

Google LLC
v.
WirelessWerx IP, LLC.

Petitioner's Presentation For IPR2023-00805
U.S. Patent No. 8,315,203
September 11, 2024

Demonstrative Exhibit Not Evidence

1

Overview

- Alleged Invention
- Overview of the Prior Art
- Undisputed Issues and Claim Elements
- “most practically near [node/transponder]” – Elements 1[Diii] and 6[G]
- “communicating between at least one transponder to the mobile user and between at least one transponder” – Elements 6[C]/29[C]/30[C]

Overview

- Alleged Invention
- Overview of the Prior Art
- Undisputed Issues and Claim Elements
- “most practically near [node/transponder]” – Elements 1[Diii] and 6[G]
- “communicating between at least one transponder to the mobile user and between at least one transponder” – Elements 6[C]/29[C]/30[C]

'203 patent's system

(12) **United States Patent**
Ashley, Jr. et al.

(10) **Patent No.:** US 8,315,203 B2
(45) **Date of Patent:** *Nov. 20, 2012

(54) MAPPING IN A MULTI-DIMENSIONAL SPACE

(75) Inventors: James Ashley, Jr., Norco, CA (US); Patrick Mooney, Brea, CA (US)

(73) Assignee: **Wirelesswrx International, Inc.**
Urbanizacion Marbella (PA)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 694 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: 12/350,817

(22) Filed: Jan. 8, 2009

(65) **Prior Publication Data**

US 2009/0137255 A1 May 28, 2009

Related U.S. Application Data

(63) Continuation-in-part of application No. 11/848,178, filed on Aug. 30, 2007.

(51) **Int. Cl.**
H04W 4/00 (2009.01)

(58) **Field of Classification Search** None
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,518,674 A	6/1970	Moorhead et al.
3,772,668 A	11/1973	Smith
4,217,668 A	8/1980	Sargent et al.
4,224,596 A	9/1980	Knickel
4,688,026 A	8/1987	Scribner et al.

(10) **Patent No.:** US 8,315,203 B2
(45) **Date of Patent:** *Nov. 20, 2012

4,819,860 A	4/1989	Hargrove et al.
4,847,773 A	7/1989	van Holsdingen et al.
4,884,708 A	11/1989	Marinelli et al.

4,958,645	A	9/1990	Cadell et al.
5,142,281	A	8/1992	Park
5,235,633	A	8/1993	Dennison et al.
5,265,516	A	11/1994	Lee et al.

5,388,147	A	2/1995	Grimes
5,389,934	A	2/1995	Kass
5,479,482	A	12/1995	Grimes

5,528,238 A	6/1996	Steiner et al.
5,546,445 A	8/1996	Dennison et al.
5,617,944 A	4/1997	McTaggart

(Continued)

FOREIGN PATENT DOCUMENTS

(Continued)

OTHER PUBLICATIONS

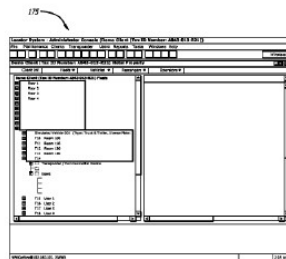
Wirelesswerks TrakWERK II SMS/Satellite Dual Mode Tracking Unit, Manual, Nov. 17, 2003, pp. 1-20.

74) *Attorney, Agent, or Firm* — Greenberg Traurig, LLP

ABSTRACT

A multi-dimensional, such as a three-dimensional, map is created using nodes in communication with each other. The nodes communicate with each other wirelessly via radio frequency (RF) using Bluetooth™ protocol. Detailed location information from the location nodes is downloaded. A mesh network of nodes is in communication with at least one base station and, in turn, is in communication with at least one control center. A mobile device associated with a user located in a specific area of a geographical location is in communication with a control center to create a multi-dimensional map.

30 Claims, 24 Drawing Sheets

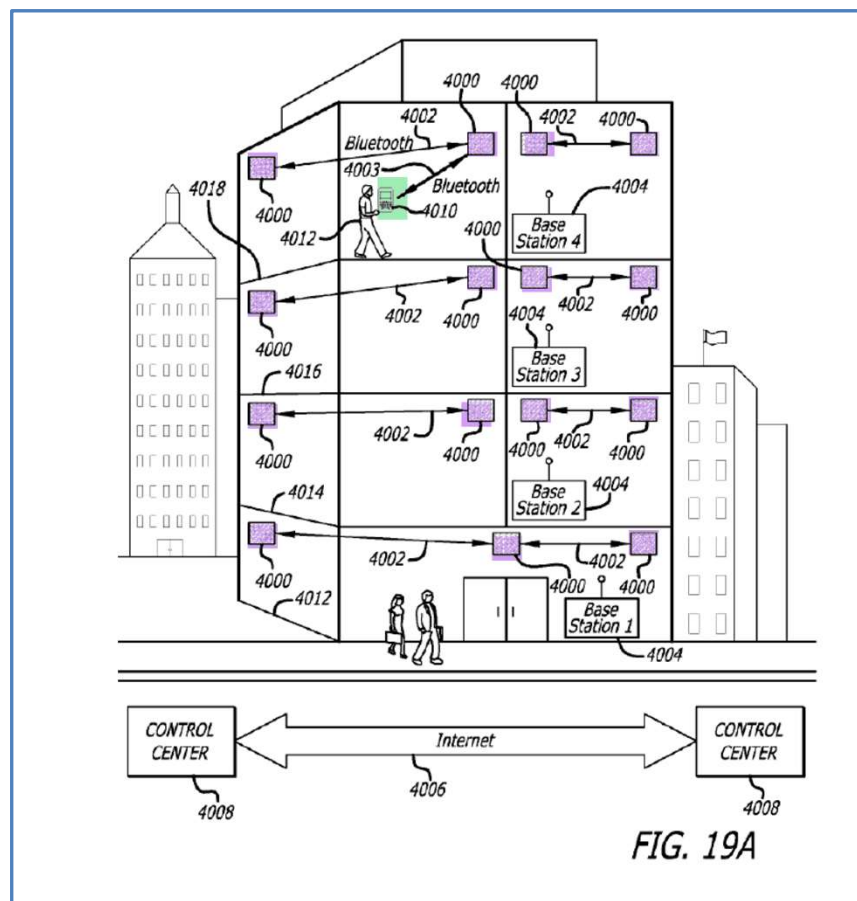


ABSTRACT

(57)

A multi-dimensional, such as a three-dimensional, map is created using nodes in communication with each other. The nodes communicate with each other wirelessly via radio frequency (RF) using Bluetooth™ protocol. Detailed location information from the location nodes is downloaded. A mesh network of nodes is in communication with at least one base station and, in turn, is in communication with at least one control center. A mobile device associated with a user located in a specific area of a geographical location is in communication with a control center to create a multi-dimensional map.

'203 patent's multi-dimensional space inside a building



Demonstrative Exhibit Not Evidence

Ex-1001 at Fig. 19A (annotated)

5

Overview

- Alleged Invention
- Overview of the Prior Art
- Undisputed Issues and Claim Elements
- “most practically near [node/transponder]” – Elements 1[Diii] and 6[G]
- “communicating between at least one transponder to the mobile user and between at least one transponder” – Elements 6[C]/29[C]/30[C]

Grounds instituted for review

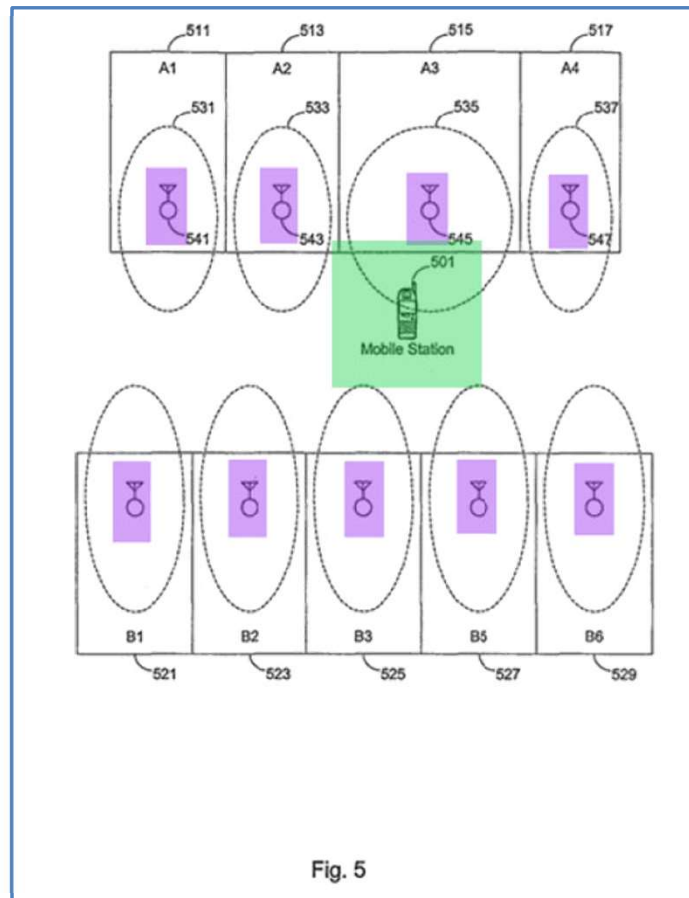
Institution decision:

E. Asserted Grounds

Petitioner asserts that claims 1–30 of the '203 patent are unpatentable under the following grounds:

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
I	1–5	103	Wrappe, Belcea
II	6–30	103	Wrappe, Belcea, Christopher
III	6–30	103	Wrappe, Belcea, Kinnunen

Wrappe's microcell beacons



Demonstrative Exhibit Not Evidence

Ex-1005 at Fig. 5 (annotated), *cited* at Petition (Paper 1) at 13

Belcea's wireless routers and controllers

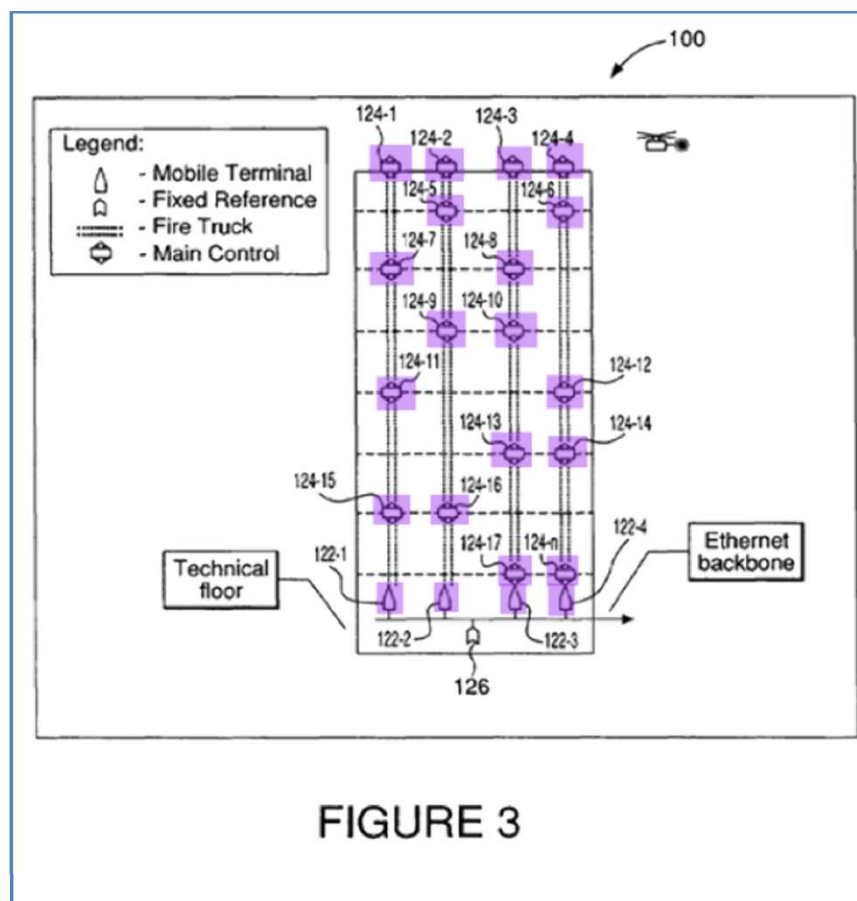
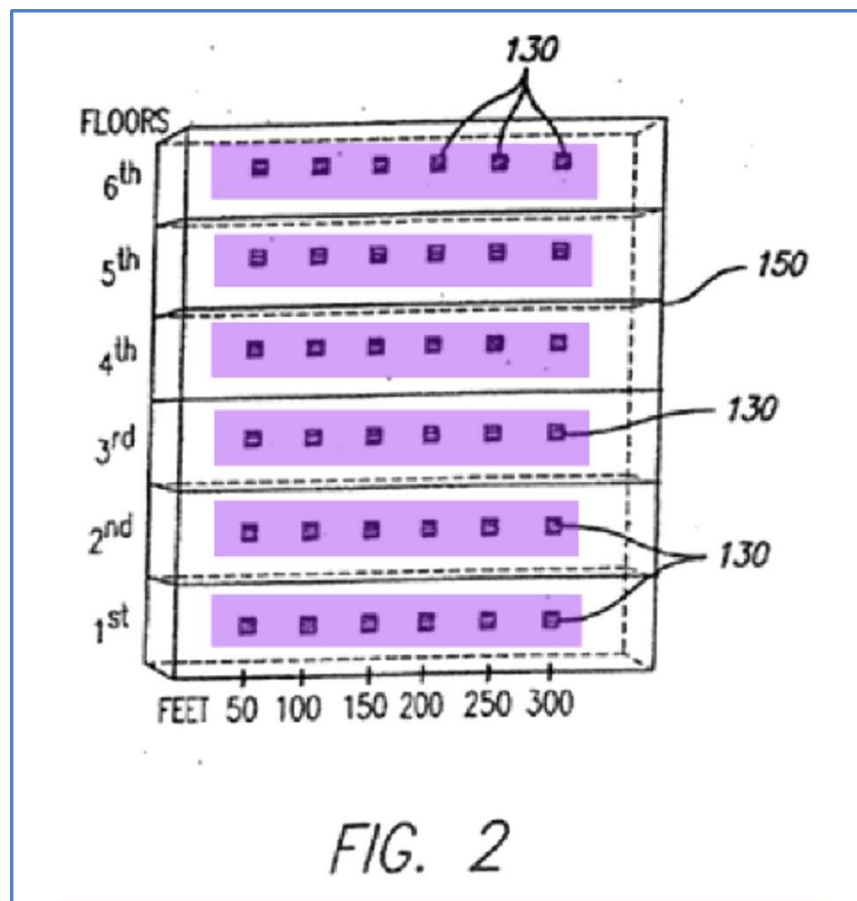


FIGURE 3

Demonstrative Exhibit Not Evidence

Ex-1006 at Fig. 3 (annotated), *cited* at Petition (Paper 1) at 15

Christopher's devices in a "six story structure"



Demonstrative Exhibit Not Evidence

Ex-1007 at Fig. 3 (annotated), *cited* at Petition (Paper 1) at 17

Overview

- Alleged Invention
- Overview of the Prior Art
- Undisputed Issues and Claim Elements
- “most practically near [node/transponder]” – Elements 1[Diii] and 6[G]
- “communicating between at least one transponder to the mobile user and between at least one transponder” – Elements 6[C]/29[C]/30[C]

Undisputed issues and claim elements

- Priority is not disputed
 - January 8, 2009
- Motivations to combine are not disputed
 - No dispute as to combinability of Wrappe and Belcea
 - No dispute as to combinability of Wrappe, Belcea, and Christopher
 - No dispute as to combinability of Wrappe, Belcea, and Kinnunen
 - Kinnunen was presented to replace Christopher as Ground 3, if PO attempted to dispute priority
 - This ground need not be reached, since there is no dispute on priority
- Undisputed claim elements
 - Undisputed elements of Claim 1: 1[pre]; 1[a]; 1[b]; 1[c]; 1[di]; 1[dii].
 - Undisputed elements of Claim 6, 29, and 30: 6/29/30[Pre]; 6/29/30[a]; 6/29/30[b]; 6/29/30[d]; 30[di]; 6/29/30[e]; 6/29/30[f]; 29[g]; 6/29/30[h]; 6/29/30[i]; 6/29/30[j]
 - Undisputed dependent Claims: 2-5, 7-28

Overview

- Alleged Invention
- Overview of the Prior Art
- Undisputed Issues and Claim Elements
- “most practically near [node/transponder]” – Elements 1[Diii] and 6[G]
- “communicating between at least one transponder to the mobile user and between at least one transponder” – Elements 6[C]/29[C]/30[C]

Element 1[Diii] – “... the most practically near node ...”

1. A method for developing a map for use by a user, the user being selectively individuals, vehicles, and other entities, comprising:

using a geographical zone, the zone selectively being a preconfigured geographical zone,

the zone including a plurality of spaced apart nodes, wherein the nodes are arranged in a multi-dimensional sense, the location of the plurality of nodes in the multi-dimensional sense being placed with a structure attached to the ground;

sending data communications between one or more of the nodes, one or more users, and one or more control stations; and

affecting multi-dimensional mapping according to the placement of the nodes and the communications between the nodes and the control stations, wherein the mapping is affected in a three-dimensional sense, selectively being a three-dimensional sense in the x, y, and z axes or coordinates and the structure is a building, the building having different elevational levels and there are nodes on different elevational levels whereby there are nodes at multiple different elevational levels, and

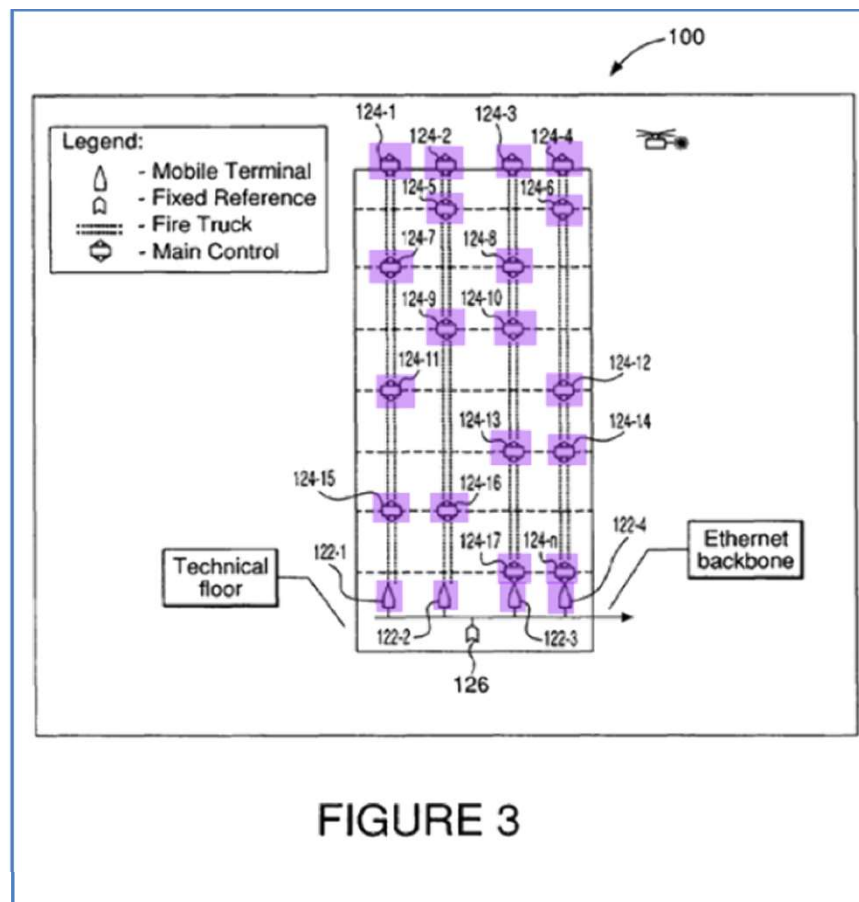
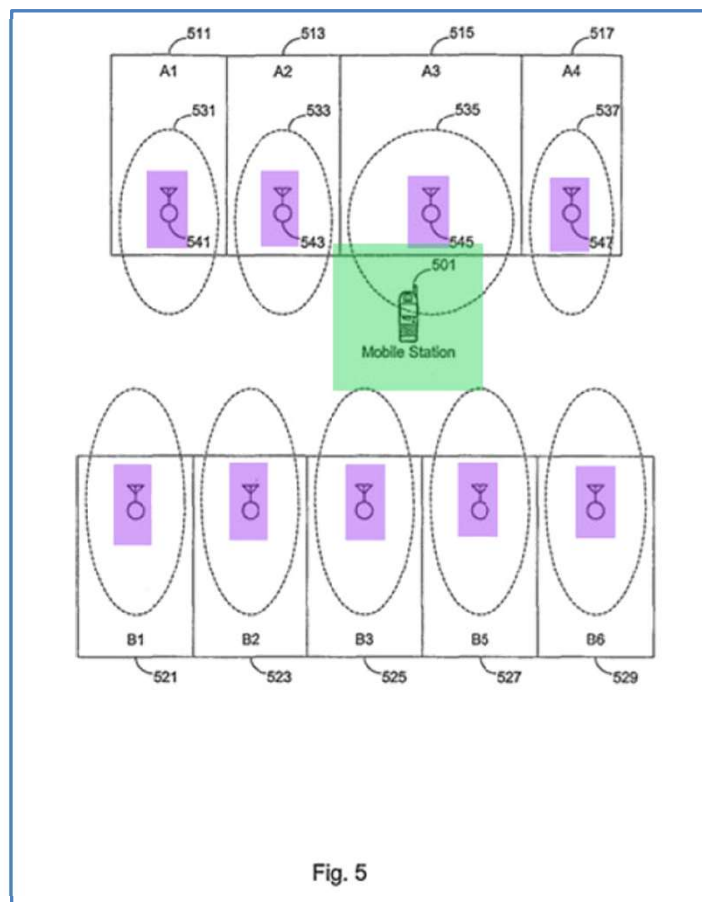
wherein the system narrows the plurality of nodes for use by the user at a first elevational level to the most practically near node to the user, such that a node at another elevational level, even though physically closer to the user at the first elevational level is excluded as being a node the most practically near to that user, and a different node at the elevational level of the user is selected as the most practically near to that user.

wherein the system narrows the plurality of nodes for use by the user at a first elevational level to the most practically near node to the user, such that a node at another elevational level, even though physically closer to the user at the first elevational level is excluded as being a node the most practically near to that user, and a different node at the elevational level of the user is selected as the most practically near to that user.

Element 1[Diii] – “... the most practically near node ...”

The most practically near node is defined as the node that is located at the closest accessible location to the movable entity. For example, a wireless communication device located on the second floor of a multi-story building may be closest to a location node located on the ceiling of the first floor, and may be next closest to a location node located on the second floor. Although the location node on the first floor is actually closer in distance to the movable entity than the location node on the second floor, since the location node on the first floor is not easily accessible to the movable entity located on the second floor, the location node on the second floor will be considered the most practically near node to the movable entity.

Wrappe-Belcea's nodes in stores at different elevation levels



Demonstrative Exhibit Not Evidence

Ex-1005 at Fig. 5 (annotated), *cited* at Petition (Paper 1) at 13; Ex-1006 at Fig. 3 (annotated), *cited* at Petition (Paper 1) at 15

Wrappe-Belcea's nodes in stores at different elevation levels

Wrappe's beacon "can store and broadcast [for] altitude aiding" such as "the altitude of a floor of a building where the microcell beacon station is installed." Ex-1005 ¶¶40, 49. As explained in Sections XII.A.1, XII.A.2.c, and XII.A.2.e, a POSITA would also have considered teachings of Belcea regarding different elevations. Figure 3 of Belcea shows "a number of Intelligent Access Points (IAP) 122-1 to 122-n [purple], and a system of Vertical Routers (VR) 124-1 to 124-n [purple], dispersed among a number of floors of an example building." Ex-1006, 6:8-11.

Belcea's teaches to identify nodes on the same floor

with Mobile Terminals operating on them. The Mobile Terminals can determine their respective locations using algorithms such as those described in U.S. Patent Application of John M. Belcea et al. entitled "System and Method for Identifying the Floor Number Where a Firefighter in Need of Help is Located Using Received Signal Strength Indicator and Signal Propagation Time", Ser. No. 10/861, 121, filed on Jun. 4, 2004, the entire content of which is incorporated herein by reference. For instance, to improve accuracy, the Mobile Terminals can use Time of Flight (TOF) data and Received Signal Strength Indicator (RSSI) data and a scoring process to identify the correct floor on which they are located. MAC protocol techniques can also

Belcea incorporates additional floor-scoring algorithms by reference

with Mobile Terminals operating on them. The Mobile Terminals can determine their respective locations using algorithms such as those described in U.S. Patent Application of John M. Belcea et al. entitled “System and Method for Identifying the Floor Number Where a Firefighter in Need of Help is Located Using Received Signal Strength Indicator and Signal Propagation Time”, Ser. No. 10/861, 121, filed on Jun. 4, 2004, the entire content of which is incorporated herein by reference. For instance, to improve accuracy, the Mobile Terminals can use Time of Flight (TOF) data and Received Signal Strength Indicator (RSSI) data and a scoring process to identify the correct floor on which they are located. MAC protocol techniques can also

Belcea's incorporated floor-scoring algorithms

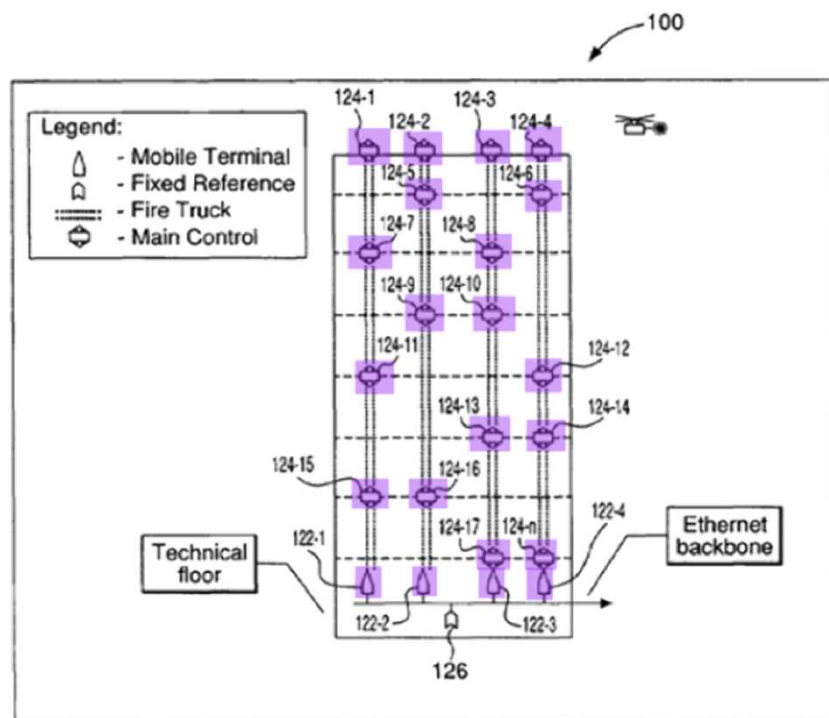


FIGURE 3

gency. The system and method according to the embodiment of the present invention described herein uses both Time Of Flight (TOF) and Received Signal Strength Indicator (RSSI) between the mobile terminals and wireless routers to identify the floors where the firefighters are located and to track firefighter movements. The RSSI and TOF values received from all routers are filtered before being used for the evaluation of the floor number. Although the RSSI and TOF data may not show the correct distance to the firefighter, the filtered data can be compared for finding the most probable floor where the firefighter is located knowing that the closet router should provide the smallest TOF and the best RSSI simultaneously.

Belcea's incorporated floor-scoring algorithms

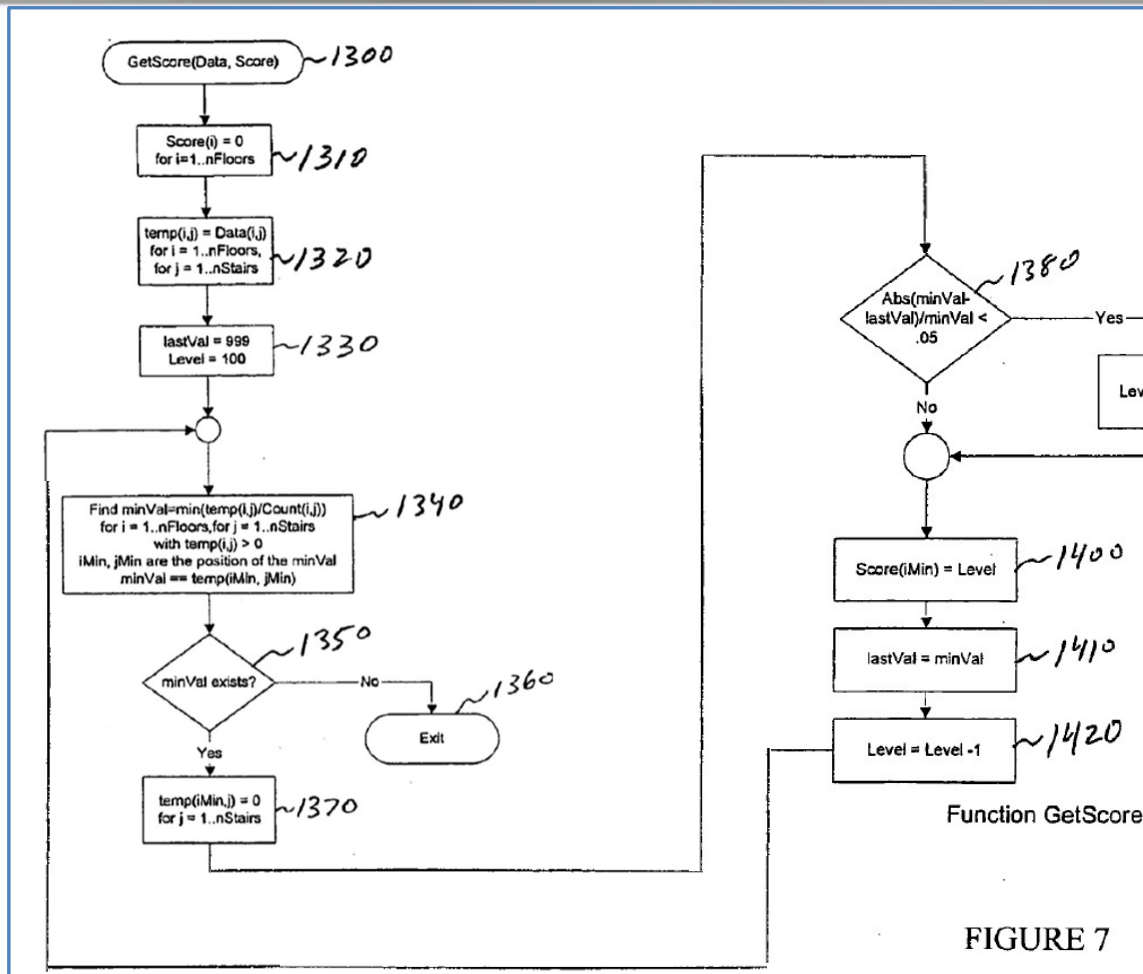
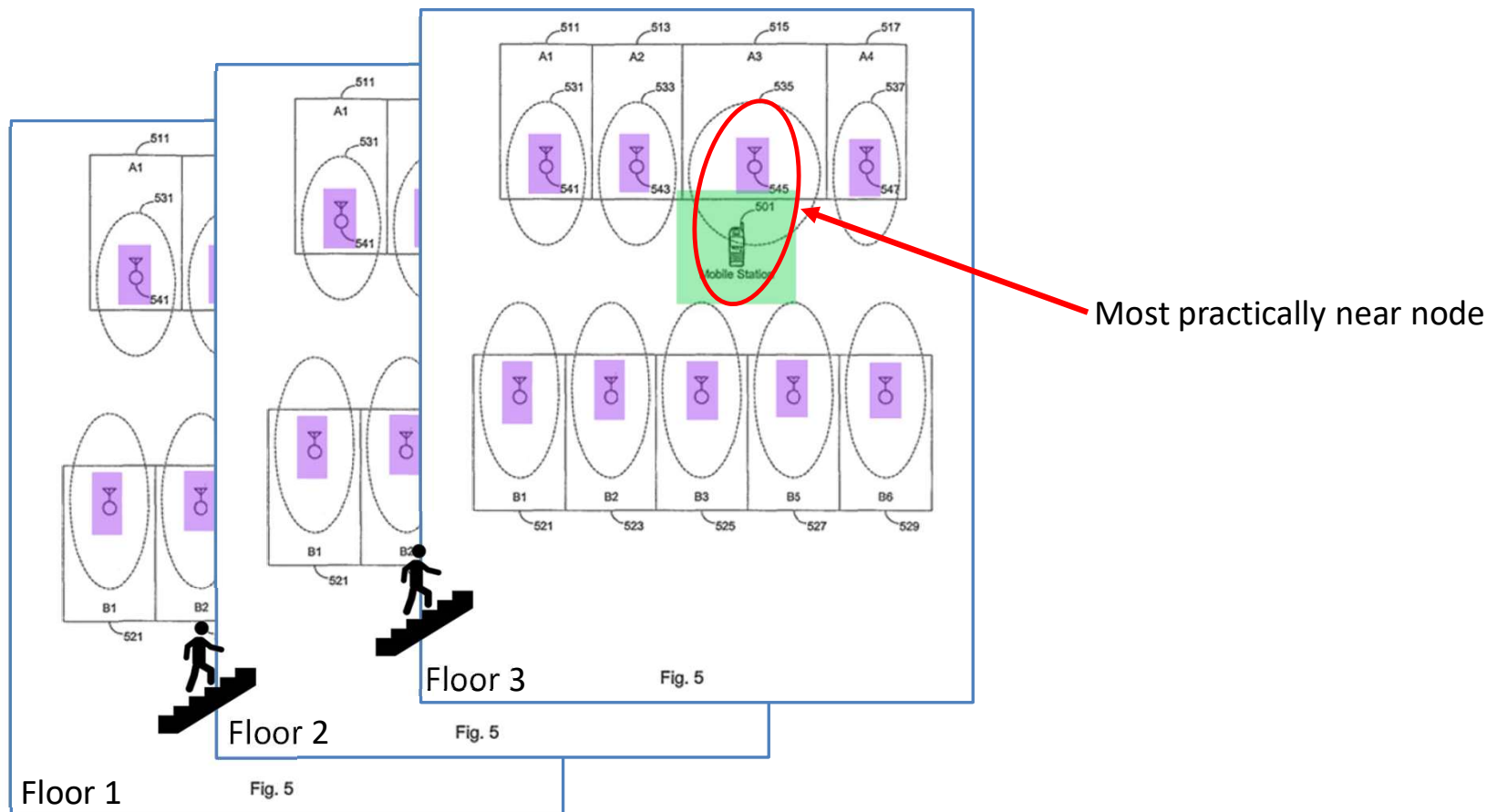


FIGURE 7

[0023] FIG. 7 is a flowchart showing an example of the floor scoring operations performed for identifying the locations of mobile terminals in the system shown in FIG. 1 according to an embodiment of the present invention; and

[0048] The operations shown in the flowcharts set forth in FIGS. 4-7 provide a technique for setting a score to each floor and selecting the floor with the best score. The same technique is used for setting the score according with TOF and RSSI data. That is, the technique looks first for the smallest value of TOF (or smallest absolute value of RSSI) divided by the number of measurements performed between a mobile terminal 116 and FIRs 106 whose signals the mobile terminal 116 can receive. The FIR 106 giving the smallest value of weighted TOF is representative of the most likely floor on which the MT 116 is located, and its score is set to the maximum value. The next likely floor is found by searching again for the smallest value of the TOF divided by the number of measurements, from the rest of the floors. The method is applied until all floors have been searched and a score has been assigned for each floor. If the searching

Wrappe-Belcea's "most practically near node" is the one nearest and on the same floor



The parties essentially agree on how the term should be understood

The construction that the Patent Owner applies is that “the most practically near node” is the node that is closest to the movable entity while being on the same floor as the user. *See* Paper 11 at 14–15, 19–29. The Petition applies that same understanding, explaining that the combination of Wrappe and Belcea renders obvious identifying a node that is on the same floor as the user because “the system identifies a beacon ‘nearby’ on the same floor.” Paper 1 at 38. Thus, the Grounds of the Petition meet both Parties’ applications of the term “the most practically near node.”

Patents Owner's extra imported words are ambiguous, unnecessary to resolve the prior art issues, and do not distinguish the art

The most practically near node is defined as the node that is located at the closest [?]accessible location to the [?]movable entity. For example, a wireless communication device located on the second floor of a multi-story building may be closest to a location node located on the ceiling of the first floor and may be next closest to a location node located on the second floor. Although the location node on the first floor is actually closer in distance to the movable entity than the location node on the second floor, since the location node on the first floor is not easily accessible to the movable entity located on the second floor, the location node on the second floor will be considered the most practically near node to the movable entity. Ex. 1001, 6: 55-67.

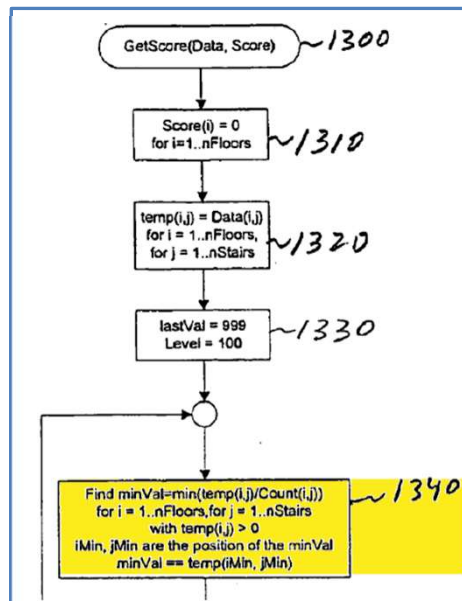
Patents Owner's arguments are incorrect and do not distinguish the art

POR:

contrary, in Belcea '926, a user can only communicate with nodes located on the same floor of the user, Belcea '926 need not remove nodes that located not the same floor of the user.

FALSE

Belcea '926:



[0065] The function has a loop that identifies the floor on which the criterion (RSSI or TOF) has the best value. Once the floor was found in step 1340, all other data from the same floor are ignored and the next floor is identified. As long as a floor needing identification remains as determined in step 1350, the function continues. However, if no such floor remains, the function exits in step 1360.

Patent Owner makes no separate argument on “most practically near” aspect of Element 6[G] and Christopher

Wrappe

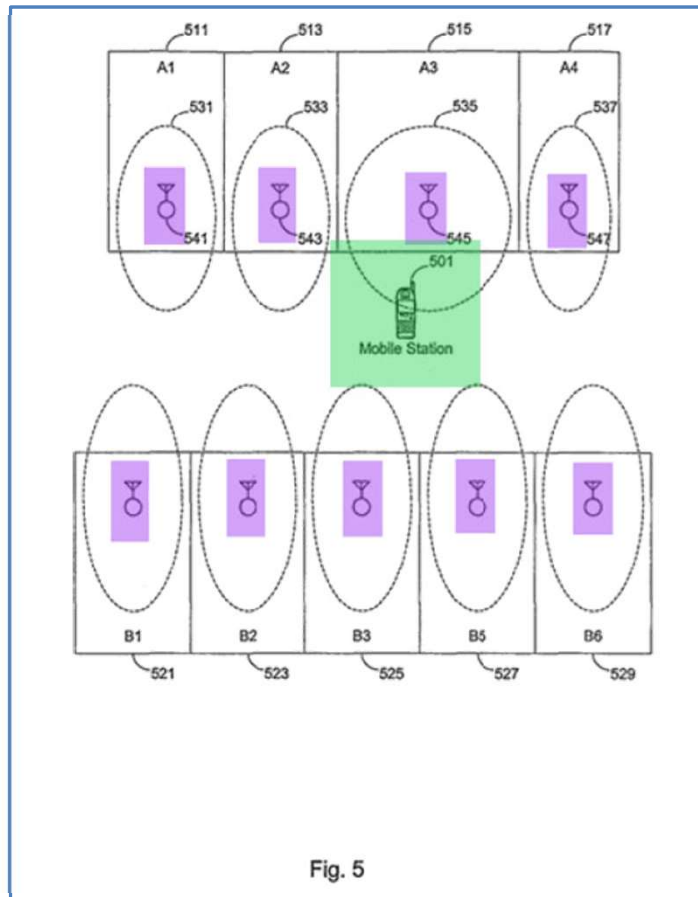


Fig. 5

Belcea Teaches multi-floor scoring algorithms

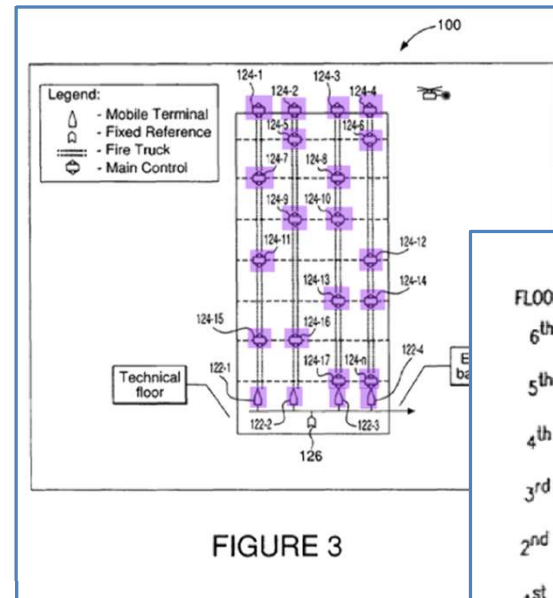


FIGURE 3

Christopher

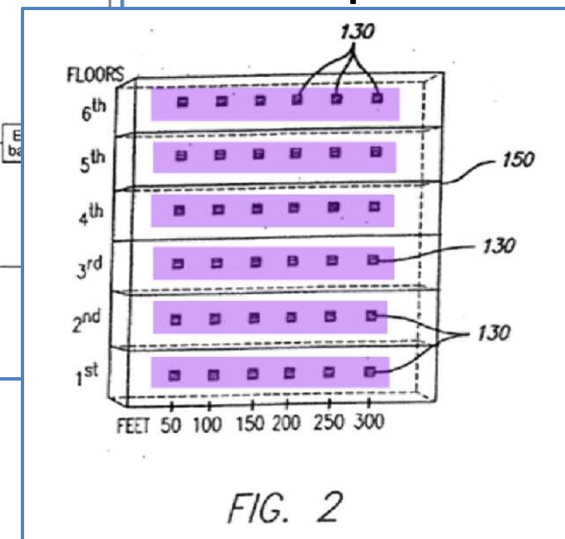


FIG. 2

Added for undisputed aspects of claim 6 related to usage tracking and selective advertising

Demonstrative Exhibit Not Evidence

Ex-1005 at Fig. 5 (annotated), Ex-1006 at Fig. 3 (annotated), Ex-1007 at Fig 2 (annotated) 26

Overview

- Alleged Invention
- Overview of the Prior Art
- Undisputed Issues and Claim Elements
- “most practically near [node/transponder]” – Elements 1[Diii] and 6[G]
- “communicating between at least one transponder to the mobile user and between at least one transponder” – Elements 6[C]/29[C]/30[C]

Element 6[C]– communicating between the transponders

6. A method of communicating data between at least one selected communication transponder and at least one selected mobile communication device comprising:

using a geographical zone, wherein the zone includes a plurality of spaced apart communication transponders; the transponders including a transmitter and receiver and wherein at least one of the transponders permits communication with a mobile device of a user;

sending data communication between pluralities of the transponders in a network communication protocol with each other, applying the plurality of transponders in the network with each other to define the zone,

communicating between at least one transponder to the mobile user and between at least one transponder; the communication between the mobile device of the user and the least one transponder being effected by at least one of a bluetooth or a wi fi protocol thereby to determine the location of the user in the zone through such communication;

arranging the transponders at locations in the zone, and the respective locations of the plurality of transponders in the zone being placed within a building structure;

obtaining and analyzing data related to the location of the mobile user according to the placement of the transponders in the zone;

enabling selected mobile communication devices to be in communication with at least one selected communication transponder when the devices are within range of the selected transponder;

the mobile user receiving selection parameter data from multiple transponders, and utilizing the selection parameters, such that the system narrows the plurality of transponders to the most practically near transponder, such most practically near transponder not necessarily being the transponder physically closest to the mobile user;

associating respective users of respective mobile devices with a respective profile of the respective user of the respective mobile device;

sending a targeted message to a selected mobile device of a selected user from the selected communication transponder when the selected mobile device is in range; and tailoring the targeted message to the profile of the user associated with the mobile device.

communicating between at least one transponder to the mobile user and between at least one transponder; the communication between the mobile device of the user and the least one transponder being effected by at least one of a bluetooth or a wi fi protocol thereby to determine the location of the user in the zone through such communication;

Patents Owner's arguments are incorrect and do not distinguish the art

POR:

The cited portions of Wrappe show that at least one transponder (microcell beacon) can communicate with the mobile user, but do not show communicating at least one transponder. In fact, microcell beacons do not communicate with each other.

FALSE

Reply:

Petitioner's expert explained, Wrappe teaches that a group of multiple beacon stations can be interconnected to cover a larger zone, for example, in a large department store. Paper 1 at 53–54; Ex-1002 ¶¶119–120, 203 (citing Ex-1005 ¶46) (Wrappe stating that “more than one microcell beacon station can be used to create a desirable coverage, depending on the size of the store”). And as the Petition and Petitioner's expert explained, a POSITA would have implemented this teaching of Wrappe by having the beacons in communication with each other in a network communication protocol. Paper 1 at 54; Ex-1002 ¶221. For example, Wrappe says that its beacons can receive data and then “relay the data” to a remote service station. Paper 1 at 54–55 (citing Ex-1005 ¶¶35, 45, 48); Ex-1002 ¶224.

Patents Owner's arguments are incorrect and do not distinguish the art

POR:

The cited portions of Wrappe show that at least one transponder (microcell beacon) can communicate with the mobile user, but do not show communicating at least one transponder. In fact, microcell beacons do not communicate with each other.

FALSE

Reply:

Ex-1002 ¶203 (citing Ex-1005 ¶46). Petitioner's expert further explained that the requirement "that the nodes communicate amongst themselves . . . is found in the transponders of Belcea." Ex-1002 ¶202. Specifically, Belcea teaches a transponder architecture wherein there are mesh networks for horizontal routers on each floor and vertical routers sending information between floors. Ex-1002 ¶¶231–32 (citing Ex-1006, 6:15–6:67, Cl. 21, Fig. 4); Paper 1 at 57–58. As Petitioner's expert explained, in view of Wrappe's teaching to use more than one microcell beacon station for greater coverage and Belcea's implementation details teaching a mesh network of interconnected nodes, a POSITA would have been motivated to implement Belcea's teaching to use nodes that communicate in concert to create a mesh network of interconnected nodes. Ex-1002 ¶203.

Google LLC
v.
WirelessWerx IP, LLC.

Petitioner's Presentation For IPR2023-00805
U.S. Patent No. 8,315,203
September 11, 2024

Demonstrative Exhibit Not Evidence

31