



GOVERNMENT OF KERALA  
KARUKUTTY GRAMA PANCHAYAT

From

Secretary

Gram Panchayat

Karukutty

To

Dr. Sunil Jacob

Director

Centre for Robotics

SSET, Karukutty

Respected Sir,

Subject: Implementation of MEDICOS with the support of Karukutty Grama  
Panchayat

The project MEDICOS( A Mini Virtual Hospital for Villages) of SCMS School of Engineering and Technology done under the supervision of Dr. Sunil Jacob, Director, Centre for Robotics is supported by Karukutty Grama Panchayat. We have reviewed and is interested in supporting your proposal. The prototype on completion will be implemented through the panchayat.

This project for sure, will be a great invention in the field of rural medicine.

*Secy*

*[Signature]*

12.10.18



SECRETARY  
KARUKUTTY GRAMA PANCHAYAT  
PH: 0484-2612231(O)

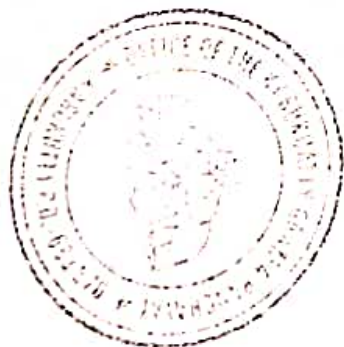
The project MEDICOS KIOSK (a mini virtual hospital for villagers) of SCMS School of Engineering and Technology under the supervision of Dr. Sunil Jacob, director SCMS centre for Robotics is supported by Karukutty Grama Panchayat. They reviewed and liked the proposal. Once the prototype is ready they are ready to accept and implement to this rural world. Since it is a socially relevant project , will be a great and immense useful to the people who are in need especially in the villages. The main attraction of this project is nothing but without going to a hospital we can cure our diseases. This prototype will help us to check our health related issues , at the same time we will get the required medicines without going to any pharmacies. They will also show the availability of doctors in hospital. They can have an individual account so that their information are secured. This project will be implemented through several schemes like NGOs.

*See*

*[Handwritten Signature]*

12.10.18

SECRETARY  
KARUKUTTY GRAMA PANCHAYAT  
PH: 0484-2612231(O)



## AICTE-ECI-ISTE CHHATRA VISHWAKARMA AWARDS

### ‘ Empowerment of Villages through Technologies ‘

#### PROJECT SUMMARY

**Project Name** : MEDICOS (Medical Kiosk: A Mini Virtual Hospital for Villages)

**Team Name** : SIDRA

**Team Lead & Members** : Darsana K.C., Elsa Antony K, Haritha T.P., Manju Davis

**Mentor’s Name** : Dr. Sunil Jacob

**Institute Name & Address** : SCMS School of Engineering & Technology  
Vidya Nagar, Palissery,  
Karukutty, Kerala-683582

**Sub-Theme** : Rural Infrastructure

**A. Title of the Innovation Proposal:** MEDICOS (Medical Kiosk: A Mini Virtual Hospital for Villages)

#### **B. Project Description:**

##### **PROBLEM**

Post conducting the survey among the villagers of Pallissery and Karukutty and reading through several articles, it was observed that, in most of the villages, the native people have to travel long distances for their basic health needs. It was also discerned that most of the villagers lack knowledge regarding live health updates. This at times, have even resulted in death of many people including pregnant women and children. The growing concern on health care includes:

× Rural verses Urban Divide:

Urban centres have numerous private hospitals and clinics which provide quality healthcare. These centres have better doctors, access to preventive medicine, and quality clinics which are a result of better profitability for investors compared to the not-so-profitable rural areas. The rural population mostly relies on alternative medicine and government programmes in rural health clinics. However these have proven ineffective to date.

× Need for Effective Payment Mechanisms

Most Indian patients pay for their hospital visits and doctors’ appointments with straight up cash after care with no payment arrangements. Only less than 1 percentage of Indian village population are aware of health insurance policies

× Demand for Basic Primary healthcare and infrastructure

India faces a growing need to fix its basic health concerns in the areas of HIV, malaria, tuberculosis, and diarrhea. Additionally, children under five are born underweight and roughly 7% (compared to 0.8% in the US) of them die before their fifth birthday.

- ✘ Lack of standardized drugs

Although, India proclaims itself as the third largest producer of drugs, it is a major concern that most of the medicines are of abnormal composition, out of date and unavailable to most of the villagers.

## **SOLUTION**

Contemplating the problem statements, our thought process ended up with the idea of a cubicle machine. The machine will provide an integrated environment offering various medical services, which includes:

- ✓ Notifications regarding medical camps, mobile medical help, important dates for vaccinations, child care, insurance policies etc., and other live medical updates
- ✓ Basic facilities for measurement of body parameters like height, weight, BMI, blood pressure, and heartbeat.
- ✓ Live consultation facilities with specialized doctors through video and voice chats.
- ✓ Instant check for availability of doctors in nearby hospitals.
- ✓ Options to find out the best hospitals for each disease.
- ✓ Information regarding subsidies from government.
- ✓ Instant emergency medical services like ambulance, and mobile hospitals if needed.
- ✓ Vending of tablets post consulting a doctor.
- ✓ User friendly environment, that supports almost all regional languages and can be accessed through fingerprint and RFID in ration cards.

## **TECHNOLOGY**

The implementation of the above mentioned solution has both hardware and software requirements. The idea is to create GUI and integrate all the required components into a single system. Connecting all systems together to user and vice versa is done by means of IoT technology.

### **Hardware**

It involves various components like pressure sensor for measuring blood pressure, temperature sensor for measuring body temperature, pulse-rate sensor for measuring heartbeat, weight detection sensor and load cells for measuring body mass, methyl sensor for measuring blood sugar levels & ultrasonic sensor for measuring height. An Arduino controller is used and we make use of an LCD display for viewing.

### **Software**

We make use of various software aspects for each and every above mentioned functionalities. This ranges from android environment that brings out the feature of providing notifications, video and voice chats, to a simple programming language that could implement the functionality of a vending machine.

## **LEVEL OF ACCEPTANCE**

66.46% percentage of the entire Indian population resides in rural areas. Unlike urban centres that have access to better doctors and quality clinics, the rural population is still grappling to find basic medical facilities. This machine will be an efficient solution to this beneficiary group. Although, it may take a while for them to get used to the system, on a longer run, they will no longer have to travel long distances to satisfy their health care needs. This can be for sure a great advancement in rural medicine especially for a country like India..

## **IMPLEMENTATION**

The kiosks are computer terminals that can guide the patients to access the right medicine and treatment at the time of need. Patients can also get notifications regarding medical camps, mobile medical help, important dates for vaccination, child care, insurance policies etc. It serve the patients to fulfil their basic needs such as measurement of height, weight, BMI, blood pressure and heart beat. Furthermore, live consultation facilities with specialized doctors through video and voice chats can improve the living standards of the rural society. The prescribed medicines can be instantly vended out from the kiosk. The machine completely eliminates the need for man power which in turn increases its working efficiency and effectiveness

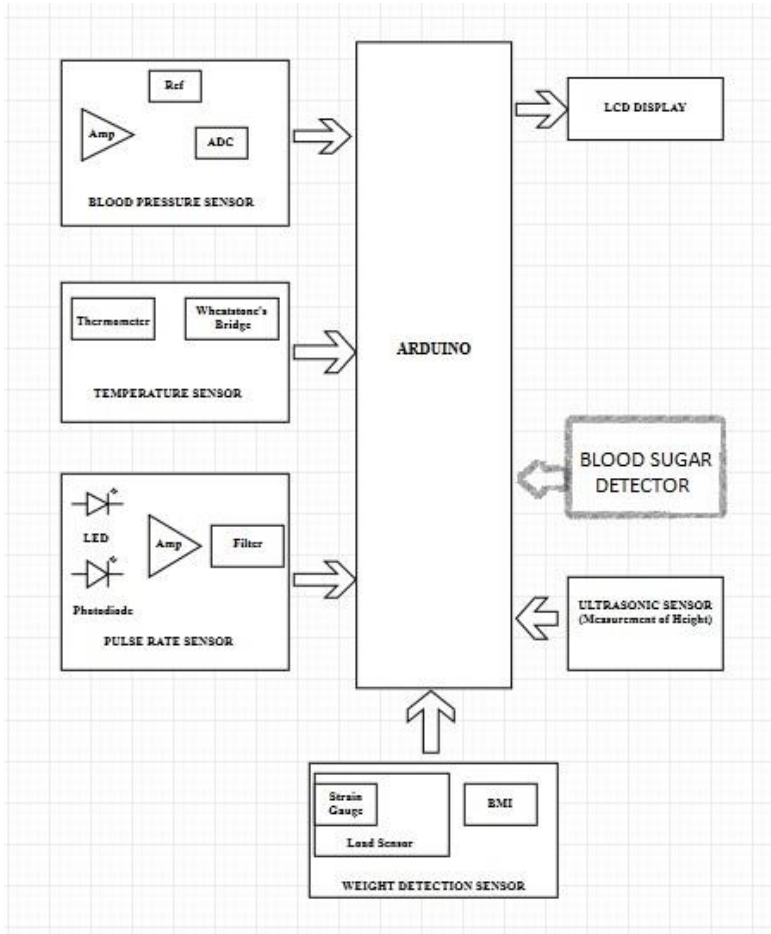
## **TEAM**

Our team under the guidance of Dr.Sunil Jacob can create a tint of wonder. Serving as the Director of ‘Centre for Robotics’, SSET, he has inspired and motivated the young budding engineering students of SSET through his inventions, dedication and hard work. He is the custodian of many patents and awards like,

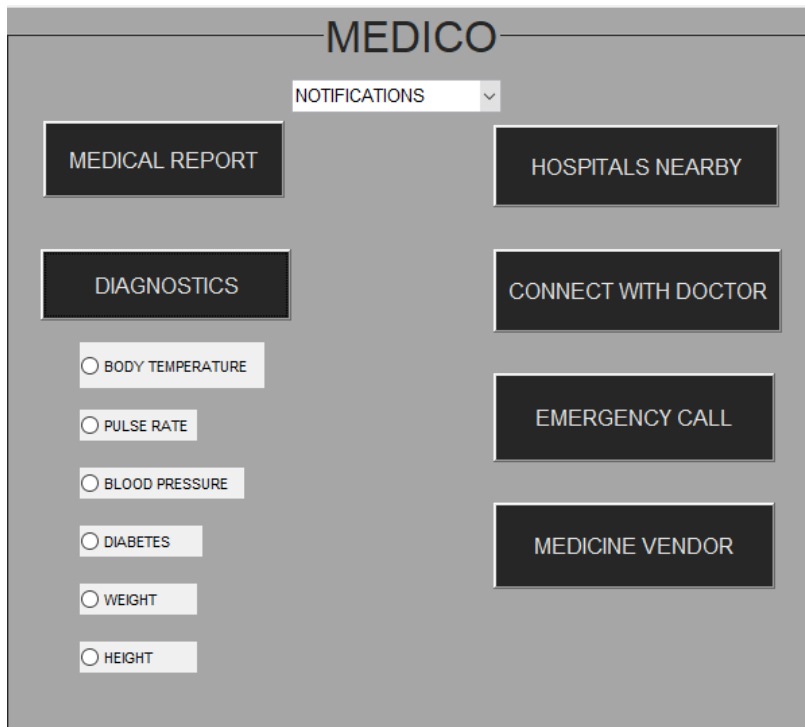
- Won ‘Young Gandhian Technological Innovation Appreciation Award 2018’ for the project titled ‘Brain wave nerve excitation for physically disabled’
- Won ‘AICTE Chhatra Vishwakarma Award 2017 in Electronics’ for project titled ‘A DE addictive coil for drug addicts’
- Won 3rd prize in ‘Third Dialogue India Academia Conclave (IIT, DELHI), 2017’.

Each and every team member are competent enough and adds up tremendous charisma to the team. Darsana having a flair of writing can be supportive in case of documentation. Elsa and Manju being students of great interests in Electronics can help in hardware sections. Software sections can be well handled by Haritha. All of us are active in social works and have served as volunteers for many socially relevant activities like “GREEN PROTOCOL” organized by government of kerala. Also, we had the opportunity to be a part of many activities like distribution of medicines for the poor from which we got struck with the idea of having a medical kiosk in rural areas. Manju, also has served as volunteer secretary of NSS Unit, and her experience of working for the rural people has helped us in thinking about working on such a social cause. We also had the opportunity to become a part of a technical workshop conducted by IIT, Madras and Lema labs at Chennai, which added on immense knowledge, which is really beneficial for us in moving ahead with our idea.

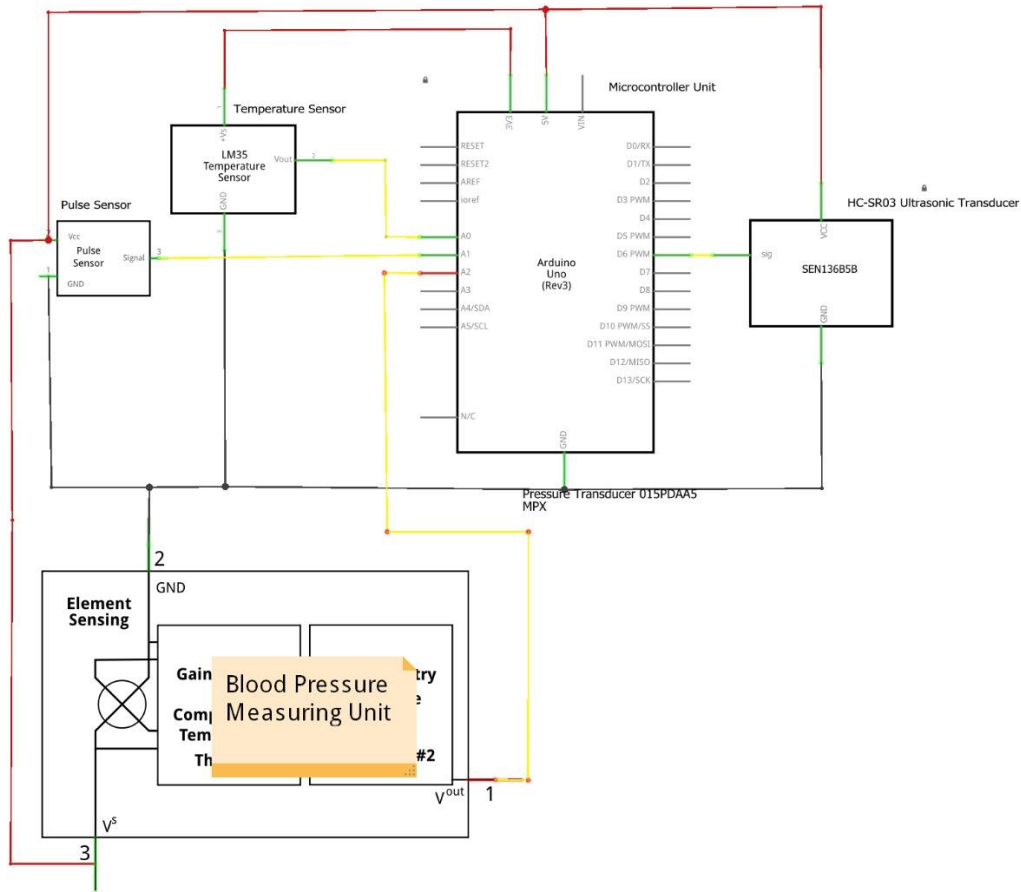
## BLOCK DIAGRAM



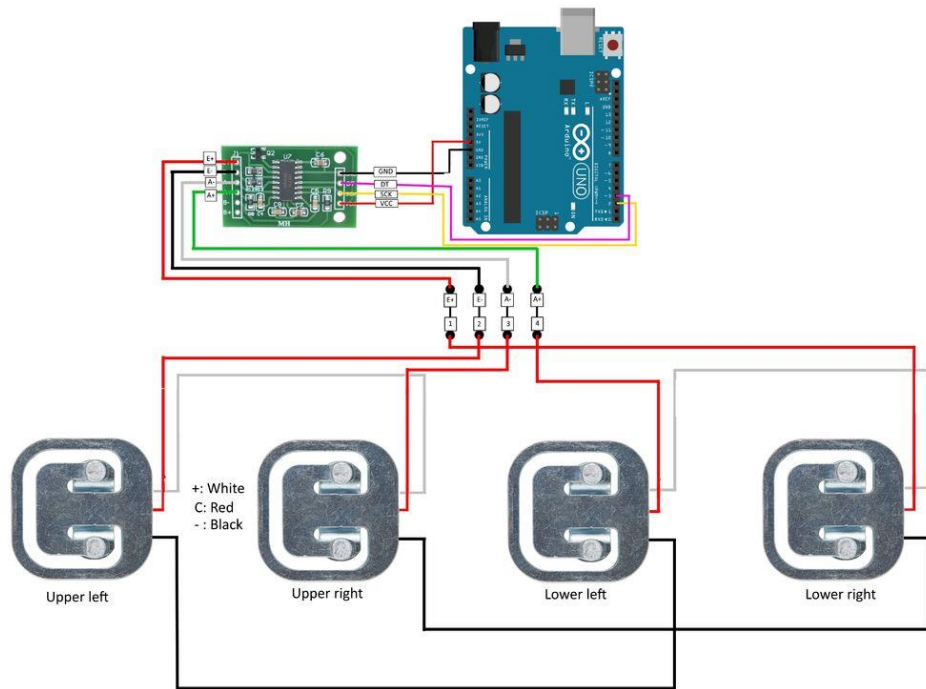
## FRONT END VIEW



# CIRCUIT DIAGRAM



fritzing



### C. Conclusion:

The above proposed project will be a great innovation in the field of medicine in rural areas. The machine can be placed at any accessible point within the village so that the villagers will no longer have to travel long distances for medical aid. Since all updated information and medical facilities are readily available, this can definitely put an end to crisis faced, especially during emergency situations. This can also avoid fraud malpractices in the name of health care to a great extent. Ultimately, the culminated result can offer a new panorama in the field of rural medicine, proffering self-empowerment to the Indian villages.

Signature:

(Team Leader)

(Team Member 01)

(Team Member 01)

(Team Member 01)

**Declaration:** *I hereby declare that all the above information furnished herein by the team is true to the best of my knowledge. I understand and accept that our application for the contest may be cancelled in case the above declaration is found to be false.*

Date: 9/08/18  
Place: KARUKUTTY



(Name & Signature of Mentor)

Dr sunil Jacob  
*[Signature]*



11/09/2018, Sep 18, 2018 at 9:52 AM RECS CHENNAI <[recschennai.ipo@nic.in](mailto:recschennai.ipo@nic.in)> wrote:



ALLAN : TR-5  
CHECK NO:66986

Date/Time : 17/09/2018

Agent Number:

SUNIL JACOB

DIRECTOR SCMS CENTRE FOR ROBOTICS SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY, KARUKUTTY, ANGAMALY,  
KERALA, INDIA. [suniljacob@scmsgroup.org](mailto:suniljacob@scmsgroup.org)

No.	CBR No.	Reference Number /Application Type	Application Number	Title/Remarks	Amount Paid
	26134	ORDINARY APPLICATION	201841034922	MEDICOS (MEDICAL KIOSK: A MINI VIRTUAL HOSPITAL FOR VILLAGES)	1750
		E-2/2769/2018-CHE	201841034922	Form2	0
		E-3/24655/2018-CHE	201841034922	Form3	0
		E-5/1511/2018-CHE	201841034922	Form5	0
	26134	E-12/910/2018-CHE	201841034922	Form9	2750
	26134	R20184027497	201841034922	Form18	4400
<b>Total :</b>					<b>8900</b>

Received a sum of Rs. 8900 (Rupees Eight Thousand Nine Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Union Bank of India	339885	11/09/2018	8900

Note: This is electronically generated receipt hence no signature required.