**Project Charter:**

## **1. General Information**

### **Project Title:**

Fetosense AI-Based Fetal Monitoring with Remote Fetal Monitoring

### **Project Sponsor(s):**

UNICEF Venture Fund  
CareNX Innovations Pvt. Ltd.

### **Project Manager:**

CareNX Innovations Pvt. Ltd.

### **Date of Approval:**

7th Nov 2024

## **2. Vision Statement**

To create an accessible, AI-driven fetal monitoring solution that ensures every pregnancy is monitored effectively, regardless of geographic or resource constraints, leading to better maternal and fetal health outcomes globally.

## **3. Mission Statement**

To develop and deploy an AI-based fetal classification model that enables general physicians (GPs) in remote and underserved areas to accurately assess fetal health, reducing complications and improving pregnancy care through scalable and open-source technology.

## **4. Community Statement**

Fetosense aims to foster a global community of healthcare providers, researchers, policymakers, and technologists dedicated to improving maternal-fetal health through AI-driven solutions. By open-sourcing the AI model, we invite collaboration from public health organizations, universities, and developers to enhance and adapt the technology for diverse healthcare ecosystems worldwide.

## **5. Licensing Strategy**

* The AI-based fetal classification model will be released under an open-source license to ensure accessibility and adaptability for global healthcare use.
* Software components will follow an **Apache 2.0 or MIT license**, allowing broad modification and distribution while maintaining transparency and security.
* Hardware designs and technical documentation will be shared under **Creative Commons (CC BY 4.0)** to enable replication and integration into other maternal health programs.
* Compliance with national and international data privacy laws (GDPR, HIPAA, NDHM) will be strictly maintained.

## **6. Identification of Key Trademarks**

* **Fetosense®** – Registered trademark of CareNX Innovations Pvt. Ltd.
* **CareMother®** – Trademarked platform associated with maternal healthcare solutions.
* Any third-party technology integrated will be used under appropriate licensing agreements.

## **7. Project Overview**

### **Background & Purpose:**

The shortage of gynecologists in rural and remote areas significantly affects access to proper fetal monitoring, leading to preventable complications during pregnancy. The Fetosense solution, currently used by gynecologists, employs a decision tree algorithm for basic clinical assessments. This project aims to enhance the Fetosense system with an AI-based fetal classification model to empower general physicians (GPs) in remote settings. By leveraging supervised machine learning on a large dataset of fetal heart rate (FHR) and clinical parameters, the project will improve decision-making, reduce unnecessary NICU admissions, and enhance maternal-fetal outcomes.

### **Alignment with Digital Public Goods (DPG) Principles:**

* **Open Source & Open Standards:** AI model will be open-sourced for global accessibility.
* **Privacy & Security:** Adheres to data protection regulations, ensuring patient confidentiality.
* **Scalability:** Designed for deployment in low-resource settings with minimal technical dependency.
* **Interoperability:** Compatible with existing maternal health platforms.

## **8. Objectives & Scope**

### **Objectives:**

* Deploy 30 Fetosense devices with 30 general physicians in remote areas.
* Collect fetal monitoring data from 3,000 pregnancies over 11 months.
* Develop and validate an AI-based fetal classification model for accurate interpretation of fetal health conditions.
* Open-source the AI model to promote broader adoption in low-resource settings.
* Improve early detection of fetal distress, reducing NICU admissions and maternal-fetal complications.

### **Scope:**

**In Scope:**

* Hardware and software deployment in pilot locations.
* Data collection, model training, and validation.
* AI model integration into Fetosense platform.
* Open-sourcing the AI model for public use.

**Out of Scope:**

* Commercial deployment of AI-enabled Fetosense beyond the pilot phase.
* Regulatory approvals for widespread implementation.

## **9. Key Deliverables**

* Deployment of 30 Fetosense devices in pilot locations.
* Data collection and analysis framework for 30,000 pregnancy screenings.
* AI-based fetal classification model with validation results.
* Open-source repository for the AI model and implementation guidelines.
* Final impact report highlighting key outcomes and recommendations.

## **10. Stakeholders**

* UNICEF Venture Fund
* CareNX Innovations Team
* General Physicians (Pilot Participants)
* Pregnant Women in Pilot Locations
* Public Health Organizations
* AI Researchers & Developers

## **11. Project Timeline & Milestones**

* **Month 1-2:** Device deployment and physician training.
* **Month 3-9:** Data collection and AI model development.
* **Month 10-11:** Model validation and pilot evaluation.
* **Month 12:** Open-source release and final reporting.

## **12. Budget & Funding**

* UNICEF funding support for hardware, software, and AI development.
* Operational costs for device deployment and data collection.
* Research and development expenses for AI training and validation.

## **13. Risks & Mitigation Strategies**

* **Risk:** Limited data quality from remote locations.  
  **Mitigation:** Standardized data collection protocols and training for physicians.
* **Risk:** AI model biases and inaccuracies.  
  **Mitigation:** Diverse data collection, rigorous testing, and expert validation.
* **Risk:** Resistance to adoption by GPs.  
  **Mitigation:** Training and support for physicians, demonstrating clinical benefits.

## **14. Success Criteria**

* Successful deployment and use of Fetosense devices by 30 general physicians.
* Collection and analysis of 3,000 pregnancy screenings.
* AI model achieving high accuracy in fetal classification.
* Reduction in unnecessary NICU admissions in pilot locations.
* Open-source adoption by health organizations and researchers.

## **15. Governance & Compliance**

* Adherence to Digital Public Goods Alliance (DPGA) standards.
* Compliance with ethical AI and data protection regulations.
* Periodic review by independent evaluators.

## **11. Approval & Signatures**

* **CareNX Innovations Pvt. Ltd.** – Project Executioner
* **UNICEF Venture Fund Representative** – Project Sponsor
* **Other Key Stakeholders** – As required

This document serves as the formal charter for the Fetosense AI-based fetal classification project, aligning with Digital Public Goods (DPG) principles to ensure accessibility, scalability, and ethical deployment.