



Monarch[®] Launches MonarchOne[™] Platform, Accelerating Autonomy and AI for the World's Essential Industries

Proven across operations in unstructured, rugged environments on Monarch's own commercial software-defined vehicles (SDV), the MonarchOne platform empowers OEMs to reduce complexity and cost, increase speed to market, and deliver AI-powered scalable autonomy.

Livermore, California — Monarch, a global leader in intelligent off-highway systems and maker of the world's first 100% electric, driver-optional, smart tractor, officially announces [MonarchOne](#), its commercially-deployed, end-to-end AI platform engineered to drive the next wave of automation and software-defined vehicles for OEMs in industries that underpin the world's infrastructure and food supply.

Putting Advanced Autonomy Where It's Needed Most

Urban mobility has seen a surge in autonomous innovations globally, but off-highway sectors, with their critical roles in agriculture, construction, mining, solar, and beyond, have lagged. As these industries face intensifying labor shortages, cost pressures, and rising safety demands, the need to digitize and automate is now urgent and undeniable. Monarch is at the forefront of this movement, partnering with OEMs to co-develop, deploy and scale the next generation of smart and automated machines in gritty, unstructured environments where progress cannot wait.

MonarchOne: Purpose-Built for Off-Highway Transformation

Designed to help OEMs accelerate development, reduce complexity, and launch smarter machines, MonarchOne integrates embedded vehicle software, full-stack autonomy, energy management and real-time data intelligence into a single, modular system for commercial deployment at a fraction of the cost.

The platform enables scalable autonomy from advanced driver-assistance system (ADAS) to full stack autonomy solutions built to integrate easily into an OEM's business strategy and brand-specific needs.

Highlights include:

- Extensive real-world, off-highway vehicle data powering AI models; a deep data advantage for smarter machine operations.
- Vision-based autonomy, ADAS, operations management, and digital support applications customizable to OEM brands.
- Embedded on-vehicle OS for real-time control, autonomy, and enhanced safety.
- Over-the-Air (OTA) software updates for continual machine improvement.
- Reference hardware kit and agnostic building blocks accelerates OEM integration.
- Mobile and web tools for visibility, analytics, and control for OEMs and their customers.
- Partner-based business model expedites bringing intelligent SDVs to market and building in-house expertise.

“MonarchOne is about democratizing AI for the hard-working industries that keep the world functioning; those known for dull, dirty, and dangerous tasks,” comments Praveen Penmetsa, CEO of Monarch. “These industries are facing similar challenges on a global scale, and access to AI and autonomy offer solutions. For the first time, OEMs can accelerate their development and unlock scalable autonomy through applications like Autodrive and Row Follow, intelligence, and energy efficiency across every class of off-highway vehicles and equipment.”

Manufacturers can adopt MonarchOne as a full-stack scalable autonomy solution or select specific capabilities to align with their product roadmaps. The platform leverages advanced AI and machine learning to analyze operational, machine, and environmental data in real time, optimizing performance and driving ongoing innovation to enable digital monetization.

Proven Across Continents, Industries, and Conditions

MonarchOne is the same technology that powers [Monarch Tractor's](#) 100% electric, driver-optional, smart tractor. As a result, MonarchOne has established an intelligent data lake built over seven years and 100,000+ commercial hours operating in messy, unstructured, and dynamic (MUD) environments.

“Monarch has amassed vast device, environment, and operations data in work environments, and it marks our evolution from smart tractors to the software platform powering the future of off-highway automation through physical AI,” Penmetsa explains.

From Tractor to Platform to the Future

Enter a new chapter of ag robotics and automation with MonarchOne at USA FIRA 2025. Monarch's unique journey from tractor to platform for OEMs is leading the way to automation, digitization and electrification across machines and use cases that can make a significant

difference for safety, efficiency, and profitability. Discover the story behind what makes MonarchOne so different from other automation technologies. Monarch CEO, Praveen Penmetsa, will be at FIRA to meet with media for interviews. Reach out to Pearl Driver at media@monarchone.ai to schedule a personal interview with Penmetsa.

Penmetsa will also be leading a special presentation at FIRA 2025; “From Tractor to Platform: Unlocking the Future of Off-Highway Autonomy” on Wednesday, Oct. 22, from 2:50-3:10 p.m. at the Exhibition Zone 1, Stage 2.

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About Monarch

Monarch is a technology leader in intelligent off-highway systems, partnering with OEMs to bring next-generation software-defined vehicles to market faster. Founded in 2018, Monarch first launched the award-winning Monarch Tractor, now operating in real-world environments across four continents. Today, Monarch delivers **MonarchOne^(TM)**, a proven, AI-powered platform that integrates autonomy, assisted driving, energy management, operations management, and data intelligence into a scalable solution for OEMs. Combining embedded software, cloud intelligence, and modular components, MonarchOne helps manufacturers accelerate development, reduce complexity, and deliver smarter, connected off-highway vehicles. Monarch powers innovation across agriculture, construction, utility-scale solar operations, and more. Visit MonarchOne.ai for more information.

Monarch Media Contact:

Pearl Driver | media@monarchone.ai