**Story — Gate Enforcement & Controlled Release: From Risk Signal to Business Action**

**Intent (one line)**

Stop risky orders, deliveries, and invoices **before they escape**, but do it **intelligently** — blocking only what’s necessary, explaining why, and allowing compliance to release with a single auditable action.

**Business Outcome**

* **No risky transaction slips through** after a BLOCK/REVIEW decision.
* Operations teams see **clear, contextual hold reasons** (not cryptic codes).
* Compliance can **release quickly with justification** and full audit trail.
* Revenue disruption is minimized using **grace windows** and **license-aware logic**.

**Actors**

* **Business System** (ERP/OMS/WMS/Billing) – calls gate before key actions.
* **Gatekeeper Service** – evaluates gate decision in <400ms from cache.
* **Compliance Console** – UI for reviewing, overriding, and releasing holds.
* **License Vault** – validates license availability & counters.
* **Audit Vault** – stores every gate decision and release justification.

**Preconditions**

* Partner screening and (if enabled) license determination are running.
* Active snapshot & rule versions are loaded in cache.
* Gatekeeper API /gatecheck is available to connected systems.
* Each tenant’s **policy mode** is set: HARD\_BLOCK, SOFT\_BLOCK, or MONITOR.

**End-to-End Flow (happy path)**

**1) Gate Check Call**

* Business system calls /gatecheck with:
  + object\_type (order, delivery, invoice, PO, etc.)
  + object\_id
  + context (partner\_id, material\_id, ship\_to, qty, value…)

**Innovation 1 — Context-Aware Gate:** Gatekeeper can use not just partner status but corridor, ECCN, counters, and end-use context to decide.

**2) Gatekeeper Evaluation**

* Fetch decision context from cache:
  + Partner decision (ALLOW/REVIEW/BLOCK)
  + Material classification (HS/ECCN, dual-use flag)
  + License eligibility/counter state (if license module enabled)
* Combine into a single gate result:
  + **ALLOW** – proceed
  + **HOLD** – soft block (save as draft but not release/ship)
  + **DENY** – hard block (reject transaction)

**3) Response Payload**

Gatekeeper returns:

{

"enforcement": "HOLD",

"reasons": [

{"code": "PARTY\_BLOCK", "detail": "Partner matched OFAC SDN"},

{"code": "LICENSE\_MISSING", "detail": "No valid license for ECCN 3A001"}

],

"fix\_suggestions": [

"Submit license request for ECCN 3A001 to clear HOLD",

"Provide passport copy to resolve false positive"

],

"lineage\_badge": "D:BLOCK • SNAP:L\_2025-09-21 • RULE:v3.2",

"time\_to\_live\_sec": 300

}

**Innovation 2 — Lineage Badge:** One-line badge that carries decision version info (snapshot, rule version) so ERP logs are self-explanatory.

**4) Business System Action**

* If **ALLOW**: proceed normally.
* If **HOLD/DENY**: block save/release/ship based on tenant policy.
* Show **human-friendly banner** with WHY + link to Evidence Pack.

**Innovation 3 — Embedded Fix Plan:** Banner shows “What to do next” right inside ERP (no need to email compliance).

**5) Compliance Review & Release**

* Compliance Console shows **case view**:
  + Original decision, reasons, evidence (provider record IDs, rule matches)
  + Suggested fix actions
  + License suggestions (if relevant)
* Reviewer chooses:
  + **Override** (false positive)
  + **Request Info** (ask ops for docs)
  + **Confirm Block** (lock permanently)
* Any override requires justification & optional **time-bound validity**.

**Innovation 4 — “Controlled Overrides”**: Override can expire automatically (e.g., valid 30 days), triggering rescreen later.

**6) Gate Flip & Event Push**

* Upon release or override:
  + Gatekeeper updates cached decision to ALLOW (or ALLOW WITH CONTROLS).
  + Emits GateStateChanged event to business system.
  + Business system can **resume order/delivery** instantly.

**Alternate / Failure Flows**

**A) Stale Cache**

* If decision cache stale/missing, Gatekeeper recomputes synchronously (<1s) before returning.

**B) License Counter Exhaustion**

* If license exists but quota exhausted:
  + Gate = HOLD; Fix = “Renew or extend License X.”
  + Compliance can reassign another license or reduce qty.

**C) Grace Window**

* If tenant has **grace policy** enabled:
  + Picks/pack allowed for X minutes; shipment blocked.
  + Reduces operational friction while compliance investigates.

**D) Business System Offline**

* Gate decisions cached locally with TTL; upon reconnect, re-validate with Gatekeeper before posting.

**Acceptance Criteria**

1. **Gate Response SLA**
   * P95 ≤ 400ms from cache, ≤ 1s if fresh compute required.
2. **Correct Enforcement**
   * When partner = BLOCK, orders/deliveries/invoices cannot be released.
   * When partner = REVIEW, system applies HOLD (not ALLOW).
3. **Explainability**
   * Every gate response includes WHY + lineage badge.
   * ERP banner clearly shows blocking reason and next steps.
4. **Controlled Release**
   * Only users with Reviewer/Approver role can override.
   * Overrides logged with justification, timestamp, and (optional) expiry.
5. **Instant Gate Flip**
   * Once override approved, ALLOW state visible in business system ≤ 10s.
6. **Audit Proof**
   * Gate decisions + releases can be replayed from Audit Vault; show snapshot, rule version, who overrode, when, and why.

**Non-Functional Requirements**

* **High Availability:** 99.9% uptime for Gatekeeper API.
* **Scalability:** Support ≥ 50k gate checks/hour per tenant.
* **Resilience:** Failover nodes and cache replication to prevent downtime.
* **Security:** RBAC + MFA required for override; signed responses to prevent spoofing.

**AI Assist (Assistive, Never Autonomous)**

* **Fix Recommender:** Suggests likely documents/actions to clear HOLD faster.
* **License Recommender:** Suggests best license candidate for current corridor & qty.
* **Risk Forecaster:** Predicts which other orders might soon be blocked (proactive alert).
* **Evidence Pack Drafting:** Auto-generates a compliance-ready pack for auditor review.

**Innovation 5 — “Smart Explainability”:** Instead of generic “Partner blocked,” ERP user sees:  
*“Blocked: Partner matched OFAC SDN list, record ID 12345 (Snapshot L\_2025-09-21). Provide proof of mistaken identity to clear.”*

**Innovation Highlights**

* **Context-Aware Enforcement:** Gate uses partner + material + license data, not just static flags.
* **Lineage Badges:** Carry decision version metadata everywhere.
* **Grace Windows:** Reduce operational disruption without weakening compliance.
* **Controlled Overrides with Expiry:** Automates re-check after a period, ensuring risk stays current.
* **Fix Plans Embedded in ERP:** Gives ops clear steps, reducing compliance back-and-forth.
* **One-Click Evidence Pack:** Saves hours of audit prep.