

Environmental Monitoring for Sustainable Agriculture

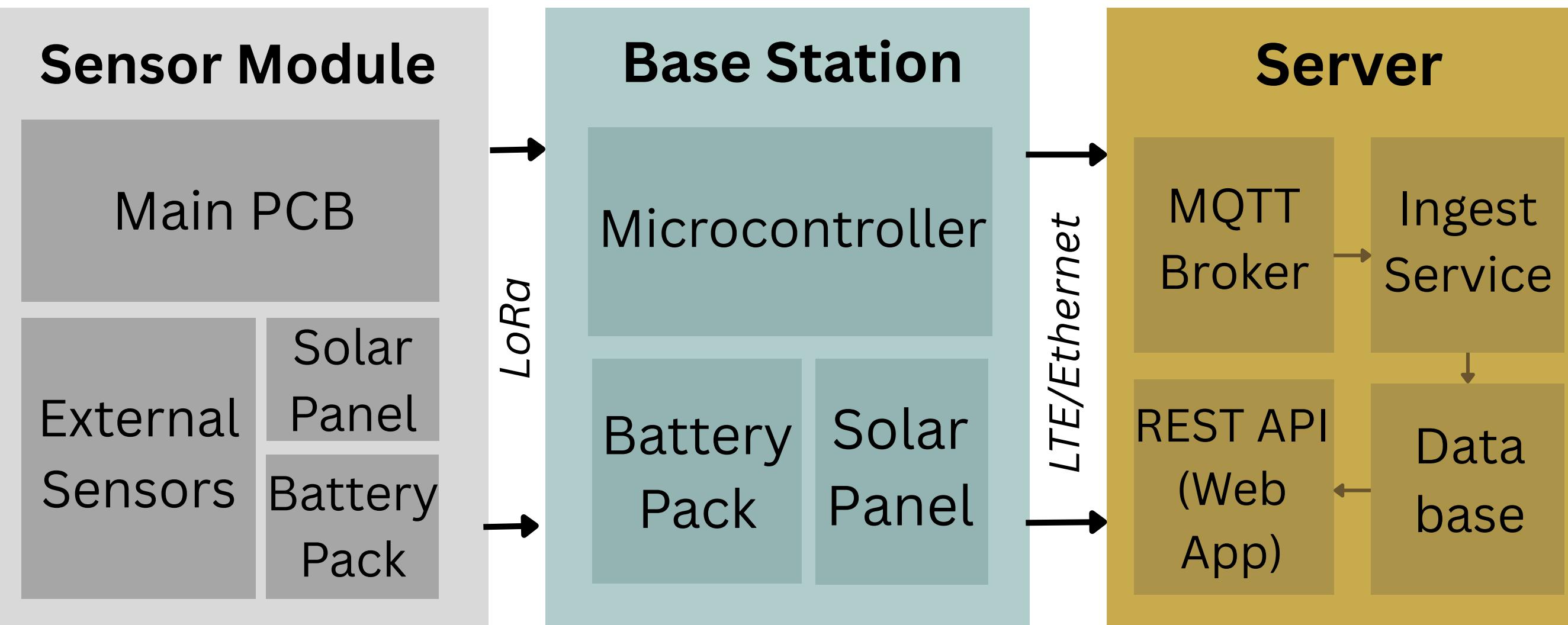
Julia Chan | Max Cohn | Bharat Kharti
Pablo Sandoval Rivas | Kriteen Shrestha

Background

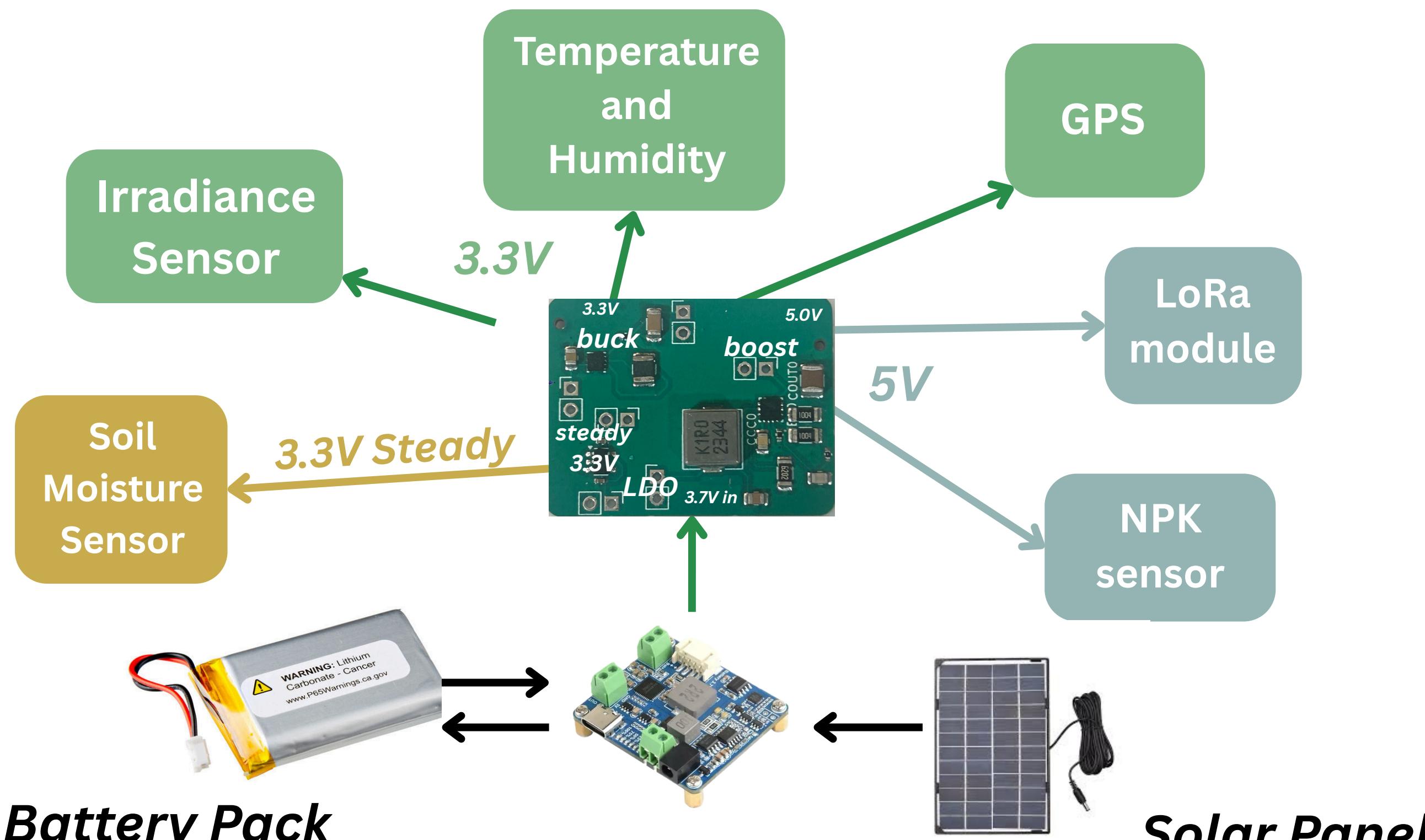
Designed as a cost-effective and scalable end-to-end Internet of Things (IoT) solution, **SproutSense** features energy-efficient sensor modules capable of securely transmitting environmental data over long distances. Users access real-time sensor readings and valuable insights through a responsive web-based application that offers intuitive visualizations, field alerts, and predictive guidance to make data-driven decisions regarding irrigation and environmental management.

System Overview

SproutSense is a network of smart sensors designed to provide farmers with real-time environmental data to optimize agricultural practices.

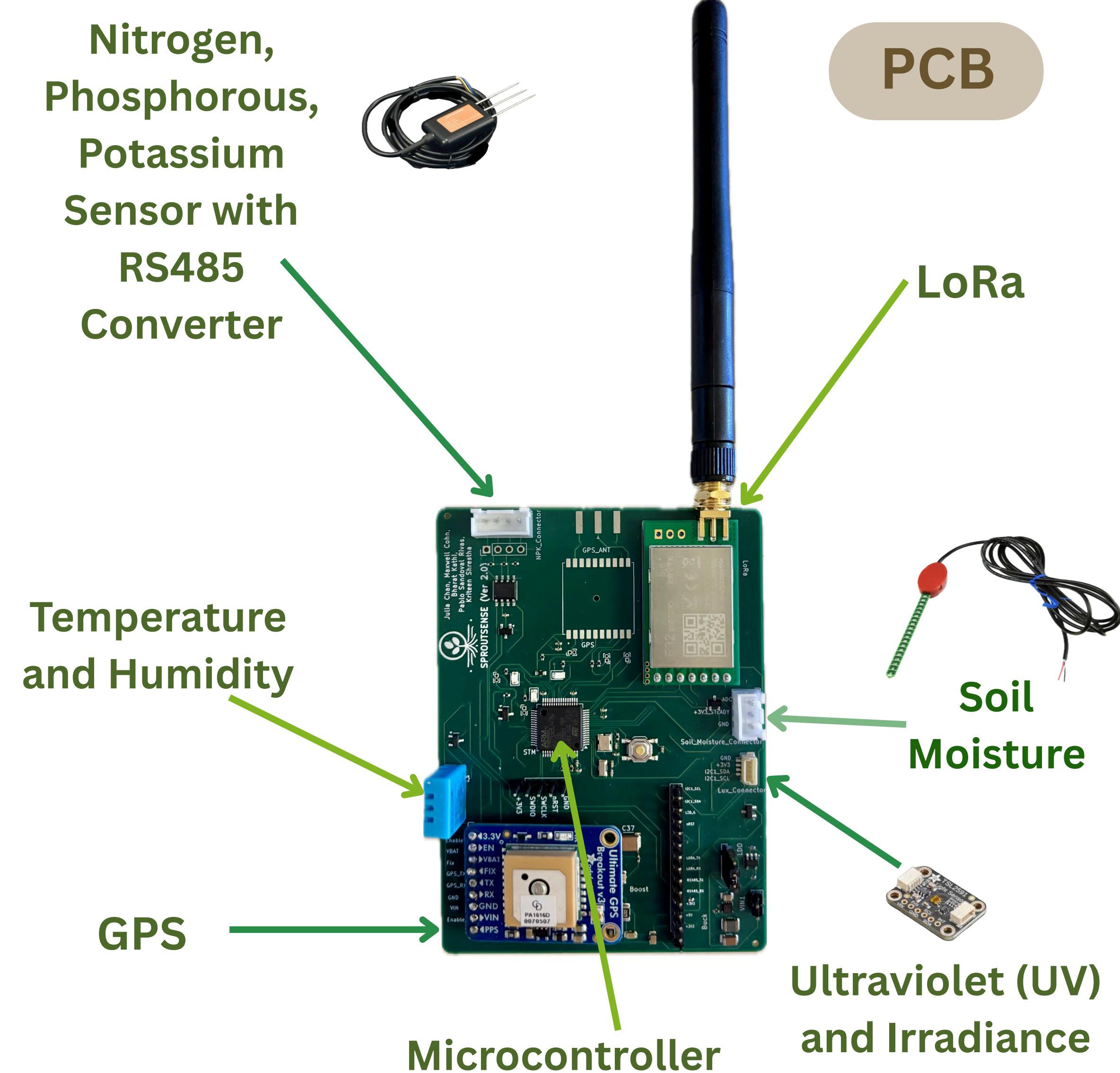


Power

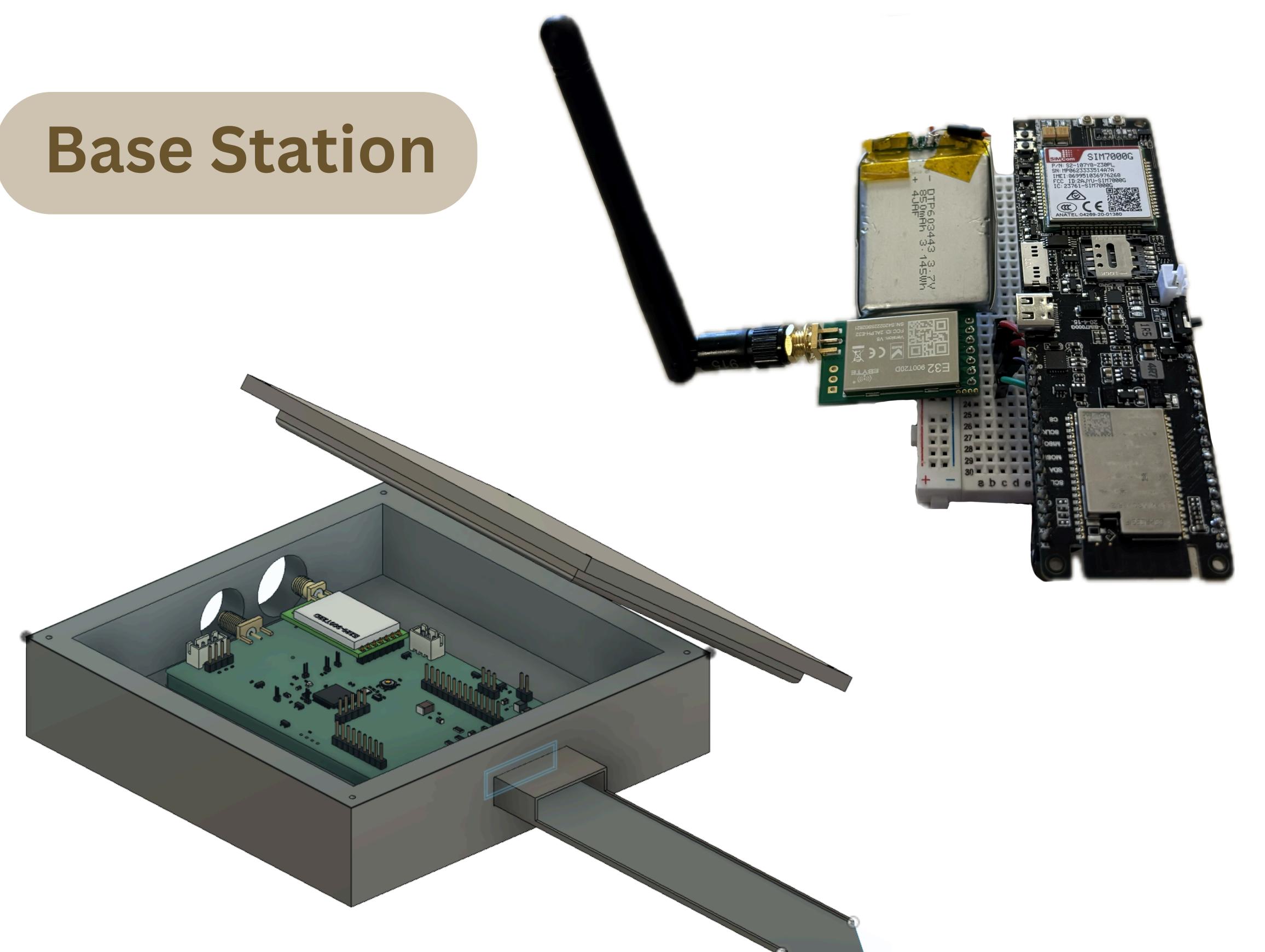


Acknowledgements:

Firmware

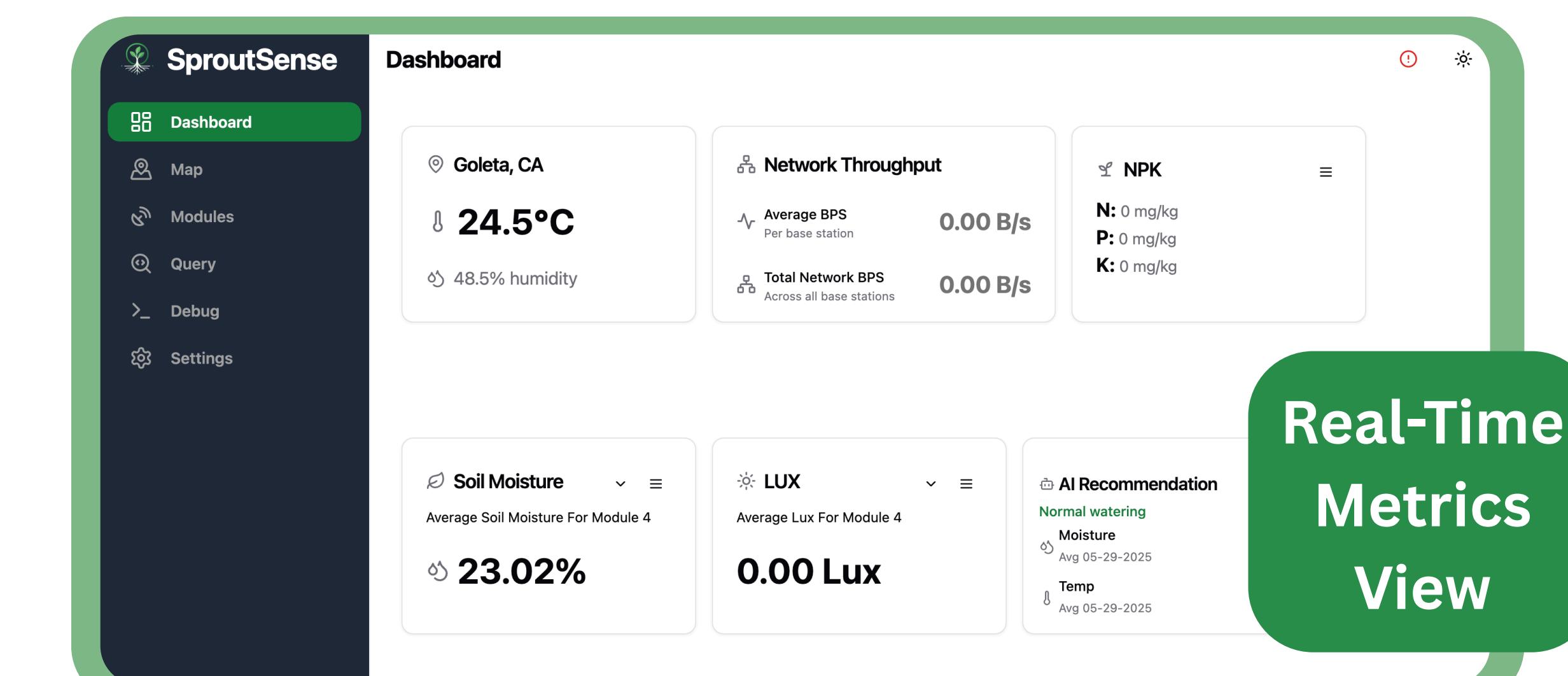


Base Station

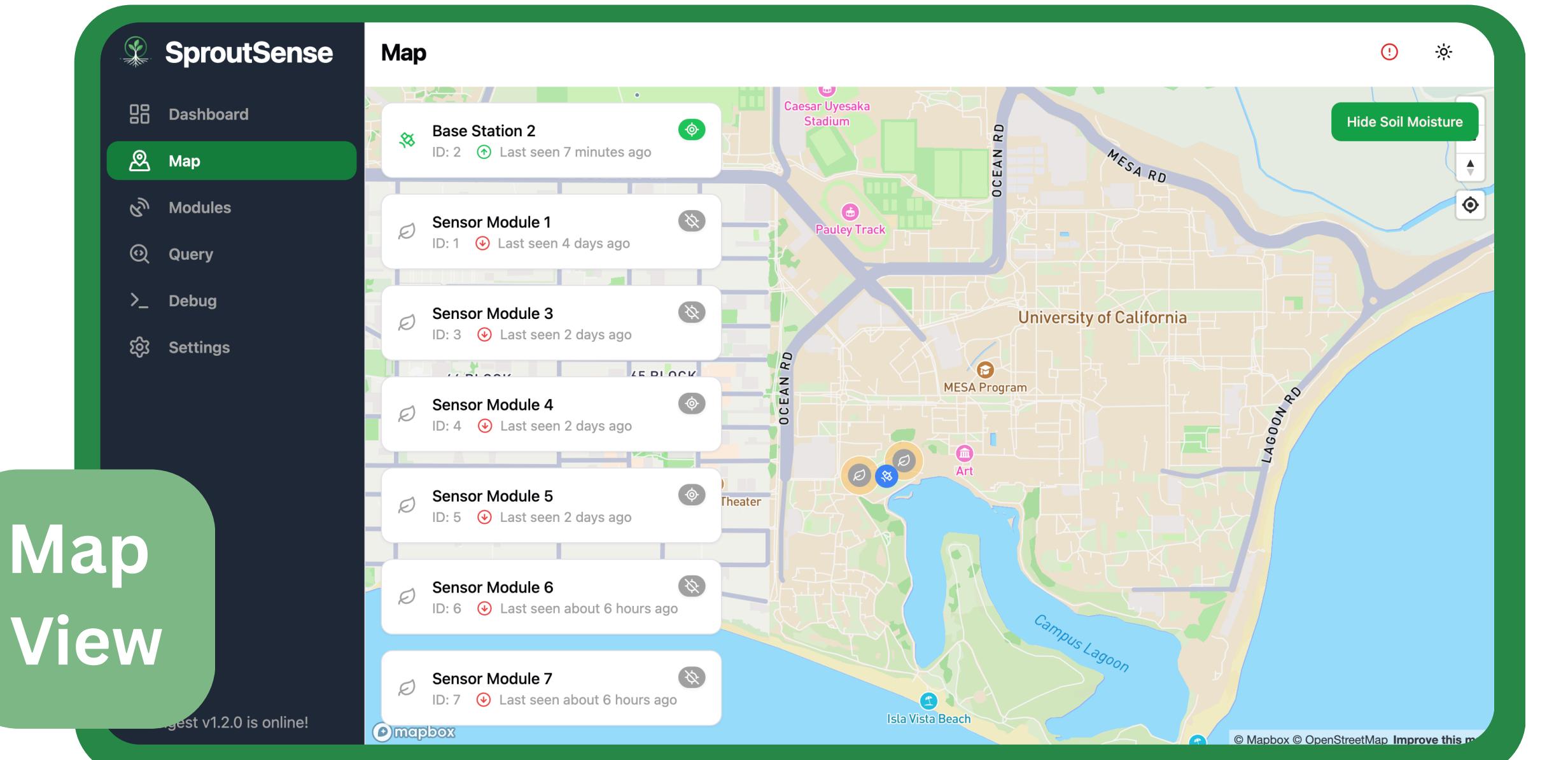


Sensor Module

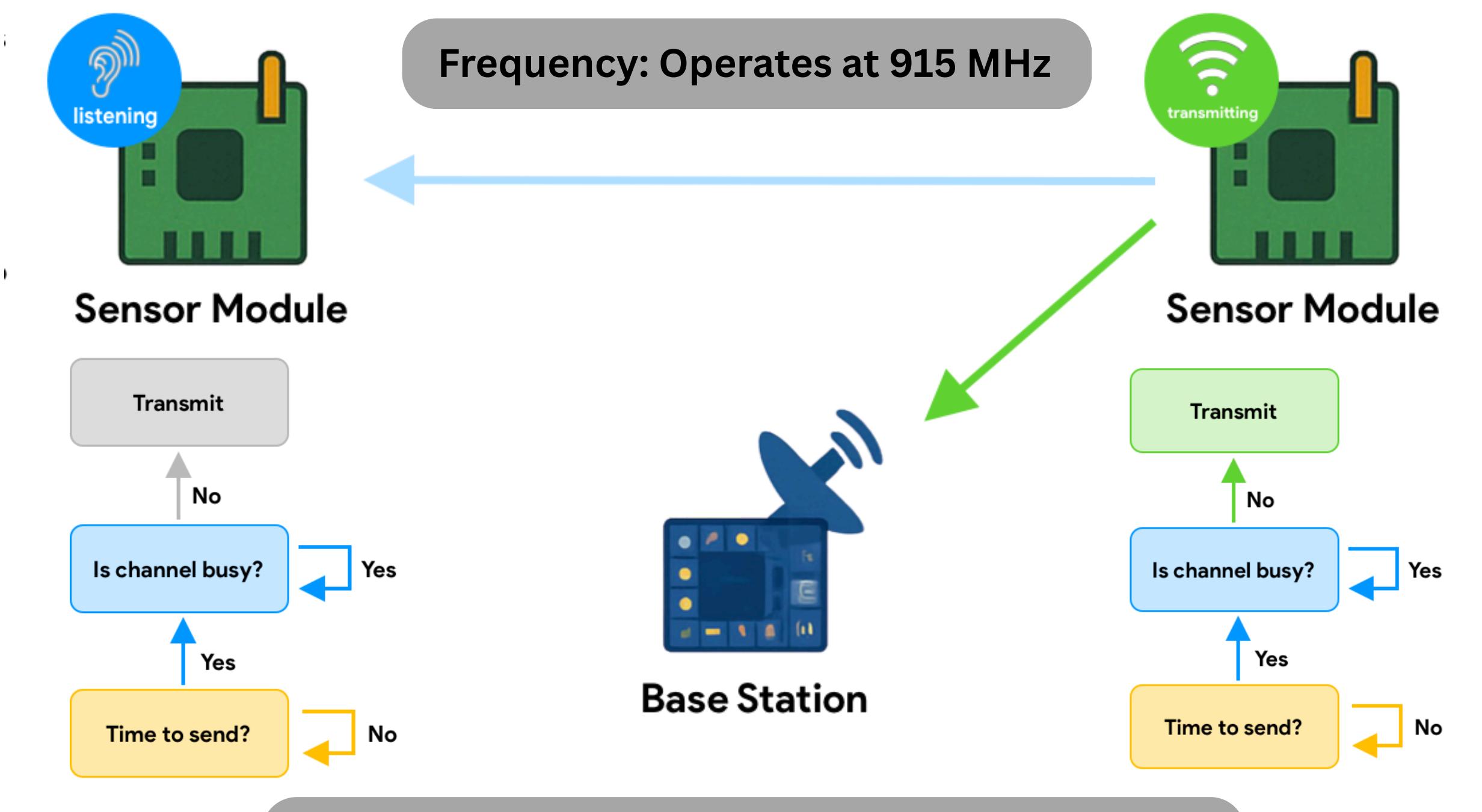
Web Application



Real-Time Metrics View



LoRa



Long-Range, Low-Power: Ideal for large-scale agricultural deployments where Wi-Fi or cellular is impractical