Accenture is moving the Ag industry into a new era of precision farming

Accenture, through its Industry X business, has acquired MeasureTek, a systems integration firm providing vital usable and actionable data for agriculture and environmental clients. For nearly 30 years, MeasureTek has been focused on serving its clients by providing solutions to fit each grower’s unique needs for usable and comprehensive agronomic data, displayed in real-time and captured season to season. Now as part of Accenture, we will continue to honor this tradition and bring outstanding value and service to our clients.

Our key offering, MTx, is an adaptive IoT software platform incorporating expansive field data options. The MTx software suite allows real-time access to all of a user’s data with fully integrated control for both wireless and wired data collection.

Harnessing the Power of Agricultural IoT

The MTx IoT platform transforms your agricultural information by taking measurements from multiple sensors and presenting them as dynamic, actionable data. With MTx, you will gain an array of tangible, actionable benefits such as:

- Efficient Water Usage
- Precision Chemical/Fertilizer Application
- Rapid Response Crop Protection with Phone and Text Alarming Systems
- Predictive Pest Modeling

Field sensors:

- Soil Conditions
- Pump Monitoring
- Pressure and Flow Monitoring
- Weather
- Valve/Pump Status

MTx’s robust architecture allows a flexible approach to sensor integration. Whether you have existing sensors from a previous installation or are starting from scratch, MTx’s IoT platform can accommodate your monitoring needs.

MTx’s cloud based IoT platform imports the data from the field sensors and not only displays your critical monitored measurements but converts them to actionable reports and recommendations.

1. MTx’s robust architecture allows a flexible approach to sensor integration. Whether you have existing sensors from a previous installation or are starting from scratch, MTx’s IoT platform can accommodate your monitoring needs.

2. MTx’s cloud based IoT platform imports the data from the field sensors and not only displays your critical monitored measurements but converts them to actionable reports and recommendations.

3. MTx uses a monitoring and control interface accessible from any browser capable device.

Water Balance
Scheduled Irrigation
Pest Models
Alarms
Valve Control
MONITOR CONTROL INTERFACE
CLOUD BASED I O T PLATFORM
IRRIGATION

Mobile Irrigation Management

MTx’s automated control capabilities allow you to micromanage your resources in an unprecedented manner. MTx’s control schema enables you to create flexible schedules which can be easily modified based on your specific needs.

Our alarm system with irrigation control will automatically activate your irrigation if the monitored variable reaches a certain point.

MTx offers 6 ways of scheduling or triggering irrigation:

- by Zone
- by Pump
- by Crop
- by Time
- by ETc
- by Monitored Value

A significant feature of the system is the amount of water you can save with the precision of automated irrigation control.

This allows you to combine monitoring data and automated control into a unified automation package.

Extensive, flexible scheduling options. For example:

Everyday at 3pm
Activate
- East pump
- Valve 5
- Valve 7

Coupled with our monitoring solutions, this automation enables you to apply the specific amount of nutrients and water needed without wasting or underutilizing resources.

Remote management, another benefit of our Irrigation Control options, can also provide significant savings in labor and consumables.

Irrigation can be activated based on monitored values.

MTx can provide control schedule feedback and identify problematic conditions in your irrigation system.
FROST

MTx is a revolutionary tool that allows users to set an alarm on any monitored value. The web-based, intuitive interface allows multiple alarms and alerts for configurable ranges and situations you might experience at your farm.

Customized Temperature Protection

A distributed sensor network...
creates a landscape of actionable data.

With MTx alerts you can:

- Customize Alert Conditions
e.g. Air Temp < 30°F
- Create Alarm Groups
- Choose Alert Type by Group: Calls, texts or emails in English or Spanish
- Choose from 2 Alert Delivery Methods:
  - Broadcast: sends an alert to everyone in a selected group
  - Sequential: calls sequentially from a prioritized list of recipients until someone answers

Monitoring Wind Machine and Orchard Burner fuel levels will ensure your frost mitigation equipment is operational when needed.

This is an MTx Alert!
Your air temp at Greenhouse Beta is 29.7 degrees. To acknowledge this alert, press 1.
Optimizing irrigation practices has become increasingly important as water resource availability diminishes and becomes subject to regulation. MTx’s soil condition solutions provide you with information and quick decision-making actions relating to the optimal conditions for crop growth.

**Information Driven Optimization**

MeasureTek can provide an extensive array of soil measurement and related sensors based on your specific needs including:
- Soil Moisture
- Soil Temperature
- Pressure Switches for Irrigation On Time
- Electrical Conductivity
- Soil Tension

The constants used in our calculations include:
- Soil Type
- Crop Type including Kc Values
- Soil Type Moisture Retention Upper Limits
- Maximum Allowable Depletion (MAD) Values derived from Soil and Crop Type

**MTx** analyzes soil data and compares that data against multiple variables including:
- Field Capacity
- Maximum Allowable Depletion
- Permanent Wilting Point
- Irrigation On Time
- Soil Type
- Crop Type
- Irrigation System Design
- Electrical Conductivity
- Soil Temperature

- **Battery Voltage**
  - To monitor solar/battery powered station health
- **Soil Moisture**
  - Soil moisture levels as percent of field capacity
- **Maximum Allowable Depletion**
  - Based on soil and crop type
- **Water Balance**
  - The balance point of evapotranspiration to water applied
- **Water Balance Differential**
  - Showing the positive/negative relationship water applied and crop-based ET
- **Crop Specific Evapotranspiration**
  - Water loss calculation based on environmental factors
- **Water Applied**
  - Derived from irrigation on-time pressure switch sensor and irrigation rate
- **Replenish (ETc)**
  - Time/quantity estimate of how much water it would take to replenish the soil due to environmental evapotranspiration
- **Block Specific Info**
  - Utilizing relevant data through the IoT platform to create the calculated values
- **Irrigation On Time**
  - In minutes per hour

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Traditionally, the quantity of data and information in nurseries was minimal due to prohibitive costs. MTx combats this by providing outstanding software combined with one of the most attractive price plans in the industry. Our MTx IoT software provides accurate and usable data that helps you make better decisions while also allowing you the control and management needed to improve your growing practices. Our distributed temperature sensor network allows you to easily move sensor locations seasonally and based on crop type. These sensors have a small footprint and have the ability to create a large sensor network providing you with large amounts of individual data points. Frost mitigation is an essential tool that MTx provides, mitigating the chances of crop damage due to an unexpected frost event. Additionally, MTx includes a robust alarming solution. When coupled with irrigation control, the system can automatically activate pumps and valves to protect your crops.

MeasureTek offers a comprehensive nursery and greenhouse solution that utilizes multiple sensors that monitor and report your critical environmental conditions.

The MTx alert system will notify growers of harmful environmental conditions on any range you set. The alarms can be sent via phone call, text or email.
Provides powerful current and trend measurements

Using complex algorithms, provides additional dynamic, actionable data and recommendations.

Takes the static trend weather data and combines it with other sensor data.

Provides an unprecedented level of insight that allows your organization to efficiently manage your growing operation.

MTx gives the tools needed to be prepared for diminishing water supplies and water use regulation compliance.

- Robust flow, pressure and pond depth monitoring
- SRMA compliant reports
- Complete variable frequency drive monitoring solutions

Real Time and Stored Weather Trend Data

Local weather data is critical to accurate models of crop-based evapotranspiration, water balance, water availability, plant stress, chill hours, and pest models for optimal growing conditions. Growing degree days are essential for optimal growth, understanding pest models, and comparing crops year over year.

The MTx system provides the data needed to gain a complete understanding of your environment and enables you to make quicker, more educated decisions for your growing operations.

This MTx exclusive online feature allows users to create personalized reports and graphs that provide more detailed information on system sensors. The user-friendly format makes it easy to use and customize to specific needs.

Visibility Insight Control

- Provides visibility and control
- Enables easier decision making
- Helps prepare for future water challenges

MultiGraph Sensor Visualization

- Visualizes sensor data in one place
- Allows easy monitoring of multiple sensors

Irrigation Schedule Visualization

The MTx control feature includes a visual representation of the irrigation schedule in an easy-to-read Gantt chart that can display the currently deployed schedule or the proposed draft schedule.

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