



The People-Building Robot Company

CASE STUDY

Three U.S. Companies, One Autonomous Farming Solution

The Largest Commercial Deployment of Tractor Autonomy for the American Sugar Industry

U.S. Sugar feeds American families from 255,000 acres of South Florida farmland — sugarcane fields, citrus groves, and vegetable crops that span five counties and roughly 375 square miles.

Keeping that operation cost-competitive means squeezing every hour of productivity from the land and the equipment that works it. To do that at scale, U.S. Sugar partnered with Autonomous Solutions, Inc. (ASI) and Florida John Deere distributor Everglades Equipment Group (Everglades) to deploy the largest commercial use of autonomous tractors in the American sugar industry. The result: a fleet of John Deere tractors running around the clock, guided by ASI's Mobius® platform, with one operator overseeing multiple machines from a central command station.

The Challenge

Sugarcane farming runs on tight seasonal windows. Land preparation and cultivation must be completed across hundreds of thousands of acres before planting schedules close — and the traditional model depends entirely on manual labor. That creates real constraints. Drivers face long shifts and physical fatigue, which directly affect consistency: disc depth, travel speed, and fuel consumption all drift over hours behind the wheel. Fatigue is also a safety concern. Beyond the individual risk, the labor model does not scale easily. Recruiting and retaining qualified tractor drivers is an ongoing challenge, and daylight limits what any manually operated fleet can accomplish in a day. U.S. Sugar needed a solution capable of continuous, consistent operation within its existing tractor fleet — one that could improve safety and productivity without requiring proportional headcount growth.



U.S. Sugar

A South Florida-based farming and processing company that sustainably grows sugarcane, citrus, sweet corn and other winter and spring vegetables that feed American families.

The Partners

Everglades Equipment Group - Founded in 1963, family-owned and operated, it is a full-service John Deere dealership with 19 locations across Central and South Florida.

Autonomous Solutions, Inc. (ASI) – The worldwide leader of industrial vehicle automation and developer of Mobius® for industrial autonomous fleet orchestration that is brand agnostic and multi-vehicle for construction, logistics, agriculture, landscaping, and more.

Solution Components

» ASI Mobius – OEM-agnostic industrial autonomous fleet orchestration system

» 4 John Deere 8R Series



» 1 John Deere 9R Series





U.S. Sugar has always believed that combining innovation with hard work is the best way to keep feeding American families. By leveraging ASI's technology to increase efficiency and maximize productivity, we are also increasing reliability in our domestic food supply while creating new, higher-skilled opportunities for our employees.

— Ken McDuffie, President & CEO of U.S. Sugar



The Solution

After conducting an 18-month pilot that included heavy tillage operations during the fall prep season, U.S. Sugar, ASI, and Everglades moved from proof of concept to full commercial deployment. The solution centers on ASI's Mobius industrial autonomous fleet fleet orchestration retrofitted onto existing John Deere tractors — four 8R Series and one 9R Series — operating across U.S. Sugar's sugarcane fields in South Florida.

ASI integrated its autonomous kit directly with each tractor's existing drive-by-wire system, transforming familiar, trusted platforms into fully autonomous workhorses without requiring new machinery. Everglades, a family-owned John Deere dealership with 19 locations across Central and South Florida and deep expertise in large-scale farming machinery, sourced and supported the equipment. Their involvement ensured the right tractors reached the right fields with the right service infrastructure behind them.

In the field, Mobius connects each tractor to a central command station where a single operator monitors and manages multiple vehicles simultaneously. The system draws on U.S. Sugar's existing precision agriculture infrastructure of GPS towers, high-quality field mapping, and data networks to guide vehicles with consistent accuracy across every pass. Disc raise-and-lower sequences, travel speed, and fuel consumption are all system-controlled, eliminating the variability that accompanies manual operation.

The fleet runs 24/7, limited by the task at hand rather than by operator fatigue or shift constraints. Real-time data streams from onboard cameras and sensors feed back to the command station, giving farm managers a level of operational visibility that had never existed for tillage and cultivation work. Where harvest operations had long produced detailed performance data, ground-level farming activities were largely a black box. Mobius changes that.

The deployment is currently focused on sugarcane land preparation and cultivation, with plans to extend the technology to sweet corn and green bean operations. Over the next decade, autonomous tractors will be rolled out across all 255,000 acres. To support that transition, U.S. Sugar is actively retraining tractor drivers for higher-skilled, technology-focused roles, treating autonomy as workforce evolution rather than workforce reduction.

Results

- » Nation's largest commercial autonomous tractor deployment in the American sugar industry
- » 5-tractor fleet (4 John Deere 8R Series + 1 John Deere 9R Series) operating 24/7 across South Florida sugarcane fields
- » Single operator manages multiple autonomous vehicles simultaneously from a central command station
- » Consistent disc depth, travel speed, and fuel consumption — performance no longer variable with operator fatigue
- » Real-time field data captured on every farming pass, enabling better agronomic and operational decisions
- » Planned full-fleet expansion across all 255,000 acres over the next decade
- » Increased operating hours of existing tractors, with early results showing a single operator increasing output several times over

The shift to autonomous tractor operations changed more than how the machines move. U.S. Sugar gained continuous operational hours, tighter field consistency, and a live data layer over farming activities that had previously gone unmeasured. Everglades Equipment Group's local service network and ASI's retrofit-first approach meant the company built on its existing fleet rather than starting over. What began as a pilot is now a scalable platform — built on American technology, American equipment, and an American food supply chain.