An Efficient And Secure Approach For Home Automation System Using Google Android

K. Ravikumar *, R.Suganya *, R.Sujatha *
*Asst.Professor
Dept.of Computer Science
Tamil University (State University)
Thanjavur-613010
ravikasi2001@yahoo.com
*R.Suganya,
Asst.Professor, T.U.K college &
Research Scholar, Karpagam University
*R.Sujatha
Research Scholar, Tamil University, Thanjavur

Abstract-This paper gives the potential for remote controlled operation of investigation of home automation systems. It considers problem with their implementation, discusses possible solutions through various network technologies and indicates how to optimize the use of such systems. The home is an heterogeneous, distributed computing environment eternal, which certainly requires a careful study before developing any suitable Home Automation System (HAS) that will accomplish its requirements. The latest attempts at in actual home introducing Home Automation Systems. All kinds of users are home autonomous systems starting to be successful thanks. That is lowering the prices and making devices more useful and easier to use for the end user continuous standardization process. Even so several important issues are always to be handled strictly before developing and installing a Home Automation System; factors like reliability, robustness, security, usefulness, and price are critical to determine. The final product will expect requirements is accomplished.

1. INTRODUCTION
Security mechanisms turned for a mobile environment Android as a Linux platform programmed with Java and enhanced with its own. Android inbounds operating system features memory, multi-tasking, UNIX shell user identifiers (UIDs) and file permissions with the type safe Java language and its familiar class library. The security model is much a multi-user server than the sandbox found on Blackberry platforms. A desktop computer environment where a user’s application all run as the same UID, Android applications run in separate processes under distinct UIDs each with distinct permissions.
Mobile platforms are growing in complex requirements including regulatory compliance. Android supports building applications that use phone protecting users by minimizing the consequences of bugs and malicious software. The applications the flexibility to use native code without compromising Android’s security

(A) Mobile Operating System
A mobile operating system, also known a mobile OS, mobile software platform or a handheld operating system that controls a mobile device or information appliance similar in principle to an operating system such as Windows, Mac OSX, or Linux.
distributions that controls a desktop computer or laptop. The wireless versions of broadband are local connectivity. The wireless mobile multimedia formats, and different input methods.

(B) Popular Operating System

Operating system that can be found on smart phones, mobile OS-powered tablet computers, and other mobile devices include, Microsoft’s Windows Phone Apple’s iOS, RIM’s Blackberry OS, Linux, HP’s WebOS, Samsung’s bada, Google’s Android and Nokia’s Meego among many others. Android, bada, WebOS and Memo are built on top of Linux, and iOS is derived from the BSD and Next STEP operating systems, which are all related to UNIX.

The most common mobile operating system is: Android was developed by a small startup company that was purchased by Google search Engines and Google continues to update the software. Android is a Linux derived OS backed by Google search Engines along with major hardware and software developers that form the Open Handset alliance. The OS received praise. A number of developers upon its for OS introduction. Android release prior to 2.0 was used exclusively on mobile phones. Since the Dream was introduced, there has been an explosion in the number of devices that carry Android OS.

2. HISTORY

The effectively ushered in a new era of mobile operating systems for smart phones and other devices that focus on user experience and rely on finger-operated touch-based interaction. With the release of the iPhone in 2007, The Open Handset Alliance with 79 other hardware, software, and telecom companies to make inroads into the smart phone market. The media and public, Eric Schmidt, from Apple’s board of directors, release of Android created a rift between Apple and Google, eventually leading to the resignation of Google’s ex-CEO,

Since the launch of both Apple’s and Google’s Android, the smartphone market exploded in popularity and in may 2010 accounted for more than 17.3% of all mobile phones sold. This has led to greater consumer awareness of the various mobile operating systems, with telecoms and manufactures regularly advertising the advantages of their OS. As of January 2011, Google holds 33.3% of the smartphone market worldwide, demonstrating amazing growth for Android which held only 4.7% a year earlier. Nokia, Apple, RIM, and Microsoft hold 31%, 16.2%, 14.6%, and 3.1% respectively.

3. RECENT RELEASES

- 2.3 Gingerbread
- 3.0 Honeycomb
- 3.1 Honeycomb
- 3.2 Honeycomb
- 4.0 Ice Cream Sandwich

4. DESIGNING AND FRAME WORK OF ANDROID

A. Application Framework

The open development platform, Android offers developers. The ability to build
extremely rich. The ability to build and innovative applications. Developers are free to take advantage of the devices hardware, access location information, run background services, set alarms, and add notifications to the status bar.

B. Libraries
- System C library, Media Libraries, Surface manager, Lib Web Core, SGL 3D libraries, Free Type, SQL liter

C. Android Runtime
Android contains a set of libraries. The Library provides most of the functionality. The core libraries of the Java programming language contain some Library functions.

D. Linux Kernel
Android relies on Linux version 2.6 for core system services such as security, memory management, process management, network stack, and driver model. The Kernel also acts as an abstraction layer.

Current features and specification:
- Storage, connectivity, Multiple Language support, Streaming media support, Additional hardware support, Multi-touch

E. Security
The application for the Android run in a sandbox. The operating system that does not have access to the rest of the system’s resources. The access permissions are granted by the use. The application, Android Market displays all required permissions.

F. Privacy
Android smart phones have the ability to report the location of Wi-Fi access points, encountered as phone users move around, to build vast database containing the physical locations of hundreds of millions of such access points.

5. PROPOSED WORK ANDROID FOR HOME AUTOMATION
Android will make its way into every single aspect of our life. Home automation specialists have some exciting developments for us in store, and going to be speaking through Android.

Android has found a new market for adoption: cars, home application, home utilities, and multimedia system. While some will say this is nothing new, the companies, developers, and people relaying behind it are. According to a report on Forbes, waves of touch-screen devices are set to be unleashed on the open-source Android platform.

Android’s “Touch Revolution”

In fact, the company divides them into three categories:

- **Home Phones**: Touch Revolution calls “Smart Phones for the home”
- **Home control devices**: These will be touch screen platforms that can activate and manage security, control the house lights, or switch off the A/C
- **Media control devices**: More adapt remote control over things like DVRs and stereos

This was originally built for touch-screen phones. The modified Android Os for touch screen tablets and devices seems only logical for device. Google Chrome OS, on the other hand, will focus on web applications and load speeds.

According to David Haddad, president of Chicago based Vodacom is another integrator who is “very excited about the
potential of integrating Android tablets with our home automation systems.”

"It looks as through the Android OS will allow us to address many of the limitations that the Apple OS has imposed on us. It will have the ability to design the devices home screen, wake the touch screen when someone is at the door, and so on.

Here are a few of the best Android Apps for home:

- **Droid sewer x10 Home Automation** by SPVSOFTA: This remote control for the popular Home sewer software to control X10 compatible lights and devices.
- **HCA: Home Control Assistant** (free) by Advanced Quonset Technology: Using HCA you can control, program, and schedule lights and appliances using X10, UPB, Einstein, as well as wireless and IR.
- **Home Buddy** (Free) by Raster Samar: A quite interesting feature of this app allows to create shortcuts to certain actions (like to turn light On/Off) right on the home screen.

The proposed work is to implement the technique of cross networking. This Network Controller with 8 DO (digital Output) and works like a controlled Server. We can integrate it with Home or Office Security, personal entertainment, and Industrial field applications.

**Application field:** It can manage the power supply through the web page; make it be safer for the security equipment and more convenience for digital control at the far end.

6. **CONCLUSION**

An android application contains identity enforced by the system. Applications can communicate with each other using system provided mechanisms like fishes, Activities, Services, Broadcast Receivers, and Content Providers. These mechanisms should be correct with the permission associated with that system. The application for programmatic access by others, so that unauthorized applications can’t get the user’s private data or abuse our program. Make our application security as simple and clear as possible.

**REFERENCES**

7. Jesse burns, “developing secure mobile applications for android”, insect part hers October 2008 version 1.0