

Continuity-Break Demotion of a Counterparty Identity Record: Reversing First-Encounter Promotion Without a Conduct Determination

A semantic agent that meets a stranger and completes one settled pair promotes that counterparty from the ephemeral tier to the persistent tier, and the provisional primitive it verified is written as the recorded identity primitive that thereafter verifies the first admissibility step. Demotion from the persistent tier on a continuity break, disclosed in U.S. Provisional Application No. 64/117,812 at Section 10.4, paragraph [0392], makes that promotion reversible on continuity material rather than on conduct. Where an epoch identifier later received from a promoted party fails the two-stage continuity validation against the sequence held in that record's continuity history, the agent appends a tier demotion record and writes the record's persistence from persistent back to ephemeral tier. The recorded primitive then ceases to serve the first admissibility step, scope reverts to the most restrictive form, and each further artifact re-enters the pre-settlement inert state until a new pair settles.

1. A Settled First Encounter Is Not a Permanent Grant

Under the first-encounter path of Section 10.4, a party for which the semantic agent (100) holds no counterparty identity record (114) is neither admitted nor rejected. The agent constitutes a provisional identity primitive from the attested epoch identifier and verifies the signature against it. On success it instantiates an ephemeral-tier counterparty identity record at the most restrictive scope, seeded only from the presentation, with an empty encounter history, then emits a scaffolding observation naming exactly the canonical fields the presentation did not supply. Where the party answers with a completing observation whose continuity hash field validates as a successor of the seeded sequence, the pair settles: the agent appends a first-encounter promotion record, writes the record's persistence from ephemeral to persistent tier, writes the provisional primitive as the recorded identity primitive, and writes admissible scope categories. The recorded primitive thereafter verifies the first admissibility step, and held artifacts pass to the admission evaluator (120).

No third party underwrites that result. Section 6.3 recites the negative conditions: no third-party intermediary participates in the settlement, no centralized consensus is computed, and no account relationship, no session key, no standing channel, and no prior enrollment of either party with the other is a precondition of the pair. Identity for pairing rests on continuity rather than enrollment. A determination, where one is produced, comes from the agent over its own append-only lineage field (104) and against the declared value set of the signed policy object (112), not from an external authority, an arbitrator, a registry, or a scoring service.

Paragraph [0392] opens by stating that the promotion is reversible, making the reversal turn on the same continuity material. That reversal stays distinct from its conduct-driven counterpart: demotion by one tier keyed to a counterparty whose conduct evaluation artifacts (116) repeatedly produce rejected determinations (124), at a rate or a run length declared in the signed policy object (112), is disclosed separately in Section 10.11.

2. Recording the Break and Writing the Tier Back

The trigger is recited narrowly: an epoch identifier subsequently received from a promoted party fails the two-stage continuity validation against the sequence held in that record's continuity history.

Inside the validation. Section 6.4 supplies the apparatus: a continuity hash field comprising two subfields of one record computed by different constructions. First is a successor hash field, being the dynamic agent hash of the emitting party at the emission, constructed by hashing the predecessor dynamic agent hash together with the unpredictability contribution, the volatile salt, and a domain-separating tag. The filing calls it an avalanche construction whose purpose is tamper evidence, verified by an equality test and not a distance test: under the successor-continuity test of Section 1, the digest chain is recomputed from the recorded entry forward and tested for equality against the presented identifier. Second is a continuity vector field, an ordered tuple of a declared count of components, each a projection of the emitting party's operational state normalized to the closed interval from zero to one, bound into the successor hash field by domain-separated hashing.

Over that second subfield a trust-slope validator computes a trust-slope consistency measure, from the continuity vector field and no other field, using a continuity history store of the fields received from a counterparty over a declared tolerance window. A per-step distance is the greatest component-wise absolute difference between two such fields. A step conformity is unity less the lesser of unity and the quotient of a per-step distance by a declared per-emission bound, and the measure is the mean of the step conformities within the window. Acceptance on continuity requires both conditions conjunctively: the per-step distance against the predecessor does not exceed a declared per-step ceiling, and the measure is not less than a declared acceptance threshold. Failure of either is a failed continuity validation.

What gets appended. On failure the semantic agent (100) appends a tier demotion record naming four members: the promotion record, the failing epoch identifier, the held position it failed against, and its own epoch at demotion. That fourth member is an epoch identifier and not a time: the filing states elsewhere that an epoch identifier is not a wall-clock timestamp and is not drawn from a clock available to the execution node hosting the issuing agent. The agent then writes the record's persistence from persistent back to ephemeral tier.

Consequences recited on the write. The paragraph recites four.

- The recorded identity primitive ceases to be a recorded primitive for the first admissibility step, returning the party to the Section 1.7 branch for one of which the agent holds no such record, where the signature is verified against a provisional identity primitive constituted from the presented identity material.
- Scope reverts to the most restrictive form, the form Section 10.4 recites for an ephemeral-tier record at instantiation.
- Each further conduct evaluation artifact (116) re-enters the pre-settlement inert state until a new pair settles.
- The accumulated encounter history is unmodified.

The third limb imports a fully specified state. Each artifact so held is appended to the append-only lineage field (104) with an identifier of the provisional-identity record and is not passed to the admission evaluator (120). No determination of the closed set is produced. No value of the scoped integrity vector (106) or the self-esteem aggregate (108) is moved. No counter is incremented, the refusal counter (304) is not incremented, and the authorization gate (300) is not written to withheld (310) responsive to it. The party is assigned to no origin-equivalence class (200). Such a state is neither denial nor rejection, nothing adverse is appended, and the holding is appended as a positive abstention under the conversion bar (502). That bar, recited in Section 5.4, forecloses a consuming determination from converting an abstention

outcome into a scalar value, into a default value, into an operand of a threshold comparison (510), or into a consequence adverse to any party, the foreclosure being affirmative rather than an absence of defined behavior.

Four express negatives. Paragraph [0392] closes by stating what the demotion is not. It is not a determination. It produces no rejected class (124). It moves no scoped integrity vector (106). It records no severance event. This last reaches the origin-equivalence machinery: Section 10.1 recites a severance event as a lineage entry recording a structural termination of interaction capacity, and Section 2.5 a severance-survival test resolving a reason-type of each constituent edge from recorded severance events and their survival states.

Restoration. The filed restoration path is a single clause: until a new pair settles. Under Section 6.2 a settlement effects the state transition the pair was formed to effect, one enumerated form being a promotion or demotion of a persistence designation.

3. Declared Quantities and What the Filing Leaves Unvalued

No numeric value appears anywhere in this mechanism; each quantity it depends on is policy-declared, given a role and no magnitude.

- Normalizing a per-step distance into a step conformity requires a **declared per-emission bound** as its denominator.
- The first of the two conjunctive acceptance conditions applies a **declared per-step ceiling** to the per-step distance against the predecessor.
- Against the mean of the step conformities, the second applies a **declared acceptance threshold**.
- How far back the validator draws from the continuity history store is set by a **declared tolerance window**.
- Width of the continuity vector field follows from a **declared count of components**.

- Reversion targets the **most restrictive form** of scope, named functionally rather than by value.

Restoration inherits a further set: a new pair settles under Section 6.2, whose pairing rule is satisfied within one or more of a spatial proximity window and a temporal proximity window (602), each declared in the governing policy object.

Conditioning matters throughout. Paragraph [0392] attaches its consequences to an epoch identifier that fails the validation, and recites no tolerated-failure count, no retry allowance, and no window over which failures accumulate. It recites no consequence for an identifier that satisfies both conjuncts: the demotion, the scope reversion, and the return to the inert state are stated for the failing case alone.

4. Where Paragraph [0392] Sits in Section 10.4

Section 10.4 discloses encounter receipts and first-encounter admission across a run of paragraphs, the demotion recited among them rather than as a free-standing construction. Provisional-identity verification, the scaffolding observation, the settled pair that promotes, and the pre-settlement inert state precede it in that run. Paragraphs following it take up a mutual first encounter in which each of two agents holds no record of the other, and a conflict rule under which a completing observation carrying a value for a seeded field does not displace the seeded value.

Upstream sits the admissibility procedure of Section 1.7, whose first step contemplates two branches, one for a party with a recorded identity primitive and one for a party without; demotion carries a party across that boundary in reverse. Section 6.2 supplies the settlement vocabulary the tier motion is recited in: settlement effects a transition of the authorization gate (300), a promotion or demotion of a persistence designation, or a transfer of a settlement-binding authorization.

Downstream, Section 10.11 separately recites a renewal register that counts an origin-equivalence class (200) toward renewal of an authorization quantity only where the constituent asserting party (118) resolves to a counterparty identity record (114) of the promoted value, whereby a flood of assertions from ephemeral-tier counterparties renews nothing.

The filing offers several distinct routes to a change in standing. Conduct-driven demotion in Section 10.11 turns on rejected determinations (124). Bilateral demotion and consented forgetting under Section 6.10 is effected only as a matched pair (600), a unilateral demotion effecting no demotion there. Counterparty-side fork detection in Section 10.10 addresses two distinct valid successors of a single recorded epoch identifier, where the receiver appends a lineage-discontinuity record, denies neither presenting party on that ground alone, and produces the not-determinable determination (126) where the discontinuity prevents resolution.

5. Revocation, Probation, and Registry Lookup Compared

Established categories reduce a counterparty's standing at runtime by other means, several treated in the filing's own background.

Credential withdrawal by a controlling authority. External revocation systems for autonomous agents issue and withdraw credentials from an identity provider or control plane, terminating an agent's ability to act by an act of that authority and providing no procedure by which the agent's own conduct record participates in the determination. Here nothing was issued and nothing is withdrawn. What changes is a persistence designation inside one agent's own record, and which admissibility branch the primitive serves there.

Reputation probation and behavioral integrity scoring. The background addresses systems that maintain a reputation value for a computing entity, apply decay and penalty values to it, place the entity into a probationary status, and remove the

probation after an interval of operation without incident; and systems that compute an integrity score from observed execution against expected behavior, compare that score against a threshold, modify capabilities upon the comparison, and restore capability upon a reconciliation recorded to a ledger. Both are characterized there as conformity detectors, in which divergence from an expected baseline is itself the fault signal and the consequence is proportional to that departure. Continuity-break demotion turns instead on an equality test over a hash chain plus two declared conjuncts over a normalized vector, and paragraph [0392] states expressly that the demotion is not a determination, produces no rejected class (124), and moves no scoped integrity vector (106).

Dependence on an intermediary, an ordering authority, or a registry. The background distinguishes settlement mechanisms each requiring at least one of a third-party intermediary or escrow agent, a centralized consensus or ordering authority, and pre-negotiated session or channel state established before exchange. This architecture is recited as operating without reference to a registry of evaluations and without coordination with a further execution node.

None of the foregoing characterizes the practices or products of any party; the categories mark structural boundaries only.

6. Disclosure Scope

The subject matter described here is disclosed in U.S. Provisional Application No. 64/117,812, "Governed Social Conduct of Persistent Semantic Agents Through Record-Grounded Admission of External Conduct Evaluations and Self-Limiting Refusal," at Section 10.4, paragraph [0392], titled "Demotion from the persistent tier on a continuity break." The admissibility procedure and the successor-continuity test appear in Section 1; identity by continuity, the trust-slope validator, the pairing rule, and

bilateral demotion in Section 6; the conversion bar (502) in Section 5.4; the severance-survival test in Section 2.5; and the fork-detection and conduct-driven-demotion embodiments in Sections 10.10 and 10.11.

What is disclosed is the recited structure and the ordered consequences of the write, not any particular value: every bound, ceiling, threshold, window, and component count named above is policy-declared, and the filing assigns none a value. Each consequence recited attaches on the condition that the two-stage continuity validation has failed against the sequence held in that record's continuity history. This article is published as a technical disclosure of that mechanism and establishes public, timestamped prior art as of its date of publication.

Record-Grounded Conduct Admission (</conduct-admission>)

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

Conduct judged against the agent's own record, not an outside authority.

Provisional application

PRIMARY TECHNICAL DISCLOSURE

- [Record-Grounded Conduct Admission: Governing How an Agent Answers an Accusation \(/articles/conduct-admission/record-grounded-conduct-admission\)](/articles/conduct-admission/record-grounded-conduct-admission)

SECONDARY TECHNICAL

- [Value-Scope Resolution: Testing Whether a Declared Value Is Even Implicated \(/articles/conduct-admission/value-scope-resolution\)](/articles/conduct-admission/value-scope-resolution)
- [The Retroactive Narrowing Bar: Why an Agent Cannot Edit Its Values After the Fact \(/articles/conduct-admission/retroactive-narrowing-bar\)](/articles/conduct-admission/retroactive-narrowing-bar)
- [The Delegator Floor: A Monotone Upward Ratchet on Delegated Authority \(/articles/conduct-admission/delegator-floor-ratchet\)](/articles/conduct-admission/delegator-floor-ratchet)
- [The Co-Signed Mutual Admission Compact: Two Agents Binding Each Other \(/articles/conduct-admission/co-signed-mutual-admission-compact\)](/articles/conduct-admission/co-signed-mutual-admission-compact)

- [The Inherited Governance Record: Fork- and Clone-Resistant Accountability \(/articles/conduct-admission/inherited-governance-record\)](/articles/conduct-admission/inherited-governance-record).
- [The Corrective Encounter: A Commission-Versus-Omission Compliance Test for Whether an Agent Actually Changed \(/articles/conduct-admission/corrective-encounter-commission-omission-compliance-test\)](/articles/conduct-admission/corrective-encounter-commission-omission-compliance-test).
- [**Continuity-Break Demotion of a Counterparty Identity Record: Reversing First-Encounter Promotion Without a Conduct Determination \(/articles/conduct-admission/demotion-persistent-timer-continuity-break\)**](/articles/conduct-admission/demotion-persistent-timer-continuity-break).
- [Ratchet-Freeze on Uncomplied Correction: Why One Conforming Act Cannot Restore an Agent's Earned Authorization Persistence \(/articles/conduct-admission/ratchet-freeze-uncomplied-correction\)](/articles/conduct-admission/ratchet-freeze-uncomplied-correction).
- [Three-Way Corroboration Classification: Corroborating, Contradicting, or Neither, and the Failed-Corroboration Reject Trigger \(/articles/conduct-admission/three-way-corroboration-classification-reject-trigger\)](/articles/conduct-admission/three-way-corroboration-classification-reject-trigger).
- [Untested-Class Authorization Decay: Metering Agent Permission Persistence by Recorded Corrective Encounters \(/articles/conduct-admission/untested-class-authorization-decay\)](/articles/conduct-admission/untested-class-authorization-decay).

APPLICATIONS • GENERAL

- [Agent Marketplaces: Handling a Complaint Against an Autonomous Seller \(/articles/conduct-admission/agent-marketplace-dispute-handling\)](/articles/conduct-admission/agent-marketplace-dispute-handling).
- [Clinical AI Agents: Answering an Accusation Without a Central Registry \(/articles/conduct-admission/clinical-agent-accountability\)](/articles/conduct-admission/clinical-agent-accountability).

APPLICATIONS • SPECIFIC

- [The EU AI Act and Inter-Agent Conduct: Where Record-Keeping and Oversight Duties Stop \(/articles/conduct-admission/eu-ai-act-accountability-records\)](/articles/conduct-admission/eu-ai-act-accountability-records).

TERMINOLOGY

- [append-only lineage field \(/glossary#append-only-lineage-field\)](/glossary#append-only-lineage-field).
- [authorization gate \(/glossary#authorization-gate\)](/glossary#authorization-gate).
- [conduct evaluation artifact \(/glossary#conduct-evaluation-artifact\)](/glossary#conduct-evaluation-artifact).
- [principal \(/glossary#principal\)](/glossary#principal).
- [semantic agent \(/glossary#semantic-agent\)](/glossary#semantic-agent).
- [signed policy object \(/glossary#signed-policy-object\)](/glossary#signed-policy-object).

Record-Grounded Conduct Admission overview → (/conduct-admission).