



Wireless Feto-maternal Vital Sign Monitoring and Follow-up for Resource Limited Setting

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1 Introduction

- ❖ Maternal and neonatal mortality related to childbirth is one of the big challenges of the developing world and its reduction is a key international development goal.
- ❖ Fetal heart rate, uterine contraction, maternal blood pressure, body temp, heart-rate and oxygen concentration are crucial in determining the wellbeing of a laboring mother and the fetus.
- ❖ Many of the defacto feto-maternal monitoring instruments such as Cardiotocography (CTG) are expensive, grid dependent and hard to maintain.

2 Proposed Idea

- ❖ Our idea is to construct an integrated wireless feto-maternal vital sign monitoring and alerting system for low-resource setting.
- ❖ Bio sensors are attached to a laboring mother non-invasively, collects vital sign data in real-time.
- ❖ The real-time data is being processed by a rechargeable battery powered microprocessor is delivered for a real-time visualization.
- ❖ The visualization is based on the WHO standard known as partogram which can be accessed by mobile phones, tablets and computers.

3 Aims

Introduce a low cost, portable vital-sign monitoring device in low resource setting

- The device will promote an automated, accurate, and efficient vital sign collection.
- Sensors variety, cost and accuracy increased tremendously to attain low cost device
- 3D printing became more available and cheap

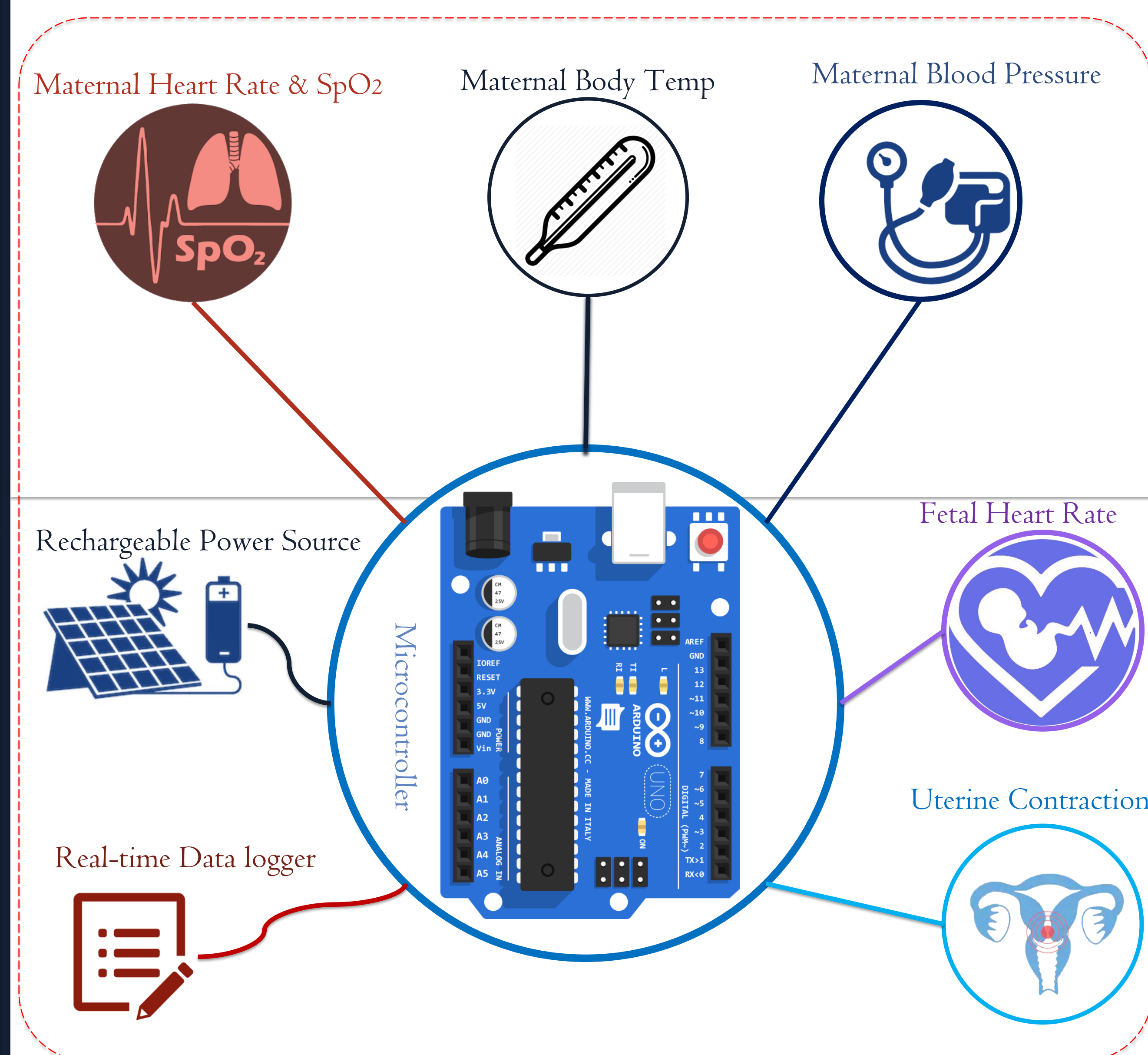
Assist the health care process by:

- Automating the vital-sign collection and monitoring based on Internet of Things.
- Reducing health care professional burnout
- Active alerting upon occurrence of risky vital signs

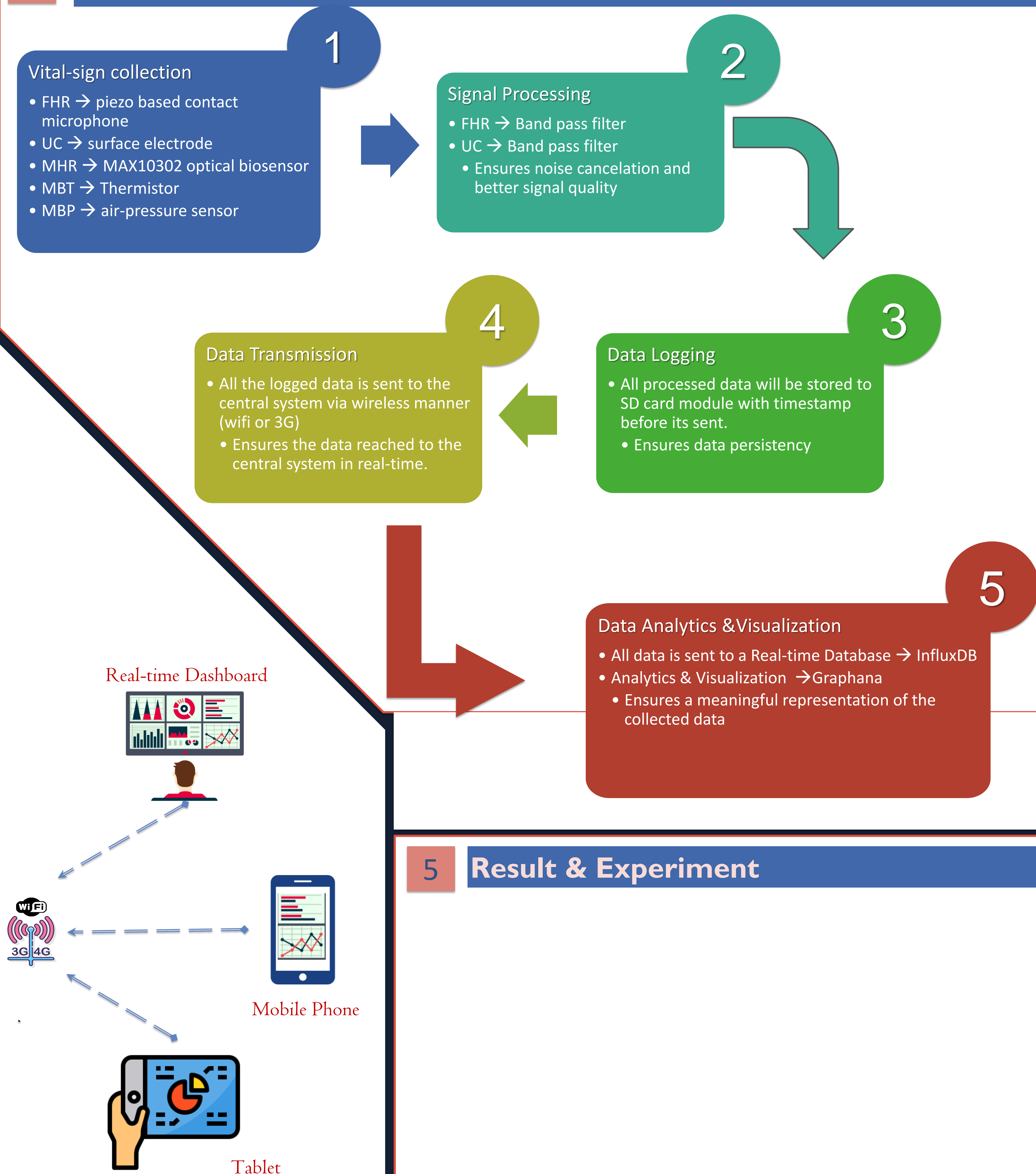
Deliver optimal care by:

- Reducing errors in the vital-sign collection.
- Producing a real-time vital-sign data of the fetus and the mother to the health care professional at his/her vicinity.
- Improving patient outcomes

4 Hardware & Software Components



5 Method



5 Result & Experiment

7 Acknowledgment

The authors acknowledges Armauer Hansen Research Institute (AHRI) for funding this project, Jimma University for being a host institution.



6 Future Directions

- ➕ Integrate Cervical Dilatation optical measurement
- 🌐 Integrate Artificial Intelligence for labor predication.
- 🏠 Produce final all in one prototype.
- 🔬 Large scale production of the device.
- 💼 Finding a business strategy for its sustainability.