

Economical & Visual Self Supporting Toolkit for Sea-Trawler

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Abstract

The main aim is to give a well understandable user friendly environment for sea trawlers. Since sea-trawlers been got captured and arrested by foreign navy for crossing International Maritime Boundary Line (IMBL) all this because of lack in positioning system. The main objective of this paper is to protect the Sea-Trawlers from crossing the Maritime Boundaries and to save their life and improves the economic status of them. GPS helps to identify the position of the boats which can plot the current position in electronic offline map. And adding with GSM transmitter that used to send message to base centre in emergency condition keeping the lives of Indian Sea-Trawlers in mind, this system has been developed to help them not to move beyond Indian boundaries and support them economically. On the whole it's an attempt to build a suitable device for Sea-Trawlers at reasonably low cost and user friendly.

Keywords

Maritime Boundaries, GSM, GPS, GNSS, Sea-Trawler

I. Introduction

The location-based services are to provide services to customers based on the knowledge of their locations. Examples of these services include real-time traffic information, digital map services which are delivered to mobile terminals according to user's location to minimize data transmission, providing dynamic guidance services according to the users' location and current traffic condition; requesting the nearest business or service and location based advertising. Unfortunately the current state-of-the-art location based services are rigid as they cannot make good use of information. Services are provided at inappropriate time without considering user's intention and changing environment. Also services are rigid as processing completely isolates various forms of user "preferences". Cell phones now emulate computers, with enhanced graphical user interfaces, integrated Global Positioning Systems, wireless data connectivity, efficient batteries, powerful central processing units (CPU), and expanded storage capabilities. Advanced communication protocols, databases, and software development environments ensures these end-system devices are connected to wireless cellular networks and can interact with many hosts and servers via the Internet. Similarly, hardware independent programming languages allow the development of applications that can run on any of these devices and exchange information to and from other clients, servers, and specialized databases. This generalized concept facilitates transportability of developed software across different devices and networks, which is a necessity for the rapidly advancing market of wireless communications. In this paper we raise the challenges and propose architecture to enable practical realization of location-based services. Then we further illustrate the key issues in the architecture and discuss corresponding solutions. The main idea of the architecture is to embed various information in service trigger mechanism and service itself. For example, dynamic route guidance service which ensures user to arrive at destination in the shortest time need to adjust previous route according to the traffic condition. Also in reminder services, the service needs to decide whether or not to post the message to user according to user's location, incident property. Android is a Linux based software stack for mobile devices which includes an Operating System, SDK (software development kit), middleware and applications. Android provides a set of core applications including an email client, SMS program, calendar, maps, browser, contacts, and others. All applications are written using the Java programming

language.

The Location Based Alarm using GPS is an attempt to add alarm facility for mobiles based on the location of the device. This facility is currently not available for mobile handsets. The Global Positioning System (GPS) is a space-based global navigation satellite system (GNSS) that provides location and time information in all weather, anywhere on or near the Earth, where there is an unobstructed line of sight to four or more GPS satellites. It is maintained by the US government. The proposed system plans to make use of this facility and implement it in mobile handsets so that location based alarm facility can be made available in mobile handsets.

II. Literature Survey

In recent years, many localization algorithms have been proposed for wireless sensor networks, in which the hop-count based localization schemes are attractive due to the advantage of low cost. However, these approaches usually utilize discrete integers to calculate the hop-counts between nodes. Such coarse-grained hop-counts make no distinction among one-hop nodes. More seriously, as the hop-counts between nodes increase, the cumulative deviation of hop-counts would become unacceptable. In order to solve this problem, we propose the concept of fine-grained hop-count. It is a kind of float-type hop-count, which refines the coarse-grained one close to the actual distance between nodes. Based on this idea, we propose a fine-grained hop-count based localization algorithm (AFLA). In AFLA, we first refine the hop-count information to obtain fine grained hop-counts, then use the Apollonius circle method to achieve initial position estimations, and finally further improve the localization precision through confidence spring model (CSM). We conduct the comprehensive simulations to demonstrate that AFLA can achieve 30% higher average accuracy than the existing hop-count based algorithm in most scenarios and converge much faster than the traditional mass-spring model based scheme. Furthermore, AFLA is robust to achieve an approximate 35% accuracy even in noisy environment with a DOI of 0.4. Besides, we also construct a Testbed that consists of 17 MICAz motes to verify the performance of AFLA in real environment [1].

The highly effective structure and methods of today's Internet may function badly in surroundings recognized by very long wait routes and regular system categories. These problems are amplified by end nodes with restricted power or storage space sources.

Often implemented in mobile and excessive surroundings missing ongoing connection, many such systems have their own specific methods, and do not utilize IP. To accomplish interoperability between them, we recommend a system structure and application interface organized around optionally-reliable asynchronous concept sending, with restricted objectives of end-to-end connection and node sources. The structure functions as an overlay above the transportation levels of the systems it interconnects, and provides key services such as in-network data storage space and retransmission, interoperable labeling, authenticated sending and a coarse-grained type of service [5].

The endemic of mobile phones as portable gadgets brings to various impressive programs that make use of their ever increasing existence in our everyday life. One such application is location-tracking and tracking. This document suggests a prototype model for place tracking using Regional Placement System (GPS) and International Program for Mobile Interaction (GSM) technology. It reveals the item moving direction on the monitor and the same details can also be conveyed to the user mobile phone, on demand of the customer by asking the specific information via SMS. This product is very useful for car theft situations, for teenage motorists being viewed and supervised by parents. The result reveals that the item is being monitored with a minimal tracking mistake [3].

Long-distance partners experience significant communication challenges in their connections. Compared with collocated partners, long-distance partners absence attention hints associated with physical vicinity and must use technological innovation such as SMS or telephone systems to remain in synchronize. We posit that long-distance couples have needs that are not met by existing communication technologies, which need precise activity from the mailer as well as the recipient. We designed Couple VIBE to explore the qualities of an implied texting route and observe how partners would use such a technological innovation. Couple VIBE is a cellular program that automatically pushes a user's location-information to her partner's mobile phone via vibrotactile hints. We existing qualitative results of a four-week customer research, learning how seven couples used Couple VIBE. A key outcome is that Couple VIBE's implicit Communication method managed as a foundation that allows keep partners in synchronize, with other methods being brought into perform when further connections was required [4].

The past few years have experienced the effects of allocated content sharing (Wikipedia, Blogger), public networking sites (Facebook, MySpace), indicator systems, and persistent processing. We believe that important more effect is hidden in the convergence of these concepts on the cell Smartphone system. Phones can be imagined as people-centric receptors able of aggregating participatory as well as neurological details from local surroundings. The details can be imagined in different measurements, such as area and time. When connected to the Internet, the collaborative details from cellular phones may allow a high quality perspective of the world. This document provides the architecture and execution of one such program, called Micro-Blog. New types of application-driven difficulties are identified and resolved in the perspective of this program. Implemented on Htc N95 cell cellular phones, Micro-Blog was distributed to volunteers for actual life use. Appealing feedback suggests that Micro-Blog can be a deployable device for discussing, browsing, and querying international details [2].

III. Existing System

At present there is few existing system which helps to identify

the position of the boats which use Radar Waves or GPS which can be plotted in electronic map in base centre. Some system use alarming system associate with GPS when the sea-trawler crosses the boundary. And adding with that GSM transmitter is used to send message to base centre about crossing the border in which uses three modules to locate and protect sea-trawler not crossing the border. Vessel Tracking Module in which Radar surveillance system in integrated with VB programmed PC to overcome the manual tracking error of coastal guard control centre. Radar Detector Module detects the radar signal and cautions the sea-trawler by alarm. GPS Module which track the location of sea-trawler and caution by alarm when he crosses the border. Some system uses GPS when they cross the border it cuts off the fuel.

Disadvantages of Existing System:

- Not being user friendly
- Cannot be understand by common man
- More Expensive.
- Not reliable.
- Dangerous in some cases.
- Not effective.

IV. Proposed System

Our proposed systems have the aim to give a well understandable user friendly environment for sea-trawler who does not have much awareness of International Maritime Boundary Line (IMBL) and effective modern method of fishing. For these we propose a system which makes use of embedded toolkit with few modules like GPS, GSM, integrated with mobile computing device. We help sea-trawler to view the exact position of its vessel and protecting from crossing border by light and sound indicating alarm and visual caution effects in mobile computing device and also used to send caution messages to base centre while crossing the boundary that we create. By these system we reduce the threatens of caused by foreign navy, pirates and national disaster, and supporting him economically.

Advantages of Existing System:

- User friendly and flexible to use.
- Visually executable.
- Cost effective.
- More reliable.
- Compact in design

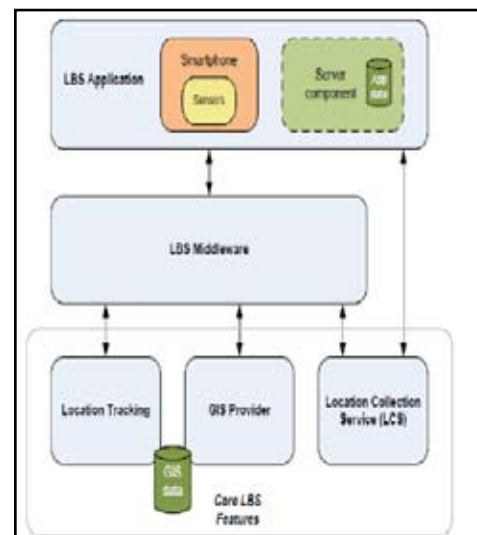


Fig. 1: System Architecture

1. Display Module

In this module the, the Google map is displayed the locations using the GPS and GPRS/3G networks available in android Smart phones. By using this module the user can set their destination and current location based on their needs of travel. And the point to point distance and traffic condition are displayed in this map.

2. GPS Interaction Module

In this module the GPS interaction is changed based on their user's time limit. And check whether the GPS and the internet provider is enabled or disabled. Based on that the alert will shows to the android notification bar in android device.

3. Place Management Module

In this module the location details are stored in SQLite data storage within the android device. The visited location details are getting from the location updates and stored in SQLite data storage for the user future reference.

4. Ring Tone Module

This is the Settings module, the default five ringtones are stored within the application and also the ring tone chooser based on their user need from their Audio gallery. And also it has the volume control and vibrates mode control settings in this application module.

5. Alarm Module

This is main module of this project; in this the alarm service and location updates are done using the android Background services. The location updates is done by using the GPS and Internet providers. And the alarm is set using the android device alarm services.

V. Conclusions

The most important factor in enabling the growth of LBS is wide availability of cheap GPS enabled handsets. GPS enabled handsets are being manufactured now days. One of the main problems is the lack of spread of the wireless network into the countryside. In developing country like India, the wireless technology is in very nascent stage. In metro cities and areas, the problem of network congestion is also an important issue. The percentage of service operators not meeting the congestion rate benchmarks has risen subsequently. This paper proposes a developing an Android Application which is based on LBS & provides different location based services like profile changing of mobile from normal mode to silent mode & vice versa for certain places that user registered. Again nearest friend locator, family member location finder. Here for finding location the GPS technology with Google Map API can use. As android is an open source, this application can be used for further improvements in many Smartphones. Also in concern the security aspect of this application, the Reputation based security model can apply. After going through the surveying, it can be gathered that there is a huge scope of application development in mobile domain. The LBS application can help user to find hospitals, school, gas filling station or any other facility of interest indicated by user within certain range. Just like a GPS device its location will also be updated as soon as user changes his/her position.

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