GSM Base Interface With Industrial Product Using Android Platform

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***Abstract*— This paper presents an Android based application for Monitoring and controlling of the activity of industrial products. This application allows users to view & handle different parameter related information of their product like Drives, UPS, AHF etc. in easy-to-access and interactive manner. By synchronising Android Apps with GSM Modem Access of Industrial Product can be done without going at locations where products are established Which become more helpful for the owner for commanding Industrial Product in Critical Stage. Try to minimize the Damage of the product in the case of it reaches in its abnormal state of the system. It will also help the Technical person which is far away from product where it is established. It will also be helpful by monitoring & controlling feature in the primary stage of solution of the problem.**

***Keywords*— Android, GSM/GPRS Modem, Different parameter of Industrial product**

I. INTRODUCTION

With changing times, the mobile technology has changed a lot and in the last few years we have seen the arrival of various new kinds of gadgets in the form of Smartphone, camera-phone, Android and tablet phones. In fact, the handset industry has turned from simple budget handsets to ultra-modern high end mobile phones. Today's device is almost everything - it is fashionable, innovative, appealing, high-performing, durable, stylish and multi-tasking. Latest gadgets can be used for various purposes like browsing mobile, internet, playing games, emailing, blogging, messaging and accessing all popular social networking sites like YouTube, Google search, Gmail and more.

With the rise of mobile phone applications, so-called apps, people today are more looking for information on the go. This is one area of mobile phone technology enhancement that allows developers and programmers to offer users just what they seek under their preferred area of interest.

Now a day Google's open-source Android mobile platform has been a powerful competitor of mobile operating system and drawn the attention of the leading manufacturers of the industry and became a hot spot of research. The main advantage of adopting Android is that it offers a unified approach to application development. Developers need only develop for Android, and their applications should be able to run on numerous different devices, as long as the devices are powered using Android.

In this work we have developed an application for sending SMS messages to the Industrial products Using GSM Modem. The main goal of application is controlling and monitoring the different Parameter of Devices & make free from the damage of the product in the Critical Stage.

II. ANDROID

Android is a mobile operating system that is based on a modified version of Linux. It was originally developed by a start-up of the same name, Android, Inc. In 2005, as part of its strategy to enter the mobile space, Google purchased Android and took over its development work as well as its development team).

Google wanted Android to be open and free; hence, most of the Android code was released under the open source Apache License, which means that anyone who wants to use Android can do so by downloading the full Android source code. Moreover, vendors (typically hardware manufacturers) can add their own proprietary extensions to Android and customize Android to differentiate their products from others. This simple development model makes Android very attractive and has thus piqued the interest of many vendors. Manufacturers see Android as a solution & they will continue to design their own hardware and use Android as the operating system that powers it.

III. BASIC IDEA OF IMPLEMENTATION

As per shown in figure(1) , there is a communication established between Industrial product and android supported device by using GSM modem. The industrial product having serial port sending different parameter data through RS-232/RS-485 continuously to GSM Modem. As per Programming of GSM Modem it will give values of different parameter when ask for it. All the data send from industrial product through GSM modem to the Android Device & Data can be monitor & controlled by android supported devices. So, many numbers of industrial products which having Serial ports can be interface with the Android Devices.

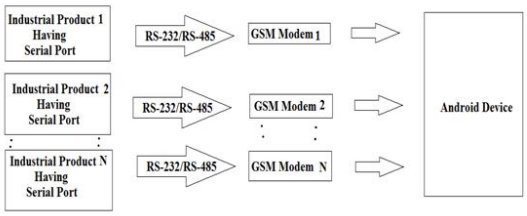

Fig. 1 block diagram of Android Interface

For hardware side, As per shown fig(2) connection is established. There is main power supply 230v is given to SMPS. Driver Card is connected to 5V supply (SMPS).GSM Modem is connected with Driver card by RS-232/RS-485 port. Main Supply is also given to the Modem For it working. When Switch on the main power supply then supply given to the SMPS & Modem. As per programming in Driver card & Modem, the data will be send to the modem from Driver card.

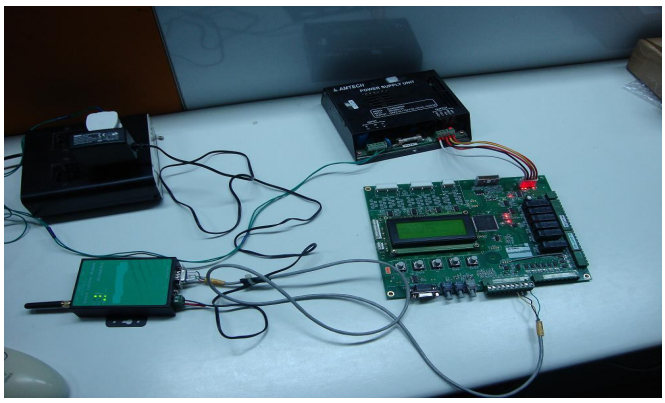

Fig.2 Hardware Implementation Of project

IV. Practical Implementation

The application interface is implemented on the Smartphone Samsung Galaxy y. At the testing stage, All menu & Submenu of interface is tested Successfully .Testing of application AXPERT Apps has been done on Android phones 2.3.6 & Above .The basic logic idea of application is base on following Logic chart.

Application is divided into four major part AS shown in fig(3)

1. Communication Login
2. Industrial Product Contact
3. Controlling & Monitoring Command
4. Product Data

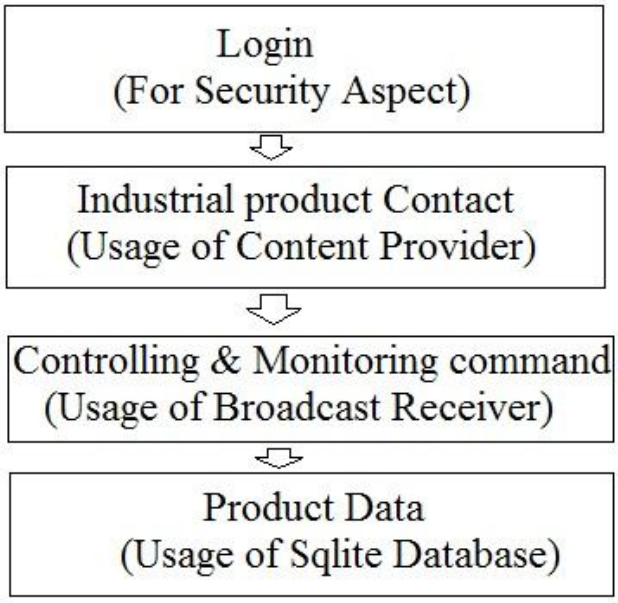

Figure.3 Logical Flowchart

The GUI of the Project is explaining as under.

1. **Communication Login**
   At this stage user is asked for login by filling such required detail for the further stage of communication.
2. **Add, Edit or Delete Industrial product**
   At this stage user can Add, Edit and Delete the industrial product with whom Communication can take place.

Fig.4 ADD, Edit & Delete Device

3. **ADD Detail For Industrial Product**
   Generally this stage come immediately after the second stage if user using application at the first time. As per given Hint in Edit box user fill the detail of their product & modem which are used in communication.

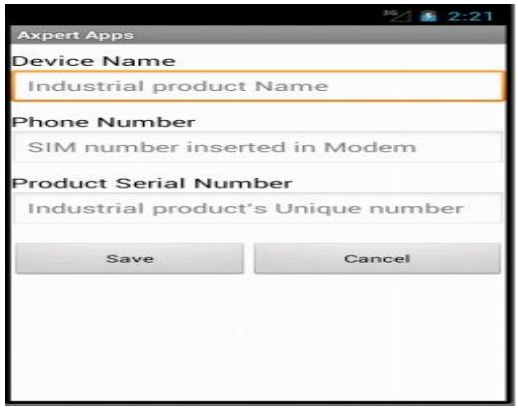

Fig.5 Detail of Modem & Product

4. Selection of Action For Industrial Product.

At this stage user can choose any action regarding to industrial product and get result for that. It will help user to take necessary step after finding result under the text box. After pressing check history the data stored in database is shown as per textbox.

Fig.6 Selection Of Action

V. Conclusion & Future Scope

Base on testing of this application, there are some conclusion can be drawn As follows:

1. The data received in android phone using this application can be shown using message service .So, in future it will extend using internet directly.
2. Application can be used for the local network that is restricted it to communicating with product placed in outer country.
3. At the instant, Internal Database of Android device is used for storing information. External storage can be possible.

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