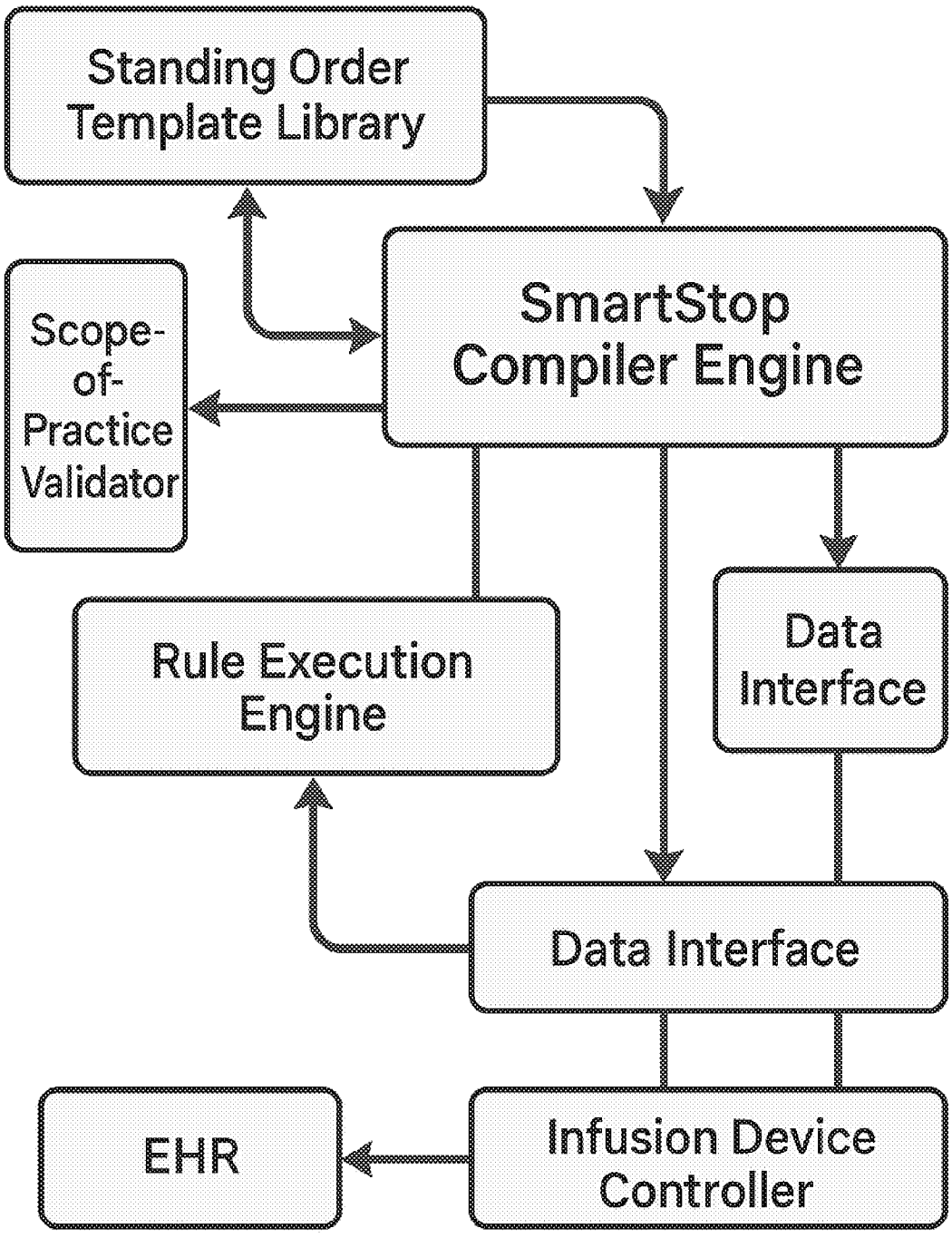
Figures

FIG 1 — SmartStop Compiler Architecture



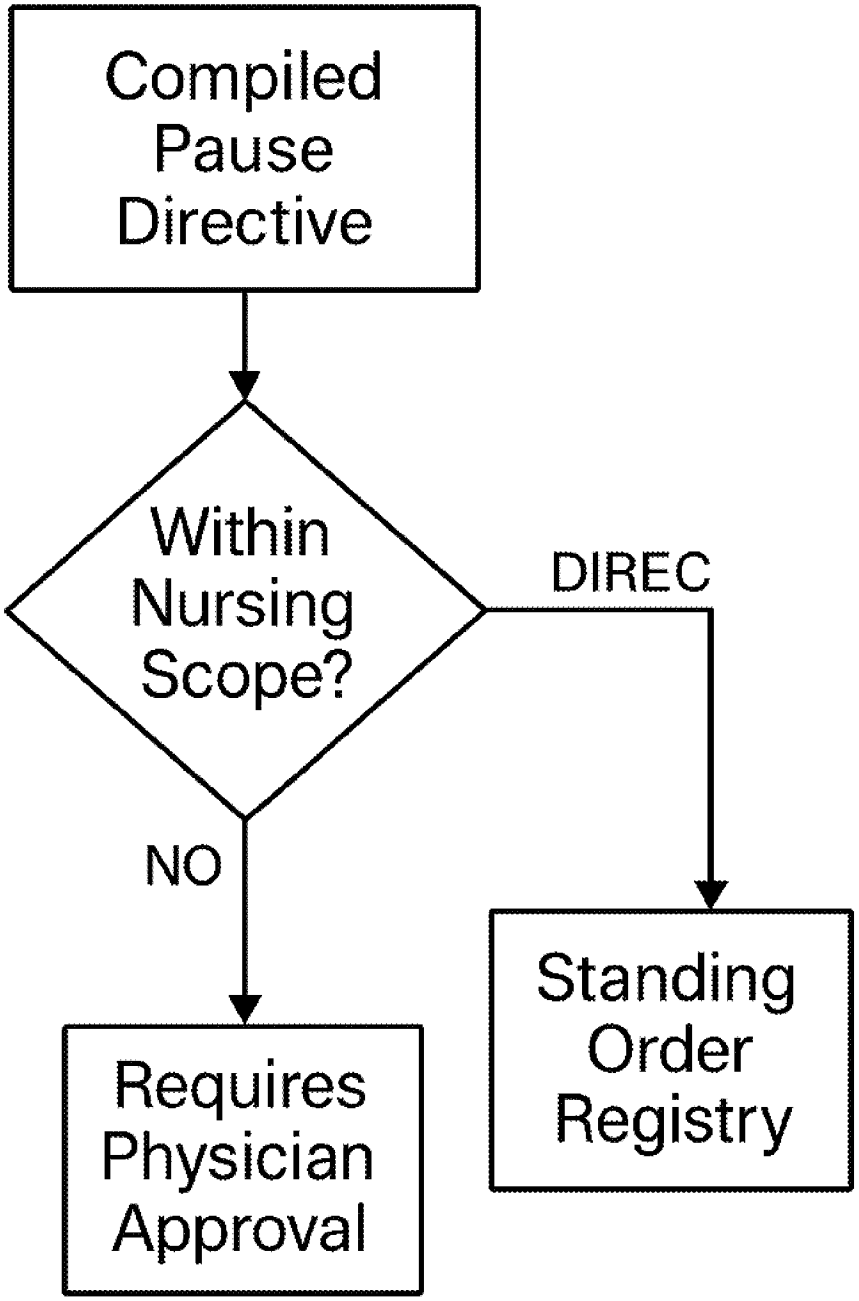
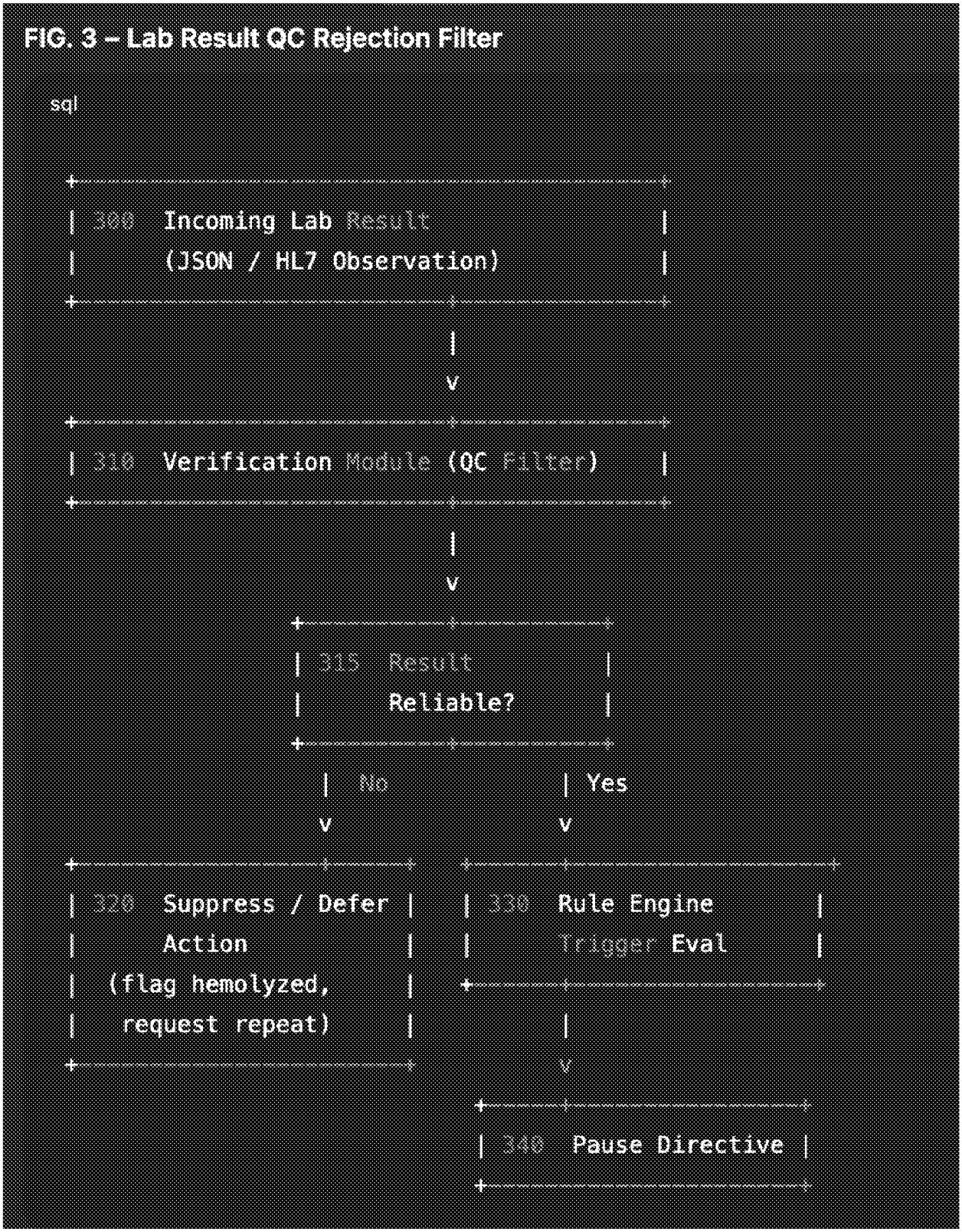


FIG_2–

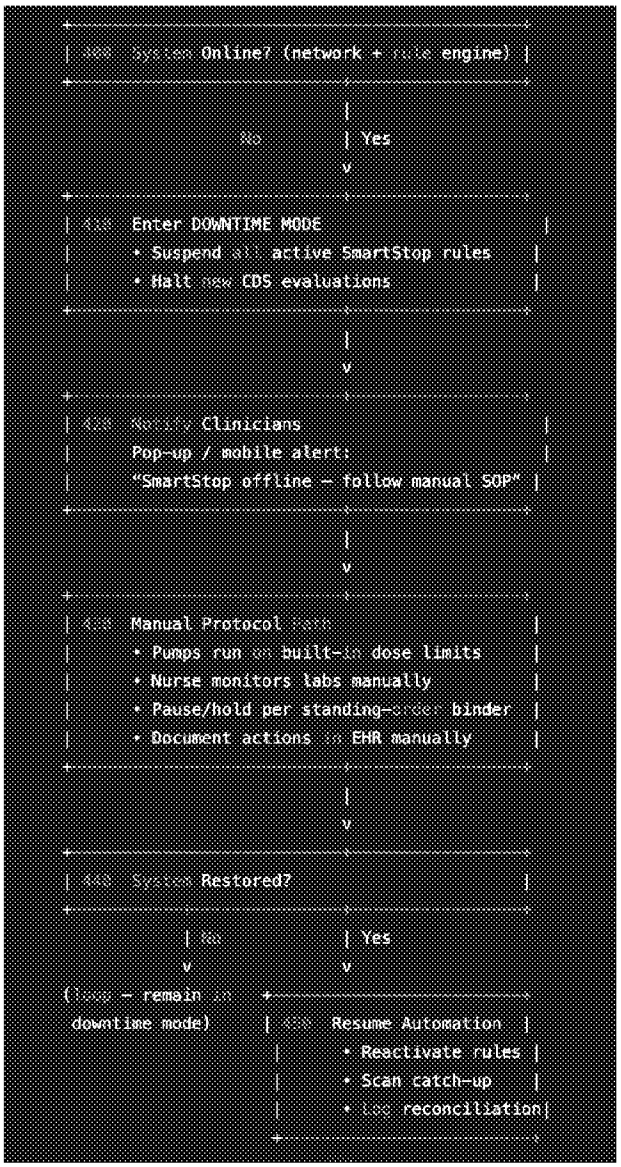
SCOPE-OF-PRACTICE VALIDATION MODULE

FIG. 3 – Lab Result QC Rejection Filter



This flowchart depicts how SmartStop filters lab inputs before any infusion-pause logic is allowed to fire: incoming results (300) pass through a QC Verification Module (310); a decision gate (315) routes unreliable data to suppression (320), while validated results continue to rule evaluation (330) and, if thresholds are exceeded, generate a pause directive (340).

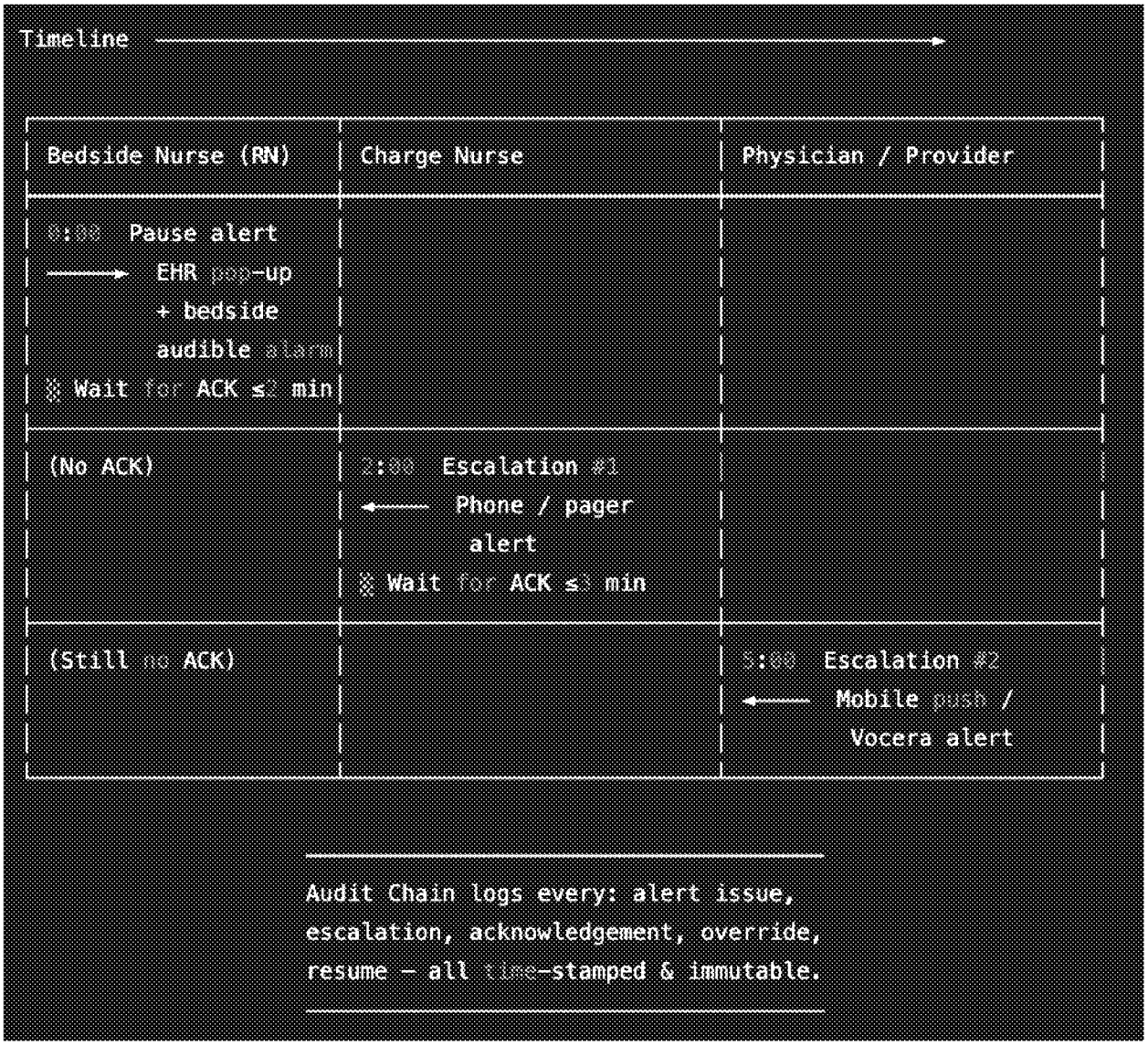
FIg 4



This flow mirrors the description: when connectivity or the CDS service drops, a watchdog forces **Downtime Mode** (410), clinicians are alerted (420), and all infusion safety reverts to existing manual protocols while pumps continue under their own dose limits (430). Once

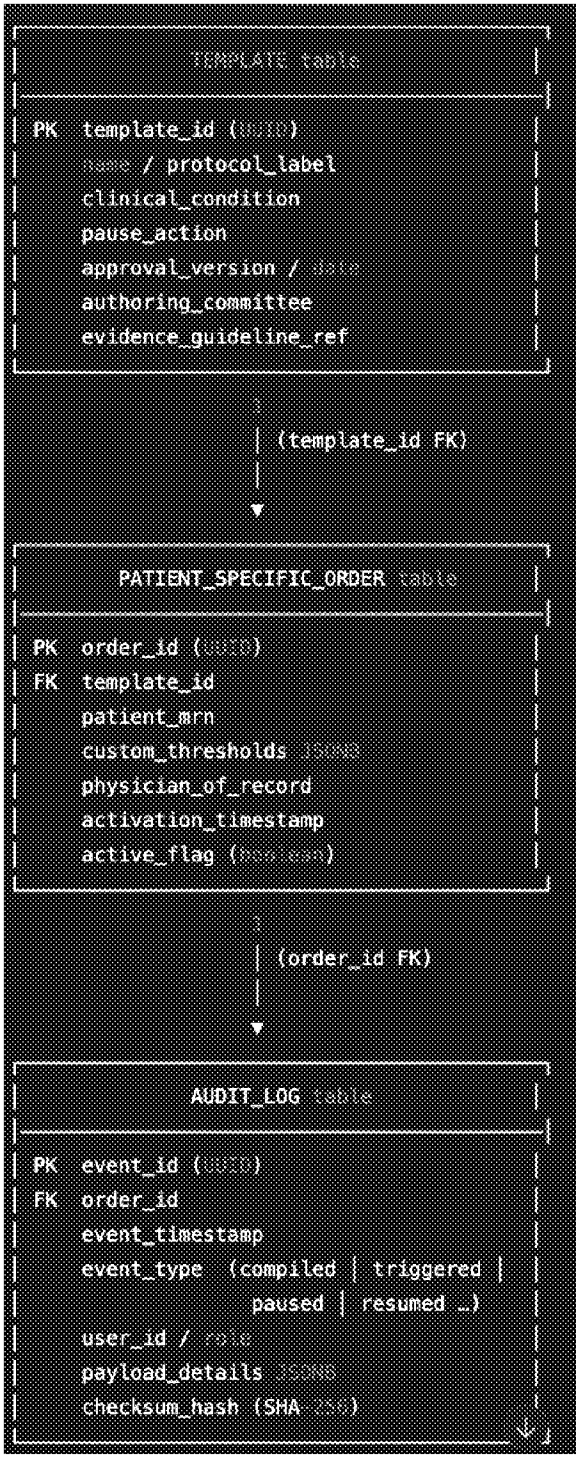
connectivity returns, the engine re-engages automation and catches up on any missed triggers (450)

Figure 5



The swim-lane diagram reflects SmartStop's default ladder: bedside RN first, charge nurse after ≈ 2 minutes without acknowledgement, and attending physician after ≈ 5 minutes, with each hand-off automatically captured in the audit trail

Figure 6

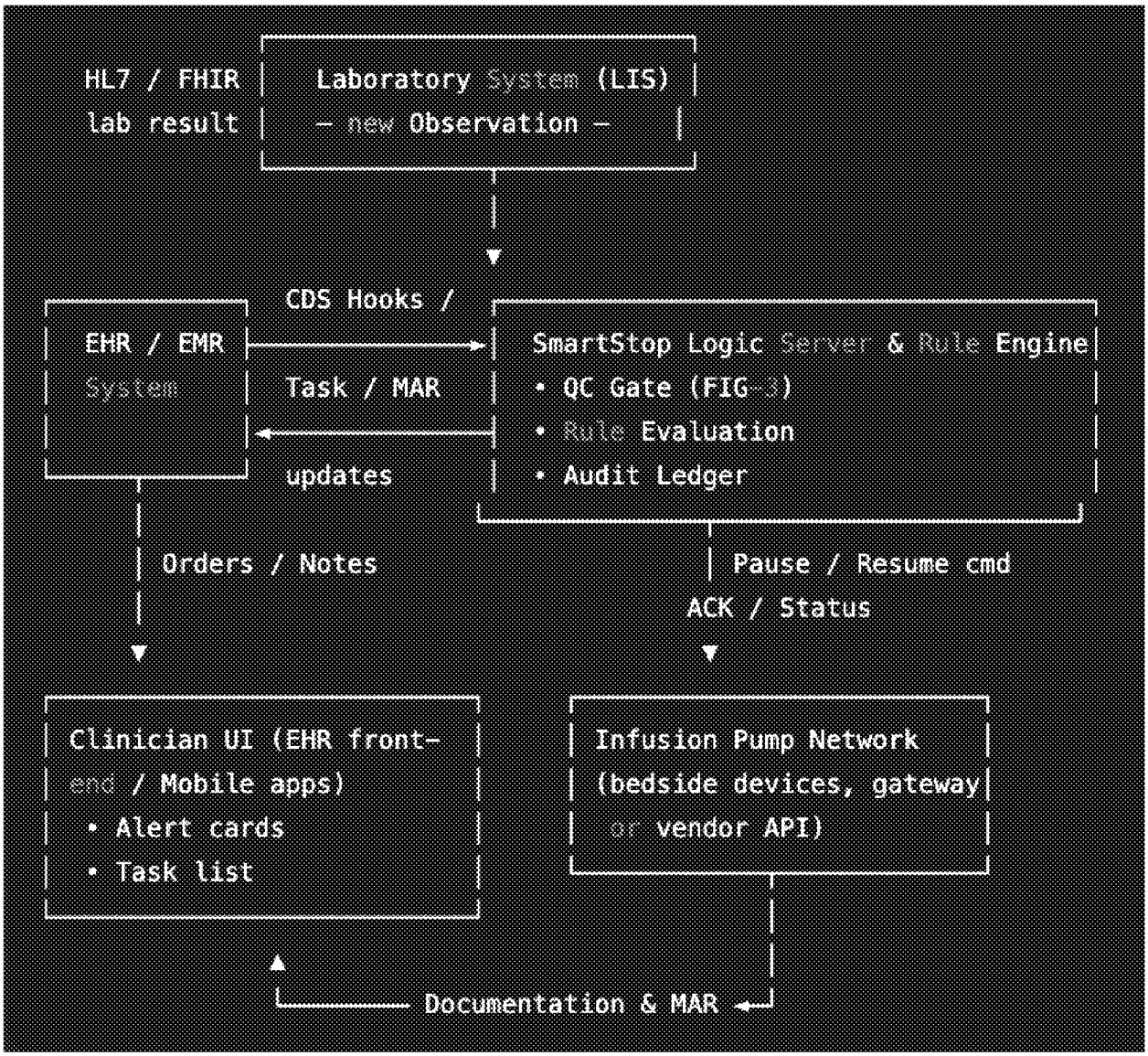


Relationship cardinality

- TEMPLATE → PATIENT_SPECIFIC_ORDER : *one-to-many* – each approved protocol can spawn many patient-specific instantiations.

- PATIENT_SPECIFIC_ORDER → AUDIT_LOG : *one-to-many* – every pause event, escalation, or resume linked back to the governing order for full traceability.

FIG. 7 – EHR-to-Device Orchestration Overview



Flow highlights

1. **Lab trigger:** LIS posts a finalized lab result to the EHR; a CDS Hooks event forwards the relevant Observation to SmartStop.

2. **Decision & command:** The SmartStop engine verifies QC, evaluates rules, and—if criteria match—issues a *pause* command to the connected pump (or generates a Task

for the nurse if pumps are not networked).

3. **Acknowledgement:** The pump (or nurse via Task completion) returns an acknowledgment; SmartStop records the event, updates the EHR Medication Administration Record, and logs to the audit ledger.

4. **Bidirectional updates:** Continuous status pings from the pump keep SmartStop and the EHR synchronized so clinicians always see current infusion state.