WHAT IS LoRaWAN?

LONG RANGE WIDE AREA NETWORK

"The LoRaWAN® specification is a Low Power, Wide Area (LPWA) networking protocol designed to wirelessly connect battery operated 'things' to the internet in regional, national or global networks, and targets key Internet of Things (IoT) requirements" (LoRa-Alliance.org).

BENEFITS OF LoRaWAN

Low Power Draw – Some sensors claiming 10 years of battery life on a single coin cell battery

Long Range Transmission – Up to 6 miles in rural areas with low obstruction

No Frequency Licensing Fees – LoRaWAN operates on a specific frequency (915 MHz in the U.S.) that the FCC does not charge fees to operate on

Low Cost – Full systems in the hundreds rather than thousands of dollars

High Capacity – Network servers can handle millions of messages from thousands of gateways

Connectivity – Following the PODs architecture, it can be set up in a way that does not require a cellular plan or an internet connection

HOW IT WORKS
FROM OPERATION TO ANALYTICS

Data points are collected by ***SENSORS,*** a specialized LoRaWAN sensor node sends a packet of data via radio frequency to a ***GATEWAY,*** once the packet is received the internal computer of the gateway processes the data through a ***NETWORK SERVER*** and then through an ***APPLICATION SERVER*** where the data can be viewed.

Sensors

Soil Moisture, or other LoRaWAN, sensors collecting data in your field and sending data packets

Gateway

Your Purdue OATS DataStation (PODs), within range of your sensors, collecting your data packets

Network Server

Data packets are stored and processed on your PODs microcomputer

Application Server

Viewable Soil Moisture information from your computer or mobile device

PURDUE UNIVERSITY

POD Purdue OATS DataStation

OATS