

## Commit Tenant Flow Sequence Diagram – Descriptions of Steps

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### ◆ PHASE 1 — Submission & Pre-PEC Validation (1–5)

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#### 1. Submit ActionEnvelope

- **Action:** Agent sends request to AGCP
  - **Outcome:** Processing begins (state = SUBMITTED, transient)
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#### 2. Schema validation

- **Action:** AGCP validates JSON/schema
  - **Outcome:**
    - Pass → continue
    - Fail → REJECTED (not explicitly branched here)
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#### 3. Provenance verification

- **Action:** Verify signature, nonce, expiry
  - **Outcome:**
    - Pass → continue
    - Fail → REJECTED
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#### 4. Tenant state validation

- **Action:** Check tenant is ACTIVE
  - **Outcome:**
    - Pass → continue
    - Fail → REJECTED (TENANT\_STATE\_INVALID)
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#### 5. Policy resolution

- **Action:** Resolve policy/module

- **Outcome:**
    - Found → continue
    - Not found → REJECTED
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## ◆ PHASE 2 — PEC Evaluation (6–13)

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### 6. Evaluate constraints

- **Action:** Call PEC constraint logic
  - **Outcome:** Constraint results produced
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### 7. Constraint results

- **Action:** Return constraint outcomes
  - **Outcome:**
    - PASS → continue
    - FAIL → leads to REJECT later
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### 8. Evaluate invariants

- **Action:** Call PEC invariant logic
  - **Outcome:** Invariant results produced
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### 9. Invariant results

- **Action:** Return invariant outcomes
  - **Outcome:**
    - PASS → continue
    - HARD FAIL → forces REJECT
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### 10. Evaluate HITL requirement

- **Action:** Determine if human approval required

- **Outcome:** HITL requirement computed
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### 11. HITL result

- **Action:** Return HITL requirement
  - **Outcome:**
    - requires\_hitl = true/false
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### 12. Compute decision

- **Action:** PEC computes final decision
  - **Outcome:** Decision resolved
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### 13. Decision output

- **Action:** Return decision
  - **Outcome:**
    - ACCEPT
    - REJECT
    - PENDING\_HITL
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## ◆ PHASE 3 — Decision Branching (14–27)

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### ● REJECT PATH

#### 14. Append DECISION(REJECT)

- **Action:** Ledger append
  - **Outcome:** Immutable rejection recorded
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#### 15. State = REJECTED

- **Action:** Derived lifecycle state
- **Outcome:** Terminal state

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● **PENDING\_HITL PATH**

**16. Append PEC\_HITL + DECISION(PENDING\_HITL)**

- **Action:** Ledger append
- **Outcome:** HITL required recorded

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**17. State = PENDING\_HITL**

- **Action:** Derived lifecycle state
- **Outcome:** Awaiting human approval

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**18. Obtain required cosign(s)**

- **Action:** Agent initiates approval workflow
- **Outcome:** External human process begins

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**19. Submit cosign token(s)**

- **Action:** HITL tokens submitted to AGCP
- **Outcome:** Validation triggered

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**20. Cosign invalid / expired / replayed**

- **Action:** Token validation fails
- **Outcome:** State remains PENDING\_HITL

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**21. Quorum not yet satisfied**

- **Action:** Valid token but insufficient approvals
- **Outcome:** Ledger append of evidence

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**22. State remains PENDING\_HITL**

- **Action:** No transition

- **Outcome:** Still awaiting approval
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### 23. Quorum satisfied → Append EXECUTION\_AUTHORIZED

- **Action:** Authorization recorded
  - **Outcome:** Transition enabled
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### 24. State = AUTHORIZED

- **Action:** Derived lifecycle state
  - **Outcome:** Ready for execution
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## ● ACCEPT PATH

### 25. Append DECISION(ACCEPT)

- **Action:** Ledger append
  - **Outcome:** Acceptance recorded
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### 26. Append EXECUTION\_AUTHORIZED

- **Action:** Authorization reference recorded
  - **Outcome:** Execution permitted
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### 27. State = AUTHORIZED

- **Action:** Derived lifecycle state
  - **Outcome:** Ready for execution
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## ◆ PHASE 4 — Commit Request (28–32)

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### 28. Request execution

- **Action:** Agent initiates execution
- **Outcome:** Commit flow triggered

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### 29. POST /executions/commit

- **Action:** Execution adapter calls AGCP
  - **Outcome:** Commit endpoint invoked
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### 30. Read ordered ledger history

- **Action:** Retrieve all ledger entries
  - **Outcome:** Full history available
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### 31. Derive current lifecycle state

- **Action:** Compute state from ledger
  - **Outcome:** One of:
    - PENDING\_HITL
    - REJECTED
    - AUTHORIZED
    - EXECUTED
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### 32. Binding validation

- **Action:** Validate commit conditions
  - **Outcome:** Decision to bind or reject
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## ◆ PHASE 5 — Commit Outcomes (33–43)

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### ✗ Not authorized paths

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### 33. [State = PENDING\_HITL] → Commit rejected

- **Action:** Reject commit
- **Outcome:** ACTION\_NOT\_AUTHORIZED

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**34. State remains PENDING\_HITL**

- **Outcome:** No change

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**35. [State = REJECTED] → Commit rejected**

- **Outcome:** ACTION\_NOT\_AUTHORIZED

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**36. State remains REJECTED**

- **Outcome:** Terminal

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**37. [State = EXECUTED] → Commit rejected**

- **Outcome:** Replay rejection

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**38. State remains EXECUTED**

- **Outcome:** Terminal

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**⚠ Authorized but binding fails**

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**39. AUTHORIZED but binding validation fails**

- **Action:** Reject commit
- **Outcome:**
  - ACTION\_NOT\_AUTHORIZED
  - or TENANT\_STATE\_INVALID

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**40. State remains AUTHORIZED**

- **Outcome:** Still eligible for retry

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**✅ Successful commit**

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#### 41. Append EXECUTION\_COMMITTED

- **Action:** Ledger append
- **Outcome:** Execution recorded

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#### 42. Commit accepted

- **Action:** Return success
- **Outcome:** Execution confirmed

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#### 43. State = EXECUTED

- **Action:** Derived lifecycle state
- **Outcome:** Terminal success

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#### Final Summary

Across the 43 steps, the system resolves into:

##### Decision phase outcomes:

- REJECTED
- PENDING\_HITL
- AUTHORIZED

##### Commit phase outcomes:

- EXECUTED
- remains AUTHORIZED
- remains PENDING\_HITL
- remains REJECTED

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#### Key Insight

These 43 steps are not 43 *decisions*.

They are:

many evaluations → 1 decision → 1 optional binding → 1 final state

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