Farm Automation Cloud Platform

Platform Introduction and Commercial Terms

No Upfront Cost | Revenue-Sharing Model

Indian Market

Quasortech

www.quasortech.com

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Farm Automation Cloud Platform

Our platform is a purpose-built, cloud-native farm automation solution that serves the full spectrum of agriculture operations, from early-stage pilot farms to large-scale corporate agribusinesses.

As a software-only cloud platform, it enables organizations to efficiently manage farms, services, and operational data while driving rapid innovation in the agri-tech space.

Organizations can either integrate their own IoT devices or leverage Quasortech's partner, Marchmind Technologies, for complete, ready-to-use hardware and firmware solutions, enabling seamless end-to-end operational automation.

Core Platform capabilities:

- Electrical and Irrigation Automation Management.
- IoT Device Integration with standard API and robust Security Framework.
- Real-Time Data and Visualization.
- Flexible Farm and Account Management.
- Configurable Product and Service Flexibility.
- Standard and Extensible Cloud Technology Stack.
- Global Ready and Enterprise Grade.
- Cloud-native platform for modular, intelligent farm automation.

This cloud-native farm automation platform accelerates operations for farmers, startups, and agribusinesses, eliminating the need to develop a solution from scratch.

With a modular architecture, enterprise-grade security, and real-time intelligence, it seamlessly integrates IoT devices, whether custom modules from startups and enterprises or Marchmind Technologies' end-to-end hardware solutions, for complete operational automation.

General Platform Capabilities

Purpose-built Farm Automation Platform:

- Architected to support a wide spectrum of real-world agri-tech farm automation scenarios, from smallholder farms to enterprise-scale corporate farming operations.
- Designed not as a point solution, but as a platform that is extensible, modular, and future ready.

Modern, Responsive User Experience:

- Mobile responsive web interface ensuring seamless usability across desktops, tablets, and mobile devices.
- Frontend architecture designed for real-time interaction and operational monitoring.

Native Multi-Lingual Support:

- Built-in support for multiple languages to enable adoption across regions and geographies.
- Designed to support localization requirements for global agribusiness deployments.

Comprehensive Help & Enablement System:

- Contextual, in-app help embedded directly within the web experience.
- Detailed, intuitive, self-service video guides for rapid onboarding.
- Fully configurable help framework allowing administrators to add, update, or customize help content as the platform evolves.

Scalable Across Farm Sizes & Business Models:

- Equally suited for: Early-stage startups piloting automation, Mid-size automation vendors, and Large multi-farm corporate agribusinesses.
- Designed to scale horizontally in terms of users, farms, devices, and data volume.

General Platform Capabilities cont...

Integrated IoT Device Commerce Enablement:

- Built-in capability for users to discover and order IoT devices from the platform.
- Supports both physical device sales and digital service provisioning.

Flexible Product & Subscription Model:

- Supports both: Physical products (IoT devices), and Subscription based digital services with multiple service tiers.
- Built-in capability to enforce feature restrictions, configurations, and entitlements based on subscribed service tiers.

Startup-Friendly Administration, Enterprise-Ready Integration:

- Lightweight yet powerful administration system ideal for early-stage startups.
- Architecture designed for easy integration with external E-Commerce platforms or ERP systems with reasonable customization effort.

Real-Time Telemetry-Driven UI Updates:

- Frontend supports instant UI refresh when new telemetry data becomes available at the backend.
- Enables near real-time operational visibility without manual refresh cycles.

Mobile Application Readiness:

- Frontend architecture designed to be easily packaged as a mobile application.
- Capability to build mobile apps on top of existing backend API infrastructure.
- Mobile app build and release pipelines are planned and structurally supported, though not yet activated.

General Platform Capabilities cont...

Modern Cloud-Native Technology Stack:

- Frontend: Angular, Backend: .NET Core, Data Layer: Azure Cosmos DB, Cloud Platform: Microsoft Azure (native-first design)

Security-First Architecture:

- Robust JWT-based authentication and authorization model.
- Architecture designed to support pluggable external Identity Providers, enabling seamless adoption of OAuth 2.0 Authorization Code Flow with OpenID Connect.
- Secure, role-based access control enforced consistently across: End-user applications, Administrative systems and IoT devices and machine identities.

Enterprise Grade Observability & Logging:

- Extensive application logging framework built into the .NET Core backend.
- Enables deep diagnostics, operational monitoring, and faster issue resolution in production environments.

CI/CD & DevOps Readiness:

- Complete CI/CD framework implemented using Azure DevOps.
- Pipelines can be easily ported to other Git and CI/CD platforms such as GitHub.
- Compatible with Quasortech's Ka Code Automation Framework, while remaining fully functional without it.

Account and Farms Structure and Capabilities

Flexible Account Creation Model:

- Accounts can be created directly by farmers or provisioned by administrators through the backend admin system.
- Supports both self-service customer onboarding and centrally managed enterprise onboarding models.

Hierarchical Farm Organization:

- Farms are organized under Accounts.
- Farms can be grouped into Farm Groups, each containing one or more farms.
- Enables logical grouping aligned with geography, crop type, ownership, or operational structure.

Dynamic Device Allocation:

- IoT devices can be moved seamlessly between farms and farm groups.
- Supports evolving farm layouts and operational changes with effortless device management.

Enterprise-Grade Role-Based Access Control:

- Fine-grained, role-based authorization enforced across: Accounts, Farm Groups, and Individual Farms.
- Well suited for both small scale and corporate farming operations with layered operational roles.

Account and Farms Structure and Capabilities cont...

Device Ownership & Theft Prevention:

- Devices are strictly linked to owning accounts.
- Devices cannot be used across accounts without explicit authorization from the current owner.
- Protects against unauthorized reuse or theft of physical assets.

Geospatial Farm Visualization:

- Map based geo coordination for farm boundaries.
- Visual representation of device locations and usage across farms.
- Particularly valuable for medium and large corporate farming operations with geographically distributed assets.

Payment System Agnostic by Design:

- No native payment processing included by default.
- Intentional architectural choice to allow startups and enterprises to integrate: Custom e-commerce systems, Third-party payment gateways, or Subscription billing platforms.
- Integration friendly APIs and system boundaries enable rapid external system onboarding.

Electrical Device Management Capabilities

Comprehensive Power Supply Visibility:

- Real time monitoring of power supply from utilities or electricity boards.
- Supports multiple power sources.
- Support for both single phase and three phase power systems.
- Visibility includes: Voltage per phase, Aggregate current consumption, Phase level power disruption events.

Virtual Power Switch Architecture:

- One or more independently controllable virtual power switches.
- Real-time current consumption monitoring at each switch level.

Configurable Safety & Protection Controls:

- High and low voltage/current thresholds configurable per switch.
- Automatic cut-off and trip mechanisms to protect equipment and infrastructure.

Operational State Awareness:

- Clear visual indicators for current switch state, trip events, and cut-offs.
- Enables faster diagnosis and response to electrical anomalies.

Irrigation System Management Capabilities

Designed for Any Irrigation Complexity:

- ❖ Supports simple irrigation setups for small farms as well as highly complex systems for large-scale corporate farming.
- ❖ Scales without architectural limits as irrigation infrastructure grows.

Structured Irrigation Modeling:

- ❖ Irrigation systems modeled using water source sets, individual water sources, irrigation zones, and distribution points.
- ❖ No hard limits on the number of Source sets, Sources per set, Zones per source set, Distribution points per zone.

Granular Valve Control:

- ❖ Independent control of valves at Source, Zone and Distribution point levels.

Sensor Driven Intelligence:

- ❖ Optional sensor integration for Pressure readings before or after valves, and Flow meter readings across valves.
- ❖ Sensor points are optional and configurable, allowing phased instrumentation.

Advanced Visualization & Intelligence (In Progress):

- ❖ Rich frontend module under development for visualizing entire irrigation topology.
- ❖ Intelligent logic to detect and visually alert on dead irrigation zones, flow anomalies, and pressure inconsistencies.

Administration System Capabilities

Centralized, Modular Administration Platform:

- Designed to support both startup-scale operations and enterprise growth.

Product Management:

- Management of Physical IoT products, and Subscription-based service offerings.
- Supports multiple service tiers and configurations.

Lightweight Device Manufacturing Management:

- Basic manufacturing lifecycle tracking for IoT devices.
- Suitable for in-house or partner-based device production workflows.

Order Management:

- Unified order management for Physical device orders, and Subscription service orders.

Account Management:

- Full lifecycle management of customer accounts.
- Designed for seamless integration with external CRM, ERP, or commerce systems.

Quasortech's Proposal

Quasortech provides access to this **enterprise-grade code base with no upfront cost**, allowing you to share only a small percentage of revenue once your business starts generating income.

This approach lets you **focus on building your IoT products and establishing your business**, including manufacturing, marketing, sales, and related operations, while we have already handled the heavy lifting of creating a scalable, enterprise-ready cloud platform.

As your business grows, you can **extend and customize this code base** to meet your evolving needs. Meanwhile, Quasortech will continue to expand the platform into a **comprehensive precision agriculture ecosystem**, which you can leverage to further grow and differentiate your business.

Quasortech's offering to Agri-Tech Startups

Unlimited Free Trial with Revenue Share

- Quasortech makes its current Farm Automation Cloud Solution to new agri-tech startups on an *'as-is'* basis *without any upfront cost*.
- Startups and interested parties can get a copy of this solution, modify the code, extend its features, integrate with their systems, and launch it in the market.
- Once the startup begins generating revenue, it shall pay three and half percent (3.5%) of its revenue to Quasortech as a fee, payable on a quarterly basis.
- Startups may discontinue the fee by purchasing the source code from Quasortech for INR 2,500,000 or 75% of the combined revenue from the last 24 months, whichever is higher.
- Any new capabilities or products developed by Quasortech shall be made available to the startups on mutually agreed terms.

Support options for startups

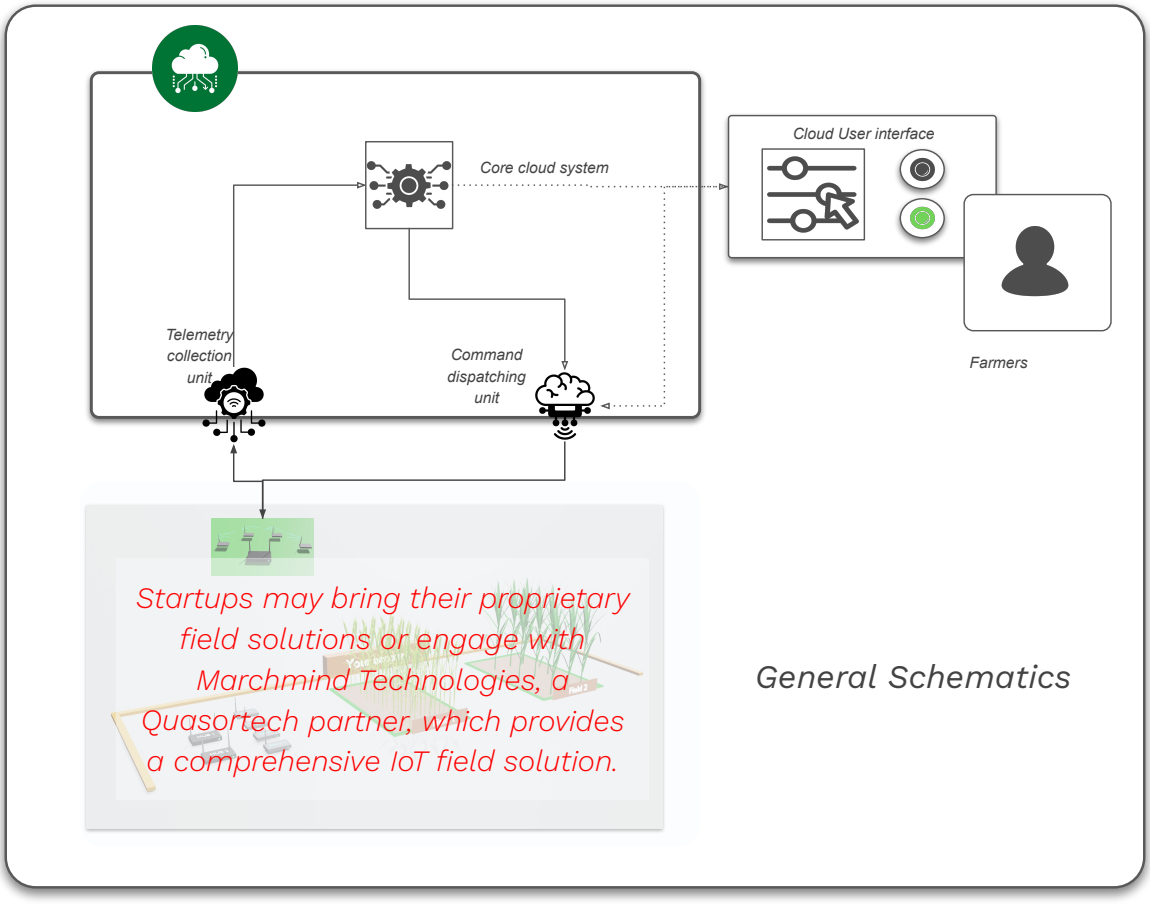
- Startups without the internal capability to host or modify the cloud solution can leverage Quasortech's network of technical partners.
- Startups may also directly engage with the technical partners to (i) deploy the solution, (ii) train their workforce, (iii) customize the platform to meet their requirements, (iv) provide ongoing maintenance and support, and (v) integrate the solution with other systems, including identity platforms, e-commerce systems, payment services and similar services.
- Certain partners may also offer a software-as-a-service (SaaS) version of the product in the future.

A Sneak Peek at Our Cloud Platform

We are sharing couple of videos, taken from our customer-facing user guide, to give you a preview of our platform.

A comprehensive set of capabilities is documented in multiple videos and materials, which we can share if you are serious about exploring the platform further.

A Sneak Peek at Our Cloud Platform

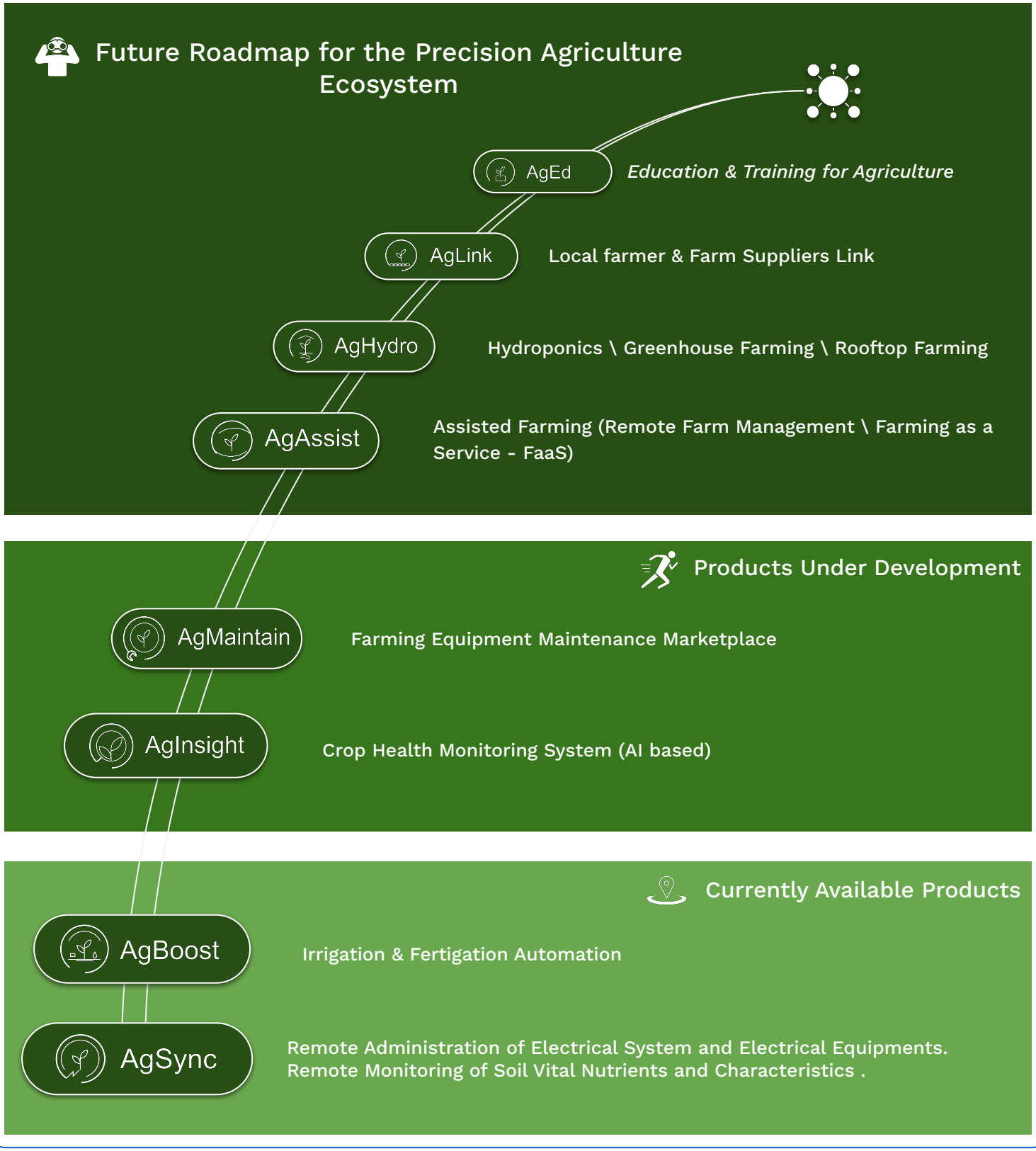


General Schematics

Power Management video guide
(3.5 minutes long 2K video)

Irrigation system management Video guide
(5.5 minutes long 2K video)

Our Roadmap Towards Precision Agriculture Ecosystem



Quasortech

Driven by the belief that every great idea deserves a clear path to execution

Thank you!