

Indoor Navigation

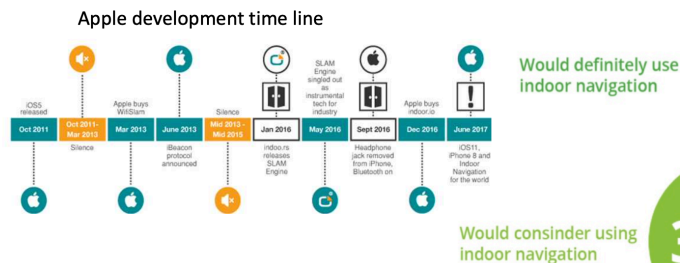
Indoor navigation deals with **navigation within buildings**. Because GPS reception is normally non-existent inside buildings, other positioning technologies are used here when automatic positioning is desired. Wi-Fi or **beacons** (Bluetooth Low Energy, BLE) are often used in this case to create a so-called "**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



57%

35%

Indoor Navigation[®] is our register trade mark

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



**We pioneer the beacon
Technology and owns
The most complete Beacon ,Smart City
I.O.T ,Intellectual property**

**Owens the most prestige Trade mark
& related Domains:**

Indoor Navigation[®] ✳

Indoor View[®] IndoorMapping.com

Mall View[®] IndoorView.com

Building View[®] BuildingView.com

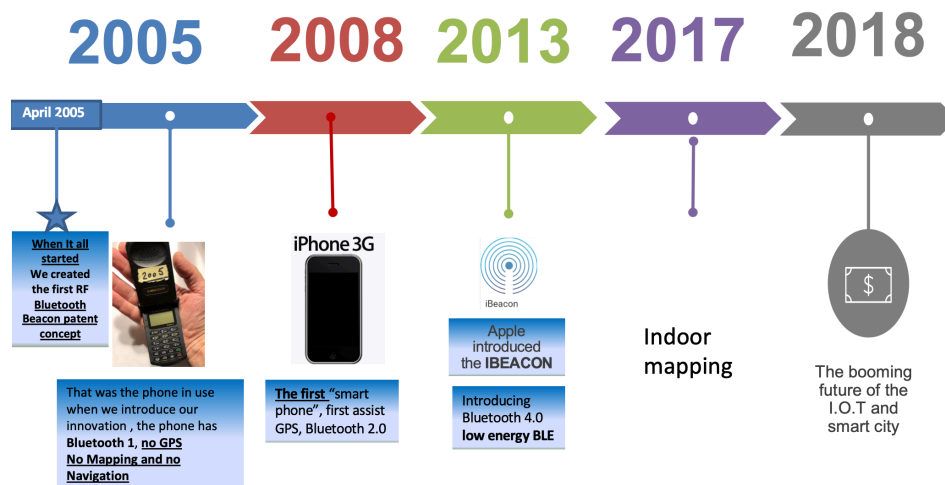
Nav4[®] LBS4Indoor.com
Nav4.com
Nav4Indoor.com

**Car Beacon™ Ugate™
Home Beacon™ Sense4™**

Nav4Parking Pat 7899583 04/03/2006 04/12/2005	Indoor Mapping Indoor Navigation Pat 8836580 05/08/2006 05/09/2005	LBS services Pat 8896485 06/22/2006 05/09/2005	Nav4Emergency Pat 7924149 02/13/2008 05/09/2005
Data Gathering Pat 8866673 10/01/2009 05/09/2005	Beacon in a Car Pat 9020687 01/14/2011 05/09/2005	Infrastructure Pat 8941485 03/07/2011 05/09/2005	E911 Enhancement Pat 9374673 07/05/2011 05/09/2005
Mapping pat 9204257 05/22/2014 05/09/2005	 Blue Umbrella^(R) Most Complete Smart City/IoT/Beacon Intellectual Property		Hospitality pat 9491584 05/22/2014 05/09/2005
Transportation pat 9602193 05/22/2014 05/09/2005			Home Beacons pat 9538332 08/16/2016 05/09/2005
Beacons 4 Home Pat 9674684 01/03/2017 05/09/2005	Car Broadcast Pat 9772193 01/10/2017 05/09/2005	Smart City Pat 9961507 08/26/2017 05/09/2005	Sense4Sign Pat 10470013 04/13/2018 05/09/2005
Sense4Medical Pat 10117078 05/04/2018 05/09/2005	Location Eng App xxxxx 06/26/2018 05/09/2005	E911/1 App xxxxx 10/17/2018 05/09/2005	E911/2 App xxxxx 10/17/2018 05/09/2005

Car Beacon™, Auto Beacon™, Search For Parking™, Nav4Parking.com
Indoor View™, Indoor Navigation™
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 9,538,332
and pending patents

Roadmap Timelines



***we Own the **INDOOR NAVIGATION ®** trade mark .. meaning who ever will own the trade mark not only will have a tremendous advantage on any one on the market but also own the BRAND ! (Like the Coca Cola!, the Jeep like Brand..!!!) also meaning that no one except your company can use it!!!

*** we own the patents on indoor navigation way before Apple and Google enter to that market! please view our patents information below.

*** In addition we own the **indoor mapping.com domain**

***In addition we own the **indoor View ®** , **Mall view ®** **Store View®** trade marks Which **brings the “street view” – Indoor !!!**

Patents by Inventor Ehud Mendelson

Ehud Mendelson has filed for patents to protect the following inventions. This listing includes only the award patent (19) , (not Inc applications that are pending(8)

patents that have already been granted by the United States Patent and Trademark Office (USPTO).

****Smart city **the method and system to be used in the next smart city deployment**

location based services (LBS) in an urban or city environment

Patent number: 9961507

Abstract: Utilizing a series of beacons deployed within an urban environment to support Location Based Services (LBS). Each beacon emits a beacon signal comprising LBS supporting information within an identification portion of the beacon signal. The emitted beacon signal is received by any mobile device, decoded, the LBS supporting information is extracted from the signal and acted upon accordingly. The information can provide the recipient with information, initiate a link to another device, initiate a

LBS, etc. The information can be relayed using intermediary mobile devices. The identification portion can include information for location, beacon ID, marketing, emergencies, services, traffic, etc. A sensor can be integral with the beacon to provide additional benefits. **Type:** Grant **Filed:** August 26, 2017 **Date of Patent:** May 1, 2018 **Inventor:** Ehud Mendelson

******Indoor navigation and indoor mapping**

RF proximity tags providing indoor and outdoor navigation and method of

use **Patent number:** 8836580 **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. **Type:** Grant **Filed:** May 8, 2006 **Date of Patent:** September 16, 2014 **Inventor:** Ehud Mendelson

******Lbs services**

System and method for automatically generating and updating real time navigation

waypoint **Patent number:** 8896485 **Abstract:** Method and system to guide people around urban environments indoor and outdoor, provide real time accurate update of way points information to the user navigation system and or to his cellular phone via FM-RDS according to the user location, The information will display on the existing cellular phone or Bluetooth device and interface to existing GPS navigation system. **Type:** Grant **Filed:** June 22, 2006 **Date of Patent:** November 25, 2014 **Inventor:** Ehud Mendelson

******Data Gathering /Nav4Mall**

System and method for providing indoor navigation and special local base service application for malls stores shopping centers and buildings utilize RF beacons

Patent number: 8866673 **Abstract:** The system and method described herein could guide people around urban environments indoor and outdoor, provide a direct content according to the user preference/profile and navigation guidance to the content

integrated into a special local base services application benefit mall store or building facility area. The content and navigation will display on the existing cellular phone as mobile application. **Type:** Grant **Filed:** October 1, 2009 **Date of Patent:** October 21, 2014 **Inventor:** Ehud Mendelson

****Mapping and navigation marketing

The marketing use of user location in LBS market

Indoor and outdoor navigation and local base services application utilizing RF bluetooth beacons

Patent number: 9204251 **Abstract:** A series of RF beacons deployed about a localized area to create an infrastructure for use with a series of applications. One application provides navigation to the receiving device, wherein the location of the receiving device utilizes information obtained from one or more beacon signals. The location can be determined by signal strength, triangulation, an identity of the RF beacon, etc. Another feature is an initiation of an application based upon receipt of a beacon signal. Another application provides local based services (LBS) to the recipient. Another application is directed towards transportation, including transportation management, parking assistance, traffic telematics, etc. Another application emergency based applications, more specifically a communication process in an area where longer range cellular infrastructure is either non-existent or non-functional. The system can create an infrastructure by networking a series of mobile transceivers to create an ad hoc network. **Type:** Grant **Filed:** May 22, 2014 **Date of Patent:** December 1, 2015 **Inventor:** Ehud Mendelson

****Mapping and navigation the use of mapping especially the indoor mapping and navigation

Indoor and outdoor mapping and navigation utilizing RF bluetooth beacons

Patent number: 9204257 **Abstract:** A series of RF beacons deployed about a localized area to create an infrastructure for use with mapping, navigation, and marketing of merchants in the vicinity thereof. An application would utilize the RF beacons to determine a user's location respective to a local area and inform the user of their location on an associated map. The application can employ the RF beacons for navigation through the local area. The application can utilize a beacon identifier that

would be embedded within the beacon signal. The beacon identifier can be utilized to determine a user's location, provide navigation, obtain marketing information for merchants associated with the specific beacon, etc. Receipt of the beacon signal could initiate a feature on the receiving device to transmit a request for information to a remote provider, which in turn, utilizes the beacon identifier to obtain information associated with the area and return the information accordingly. **Type:** Grant **Filed:** May 22, 2014 **Date of Patent:** December 1, 2015 **Inventor:** Ehud Mendelson

Car broadcasting the communication to be use in a car for many methods

Vehicle beacon and method of use **Patent number:** 9772193

Abstract: Installation of a Bluetooth and/or Wi-Fi enabled RF beacon within a vehicle. The RF beacon can be utilized to direct a user to a parking space where the user parked the vehicle. The return to parking feature can provide navigation from a current location of the user to the vehicle parking space. Navigation can be accomplished using a Global Positioning System (GPS), a beacon navigation system, or a combination thereof. The RF beacon can be utilized as a geofence. The geofence can provide several functions, such as a reminder to collect one or more items from the vehicle when the user travels outside of the geofence; automatically register the parking space where the vehicle is parked; automatically initiate a Location Based Service, and the like. **Type:** Grant **Filed:** January 10, 2017 **Date of Patent:** September 26, 2017 **Inventor:** Ehud Mendelson Beacon 4 home deployment the use of beacon to establish location in a vertical and indoor especially for the emergency needed

Beacon deployment for use with location based services (LBS)

Patent number: 9674684 **Abstract:** An infrastructure of Bluetooth and/or Wi-Fi enabled RF tags or beacons deployed within a structure, an urban environment, a residence, buildings, real estate property, in a parking area, etc. The deployed beacons can be integrated with sensors to initiate or trigger an application. The infrastructure being used to recognize a presence of a user within the area to trigger activities, initiate Location Based Services (LBS), provide navigation, provide mapping, convey of information, initiate a link to a server or software, provide support during an emergency, provide assist to E-911 services, trigger an automation function, provide real estate information, and the like. **Type:** Grant **Filed:** January 3, 2017 **Date of Patent:** June 6, 2017 **Inventor:** Ehud Mendelson

Transportation infrastructure the communication and the infrastructure

Transportation support network utilized fixed and/or dynamically deployed wireless transceivers **Patent number:** 9602193 **Abstract:** An application that creates a

dynamic ad hoc network by wirelessly linking a plurality of mobile Bluetooth transceivers. The dynamic ad hoc network enables communication between a transmitting Bluetooth transceiver and a receiving Bluetooth transceiver through at least one intermediary Bluetooth transceiver exclusive of other higher power consuming and expensive communication protocols, such as cellular networks. The network provides a number of solutions, including transportation management, traffic alerts, traffic telematics, information associated with road signs, warnings of speed limit changes, navigation, emergency scenarios (more specifically in a condition where a cellular network is inoperable or unavailable), etc. Navigation can utilize GPS, motion sensors, references from RF beacons signals, and the like to determine a user's location and routing. **Type:** Grant **Filed:** May 22, 2014 **Date of Patent:** March 21, 2017 **Inventor:** Ehud Mendelson

Home beacon deployment the use of beacon/RF in many device indoor to establish precise location **Beacon deployment for use with location based services**

(LBS) **Patent number:** 9538332 **Abstract:** An infrastructure of Bluetooth and/or Wi-Fi enabled RF tags or beacons deployed within a structure, an urban environment, a residence, buildings, real estate property, in a parking area, etc. The deployed beacons can be integrated with sensors to initiate or trigger an application. The infrastructure being used to recognize a presence of a user within the area to trigger activities, initiate Location Based Services (LBS), provide navigation, provide mapping, convey of information, initiate a link to a server or software, provide support during an emergency, provide assist to E-911 services, trigger an automation function, provide real estate information, and the like. **Type:** Grant **Filed:** August 16, 2016 **Date of Patent:** January 3, 2017 **Inventor:** Ehud Mendelson

Hospitality Room key and lbs services

The use of RF beacon Wi-Fi and Bluetooth in a hospitality and cruise industry (room key for example) [Hospitality venue navigation, guide, and local based services](#)

[applications utilizing RF beacons](#) **Patent number:** 9491584 **Abstract:** A series of RF beacons deployed about a localized area associated with a hospitality venue creating an infrastructure for use with mapping, navigation, marketing of merchants, and local based services (LBS) in the vicinity thereof. An application would utilize the RF beacons to determine a user's location respective to a local area and inform the user of their location on an associated map. The application can employ the RF beacons for navigation through the local area. The application can utilize a beacon identifier that would be embedded within the beacon signal. The beacon identifier can be utilized to determine a user's location, provide navigation, obtain marketing information for merchants associated with the specific beacon, etc. Receipt of the beacon signal could initiate a feature on the receiving device to activate a process for obtaining information associated with the area located proximate the respective beacon. **Type:** Grant **Filed:** May 22, 2014 **Date of Patent:** November 8, 2016 **Inventor:** Ehud Mendelson

Geo fencing - over take Apple patents !!!

About the method of Geo Fencing

[RF beacon deployment and method of use](#) **Patent number:** 9420423 **Abstract:** A precise navigation system utilizing a fleet of deployed RF beacons and an associated application. The RF beacons are installed in known locations about a predefined facility area. The RF beacons emit either a Bluetooth or Wi-Fi beacon signal. An RF beacon identifier is encoded into the beacon signal. The location of the beacon is determined by using the beacon identifier in conjunction with a beacon location index. The location can be used to determine a location of the receiving mobile device, initiating conveyance of information associated with merchants in the proximate area, assistance for parking, etc. The system can be employed to assist in emergency conditions, obtaining road sign information, and other applications where RF beacons can transmit specific location based services and information. **Type:** Grant **Filed:** March 30, 2016 **Date of Patent:** August 16, 2016 **Inventor:** Ehud Mendelson

Scanning4Life E911 enhancements - use for lbs market all market use the method to gather data from users [System and method utilizing integral wireless protocols of a mobile phone as an emergency beacon to aid first responders in locating people](#)

Patent number: 9374673 **Abstract:** A system and method that employs features of a user's cellular phone to emit an emergency beacon to aid first responders search and rescue units or emergency personal in locating a person experiencing an emergency condition. The system includes a process for identifying a location of the user's cellular phone independent of functionality of a Global Positioning System (GPS) by determining the location of the user's cellular phone by using locating beacon signals emitted from locating beacons deployed in a vicinity of the person. The user's cellular phone can be adapted to emit an emergency beacon signal. The emergency beacon signal can include emergency information in a naming portion thereof when the emergency beacon signal is transmitted using Bluetooth and/or Wi-Fi protocols. The emergency information can include location information. **Type:** Grant **Filed:** July 5, 2011 **Date of Patent:** June 21, 2016 **Inventor:** Ehud Mendelson

Beacon in a car method use in a car for broadcasting car Id

[System and method of obtaining and using a vehicle identifier for providing information to an end user](#) **Patent number:** 9020687 **Abstract:** A wireless transmitter using Wi-Fi or long range Bluetooth wireless devices for emitting a signal including one of the vehicle ID or the VIN. The signal is received by one or more deployed RF receivers. The received data can be utilized to aid an individual in locating a parking location of a specific vehicle, for use in recognizing the vehicle for passage through a tollway, a gate, or any other controlled passageway. The system is capable of operating either indoors or outdoors. The one of the vehicle ID or the VIN obtained through the emitted signal from the vehicle RF device can be associated with a payment account for payment of tolls, parking, etc. Receipt and decoding of the vehicle ID or the VIN can additionally be used to initiate telematics or other applications using an association with the vehicle identifier. **Type:** Grant **Filed:** January 14, 2011 **Date of Patent:** April 28, 2015 **Inventor:** Ehud Mendelson

Infrastructure

System and method of obtaining and using identifier for providing information to an end user

Patent number: 8941485 **Abstract:** A precise navigation system utilizing a fleet of deployed RF beacons and an associated application. The RF beacons are installed in known locations about a predefined facility area. The RF beacons emit either a Bluetooth or Wi-Fi beacon signal. An RF beacon identifier is encoded into the beacon signal. The location of the beacon is determined by using the beacon identifier in conjunction with a beacon location index. The location can be used to determine a location of the receiving mobile device, initiating conveyance of information associated with merchants in the proximate area, assistance for parking, etc. The system can be employed to assist in emergency conditions, obtaining road sign information, and other applications where RF beacons can transmit specific location based services and information. **Type:** Grant **Filed:** March 7, 2011 **Date of Patent:** January 27, 2015 **Inventor:** Ehud

Nav4emergency e911

System and method for providing alarming notification and real-time, critical emergency information to occupants in a building or emergency designed area and evacuation guidance system to and in the emergency exit route

Patent number: 7924149 **Abstract:** The system method described herein could guide people around urban environments indoor and outdoor, provide accurate update and real time emergency notification and information to the building occupants or to the emergency designated area to his cellular phone, We have focused on the task of providing a real time emergency information and navigation along the emergency exit route, The information will be received directly and will display on the existing cellular phone as Bluetooth application. **Type:** Grant **Filed:** February 13, 2008 **Date of Patent:** April 12, 2011 **Inventor:** Ehud Mendelson

Sense4sign , Nav4sign

Use a database of collected road sign to view according to location on map /navigation - assist to autonomously system to provide better accuracy , we beat mobile eye's patent and it's the future method to be used in the huge car market as add-on to existing system .

System and method for automatically generating and updating waypoint information in real time Patent number: 10470013

Abstract: A method and system to automatically change an operation of a vehicle, wherein the change is based upon obtained information associated with a road sign. The system provides accurate information associated with road signs, identified as way points, in real time to a user's navigation system, to a user's cellular telephone and/or to a vehicle computer. The waypoint and associated information would be obtained according to a location of the respective receiving device. The information can be presented on a display of the user's cellular telephone, the GPS navigation system, any other Bluetooth-enabled device, etc. The system can interface with an existing GPS navigation system, a vehicle computer, etc. The process can be adapted to parking, navigation, roadway assistance, emergency conditions, mass transits, and the like. **Type:** Grant **Filed:** April 13, 2018 **Date of Patent:** November 5, 2019 **Inventor:** Ehud Mendelson

Sense4medical

Ability to provides medical Id as well as medical emergency in case of emergency and E911 and the method to secure use the mobile phone to store and share when needed the medical record

Medical information communication method Patent number: 10117078

Abstract: A method of storing and utilizing a user's cellular telephone to securely store a user's identification and associated medical information to be use in an emergency and in a non-emergency condition. The medical information can be accessed by medical providers or emergency personnel. An application operating on the cellular telephone can provide a link to the emergency personnel and medical providers. The medical information can be broadcasted in an identification portion of a Wi-Fi or Bluetooth protocol transmission. The process is capable of being accomplished using a one-way

transmission. **Type:** Grant **Filed:** May 4, 2018 **Date of Patent:** October 30, 2018 **Inventor:** Ehud Mendelson

Nav4 parking and return2parking

System and method of detecting and navigating to empty parking spaces

Patent number: 7899583 **Abstract:** The parking detection system method described herein could guide people around urban environments detect guide and navigate them to empty parking spaces, add-on to the car-based navigation systems and or to the cellular 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 and without the need for central computer system or internet connections. The parking information will be received directly from RF sensors and will display as a floating overlay on the existing navigation system and or cellular phone as Bluetooth application. **Type:** Grant **Filed:** April 3, 2006 **Date of Patent:** March 1, 2011 **Inventor:** Ehud Mendelson

*****Waypoint locating and information**

Patent application : providing indoor and outdoor waypoints and navigation information and method of use

Abstract: the waypoints and navigation system method described herein could guide people around urban environments indoor and outdoor and provides additional local based services to the mobile users and business in the local area.

Spec. and drawing: are based on patent 8,836,580 filed may 8,2006 that claims priority of provisional application 60/678,947 filed on may 9,2005

***** patent got ext by 565 days.. until 2029**

1. A method of providing a user a point of interest (POI) waypoints information and navigation to a display device indoor and outdoor wherein said display device is selected from a group consisting of a portable display device, a mobile phone, a hand held navigation system, a car navigation system, a navigation and mapping system and Bluetooth enable devices, the method comprising steps of:
 - a. determining a current position of said display device
 - b. displaying a position marking representative said position of said display device on the display device overlay local map or facility area map

- c. display waypoint information containing local base information associate within determine location said local based services contents includes: display color code to identify the type of the waypoints(store/business) in the local area/facility
- d. display additional local base services related to the waypoints in the local area/facility includes: store name, phone number, floor, address, time, and small notes representing the business/store
- e. allow the user receiving additional information regarding local business such as special promotions, coupons, advertising or special sales to the display device