Anti-Theft Location Detection Chip (ATTLD)

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***Abstract*—**

***Keywords*—ATTLD**

I. Introduction

In todays world of revolutionary innovative technology various gadgets that can fit our pockets for everyday use are manufactured and made available at low rates. With the technology becoming cheaper, more people use different devices on a much larger scale with an exponential increase in the rate of sales. These days its very common for a person to own mobile phones, cars and other valuable tech items. However these gadgets and items like mobile, purses, wallets, bags, etc become easy target for thieves to steal them. With the in- crease in the robbery and such crimes it is very important to contain it. Gone are the traditional days of searching stolen items, with the techno-boom there is also increased intelligence available in the field of security which should be harnessed.Hence, using this motivation to try and contain these robberies and actually recover the stolen item we introduce the idea of ATTLD (Anti-Theft Tracking and Location Detection Chip).

ATTLD is a GPS tracking device that when installed in a device can provide its location and give the information to the owner (via website). The latest tracking devices make use of GPS. The additional feature ATTLD has is that it can communicate with other ATTLDs in its proximity and make the owner of the device aware of the location. All the owner has to do is to go to the site and flag his device as stolen so that other ATTLDs are aware of the stolen device. This makes the location of object a relatively simpler task.If the device with 2the chip on it gets stolen then the location I.D is sent to the company which then sends alert messages to all the other devices in the vicinity.All the other chips of the vicinity will start searching the particular chip with the I.D and as soon as any chip finds the chip in question then the location is found of the stolen device which can then be retrieved. The aim of this project is to develop a means of communication by which the stolen object can be tracked.

II. Proposed System

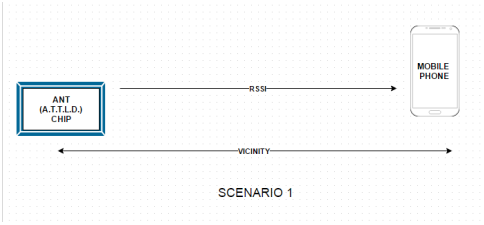
Following are some of the functionalities of Proposed System:

- User can make ATTLD buzz, sound or flash LEDs by pressing the button in the Application from your Smartphone to detect the mobile device or gadget to which ATTLD is attached.
- By pressing the detection key in your ATTLD device provision will be made to detect the Smartphone to which the ATTLD device is synchronized with.
- ATTLD will sound, vibrate and flash LEDs automatically when about 10 meters away from your Smartphone .i.e. it will indicate that the ATTLD device is moving out of the Bluetooth range of the Smartphone.

If you mark an item as lost the entire ATTLD community of users will anonymously and securely help you find your ATTLD. This essentially expands your reach in finding your device. The more family and friends in the community, better the capability. ATTLDs can be designated to easily discover which of your friend ATTLDs is closest to your lost.

A. Scenario 1

In the first scenario, gadget location on which the device is mounted is found out by the strength of the signal between the smartphone and the ATTLD chip. As the chip is in the vicinity it can be connected to the smartphone and based on the signal strength the user could be able to navigate to the gadget. This is done by receiving the RSSI[5][9] value. The RSSI value returns the signal strength between the devices. When the distance between the devices increase the RSSI value drops down and accordingly the user is indicated that the signal strength is decreased. Therefore when the user goes in one direction for searching the gadget he/she will see the signal strength, if the signal strength drops the the device is not in the direction they are going and thus can change the direction. Eventually the user reaches the gadget as the signal goes on strengthening.

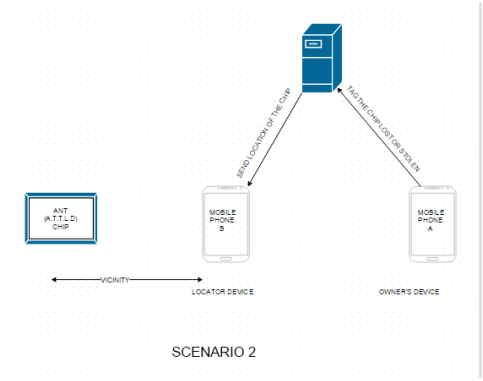


Scenario 1

B. Scenario 2

In the second scenario, to find out the gadget location is much complicated. The gadget in not in the vicinity and thus cannot be connected to the ATTLD Chip. If the user is not able to find it, then he/she can go upto the web server and tag the device as stolen. Tagging the device as stolen put the device in the search list and this search list is updated in smartphones that have the ANT App. Thus when the stolen chip comes in contact with any of the smartphone the

smartphone sends it location to the server and the corresponding owner of the chip is informed. This works in the following manner the list of devices which are tagged lost or stolen are updated to all the smartphones containing the ATTLD app. When the stolen chip is in the vicinity of the smartphone app, the smartphone immediately send its GPS[7] coordinates to the server. Based on the coordinates received server maps the location and the user is notified the user then can untag the device from the list or if the device is not found at the location the user may leave the tag on the device and let other smartphones find the chip. The proposed work would be to analyse various parameters mentioned above by changing the existing setup.



Scenario 2

III. Conclusion

ATTLD security system can be installed in mobile easily. This security system is suitable for a real time monitoring of the object and avoid the theft. The application included a transmitting module which contains an embedded system to combine GPS and GSM devices to retrieve location of objects and it to the ATTLD users. ATTLD is made to make low cost and excellent anti-theft control system. ATTLD users will anonymously and securely help you to find lost/stolen objects. This essentially expands your reach to anywhere in the world. The more number of people use it the better the capability!

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References

[1] Jake M. Laguador, Moulle M. Chung, Frina Joy D. Dagon, Julie Ann M. Guevarra, Rommel J. Pureza, Jeffrey D. Sanchez, and Dan Kenneth I. Sta. Iglesia, Anti Car Theft System using Android Phone, International Journal Of Multidisciplinary Sciences And Engineering, Vol. 4, No. 5, June 2013.

[2] Nateq Be-Nazir Ibn Minar, and Mohammed Tarique ,Bluetooth Security Threats And Solutions: A Survey, International Journal of Distributed and Parallel Systems (IJDPS) Vol.3, No.1, January 2012.

[3] Dr. Saleem Ahmad, Ruoyu Lu, Muhammad Ziaullah, Bluetooth an Optimal Solution for Personal Asset Tracking: A Comparison of Bluetooth, RFID and Miscellaneous Anti-lost Traking Technologies, International Journal of u- and e- Service, Science and Technology 03/2015; Vol:8(No.3):179-188. DOI: 10.14257/ijunesst.2015.8.3.17

[4] I. A. Mingkhwan, Wi-Fi Tracker: An Organization Wi-Fi Tracking System, In Proceedings f Canadian Conference On Electrical And Computer Engineering Ccece '06.

[5] Wilson M. Yeung, Joseph K. Ng, Wireless LAN Positioning based on Received Signal Strength from Mobile device and Access Points, in Proceedings of 13th IEEE International Conference on Embedded and Real-Time Computing Systems and Application, RTCSA07.

[6] Ted Tsung-Te Lai, Chun-Yi Lin, Ya-Yunn Su, and Hao-Hua Chu BikeTrack: Tracking Stolen Bikes through Everyday Mobile Phones and Participatory Sensing www.csie.ntu.edu.tw/ỹysu/BikeTrack_ phonesense11.pdfo

[7] Guha, S., Plarre, K., Lissner, D., and Bhagavathy Krishna, S. M., Dutta, P., and Kumar, S. Autowitness: Locating and tracking stolen property while tolerating gps and radio outages, In SenSys, 2010

[8] . Dawson, Device Tracking on a Scattered Bluetooth-Enabled Network, Bsc Dissertation, Faculty of Engineering, University of Bristol, May 2005

[9] A, Frunzke T and Dressler F, 2007, Adaptive Distance Estimation and Localization in WSN using RSSI Measures. In: Proceedings of the 10th Euromicro Conference on Digital System Design Architectures, Methods and Tools, 471-478

[10] Rohitaksha K , Madhu C G , Nalini B G ,Nirupama C V .Android Application for Vehicle Theft Prevention and Tracking System, Rohitaksha K et al, / (IJCSIT) International Journal of Computer Science and Information Technologies, Vol. 5 (3) , 2014, 3754-3758