

Agriculture IOT

Step towards betterment of Farming





Insights

- For farmers and growers, the Internet of Things has opened up extremely productive ways to cultivate soil and raise livestock with the use of cheap, easy-to-install sensors and an abundance of insightful data they offer.
- Prospering on this prolific build-up of the Internet of Things in agriculture, smart farming applications are gaining ground with the promise to deliver 24/7 visibility into :
 - soil and crop health.
 - machinery monitoring.
 - storage conditions.
 - animal behavior.
 - energy consumption level.

Solutions we can provide



**Sensor-based field
and resource
mapping**



**Remote equipment
monitoring**



**Remote crop
monitoring**



**Predictive
analytics for crops
and livestock**



**Climate monitoring
and forecasting**

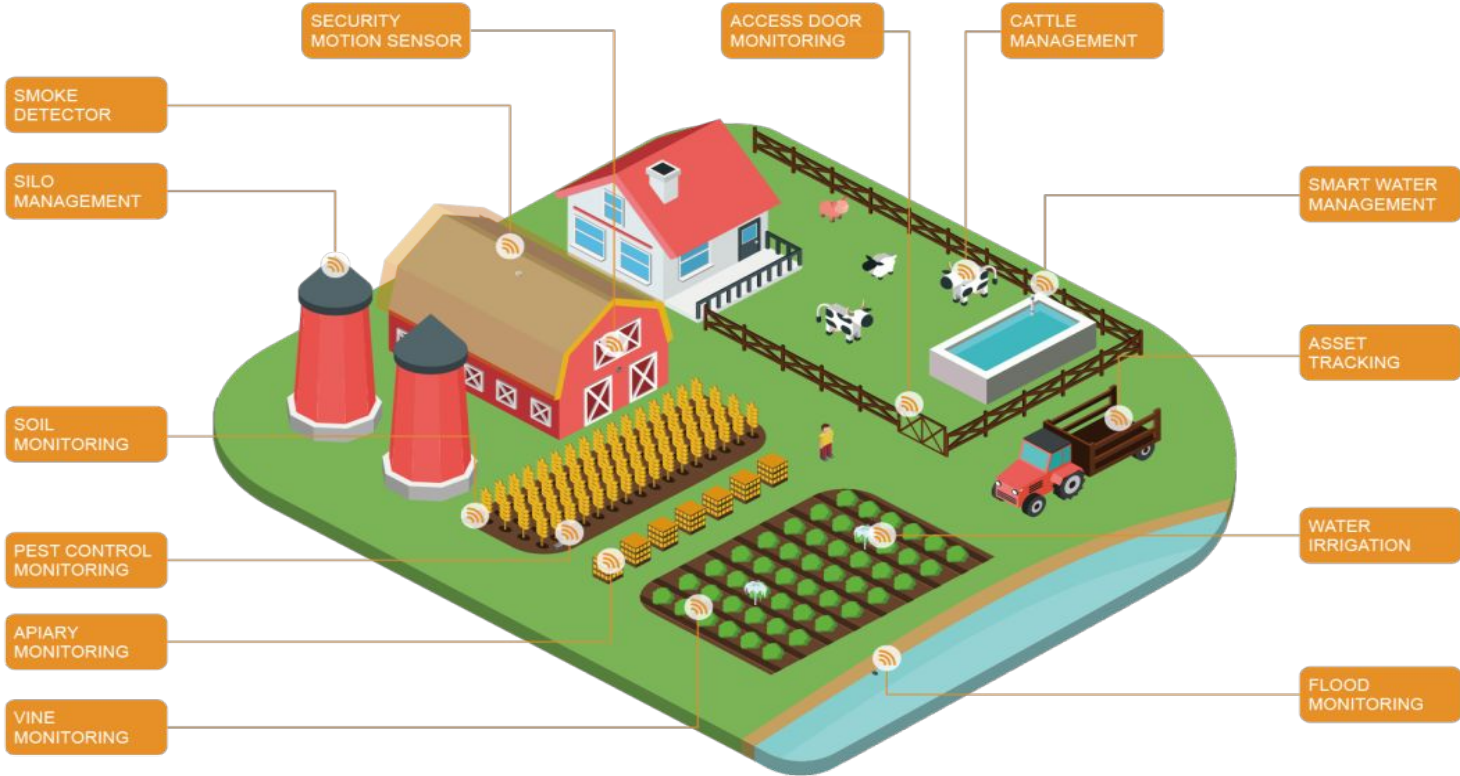


**Livestock tracking
and geofencing**

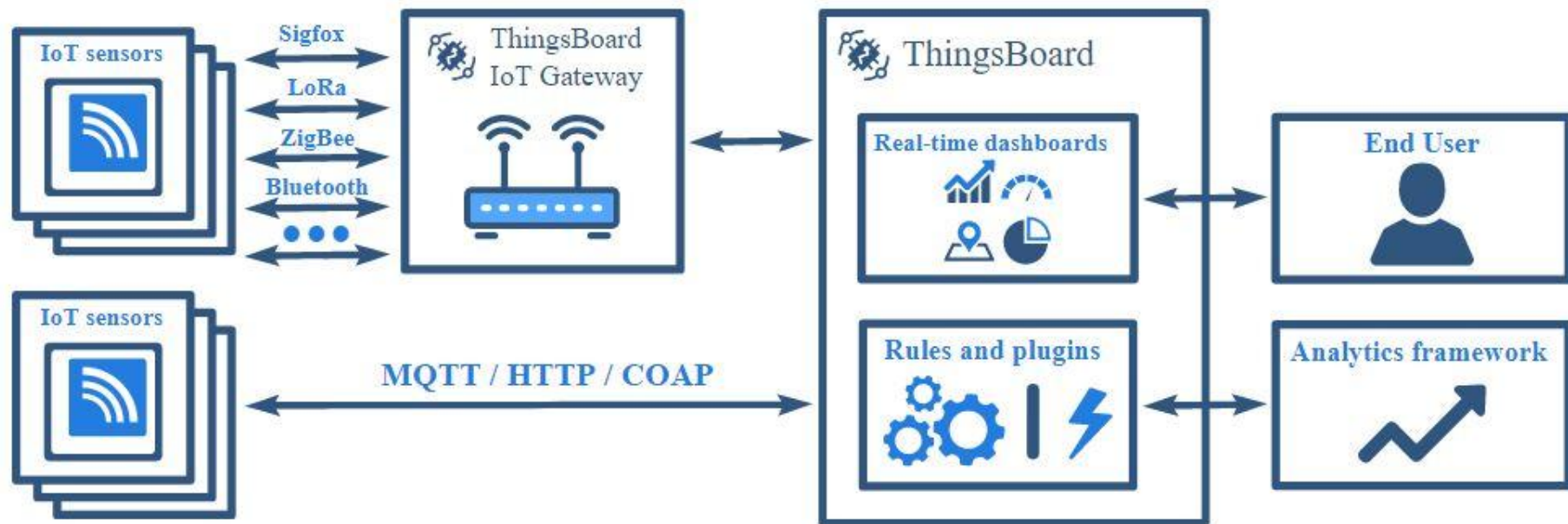


**Smart logistics
and warehousing**

Tracking sensor data



End to End Solutions





LoRaWAN - Long range wide area network

- It uses 868 MHz/ 915 MHz ISM bands which is available world wide.
- It has very wide coverage range about 5 km in urban areas and 15 km in suburban areas.
- It consumes less power and hence battery will last for longer duration.
- Single LoRa Gateway device is designed to take care of 1000s of end devices or nodes.



Facts for increasing the yield

- **Sowing at right time**
- **Irrigation at right time**
- **Monitoring and Disease control throughout**
- **Optimum Resource Management (Power fertilisers and water)**
- **Harvesting at right time**
- **Preserving and Warehouse management.**



IoT Solutions

- ❖ Automated irrigation system:
 - Weather monitoring to determine right sowing time
 - Sensors deployed in field to decide right amount of irrigation
 - Cloud Monitoring of crop life cycle to show resources used, yield produced and also best market rate suggestions.
 - Irrigation systems to utilise the water and power optimally
 - Warehouse solutions to maintain the right temperature and moisture essential for long shelf life.



MSL Sugarcane Case Study

Problems being faced:

- Power supply at odd times (mid night)
- Water wastage from farmers
- Less yield due to lack of optimum irrigation practices
- Power wastage on motors leading to more expenses for farmers





What can be done?

- Automated irrigation system which senses soil moisture and decides the irrigation timing and interval
- It includes sensors uploading real time data to gateways which send to cloud for analytics
- Mobile control for farmers to control/stop irrigation when required.
- Online analytical dashboard to measure ROI on each field by farmer.



What it leads to?

- **Approx. 20% more yield per acre**
- **25% less usage of water**
- **Expenses saved in terms of power and water bills**
- **Healthier crops due to right agricultural practices**
- **Monitoring the whole life cycle of crop for improvements and changes in future**



Thank you !