Team – IoT#01

Minutes of Meeting (MoM)
Date of Meeting: 10.12.2024
Time of Meeting: 10:30 AM to 11:00 AM

Agenda
Topic: Smart Ambulance System with IoT Integration for Real-Time Traffic Updates

Discussion Points

Components and Technologies to Be Integrated
1. Pi Camera
   - Functionality: Image recognition for road signs and boards to assist in navigation and compliance with traffic rules.

2. Neo6M GPS Module
   - Functionality: Real-time location tracking for precise navigation and updates.

3. LiPo Battery
   - Functionality: Power supply to ensure uninterrupted operation of the system.

4. Waze Maps
   - Functionality: Integration for real-time traffic updates and route optimization.

5. Mosquitto Protocol
   - Functionality: MQTT protocol for efficient communication between IoT devices.

6. Twilio
   - Functionality: Notification system for emergency alerts and communication.

7. VANET (Vehicular Ad-hoc Network)
   - Functionality: Vehicle-to-Infrastructure (V2I) communication to share and receive real-time traffic data.

Suggestions Provided

1. Focus on creating a seamless integration of IoT devices for improved functionality and reliability.

2. Ensure robust communication using Mosquitto for efficient data exchange.

3. Leverage Twilio for real-time notifications to stakeholders, such as nearby vehicles or hospitals.

4. Utilize Waze Maps for dynamic rerouting in case of traffic congestion or roadblocks.

Future Scope

1. Explore advanced image recognition capabilities to identify additional road elements such as pedestrians or traffic lights.

2. Expand VANET functionalities to include Vehicle-to-Vehicle (V2V) communication.

3. Consider integrating blockchain technology for secure and immutable data storage.

4. Making it usable for 108 services rather than a private sector.

Action Plan

1. Initial Setup
   - Integrate Pi Camera, Neo6M GPS, and LiPo Battery.

2. Software Integration
   - Configure Mosquitto, Twilio, and Waze Maps for real-time operations.

3. Testing Phase
   - Conduct end-to-end testing of the system in controlled environments.

4. Deployment
   - Implement the system on a prototype ambulance for live testing.

Conclusion

The meeting outlined the core functionalities and integration of components for the Smart Ambulance System. Action points were assigned, and the next meeting will focus on progress review and addressing any technical challenges.