

Edge Severance Events and the Three-Valued Survival State: Resolving Whether a Counterparty Relationship Outlived a Payment-Class or Obligation-Class Termination

Edge severance events and the three-valued survival state are a recording and resolution procedure for a persistent semantic agent, disclosed in U.S. Provisional Application No. 64/117,812. An edge is a persisted dyadic relation between the agent and one counterparty, represented by that counterparty's identity record and by the lineage entries recording their interactions. A severance event is a lineage entry recording a structural termination of interaction capacity, carrying a severance class of payment or obligation, a recorded time, and a reference to the evidencing entry. For each class the agent computes a severance-survival state over an observed interval, taking one of not-tested, survived, or not-survived, computed structurally and never inferred from message content or from a party's declaration. The pair of states so computed is the sole input to the reason-type resolution that follows it.

Why weight cannot come from the party being weighted

An agent that lets an outside assertion move its own internal state has to settle how far any one assertion moves it. In the architecture of U.S. Provisional Application No. 64/117,812, a conduct evaluation artifact (116) arrives from an asserting party (118), an admission evaluator (120) resolves it, and upon an accepted determination (122) a state modifier applies a weighting to the magnitude by which the scoped integrity vector (106) and the self-esteem aggregate (108) are modified.

Conventional answers sit outside the agent, and the filing's background says so. Reputation and trust systems compute a score for an entity from ratings or observations supplied by other entities, and the scored entity neither holds the score nor participates in its computation. Role-weighted extensions additionally admit certified references and role-derived weightings, the roles being exogenous institutional designations asserted by parties other than the evaluated entity rather than quantities derived from the evaluated entity's own records of how its relationships terminate.

That closing phrase names the input this mechanism supplies: what the agent already holds in its own append-only lineage field (104), a record of structural terminations and of whether interaction continued across them. Substitutes are foreclosed by recitation: a reason-type of an edge is computed structurally, is never declared by the asserting party (118), is never inferred from message content or from a party's declaration, and no cardinal magnitude of benefit conferred or received is computed, solicited, or stored by any step.

A second recitation shapes the data structure: an edge against which the test does not resolve is given a value of its own rather than left absent.

The edge, the severance event, and the state computed per class

An edge is a persisted dyadic relation between the agent (100) and one counterparty, represented by that counterparty's identity record (114) and the entries of the append-only lineage field (104) recording their interactions.

A severance event is a lineage entry recording a structural termination of interaction capacity. Three constituents are recited: a severance class, a recorded time, and a reference to the evidencing entry. The definitions section requires at least the first two.

Two classes are enumerated: a payment class evidenced by cessation of a recorded settlement obligation, and an obligation class evidenced by lapse or revocation of a contract or enforcement record.

For each class the agent computes a severance-survival state over an observed interval, taking one of three values: not-tested; survived, where an interaction entry follows the severance within a declared continuation interval; and not-survived otherwise. The computation is structural and is never inferred from message content or from a party's declaration. Section 2.5 states the survival condition in matching terms and adds that the subsequent event of that class re-establishes the edge. Survived is accordingly an affirmative finding rather than a residue of not having ended.

Each edge carries a pair of these states, one per class, and that pair is the sole input to the resolution disclosed next. From it the agent (100) resolves the edge's reason-type by an ordered procedure: payment-sustained where a payment-class severance is recorded and unsurvived; obligation-sustained where an obligation-class severance is recorded and unsurvived; want-sustained where severances of both classes are recorded and both survived; and not-typeable where no severance is recorded or only one class was tested and survived. Where both classes are recorded unsurvived, the reason-type resolves under the class whose severance bears the earlier recorded time, ties broken by a

declared class precedence, so exactly one reason-type is yielded. The resolution and its inputs are appended to the lineage field (104) and to the counterparty identity record (114).

The third value carries weight inside that procedure. An edge whose payment class is survived and whose obligation class was never tested does not resolve want-sustained, which requires severances of both classes recorded and both survived. It resolves not-typeable, under the branch reading on an edge only one class of which was tested and survived.

Failure to resolve lands in the same value. Section 2.5 treats an edge against which the test does not resolve, for want of a recorded severance event, of a recorded outcome of one, or of elapse of the declared continuation interval, as likewise resolving not-typeable, and imposes no condition beyond that failure upon the untested-class designation reading it.

The consequence recited for not-typeable is itself conditioned. Upon an accepted determination (122), the state modifier retrieves the reason-type of the edge to the asserting party (118) from the counterparty identity record (114), takes the weighting per reason-type carried by the signed policy object (112) in force, and forms an effective weighting as the product of that weighting and a standing multiplier. Where the reason-type is not-typeable and the product falls below a declared non-zero minimum, the effective weighting is raised to that minimum, the floor lying upon the product rather than upon the weighting alone. Both conditions have to hold; absent the second, no raising occurs. The recited consequence is that an untested edge still moves state, but by less than a severance-tested one. Each operand is appended to the lineage field (104).

Bounds the filing declares and values it does not

For most quantities this mechanism consumes, the filed text supplies structure and leaves magnitude to be declared.

- The continuation interval bounds the window within which a post-severance entry marks a class survived. It is recited as declared, with no length stated.
- The observed interval is the span over which the survival state is computed. Section 10.1 names it and states no duration.
- Class precedence breaks a tie between two classes recorded unsurvived at the same recorded time. It too is declared, and the stated consequence is that exactly one reason-type is yielded.
- Severance classes are enumerated at two, payment and obligation. The survival state admits three values per class, and the reason-type four.
- The non-zero minimum reached where the reason-type is not-typeable is declared without a value, and operates as a floor upon the product of the per-reason-type weighting and the standing multiplier.
- The untested-class cost multiplier of Section 2.5 is bounded rather than fixed: declared in the signed policy object (112), greater than zero, and less than unity. It applies where an origin-equivalence class (200) is designated an untested class and its recorded introduction paths converge upon a common ancestor entry. Absent either condition, the contribution applies at full weight.
- The severance-conditioned renewal amount is a monotonically non-decreasing function of the count of recorded severance events across the constituent edges of the renewing origin-equivalence class (200), a class each of whose edges resolves not-typeable renewing at a declared least amount.
- The reason-type-conditioned issuance decrement is specified ordinally: greatest for an edge resolving not-typeable, lesser for payment-sustained or obligation-sustained, least for want-sustained.

A disclosed alternative replaces the threshold form of that cost multiplier with a continuous function of the recorded severance count across the constituent edges of the class, declared in the signed policy object (112) and monotone in that count.

Downstream stages that read the same recorded events

Section 10.1 of the application gathers value-scope resolution, reason-type admission, provisional restoration, and correction exposure. Within it, the paragraph disclosing severance events and the survival state precedes three that consume its output in sequence: the ordered procedure yielding a reason-type from the pair of states, the weighting of state movement by that reason-type, and the standing multiplier derived from three timing-domain statistics over the agent's own lineage entries (104) and nothing else.

Section 2.5 runs the same test at class granularity. Where every constituent edge of an origin-equivalence class (200) resolves not-typeable, the class is designated an untested class, a designation resting upon the not-typeable resolution alone and upon no narrower condition, and metering of the refusal counter (304) reads it. Recomputation is confined to three triggers and no other: receipt of a conduct evaluation artifact (116) from an asserting party (118) assigned to the class; append of a severance event against a constituent edge, or of an entry carrying such an edge to a survived value; and merge of the class. A recomputation that changes the designation is appended and governs contributions applied after the append, without altering a contribution already applied within the current window. Nothing is excluded by the multiplier that follows: it suppresses no determination produced for the class's artifacts, and does not prevent the class from contributing at full weight where the class later accumulates recorded severance events.

Renewal reads the same counted events. The amount by which a renewal raises the authorization quantity, and the amount by which it replenishes the authorization budget (404), are each non-decreasing in the count of recorded severance events across

the constituent edges of the renewing class, so a principal standing up fresh identities that classify into classes bearing no recorded severance event renews at the declared least amount and does not restore full authorization. On the issuing side, the decrement applied to the authorization budget (404) upon issuance of a conduct evaluation artifact (116) is conditioned on the reason-type of the edge between the issuing agent (100) and the receiving party.

Evidence arriving afterward gets a procedure of its own. Upon a severance event subsequently recorded against an edge, the agent recomputes that edge's reason-type and, where it resolves differently, appends a superseding-type entry naming the superseded reason-type, the superseding reason-type, and the severance event upon which the retyping was performed. Modifications of the scoped integrity vector (106) and the self-esteem aggregate (108) already applied under the superseded type are neither reversed, recomputed, nor removed, and the superseding type governs only the weighting of a modification whose recorded assertion time is later than the retyping entry. What each stage relied upon sits in the append-only lineage field (104): the resolution and its inputs, and each operand of the effective weighting.

Structural distinctions from churn analytics, reputation weighting, and lifecycle records

Several established categories of system record something resembling the ending of a commercial relationship. They are described as they generally operate, to locate the structural difference; nothing here characterizes any product, publication, or method as falling within any claim.

Customer relationship and account-lifecycle systems record contract starts, renewals, terminations, and churn flags against an account, producing an account status for reporting. The filed mechanism differs in structure. State is computed per

severance class, so a payment ending and an obligation ending stay separately visible; it is three-valued, so an untested class carries an explicit not-tested value; and the result weights the recording party's own governed state rather than labeling the counterparty.

Reputation, feedback, and trust-scoring systems weight a participant's input by ratings, transaction counts, declared credentials, or scores supplied by others, and the application's background records that the scored entity in such systems neither holds the score nor participates in its computation. Under the filed mechanism, the reason-type is never declared by the asserting party (118), and no cardinal magnitude of benefit conferred or received is computed, solicited, or stored.

Survival analysis and churn prediction compute survival functions, hazard rates, and probabilities of continuation over populations, producing an estimate. Nothing is estimated here. One of three recorded values is assigned per class from entries already held in the append-only lineage field (104), and where the test does not resolve, not-typeable carries the edge forward.

Tie-strength and edge-decay models over interaction graphs infer relationship strength from recency, frequency, or the content of exchanges. No such inference is admitted by the filed severance event, which carries a reference to the evidencing entry and rests upon a recorded cessation of a settlement obligation or a recorded lapse or revocation of a contract or enforcement record.

Contract lifecycle and entitlement management systems track validity windows, expiry, and revocation, and are a plausible source of the evidencing entries an obligation-class severance refers to. What they do not compute is whether an interaction entry followed the lapse within a declared continuation interval, asked of each class separately and resolved into exactly one reason-type.

Disclosure Scope

This article describes subject matter disclosed in U.S. Provisional Application No. 64/117,812, at Section 10.1, paragraph [0333], titled "Edge severance events and three-valued survival state." Supporting disclosure appears at paragraphs [0334] through [0336], at Section 2.5 paragraphs [0072] through [0079], at [0347], [0348], [0488], and [0490], in the background discussion of reputation and trust systems at [0004], and in the definitions of "severance event" at [0539] and "reason-type" at [0532].

Publication is defensive, establishing a public, timestamped record of this mechanism on this date. Nothing here enlarges the application's disclosure: every structure, class, value, and consequence above is stated because the filed specification supports it, and each quantity described as declared carries no value recited in the filing. Where an outcome is conditioned there, upon a declared continuation interval, upon a declared non-zero minimum, or upon convergence of recorded introduction paths, it is conditioned here in the same terms. This article defines no claim, enlarges no claim, and limits no claim; where it and the filed application differ, the application governs. Adaptive Query is the portfolio under which this and related mechanisms are disclosed.

Deference and Earned Exposure ([/earn](#) [All 49 steps → \(/inventive-steps\)](#)

ed-exposure

Standing earned through recorded conduct; deference that survives across agents.

Provisional application

PRIMARY TECHNICAL DISCLOSURE

- [Earned Exposure and Deference Records: Standing Built From Recorded Conduct \(/articles/earned-exposure/earned-exposure-and-deference-records\)](#)

SECONDARY TECHNICAL

- [The Valuation-Free Ordinal Standing Quantity \(/articles/earned-exposure/valuation-free-ordinal-standing\)](/articles/earned-exposure/valuation-free-ordinal-standing)
- [Determination-Invariance Under an Agent's Own Policy Succession \(/articles/earned-exposure/determination-invariance-policy-succession\)](/articles/earned-exposure/determination-invariance-policy-succession)
- [Elective Exposure Enrollment Without Deference \(/articles/earned-exposure/elective-exposure-without-deference\)](/articles/earned-exposure/elective-exposure-without-deference)
- [Interventional Attribution by Receipt-Path Control \(/articles/earned-exposure/interventional-attribution-receipt-path\)](/articles/earned-exposure/interventional-attribution-receipt-path)
- [The Portable Exoneration Record \(/articles/earned-exposure/portable-exoneration-record\)](/articles/earned-exposure/portable-exoneration-record)
- [Attribution, Exoneration, and the Domain Baseline: An Ordered Branch Over the Latency Differential \(/articles/earned-exposure/attribution-versus-exoneration-branch-domain-baseline\)](/articles/earned-exposure/attribution-versus-exoneration-branch-domain-baseline)
- [Bounded Count of Dispatches Per Deference Record: Capping How Many Executions One Counter-Signed Adopted Determination Authorizes \(/articles/earned-exposure/bounded-count-dispatches-deference-record\)](/articles/earned-exposure/bounded-count-dispatches-deference-record)
- [Coarse Lineage-Segment Granularity: Verifying a Tested-Entry Enumeration Without Disclosing Which Lineage Entries Were Tested \(/articles/earned-exposure/coarse-lineage-segment-granularity-tested-entry\)](/articles/earned-exposure/coarse-lineage-segment-granularity-tested-entry)
- [Correction-Exposure Decay: An Authorization Quantity That Depletes With Agent Operation and Renews Only on Recorded External Evaluation \(/articles/earned-exposure/correction-exposure-decay-authorization-quantity\)](/articles/earned-exposure/correction-exposure-decay-authorization-quantity)
- [Cause-Keyed Gate Restoration: A Distinct Return Path for Decay-Induced Withholding of Agent Authorization \(/articles/earned-exposure/distinct-return-path-decay-induced-withholding\)](/articles/earned-exposure/distinct-return-path-decay-induced-withholding)
- [Edge Severance Events and the Three-Valued Survival State: Resolving Whether a Counterparty Relationship Outlived a Payment-Class or Obligation-Class Termination \(/articles/earned-exposure/edge-severance-events-three-valued-survival\)](/articles/earned-exposure/edge-severance-events-three-valued-survival)
- [Emitting the Deference Correction Linkage Record to the Followed Agent: Reporting a Downstream Correction Without Producing a Rating \(/articles/earned-exposure/emission-deference-correction-linkage-record-followed\)](/articles/earned-exposure/emission-deference-correction-linkage-record-followed)
- [The No-Address Omission Branch: What a Deferring Agent Records When an Exposure Dispatch Reaches Nobody \(/articles/earned-exposure/exposure-dispatch-no-address-omission-branch\)](/articles/earned-exposure/exposure-dispatch-no-address-omission-branch)
- [Channel-Baseline Normalization: Taking Channel Overhead Out of the Latency Differential \(/articles/earned-exposure/latency-differential-channel-baseline-normalization\)](/articles/earned-exposure/latency-differential-channel-baseline-normalization)
- [Reason-Type Resolution From Severance-Survival States: Typing an Agent's Relationship Edges Without Asking the Counterparty \(/articles/earned-exposure/reason-type-resolution-survival-states\)](/articles/earned-exposure/reason-type-resolution-survival-states)

- [Reason-Type Retyping by a Superseding-Type Entry: Recomputing an Edge's Reason-Type on Later Severance Evidence Without Disturbing Modifications Already Applied \(/articles/earned-exposure/reason-type-retyping-superseding-type-entry\)](/articles/earned-exposure/reason-type-retyping-superseding-type-entry).
- [Renewal-Side Replenishment of the Authorization Budget: Restoring an Agent's Metered Spending Capacity Only on Exposure to an Uncounted Origin-Equivalence Class \(/articles/earned-exposure/renewal-side-replenishment-authorization-budget\)](/articles/earned-exposure/renewal-side-replenishment-authorization-budget).
- [Following Does Not Count as Being Tested: Retention of the Short Decay Constant When an Agent Defers, and the Action Class That Stays Untested \(/articles/earned-exposure/retention-short-decay-constant-deference-class\)](/articles/earned-exposure/retention-short-decay-constant-deference-class).
- [Standing-Determination Designation: Substituting a Verified Counterparty Determination for One Conjunct of the Dispatch-Authority Predicate \(/articles/earned-exposure/standing-determination-on-designation-substitution-inside-dispatch\)](/articles/earned-exposure/standing-determination-on-designation-substitution-inside-dispatch).
- [Uncounted-Class Renewal: Gating Agent Authorization on a Windowed Register of Origin-Equivalence Classes \(/articles/earned-exposure/uncounted-class-renewal-gated-windowed-register\)](/articles/earned-exposure/uncounted-class-renewal-gated-windowed-register).

APPLICATIONS · GENERAL

- [Vendor Qualification Without Ratings: Standing Earned From Recorded Conduct \(/articles/earned-exposure/vendor-qualification-without-ratings\)](/articles/earned-exposure/vendor-qualification-without-ratings).
- [Credentialing Autonomous Practitioners: Deference That Survives Across Agents \(/articles/earned-exposure/professional-credentialing-agents\)](/articles/earned-exposure/professional-credentialing-agents).

APPLICATIONS · SPECIFIC

- [Marketplace Seller Reputation Systems: Presented Scores Versus Earned Admissibility \(/articles/earned-exposure/marketplace-seller-reputation\)](/articles/earned-exposure/marketplace-seller-reputation).

TERMINOLOGY

- [counterparty identity record \(/glossary#counterparty-identity-record\)](/glossary#counterparty-identity-record).
- [deference record \(/glossary#deference-record\)](/glossary#deference-record).
- [edge \(/glossary#edge\)](/glossary#edge).
- [reason-type \(/glossary#reason-type\)](/glossary#reason-type).
- [severance event \(/glossary#severance-event\)](/glossary#severance-event).
- [standing quantity \(/glossary#standing-quantity\)](/glossary#standing-quantity).
- [untested class \(/glossary#untested-class\)](/glossary#untested-class).

[Deference and Earned Exposure overview → \(/earned-exposure\)](/earned-exposure)

