

MOONSHOT LAGRANGE

Alarm governance, from the machine to the cloud.



Moonshot Lagrange evaluates and governs industrial alarms on the industrial PC in every cell, and carries the governed record across your DMZ to plant and enterprise systems. Software only, on hardware you own.

Deployment

Delivery	Software only, on customer-supplied hardware
Edge runtime	Docker (OCI containers) on Linux, x86-64 or ARM64
Minimum edge hardware	Quad-core processor, 2 GB RAM, 64 to 100 GB industrial flash
Plant tier	On-premises server
Cloud tier	AWS
Disconnected operation	Each cell runs fully offline, with local history and its own operator console

Connectivity

PLC protocols	Modbus TCP, OPC-UA, Rockwell CIP (EtherNet/IP), Siemens S7
Unified Namespace	MQTT and Sparkplug B on an ISA-95 topic hierarchy
Existing platforms	Subscribes to Kepware or Ignition over MQTT or OPC-UA
Control systems	Built-in OPC-UA server exposes alarms and accepts acknowledgments from your DCS or SCADA

Alarm governance

State model	Eight ANSI/ISA-18.2 core states plus four governance extensions
Shelving	Time-bounded (4-hour default, up to an 8-hour shift), capped plant-wide, re-annunciates on expiry
Latched trips	Held after the condition clears until a Supervisor or Safety Officer resets with a comment
Out of service	Requires MOC role, ticket number and rationale; weekly report to the plant manager
Correlation	Cascade alarms within 5 seconds grouped under one parent incident
Escalation	Unacknowledged alarms routed to a supervisor after a set time
Audit trail	Every transition recorded with actor, role and comment

MOONSHOT LAGRANGE SPECIFICATIONS, CONTINUED

Integrations

IBM Maximo	Bidirectional work orders over OSLC, queued in a local outbox through outages
APIs	REST and WebSocket API for alarm state, actions and live events; signed webhooks
Analytics	Read-only analytics gateway for approved AI agents (Model Context Protocol)

Industrial AI

Edge AI	Anomaly scoring on the industrial PC, under 5 ms inference, runs offline
Industrial AI copilot	Small language model on a plant server with no internet connection; voice or text; answers from your SOPs and cites its source
Role	Advisory only: people acknowledge, reset and sign off

Security

Network	Outbound-only TLS 1.3 with mutual certificates; zero inbound firewall ports into the plant
Industrial DMZ	The only Moonshot component in the DMZ is a thin outbound-only relay
Cell isolation	Dual network interfaces with IP forwarding disabled between machine and plant networks
PLC access	Read-only by default; setpoint and actuation writes gated by role, limits and physical key switch
Identity	OpenID Connect sign-on; each alarm action checked against role and plant scope
Provisioning	Zero-touch enrollment; certificates rotate automatically

Performance on reference hardware

Trip evaluation	Under 5 ms per event
Throughput	1,500 to 3,500 events per second per edge node, at under 50% CPU
Tag capacity	800 to 1,500 active tags per edge node, across 10 to 15 cells
Offline queue	2,000,000 alarm and work-order transactions
Restart recovery	Alarm state restored locally in under 50 ms

Reference hardware: quad-core ARM64, 2 GB RAM, 100 GB flash. Designed to adhere to ANSI/ISA-18.2 and IEC 62682; network architecture aligned to IEC 62443.

Go deeper, or see it live.

Request the technical brief for architecture, sizing and licensing detail, or book a 30-minute showroom demo.

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