VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

PROJECT REPORT
ON

"WIRELESS TRANSMISSION OF SIGNALS FROM BABY INCUBATORS TO NEONATAL NURSING STATION"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

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2016-2017

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CERTIFICATE

Certified that the project work entitled "**WIRELESS TRANSMISSION OF SIGNALS FROM BABY INCUBATORS TO NEONATAL NURSING STATION**" *is a bonafide work carried out by*

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in partial fulfillment for the award of BACHELOR OF ENGINEERING in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2016–2017. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

Ga-ya Mendes	15/05/17	
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ABSTRACT

Babies born prematurely are generally kept in special chambers referred to as "incubators", which are enclosure with controlled temperature and humidity. Some newborn babies at full term, also needs to be placed in incubators for special treatment. The survival rate of premature births and newborns has increased significantly, since the introduction of neonatal incubators making the incubators extremely important devices in neonatal care at hospitals. Unfortunately in recent times, it has been observed that often there is a fault in the temperature controlling unit which has lead to fatal accidents leading to the death of the babies. Taking a note from this, it seems quite justified to incorporate a separate temperature monitoring unit which will measure the temperature of the premature infants. Deaths and injuries to neonates in incubators have been linked to thermostat failure that caused incubator overheating and infant hyperthermia and to malfunctions or design defects that produced fires and electric shock hazards.

Even after the advancements in technology, there is a need for instrument- Health Caregiver (HC) interactions due to varied reasons. Unfortunately, due to the higher patient: HC ratio the work load on the HCs is very high. Here the development of a wireless transmission of incubator indicator alarms to the neonatal nursing station for the early intervention of the HC is discussed. The developed technology will reduce the workload of the HCs. This project involves continues monitoring of some of the physical parameters of the baby. An unexpected rise of fall in any of the physical parameters of the baby will immediately transmit a visual alarm to the nursing station. This might help in preventing fatal accidents related to malfunctioning of the temperature controlling unit. Apart from the above, babies often wet the bed. It is not possible to manually supervise the bed wet continuously. Keeping this in mind, a bed wet alarm system has also been incorporated into the incubator model. Occurrence of bed wet will wirelessly transmit an alarm signal to the neonatal nursing station.