**LITERATURE SURVEY**

**INTRODUCTION**

# In today’s world there is a need to develop a new and a low cost electronic cradle because the previously existing cradles are very costly. So, this paper presents a simple design and implementation of a new and a low cost E-Cradle that swings automatically whenever the baby cries. For doing this, the E-Cradle has a cry analyzing system that will detect the cry of the baby and then accordingly the baby cradle will swings till the baby stops crying. The speed of the baby cradle can also be controlled as per the user/individual need. Also this system has an inbuilt alarm that is used to indicate two conditions – the first is,when the mattress is wet, which is a very important parameter to keep all the baby in very good hygienic condition, second is, when the baby does not stop crying with in a stipulated time, which is then intimated that baby needs attention. This system basically helps parents as well as the nurses to take care of all babies without any physical attention required. Also the RFID tags are attached to baby’s wrist or baby’s leg which will help in tracking baby’s movements.

# EXISTING SYSTEM

# Many home-care systems are available but majority of this system are specially designed for the aged people and patients. These systems can monitor their health status, automatically send out emergency signals, and have other functions. However, the caring methods for infants are not the same. Children and adults require different type of care because they are totally dependent for their normal functions on someone else. Infants cannot give any feedback about their discomfort or health complaints. Infants cannot express themselves like old people, e. g when an infant has a fever, he/she can only express his/her discomfort by crying. Hence, a home-care system specially designed for infants is today’s need which would substantially lighten parents’ especially mother’s burden. In support of this requirement many research papers and patents for healthcare application are studied with the intention of possible solutions to take care of the infant. Author had developed a system which is based on commercial GSM network. Vital parameters such as body temperature measurement using LM 35[1,6], Heart rate using IR Transmitter and Receiver, respiratory rate by using Piezo film sensor located on Patient’s Chest and blood Pressure are sensed, amplified with variable gain, filtered and given to microcontroller. Remote subsystem with GSM module receives data which is then send to a server by a USB port. Data are stored on the server and remotely displayed in a web site. In SMS based telemedicine system, patients temperature measured by Infrared temperature sensor MLX 90614 and ECG signals acquired with electrodes interfaced with the microcontroller PIC16F877 [3]. A skin-temperature probe, the air temperature-probe was used to monitor the temperature around the baby and humidity of incubator was monitored using the humidity sensor from SYHS2XX series. This signal is interfaced to PIC microcontroller 18F4550 and GSM modem is used for communication. Patents are also searched to find novelty in baby care monitoring system. In design, (Patent No. 2002/0057202 A1)[16], system is developed which monitors breathing ,fever and volume of baby sleeping in the crib. There is a module having three sensors attached to the diaper. This signal are amplified, transmitted by transmitter and at remote station there is receiver, multiplexer which applies this signal to audible alarm to alert mother to take IJARCCE ISSN (Online) 2278-1021 ISSN (Print) 2319 5940 International Journal of Advanced Research in Computer and Communication Engineering Vol. 4, Issue 12, December 2015 Copyright to IJARCCE DOI 10.17148/IJARCCE.2015.41242 188 appropriate action. U.S. Patent No.6, 043, 747 (Altenhofen), wherein a parent unit can record messages Which may then be transmitted to the baby unit to soothe or calm the baby. The baby unit includes a microphone and can transmit sounds to the parent unit. However, in order for the parent to detect a problem with the child, the parent must constantly monitor the sounds being transmitted from the baby unit. The next U.S. Patent No. 6,450,168 B1,includes an infant’s sleep blanket/garment which is offered as either a sleep sack or a sleep shirt, depending on the age of the infant. The sack with no arm holes for newborns and with arm holes and sleeves for older infants. Here thermometers incorporated to monitor the infant’s temperature as he sleeps. U.S. Patent No. 4,895,162, in which a soft belt containing a pair of electrodes is positioned around the torso of an infant such that the electrodes are in position to monitor vital signs, such as respiration and pulse. Monitoring lead Wires connect the electrodes to a monitor unit proximate the infant.

# PROPOSED SYSTEM

* Sounds an alarm when mattress gets wet.
* A temperature sensor kept under the bottom cover where the baby sleeps can sense the temperature all time and sends analog signals to the inbuilt ADC of the RL78 controller. The digital data can be continuously monitored. A reduction in temperature indicates the wetness in the cover.
* The controller can be made to activate an alarm, so that his/her cover be changed.
* Sounds an alarm if baby cries for more than a stipulated time indicating that baby needs attention.
* Two motors are interfaced via a DC motor driver to the controller.
* One motor is to swing the cradle when baby cries.
* Second Motor is to rotate a Toy attached on the top of the cradle.
* GSM interface sends SMS to android based handsets to get the attention of parents/nurses.
* An ALCD is interfaced to the controller which keeps displaying the status as messages.

# COMPONENTS:

**Software**

* CubeSuite +
* Renesas Flash programmer
* Embedded C Program

**Hardware**

* Bluetooth/Wi-Fi
* RL78 series 16-bit Microcontroller
* LM95 – Temperature sensor
* Sound sensor
* L293 DC Motor driver
* DC Motors
* OrCAD tools for Schematic and PCB

# ADVANTAGES

# Easy for parents to monitor their baby

# Provides security

# Small in size

# Lightweight

# Easily portable from one place to another

# Easy to use

# Cost efficient

# Less power consumption

# CONCLUSION

# The proposed system can help in providing enhanced healthcare for the infants by using the technologies mentioned above. This will also impact the society by providing the parents with a sense of security for their child and enabling them to take care of their child while doing their daily routines.

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