SILIKON
TECHNOLOGIES

Corporate **Profile**

This Corporate Profile has been prepared by Silikon Technologies for the sole use of the intended recipient's confidential evaluation of Silikon Technologies' qualifications as a potential business partner.

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About Silikon

Silikon Technologies Corporation *is a startup that was established in 2019 in Legazpi, Albay, as the founders envisioned creating a true Internet-of-Things development company in the Philippines, that would help cater to the needs of the diverse industries of the community.*

The name SILIKON which is a play between, Silicon Valley, the global tech center for technology in the world and SILI which is the local name for chili, the spice, Bicol region is well known for

Vision

To be the top Full Service Internet-of-Things solutions provider in the Philippines by improving quality of life and providing competitive advantage for businesses

Mission

We aim to provide best-in-class services by:

- working closely with our customers and clients
- leveraging state-of-the-art sensing and communication technologies
- empowering businesses through data-gathered insights
- Providing cost effective and practical solutions applicable to the Philippine industry

About Internet-of-Things

Internet of Things Uses By Industry

HOME
- Smart Temperature Control
- Optimized Energy Use

INDUSTRIAL
- Machine-to-Machine Communication
- Quality Control

AUTOMOTIVE
- Vehicle Auto-Diagnosis
- Optimized Traffic Flow
- Smart Parking

AGRICULTURE
- Offspring Care
- Crop Management
- Soil Analysis

MILITARY
- Situational Awareness
- Threat Analysis

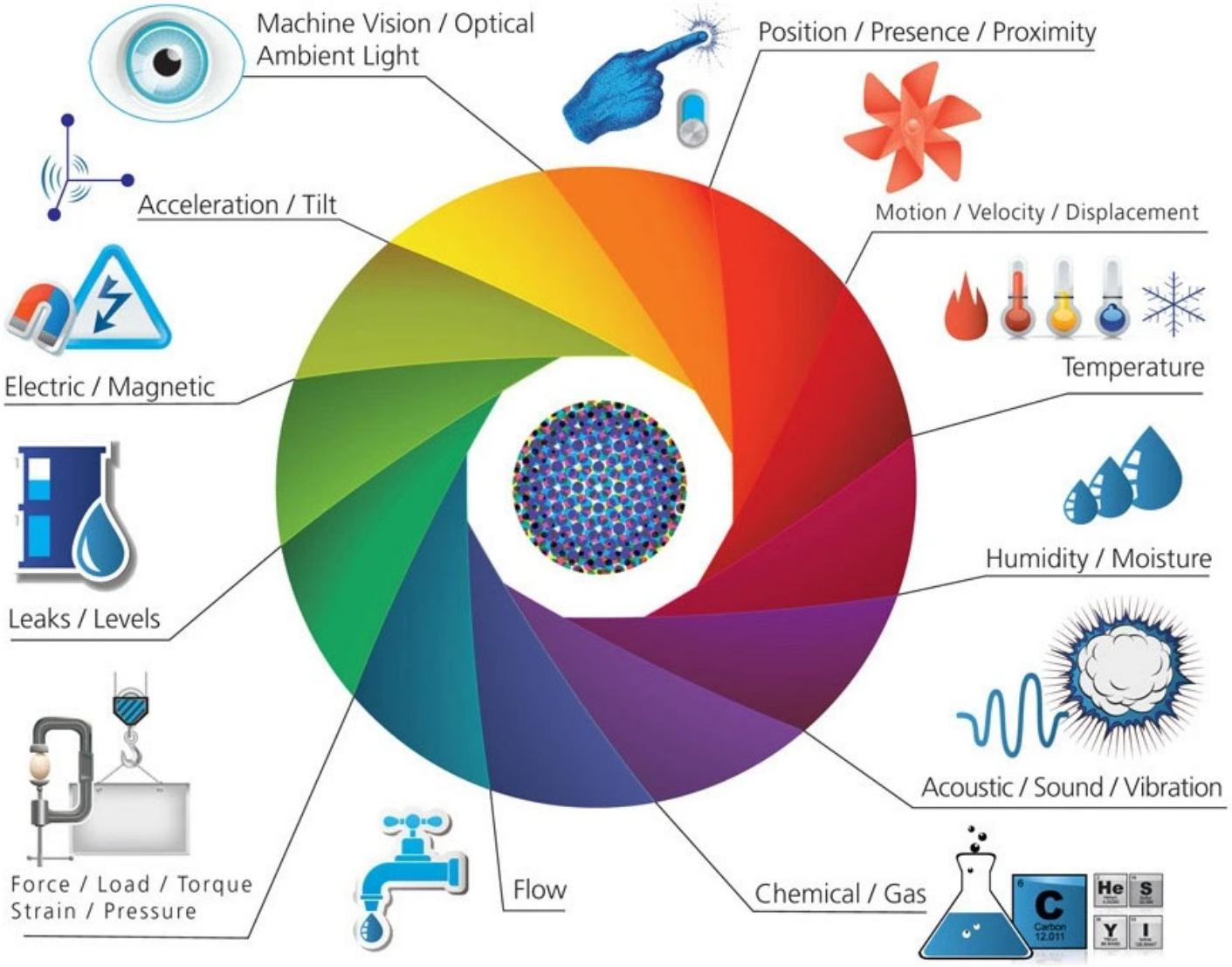
MEDICAL
- Optimized Patient Care
- Wearable Fitness Devices
- Quality Data Reporting

ENVIRONMENTAL
- Forest Fire Detection
- Species Tracking
- Weather Prediction

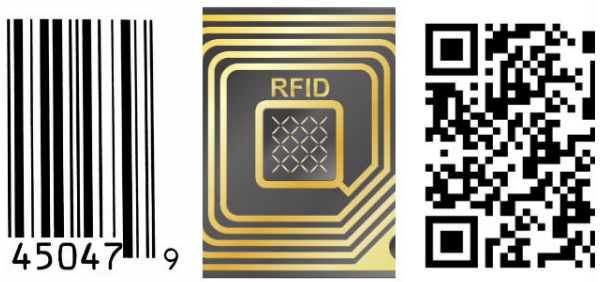
RETAIL
- Theft Protection
- Inventory Control
- Focused Marketing

About Internet-of-Things

Types of Sensors

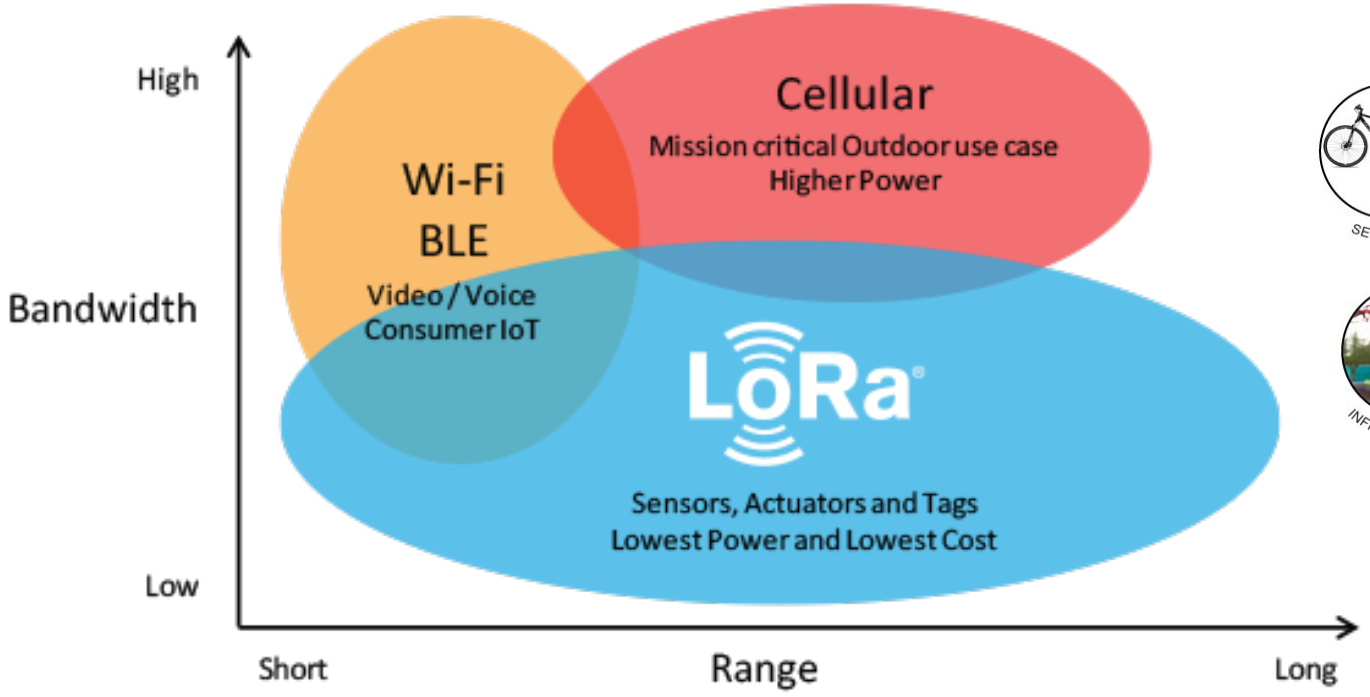


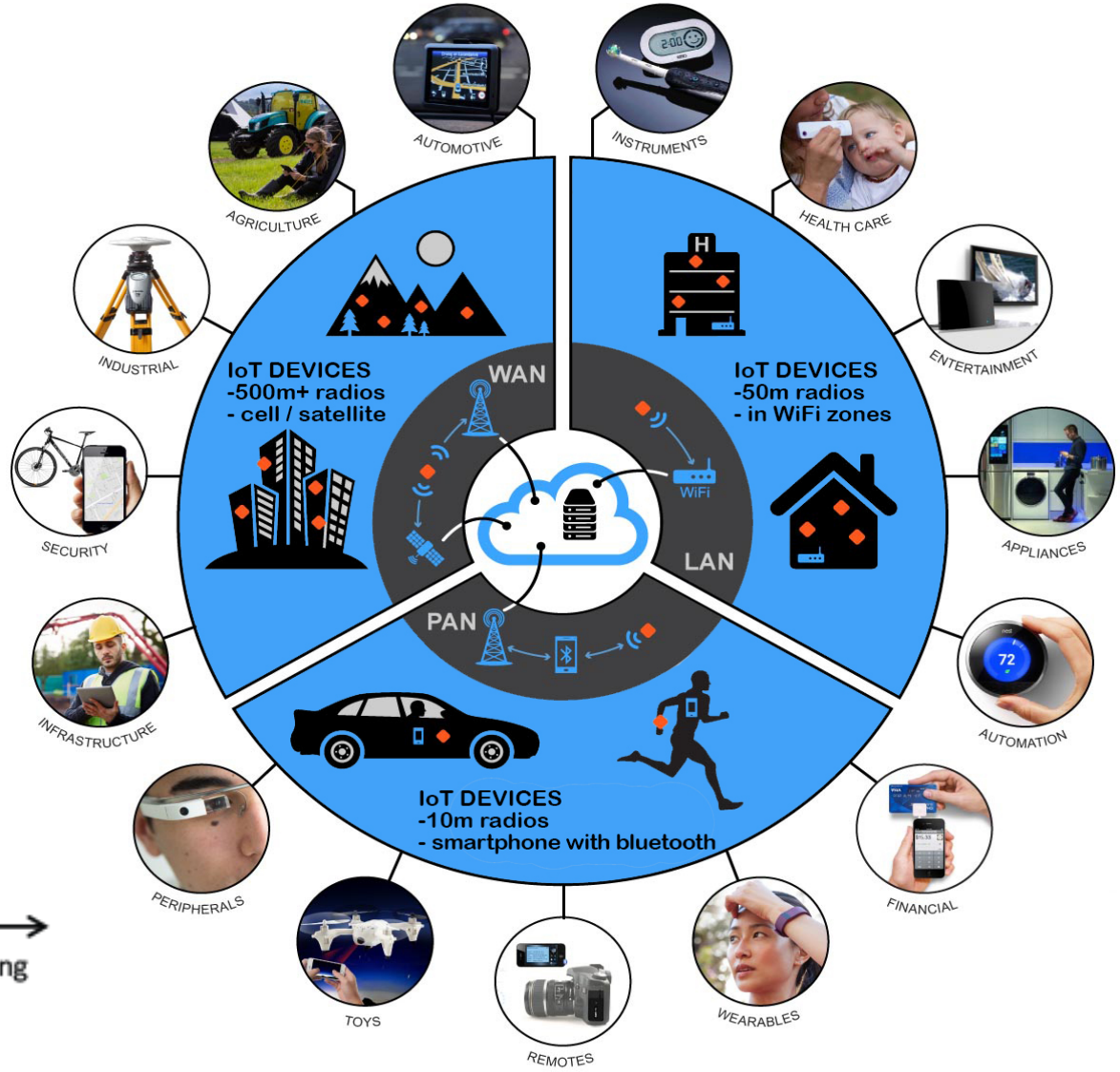
For Tagging and Tracking



About Internet-of-Things

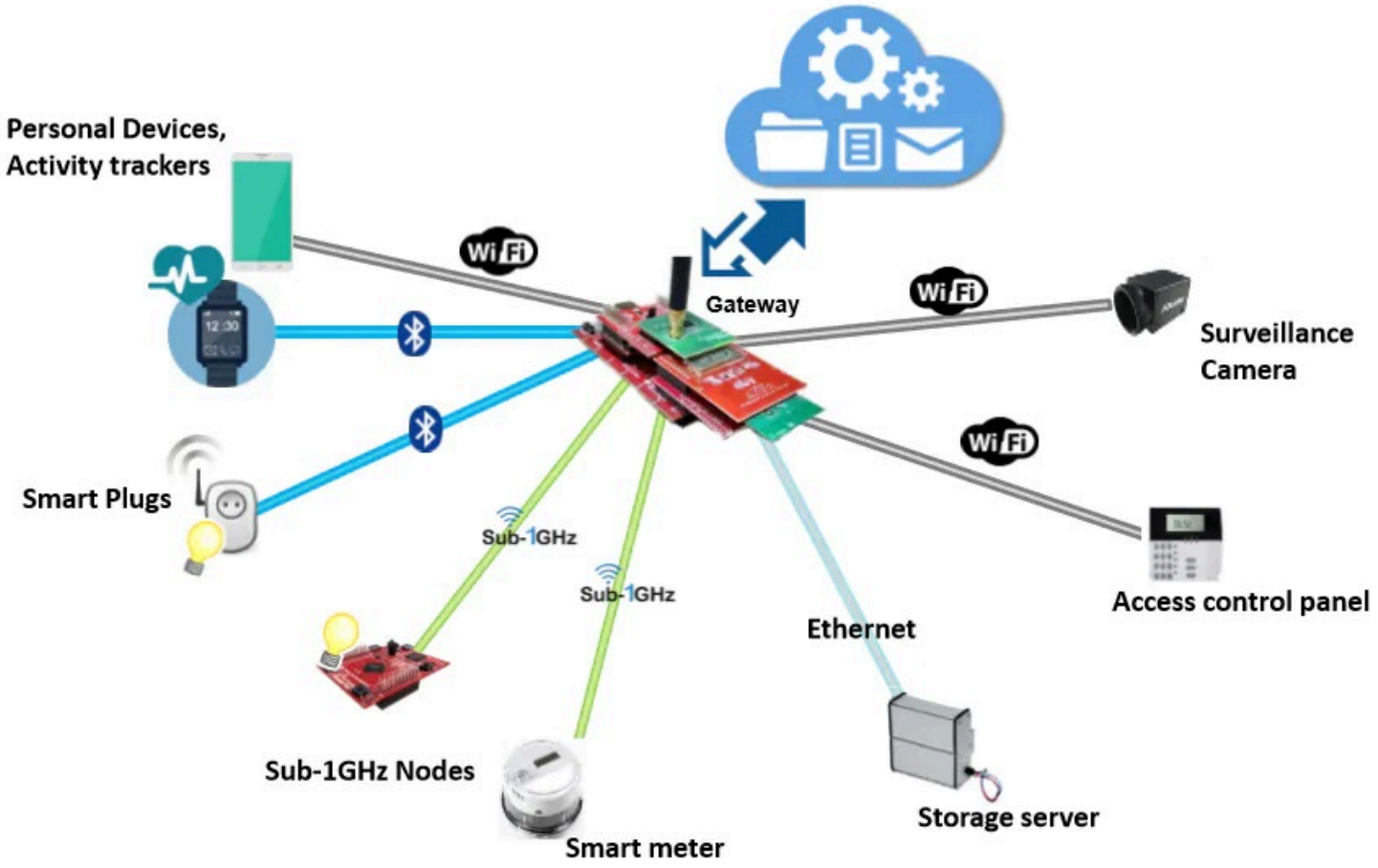
Industry Application and Range





About Internet-of-Things

Connectivity Diagram



Sensors – Data gatherers and sends data to gateway through the following means

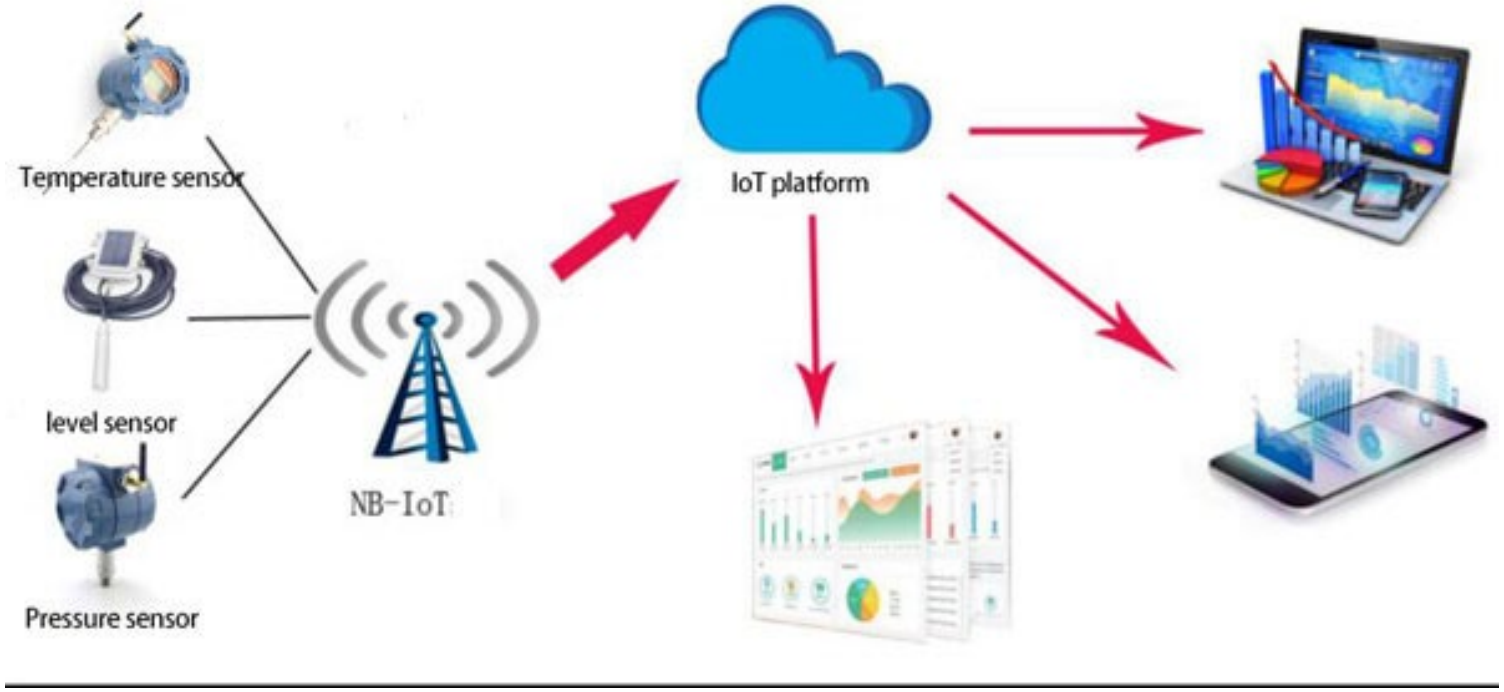
- WiFi
- Bluetooth
- LoraWan (Sub 1GHz)
- Ethernet
- Etc.

Gateways – Data aggregators and facilitate transmission of data to the cloud.

- Cellular
- Fiber
- Satellite

How We Operate

Infrastructure Diagram



How We Operate

How we integrate

Sensors

- Integrate off the shelf 3rd-party sensors
- Dependent on mix of sensors
- User requirement for level of accuracy
- In-door vs Out-door

Gateway

- We use 3rd party gateways but can also do custom-built
- Distance of sensors
- In-door vs Out-door
- Location of Gateway (i.e. cellular signal vs satellite)

Cloud and User Interface

- Cloud server for data facilitation
- Software for data analysis and storage
- User interface for data viewing (desktop or mobile)

Value Proposition: Our hardware and software development capabilities enable best in class customizable vertical integration coupled with unmatched local technical support.

Partial Product List

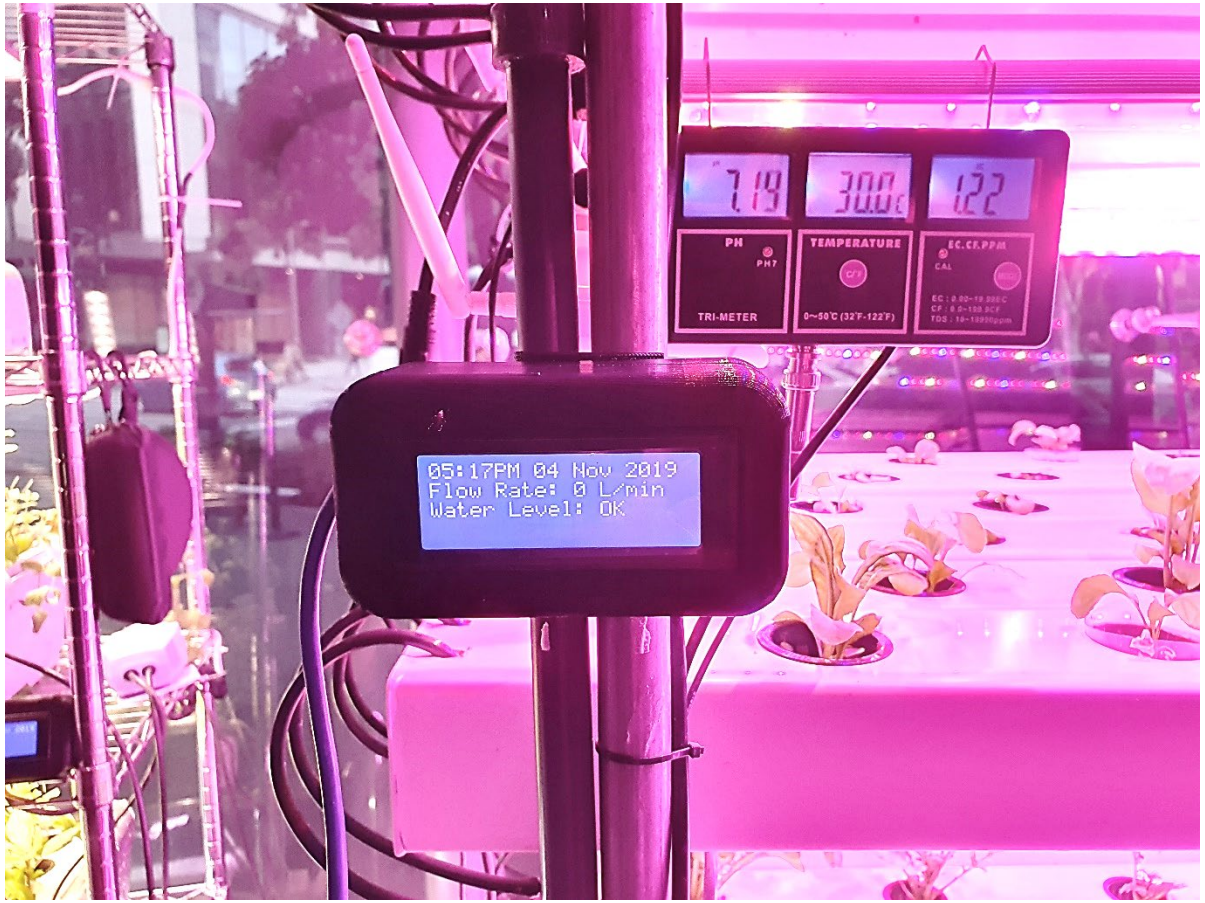
Product Name	Basic Sensors	Addtl Sensors	Description
FarmWatch	humidity, Temp, CO_2	Pressure, Airflow, Light, NH_3	Used for high density poultry tunnel vent farms and other livestock monitoring
Fleet Tracker with ODB-II	GPS, Fuel, Speed, accel eration, mileage	Temp, Humidity, Door sensor, pressure, different gases	Fleet management, gasoline pilferage, route optimization, cargo environment m onitoring
Temp+Hum	Temp, rH		Used for warehouse environment monito ring; building information management,
Satellite-based GPS Tracking	GPS	Temp, humidity, door sensor	Used for global container tracking solutio n; isolated
Weather Station	Wind Speed, Wind Dire ction, Temp, Humidity, Rainfall	Air pressure, Radiation, illumi nance	Used for farm research, weather monitor ing agencies (eg. PASGASA, Philvocs)
Moisture Sensor	Moisture		Soil management for irrigation; coffee bean and cocoa storage monitoring
Air Quality Monitoring Sensor	Temp, humidity, VOC, PM, CO_2	Methane, Nitrogen Dioxide, SO_2	Outdoor air quality monitoring system (eg. LGU pollution monitoring)

Existing and Past Projects

Project Name	Customer Base	The Problem	The Solution	Implementation
Hydroponics Monitoring	Hydroponics Farmers	Growing high value crops using hydroponics require timely management of nutrients and ambient conditions of the crops.	Measurement of pH and other nutrient content of the water need to be managed carefully. Air sensors will also need to measure CO^2, temp and relative humidity (rH). Farm operators need to know when to add nutrients	Water thing: pH, Electrical Conductivity (EC), temp, water level Air Thing: Temp, relative humidity (rH), CO2 . The things sensors send measurements to the cloud every 15mins. WebApp available for live viewing and historical data
Cooltech	Offices with multiple non-centralized aircons	High electricity cost due to undisciplined & inefficient use of the aircons	Centralized control of aircons that automatically manage the aircon setpoint temp.	Installation of non-invasive IR blasters deployed w/in line-of-sight to aircon units. Outside temp and RH are monitored to compute ideal setpoint. Occupants simply control one system to manage all Aircons
Mobile Cold Storage Fleet Monitoring	companies that have a fleet of cold storage vehicles	Effective and efficient tracking of refrigeration parameters, and, GPS location to minimize spoilage and avoid pilferage	Fleet monitoring (GPS) and data logging for critical sensor data such as Temp, Fan signal, Compressor signal, and defrosting signal (refrigerated vans) which can be retrieved through USB or GSM communication	Installation of the monitoring system that connects to the existing client monitoring panel to measure control signals for compressor, defrosting, condenser fan and evaporator fan. Also includes external temp probe for cold storage and GPS tracking

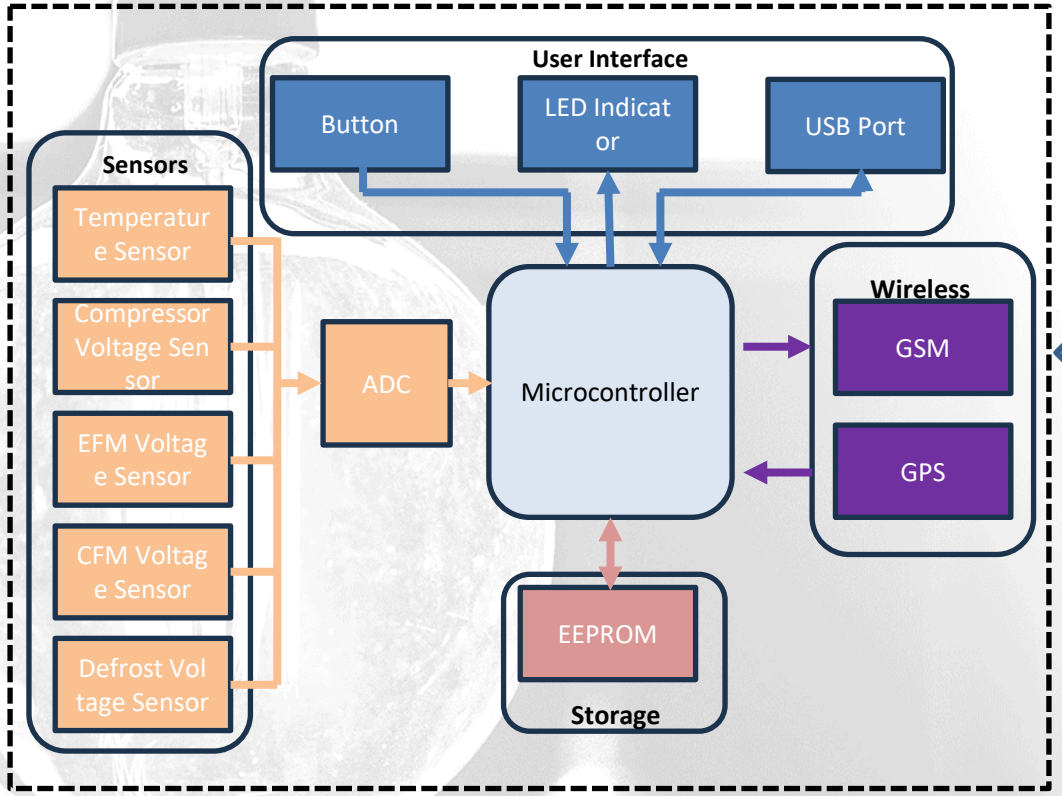
Existing and Past Projects

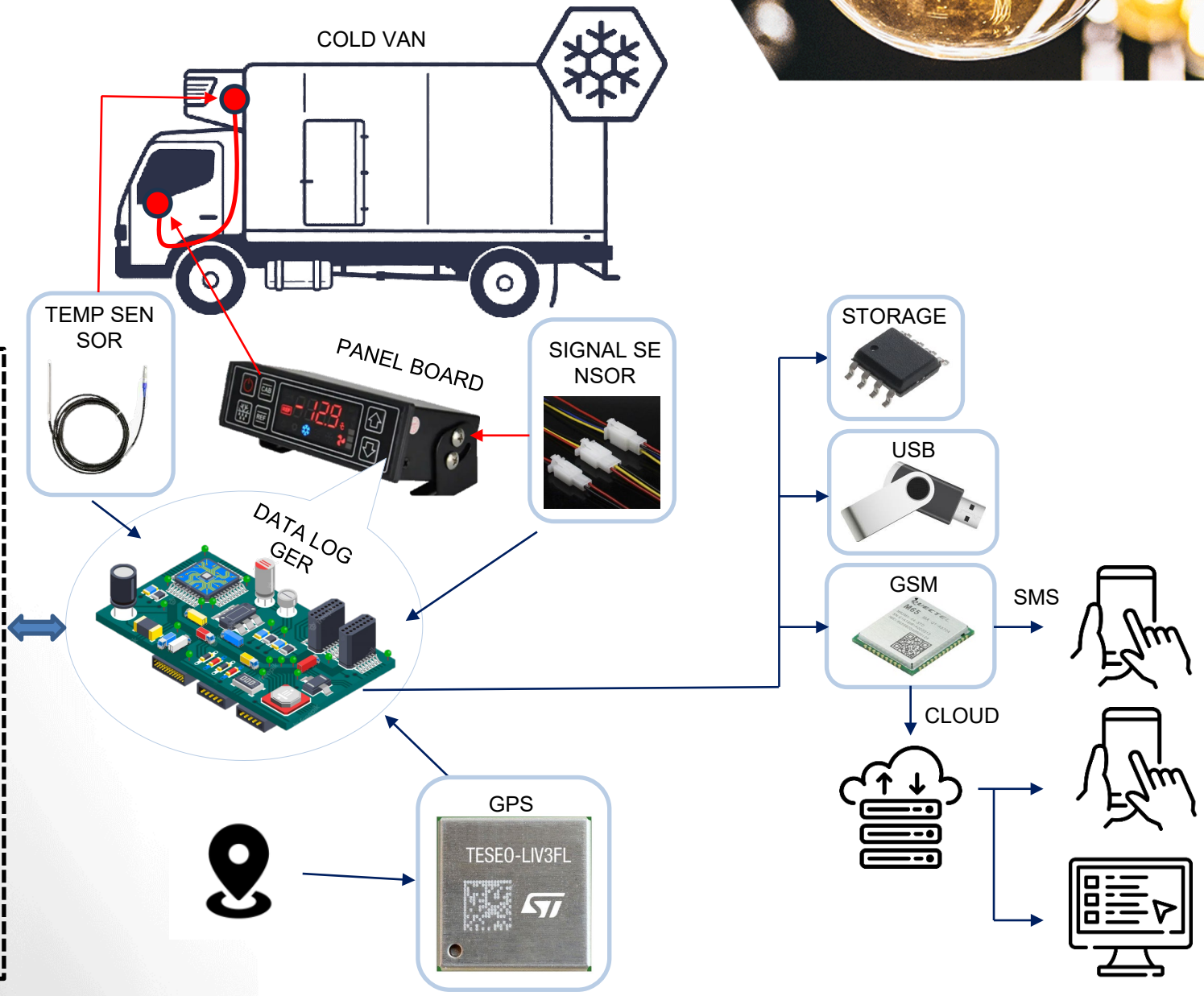
Hydroponics Monitoring



Existing and Past Projects

Mobile Cold Storage Fleet Monitoring





Case Study

Farm Watch

Customer Base	Broiler Poultry Farms
The Problem	High Mortality rate, long growth cycles, low feed conversion • Eg. Growth cycle of 40~45 days (Ideal condition is 28~30days)

Case Study

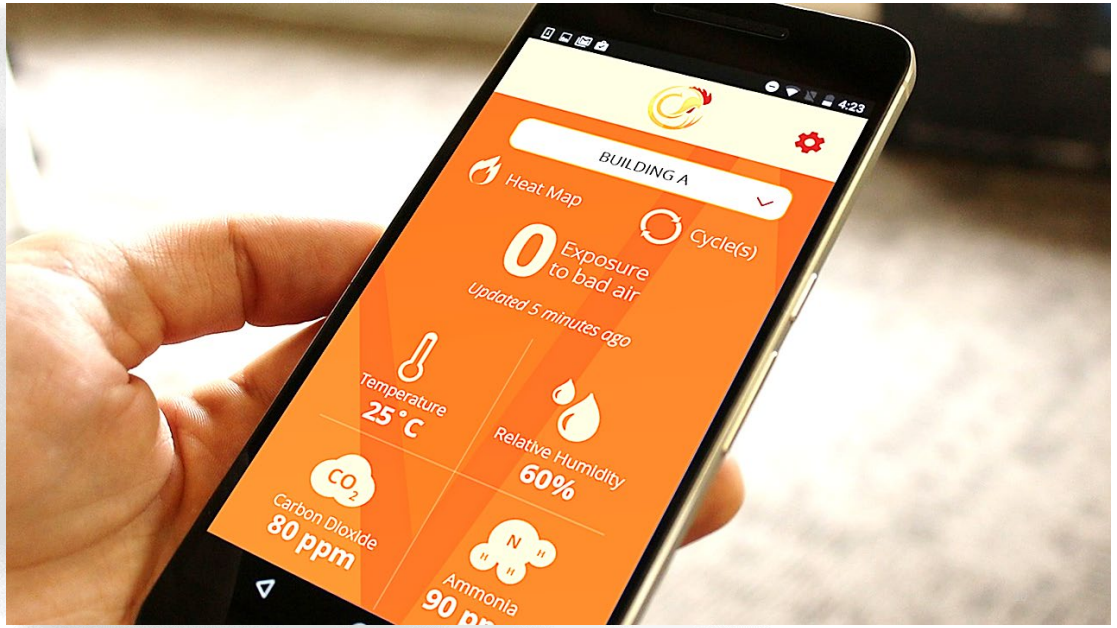
Farm Watch

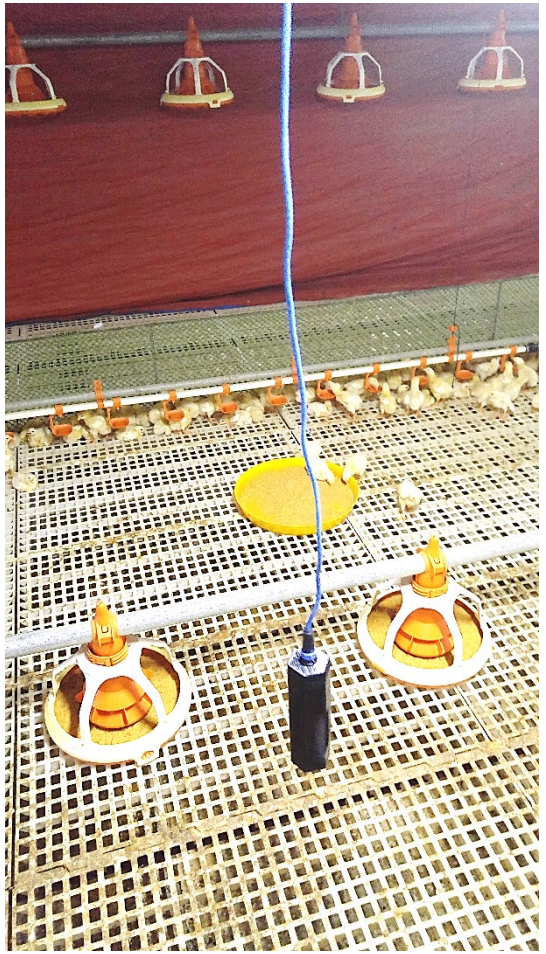
The Solution	Monitoring of environmental conditions: Temp, rH, CO2, Ammonia, TVOC (Approx for Ammonia) in order to alert & inform farmers of critical conditions that are detrimental to the health of the chickens
Implementation	• 3 sensors deployed throughout the poultry building to monitor conditions at different points • Data is collected every 5mins • Realtime SMS alerts are immediately sent to farm manager of critical c onditions detected • Historical data is available via mobile app so they can review and make changes to their operational processes

Case Study

Farm Watch

Results – Farm in Agusan Del Sur	• Deployment of sensors determined high CO2 concentration greater than 8,000 ppm for 6hrs every night • Investigation determined LPG heaters and lack of ventilation caused CO2 buildup. • High CO2 caused stunted growth of chickens • Constant monitoring of environmental variables significantly improved growth rate





Strategic Partnerships

Globalstar, Inc. is an American satellite communic ations company that operates a Low Earth Orbit (LEO) satellite constellation for satellite phone and low-speed data communications. The Globalstars econd-generation constellation consists of 25 low Earth orbiting (LEO) satellites.

Packetworx, Inc. is the first and only LoRaWAN® connectivity provider for the Internet of Things in the Philippines

Management Team

Fred Chua – Chief Executive Officer(CEO)

- Co-Founder of Silikon Technologies, Inc.
- CEO of Magellan Solutions, an SME BPO company that was established in 2003
- President of My3D Concepts Corp., a 3D Services company that provides 3D Scanning, 3D Modeling, 3D printing, and vacuum forming Services.
- Director – Embedded Silicon Technology Solutions

Mark M. Jimenez – COO & Legal Counsel

- Co-founder of Silikon Technologies, Inc.
- Founder of Habeas Ventures Inc., a legal technology comp any that provides SMEs with online legal services
- Managing Director of Celo Business, an SME BPO company that was established in 2012

Robert Minguez – Chief Technical Officer (CTO)

- Founder & CEO - Embedded Silicon Technology Solutions Corp (2020-Present)
- Founder and President - Xinxy Design Consultancy and Services Inc. (2010 – 2020)
- IC Design Manager - Numonyx Philippines Inc. (An Intel Flash Memory Spin-off) (2008-2009)
- Senior Component Design Engineer - Intel Technology Philippines Inc. (2001 – 2008)

John Audie Cabrera – Chief Analytics Officer (CAO)

- Teaching Fellow at the Electrical & Electronics Engineering Institute UP Diliman
- Senior Researcher on Energy Management Systems, wire -less sensor networks and data analytics
- Specializes in optimization and data-driven control system

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