03-24-06

IFW 3662

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	) Group Art Unit: 3662
	)
Dupray et al.	) Examiner: Dao L. Phan
	)
Serial No.: 09/770,838	) <u>RESPONSE TO OFFICE ACTION DATED</u>
	) <u>FEBRUARY 8, 2006</u>
Filed: January 26, 2001	)
	)
Atty. File No.: 1003-1	) EXPRESS MAIL MAILING LABEL NUMBER: **EV737751758US**
	) DATE OF DEPOSIT: **March 22, 2006**
For: A GATEWAY AND HYBRID	) I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL
SOLUTIONS FOR WIRELESS	) SERVICE "EXPRESS MAIL POST OFFICE TO ADDRESSEE" SERVICE UNDER 37 CFR 1.10 ON THE DATE INDICATED
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TYPED OR PRINTED NAME: **Aimee M. Thuerk**

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

In response to the Office Action having a mailing date of February 8, 2006, the applicant hereby submits a copy of the Preliminary Amendment dated February 20, 2002, which contains the claims to be examined.

Respectfully submitted,

By:
Dennis J. Dupray
Registration No. 46,299
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Golden, Colorado 80401
(303) 863-9700

Date: MARCH 22, 2006

-1-

In Re the Application of:

DUPRAY et al.

Serial No.: 09/770,838

Filed: January 26, 2001

Atty. File No.: 1003-1

For: "WIRELESS LOCATION USING
SIGNAL FINGERPRINTING"

Prior Group Art Unit: 3662

Prior Examiner: Dao Phan

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents

Washington, D.C. 20231

Dear Sir:

Applicants herewith submit an additional voluntary preliminary amendment. Accompanying this amendment is an additional Information Disclosure Statement. Also accompanying this amendment is a transmittal requesting changes to the drawings. The requested changes to the drawings are consistent with the changes to the specification requested herein. Accordingly, Applicants request the Examiner to reconsider the present application in view of the requested amendments and the additional Information Disclosure Statement.

If there are any questions regarding the present amendment, the request for changes to the drawings, or the newly filed Information Disclosure Statement, it is requested that the named Applicant hereinbelow (Dennis Dupray) be contacted at 303-863-2975.

IN THE SPECIFICATION:

Applicants have provided herein a replacement set of amendments to the specification. The amendments to the specification herein are to replace all previous specification amendments **with the exception of the change in the claim for priority filed which were provided in a transmittal to the USPTO filed on January 26, 2001.** Accordingly, it is requested that all previous amendments to the specification, **except for the change in the claim for priority**, be replaced with the specification amendments provided herein following.

Please replace the title of application with the following new title:

"A GATEWAY AND HYBRID SOLUTIONS FOR WIRELESS LOCATION"

Please replace the paragraph beginning on page 8, line 3 with the following paragraph:

Loss due to slow fading includes shadowing due to clutter blockage (sometimes included in Lp). Fast fading is composed of multipath reflections which cause: 1) delay spread; 2) random phase shift or Rayleigh fading; and 3) random frequency modulation due to different Doppler shifts on different paths.

Please replace the paragraph beginning on page 10, line 3 through page 10, line 20 with the following paragraphs:

It is an objective of the present invention to provide a system and method for to wireless telecommunication systems for accurately locating people and/or objects in a cost effective manner. Additionally, it is an objective of the present invention to provide such location capabilities using the measurements from wireless signals communicated between mobile stations and a network of base stations, wherein the same communication standard or protocol is utilized for location as is used by the network of base stations for providing wireless communications with mobile stations for other purposes such as voice communication and/or visual communication (such as text paging, graphical or video communications). Related objectives for various embodiments of the present invention include providing a system and method that:

(1.1) can be readily incorporated into existing commercial wireless telephony systems with few, if any, modifications of a typical telephony wireless infrastructure;

(1.2)   can use the native electronics of typical commercially available, or likely to be available, telephony wireless mobile stations (e.g., handsets) as location devices;

(1.3)   can be used for effectively locating people and/or objects wherein there are few (if any) line-of-sight wireless receivers for receiving location signals from a mobile station (herein also denoted MS);

(1.4)   can be used not only for decreasing location determining difficulties due to multipath phenomena but in fact uses such multipath for providing more accurate location estimates;

(1.5)   can be used for integrating a wide variety of location techniques in a straight-forward manner;

(1.6)   can substantially automatically adapt and/or (re)train and/or (re)calibrate itself according to changes in the environment and/or terrain of a geographical area where the present invention is utilized;

(1.7)   can utilize a plurality of wireless location estimators based on different wireless location technologies (e.g., GPS location techniques, terrestrial base station signal timing techniques for triangulation and/or trilateration, wireless signal angle of arrival location techniques, techniques for determining a wireless location within a building, techniques for determining a mobile station location using wireless location data collected from the wireless coverage area for, e.g., location techniques using base station signal coverage areas, signal pattern matching location techniques and/or stochastic techniques), wherein each such estimator may be activated independently of one another, whenever suitable data is provided thereto and/or certain conditions, e.g., specific to the estimator are met;

(1.8)   can provide a common interface module from which a plurality of the location estimators can be activated and/or provided with input;

(1.9)   provides resulting mobile station location estimates to location requesting applications (e.g., for 911 emergency, the fire or police departments, taxi services, vehicle location, etc.) via an output gateway, wherein this gateway:

> (a)   routes the mobile station location estimates to the appropriate location application(s) via a communications network such as a wireless network, a public switched telephone network, a short messaging service (SMS), and the Internet,
>
> (b)   determines the location granularity and representation desired by each location application requesting a location of a mobile station, and/or
>
> (c)   enhances the received location estimates by, e.g., performing additional processing such as "snap to street" functions for mobile stations known to reside in a vehicle.

Please replace the paragraph beginning on page 11, line 15 with the following paragraph:

(3.3)   The term, "infrastructure", denotes the network of telephony communication services, and more particularly, that portion of such a network that receives and processes wireless communications with

wireless mobile stations. In particular, this infrastructure includes telephony wireless base stations (BS) such as those for radio mobile communication systems based on CDMA, AMPS, NAMPS, TDMA, and GSM wherein the base stations provide a network of cooperative communication channels with an air interface with the MS, and a conventional telecommunications interface with a Mobile Switch Center (MSC). Thus, an MS user within an area serviced by the base stations may be provided with wireless communication throughout the area by user transparent communication transfers (i.e., "handoffs") between the user's MS and these base stations in order to maintain effective telephony service. The mobile switch center (MSC) provides communications and control connectivity among base stations and the public telephone network 124.

Please replace the paragraph beginning on page 12, line 6 with the following paragraphs:

The present invention relates to a wireless mobile station location system, and in particular, various subsystems related thereto such as a wireless location gateway, and the combining or hybriding of a plurality of wireless location techniques.

Regarding a wireless location gateway, this term refers to a communications network node whereat a plurality of location requests are received for locating various mobile stations from various sources (e.g., for E911 requests, for stolen vehicle location, for tracking of vehicles traveling cross country, etc.), and for each such request and the corresponding mobile station to be located, this node: (a) activates one or more wireless location estimators for locating the mobile station, (b) receives one or more location estimates of the mobile station from the location estimators, and (c) transmits a resulting location estimate(s) to, e.g., an application which made the request. Moreover, such a gateway typically will likely activate location estimators according to the particulars of each individual wireless location request, e.g., the availability of input data needed by particular location estimators. Additionally, such a gateway will typically have sufficiently well defined uniform interfaces so that such location estimators can be added and/or deleted to, e.g., provide different location estimators for performing wireless location different coverage areas.

The present invention encompasses such wireless location gateways. Thus, for locating an identified mobile station, the location gateway embodiments of the present invention may activate one or more of a plurality of location estimators depending on, e.g., (a) the availability of particular types of wireless location data for locating the mobile station, and (b) the location estimators accessible by the location gateway. Moreover, a plurality of location estimators may be activated for locating the mobile station in a single location, or different ones of such location estimators may be activated to locate the mobile station at different locations. Moreover, the location gateway of the present invention may have

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