

Partition-Scoped Escrow Release Gated on Intersection Non-Emptiness

When two semantic agents settle across a boundary they settle only where their scope partitions overlap, and the content of that settlement commonly waits in escrow until the exchange completes. U.S. Provisional Application No. 64/117,812 discloses a partition-scoped escrow whose release is gated on the continued non-emptiness of that overlap. The escrow custody record carries a designation naming the intersecting scope-partition identifiers, and its content is held nowhere else. If the intersection empties, by a withdrawn partition or a suspension, no release is performed while it is empty. On timeout while the intersection remains empty the content is returned unchanged to the party that placed it by a rollback record that charges no refusal meter, and if the overlap reappears before timeout the release evaluation proceeds as though it had never emptied.

1. The Gap

Two autonomous agents that share no standing account still transact. In the Adaptive Query settlement substrate they do so through a matched pair (600) of governed observations recognized within a proximity and time window, and where the parties hold their state in separate scope partitions, the pair is admissible only in the non-empty intersection of those partitions. Much of what such a settlement transfers does

not move at the moment of the pair. It waits in escrow: a persistence-designation promotion, a settlement-binding authorization, an authorization-gate transition, or the removal of an accumulated reparation amount, each held pending completion of the pair that conditions its release.

That waiting period is where a scope boundary can be abused. A conventional escrow watches a single release condition and fires when the condition is met, indifferent to whether the two parties still occupy any common ground. If the shared scope that made the settlement admissible in the first place has since evaporated, a plain escrow will still release, pushing content into a partition context that no longer exists on one side, or letting a party strand a counterparty's placed content in a scope the counterparty has closed. The settlement was authorized in a shared partition; nothing in an ordinary escrow keeps its release inside that same shared partition.

The gap is an escrow that is itself scoped to the partition intersection that authorized it, that refuses to release anywhere else, and that returns placed content cleanly, without penalty, when the shared scope disappears before the exchange finishes. That is the mechanism disclosed at paragraph [0497] of U.S. Provisional Application No. 64/117,812.

2. Mechanism

The mechanism begins with how cross-partition settlements are admitted at all. Where a party maintains a plurality of scope partitions, each bearing a scope-partition identifier and a per-partition lineage record, a settlement implicating a partition of one party and a partition of the other is admissible only in the intersection of the two partition scopes. The pairing rule is satisfied only where the identifiers declared by the two observations share a non-empty intersection, and a cross-partition settlement record is appended to the per-partition lineage record of each partition in the intersection and to no other. A pairing whose partition sets do not intersect is rejected, and that rejection increments no refusal meter of either party.

An escrow custody record arising from a settlement admitted in that non-empty intersection carries a **partition-scoped escrow designation** naming the scope-partition identifiers of the intersection within which the settlement was admitted. The escrowed content is held within those partitions and within no other, and the release condition is, by construction, incapable of satisfaction outside the designated partitions. The designation therefore fixes the partitions in which release can ever occur, not merely where the record happens to sit.

From there the escrow watches the intersection, not merely the clock or the completion event. Where the intersection later empties, whether by withdrawal of a partition by either party or by a suspension, no release of the escrowed content is performed while the intersection is empty. The persistent semantic agent (100) then applies a computed release rule with two branches, and the branch taken depends entirely on the ordering of two events: the escrow timeout, and the reappearance of a non-empty intersection.

In the first branch, the escrow timeout expires while the intersection remains empty. The escrowed content is returned unchanged to the party that placed it by a rollback record appended to the per-partition lineage of each designated partition, and that return increments no refusal meter of either party. The emptying itself is charged to no one: a party that withdraws a partition, or a partition placed under a suspension, inflicts no metered cost on a counterparty, and a party whose placed content is returned does not pay for the shared scope having closed under it. Because the per-partition lineage is append-only, the rollback record adds an entry rather than deleting or rewriting one. The content is exactly the content that was placed, returned to exactly the party that placed it.

In the second branch, the intersection becomes non-empty again before the timeout expires. Here the emptying is treated as if it had never happened: the release evaluation proceeds as though the intersection had not emptied. A transient loss of overlap, a partition briefly withdrawn and reopened, or a suspension that clears before the deadline does not consume the escrow, and the evaluation resumes as though the

overlap had never lapsed. The settlement survives the interruption and completes on its own terms once the shared scope is restored, provided restoration occurs inside the window the timeout defines.

The structural point is that release is conditioned on a live, present fact about the two parties, the continued existence of a shared partition, rather than on a stored permission that outlives the condition that granted it. The escrow cannot release into a scope that no longer exists on both sides, because its release condition is defined over identifiers that must currently intersect. When the shared scope is gone and stays gone, the only thing the escrow can do is give the content back, and it does so without cost. The escrow is thus scoped in space to the intersection and bounded in time by its own timeout, and the two branches of the computed rule cover the two ways the race between those two constraints can resolve.

3. Operating Parameters

The filed disclosure declares the following parameters for this mechanism, and it declares them as policy-resolved quantities rather than fixed numeric values.

- **The escrow timeout.** Expiry of the escrow timeout while the intersection remains empty is the trigger for the return-by-rollback branch. Its duration is the deadline against which the reappearance of a non-empty intersection races.
- **The scope-partition identifiers of the intersection.** The partition-scoped escrow designation names these identifiers, and they define the only partitions in which the content is held and the only partitions in which the release condition can be satisfied.
- **The per-partition lineage record of each designated partition.** This is where the rollback record is appended on return, one append per partition of the designation, so the return is recorded in the lineage of each partition that held the escrow and nowhere else.

- **The escrow-depth bound.** Declared in the governing policy object, this bound caps how deeply escrow custody records may be nested or successively conditioned; a placement that would exceed it is not performed, and that refusal itself increments no refusal meter.
- **The refusal meter.** It is expressly not incremented by the return-by-rollback on timeout, nor by the rejection of a non-intersecting pairing that would have produced no escrow at all.

The disclosure states no fixed numeric threshold, latency, or benchmark for the timeout or the escrow-depth bound. Those are resolved from the signed policy object each party applies, identified by canonical alias and successor index under the anti-rollback monotonicity constraint the filing maintains.

4. Composition

This mechanism is a specialization of the matched-pair settlement substrate that is the subject of the parent exposition, and it inherits that substrate's defining constraints: settlement without a third-party intermediary, without centralized consensus, and without pre-negotiated session state. It sits directly on top of cross-partition settlement in the intersection, which establishes both that a cross-partition pair is admissible only in a non-empty intersection and that an escrow custody record so arising carries the partition-scoped designation. The release-gating rule of [0497] is what that designation is for.

It composes with the general escrow apparatus in several directions. The content it protects is the content the escrow embodiments actually hold: an escrowed promotion record placing a persistence-designation promotion under escrow, an authorization escrow record placing a settlement-binding authorization or an authorization-gate (300) transition under dual-lock escrow, and the dual-lock escrow of a reparation discharge, whose escrowed content is the removal of an accumulated amount from a

retention register. Each of these is released only on completion of the matched pair and returned unchanged on failure, and the partition-scoped rule adds the further condition that the shared scope must still exist for release to occur at all.

It composes with the scope-partition machinery that can cause the emptying. A partition may be withdrawn by its holder, and a partition may be placed under a suspension by the containment mechanisms that confine state movement and suspend cross-partition propagation when a partition's receipt rate crosses a declared bound. Either event empties an intersection, and the escrow rule treats both identically: hold, then either resume on reappearance or return on timeout.

Finally, it composes with the metering discipline that runs throughout the filing. The return-by-rollback charges no refusal meter, consistent with the broader principle that structural and no-fault events, a rejected non-intersecting pairing, a timeout, a refusal to exceed the escrow-depth bound, load no counter against any party. The escrow does not convert the disappearance of shared scope into an accusation. It records the return in lineage and leaves the parties where the vanished scope left them.

5. Prior-Art Distinction

The distinction is best drawn against the categories of settlement and escrow the background of the filing itself identifies, and it is a distinction of structure, not of conduct by any named implementer.

Classical **escrow arrangements** interpose a trusted third party or escrow agent that holds the subject of the exchange and releases it upon a release condition. The release condition there is watched by the intermediary, and the parties' own scope is not a term of it. The mechanism here has no escrow agent; each party holds its own escrow custody record in its own partition lineage, and the release condition is a fact the parties themselves define, the non-emptiness of their partition intersection.

Atomic swaps and hashed timelock contracts condition a cross-ledger exchange on disclosure of a preimage within a timelock, and require each leg to be committed to a distributed ledger whose ordering is established by a consensus authority. Release is a function of preimage disclosure and block time. It has no notion of a shared scope that can open and close, and its timelock refund is a ledger event, not a return keyed to whether the two parties still occupy common ground.

Two-phase commit and distributed-consensus commit protocols coordinate the parties through a coordinator or a quorum that establishes a single agreed ordering before the exchange is finalized. The release decision is centralized in that coordinator or quorum. The mechanism here computes release locally from each party's own lineage, with no coordinator and no agreed global ordering.

Payment-channel settlement settles a sequence of exchanges against a channel funded and opened by pre-negotiated session state established before any exchange occurs. Its release is bounded by the channel, a standing relationship. The partition-scoped escrow requires no channel and no prior enrollment; the intersection that scopes it can form on first encounter and can dissolve without a channel-close.

Across all four categories the release condition is either an intermediary's judgment, a preimage-and-timelock, a coordinator's ordering, or a funded channel. None of them makes release contingent on the continued existence of a privately held scope shared by exactly the two parties, and none returns the placed content to its placer, unchanged and unmetered, precisely when that shared scope disappears. That contingency, and that no-fault return, are what this mechanism adds.

6. Disclosure Scope

The operative and citable disclosure is U.S. Provisional Application No. 64/117,812, Section 10.13, paragraph [0497], titled "Partition-scoped escrow release gated on intersection non-emptiness," read together with the foundational escrow and

intersection disclosure at paragraphs [0214] through [0216] and the escrowed-promotion and authorization-escrow embodiments at paragraph [0218], and the dual-lock escrow of a reparation discharge at paragraph [0495].

What is disclosed: an escrow custody record arising from a settlement admitted in the non-empty intersection of two parties' scope partitions, carrying a partition-scoped escrow designation naming the identifiers of that intersection; the holding of the escrowed content within those partitions and within no other; the withholding of release while the intersection is empty, whether emptied by withdrawal of a partition or by a suspension; the computed release rule under which timeout expiry during an empty intersection returns the content unchanged to the placing party by a rollback record appended to the per-partition lineage of each designated partition, incrementing no refusal meter of either party; and the treatment of a reappearing non-empty intersection before timeout as though the intersection had not emptied.

What is disclaimed: this article claims no numeric value for the escrow timeout, the escrow-depth bound, or any window, the filing declaring these as policy-resolved rather than fixed; and it asserts no conduct by, and no infringement by, any named party. Any sub-mechanism, parameter, or embodiment appearing only in the author's fuller drafting exposition and not in the filed provisional is outside the scope of this publication and is neither disclosed nor relied upon here.

Governed Matched-Pair Settlement

[All 49 steps → \(/inventive-steps\)](#)

(/governed-settlement)

Two agents settle on matched signed observations, by continuity, with no clearer.

Provisional application

PRIMARY TECHNICAL DISCLOSURE

- [Matched-Pair Settlement Between Agents: Bilateral Closure Without a Clearer \(/articles/governed-settlement/matched-pair-settlement-without-a-clearer\)](/articles/governed-settlement/matched-pair-settlement-without-a-clearer)

SECONDARY TECHNICAL

- [The Derived-Artifact Provenance Chain and Chain-Head Identifier \(/articles/governed-settlement/derived-artifact-provenance-chain\)](/articles/governed-settlement/derived-artifact-provenance-chain)
- [Provenance Withdrawal and the Provenance-Withdrawn Attribute \(/articles/governed-settlement/provenance-withdrawal\)](/articles/governed-settlement/provenance-withdrawal)
- [Matched-Pair-Gated Corpus Contribution \(/articles/governed-settlement/matched-pair-gated-corpus-contribution\)](/articles/governed-settlement/matched-pair-gated-corpus-contribution)
- [Partition-Scoped Escrow Release Gated on Intersection Non-Emptiness \(/articles/governed-settlement/partition-scoped-escrow-release\)](/articles/governed-settlement/partition-scoped-escrow-release)
- [The First-Encounter Settled Pair and Promotion to the Persistent Tier \(/articles/governed-settlement/first-encounter-settled-pair\)](/articles/governed-settlement/first-encounter-settled-pair)

TERMINOLOGY

- [governed observation \(/glossary#governed-observation\)](/glossary#governed-observation)
- [matched pair \(/glossary#matched-pair\)](/glossary#matched-pair)
- [scope partition \(/glossary#scope-partition\)](/glossary#scope-partition)

[Governed Matched-Pair Settlement overview → \(/governed-settlement\)](/governed-settlement)