includes an antenna 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, 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); 4:36-45 (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 shows the programming algorithm used by a control unit to query specific geographic boundaries of the network). Furthermore, a POSA reading the '726 specification understands that a control station of the network necessarily already has an antenna and transceiver to communicate with the PRUs, as well as hardware to store and process data. Therefore, to implement the means plus function claim elements in the '726 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 '726 specification. Additionally, a POSA would understand that a control unit at the network can provide geographic boundary information to another control unit at the network, which does not require a transceiver or antenna but may (and likely would) use a hardwire connection between the two.

D. “iii) means to forward said notification to portable mobile remote units within said region” (Claim 8)

55. The function of this claim element is “to forward said notification to portable mobile remote units within said region.” A POSA would understand that the minimum necessary structure for performing the recited function is “a control

unit programmed to control sending the notification to only one or more portable mobile remote units currently located within the identified area, and equivalents thereof.” Such an interpretation is supported by the ’726 Patent’s specification. *See* Fig. 7 reference 3, and 8:32-54 describing that a control unit is programmed to forward a notice/message to portables present in a specific geographic boundary of the system to reveal their location.

56. A POSA reading the ’726 Patent’s specification would understand that the required function may be performed at the control station. *See*, Ex-1001, 11:1-5 (“In situations where a PRU cannot perform any of the tasks described herein, the network may obtain its location information and the required functions performed at the network and forwarded to the appropriate communication target on completion.”). Furthermore, a POSA reading the ’726 specification understands that a control station of the network necessarily already has an antenna and transceiver to receive, and hardware to store data, such as the PRUs location data, for further processing. Therefore, to implement the claim element a POSA would understand that they only need to add a control unit programmed in the manner above. Additionally, a POSA understands that one network control unit can also forward a notification to another network control unit utilizing a hardwire connection between the two.

57. Mr. Andrews asserts that “[t]he minimum necessary structure to perform the recited function is a control unit/center, programmed to request the location of communication targets within a specific distance or boundary by sending a ‘page’ (Ex-1001, 2:29-31), ‘poll’ (*Id.*, 3:52-54) and/or ‘query’ (*Id.*, 3:39-41, 7:25-27), together with ‘terrestrial network center’ or “ground based transmitter stations’ to relay mobile information to and from the portable mobile remote units of the network (*Id.*, 4:36-43, 4:48-51), such as performing the ‘page,’ ‘poll,’ and/or transmission of the ‘query,’ and equivalents thereof.” (Ex-1002, ¶ 113).

58. I disagree. The structural requirement is that which is necessary to perform the claimed function and does not include everything that may be used in the communication path from the forwarding control unit to the receiving control unit. Additionally, the specification expressly states that the control unit may be at the PRU or at the network, which does not require a wireless path or any of the components associated with that wireless path. By way of analogy, a POSA would understand that a connection to power is needed for the control unit to function but that connection to power (that which enables) is not part of the claim. Likewise, a POSA understands that the control unit will have connection to ground transmitters and other communication elements that are already present either at the PRU or at

the control station so none of these other structures need be added to perform the claimed function.

E. **“iv) means to identify said notification (iii) at the portable mobile remote unit and means to verify whether the portable remote unit exists within said region (iii)” (Claim 8)**

59. This element comprises two “means” terms. The function of the “means to identify” claim element is “to identify said notification (iii) at the portable mobile remote unit.” A POSA would understand that the minimum necessary structure to perform this function is “a control unit programmed to identify that the notification was received at the portable remote unit, and equivalents thereof.” The function of the “means to verify” claim element is to “to verify whether the portable remote unit exists within said region (iii).” A POSA would understand that the minimum necessary structure to perform this function is “a control unit that is programmed to determine whether the portable remote unit is within the specified region, and equivalents thereof.” See, Fig. 7, reference 4 and 9:13-32; Fig. 6 and 10:21-37 discussing basic checks by a control unit for boundary information in determining whether a unit is within the prescribed boundary.

60. Such an interpretation is supported by the ’726 Patent’s specification. Moreover, a POSA reading the ’726 Patent’s specification would understand that

each of the required functions may be performed at the control station. (Ex-1001, 11:1-5).

61. Moreover, nothing in this claim element requires there to be “transceiver circuitry” because a POSA would understand that this claim element can use the antenna and transceiver circuitry of the PRU or at the control station. Additionally, a POSA understands that one control unit at the network can provide the location to another control unit at the network, which does not require a transceiver but may (and likely would) utilize a hardwire connection between the two.

62. At Ex-1002 ¶ 117, Mr. Andrews opines that the control unit must be located at the PRU. I disagree. The ’726 Patent expressly states that any function that the PRU cannot do may be done at the control station. *See*, Ex-1001, 11:2-6 (“In situations where a PRU cannot perform any of the tasks described herein, the network may obtain its location information and the required functions performed at the network and forwarded to the appropriate communication target on completion.”)

F. **“(iv) means to request for the location information of portable mobile remote units that are in a geographic boundary that is prescribed within the coverage area of said network” (Claim 1)**

63. The function of this claim element is “to request for the location information of portable mobile remote units that are in a geographic boundary that is prescribed within the coverage area of said network.” A POSA would understand, after having read the ’726 Patent specification, that the minimum necessary structure to perform the recited function is “a control unit programmed to submit a request to a specific contiguous area on earth within the coverage area of the network for the location only of one or more PRUs currently located within that area, and equivalents thereof.” This is consistent with the ’726 Patent’s specification, which also teaches that the required function may be performed at the control station, as previously discussed above.

64. Mr. Andrews asserts that “[t]he minimum necessary structure to perform the recited function is a control unit/center (Ex-1001, 4:38-40) programmed to generate a “page,” “poll,” and/or “query” for the location information of portable remote units that are in a geographic boundary that is prescribed within the coverage area of said network (Ex- 1001, 3:39-41, 3:51-54, 5:51-55, 5:59-63) together with “an antenna 20 and a transceiver circuitry 21” (Ex-1001, 4:62-64) configured to

perform the page, poll, and/or transmission of the query, and equivalents thereof.” (Ex-1002, ¶ 119).

65. I disagree that the minimum necessary structure needed to perform the function of this claim element requires the antenna or transceiver circuitry for the reasons I have previously discussed regarding the prior claim elements. Moreover, nothing in this claim element requires there to be “an antenna” and “transceiver circuitry” because a POSA would understand that this claim element can use the antenna and transceiver circuitry of the PRU or at the control station in order to assist in communicating the results claimed function. Additionally, a POSA would understand that one control unit at the control station may request another control unit at the station for the location information of portable mobile remote units that are in a geographic boundary that is prescribed within the coverage area of said network, which can utilize a hardwire connection between the two.

66. Otherwise, I would agree that the function of requesting locations, as taught in the ’726 Patent, is performed by polling individual network boundaries, as previously discussed. *See generally*, Ex-1001, 4:38-51, 7:19-29, 7:47-8:41, 10:45-58 (collectively explaining the individually pollable network boundaries are used for location requests and notifications).

G. **“(v) means to provide the location information of the portable mobile remote unit to the network upon determination that the portable mobile remote unit is within said prescribed geographic boundary requested by the network” (Claim 1)**

67. The function of this claim element is “to provide the location information of the portable mobile remote unit to the network upon determination that the portable mobile remote unit is within said prescribed geographic boundary requested by the network.” A POSA would understand, after having read the ’726 Patent specification, that the minimum necessary structure to perform the recited function is “a control unit programmed to determine whether the location of a portable remote unit is within a specified contiguous area on earth and, if so, provides the location of the portable remote unit to another network component, and equivalents thereof.” *See id.*, Fig. 6, reference 1-4, 6 and 10:21-36; Fig. 7 reference 1, 2, 4, 5 and 9:13-32 teaching use of a control unit programmed to provide the location of a PRU upon determination that it is within the prescribed geographic boundary. Such an interpretation is supported by the ’726 Patent’s specification. Moreover, a POSA reading the ’726 Patent’s specification would understand that the required function may be performed at the control station.

68. Mr. Andrews here again asserts that the minimum necessary structure to perform the recited function requires “an antenna 20 and a transceiver circuitry 21” (*Id.*, 4:62-64) configured to transmit location information (*Id.*, 5:11-16), together

with a “control unit” (*Id.*, 5:1-4) programmed to determine that the unit is within the prescribed geographic boundary requested by the network (*Id.*, 5:63-64), and equivalents thereof.” Ex-1002, ¶ 121.

69. I do not disagree with the definition regarding the “control unit” aspect to the extent it is substantially the same as my own. However, as I have previously noted nothing in this claim element requires there to be “an antenna” and “transceiver circuitry” for the reasons I have previously discussed. The control unit can use the antenna and transceiver circuitry of the PRU or at the control station in order to assist in communicating the results of the recited function. Also, one control unit at the network may communicate the location information to another control unit at the network, which can utilize a hardwire connection between the two.

H. **“(vi) means to determine and report to the system that, another portable mobile remote unit has maintained relative proximity to the portable mobile remote over a period of time while in motion” (Claim 1)**

70. 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 ’726 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 within the network boundary or pre-specified radius over a pre-defined time period, and equivalents thereof.” Again, a control unit of the system is programmed to provide this function. See Ex-1001, Fig. 5, references 10-12 and 6:1-47. This is consistent with the algorithm described in the ‘726 Patent’s specification. See, e.g., *id.*, 5:37-64 (“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.*, 6:1-64 (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). 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 ’726 specification that, first, the page is directed to a specific region of the network for possible candidates and, second, 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.

71. As with the other “means” claim terms, and for the same reasons, I also disagree that this claim element requires a transmitter configured to transmit a message identifying such a PRU because the specification explains that this function may be performed by a control unit at the control station. Therefore, a POSA would understand the control unit at the network may be reporting the tracking determination to another control unit at the network, such as though a hardwire connection. A POSA would also understand that the control unit at the PRU may be reporting to another control unit (via a hardwire connection) prior to transmission to the control station.

I. **“means to further determine if location disclosure for the remote unit is prohibited at a specific geographic boundary before sending its location information to the network” (Claim 2)**

72. 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 information to the network.” A POSA would understand, after having read the ’726 Patent specification, that the minimum necessary structure to perform the recited function is, “a control unit programmed to determine, prior to sending a location of a remote unit to another network component, 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." This is consistent with Fig. 6 of the '726 patent, references 3-7:

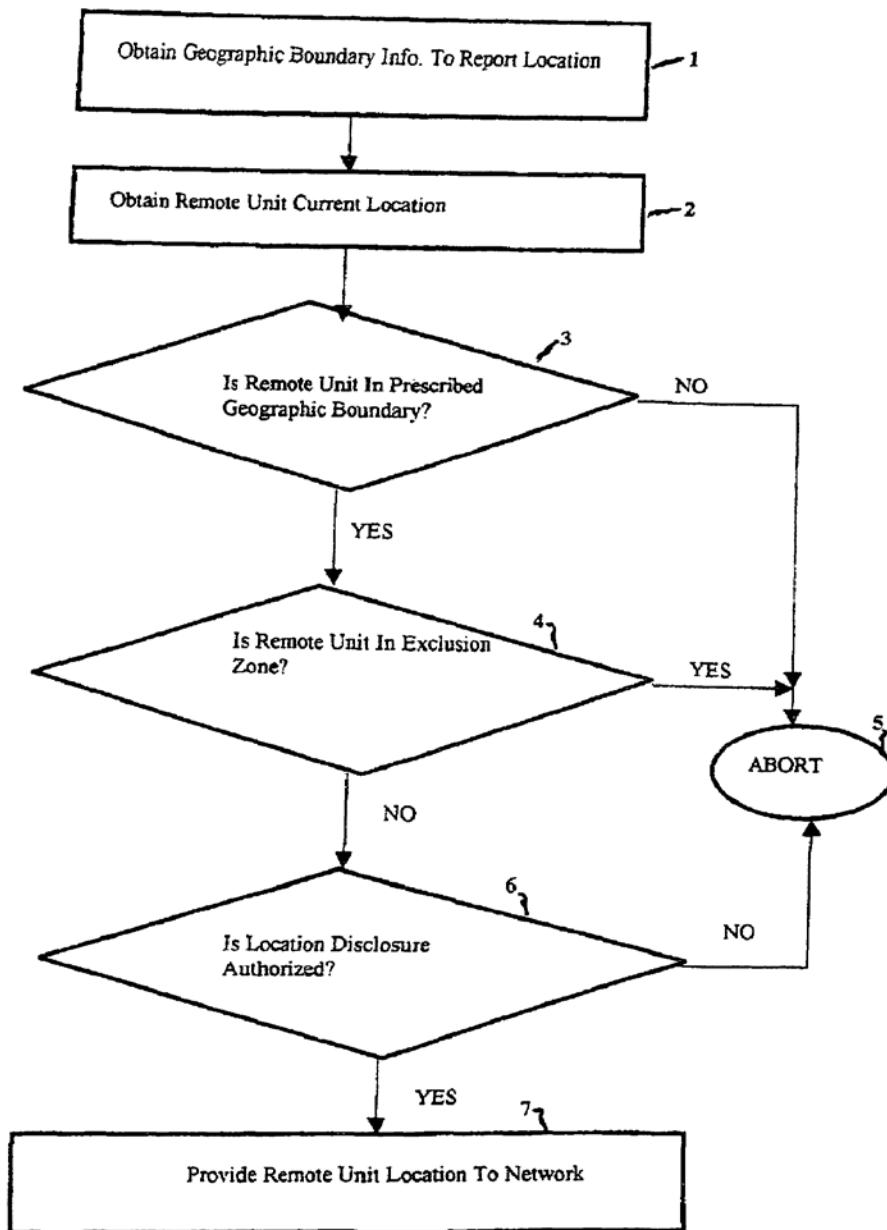


FIG. 6

73. As also explained at Ex-1001, 10:21-37, the control unit is programmed to determine 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.

74. I disagree with Mr. Andrews' proposed construction (Ex-1002, ¶ 126) because, by using the term "it" therein, his proposed construction requires that the PRU and only the PRU can make this determination, contrary to the specification's teachings that the network can also make any determination based upon the PRU's location. *See, e.g.*, Ex-1007, 6:49-55 (explaining a control unit at the network can also make a tracking determination); 11:2-6 (explaining that the network may obtain the location information and perform any necessary location-based function).

VIII. TECHNOLOGY BACKGROUND PRESENTED BY MR. ANDREWS

75. Mr. Andrews provides a technology background at Ex-1002, Section VII. 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

76. 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.

77. 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.

78. 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 '726 Patent, which is directed to determining whether two cell phones are moving in tandem during a tracking period.

79. 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 2001.² 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.³

80. 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*

² 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.

³ See <https://www.zdnet.com/article/forum-sets-standards-for-location-based-services/>

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)

81. *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).

82. 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).

83. 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).

84. 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).

85. 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).

86. 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. Unlike the '726 Patent, *Layson*'757 is not directed to making tracking been cell phones moving in tandem or querying specific boundaries for the location of nearby cell phones subscribers in a cellular network. Rather, it describes a system in which a parameter is sent to a specific device, which notifies the network when and if that parameter is ever violated. A victim cannot request the location of the nearby offender (or vice versa).

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

87. *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).

88. 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).

89. *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).

90. 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).

91. 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 the query terminal 37, 39 for structured queries. (*Id.*, 20:40-42). *Layson*'213 does not describe a cellular network available to the general public or a network that individually polls specific geographic areas of the network's coverage area for the location of nearby cell phones. Nor does it make any determinations that two PRUs moved in tandem over a minimum distance during a tracking period.

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

92. Rather, *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). Wang does not describe a cellular network available to the general public or a network that individually polls specific geographic areas of the network’s coverage area for the location of nearby cell phones. Nor does it make any determinations that two PRUs phones moved in tandem over a minimum distance during a tracking period.

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)

93. *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)

94. *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). 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, 9:45-64, 10:25-28 (“The assignment message 32 is then sent the vehicles 14 of the fleet 12 which each receive the assignment message 32 using the wireless communication device 36.”)).

95. 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 all vehicles 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).

96. 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).

97. 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.⁴ (*Id.*, 5:23-35). *Suarez's* network differs significantly from the network of the '726 Patent. Unlike the '726 Patent, Suarez does not describe a cellular network available to the general public or a network that individually polls specific geographic areas of the network's coverage area for the location of nearby cell phones. Nor does it make any determinations that two PRUs moved in tandem over a minimum distance during a tracking period.

⁴ 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).

F. Australian Patent Application No. 200037767 Published August 17, 2000 (“Mezhvinsky”) (Ex-1017)

98. *Mezhvinsky* discloses a web-based service network to which mobile service providers, like chauffeurs, can subscribe and report their locations to a web server. The user interfaces to a web page, which displays the geographical locations of certain subscribers. (Ex-1017, 5:21-29, 12:13-18). The user’s equipment 60 will know its own geographical location and will display an area surrounding the user’s location. (*Id.*, 10:1-9). Either the user’s computer or the WEB server 50 will calculate the geographic location of one or more of the mobile service providers to display in the user-controlled display area. (*Id.*, 10:11-29). When the user selects a mobile service provider, they are sent a message. (*Id.*, 14:11-22). The user’s web interface may be configured to automatically select the nearest mobile service provider. (*Id.*, 14:24-30).

G. German Patent Application Publication DE 19751741A1 (“Heedfeld”) (Ex-1019)⁵

99. Like *Suarez*, *Heedfeld*’s dispatch system sends the dispatch request to each vehicle in the fleet, whether it is inside or outside of a specified region, in order to identify the locations of those vehicles that are within the specified region. Each vehicle includes a radio data terminal which analyzes the request and returns its

⁵ I rely upon Petitioner’s translation and reserve the right to update my opinion should any other translation be introduced having any substantive impact.

location to the control center if it is in fact located in the specified area. (Ex-1018, Abstract, 4:32-39, 4:48-54, 5:4-11).

H. General Observations Regarding Suarez, Mezhvinsky, Heedfeld, Layson'757, Layson'213, IllinoisLaw & Wang

100. None of the asserted systems 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 reference 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 prior art reference 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 be 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: Claims 12 and 13 are not rendered obvious by Suarez

1. Independent Claim 12

101. Independent Claim 12 recites:

A method for notifying portable mobile remote units within a geographic region in a wireless communication system comprising:

- i) communicating with one or more portable mobile remote unit in a network to establish their geographic location within the system;
- ii) specifying and forwarding to the network, geographic boundary information describing a region within a coverage area of said network where a notification should be sent to one or more of said portable mobile remote units within said region;
- iii) forwarding said notification to portable mobile remote units within said region;
- iv) identifying said notification (iii) at the portable mobile remote unit and verifying whether the portable remote unit exists within said region (iii).

a. Element 12[pre]: A method for notifying portable mobile remote units within a geographic region in a wireless communication system comprising:

102. Petitioner does not take a position whether the preamble is limiting. In my opinion, 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 for notifying portable mobile remote units within a geographic region in a wireless communication system.

103. First, a POSA reading the '726 Patent understands that this claim is directed to cell phones or other hand-carried wireless telecommunication devices used by wireless consumers to communicate via cellular telecommunication networks available to the general public. *Suarez*, in contrast, is directed to a fleet dispatch system for “taxicabs, delivery trucks and the like” that improves prior “two-way radio” dispatch systems. Ex-1013, 1:12-14, 1:21-22). It is concerned with “shortage of radio frequency channels, “the expense of maintaining existing channels and/or petitioning the local government for new channels” which “can be out of reach for many dispatch businesses” (*Id.*, 1:56-60). *Suarez* seeks to “reduce the loading of the channels used for vehicle dispatch, reduce the decision-making stress on the vehicle derives, and at the same time retain the automatic sorting mechanism of the dispatch center-based systems.” (*Id.*, 2:29-33).

104. Mr. Andrews reads *Suarez*’s vehicle mounted remote units as a portable mobile device because “they are utilized by a consumer in a moving vehicle....” (Ex-1002, ¶ 156). But that does not make them the claimed PRUs. Rather, *Suarez*’s devices are clearly radios and not cell phones or other hand-carried wireless

telecommunication devices used by wireless consumers to communicate via cellular telecommunication networks available to the general public.

105. *Suarez* also does not employ a method of notifying portable mobile remote units within a geographic region in a wireless communication system. There is no disclosure that the system breaks down the network into individually pollable geographic regions areas so that portable remote units in a geographic region may be notified. Rather, dispatch center 16 receives the dispatch request 28 and generates an assignment message 32 that is sent to all vehicles in the network, regardless of whether or not the vehicle is within a geographic boundary. (Ex-1013, Abstract, 3:20-25, 7:19-26, 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.”); 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.”))

106. Therefore, *Suarez* does not teach a POSA the preamble of claim 12.

- b. **Element 12[A]: i) communicating with one or more portable mobile remote unit in a network to establish their geographic location within the system;**

107. *Suarez* does not disclose this element for the same reasons as it does not disclose the preamble. Additionally, *Suarez* does not disclose Element 12[A] because *Suarez* does not disclose such a pool of portable mobile remote units that are able to communicate with the network to establish their geographic location “within the system.” A POSITA would understand their location “within the system” refers to a specific geographic region of the network that can be individually polled. *Suarez* radio terminals may establish a geographic location but establish no location “within the system” location since *Suarez* network is not divided into individually pollable regions so that each geographic location can also represent a location “within the system.”

- c. **Element 12[B]: ii) specifying and forwarding to the network, geographic boundary information describing a region within a coverage area of said network where a notification should be sent to one or more of said portable mobile remote units within said region;**

108. *Suarez* does not disclose this element because the request for dispatch received by the dispatch center does not describe a region within a coverage area of the network where a notification should be sent. Rather, the request for dispatch includes an assignment location, from which the dispatch center generates a location parameter 50. (Ex-1013, 9:54-58) (“In Step 122, when a request for dispatch 28 is received by the dispatch center 16, the dispatch controller 18 of the dispatch center

16 generates the location parameter 50 identifying the assignment location 66 of the request for dispatch 28.”) Moreover, even if the assignment location indicates a location parameter that defines a region, in *Suarez* the regions are not a region where a notification should be sent. Rather, the notification is sent to all vehicles of the network, whether they meet the location parameter or not. (Ex-1013, Abstract, 3:20-25, 7:19-26, 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”); 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.**”))

109. In other words, the ’726 patent does not merely disclose specifying a search criterion to identify where units are located, but rather to specify which units’ locations should be polled in the first place based upon in which network boundary they are located. Therefore, I disagree with the entire premise of Mr. Andrews’ analysis (spanning his ¶¶ 163-171) because that analysis is directed to how *Suarez* searches for vehicles that are within specific areas by polling every unit and not by directing polling requests to specific areas of the network as the claim requires.

110. For example, Mr. Andrews states that “it was well known for the user to specify the search region when the user enters search parameters.” (Ex-1002, ¶ 163). I agree that search parameters are conventional⁶ regarding being used to match targets that meet the search criteria, such as in *Suarez*, but this does not meet the claim limitation because using search parameters to discover which units meet the search criteria, such as *Suarez* does, is not the same as, and does not disclose, directing notices to PRUs in specific network regions. A search criterion is not “geographic boundary information describing a region within a coverage area of said network where a notification should be sent.” In *Suarez*, a notification is sent to all units in the fleet, regardless of whether they meet the location parameter (and criteria parameter). Mr. Andrews admits as much, when he states: “The dispatch controller 18 schedules the assignment message 32 for transmission by the dispatch transmitter 20, via a transmit antenna 34, **to each vehicle 14 of the fleet 12** on at least one outbound radio frequency (RF) channel such as a first communication channel 35.” (Ex-1002, ¶ 166) *See also, id.*, ¶ 168 (explaining that the assignment location and criteria parameter specify “a search radius that is included in the assignment message that is then forwarded to the network of portable mobile remote units.”) In contrast, the '726 technology is intended to be used in consumer cell phone environments

⁶ Including in Ex-1023 and 1025, to which Mr. Andrews also cites.

wherein the number of users may be in the tens of millions and spread over the country, wherein *Suarez*'s approach would not be feasible.

111. Perhaps recognizing this lack, and in contradiction to the repeated teaching of *Suarez* that all vehicles are sent assignment messages, Mr. Andrews attempts to argue that notifications are sent to only a limited number of vehicles. Specifically, he argues that the use of the location parameter "greatly reduces the assignment message being received and processed by each individual driver." (Ex-1002, ¶ 169). But this is misleading because every vehicle's wireless communication device 36 still receives the notification, regardless of their location, but only alerts the driver when the vehicle's location meets the location criteria. (Ex-1013, 8:44-51, 10:55-66). Therefore, this argument does not show the claim element is met.

112. Mr. Andrews likewise argues that "*Suarez*'s location parameter 50 and criteria parameter 62 are used to specify a region where the notification should be sent because, in one example, the criteria parameter is used as a filter so that the assignment message is forwarded and "seen only by the vehicles 14 within the fleet 12 that meet the specified criteria." (Ex-1002, ¶ 170). This misstates the specification, because *Suarez* does not disclose any embodiment that sends notices to only vehicles in a specific area. Mr. Andrews only cites to four lines of *Suarez* (Ex-1013, 5:14-17) as support for this supposed different embodiment reflecting a

fundamental change to *Suarez*'s teachings and system architecture. But these four lines do not describe any such new embodiment. Rather, they only repeat that the driver is not notified when the vehicle does not meet the search criteria: "[t]he criteria parameter 62 is a pre-set metric for filter the assignment message 32 received by the wireless communication device 36 to be seen only by the vehicles 14 within the fleet 12 that meet the specified criteria." Again, these four lines reiterate that every vehicle in the fleet receives the notification but only those matching the search criteria will display the notification. *See also*, Ex-1013, 4:19-30, 39-55 (explaining that the message is not displayed unless the location parameter is met.)

113. Finally, Mr. Andrews argues because each notification is individually addressed, somehow this implies that the notification is sent to less than all the vehicles in the fleet. This is logically and factually incorrect. Mr. Andrews cites again a single statement in *Suarez* (Ex-1013, 3:43-46) in support of this implication. Again, this takes *Suarez*'s specification out of context. Rather, *Suarez* explains that "[e]ach wireless communication device 36 assigned for use in the vehicle dispatch system 10 has an address assigned thereto, which a unique selective call address. This address 48 enables the transmission of the assignment message 32 from the dispatch controller 18 only to the addressed wireless communication device 36. The address 48 also identifies the replies 38 sent by the wireless communication device

36 over at least one outbound radio frequency (RF) channel...” (Ex-1013, 3:40-48). So, as a POSA would understand, all this is saying is that when a notification is sent to each vehicle in the fleet, is sent individually to all units in the fleet.

114. Therefore, this claim element is not met by either the processing of the dispatch request or the assignment message of *Suarez* because the notification goes to all vehicles in the fleet and not to those in a specific geographic region of the network.

d. Element 12[C]: iii) forwarding said notification to portable mobile remote units within said region;

115. Again, *Suarez* does not disclose this claim element. The location parameter in the assignment message is sent to all vehicles, there is no mechanism to limit the assignment message being sent only to those vehicles that meet the location parameter. To the contrary, the location parameter in *Suarez* is a conventional search criterion that *Suarez* uses to find vehicles in the fleet which meet the location parameter. In contrast, a POSA reading the '726 specification understands that it describes using cellular infrastructure to limit the regions where notifications are sent, as previously discussed. Therefore, I disagree with the notion that a POSA would equate sending a notification to all units with sending the notification only to portable remote units that meet the location criteria.

116. Mr. Andrews states in Ex-1002 ¶ 172 that *Suarez* “discloses Element 12[C]” because “the assignment message includes location parameter 50 and criteria parameter 62” to create “a perimeter 68 surrounding the assignment location 66” and that “a POSITA would have understood that the dispatch controller thus can select which vehicles to send the assignment message in view of *Suarez*’s teaching that the criteria parameter is a filter used so that the assignment message is ‘seen only by the vehicles within the fleet 12 that meet the specified criteria.’” I disagree. This is the same implicit distortion of the *Suarez* specification I previously discussed. *Suarez* nowhere teaches less than all the vehicles receiving the assignment message, or how such would be accomplished. It teaches only that the ones who match the search criteria will display the message to the driver and respond. Indeed, this is exactly how *Suarez* deals with the problem of preventing drivers from affirmatively replying to assignment messages clearly outside their range for the purpose of maximizing their own income.

117. I note that Mr. Andrews cites Ex-1014 and Ex-1018 for the proposition that “[a] POSITA would have understood that where the request is sent can cause the network issues such as too many responses, causing a delay in selecting the appropriate vehicle, or too few vehicles targeted, risking a ‘collision of identification messages.’” (*Id.*, ¶ 172). I need go no further in addressing this argument (which

admittedly I am having a hard time parsing) than to address his conclusion: “Therefore, using *Suarez*’s criteria parameter to filter which vehicles see the assignment message allows *Suarez* to limit the number of possible vehicles to respond to the assignment message and fulfill the assignment; thereby reducing processing time and overload.” (*Id.*, ¶ 172).

118. But this is exactly what *Suarez* already teaches: sending notices to all the vehicles in the fleet but only displaying the notice in (and possibly getting responses from) those that meet the search criteria. And that is not enough to disclose the claim requirement. Mr. Andrews does not discuss any modification of *Suarez* considering Ex-1014 or Ex-1018, so I will end my rebuttal analysis for this claim element here.

e. Element 12[D]: iv) identifying said notification (iii) at the portable mobile remote unit and verifying whether the portable remote unit exists within said region (iii).

119. The wireless communication device 36 described in *Suarez* is not a “portable mobile remote unit” as that term would be understood by a POSA reading the ’726 Patent’s specification because it is clearly not a cellular phone that uses a cellular network, as previously discussed. Moreover, as previously discussed, the asserted “region” used as a criteria in *Suarez* is not a polled region to which a notice is sent, as previously discussed. Therefore, *Suarez* does not meet this claim element.

2. Dependent Claim 13

120. Dependent Claim 13 recites:

The method of claim 12 further comprising responding to said notification if said portable mobile remote unit (iv) exist[s] within the geographic boundary defined by said region.

121. *Suarez* does not disclose claim 13 for all the reasons it does not disclose claim 12. The wireless communication device 36 described in *Suarez* is not a “portable mobile remote unit” as that term would be understood by a POSA reading the ’726 Patent’s specification because it is clearly not a cellular phone that uses a cellular network, as previously discussed. Moreover, as previously discussed, the asserted “region” is used in *Suarez* to determine whether the wireless device will process the message and alert the driver thereof. It is not an individually pollable region of the network to which a notice is sent, as previously discussed.

B. GROUND 2: Claim 8 is not rendered obvious by the combination of *Suarez* and *Mezhvinsky* (*Suarez-Mezhvinsky*)

1. A POSITA would not have been motivated to combine *Suarez-Mezhvinsky* or had a reasonable expectation of success in so doing

122. I disagree with Mr. Andrew’s motivation to combine argument. *Suarez* is a dispatch system that prevents a driver in the fleet from responding to an assignment message unless their vehicle matches a location criterion. When a user makes a dispatch request, the dispatch center sends an assignment message to all the

fleet vehicles. The assignment message includes the location criteria. When each vehicle receives the assignment message via a radio device, the device determines whether the vehicle's location meets the location criteria. If so, it will alert the driver and display the assignment message for a response from the driver accepting or rejecting the assignment. By applying the location criteria, the network reduces incoming traffic, minimizes driver distraction and eliminates responses from vehicles that do not meet the criteria. The fleet vehicles in *Suarez* do not continuously report their location to the dispatch center.

123. *Mezhvinsky* teaches a web-based system in which subscribed mobile service providers, such as taxis and limousines, report their geographic location to a web server. (Ex-1017, 5:21-29). A web user uses their browser to specify and display an area around their location. The web browser calculates which mobile service providers are within the area specified by the user and sends the information for display by the user's browser. (*Id.*, 10:2-29). The user may select, communicate with and pay for one of the displayed service providers. (*Id.*, 13:28-14:2, 14:11-22). The user interface to the web server may be through an internet connection provided via the user's cell phone or PDA. (*Id.*, 13:17-26).

124. I do not believe a user would have been motivated to have *Suarez's* input device 24 "designate specific geographic boundary information to search for a

mobile service provider, as taught by *Mezhvinsky*, so that the end user defines and provides its preferred specific search criteria for mobile service providers.” (Ex-1002, ¶ 179. Specifically, this would add additional input for the user of *Suarez* because they would have to provide location search criteria instead of just pick-up address, which would make the system less friendly for a person just seeking a taxi.

125. Secondly, even if a POSA was motivated to allow the user to input location-based search criteria, based upon *Mezhvinsky*, that is not the same as specifying a geographic boundary that can be individually polled or where a notice should be sent. Rather, as previously discussed the assignment message will still be sent to all vehicles regardless of whether they were in the boundary.

126. Finally, to the extent the proposed combination would require *Suarez*’s dispatch center 16 to receive continuously updated locations from the fleet vehicles, a POSA would not be motivated to make that change since it would increase radio traffic between the vehicles and dispatch center, contrary to *Suarez*’s expressly goals and purpose.

127. Further, the *Mezhvinsky* search criteria requires a service provider to be selected after its geographic area is displayed to the user. Accordingly, there will be no need for *Suarez* to use the *Mezhvinsky* search criteria to poll for a vehicle whose service has already been selected by the user as specified by *Mezhvinsky*.

2. *Suarez-Mezhvinsky* Does Not Disclose Claim 8

a. Element 8[Pre]: A communication system comprising:

128. I do not dispute that *Suarez* discloses a communication system.

b. Element 8[A]: i) a network of communication resources;

129. I do not dispute that *Suarez* discloses a network of communication resources.

c. Element 8[B]: ii) a pool of portable mobile remote units that are able to communicate with the network to establish their geographic location within the system;

130. I dispute that *Suarez* discloses a pool of portable mobile remote units that are able to communicate with the network to establish their geographic location within the system. While *Suarez* discloses that the wireless communication device 36 in each vehicle may use a pager channel, mobile cellular channel, or a mobile radio channel (all which *Suarez* refers to as RF channels), this does not disclose to a POSA that the units are hand carried cell phones or pagers that use cellular networks available to the general public. Additionally, the remainder of the description would suggest to a POSA that these devices are radios “assigned for use in the vehicle dispatch system” with dedicated inbound and outbound frequency channels. See, Ex-

1013, 3:27-51. The specification reinforces the conclusion with the objective to “reduce the loading of the channels used for vehicle dispatch.” (*Id.*, 2:29-30).

131. The infrastructure used for direct radio communication is substantively different from the use of actual mobile cellular network infrastructure, and there is no description to the POSA as to how to implement its system in a mobile cellular network

132. Therefore, I disagree with Mr. Andrews’ conclusion (Ex-1002, ¶¶183-184) that the POSA would understand that *Suarez*’s wireless communication device is a not a cell phone or other hand-carried wireless telecommunication device to communicate via cellular telecommunication networks available to the general public.

- d. **Element 8[C]: ii) means for a wireless consumer to specify and forward to the network, geographic boundary information describing a region within a coverage area of said network where a notification should be sent to one or more of said portable mobile remote units within said region;**

133. *Suarez-Mezhvinsky* does not teach Element 8[C] because neither of the systems disclosed in these references send notifications to portable remote units in specific regions. Rather, in *Suarez*, notifications are sent to each vehicle in the fleet. See, *Suarez*, Ex-1013 at 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.”) (emphasis added). Moreover, there is no wireless consumer (*i.e.*, a mobile telecommunication customer) specifying geographic boundary information describing a region within a coverage area of said network where the network should send a notification. The *Suarez* customer provides a pick-up address, and the network generates and sends a location parameter to the fleet. (*Id.*, 9:54-58) (“In Step 122, when a request for dispatch 28 is received by the dispatch center 16, the dispatch controller 18 of the dispatch center 16 generates the location parameter 50 identifying the assignment location 66 of the request for dispatch 28.”)

134. *Mezhvinsky* teaches a web-based system in which subscribed mobile service providers, such as taxis and limousines, report their geographic location to a web server. (Ex-1017, 5:21-29). A web user uses their browser to specify and display an area around their location. The web browser calculates which mobile service providers are within the area specified by the user and sends the information for display by the user’s browser. (*Id.*, 10:2-29). The user may select, communicate with and pay for one of the displayed service providers. (*Id.*, 13:28-14:2, 14:11-22) The user interface to the web server may be through an internet connection provided via the user’s cell phone or PDA. (*Id.*, 13:17-26). Again, there no sending of

notifications to portable remote units in specific regions. Rather, in *Mezhvinsky* any notification is sent only to a user selected mobile service provider. There is no wireless consumer (*i.e.*, a mobile telecommunication customer) specifying, geographic boundary information describing a region within a coverage area of said network where a notification should be sent to one or more of said portable mobile remote units within said region. The input of the *Mezhvinsky* customer is only to provide the web server with an area within which they wish to see the locations of mobile service providers on a display and selecting one of them.

135. I disagree with Mr. Andrews conclusion (Ex-1002, ¶ 188) that the location parameter 50 and criteria parameter 62 in the assignment message 32 “define the ‘geographic boundary information’ of the region where the notification should be sent.” They do not. These two parameters have nothing to do with where the message is sent because in *Suarez* the message is to each vehicle regardless of whether it is located inside or outside of the area defined by the two parameters. Rather, these parameters have to do with which drivers will be alerted to the assignment request. (*See*, Ex-1013, 10:55-66) (“When the wireless communication device 36 receives the assignment message 32 including the location parameter 50 and the criteria parameter 62, it compares the location parameter 50 corresponding with the assignment location 66 to the current location 56 of the vehicle 14 in which

the wireless communication device 36 resides. When the current location 56 is within the first perimeter 140, the assignment message 32 will be processed. When the current location 56 is not within the first perimeter 140, the assignment message 32 will be deleted and the driver of the vehicle 14 would never even be aware that it was received.”) Therefore, neither *Suarez* nor *Mezhvinsky* disclose this element.

136. I disagree with Mr. Andrews’ analysis spanning his ¶¶ 189-191 because specifying on a web page what area an end user wishes to see displayed on their screen as disclosed in *Mezhvinsky* is not very suitable for a customer calling or messaging a taxi dispatch center as disclosed in *Suarez*. I do agree with Mr. Andrews that *Mezhvinsky* allows a user to specify a search area for the webserver for the locations of subscribed mobile service providers. But this claim element does not merely require providing the network with information that specifies a search area, but rather information that specifies a region where a message to portable remote unit should be sent. Both only specify a search area. Moreover, *Suarez* sends messages to all vehicles and *Mezhvinsky* only sends a message to the mobile service provider selected by the end user. Ex-1017, 14:11-16.

e. Element 8[D]: iii) means to forward said notification to portable mobile remote units within said region;

137. *Suarez-Mezhinsky* does not teach Element 8[D]. As I have previously noted, *Mezhvinsky* allows an end user to specify what area they wish to see displayed

on their screen. This specifies a search area for the webserver for the locations of subscribed mobile service providers to be displayed. But the only means disclosed by *Mezhvinsky* is the means for the end user to select a specific mobile service provider to whom a message should be sent—the system does not notify provides b geographic area or teach how to do so. Likewise, *Suarez* can send messages to any vehicle in the fleet. It does not however disclose a mechanism to send a notification to portable remote units in a given geographic boundary (or teach how to do so).

138. Therefore, I disagree with Mr. Andrews’ implicit argument in Ex-1002, ¶¶ 192-195 that sending a message to every vehicle in the fleet to search for units that meet a specific location criterion is the same as sending messages to portable remote units that are located within a specified region. These are different approaches and there is no disclosure in *Suarez* of the latter. The ’726 Patent explains that individual network boundaries are polled. Nothing in *Suarez* discloses this approach verses polling the entire fleet for vehicles meeting the location criterion.

- f. Element 8[E]: iv) means to identify said notification (iii) at the portable mobile remote unit and means to verify whether the portable remote unit exists within said region (iii).**

139. I do not dispute that *Suarez*’s assignment manager 58 of wireless communication device 36 identifies the receipt of an assignment message 32 and

determines whether it is located within the location criteria contained in the assignment message.

140. I disagree, however, with Mr. Andrews' proposed construction for the reasons previously discussed. I also disagree that *Suarez* meets this imitation because the "region" of the claim is a wireless consumer specified region to which messages are sent. *Suarez* also does not disclose that device 36 is a hand carried telecommunication device used in a cellular mobile telecommunication network available to the general public, for the reasons previously discussed.

C. **GROUND 3: Claims 8, 12 and 13 are not rendered obvious by Heedfeld**

1. **Independent Claim 12**

a. **Element 12[Pre]: A method for notifying portable mobile remote units within a geographic region in a wireless communication system comprising:**

141. Petitioner does not take a position regarding whether the preamble of claim 12 is limiting. I believe the preamble provides structure or steps that are necessary to give life, meaning and vitality to the claims to a POSA because it requires that the claimed method is for notifying portable mobile remote units within a geographic region in a wireless communication system.

142. *Heedfeld* does not disclose a method for notifying portable mobile remote units within a geographic region in a wireless communication system.

Rather, like *Suarez*, *Heedfeld*'s dispatch system sends the dispatch request to each vehicle in the fleet, whether the vehicle is inside or outside of a specified region, to identify which vehicles are within the specified region. Each vehicle includes a radio data terminal which analyzes the request and returns its location to the control center if it is in fact located in the specified area. (Ex-1018, Abstract, 4:32-39, 4:48-54, 5:4-11).

143. Critically, Mr. Andrews acknowledges that *Heedfeld* sends “coordinate data specifying a selected area to ***all of the units.***” (Ex-1002, ¶ 200) (emphasis added). Therefore, the claim is not met for that reason alone.

144. Also, there is no disclosure in *Heedfeld* that its terminal devices 18 are cell phones or other hand carried devices that consumers of cellular communication networks use to access the location-based services as shown and described in the '726 Patent. I do not agree that the terminals are portable remote units, as that term would be understood by a POSA reading the '726 Patent, simply “because they are designed to be in a moving vehicle.” (Ex-1002, ¶ 201).

145. Rather, the '726 teaches providing location-based services that specifically utilize cellular network infrastructure in order to carry out certain methods, including being able to directly poll units in specific geographic regions. (Ex-1001, 7:47-8:56 (explaining how messages are beamed in a specific geographic

within the coverage area of the network); 10:45-49). *See also*, Ex-1002, ¶ 194 (Mr. Andrews acknowledging “the ’726 Patent explains the notification to portable mobile remote units within said region as a page ‘sent to specific areas in order to obtain the location of portable remote units in that geographic area.’”). But nothing in *Heedfeld*’s system architecture would indicate to a POSA that the network being employed to provide the location-based services is a cellular network or is otherwise able to send notifications to specific network areas.

146. In conclusion, sending pages to all units and searching for, identifying or getting responses from those that meet a certain location criterion, as taught by the prior art, is different from directly polling units in specific areas for their locations, as taught in the ’726 patent.

b. Element 12[A]: i) communicating with one or more portable mobile remote unit in a network to establish their geographic location within the system;

147. *Heedfeld* does not disclose Element 12[A] The portable remote units in the ’726 Patent are cellphones or other hand carried telecommunication units that use cellular networks available to the general public to communicate. The ’726 Patent also teaches that the network is divided into individually pollable regions for the locations of PRUs. *Heedfeld* does not disclose such a pool of portable mobile remote units that are able to communicate with the network to establish their

geographic location “within the system.” A POSITA would understand their location “within the system” refers to a specific geographic region of the network that can be individually polled. *Heedfeld*’s radio terminals may establish a geographic location but establish no location “within the system” location since *Heedfeld*’s network is not divided into individually pollable regions so that each geographic location can also represent a location “within the system.”

- c. **Element 12[B]: ii) specifying and forwarding to the network, geographic boundary information describing a region within a coverage area of said network where a notification should be sent to one or more of said portable mobile remote units within said region;**

148. *Heedfeld* does not disclose Element 12[B]. Mr. Andrews states that “*Heedfeld* specifies and forwards the geographic boundary information describing a region that the network should send a notification to one or more portable remote units.” (Ex-1002, ¶ 205). This statement is not factually supported and incorrect. As Mr. Andrews explains, this information is a “search region.” (*Id.*) But this is just like the other prior art. As Mr. Andrews acknowledges just a paragraph before, “*Heedfeld*’s request is communicated to terminal device 18 **of each mobile unit** to establish its geographic location within the system. The mobile unit’s terminal device 18 ‘automatically compares its own position with the coordinate data’ to

determine whether or not the vehicle is located within the selected area.” (*Id.*, ¶ 204) (citing Ex-1018, 2:15-32) (emphasis added).

149. There is no disclosure in *Heedfeld* of specifying and forwarding to the network, geographic boundary information describing a region within a coverage area of said network where a notification should be sent to one or more of said portable mobile remote units within said region.

150. Mr. Andrews also states that an operator at the control center selecting a search region meets the “specifying and forwarding to the network” element because “the only way to get in the network is via one of the nodes of the network” and the control center is one of the entry nodes. I offer no opinion regarding this because, whether he is correct or not, the search area entered by the operator does not specify a region where the notification should be sent.

d. Element 12[C]: iii) forwarding said notification to portable mobile remote units within said region;

151. *Heedfeld* does not disclose Element 12[C] because, as previously discussed, the notification is not sent/forwarded to portable remote units within the region. Rather it is undisputably sent to all units regardless of region. Mr. Andrews’ annotations to *Heedfeld*’s Fig. 2 in Ex-1002 ¶ 208 distort the actual teachings. The pink “notification” lines Mr. Andrews added imply that notifications are only sent to terminals 10 and 12 and not to terminal 14. But this is exactly the opposite of

what actually takes place in *Heedfeld* (and in Fig. 2) because the notification goes to all terminals, including terminal 14, despite the fact that terminal 14 is outside of the “geographic region.” *Heedfeld*’s Fig. 1 shows a rectangular boundary provided by control center 16 as a search parameter, whereas its Fig. 2 shows a circular boundary. As *Heedfeld* explains, “a fleet of mobile units is represented in Fig. 1 by three vehicles, which communicate with a control center 15 with a radio data transmission network.” (Ex-1018, 4:32-34)

152. *Heedfeld* continues: “The control center 16 then transmits a request on a channel of the radio data network on which the terminal devices 18 of all vehicles in the fleet receive, which also contains the coordinates of the corner points 28 and 30 of the selected area 26 in compressed form. In response to this request, the terminal 18 in each vehicle checks whether the vehicle is located within the selected area 26 or not. If necessary, the vehicle position is updated for this purpose with the aid of the GPS satellites 22. ***For the majority of the vehicles in the fleet, represented by vehicle 14 in the example shown, the check shows that the vehicle is outside the selected area 26. In this case, no further reaction takes place in the terminal 18.*** If, on the other hand, the check shows that the vehicle is located within the selected area, as is the case with vehicles 10 and 12 in the example shown, the terminal 18

reports the current vehicle position to the control center 16 via the radio data network.” (Ex-1018, 5:4-19 (actual line numbers not printed ones)).

153. Regarding its Fig. 2, *Heedfeld* explains: “The central unit **16** specifies the selected area by indicating the coordinates of the target location **24** and the radius of the circle. The units **10**, **12** and **14** then check their own position using the GPS system (not shown in **Fig. 2**) and calculate their distance to the target location **24**. If this distance is greater than the specified radius, as in the example shown for unit **14**, the request from the control center is ignored. For units **10,12** located within the selected area **32**, the request from the control center triggers the counting of a delay time proportional to the calculated distance from the destination. In the example shown, the unit **10** is closest to the destination **24**, so that the delay time expires earliest there. When the delay time expires, the unit **10** sends a message which is received both by the control center **16** and by all the other units **12, 14** in the fleet. The control center **16** thus recognizes that unit **10** is closest to the destination and will carry out the order. If necessary, the control center will then send a special order confirmation to unit **10**. If two messages from two different units happen to arrive at the same time, the control center makes the selection.” (Ex-1018, 6:2-21).

154. Thus, the entire fleet is polled, regardless of whether the vehicle is in the specified boundary or not, to search for potential responders who fit the search parameters.

155. Mr. Andrews, perhaps recognizing this failure of *Heedfeld*, states that a POSA “would have understood that Element 12[C] does not require that the notification is forwarded to the portable remote units only within said region and specifically exclude also sending messages to units that may be outside the region...” (Ex-1002, ¶ 280, n. 12). I disagree. A POSA would understand from the ’726 specification as well as language of claim 12, that the network is divided into geographic boundaries that may be individually polled for the location of units within that boundary. Mr. Andrews justifies his conclusion with the statement that Element 12[D] would be unnecessary otherwise. (*Id.*). I disagree. The ’726 patent teaches that the network has individually pollable geographic boundaries\ to which a notification can be sent, so that only the PRUs within that individual network boundary receive the notification. But this does not obviate the need for the PRU to identify that the notification has been received or verify its location within the individual geographic boundary before responding. Nothing in element 12[D] would suddenly lead a POSA to reject all of the teachings of individually pollable regions of the network for the locations of one or more PRUs therewithin.

- e. **Element 12[D]: iv) identifying said notification (iii) at the portable mobile remote unit and verifying whether the portable remote unit exists within said region (iii).**

156. I do not dispute that *Heedfeld*'s radio data terminal identified that it received a request from the control center or that it determined whether its location meets a location criterion. But this claim recites "said notification," which refers again to a notification sent to a specific region. *Heedfeld* does not disclose this element because the network does not send the notice to a specific region.

2. Dependent Claim 13

Claim 13: The method of claim 12 further comprising responding to said notification if said portable mobile remote unit (iv) exist within the geographic boundary defined by said region.

157. I do not dispute that *Heedfeld*'s radio data terminal responds to the control center if its location meets a location criterion. But this claim recites "if said portable mobile remote unit (iv) exist within the geographic boundary defined by said region." This refers back to step (iv) of claim 12, which refers again to a notification that is sent to a specific region. *Heedfeld* does not disclose this element because its notice is not sent to a specific region, as discussed above regarding claim 12.

3. Independent Claim 8

- a. **Element 8[Pre]: A communication system comprising:**

158. I do not dispute that *Heedfeld* discloses a communication system, but not the claimed communication system for reasons I will explain.

b. Element 8[A]: i) a network of communication resources;

159. I do not dispute that *Heedfeld* discloses a network of communication resources, but not the communication resources required to meet other claim elements, which will be discussed regarding those further claim elements.

c. Element 8[B]: ii) a pool of portable mobile remote units that are able to communicate with the network to establish their geographic location within the system;

160. *Heedfeld* does not disclose Element 8[B]. The portable remote units in the '726 patent are cell phones or other hand carried units that use cellular networks available to the general public to communicate. The '726 patent also teaches that the network is divided into individually pollable regions for the locations of PRUs. *Heedfeld* does not disclose such a pool of portable mobile remote units that are able to communicate with the network to establish their geographic location “within the system.” A POSA would understand their location “within the system” refers to a specific geographic region of the network that can be individually polled. *Heedfeld*’s radio terminals may establish a geographic location but establish no location “within the system” location since *Heedfeld*’s network is not divided into individually

pollable regions so that each geographic location can also represent a location “within the system.”

- d. **Element 8[C]: ii) means for a wireless consumer to specify and forward to the network, geographic boundary information describing a region within a coverage area of said network where a notification should be sent to one or more of said portable mobile remote units within said region;**

161. *Heedfeld* does not teach Element 8[C]. *Heedfeld* discloses no means for a wireless consumer to specify and forward to the network geographic boundary information describing a region within the coverage area of the network where the network should send a notification to one or more of the portable remote within that region.

162. First of all, the dispatch operator is not a wireless consumer as a POSA would understand that term because the dispatch operator is not operating as a member of the general public who is a consumer of a cell phone or another hand carried device that uses a cellular network for communication. Nor is the fleet vehicle driver who is using a radio data terminal. Moreover, as Mr. Andrews acknowledges, the area specified by the dispatch system operator (or driver) is not a specific area where a notification is directed but rather a location criteria that each vehicle in the fleet receives, regardless of their location. Therefore, *Heedfeld*

discloses a search parameter, like *Suarez*, and not the required means because the notification goes to all vehicles in the fleet.⁷

e. Element 8[D]: iii) means to forward said notification to portable mobile remote units within said region;

163. *Heedfeld* has no means to forward the notification to mobile remote units within, “said region.” As previously discussed, *Heedfeld* does not break its network into individually pollable regions for the locations of PRUs therewithin and has no means of sending a notification to the PRU within such a region. Mr. Andrews’ analysis does not show otherwise. It only repeats (at ¶ 219) the same error in that there is no pink line highlighting the notification sent to a “majority” of the vehicles that are outside of the location search criteria, represented by unit 14.

⁷ Mr. Andrews again incorrectly implies that the notification is only sent to the vehicles in specified search area despite *Heedfeld*’s clear teaching that the notification is sent to **all units** in the fleet, even those outside of the specified search area, including terminal 14 which represents the numerous terminals that are not located in the boundary. Compare, Ex-1002, ¶ 217, annotated Fig. 2 with Ex-1018, 5:12-14 (“For the majority of the vehicles in the fleet, represented by vehicle 14 in the example shown, the check shows that the vehicle is outside the selected area 26”); 6:1-9 (“The selected area 32 here is a circle with a certain radius around the target location 24. The central unit 16 specifies the selected area by indicating the coordinates of the target location 24 and the radius of the circle. The units 10, 12 and 14 then check their own position using the GPS system (not shown in Fig. 2) and calculate their distance to the target location 24. If this distance is greater than the specified radius, as in the example shown for unit 14, the request from the control center is ignored.”)

164. In Ex-1002 ¶ 220, Mr. Andrews argues that *Heedfeld*'s teaching is the same as the '726 but such is not the case because the specified area in *Heedfeld* is only a search area, not an area defining where the notification is to be sent.

- f. **Element 8[E]: iv) means to identify said notification (iii) at the portable mobile remote unit and means to verify whether the portable remote unit exists within said region (iii).**

165. *Heedfeld* does not disclose Element 8[E] because the notification in *Heedfeld* is not a notification that is sent to a particular region. Therefore, while *Heedfeld* discloses a means to identify a notification, it is not the claimed notification. Likewise, *Heedfeld* does not disclose a means to verify whether the portable remote unit exists within "said region" because this refers to region to which the notification is to be sent. As previously discussed, *Heedfeld* has no such regions to which the network directs the notice, and Mr. Andrews' analysis does not show otherwise.

D. GROUND 4: Claims 1 is not rendered obvious by Layson '757 in view of Layson '213 in further view of IllinoisLaw

- 1. A POSITA would not have been motivated to combine Layson'757 with Layson'213 in the manner Mr. Andrews suggests.**

166. I disagree fundamentally with Mr. Andrews' explanation of why a POSA would be motivated to combine these references with a reasonable expectation of success.

167. *Layson*'213's correlation database correlates crime incident data 2, 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, with offenders' locations to determine receives crime incident data and offender location data to determine whether a given offender was at the location of a criminal incident when the criminal incident occurred. (Ex-1008, 8:39-43, 20:63-21:4). The correlation database has nothing to do with victims' locations.

168. I also disagree with Mr. Andrews' assertion that "a POSITA would have recognized that the *Layson* combined system could be used to identify offenders located within a buffer region of the victim...for a prolonged period of time as potential criminal stalkers...In particular, for a victim who suspects that he/she is being stalked, the combined [*Layson*] system could be used 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, ¶ 237)

169. First, it would not occur to the POSA to enter the location of a victim into the correlation database because a victim's location is not a crime incident (even if the victim suspects they are being stalked). Additionally, Mr. Andrews' suggested

modification would have been unworkable because it would require that each time victim's location was updated, the updated location would be entered into the system as a new crime incident, thereby adding orders of magnitude to the data having to be correlated. To be meaningful, for example, each victim's location may have to be updated 100 times a day—or even more. Mr. Andrews does not describe how to implement adding such data to the database as a crime incident. It would be a significant challenge to implement such a modification with a reasonable expectation of success and without undue experimentation. Further magnifying the problem, every victim's location would have to be compared to every offender's location, making such a modification even more unworkable, let alone with nearly 25-year-old computer technology. Add to that the fact that, to be meaningful, the database would have to perform a continuous comparison of continuously updated victim location data for each victim with the continuously updated location of every tracked offender.

170. Therefore, 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*'757's teachings that the location of a victim is only used to update location constraints of an associated offender in order to alert

the central station, or in the periodic data fusion process. Mr. Andrews' suggested addition of victim location data to the correlation database 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 also violate the common-sense goal of protecting a victim from an associated offender, not from an unrelated one. In sum, it would not occur to a POSA to track the location of every offender and compare it with the location of each victim, regardless of whether or not the offender was associated with the victim or was even located near the victim.

171. 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, ¶ 237) *See also*, ¶ 242 ("*Layson's* 213's correlation database would then output a table report identifying one or more offenders (potentially unknown to the potential stalking 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.")

172. Mr. Andrews, I believe with good reason, does not at all address the feasibility of such a modification because it would be inordinately complicated, far beyond the scope addressed by *Layson*. The correlation database is designed to receive reported actual crime incidents from local authorities. There is already a massive amount of data processing involved just to correlate the reported crime incidents with offenders' locations. For the system to run a cross comparison against the victim's location as crime incidents would magnify the required processing by orders of magnitude if each victim's location were compared with each offender's location to determine whether stalking is occurring, as Mr. Andrews suggests. (Ex-1002, ¶¶ 238-242). 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.

173. Even were the POSA 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.

174. 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, ¶ 242).

175. 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.

176. 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 ’726 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 actual stalking occurred.

177. 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 ’726 Patent is only concerned with making tracking determinations with regarding to 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

IllinoisLaw in order to have any reasonable expectation of success with regard to capturing an occurrence of stalking.

178. 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?

179. 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.

180. 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.

1. Independent Claim 1

a. Element 1[pre]: A communication system comprising:

181. A POSA reading the '726 Patent understands that it is directed to providing location-based services to wireless consumers using portable cell phones to communicate with the network via wireless service providers' cellular infrastructure. The combination of *Layson'757-Layson'213-IllinoisLaw* does disclose a communication system but not the claimed communication system, as further discussed in the element-by-element analysis, because the offender and victim portable devices are not consumer cell phones using a wireless service providers' cellular infrastructure. On that basis, I disagree with Mr. Andrews' contention that "*Layson'757's* system is of the same form as the '752 [sic] patent's communication system" (Ex-1002, ¶ 251). The comparison of the respective Figure 1 of each patent shows the difference. Indeed, one can see that the portable remote units 501-508 of the '726 patent are cell phones using cellular infrastructure,

consistent with the '726 Patent's specification which describes that the invention is directed to providing location-based services to wireless consumers from the general public using mobile phones to communicate with the network via commercial cellular communication infrastructure. Ex-1001, 1:17-22 ("telecommunication services and systems", "mobile unit", "wireless industry"), 2:1-7 ("wireless consumers"), 2:20-26 ("mobile user"), 2:34-52 ("wireless subscriber", "PRU"), 3:3-29 ("mobile telecommunication system," "mobile communication targets," "communication units," "portable mobile device"). In contrast, the Layson systems are specialized offender/victim systems that are not cell phones available to the general public. Rather, the portable tracking device 12 in Layson is a specialized device "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.

b. Element 1[A]: (i) a portable mobile remote unit;

182. A POSA, reading the '726 Patent, understands that the portable remote units are cell phones carried around by wireless consumers to communicate via wireless service providers' cellular infrastructure in the wireless industry and available to the general public. *Layson'757-Layson'213-IllinoisLaw* does disclose such a portable remote unit because the offender and victim portable devices are not

consumer cell phones. I disagree with Mr. Andrews' contention that "*Layson*'757's offender portable tracking device corresponds to the claimed 'portable remote unit.'" (Ex-1002, ¶ 254). One can see that the portable remote units 501-508 of the '726 Patent are cell phones using cellular infrastructure, consistent with the '726 Patent's specification which describes that the invention is directed to providing location-based services to wireless consumers from the general public using mobile phones to communicate with the network via commercial cellular communication infrastructure. Ex-1001, 1:17-22 ("telecommunication services and systems", "mobile unit", "wireless industry"), 2:1-7 ("wireless consumers"), 2:20-26 ("mobile user"), 2:34-52 ("wireless subscriber", "PRU"), 3:3-29 ("mobile telecommunication system," "mobile communication targets," "communication units," "portable mobile device"). In contrast, the portable tracking devices in *Layson*'757's system are specialized offender/victim devices not available to the general public through the wireless industry. Rather, the portable tracking device 12 in *Layson* is a specialized device "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.

c. Element 1[B]: (ii) a network of communication units;

183. I believe a POSA would understand that the recited “communication units” in the claim are a synonymous with portable remote units, *i.e.*, the commercial cell phones of the wireless industry to communicate voice and data using cellular infrastructure, because the terms are used synonymously in the specification. Therefore, for the same reason I do not believe *Layson*’757 discloses element 1[B] for the same reasons it does not disclose element 1[A].

d. Element 1[C]: (iii) the portable mobile remote unit able to communicate with at least a transmitter within the network to establish its geographic location within the system;

184. I do not dispute that *Layson*’757’s portable tracking devices communicate with GPS satellites to establish their location and report it to the network. However, the asserted system of the *Layson*’757-*Layson*’213-*IllinoisLaw* combination does not disclose dividing the network into individually pollable geographic boundaries of the network (to which each PRU’s location coordinates corresponds.) Therefore, the GPS location does not establish a “location within the system” as that term would be understood to a POSA reading the ’726 Patent’s specification, which teaches that each PRU participating in the network is located within an individually pollable network boundary to establish a location within the system. Ex-1001, 3:46-62 (describing network boundaries are directly polled), 4:34-60 (explaining the cellular and GPS infrastructure used by the network); 5:47-55

(explaining the page is sent to the geographic boundary to units within that geographic boundary); 7:19-28 (again explaining page sent to the “required region” or necessary set of required regions) 7:30-34 (explaining that the PRUs in the boundary “pick[s] up the request”); 7:47-9:12 (explaining how pages are sent out to specific areas so that a **“PRU within that area will pick up the signal and determine if it is within the radii”** (7:63-64) (emphasis added)).

185. Therefore, *Layson’757-Layson’213-IllinoisLaw* does not teach establishing a location “within the system.”

- e. **Element 1[D]: (iv) means to request for the location information of portable mobile remote units that are in a geographic boundary that is prescribed within the coverage area of said network;**

186. *Layson’757-Layson’213-IllinoisLaw* does not teach Element 1[D]. I do not disagree that *Layson’757*’s “central data-base system” is a control unit of a network control center. See, Ex-1002 at ¶ 265. Mr. Andrews, however, asserts that this claim element is met because the central data-base system “is configured to generate a page/poll/query for the location of offender portable tracking device” by “transmitting location constraints to those offender portable tracking devices.” *Id.*, ¶ 266. I disagree.

187. The ’726 Patent explains that the network is divided into specific coverage areas wherein each coverage areas can be individually polled for just the

locations of PRUs within that coverage area. There is nothing of such a nature, or an equivalent thereto, in either *Layson*’757 or *Layson*’213. Even if a victim has two associated offenders, *Layson*’757 does not divide its system into individually pollable geographic boundaries for the locations all the offenders within that coverage area to report their locations if they are within proximity to a particular victim—nor would there be any motivation to do so.

188. Rather, as Mr. Andrews correctly states, the central database system contacts a specific offender device to download its particular “schedule rules and location constraints.” (Ex-1002, ¶ 270). The offender’s device uses those rules for two specific and distinct purposes. First, it determines its location and continuously reports it to the central database according to its given schedule. (Ex.-1007, 7:3-9) (“Once the status of the body-worn device has been established 138, the current location is compared 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.”). Second, it immediately alerts the system if there is a location constraint violation. (*Id.*, 9:48-50) (“The portable tracking apparatus notifies the subject and the central data-base system immediately when a violation

occurs.”) Mr. Andrews cites to no place in *Layson*’757 that actually states the alert includes its current location. Nor would there be any reason for there to be such an indication in *Layson* ’757 because the central database system already has the current location of the offender’s device via its continuous location reporting.

189. *Layson*’757 is an offender/victim tracking system that law enforcement uses to ensure that an offender who has been legally restrained from being within a specific distance of a victim does not violate that restriction by alerting the central database system in the event such a violation occurs. There is no teaching in *Layson*’757 of dividing its network into individually pollable boundaries so it can direct proximity and tracking requests to all offenders located in one of those boundaries.

190. Rather, as Mr. Andrews acknowledges, the central database system directly sends to an offender’s tracking device a buffer zone, based upon the associated victim’s location updates reported to the central station. (Ex-1002, ¶ 270) (“the central database station contact[s] the portable tracking device and download[s] schedule rules and location constraints to the portable tracking device”). But Mr. Andrews does not assert that this communication is made based upon the offender being located in any specific network coverage area, nor could he make any such assertion because there is no such teaching in *Layson*’757. Rather,

all Layson teaches is that “when an offender device enters within the [associated victim’s] buffer zone, it alerts the central database of this violation of the victim’s buffer zone.” (*Id.*, ¶ 271). There is no suggestion in *Layson*’757 that all offenders’ respective tracking devices receive the same location constraint, nor would this make any sense since each offender who is not legally restrained from being within the victim’s buffer zone would neither need nor have such a location constraint.

191. *Layson*’757 can individually query each offender (or victim) to disclose their location. But it cannot request for the location information of all offenders that are in a geographic boundary in any manner equivalent to the manner disclosed in the ’726 Patent. There is only means in *Layson* ’757 to (a) instruct a specific offender device to alert the central database system when that offender device has violated a location constraint such as when it is within a specific buffer zone of an associated victim; or (b) to individually poll each offender device for its location, regardless of its location. Nothing in *Layson*’757 discloses an architecture that allows polling individual geographic boundaries for PRU locations within that boundary, or its equivalent. Therefore, this claim element is not met.

192. I disagree with Mr. Andrews’ statement that “each time it receives an updated victim location, the central [database system] sends a request...to all offender portable tracking devices that are associated with the victim, requesting that

such offender devices send their location to the database, if they are located inside of the victim's buffer zone.” (*Id.*, ¶ 273). First, the central station is not sending a request to a specific boundary, it is sending a location constraint—which is a parameter—to a specific offender device regardless of where that offender device is located. Second, there is no necessity that a second offender device exists that is actually restrained from being within the same buffer zone of the same victim. However, even if such a second offender device exists it too would receive the location constraint from the central database system regardless of where they were located, which may be in a totally different area than the first offender device. This fact only shows that *Layson*’757 does NOT include the claimed means. Fourth, the offender’s tracking device may never violate the location constrained and, therefore, may never report an alert to the system—which would be unsuitable for the purpose of the ’726 Patent and only serves to highlight the difference between its architecture and the architecture of the *Layson*’757’s victim/offender system. Fifth, even if such an alert was ever made, it would not necessarily include the location of the offender device, since the offender and victim’s respective tracking devices are already “continuously” reporting their locations to the central station. Ex-1007, 2:46-58 (discussing the continuous location reporting of the tracking devices), 7:15-19 (describing the continuous reporting is per the device’s schedule rules), 8:9-20

(describing that the central database system's data fusion process examines the present and past locations of the offender relative to the associated victim to determine whether "the offender's current position relative to any associated victim's current position" requires "any alarms to law enforcement or corrections, commands to the offender and warnings to the victim...based on the dynamic movements of the offender and victim.") Therefore, the location constraint update is not a location request, as Mr. Andrews suggests.

193. Consequently, I disagree with Mr. Andrews' conclusion that "notifying the central database that the offender's device is located within the victim's buffer zone would have entailed the offender's portable tracking device providing its current location." Indeed, Mr. Andrews bypasses the specific teachings in *Layson*'⁷⁵⁷ regarding how the data fusion process works which reinforces that the central database already has the current and past locations of the offender's device from it continuously updating its location (Ex-1007, 8:9-20). Instead, Mr. Andrews cites to a general summary that states only that the offender's device immediately notifies the system of the violation, at which time the central database system determines what to do next based upon its guidelines and the nature of violation: "The portable tracking apparatus notifies the subject and the central data-base system immediately when a violation occurs. The central data-base system contains

guidelines in the schedule rules for each offender regarding the notification response to corrections, law enforcement and victims based on the nature of the offender's violation.” (Ex-1007, 9:48-54).

194. Nothing in this passage suggests any need for the offender’s alert to include the offender’s location in the alert. because the central database already has a current location via the continuous updates.⁸ Mr. Andrews simply ignores the portions of the *Layson*’757 specification that the database already has a “continuous” stream of the offender’s tracking device’s current location through the scheduled updates. For this additional reason, the claim element is not met by either *Layson*’757 or the asserted combination.

195. Finally, I address Mr. Andrews’ statement that “*Layson*’757 also discloses querying the portable tracking devices for their locations as part of the ‘data fusion processing’” also meets the claimed function. (Ex-1002, ¶ 281). I disagree.

⁸ Rather, *Layson*’757 teaches that the task of continuously comparing its location with the location constraint is offloaded to the offender’s tracking device so that the central database system need not continuously perform this calculation but rather receives an alert instead. Ex-1007, 8:21-29, 50-56. (explaining the task of making instant real-time determination when violations occur is offloaded to the offender’s unit whereas the central database system performs data fusion).

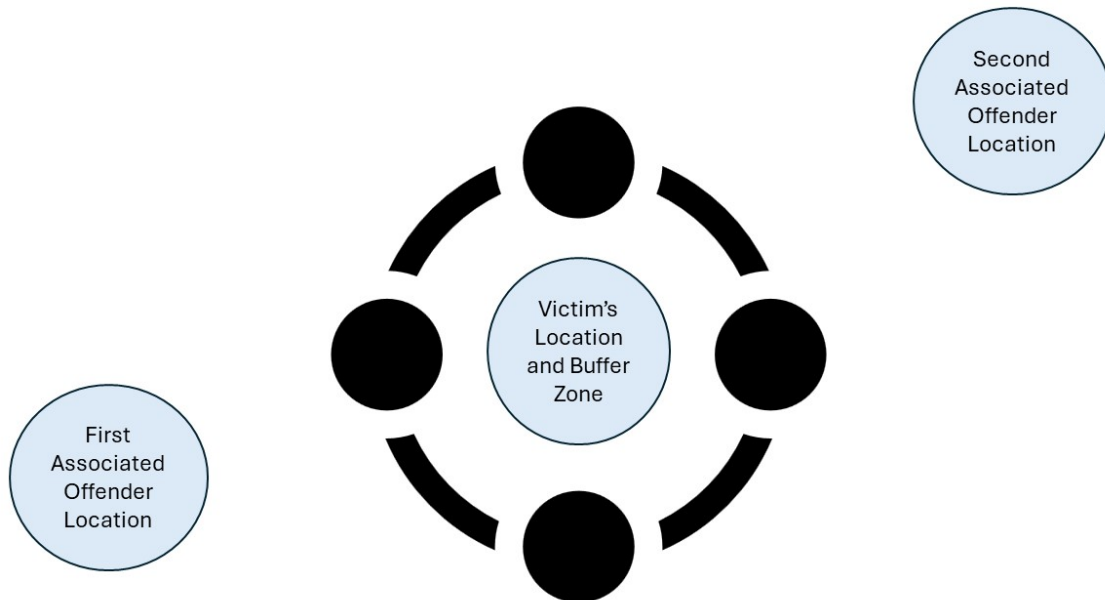
196. The data fusion process is done by the central database system as part of examining “[a]n offender’s current position relative to any associated victim’s current position” to determine “if any alarms to law enforcement or corrections, commands to the offender and warning to the victim are required based on the dynamic movements of the offender and victim.” (Ex-1007, 8:9-19).

197. The data fusion process does not need to request a location. Again, each device continuously reports its location to the central database system in “deterministic reporting intervals based on schedule rules” (*Id.*, 7:40-42). *See also*, 7:14-20 (explaining how location reporting is implemented according to schedule); 2:50-58 (explaining that the tracking devices provides “continuous” location information). Thus, the central database system already has the current location information of both a victim’s and an associated offender’s devices and, as part of the data fusion process, “examines the present and past location of the subject 212 since the previous data transfer.” (*Id.*, 8:9-11). As to be expected, the central database system can also query any device at any time it deems such a query necessary, such as when the device has failed to perform its scheduled location reporting. (*Id.*, 7:58-62).

198. Again, none of this activity or any other activity in *Layson*’757 meets the claim limitation because its architecture cannot meet this limitation to allow the

system to poll a specific boundary of the network for the location of PRUs within that boundary at the time the poll is made, as the '726 Patent teaches and the claim element requires. Layson lacks any such means and Mr. Andrews' analysis fails to show otherwise.

199. For example, the below diagram illustrates a victim who has two associated offenders. Both offenders receive the same location constraints relative to that victim but are not (and need not be) currently in the buffer zone when they receive the location constraint message.



200. These units may never come within the buffer zone to provide an alert. Therefore, this diagram shows the unsuitability of *Layson*'757's system to the

purposes of the '726 patent, which requires polling network boundaries for the locations of one or more PRUs currently within such network boundary so that the system may further process only those locations.

- f. Element 1[E]: (v) means to provide the location information of the portable mobile remote unit to the network upon determination that the portable mobile remote unit is within said prescribed geographic boundary requested by the network;**

201. *Layson'757-Layson'213-IllinoisLaw* does not teach Element 1[E] for the same reason as it does not teach Element 1[D].

- g. Element 1[F]: (vi) means to determine and report to the system that, another portable mobile remote unit has maintained relative proximity to the portable mobile remote over a period of time while in motion.**

202. *Layson'757-Layson'213-IllinoisLaw* does not teach Element 1[F]. The '726 Patent teaches a technical solution for providing location-based services in networks using the cellular infrastructure of the wireless telecommunication industry (which may involve tens of millions of participating PRUs). Therefore, an essential portion of the '726 Patent's teachings is dividing the network into boundaries that can each be individually polled for the locations of PRUs currently within that boundary so that further location processing can be made on only that set of PRUs (such as determining whether one wireless customer is using their PRU to track another or is available to assist the latter). The division of the network into

individually pollable boundaries is critical or the system cannot efficiently or practically make these determinations. *Layson*'757's system is not directed to making commercial wireless networks and location-based services carried thereupon more efficient and *Layson*'757 does not include this element, or its equivalent, as is evident from Mr. Andrews' analysis.

203. I agree that *Layson*'757's central database system includes *multiple* control units for performing tasks in connection with the real-time processing of location data received automatically at intervals from each offender's tracking unit (and from at least some associated victims' tracking units). (See, Ex-1002, ¶ 271). However, this continuous time interval reporting of location data is *not* dependent upon an offender and an associated victim being in proximity to one another but rather occurs regardless of whether they are located relative to one another.

204. Therefore, in my opinion, Mr. Andrews' statement that "the central database received the location of the victim and [the associated] offender devices at intervals, when the victim and offender devices are in proximity to one another" (*Id.*) is incorrect because proximity does not trigger the time interval reporting. Rather, the passing of the time interval triggers the reporting, regardless of where the offender or associated victim are located. Moreover, Mr. Andrews is factually incorrect that sending a location constraint to the offender device triggers it to

immediately provide its location. Putting aside the lack of any need for a location constraint violation alert to include a current location, because the central database system already has it via the time interval reporting, the fact remains that the offender's device may be nowhere near the victim at the time when they receive the location constraint and may never issue an alert. While the central database system can make a location request to any tracking device at any time (for example, if the device has stopped its time interval reporting), the sending of a location constraint is not making a location request. Rather, it is making a request for the offender's unit to alert the system should the location constraint ever be violated. Even if the alert included the device's location, which it does not, the alert may never be sent. This is quite different from and completely unsuitable for the purposes of the '726 patent which needs current locations to make its determinations.

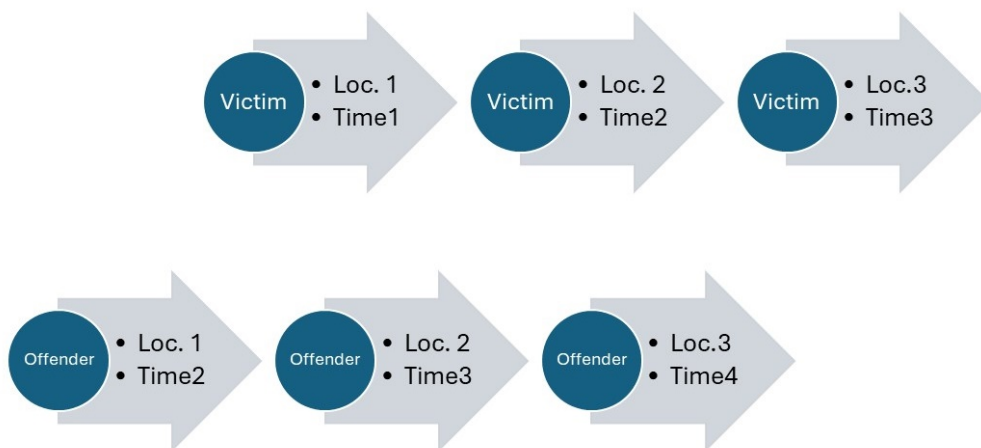
205. *Layson*'757 discloses that an offender will trigger a constraint violation alert if it violates any geographic boundary constraint of a victim. Even if such an alert necessarily included the location, and it does not, *Layson*'757 does not teach "means to determine and report to the system that, another portable mobile remote unit has maintained relative proximity to the portable mobile remote over a period of time while in motion."

206. *Layson*'757's lack of teaching this claim element is not cured by reporting to *Layson*'213's correlation database a location constraint/exclusion zone violation because a location constraint violation is literally just that, that the offender was in the exclusion zone. First, adding a "loiter time" before alerting the system of a location constrain violation contradicts *Layson*'757's teaching that violations be immediately reported. But even if one added a "loiter time", whereby a *Layson*'757 did not send an alert to the *Layson*'213 database unless the offender had "loitered" within the exclusion zone for some minimum amount of time, this does not mean that the offender's and associated victim's respective devices move together over a pre-specified distance for a pre-specified period of time while maintaining locations within a pre-specified radius from each other.

207. For example, the victim does not need to move for an exclusion zone violation to occur. The victim may be static and the offender's tracking device would still issue an alert if the offender moved into the exclusion zone. The opposite is also true: the offender may be static, and the victim could be moving towards them. The offender's device would still receive an updated location constraint based upon the victim's current position and report a violation when the victim had moved such that their buffer zone had moved to encompass the victim. Accordingly, none of

these scenarios requires that the two devices have maintained relative proximity over a period of time while in motion.

208. Nor does *IllinoisLaw* teach the specific tracking algorithm of the '726 Patent because following a victim from place to place does not require that the offender move in tandem with the victim within a certain radius of the victim during the tracking period. For example, the offender could be following the victim from place to place several minutes behind the victim, such as depicted below, and not necessarily moving in tandem within a pre-specified radius, as depicted below:



209. In contrast, the '726 tracking algorithm determines whether a PRU in the same network boundary as the subject PRU remains also within a pre-specified radius of the subject PRU while both are moving at certain sampled time intervals over the tracking period. *IllinoisLaw* does not teach this specific technique.

210. Therefore, the proposed combination does not disclose this claim element in any manner.

E. Ground 5: Claim 2 is not rendered obvious by *Layson*'757-*Layson*'213-IllinoisLaw in view of *Wang*

1. A POSA Would Not Have Been Motivated to Combine *Layson*'757-*Layson*'213-IllinoisLaw-*Wang* or Had a Reasonable Expectation of Success

211. Mr. Andrews suggests that a POSA would have been motivated to incorporate *Wang*'s "borders" to stop location reporting if the offender is within an "allowed region," such as their home or work. I disagree. First, there is no evidence that the offender/victim system would benefit from non-reporting of a location. Even if the offender was at home or work, and a POSA wanted to reduce the amount of data being transmitted to the central database system for the sake of efficiency, a POSA could simply program the system to have a different time interval for location reporting when they were in an allowed location.

212. I find it particularly hard to understand why Mr. Andrews asserts that a POSA would be motivated to completely eliminate location reporting from such a region when he has also argued to combine *Layson*'757 with *Layson*'213 by adding the latter's correlation database to the former (and even to add to the correlation database *Layson*'757's victim device location reporting) because there would be no way for the correlation database to eliminate the offender as a suspect of a crime without having the offender's location reporting with at least some frequency even

if they are at their home or work because, for example the crime may have been committed at their work location.

213. Even from the standpoint of eliminating the offender as a suspect of a crime that may have been committed very close to their home or work address, the system would need at least some confirmation of the offender's location. Therefore, even if a POSA wished to conserve network resources, they would not wish to introduce into a law enforcement tracking system any technology that results in the offender's location being completely unreported for potentially large periods of time, even when they are located at home or work.

2. The Combination of *Layson*'757-*Layson*'213-*IllinoisLaw-Wang* Does Not Disclose Claim 2

214. Claim 2 recites:

The portable mobile remote according to claim 1, having means to further determine if location disclosure for the remote unit is prohibited at a specific geographic boundary before sending its location information to the network.

215. Adding *Wang* does not result in the practice of the claim. *Wang* does not fill in any of the missing material in *Layson*'757-*Layson*'213-*IllinoisLaw* because *Wang* does not introduce individually pollable network boundaries of the '726 Patent or its tracking algorithm, let alone both.

216. Rather, *Wang*'s system introduces a "border" that is sent to a remote device in a fleet vehicle after it has reported a current location (that is physically within that border) to a central station. The central station determines the size of the "border" based upon how far the reported location is from a state line. The further the reported location is from the state line, the larger the size of the "border" returned to the remote device. When the vehicle has been driven to a location outside of the "border," it again reports its location to the central station. The central station will then send either a larger or smaller border depending on whether the vehicle is closer to or further away from the state line, with the process iterating so that the vehicle more frequently reports its location as it is getting closer and closer to the state line. The border is simply a circle with a defined radius from the remote unit's reported position. The unit is therefore located within the border when time it has reported its position. Therefore, introducing *Wang* does not result in the non-reporting of a location when the remote device is within the border.

217. Mr. Andrews here again asserts that the victim's tracking device in *Layson*'757 includes location constraints, citing Ex-1007, 9:35-37, which uses the word "subject" in discussing the "subject's schedule rules and location constraints." But a POSA would not glean from the use of the term "subject" here in connection with "schedule rules and location constraints" that this is referring to the victim

because, later in the same paragraph (*Id.*, 9:50-54), it specifically states that the subject's being referring to are "offenders." Also, it does not make sense that a victim would have a location constraint because they have violated no laws and have no restraining orders or other prohibitions to their freedom of movement. Even so, where there a motivation to impose on a victim "static prohibited areas corresponding to the offender's allowed areas" this does not result in the disclosure of this claim because the question is whether a POSA would stop offender location reporting (or per *Wang* just have the location reported once) while the offender is in an inclusion zone where they are always permitted to be. And the answer to that is even if the POSA were motivated to incorporate *Wang*, this would still not result in the practice of the invention because the offender device would still report their location once when in a permitted location if *Wang*'s teachings were incorporated by a POSA.

218. However, as I previously discussed, such would not be a POSA's motivation, because reduction in transmission bandwidth would be realized simply by less frequent location reporting in an exclusion zone and *Wang*'s single instance location reporting would probably not suffice in the context of an offender/victim system that requires continuous knowledge of an offender's and associated victim's location. Indeed, if Mr. Andrews' analysis is to be credited that the victim would

have location constraints, the system would want confirmation the offender was actually at home or at work to alert the victim to avoid those locations.

219. In sum, none of the prior art in the combination asserted against claims 1 and 2 are designed to address the large-scale problems in providing location-based services to millions wireless consumers across the country through their cell phone and cellular networks. None of them are designed to efficiently make tracking determinations in such an environment between units that are not associated with each other. None of these teach dividing the network into individually pollable network boundaries so that the tracking determinations can be made only within the set of devices within the individually pollable boundary at the time of the tracking determination. And none teaches the tracking algorithm used in the '726 Patent.

XII. CONCLUSION

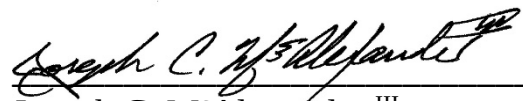
220. It is thus my opinion that Claims 1, 2, 8, 12 and 13 of the '726 Patent would not have been obvious and should not be canceled as unpatentable over the prior art and grounds raised by the Petitioner.

221. 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