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Transitive Reliance Records and the Reliance Chain: Registering Second-Order Dependency on a Settlement Without Any Party Enumerating the Whole Chain

A transitive reliance record is a reliance record that carries, in place of the settlement identifier, an upstream-reliance reference naming another party, the entry of that party's lineage at which its reliance record was appended, and the settlement identifier ultimately relied upon. Disclosed in U.S. Provisional Application No. 64/117,812, it addresses a party that consumes not a settlement but another party's reliance-bearing determination, and so holds no settlement identifier to place in the record. The further party emits its transitive record as a governed observation to the referenced party alone and not to any settled party. That party verifies it, confirms the upstream reference resolves to its own reliance record, and enters it in its own reliance register. A sequence of such records each referencing the next and terminating in one carrying a settlement identifier constitutes a reliance chain, and each party holds a register of the parties immediately downstream of it and no enumeration of the whole chain.

Where a registered dependency runs out of reach

Matched-pair settlement settles a bilateral exchange between a semantic agent (100) and a counterparty. A first governed observation (608) from one party and a second governed observation (610) from another are recognized as a matched pair (600) under a pairing rule, within one or more of a spatial proximity window and a temporal proximity window (602). The pair is bound into a settlement record (604) comprising the two signed observations, a cryptographic binding over both, and an attestation of the window within which the pair was recognized. Settlement also writes a settlement-lineage entry (606) into the append-only lineage field (104) of each party. The settlement record (604) is verifiable by a downstream consumer from the record alone.

A settled pair is subject to challenge only through a credentialed dispute procedure, whose rendered resolution may include a settlement reversal, a settlement amendment, a compensation directive, or a no-change outcome. Section 6.16 recites that a reversal is given effect by the settled party appending a reversal record enumerating each reliance entered under the settlement identifier and emitting a reversal notice to each relying party so enumerated. The reach of that notice is the reach of the enumeration.

For the first party outward, the filing supplies what the enumeration draws upon. A relying party that independently verifies a settled matched pair (600), against the counterparty identity records (114) it holds for both settled parties, and then produces a determination consuming that settlement, appends to its append-only lineage field (104) a reliance record carrying the settlement identifier, a consuming-determination reference identifying the exact determination with its action class and scope partition, the relying party's identity primitive, and its attested epoch. That record is emitted to both settled parties as a governed observation, soliciting no acceptance. Each settled party, on verifying it and resolving the settlement identifier to a settlement-lineage entry (606) of its own, enters it in a reliance register indexed by settlement identifier and appends a reliance acknowledgment.

A further party may consume not the settlement but another party's reliance-bearing determination, and holds no settlement identifier to carry in a reliance record of the recited form.

An upstream reference standing in the settlement identifier's place

Such a party appends a reliance record carrying, in place of the settlement identifier, an upstream-reliance reference. The reference names that other party, the entry of its lineage at which its reliance record was appended, and the settlement identifier ultimately relied upon. A record of that form is a transitive reliance record, and a sequence of them each referencing the next and terminating in one carrying a settlement identifier constitutes a reliance chain.

Emission is directed. The further party emits its transitive record as a governed observation to the referenced party alone, not to any settled party. A governed observation, as the filing defines it, is a signed structure comprising at least an authority credential field and a payload field, emitted complete upon emission, and emitted without acknowledgment, handshake, delivery confirmation, or registration with a central authority.

Receipt carries conditions of its own. The referenced party verifies the transitive record, confirms that the upstream reference resolves to its own reliance record, and enters it in its own reliance register. Each party thus holds a register of the parties immediately downstream of it and no enumeration of the whole chain.

That register is what a reversal is recited to traverse. A party of a reliance chain that admits a reversal notice, appends its reversal mark, and re-resolves then evaluates the reliance-completeness predicate over its own reliance register, indexed by the reliance record the notice named, and emits to each downstream party so enumerated a transitive reversal notice as a governed observation. The notice carries that party's own

reliance record identifier, the settlement ultimately reversed or amended, the resolution class, any amended terms, and a hop count. Each downstream party treats it as a reversal notice, appends its own mark, re-resolves, and discharges the same duty onward, so that the reversal reaches a chain of arbitrary length with no party holding the whole enumeration. Propagation within a party's own lineage is bounded by a re-resolution cascade bound declared in that party's signed policy object (112), the traversal terminating in a recorded abstention state rather than unbounded recursion.

What each hop does upon the notice is recited for a relying party receiving one. That party, having verified the notice against the counterparty identity record (114) of the emitting settled party, appends to its append-only lineage field (104) a reversal mark carrying the settlement identifier, the resolution class, the emitting identity and epoch, and a reference to its reliance record; the settlement the mark names is not deleted. Thereafter it tests each settlement identifier presented as a determination input against its reversal marks, and one bearing a reversal-class mark is not admitted. Where the class is a reversal, the party re-resolves the referenced determination with the barred input unavailable and emits an outcome of its recorded abstention class (126). Where the class is an amendment, it re-resolves against the amended terms and, if those terms supply every consumed input, produces a fresh determination and a fresh reliance record. The outcome propagates to consuming determinations under the conversion bar (502) and is adverse to no settled party.

At the settled end, the enumeration condition rests with the party that reverses. A settled party reversing or amending a settlement appends a reversal record carrying a reliance enumeration field and evaluates a reliance-completeness predicate by an evaluator in its own memory field (102). The predicate is satisfied only where, for every reliance record entered in that party's own reliance register under the settlement identifier, the enumeration carries a matching entry by relying-party identity and consuming-determination reference. Where the predicate is satisfied, the reversal is given effect and a reversal notice is emitted to each enumerated relying party. Where it is not, the reversal record is appended as an attempted-reversal entry and the

settlement is not reversed, continuing to obtain for a downstream consumer verifying it from the record alone. No other party is polled, votes, or responds, and the non-response of a relying party neither prevents nor conditions the reversal.

Quantities the filing declares, and those it leaves open

Cardinality of the reliance record is recited rather than configured: the record is bound to exactly one settlement and one determination, and its consuming-determination reference identifies that determination with its action class and scope partition. The registered unit is a determination.

Register reach is stated at one hop: each party holds a register of the parties immediately downstream of it and no enumeration of the whole chain, and no parameter widening or narrowing that reach is declared.

Chain length carries no value in the paragraph itself, the reversal being recited as reaching a chain of arbitrary length. Bounds of a related kind appear elsewhere: the signed policy object (112) resolved for the settlement context declares, among the settlement parameters, a chained-settlement length bound. Under Section 6.13, responsive to reading the provisional marker upon an execution record of a presenting party, the receiving party writes a reliance bound record into the counterparty identity record (114) of that party, capping the length of any chained settlement dependency in which such a settlement participates, under bounds declared in the governing policy object.

The re-resolution cascade bound is likewise declared and not derived. Declared in the party's signed policy object (112), it bounds propagation within that party's own lineage. No numeric value, no default, and no permitted range accompanies it.

A hop count travels in the transitive reversal notice, and no threshold upon it is recited.

The completeness predicate is a per-record matching condition rather than a quorum, and no proportion and no tolerance appears. Timing quantities are absent as well: no expiry, validity period, or decay is declared for a reliance record or a register entry, and the temporal proximity window (602) beneath is defined by enumerated forms, among them an absolute duration, an adaptive window, and a count of epochs of the dynamic agent hash chain, rather than by a stated value.

Composition with the settlement, abstention, and provenance layers

Beneath the chain sits Section 6. The matched pair (600), the settlement record (604), and the settlement-lineage entry (606) supply the object relied upon and the settlement identifier that the upstream-reliance reference carries at every position in the chain. Such an entry is neither removed nor modified, a subsequent reversal or amendment being itself appended. Section 6.3 recites three negative conditions of that settlement: no third-party intermediary participates, no centralized consensus is computed, and no pre-negotiated session state exists between the parties.

Section 5 governs what a re-resolution emits. An abstention outcome is appended to the append-only lineage field (104) as a first-class outcome entry comprising the abstention class, an identifier of the stage that produced it, an identifier of the unavailable input, and a recorded time; a further determination consuming it emits an abstention outcome of its own recorded class. The conversion bar (502) forecloses converting such an outcome into a scalar value, a default value, an operand of a threshold comparison (510), or a consequence adverse to any party.

The same section that recites the reliance chain also recites a second propagation of similar shape. A consuming agent (100) maintains against each endpoint an onward emission register, writing an entry whenever it emits that endpoint to a peer semantic agent (100) as a tool source. Upon writing a provenance-withdrawn attribute, it enumerates that register and emits an onward withdrawal notice to each peer whose

recorded head is the head withdrawn or descends from the withdrawn entry, and a peer holding a matching endpoint discharges the same duty to its own downstream peers across a sourcing chain of arbitrary length. In both registers, what a party holds is the next hop.

Distinguishing ledgers, revocation lists, and provenance graphs

Several established lines of work address neighboring problems. The comparisons below are structural, and assert nothing about any product, party, or practice.

Distributed ledgers and consensus-ordered chains give dependency visibility by replicating a globally ordered state that every participant reads. The filed structure declines that premise: no quorum, no distributed ledger commit, and no consensus round is a condition of settlement, finality attaching upon recognition and admission of the pair itself.

Certificate revocation lists and online status responders publish invalidation from a central issuer that consumers query. In the filed arrangement the notice travels from the party actually relied upon to the parties immediately downstream of it, and the enumeration comes from that party's own register.

Publish-and-subscribe brokers and webhook fan-out maintain a subscriber list per topic. A register entry here is admitted only where the upstream reference resolves to a reliance record the receiving party itself appended, each entry naming one determination.

Data lineage systems and software bills of materials record derivation for later audit, assembled into a graph a consumer reads whole. Registration in the filed arrangement occurs when reliance is taken, and runs from the consumer toward the party consumed from.

Two-phase commit and coordinated compensating transactions obtain agreement from participants before an outcome is fixed. The filed condition is evaluated by one party: the predicate rests upon the reverting party's own enumeration, and a non-response neither prevents nor conditions the reversal.

Reference counting in distributed caches tracks how many holders an object has, as a count. The register instead holds identified parties and consuming-determination references, and an abstention outcome reached through the chain falls under the conversion bar (502).

Each of these addresses a real need and can sit alongside what the filing describes. What the filed paragraph adds is narrower: a reliance record whose settlement identifier is replaced by a reference to another party's reliance record, emitted to that party alone, yielding a chain terminating in a settlement and along which a reversal notice travels one hop at a time.

Disclosure Scope

This article describes subject matter disclosed in U.S. Provisional Application No. 64/117,812, at Section 10.5, paragraph [0411], titled "Transitive reliance record and the reliance chain." Immediately supporting it are [0408] on the reliance record registered with the settled parties, [0409] on the reliance-completeness predicate conditioning a reversal, [0410] on the relying party's reversal mark and re-resolution, and [0412] on one-hop propagation of a reversal along a reliance chain and the re-resolution cascade bound. Supporting architecture appears at Sections 5.3 and 5.4 for abstention propagation and the conversion bar (502), Sections 6.1 through 6.3 for the matched pair (600), the temporal proximity window (602), the settlement record (604), and the three negative conditions, Section 6.6 for the settlement-lineage entry (606), Section 6.13 for the reliance bound record, Section 6.16 for credentialed dispute resolution, [0399] for the onward withdrawal duty, and Section 11 for the definitions relied upon.

Everything asserted above is drawn from that filed disclosure. Descriptions are of embodiments, and the scope of any exclusive right is determined by the claims of any application claiming benefit of that provisional, not by this article. Publication establishes public, timestamped prior art on this mechanism, and is not a license, an offer, or legal advice.

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)

SECONDARY TECHNICAL

- The Derived-Artifact Provenance Chain and Chain-Head Identifier (/articles/governed-settlement/derived-artifact-provenance-chain)
- Provenance Withdrawal and the Provenance-Withdrawn Attribute (/articles/governed-settlement/provenance-withdrawal)
- 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)
- The First-Encounter Settled Pair and Promotion to the Persistent Tier (/articles/governed-settlement/first-encounter-settled-pair)
- Contribution Encumbrance on Severance or Quarantine: Governing Dispatch to Models Trained on a Severed Counterparty's Corpus Without Retraining or Deletion (/articles/governed-settlement/contribution-encumbrance-severance-quarantine)
- Encumbrance Bounds That Bar Persistence Promotion and Onward Tool-Source Emission Once the Per-Endpoint Count Exceeds the Bound (/articles/governed-settlement/encumbrance-bound-barring-promotion-onward-emission)

- Blinded Encumbrance Commitments: Carrying a Severed Contributor's Encumbrance Along With an Inference Endpoint Emitted to a Peer Agent (/articles/governed-settlement/encumbrance-commitment-travelling-emitted-endpoint)
- Release of a Contribution Encumbrance: Matched-Pair Re-Admission or a Substitution With an Empty Intersection (/articles/governed-settlement/release-contribution-encumbrance)
- Registering Third-Party Reliance on a Settled Matched Pair: The Reliance Record and the Settled-Party Reliance Register (/articles/governed-settlement/reliance-record-registered-settled-parties)
- Conditioning a Settlement Reversal on a Reliance-Completeness Predicate Evaluated Over the Reverting Party's Own Reliance Register (/articles/governed-settlement/reliance-completeness-predicate-conditioning-reversal)
- The Relying Party's Reversal Mark: Barring a Reversed Settlement as a Determination Input and Re-Resolving the Determination That Consumed It (/articles/governed-settlement/relying-party-reversal-mark-and-re-resolution)
- **Transitive Reliance Records and the Reliance Chain: Registering Second-Order Dependency on a Settlement Without Any Party Enumerating the Whole Chain (/articles/governed-settlement/transitive-reliance-record-reliance-chain)**
- Transitive Reversal Notices That Carry a Settlement Reversal One Hop at a Time Along a Reliance Chain No Party Enumerates (/articles/governed-settlement/one-hop-propagation-reversal-along-reliance)
- Contested Pairing in Matched-Pair Settlement: Withheld Recognition, a Distinct-Identity Claimant Count, and the Not-Determinable Resolution (/articles/governed-settlement/contested-pairing-not-determinable-resolution)
- Attributable Contest Resolution: Settling a Contested Offer by Re-Emitting a First Governed Observation That Names Exactly One Claimant (/articles/governed-settlement/attributable-contest-resolution-named-re-emission)
- Local Outcome-Quality Records and Smoothed Endpoint Selection Preference for Governed Inference Dispatch (/articles/governed-settlement/outcome-quality-record-endpoint-selection-preference)

APPLICATIONS · GENERAL

- B2B Agent Commerce: Bilateral Settlement Without a Clearing House (/articles/governed-settlement/b2b-agent-commerce-settlement)
- Supply Chain Handoffs: Settling a Transfer on Matched Observations (/articles/governed-settlement/supply-chain-agent-handoffs)

APPLICATIONS · SPECIFIC

- ISO 20022 and Settlement Messaging: Matched Pairs in Financial Infrastructure (/articles/governed-settlement/iso-20022-settlement-messaging)

TERMINOLOGY

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

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