

EON Delta Speed

Real-Time, Schema-Constrained Decisions for Life-Critical Field Work

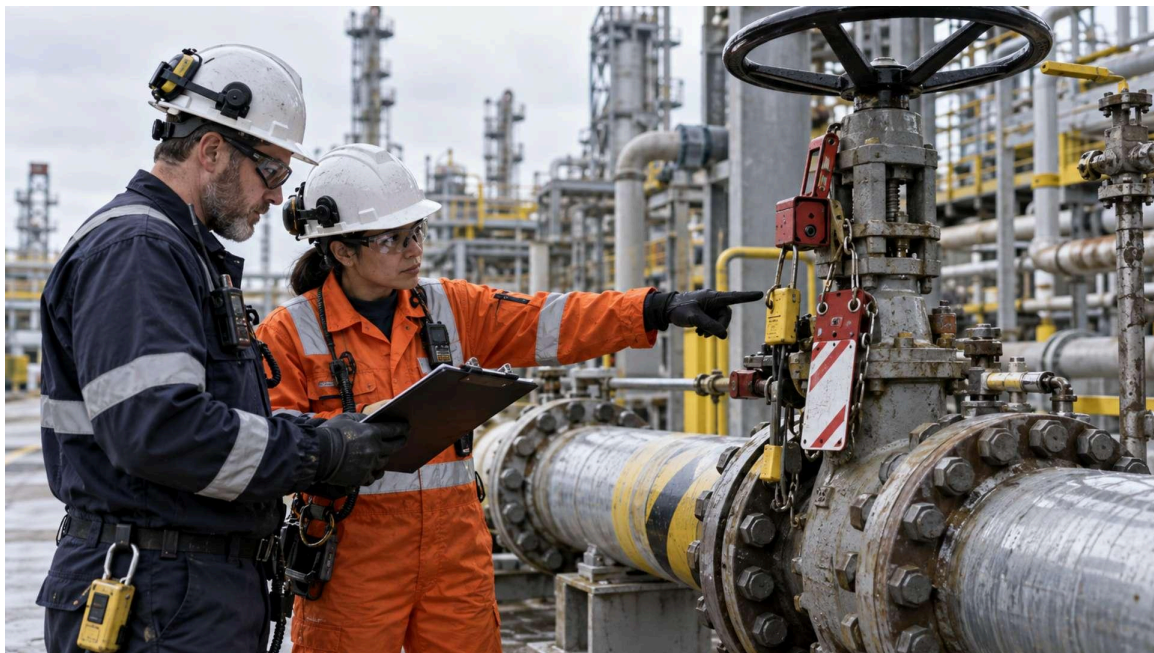


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Section 1: Executive Summary

Industrial field work still fails at the moment that matters most: a worker sees something unexpected, and someone must decide—in seconds—whether they may proceed, must stop, or must escalate. That gate is where lives, assets, and licenses are won or lost. Generative chat models are the wrong tool for it. They write freely, they can invent options that do not exist, and they optimize for fluent answers rather than calibrated go / no-go decisions.

EON Delta Speed is EON AI Ventures' decision station for that gate. It sits inside the Intelligence Flywheel alongside Field IQ (Deploy), Assess IQ (verify and investigate), and Work Intelligence. Delta does not replace Field IQ's guidance or vision verification. It answers a narrower, harder question: Given what the worker saw, the governed procedure, and the enterprise's captured tacit knowledge—Allow, Deny, or Escalate?

Under the hood, Delta is implemented on a Jev-class decision model (TypeSafe Jev / RLCD architecture): shared state in, typed questions out—Boolean, Choice, and Score—with probabilities and confidence, typically in tens to a few hundred milliseconds. Outputs are schema-constrained: the model cannot invent a fourth permit type or a fake “approved” label. “Zero hallucination” means zero out-of-schema answers, not perfect judgment. Wrong answers inside the schema remain possible; that is why Delta ships with Field IQ's doctrine: ask when unsure, never bluff on a safety gate, everything on the record.

Section 2: The Problem

2.1 The decision gap after knowledge capture

EON's Intelligence Flywheel already attacks the retirement crisis: Genesis captures expert judgment; Field IQ delivers procedures on glasses, phones, tablets, and Boards; Assess IQ verifies competency; Compound IQ sharpens the brain every shift. That loop closes the gap for known procedures. It does not yet close the gap for novel field observations—the moment a technician sees a leak, a tag mismatch, or a condition that is “almost” the procedure but not quite.

2.2 Why generative AI fails the gate

- Produce open-ended text that must be re-parsed into actions

- Can invent categories, permit numbers, or rationales that never existed
- Optimize for human preference (RLHF), not calibrated decision probabilities
- Are too slow and too expensive to run on every micro-observation in a live working loop

Claude and ChatGPT remain excellent for explaining, authoring, coaching, and vision-assisted step checks. They are the wrong primary engine for high-volume Allow / Deny / Escalate gates.

2.3 The Work Intelligence loop

When a worker sees something and the system must investigate whether to allow the next action, that investigation is only as fast and trustworthy as the decision layer on top of Field IQ and Work Intelligence evidence.

Section 3: The Solution — EON Delta

3.1 Product definition

EON Delta Speed evaluates shared state (active procedure step and safety-gate flags; worker observation; Work Intelligence / Assess IQ context; OSHA / ATEX / API / site permit frames) and returns typed decisions: Allow / Deny / Escalate, safety-gate Boolean, severity Score, and confidence for product thresholds. Code—not the model—owns thresholds and human escalation.

3.2 Jev-class engine (RLCD)

- Input: shared state + many questions in one call (speculative fan-out)
- Output: constrained Boolean / Choice / Score with probability distributions
- Training orientation: Reinforcement Learning for Calibrated Decisions (RLCD)
- Latency / cost: in-loop decisions (often ~100 ms class)
- API: TypeSafe System One (POST /v1/systemone), SDKs, or gateway routes via Conductor
- Vision and generative authoring stay on Claude-/GPT-class models

3.3 Field IQ / Assess IQ loop

- Observe — Field IQ Live / Anywhere / Board; Assess IQ investigation
- Compose state — procedure, safety flags, Work Intelligence, observation metadata
- Decide (Delta) — parallel Allow / Deny / Escalate + severity + gate checks

- Act in code — high confidence allow; medium confirm; low or gate → hard stop
- Record — Trust Ledger; Compound IQ feeds the next shift

3.4 Trust and safety

- It checks itself first — Verdict / adversarial agents before publish
- It asks when unsure — confidence below threshold forces escalate
- Everything is on the record — immutable under policy, regulatory frame mapped

Section 4: Oil & Gas Use Cases — Where Delta Is Much Better

Use Case 1 — LOTO anomaly mid-job

Situation: During lockout/tagout, the technician finds an energy source or tag that does not match the isolation list. Chat-model failure: a fluent workaround that invents steps. Delta: Choice allow / deny / escalate plus Boolean “isolation incomplete?” — inventing a new isolation method is structurally impossible. Keep Claude for photo verify of locks/tags.

Use Case 2 — Permit-to-work at the gate

Situation: Hot work, confined space, or breaking containment. Chat-model failure: slow multi-turn advice; may invent permit types. Delta: parallel Booleans/Choices on gas, weather, fire watch, permit validity → composite Allow / Hold / Escalate in code. HSE owns thresholds.

Use Case 3 — Control-room alarm flood

Situation: Dozens to hundreds of related alarms in a minute. Chat-model failure: too slow/expensive per alarm; free text hard to feed into alarm systems. Delta: fan-out Choice + Severity on each cluster; code ranks and suppresses noise.

Use Case 4 — Contractor “see something, say something”

Situation: Night-shift contractor smells hydrocarbon, sees a missing bolt, or finds the wrong line marked. Chat-model failure: conversational guidance misread as authorization. Delta: Assess IQ packs observation + Work Intelligence; returns Proceed-under-watch / Shut-in / Call supervisor. Low confidence always escalates.

Use case	Primary Delta output	Keep Claude/GPT for
LOTO anomaly	Allow / Deny / Escalate	Photo verify; procedure explanation

Permit-to-work	Composite clear / hold	Permit narrative; training content
Alarm flood	Route + severity	Post-incident report writing
See something	Proceed / Shut-in / Call	Captioning; toolbox talk drafts

Section 5: Key Capabilities

- Real-time Allow / Deny / Escalate gates inside the working loop
- Schema-constrained outputs (no invented options)
- Calibrated confidence for automation policy
- Native fit to Field IQ + Assess IQ + Work Intelligence
- Oil-and-gas rubric packs for LOTO, PTW, alarms, and observation gates
- Shadow mode → assisted mode → selective auto-allow

Section 6: Benefits and Outcomes

- Faster safe decisions — millisecond-class typed gates vs radio-and-chat latency
- Fewer confidently wrong allows — schema constraint + escalate-on-low-confidence
- Supervisor leverage — humans only on medium/low confidence and safety gates
- Knowledge that compounds — Assess IQ / Field IQ evidence becomes Delta state
- Audit-ready operations — every gate logged with procedure lineage

Section 7: Conclusion

Generic generative AI is good enough for drafts and bad enough for valves. EON Delta Speed makes the Intelligence Flywheel decisive at incident speed: Field IQ and Assess IQ supply eyes and expertise; a Jev-class decision model supplies schema-safe, confidence-aware gates; Conductor and Verdict keep the system honest. In oil and gas—LOTO anomalies, permit gates, alarm floods, and contractor observations—that split is the difference between a helpful paragraph and a trustworthy traffic light.

Learn more: eonenterprise.com/field-iq