We pioneer the Technology behind Indoor navigation and Indoor Mapping as well the RF beacon Technology and owns

The most complete Indoor mapping and indoor Navigation Intellectual Property

Indoor Navigation™

Indoor View™ Mall View™

Indoor View.com™ Indoor Mapping.com

Home Beacon™ Car Beacon™

Nav4™ Ugate™ Sense4™



ugate™,Gesher™, Sense4™,Sense4Parking™, Sense4waste™,Sense4mail™, Sense4pedestrian™, Sense4childseat™, Sense4traffic™,Sense4gun™, Sense4customer™, Sense4Sign™, Indoor View ™, Indoor Navigation ™,Nav4 ™,BBeacon ™,Car Beacon™,Home Beacon™,Blueumbrella ™ are protected trade marks ,
protected by one or more of patent:
8,836,580, 8,866,673, 8,896,485, 7,924,149, 8,941,485, 9,374,673, 7,899,583, 9,020,687, 9,204,251, 9,204,257, 9,491,584, 9,420,423, 9,602,193, 9,538,332, 9,674,684
9,772,193 and pending patents

LBN
LOCATION BUSINESS NEWS
LOCATION NEWS AND MARKET INFORMATION

The Market for Navigation and Indoor Navigation™ (Local Ad and LBS)expect to reach over 1.8 Trillion In 2030!!!

We are behind the Technology which become the de-facto standard for Indoor navigation and Indoor Mapping featuring the : locating engine technology utilizing RF signal emit from proximity known address devices

Indoor Navigation™

Indoor View™

Indoor View.com™

Indoor Mapping.com

Indoor Navigation

Indoor navigation deals with **navigation within buildings**. Because GPS reception is normally non-existent inside buildings, other positioning technologies are used here when automatic positioning is desired. Wi-Fi or beacons (Bluetooth Low Energy, BLE) are often used in this case to create a so-called **"indoor GPS"**. Contrary to GPS, however, they also enable you to determine the actual floor level. Most applications require an "indoor routing" functionality that guides people precisely through a building using an indoor navigation app and in this way, automatically determines their position - very similar to the navigation systems that we use in our cars. A typical application is **turn-by-turn navigation** in an app (displaying directions on a digital map) used for train stations, airports, shopping centers and museums. This kind of application can also include many other useful services. However, indoor navigation is not possible without automatic positioning - for example, when a digital building map is integrated into a website or in a **digital signage system** (multi-touch

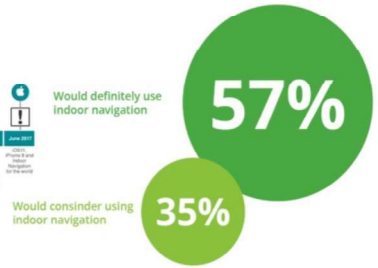
In the last 15 years, the global #positioning system has changed the way people travel. However, the real revolution of the industry occurred with the #GPS implementation into smartphones. Nowadays, more than 67% of smartphone owners use GPS at least occasionally for outdoor navigation. In contrast to that, indoor is where people really spent their time. The average westerner spends 90% of his life indoors - thereby consuming 80% of the mobile data. In large buildings with complex layouts, visitors often get lost. Consequently, smartphone users desire a GPS-like solution for #indoor #navigation.

92% of users would definitely use or consider to use Indoor Navigation ® ...

From the news:
Apple will launch indoor navigation for all iPhone users

Apple development time line





Indoor Navigation ® is our register trade mark

And protected by many award patents going back to 2005..

The most complete Indoor mapping and indoor Navigation Intellectual Property

The Market for Indoor Navigation™ (Local Ad and LBS)expect to reach over 1.8 Trillion In 2030!!!

According to recent research, indoor navigation may represent the most important and biggest market

We have pioneers developed and patented the most foundational technologies that are critical for precise location mapping and navigation, particularly in indoor environments.

Our locating engine method leverages an RF signal from a known indoor proximity device location, enabling accurate outdoor positioning (in addition to GPS and cellular) as well as effective indoor navigation. Furthermore, we pioneered beacon technology well before the advent of Apple's iBeacon and Google's counterparts.

Our patents date back to early 2005, predating the innovations of Apple, Google, Samsung, and the smartphone era, in fact the main phone in 2005 was Motorola flip phone ... with 2" screen, no GPS and no mapping... Apple and Google did not even exist in that field ...

It is essential to recognize that we are not only the first to innovate but also the rightful owners (meaning again ...that we were first...) of significant intellectual property, including the **trademarks** for "**indoor mapping.com**," "**indoor navigation**," "**indoor view," indoor view.com and the domain indoorview.com. And indoor mapping.com.** ... our portfolio contains **21 patents) 19 allow and 2 pending**)

Best explain by US patent office examiner as a reason for the patent (one of the first one...)

From US Patent office Examiner:

2) The following is an examiner's statement of reasons for allowance: the examiner found no teaching in the prior art that would render obvious the claimed method for navigation indoor and outdoor in a facility area like a mall department store downtown center building on at least one display device selected from a group consisting of a display device, a mobile phone, hand held navigation system, car navigation system, and a Bluetooth enabled device including the steps of " determining a current position of said display device by utilizing a proximity to one or more wireless radio frequency (RF) beacons, wherein said RF beacons employ at least one of Bluetooth , long range Bluetooth, and Wi-Fi protocols, each RF beacon comprising a beacon identifier and is installed in known position within said area/facility, and receiving local content, wherein said local content is determined based upon a location of said display device as identified by beacon identifiers of proximate beacons".

That's the De-Facto standard for Precise locating engine used for outdoor and indoor!
Beacon= any RF device in proximity known position (Bluetooth or Wi-Fi)



Very few people are aware of it; they simply use it.

Now, that's a bold statement. Consider this:

We are the de facto creators of the critical technology that powers:

- Every smart phone, iPhone, Google Phone Samsung phone ...
- Every smart device
- Every car
- Every autonomous vehicle
- Every mapping and navigation system indoor or outdoor
- Most hotels and cruise ships

Our proprietary technology is behind all these applications.

And here's the remarkable part:

- When you search for your parked car
- When you navigate both indoors and outdoors
- When you need to find what's nearby
- When emergencies arise and E911 services need to locate you outdoor and indoor
- When exposure notifications are triggered
- When digital keys for cars and hospitality are utilized
- When your device—be it a phone, smart device, or portable computer—needs to be located using Find My or similar services

And more ...

Our technology plays a crucial role in enabling precise location services when needed, ultimately saving lives!

Soon, it will also help you find available parking in busy city streets and guide you inside buildings, malls, and stores to the right product on the right shelf.

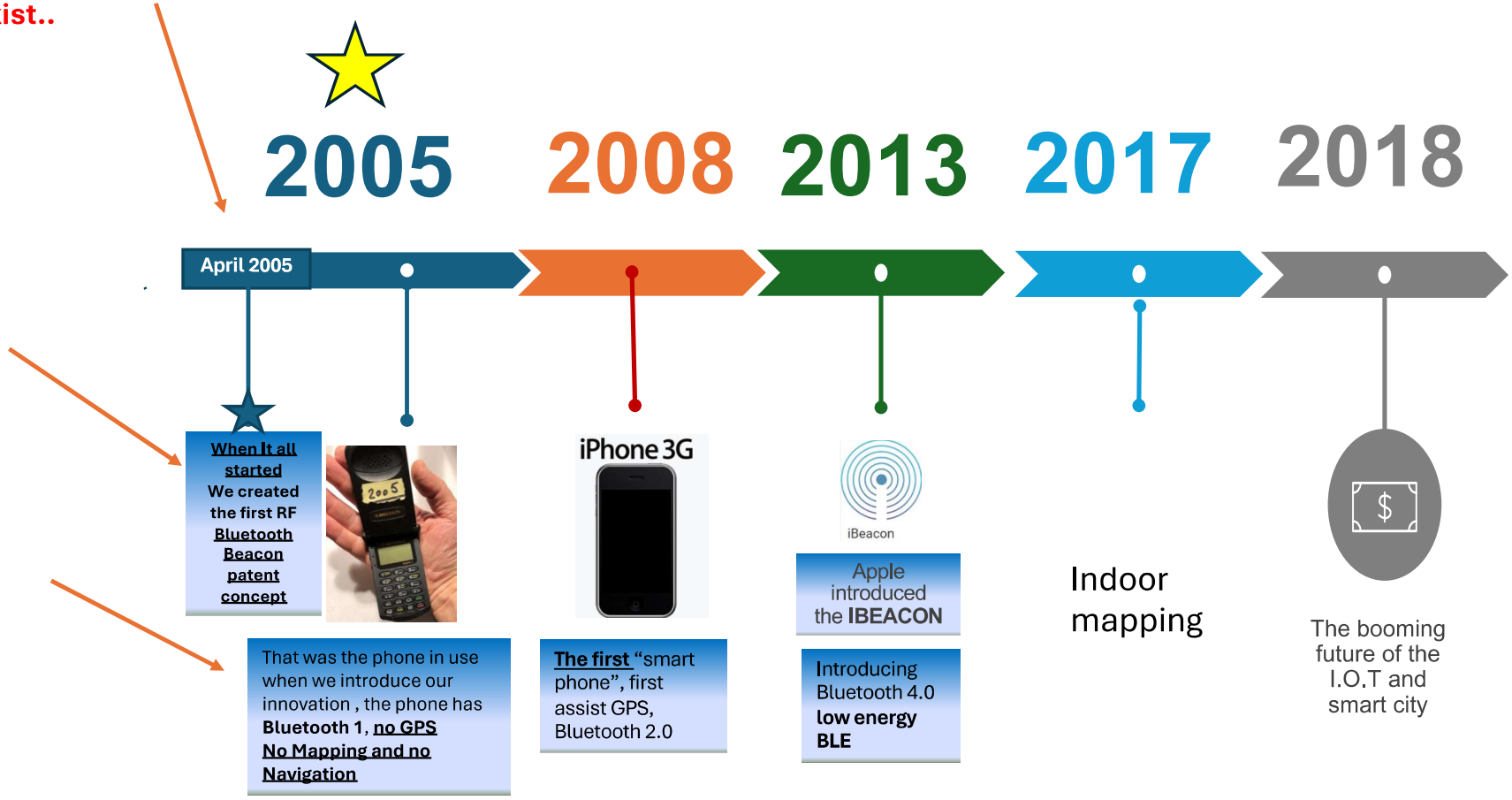
Most people interact with this technology daily; it's an integral part of life!

Our proprietary technology underpins all of this, and recent news suggests an even brighter future ahead... (as market for LBS locating and navigation can be reaching 300Billions in 2030...!!)

It is utilized by some of the most dominant companies in the world:
From Apple Google Samsung Amazon IBM to mapping and navigation companies from car manufacturers to hotels and cruise ships and many more

When we start:
no beacons,
no indoor mapping and
no indoor navigation even exist..

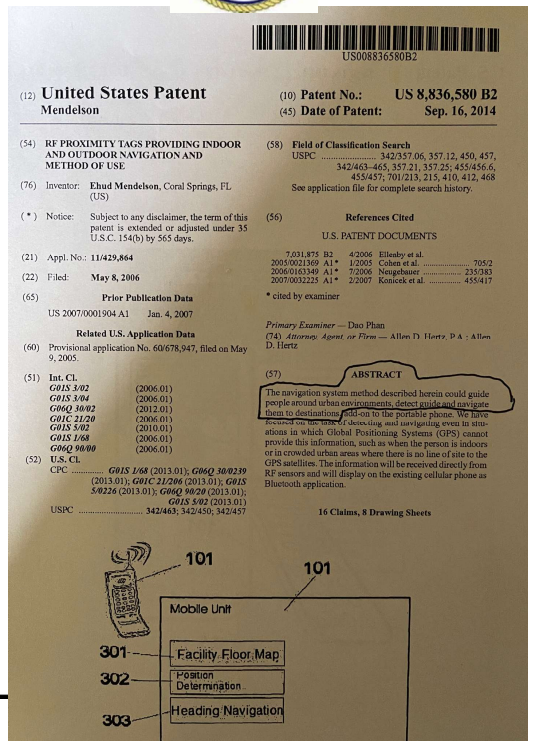
Roadmap Timelines



From US Patent office Examiner:

2) The following is an examiner's statement of reasons for allowance: the examiner found no teaching in the prior art that would render obvious the claimed method for navigation indoor and outdoor in a facility area like a mall department store downtown center building on at least one display device selected from a group consisting of a display device, a mobile phone, hand held navigation system, car navigation system, and a Bluetooth enabled device including the steps of " determining a current position of said display device by utilizing a proximity to one or more wireless radio frequency (RF) beacons, wherein said RF beacons employ at least one of Bluetooth , long range Bluetooth, and Wi-Fi protocols, each RF beacon comprising a beacon identifier and is installed in known position within said area/facility, and receiving local content, wherein said local content is determined based upon a location of said display device as identified by beacon identifiers of proximate beacons".

We pioneer the Technology behind Indoor navigation and Indoor Mapping as well the RF beacon Technology
Its power the LBS industry



US008836580B2

(12) **United States Patent**
Mendelson

(10) **Patent No.: US 8,836,580 B2**
(45) **Date of Patent: Sep. 16, 2014**

(54) RF PROXIMITY TAGS PROVIDING INDOOR AND OUTDOOR NAVIGATION AND METHOD OF USE

(76) Inventor: **Ehud Mendelson**, Coral Springs, FL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 565 days.

(21) Appl. No.: **11/429,864**

(22) Filed: **May 8, 2006**

(65) **Prior Publication Data**

US 2007/0001904 A1 Jan. 4, 2007

Related U.S. Application Data

(60) Provisional application No. 60/678,947, filed on May 9, 2005.

(51) **Int. Cl.**

G01S 3/02	(2006.01)
G01S 3/04	(2006.01)
G06Q 30/02	(2012.01)
G01C 21/20	(2006.01)
G01S 5/02	(2010.01)
G01S 1/68	(2006.01)
G06Q 90/00	(2006.01)

(52) **U.S. Cl.**

CPC ***G01S 1/68*** (2013.01); ***G06Q 30/0239*** (2013.01); ***G01C 21/206*** (2013.01); ***G01S 5/0226*** (2013.01); ***G06Q 90/20*** (2013.01); ***G01S 5/02*** (2013.01)

USPC **342/463**; 342/450; 342/457

(58) **Field of Classification Search**

USPC 342/357.06, 357.12, 450, 457, 342/463–465, 357.21, 357.25; 455/456.6, 455/457; 701/213, 215, 410, 412, 468

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,031,875	B2	4/2006	Ellenby et al.	
2005/0021369	A1 *	1/2005	Cohen et al.	705/2
2006/0163349	A1 *	7/2006	Neugebauer	235/383
2007/0032225	A1 *	2/2007	Konicek et al.	455/417

* cited by examiner

Primary Examiner — Dao Phan
(74) *Attorney, Agent, or Firm* — Allen D. Hertz, P.A.; Allen D. Hertz

(57) **ABSTRACT**

The navigation system method described herein could guide people around urban environments, detect guide and navigate them to destinations add-on to the portable phone. We have focused on the task of detecting and navigating even in situations in which Global Positioning Systems (GPS) cannot provide this information, such as when the person is indoors or in crowded urban areas where there is no line of site to the GPS satellites. The information will be received directly from RF sensors and will display on the existing cellular phone as Bluetooth application.

16 Claims, 8 Drawing Sheets

One of our 21 patents covering all aspects of the Locati Technology used today as well as the indoor mapping indoor navigation and indoor view

6/16/2010

Blue Umbrella indoor navigation offers ...

thewherebusiness.com
Inside information on the business of location

The Where Business eBrief - direct to your inbox

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Blue Umbrella indoor navigation offers one-metre accuracy

Jun 16, 2010

Tags: Bluetooth Cellphone navigation indoor navigation LBS location based services location technology Mobile Navigation people location personal location

Blue Umbrella, an R&D company based in Florida, has announced an indoor navigation solution which it believes will have "a game-changing impact" on the navigation market.



Blue Umbrella is a pioneer in the largely untapped market for indoor navigation. Its new solution offers accuracy of indoor location to a metre or less.

The solution relies on the Bluetooth in smartphones in combination with small beacons that cost less than $10 each. The beacons provide a proximity triggering mechanism for fast and easy deployment with metric accuracy. Ehud Mendelson, Blue Umbrella's president, notes: "What is unique is that the beacons are autonomous and there is no exchange of communication between the beacons and the user. This results in faster locating without the need for cellular or Internet."

He adds: "It also saves the user's battery power."

The user's phone with Blue Umbrella software installed will scan an area for known tags (the beacons) in the same that a Wi-Fi device scans for Wi-Fi access points. Mendelson comments: "As with Wi-Fi detection, there is no real communication between the phone's Bluetooth and the beacons - there is only fast discovery of the area proximity tags, which takes less than five seconds."

Blue Umbrella tailors patented applications for indoor uses ranging from finding specials, sales and coupons to showing where you parked your car. In an emergency the solution delivers an alarm and a notification, then directs the user to an exit.

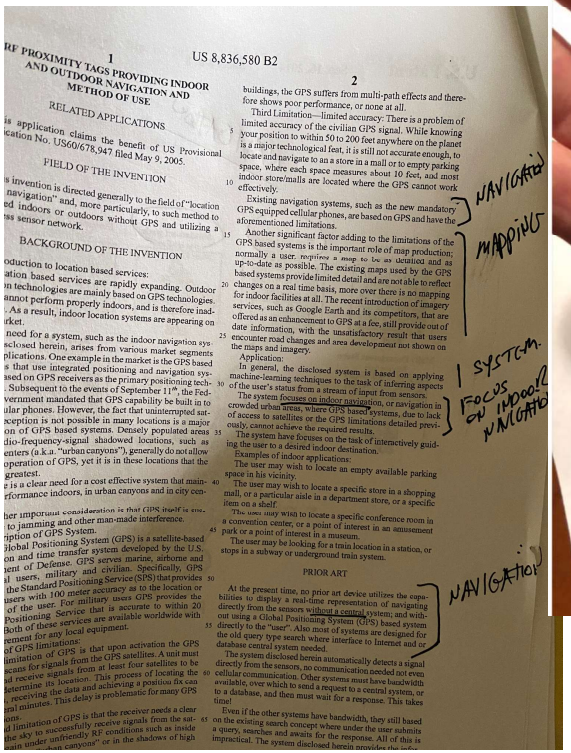
The company is currently developing 14 applications for indoor use, based on patents pending going back to 2005. Mendelson says: "The needs for indoor navigation are not limited to the shopping mall. We see it being used inside department stores and supermarkets, commercial buildings, shows, conferences and museums as well as hotels, resorts, amusement parks and any places where there is a need for better accuracy than today's methods can provide."

- Follow the developments in location technology at People Tracking



We have more than 21 patents covering all aspects of the Location Technology used today as well as the indoor mapping indoor navigation and indoor view

When we start in early 2005:
no beacons,
no indoor mapping and no indoor navigation even exist..



1 US 8,836,580 B2

RF PROXIMITY TAGS PROVIDING INDOOR AND OUTDOOR NAVIGATION AND METHOD OF USE

RELATED APPLICATIONS

is application claims the benefit of US Provisional cation No. US60/678,947 filed May 9, 2005.

FIELD OF THE INVENTION

is invention is directed generally to the field of "location navigation" and, more particularly, to such method to ed indoors or outdoors without GPS and utilizing a ss sensor network.

BACKGROUND OF THE INVENTION

oduction to location based services:

ation based services are rapidly expanding. Outdoor n technologies are mainly based on GPS technologies. annot perform properly indoors, and is therefore inad- . As a result, indoor location systems are appearing on rket.

need for a system, such as the indoor navigation sys- sclosed herein, arises from various market segments plications. One example in the market is the GPS based s that use integrated positioning and navigation sys- ased on GPS receivers as the primary positioning tech- . Subsequent to the events of September 11th, the Fed- vernment mandated that GPS capability be built in to ular phones. However, the fact that uninterrupted sat- ception is not possible in many locations is a major on of GPS based systems. Densely populated areas dio-frequency-signal shadowed locations, such as enters (a.k.a. "urban canyons"), generally do not allow operation of GPS, yet it is in these locations that the greatest.

e is a clear need for a cost effective system that main- rformance indoors, in urban canyons and in city cen-

her important consideration is that GPS itself is sus- to jamming and other man-made interference.

ription of GPS System.

Global Positioning System (GPS) is a satellite-based on and time transfer system developed by the U.S. ent of Defense. GPS serves marine, airborne and l users, military and civilian. Specifically, GPS the Standard Positioning Service (SPS) that provides users with 100 meter accuracy as to the location or of the user. For military users GPS provides the Positioning Service that is accurate to within 20 services are available worldwide with Both of these services are available worldwide with out any local equipment.

rement for any local equipment.

of GPS limitations:

limitation of GPS is that upon activation the GPS scans for signals from at least four satellites to be d receive signals from the GPS satellites. A unit must determine its location. This process of locating the receiving the data and achieving a position fix can ral minutes. This delay is problematic for many GPS ons.

d limitation of GPS is that the receiver needs a clear the sky to successfully receive signals from the sat- ellites. Thus, GPS does not work well in unfriendly RF conditions such as inside ain under unfriendly RF conditions such as inside ban canyons" or in the shadows of high

2

buildings, the GPS suffers from multi-path effects and therefore shows poor performance, or none at all.

Third Limitation—limited accuracy: There is a problem of limited accuracy of the civilian GPS signal. While knowing your position to within 50 to 200 feet anywhere on the planet is a major technological feat, it is still not accurate enough, to locate and navigate to an a store in a mall or to empty parking space, where each space measures about 10 feet, and most indoor store/malls are located where the GPS cannot work effectively.

Existing navigation systems, such as the new mandatory GPS equipped cellular phones, are based on GPS and have the aforementioned limitations.

Another significant factor adding to the limitations of the GPS based systems is the important role of map production; normally a user, requires a map to be as detailed and as up-to-date as possible. The existing maps used by the GPS based systems provide limited detail and are not able to reflect changes on a real time basis, more over there is no mapping for indoor facilities at all. The recent introduction of imagery services, such as Google Earth and its competitors, that are offered as an enhancement to GPS at a fee, still provide out of date information, with the unsatisfactory result that users encounter road changes and area development not shown on the maps and imagery.

Application:

In general, the disclosed system is based on applying machine-learning techniques to the task of inferring aspects of the user's status from a stream of input from sensors.

The system focuses on indoor navigation, or navigation in crowded urban areas, where GPS based systems, due to lack of access to satellites or the GPS limitations detailed previously, cannot achieve the required results.

The system have focuses on the task of interactively guiding the user to a desired indoor destination.

Examples of indoor applications:

The user may wish to locate an empty available parking space in his vicinity.

The user may wish to locate a specific store in a shopping mall, or a particular aisle in a department store, or a specific item on a shelf.

The user may wish to locate a specific conference room in a convention center, or a point of interest in an amusement park or a point of interest in a museum.

The user may be looking for a train location in a station, or stops in a subway or underground train system.

PRIOR ART

At the present time, no prior art device utilizes the capabilities to display a real-time representation of navigating directly from the sensors without a central system; and without using a Global Positioning System (GPS) based system directly to the "user". Also most of systems are designed for the old query type search where interface to Internet and or database central system needed.

The system disclosed herein automatically detects a signal directly from the sensors, no communication needed not even cellular communication. Other systems must have bandwidth available, over which to send a request to a central system, or to a database, and then must wait for a response. This takes time!

Even if the other systems have bandwidth, they still based on the existing search concept where under the user submits a query, searches and awaits for the response. All of this is impractical. The system disclosed herein provides the

NAVIGATION
MAPPING
SYSTEM
FOCUS ON INDOOR NAVIGATION
NAVIGATION



Indoor navigation and mapping primary elements includes and protected by our patents:

1. **Location/Positioning Engine**: The use of RF signals (Bluetooth and/or Wi-Fi) serves as beacons in known indoor and outdoor locations, establishing what is now a standard for precise positioning and forming the foundation of indoor mapping and navigation technology.

2. **Indoor Mapping**: We also own the domain indoor mapping (.com), underscoring our expertise in this area.

3. **Indoor Navigation**: We hold the trademark for indoor navigation, further emphasizing our leadership in the sector.

4. **Circle Display**: This feature allows users to recognize their location on the map effectively.

5. **Waypoints**: Our maps include waypoints characterized by color, type, information, links, and business models, which represent the standard in the industry.

6. **Indoor View**: We possess the trademark and domain for indoor view, highlighting our commitment to comprehensive mapping solutions.

7. **Behavior Aggregation and Analytics**: Our technology captures and analyzes user behavior data to enhance navigation experiences.

8. **User Interface**: Our solutions are compatible with various devices, including mobile phones, cars, and navigation devices.

9. **Applications**: A range of applications that utilize our technology enhances the user experience.

These elements work cohesively to create a seamless indoor navigation experience, enabling users to navigate complex environments with ease and efficiency. Furthermore, they represent the standard components utilized across the industry.

The Location Engine:

We have pioneers developed and patented the most foundational technologies that are critical for precise location mapping and navigation, particularly in indoor environments.

Our locating engine method leverages an RF signal from a known indoor proximity device location, enabling accurate outdoor positioning (in addition to GPS and cellular) as well as effective indoor navigation. Furthermore, we pioneered beacon technology well before the advent of Apple's iBeacon and Google's counterparts.

Our patents date back to early 2005, predating the innovations of Apple, Google, Samsung, and the smartphone era, in fact the main phone in 2005 was Motorola flip phone ... with 2" screen, no GPS and no mapping.. Apple and Google did not even exist in that field ...

It is essential to recognize that we are not only the first to innovate but also the rightful owners (meaning again ...that we were first...) of significant intellectual property, including the **trademarks** for "**indoor mapping.com**," "**indoor navigation**," "**indoor view," indoor view.com and the domain indoorview.com. And indoor mapping.com.** ... our portfolio contains **21 patents) 19 allow and 2 pending**)

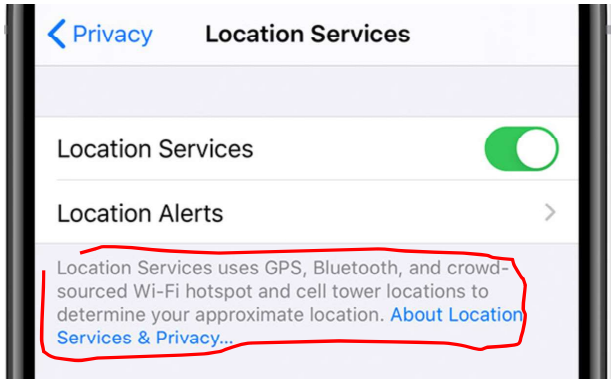
Best explain by US patent office examiner as a reason for the patent (one of the first one...)

From US Patent office Examiner:

2) The following is an examiner's statement of reasons for allowance: the examiner found no teaching in the prior art that would render obvious the claimed method for navigation indoor and outdoor in a facility area like a mall department store downtown center building on at least one display device selected from a group consisting of a display device, a mobile phone, hand held navigation system, car navigation system, and a Bluetooth enabled device including the steps of " determining a current position of said display device by utilizing a proximity to one or more wireless radio frequency (RF) beacons, wherein said RF beacons employ at least one of Bluetooth , long range Bluetooth, and Wi-Fi protocols, each RF beacon comprising a beacon identifier and is installed in known position within said area/facility, and receiving local content, wherein said local content is determined based upon a location of said display device as identified by beacon identifiers of proximate beacons".

That's the De-Facto standard for Precise locating engine used for outdoor and indoor!
Beacon= any RF device in proximity known position (Bluetooth or Wi-Fi)

Apple locating:



What is google indoor positioning technology ?

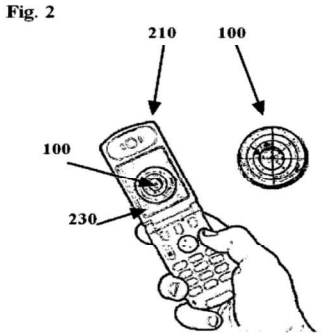
Google's indoor positioning technology is a set of technologies that allows Google devices, such as Android smartphones and tablets, to accurately determine their location and orientation indoors. This technology also uses a combination of sensors, including Wi-Fi, Bluetooth, and GPS, as well as machine learning algorithms and map data to determine the device's location within a building.
Google's indoor positioning technology is based on a framework called Google Maps Indoor SDK,

The circle
Or What they call the "blue dot"

The display way to show user's exact location on the map (indoor and outdoor)

From Patent 8,896,485

patent 8896485 Claims 1,
Patent 8866673 Claim 19
Patent 9204257 Claims 9,22,23
Patent 9491584 claim 34
Patent 8836580 claim 1 (D) Fig 7



This chart provides details regarding only few example of the infringement , and only as to a (single claim) we reserves the right to provide greater detail and scope via preliminary and final infringement contentions at the time required. this chart specifically address infringement of claim "485 as well as "673" patent and "257" patent (and many more..)

*** **what become the de-facto standard of the way to show /display user exact location on the map**

The method is become the standard in the industry for mapping outdoor and indoor

The circle:

The circle - or what they call the blue dots -

The use of blue dots to represent a user's location on a map is a feature that has been around for some time and has been used by several mapping companies.

Google Maps was one of the first mapping companies to use blue dots to indicate a user's location on a map. This feature was introduced in **2009** and has been a staple of the Google Maps experience ever since.

The blue dot is typically accompanied by a pulsating circle that represents the estimated accuracy of the user's location.

Apple Maps also uses a blue dot to indicate a user's location on a map, which was introduced with the launch of Apple Maps in 2012. The blue dot is accompanied by a pulsating circle that represents the estimated accuracy of the user's location.

Other mapping companies, such as Bing Maps and HERE Maps, also use blue dots to indicate a user's location on a map.

Claim 1 of 8,896,485

What is claimed is:

1. A method of navigation for use in indoor and outdoor on a display device, the display device being selected from a group of display devices comprising a mobile phone, a hand held navigation system, a vehicle navigation system and a Bluetooth enabled device, the method comprising steps of:

receiving a beacon signal directly from at least one proximity installed RF beacon in the local area, wherein said beacon signal is at least one of a Wi-Fi signal and a Bluetooth signal;

utilizing the received signal to determine a location of the display device;

determining waypoints that are located in a proximity of the display device;

transmitting waypoint content information associated with the proximate waypoints to the display device, wherein the content information includes at least one of a merchant location, a type of merchant, merchant business hours, a coupon, a deal, and an advertisement;

generating automatic navigating between waypoints according to a user location; and

displaying location information in a floating circular omni directional overlay navigation map on the display device.

2. The method of navigation according to claim 1, wherein said RF beacons are installed at a known location, wherein said known location is associated with a waypoint.

3. The method of navigation according to claim 1 wherein said RF beacons are one of a Bluetooth device or a Wi-Fi device.

4. The method of navigation according to claim 1, further comprising a step of displaying said information over one of

The exact method used by Apple Google and others to provides precise location outdoor and indoor

User's location display in a circular overlay mapping..

Claim 19 of 8,866,673

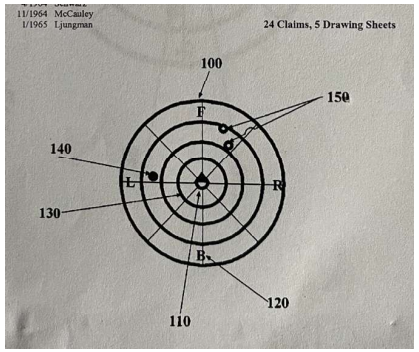
19. The method according to claim 1, wherein said display device overlay image is illustrated as a series of concentrically arranged circles.

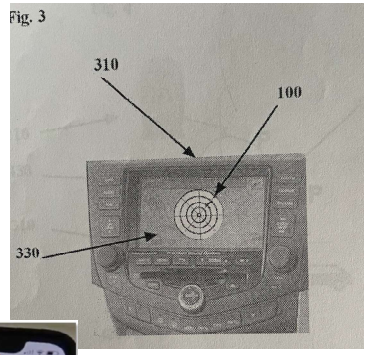
the scanning result will be display inside a circle represent range (1103) and (1104) where each circle represent the range

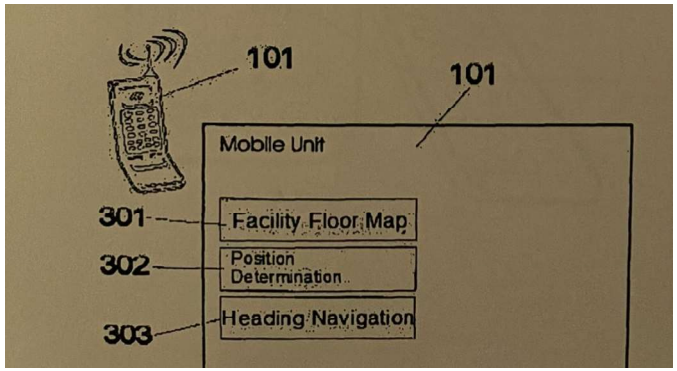
Google interduce it in 2009.. Apple in 2012.. We in 2005!!!

We interduce the circle as a way to display the user's location going back to 2005.. Apple and Google wasn't existing in this field ..









Claims 9,22,23 from 9204257

9. The method as recited in claim **1**, further comprising a step of:
overlaying a series a gradient concentric circles onto said localized area indoor map, wherein said series a gradient concentric circles provide a distance relationship between said mobile device and a secondary object.

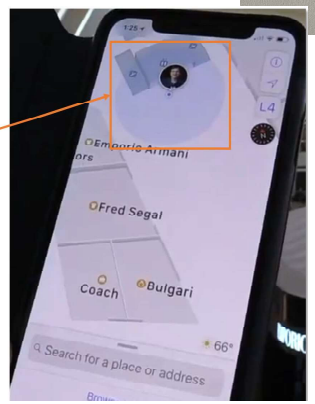
22. The method as recited in claim **1**, further comprising a step of:
displaying said current user location depicted within a circle on a display of said mobile device.

23. The method as recited in claim **1**, further comprising a step of:
displaying the user location in the immediate area depicted within a circle having a radius representing an accuracy of said current user location of said mobile device.

[F] displaying location information in a floating circular omni directional overlay navigation map on the display device.

Comment: The blue dot with the surrounding blue circle (floating circular omni directional overlay) displays the location of the user's display device, which is overlaid on the navigation map of the facility. For example, in this photo, the facility is Los Angeles International Airport.
This is supported in the spec at least at:
- *18:5 9; "the overlay floating circular display 100 detector will run over ether GPS existing mapping or over a background of the area floor plan 330 ..."*
- *19:38-42; "FIG. 8. is an illustration of the possibility application for automatic waypoints generation utilize a cellular phone 210 with the floating circular method 100 running and floating on GPS mapping in the background 230 or without any mapping."*

[F]



Data gathering behavior and analytics

Claim18:aggregatin data for analysis habit behavior

The method according to claim 1, further comprising steps of:

f) storing information about customer behavior habit with- out compromising user ID or privacy,

g) providing a location based service (LBS) application and information contents based on at least one of a location of a user as determined by at least one of said location of said display device and said location associated with said RF beacon identifier, and a behavior habit obtained from said display device, and a profile preference provided by data obtained from said display device, wherein said LBS and information content comprises at least one of: a special, a sale, and a promotion events coupon,

h) designating a business as a waypoint and presenting advertisements associated with the business on the dis- play device.

i)

Claim 20:

20. The method according to claim 1, wherein said display device further provides a functionality of an RF beacon

Data gathering claim 16 of 8836580

16. A method for determining a current position of a display device and providing location based service (LBS) application and information content to said display device, the method comprising steps of:

determining said current position of said display device by utilizing a proximity of said display device to RF tags installed in known positions in a facility area, wherein said step of determining said current position is accomplished by at least one of:

a) utilizing a location reference of said RF tags when said display device receives a signal from a single RF tag,

b) utilizing signal strengths of said RF tags when said display device receives signals from multiple tags, and

c) utilizing a triangulation calculation when said display device receives signals from multiple tags;

providing a local business with information about customer behavior habit without compromising user ID or privacy;

providing said location based service (LBS) application and information content based on at least one of a location of a user as determined by at least one of said position of said display device and said location associated with an RF tag identifier, a behavior habit obtained from said display device, and a profile provided by data obtained from said display device, wherein said LBS and information content comprises at least one of: a special, a sale, and a promotion events coupon; and

designating a business as a waypoint and presenting advertisements associated with the business on the display device.

Determine location using signal from RF devices in the area
Use signal strength and triangulation

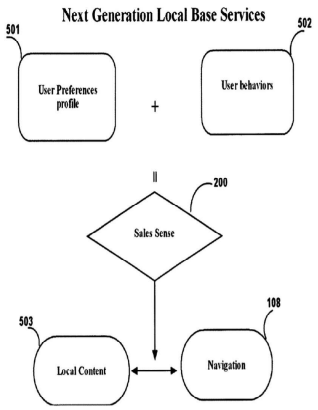
User ID is secure/private

Provide LBS application and information a behavior Habit data use for analysis

Use profile to set data segment

Designates business as waypoints and provides advertising

FIG. 5



Behavioral Targeting Blog

trends & companies for smart marketing & targeting strategies

The newest tool for estimation of SE traffic cost

Blue Umbrella Receives Patent for Indoor LBS & Navigation

APRIL 28, 2011
in BEHAVIOURAL TARGETING

Blue Umbrella is a trailblazer for outdoor navigation and indoor LBS (Location-based Service). It currently obtained patent for its new solution, the ability to locate indoors with one meter or less accuracy. This patent is based on WiFi and Bluetooth, commonly used RFs in most mobile phones with the aid of tiny beacons, each one costing 10 dollars. The beacons have triggers that activate when users are close in proximity, and they help users locate the products that they want. Unlike other similar technologies, these beacons are powered using autonomous batteries.

Ehud Mendelson, Blue Umbrella president, states that this new patent is the most accurate among all similar infrastructures today. LBS providers can definitely tap a large market with this patent, by not only giving knowledge to the location of a user, but also through letting that user know about the offers within the vicinity. Offers such as products, coupons and special sales. Not only that, you can use this LBS application to help you locate your parked car, and for emergency notifications that direct you to the exit.

Another product that is being developed is Sales Sense. This marketing method analyzes user information in a mall or store to predict user behavior and determine the user's "next move".

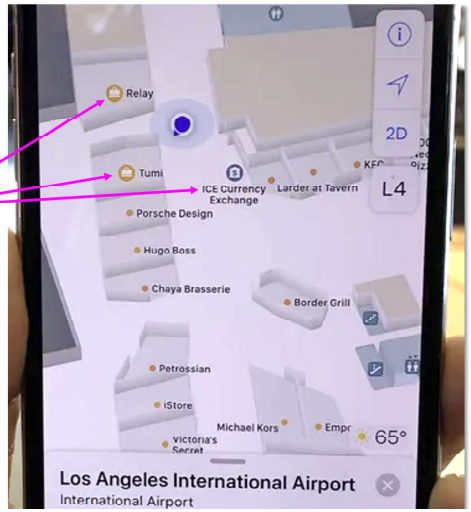
Many applications are already being visualized with this patent, and these are not limited to mall purposes. It can be used in conference centers, cruise ships, resorts, amusement parks, among others. This infrastructure for indoor location-based service and navigation is certainly a "game changer" and a "missing link", holding great promise for a new industry that is emerging.

Waypoints (POI) on the map

[D] waypoint content information associated with the proximate waypoints to the display device, wherein the content information includes at least one of a **merchant location**, a **type of merchant**, merchant business hours, a coupon, a deal, and an advertisement;

Comment: Waypoint content information is transmitted.
For example, the merchant locations are shown by name. Also, icons can indicate the type of business for the stores "Relay" and "Tumi," that they are each a shop, while the icon for "ICE Currency Exchange" indicates it is a cash exchange business.

[D]



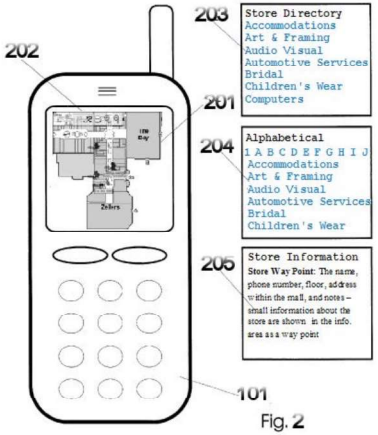


Fig. 2

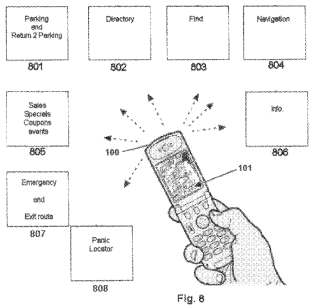
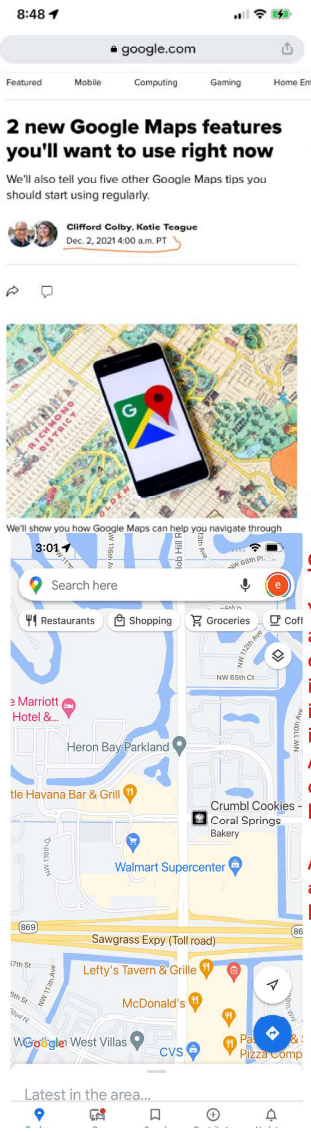
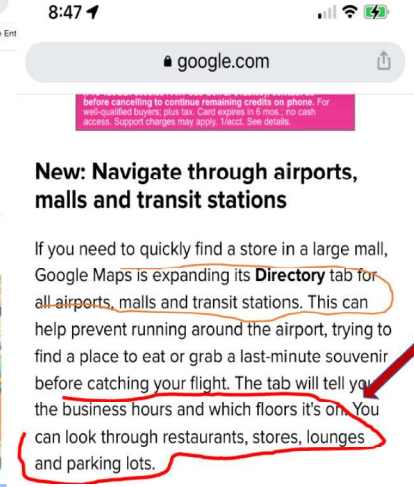


Fig. 8

U.S. Patent Oct. 21, 2014 Sheet 8 of 12 US 8,866,673 B2





Google New Map features

You can see POI (waypoints) according to categories , color type, hours and more info. overlay on a map or image (satellite or floor image)
And as business model they charge (fee) the business to be display on the map

Also related is the circle around the user estimate location

What is Google indoor view technology:

Indoor View

Indoor View technology is a feature of Google Maps that allows users to explore the interiors of buildings in a 360-degree panoramic view. It provides a street-level view of indoor spaces, allowing users to virtually walk through buildings and explore their surroundings.
To create indoor views, Google uses specialized equipment such as 360-degree cameras and laser scanners to capture detailed images and measurements of the building's interior. The images are then stitched together to create a seamless panoramic view of the space.
Indoor View is particularly useful for exploring large buildings such as airports, museums, and shopping centers. It can help users navigate complex indoor spaces and find specific locations within the building.
Google has also made Indoor View available to businesses and building owners, allowing them to showcase their interiors and promote their businesses on Google Maps. This feature can be particularly useful for businesses such as restaurants, hotels, and retail stores, as it allows potential customers to explore their interiors and get a feel for the space before visiting in person.

Google's Indoor View technology is typically paired with indoor positioning systems such as Wi-Fi, Bluetooth Low Energy (BLE), or other sensors to provide accurate location information within buildings. These technologies can detect the user's location and provide location-based services to enhance the Indoor View experience.

Google Indoor View is part of Google's indoor mapping capabilities. Indoor View is a feature of Google Maps that allows users to explore the interiors of buildings

In **2012**, Google also launched the "Google Business Photos" program, which allows businesses to create and upload their own 360-degree panoramic images of the interior of their establishments to Google Maps.

Indoor View

Claim List patent 8866673 Claim 3,7,9

3. The method according to claim 1, further comprising steps of:

obtaining at least one of: a facility map, an area map, an indoor image view, a GPS map and a floor plan,

obtaining navigation content information wherein said navigation content is associated with an RF beacon identifier, and

displaying said navigation content information over one of said facility map, said area map, said indoor image view, said GPS map or said floor plan on said display device wherein said map contain waypoints of said known installed RF beacons.

7. The method according to claim 5, further comprising a step of navigating between waypoints using a GPS mapping in outdoor and at least one of a floor map and an image of said facility indoor, wherein said map comprising known waypoints can be downloaded for use with said mobile application.

9. The method according to claim 1, further comprising a step of providing said display device with application software which provides guidance and navigation to a user by displaying information onto at least one of pre-loaded area maps and at least one of facility floor plans and indoor images of said facility.

Claim List patent 8941485 Claim 3

3. The method according to claim 1, further comprising a step of displaying the information over a background image wherein said background image is at least one of: a facility area map, a GPS map, and a floor plan downloaded to the mobile device said background image contains known waypoints associated with each known RF beacon.

IndoorView patents infringement
Indoor View® Trademark infringement
Indoor View .com domain
Indoor view.com trade mark

patent 8866673 claims 3,7,9 File 10/01/2009
Patent 8941485 claim 3 file 03/07/2011
Patent 9204257 claim 6 file 05/22/2014

This chart provides details regarding only few example of the infringement , and only as to a (single claim) we reserves the right to provide greater detail and scope via preliminary and final infringement contentions at the time required. this chart specifically address infringement of claim “673”patent as well as “485” patent and “257” patent

Outdoor → **Street view**
Indoor → **Indoorview®**
which we own the domain and the trademark

Indoor View

Claim List patent 9204257 Claim 6

6. The method as recited in claim 1, wherein said localized area indoor map is a floor plan image of said localized area.

From the spec. explain in more details about the indoor view

patent 9204257 page 14,(34-67)

The method may include displaying a floor plan image or floor mapping or the floor indoor view—the floor images corresponding to an indoor location, receiving a first input to indicate a first location on the floor plan image, gathering initial location information at the first location, and generating an indoor map, using a processor, using the initial location information wherein the indoor map includes an association of the initial location information with the first location.

The method may further include repeating the location information gathering process at a new location to associate new location information with the new location in the indoor map.

The method may include gathering additional location information as the user travels from the first location to a second location, receiving a second input to indicate the second location on the floor plan image, determining a path from the first location to the second location, and associating the additional location information with at least one location within the map corresponding to the path.

The method may include prompting the user to walk in a straight line when traveling from the first location to the second location.

The method may include providing instructions to a user to travel in a particular direction. The location information may be wireless signal data associated with one or more RF wireless beacons installed in the local area. The first input may include performing a selection operation with an indicator placed on the floor plan image.

The method may also include providing a visual indication on the floor plan image of the path. The visual indication may indicate an area of the indoor map where the location information identifies a particular location. The building floor plan may be received from a remote via Internet or cellular communication as part of the mapping and navigation application.

Outdoor → Street view

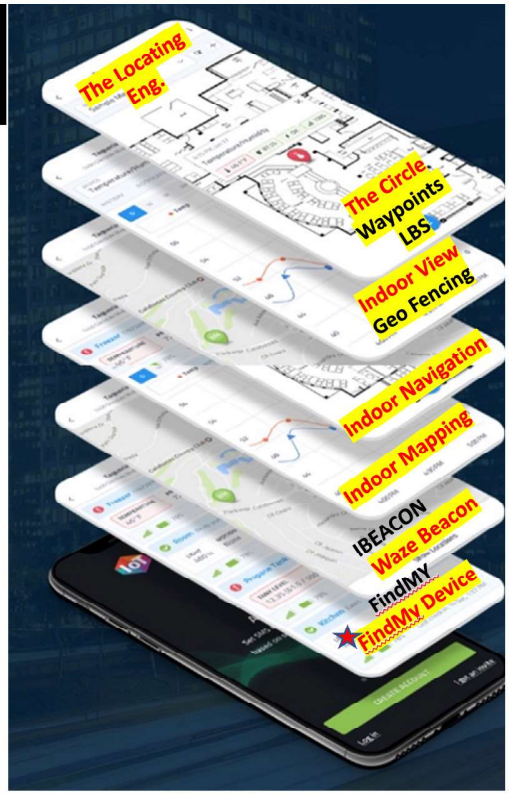
Indoor → Indoorview®

which we own the domain and the trademark



SAMSUNG

Claims against Google Apple and Samsung



We can show More than 32 specific claims parts that Google / Apple /Samsung. Infringements

1. Use the phone as beacon
2. Use the phone as integrate emergency part
3. Create emergency I'd
4. Create medical Id
5. Create template to medical record
6. Store medical record on phone
7. Ability to share medical info
8. Ability to share emergency info
9. Scan Wi-Fi and Bluetooth devices in proximity (serve as beacons) no pairing
10. use any Wi-Fi and or Bluetooth devices as beacons
11. Create a data base of known RF signal (Wi-Fi and Bluetooth devices as beacons) in the area
12. The triangulation method
13. The signal strong method
14. Find my method and the equivalent by Google and Samsung
15. Proximity detection
16. Indoor mapping
17. Indoor navigation
18. Waypoint on the map the full LBS method
19. The location engine
20. Emergency and e911
21. Road and speed sign on the map
22. Use the phone as digital key for cars and hotels
23. The circle on the map
24. The I beacon and Apple and the equivalents by Google and Samsung
25. Waze beacon beacons in tunnels and area without GPS
26. The precise locating
27. Return 2 parking by Apple google and Samsung
28. Data Gathering and Analysis
29. Geo fencing Apple and Google and Samsung
30. Exposure notification by Apple Google and Samsung
31. Show / save last location (when no communication)
32. Indoor view - what street view but INDOOR , we own patents as well as Trade marks and domains!!!

Apple (and also Google) know and still continue to infringe and copy each of our patents
We have many record of communication and acknowledgement from executives/ engineers etc

One More Thing…

Over the years (from year 2005) we approached many companies with our innovative ideas. We introduced our indoor locating and indoor navigation as well as the beacon technology and provided our insights regarding the future implementation of the technology **and also** notify about our patents.

Now, thousands of developers and companies around the globe are working and developing applications for what is seen as the most promising market of LBS all based on locating engine provides precise location using RF devices in proximity (Bluetooth and or Wi-Fi).

In fact, recent articles enthusiastic to explain the technology and the possibilities of deployments mimic our company presentations and patent documents published years ago.

Some Quote from viewers

I found you doing a patent research ... you have impressive IP in the "iBeacon", bluetooth alarming localisation etc space. Congratulations - i am very impressed - truly.
I was about to file a patent in this area too, obviously, you had the ideas before. Congratulations !
I wonder if there would be a way to cooperate, i see that Apple and others probably heavily violate your patents and sell your ideas as "new", despite your patents .. of course, being a "small" company (actually, i am working on a startup in this field) - i will not do this but rather see if we can do something together.

InMail | Google
RE: indoor navigation innovation
Strategic Partner Manager, Google Product Partnerships at Google
October 14, 2013, 12:02 PM
Hi Ehud,

I've shared this information w/ the right folks on the relevant Maps/Local team and we'll follow up

> Hi Ehud. I'm an engineer over at Google in Mountain View CA working on
> localization technologies. I came across links to your Blue Umbrella
> approach > and would like to learn more. Do you have some time for a call? I'm
> open > most of today (until 3:30 PST). Give me a call (or I can call you).
>
> -

On Thu, Oct 7, 2010 at 10:42 AM, [redacted]@google.com> wrote:

>>
>> Ok, we'll talk then. For background, I'm a electrical engineer
>> and I'm most interested in the base infrastructure that you are
>> using. We could talk for a long time about apps/etc but it is the
>> nuts and bolts that I'd like to learn about. Some questions for
>> you in the mean time:
>>
>> - Can you elaborate on your beacon ?
>> - What's the battery life & type ?
>> - What's the beacon rate ?
>> - What's the operating range of the beacon ?
>> - Have you actually deployed any ? How many ?
>> Talk to you on Tuesday,

Software Engineer at Apple
Cupertino, California | Computer Software

RE: Indoor and In-store pedestrian navigation infrastructure innovation 4 years ago

business suggestion

Ehud, It seems that your product is quite interesting. I would like to know more. This is...

9/23/2010 via LinkedIn

Ehud,

It seems that your product is quite interesting.

I would like to know more. This is actually what I have been looking for.

So if I want to use such a device to navigate in store, what do I need to do?

Do I need to order a device from you? How many places do you support now?

Thanks.

Some Articles and Quotes about us

thewherebusiness.com
Inside information on the business of location

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Blue Umbrella indoor navigation offers one-metre accuracy

Jun 16, 2010

Tags: Bluetooth Cellphone navigation Indoor navigation LBS location based services location technology Mobile Navigation people location personal location

Blue Umbrella, an R&D company based in Florida, has announced an indoor navigation solution which it believes will have "a game-changing impact" on the navigation market.



Blue Umbrella is a pioneer in the largely untapped market for indoor navigation. Its new solution offers accuracy of indoor location to a metre or less.

The solution relies on the Bluetooth in smartphones in combination with small beacons that cost less than $10 each. The beacons provide a proximity triggering mechanism for fast and easy deployment with metric accuracy. Ehud Mendelson, Blue Umbrella's president, notes: "What is unique is that the beacons are autonomous and there is no exchange of communication between the beacons and the user. This results in faster locating without the need for cellular or Internet."

He adds: "It also saves the user's battery power."

The user's phone with Blue Umbrella software installed will scan an area for known tags (the beacons) in the same that a Wi-Fi device scans for Wi-Fi access points. Mendelson comments: "As with Wi-Fi detection, there is no real communication between the phone's Bluetooth and the beacons - there is only fast discovery of the area proximity tags, which takes less than five seconds."

Blue Umbrella tailors patented applications for indoor uses ranging from finding specials, sales and coupons to showing where you parked your car. In an emergency the solution delivers an alarm and a notification, then directs the user to an exit.

The company is currently developing 14 applications for indoor use, based on patents pending going back to 2005. Mendelson says: "The needs for indoor navigation are not limited to the shopping mall. We see it being used inside department stores and supermarkets, commercial buildings, shows, conferences and museums as well as hotels, resorts, amusement parks and any places where there is a need for better accuracy than today's methods can provide."

- Follow the developments in location technology at People Tracking and Location Week 2010 in Chicago on June 22-23.

Login or register to post comments

Mobile navigation under cover

Nov 2[illegible], 2009

- Very recently BDNooz explored a proposal for indoor nav that disregards GPS data and instead relies heavily on Bluetooth, which can be built into smartphones. BDNooz highlighted the advantages of the Bluetooth solution: "The system automatically detects a signal directly from sensors, without requiring communication with a central system, data plans or even cellular communication. There is no need for pairing as every Bluetooth device's tag has a unique ID. This ID can be used for locating the tag.
- "Bluetooth is ubiquitous. Additionally, it is a low-cost, low-power technology, and when it's relatively free of obstruction it can provide a less than two-metre meter error range."

From: N [illegible]ji@navteq.com]
Sent: Thursday, April 10, 2008 7:38 PM

shortly. I would recommend having a call with Udi and his team. Sounds like a cool technology (better than wi-fi or RFID to track inside the building). I worked in the wi-fi and RFID for many of years, and these technologies for tracking assets, people are oversold, with not a significant market penetration. What Udi is offering, can be very compelling.

Sent: Sunday, July 18, 2010 10:54 PM
To: ehud
Subject: Re: Your Article "Apps we wish we had.."
Importance: High

Very impressive!

d

David Pogue
Tech Columnist, The New York Times