# PATROLL Winning Submission

## U.S. Patent 11,308,156

U.S. Patent 11,308,156 ("*Mimzi LLC*" or the "patent-at-issue") was filed on July 24, 2021. According to its cover page, the publication claims a priority date of July 29, 2008 on the basis of a prior application. Claim 1 of the patent-at-issue is generally directed to a mobile phone system comprising a Bluetooth transceiver, a cellular transceiver, a global positioning system (GPS) device for determining the phone's location, a graphic display, and an automated processor. The processor controls the Bluetooth to receive nearby device identifiers, generates a record with time and location using GPS data, and transmits it to a remote searchable database via the cellular transceiver. It then searches the database for location-related records, receive event information with time and location from the database, present a GPS-referenced map on the display, and display event locations on the map obtained from the database via the cellular transceiver.

The primary reference, U.S. Patent 7,155,238 ("*Daak*"), was filed on July 6, 2004. and claims priority on the same date. The patent is directed to a method to locate moving objects, such as people, pets and vehicles, over a wide area, by attaching small wireless devices, such as Bluetooth transceivers, to said objects and determining the location of said devices. The location of said wireless devices is determined by achieving ad-hoc short range wireless connectivity between said devices and communication devices such as Bluetooth enabled mobile phones that pass by, where said latter communication devices can be located by other means, such as GPS or network-based techniques.

The primary reference, U.S. Pat. App. 2007/0037605 ("*Logan*"), was filed on October 18, 2006. According to its cover page, the publication claims a priority date of August 29, 2000 on the basis of a prior application. The patent is directed to a system for controlling the magnitude or timing of the alert signal generated to notify the user of a portable telephone of an incoming phone call. Data values that indicate the status of the telephone are processed to control the character of the alert signals. These data values may include position data indicating the absolute location of the phone or the relative location of the phone with respect to another object, the level of ambient light or sound in the vicinity of the telephone, the time of day, the movement of the telephone, and/or whether the telephone is being held by the user.

A sample claim chart comparing claim 1 of *Mimzi LLC* to *Daak*, *a*nd *Logan* is provided below.

| **US11308156** (“*Mimzi LLC*”) | **A. US7155238** (*“Daak”*)<br>**B. US20070037605** (*“Logan”*) |
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| 1. A **mobile phone system**, comprising:<br><br>[1.a] (a) **a Bluetooth radio frequency transceiver**;<br><br>[1.b] (b) **a cellular wireless transceiver**;<br><br>[1.c] (c) a **global positioning system device configured to automatically determine a global location of the mobile phone system**;<br><br>[1.d] (d) **a graphic display**; and | **A. US7155238**<br>“**TU** 102 **and tag** 101 **obtain a short-range wireless transceiver** (shown in FIG. 2), **for communicating with each other**. Preferably, communication network 103 is a cellular/mobile phone network and **TU** 102 **is a cellular phone handset with an embedded GPS receiver** and **embedded Bluetooth (“BT”) short-range radio** (shown in FIG. 102). Alternatively, TU 102 may be a mobile telephone, a portable computer, an Access Point/gateway or a PDA.” *Daak* at col. 8:10-18<br><br>“The **geographical location of** TU 102 **is determined by utilizing conventional technologies/methods (e.g., GPS).** Therefore, the location of wireless tag 101, when in the vicinity of TU 102 and when a short-range wireless connectivity is achieved between them, can be determined.” *Daak* at col. 8:24-29<br><br>“Once a connection is established, the child's location is determined and the control center calls back the child's escort and reports the child's location, guiding him/her to the child, preferably assisted by a digital map **displayed on his/her mobile phone**.” *Daak* at col. 11:40-44<br><br>**B. US20070037605**<br>“As described below, the invention may be used to particular advantage in connection with **a cellular telephone and may be implemented using conventional components of the type commonly used in advanced cellular phone systems**. . . **The cellular phone further includes a display** 107 **that typically takes the form of a small, backlit monochrome or color LCD panel**.” *Logan* at par. 0054<br><br>“**The cellular telephone preferable includes a built-in GPS system** 113 **which produces location data specifying the absolute geographic location of the cellular phone in latitude and longitude**.” *Logan* at par. 055<br><br>“**The cellular telephone also preferable includes a built-in Bluetooth transceiver which, in addition to other Bluetooth** |

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| *(cont.)*<br>1. A **mobile phone system**, comprising:<br><br>[1.a] (a) **a Bluetooth radio frequency transceiver**;<br><br>[1.b] (b) **a cellular wireless transceiver**;<br><br>[1.c] (c) a **global positioning system device configured to automatically determine a global location of the mobile phone system**;<br><br>[1.d] (d) **a graphic display**; and | **functions, operates as a Bluetooth beacon system** 115 for detecting that other Bluetooth enabled objects are nearby, and for indicating its position to such objects." *Logan* at par. 0056<br><br>"**The cellular telephone further includes** a microphone 121 for capturing spoken voice signals from the operator, a light sensor 122 for determining whether the cellular phone is in the dark, a pressure sensor or a capacitive sensor123 for determining whether or not the telephone handset is being held, an accelerometer 124 for determining if the cellphone is at rest or in motion, a speaker or earpiece 125 for delivering audible sounds to the operator, and **a cellular transceiver** 128 **coupled to an antenna** 127 **for sending and receiving radio frequency transmissions to and from the cellular telephone via the cellular network** (and/or the public switched telephone network) to a remote telephone station set as illustrated at 125 by a cellular phone having like functionality." *Logan* at par. 0057 |
| [1.e] (e) **at least one automated processor** configured to: | **A. US7155238**<br>"Alternatively, **TU** 102 **may be a mobile telephone, a portable computer, an Access Point/gateway or a PDA**. Wireless tag 101 is essentially a BT-based radio (as shown in FIG. 2 102 b) powered by a power supply, preferably a small-sized battery (not shown)." *Daak* at col. 8:16-20<br><br>**B. US20070037605**<br>"As described below, the invention may be used to particular advantage in connection with **a cellular telephone and may be implemented using conventional components of the type commonly used in advanced cellular phone systems. The makeup and organization of these components is illustrated in** FIG. 1 **of the drawings and consists of a microprocessor** 101 that executes routines initiated by the operator's manipulation of a keypad 103." *Logan* at par. 0054 |
| [1.f] (i) **control the Bluetooth radio frequency transceiver to automatically directly receive at least an identifier of an adjacent mobile wireless communication device**; | **A. US7155238**<br>"The system consists of **at least one wireless tag** 101, **attached to a roaming object, in which a unique data is stored, a plurality of communication devices (hereinafter referred to as TUs, only one TU:** 102 **is shown)**, a wireless communication network 103 and a control center (i.e., LS: 104). Whenever required, **the data stored in wireless tag** 101 **is transmitted to a destination** (which may be, or may be linked to, control center 104), **[through] TU** 102 **and over** |

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| *(cont.)*<br>[1.f] (i) **control the Bluetooth radio frequency transceiver to automatically directly receive at least an identifier of an adjacent mobile wireless communication device**; | **communication network** 103. TU 102 and tag 101 obtain a short-range wireless transceiver (shown in FIG. 2), for communicating with each other." *Daak* at col. 8:2-12<br><br>"Preferably, no prior knowledge of each other or synchronization ("pairing") is required between tags and TUs for establishing communication link 105, **as long as they both comply with the same communication standard (e.g. BT standard), which supports ad hoc connections.** In other words, **as long as some commercial and procedural issues are set (perhaps a specific profile for location service is defined in future versions of BT standard) link** 105 **could be established between a tag that roams around the world** (e.g. embedded in a letter), **and BT-enabled cellular devices that are encountered on its way**." *Daak* at col. 8:56-66<br><br>**B. US20070037605**<br>"**This Blootooth beacon system may be supplemented with an RFID tag reader** (not shown) **for detecting and identifying nearby objects which are tagged with RFID tags**. The cellular phone may also implement an MPS cellular location systems. **These mechanisms for sensing the absolute location of the portable phone, or its location relative to other objects or regions**, are used to control the manner in which alert signals are sent to the user to indicate the arrival of incoming calls, and for other functions." *Logan* at par. 0056 |
| [1.g] (ii) **automatically generate a record of the received identifier**, **along with a time and the global location of the mobile phone system automatically determined by the global positioning system device**; | **A. US7155238**<br>"Once link 105 is established, the tag's ID is transmitted to the TU, with other optional data, such as the tag's battery status. Tag 101 remains in its active mode for a certain period of time, trying to establish a connection as many as N times, and, then, switches back to power-save mode. This policy is carried out in order to save the tag's battery power, but also to save "airtime" over the Telecom network. There is a trade-off in determining the parameter N: a high value increases the probability to determine the tag's location, but a low value saves tag's and TU's power and airtime over the network. **At the TU, the tag's report may be recorded in a memory or storage array,** or immediately relayed to LS 104. **TU is preferably a cellular handset featured with a GPS receiver, so the handset's position at the time that the tag reported its ID is monitored** and the control center that receives both the tag's ID and nearby TU location, can report the tag's location." *Daak* at col. 9:11-27 |

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| [1.h] (iii) **automatically transmit the record to a remote automated searchable database through the cellular wireless transceiver**; | **A. US7155238**<br>"The system consists of at least one wireless tag 101, attached to a roaming object, in which a unique data is stored, a plurality of communication devices (hereinafter referred to as TUs, only one TU: 102 is shown), a wireless communication network 103 and a **control center** (i.e., **LS: 104**). Whenever required, **the data stored in wireless tag** 101 **is transmitted to a destination (which may be, or may be linked to, control center 104)**, **[through] TU** 102 **and over communication network** 103. TU 102 and tag 101 obtain a short-range wireless transceiver (shown in FIG. 2), for communicating with each other" *Daak* at col. 8:2-10<br><br>"At the TU, the **tag's report may be** recorded in a memory or storage array**,** or **immediately relayed to LS** 104. TU is preferably a cellular handset featured with a GPS receiver, so the handset's position at the time that the tag reported its ID is monitored **and the control center that receives both the tag's ID and nearby TU location, can report the tag's location**." *Daak* at col. 9:21-27<br><br>"According to the preferred embodiment of the invention, **LS** 104 **is a server allowing to locate tags of interest**." *Daak* at col. 9:28-29<br><br>**B. US20070037605**<br>"The data server 311 provides data services using standards based Web services (i.e. data lookup services which may be invoked by sending an XML SOAP request message containing a data request to which the data server responds with an XML SOAP response. **The data server maintains a geographic map database** 319 **which permits the server** 311 **to respond to requests specifying a street address, city and state with a geographic "point location" expressed as a latitude and longitude value as indicated at** 321. **Using the location and function database seen at** 323, **a cellular phone** 301 **equipped with a GPS location sensor may transmit its current location as a geographic position designation comprising a latitude value and a longitude value to the database** 311 when an incoming call arrives and when the cell phone user would normally be alerted." *Logan* at par. 0079 |

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| [1.i] (iv) **automatically communicate information from the mobile phone system to the remote automated searchable database through the cellular wireless transceiver to search at least global locations associated with records stored in the remote automated searchable database;** | **A. US7155238**<br>"According to the preferred embodiment of the invention, **LS** 104 **is a server allowing to locate tags of interest. Upon receiving a request from a client to locate a specific tag, at least one parameter from the group of {Tag ID; TIME; Geographical Region; TU ID} is used in the interrogation message/signal that is transmitted over the network,** seeking TUs that are (or recently were, or will be) in contact with tags, according to said input parameters. **The corresponding TUs transmit back the relevant data/records, to LS** 104, **then LS** 104 **reports to the client the results of this interrogation i.e., the current, or the last known, location of the tag, including the time that corresponds to this location**." *Daak* at col. 9:28-39<br><br>**B. US20070037605**<br>"**The database server** 311 **compares that location with locations recorded in the database to determine if the "manager" of a given location has suggested a particular alert signal setting.** For example, if the cellphone is within a predetermined range of the THEATER whose location is recorded in the database, an indication is returned to the cell phone indicating that the ring tone should be silenced. Similarly, **if the requesting cellphone indicates that it is located at or near the SPORTS STADIUM**, the database server 311 returns an indication that the alert signal should be delivered at high volume because of the likelihood of high ambient noise levels." *Logan* at par. 0079 |
| [1.j] (v) **automatically receive information about an event along with a time and global location of the event from the remote automated searchable database through the cellular wireless transceiver responsive to the automatically communicated information;** | **A. US7155238**<br>"According to another aspect of the invention, whenever an intruder breaks into a vehicle to which a wireless tag is affixed, the wireless tag is used for detecting the presence and the location of the intruder by utilizing his own cell phone. In this case, the car's alarm system integrates a wireless tag. Once the alarm system detects that the car was been intruded unlawfully, it triggers the tag, which in turn tries to establish a BT link with a nearby BT enabled cellular phone. In case that the intruder carries such a device, **the tag transfers to the intruder's phone its ID and a pre-defined message code that indicates the alarm status. Upon interpreting the alarm code**, **the cellular phone transmits the data to the LS, or to a linked control center**, where appropriate measures are taken. **The control center is capable of keeping track of the location of the car** (and of the intruder, while driving the car). |

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| *(cont.)*<br>[1.j] (v) **automatically receive information about an event along with a time and global location of the event from the remote automated searchable database through the cellular wireless transceiver responsive to the automatically communicated information;** | If at some point the intruder leaves the car, his location can be further tracked after he moves away from the car, while the car's last known location is recorded at the place where the intruder deserted it." *Daak* at col. 11:54-67 through col. 12:1-5<br><br>"1. A communication system for determining geographical location of roaming objects in a vicinity of a plurality of communication devices, comprising:<br>…<br>wherein the **control center communicates with the plurality of communication devices for the presence of tags in their vicinity, according to at least one of the following parameters**: a tags identification; **time at which said unique data is transmitted; a geographical region**; identification of said plurality of communication devices **and a trigger signal generated at the tag or input to the tag**." *Daak* at claim 1<br><br>**B. US20070037605**<br>"Further, as seen at 331, **the server** 311 **can use the database** 323 **to respond to a request indicating a point location, a range value, and a service description with the phone number of any participant who performs the stated service and is located within the stated range of the stated point**." *Logan* at par. 0081<br><br>"**The server** 311 **further supports log-in and log-out messages in which a participant posts its current location, telephone number and offered service to the database** 323, **or alternatively a location and an indication of the ring tone characteristics that are appropriate when a requesting cellphone is in the vicinity of that location**. Upon accepting the log-in data, the server returns a record number to the participant. The participant can thereafter log-out, cancelling its participation, by sending a log-out request which includes the supplied record number. At log-in time, the participant may further state the time during which the log-in data should remain in effect." *Logan* at par. 0082 |
| [1.k] (vii) **automatically present a global positioning system referenced map on the graphic display**; and | **A. US7155238**<br>"**LS server** 104 **retrieves the tag's geographic coordinates (i.e., latitude and longitude) and using proper software (GIS—Geographical Information System) and digital maps, convert geographic coordinates into a corresponding physical address, being more friendly to the client**." *Daak* at col. 9:39-44 |

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| *(cont.)*<br>[1.k] (vii) **automatically present a global positioning system referenced map on the graphic display**; and | "Once a connection is established, the child's location is determined and the control center calls back the child's escort and reports the child's location, guiding him/her to the child, preferably assisted **by a digital map displayed on his/her mobile phone**." *Daak* at col. 11:40-44<br><br>**B. US20070037605**<br>"The data server 311 not only provides information that enable the portable phone to automatically set the nature of the alert signals it issues, **it converts the absolute geographic position data (latitude and longitude) into a name or symbol which indicates in human perceptible form the plane where the portable phone is located.** For example, if the GPS system indicates that the portable phone is within a predetermined distance of geographic point or region called "Office." **that human-perceptible designation may be displayed** or used to determine whether or not the currently detected position satisfies a rule condition that the phone be located at the "Office."" *Logan* at par. 0080 |
| [1.l] (viii) **automatically display within the global positioning system referenced map, at least the global location information of the event received through the cellular wireless transceiver from the remote automated searchable database.** | **A. US7155238**<br>"c) a control center being linked to said destination, for receiving said unique data from said tag and for using said unique data and the location of the plurality of communication devices, **through which said unique data is transmitted, for determining and displaying the geographical location of said tag**, wherein the control center communicates with the plurality of communication devices for the presence of tags in their vicinity, **according to at least one of the following parameters: a tag's identification; time at which said unique data is transmitted; a geographical region; identification of said plurality of communication devices and a trigger signal generated at the tag or input to the tag**." *Daak* at claim 1<br><br>"The corresponding TUs transmit back the relevant data/records, to LS 104, then LS 104 reports to the client the results of this interrogation i.e., the current, or the last known, location of the tag, including the time that corresponds to this location. **LS server** 104 **retrieves the tags geographic coordinates (i.e., latitude and longitude) and using** proper software (GIS Geographical Information System) and **digital maps, convert geographic coordinates into a corresponding** |

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| *(cont.)*<br>[1.l] (viii) **automatically display within the global positioning system referenced map, at least the global location information of the event received through the cellular wireless transceiver from the remote automated searchable database.** | **physical address, being more friendly to the client**." *Daak* at col. 9:35-44 |