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Mutual First Encounter Without Cross-Budget Coordination: Two Strangers, Two Matched Pairs, Two Separate Budget Decrements

First-encounter admission is written from the receiver's side: an agent holding no counterparty identity record of a presenting party instantiates an ephemeral-tier record, emits a scaffolding observation naming the canonical fields the presentation left absent, and decrements its own authorization budget. The mutual case, where neither agent holds a record of the other, is disclosed in U.S. Provisional Application No. 64/117,812 at Section 10.4, paragraph [0393]. There the presenting party emits its own scaffolding observation with the roles exchanged, and the two exchanges are two distinct matched pairs, each recognized on its own window, neither conditioned on the other. Each agent instantiates its own ephemeral-tier record, appends its own provisional-identity record, and applies its own first-encounter budget decrement against its own authorization budget, metered against its own first-encounter register, with no decrement of either agent coordinated with, offset against, or credited against the decrement of the other.

Neither Side Holds a Record of the Other

Two autonomous agents transact for the first time, and neither has ever recorded the other. Under [0038] the first admissibility step verifies the signature of a conduct evaluation artifact (116) against an identity primitive recorded in the counterparty identity record (114) of the asserting party (118). For the agent holding no such record, that paragraph verifies the signature against a provisional identity primitive constituted from the presented identity material and holds the artifact in the pre-settlement inert state until a record (114) is promoted upon a matched-pair settlement under Section 6.

Section 10.4 develops that branch from one side. Under [0387], the agent (100) receiving such an artifact neither admits nor rejects it; on verification of the signature against the provisional primitive it instantiates an ephemeral-tier counterparty identity record, being a counterparty identity record (114) at the most restrictive scope, seeded only from the presentation with an empty encounter history, and appends a provisional-identity record. Paragraph [0388] has it emit a scaffolding observation carrying an absent-field enumeration as the first governed observation (608) of a matched pair (600). Paragraph [0391] prices the instantiation: the agent decrements its own authorization budget (404) by a first-encounter budget decrement, from the signed policy object (112), metered per presented-material origin-equivalence class against a first-encounter register.

That construction names a receiver and a presenter. In the mutual case each agent is a receiver of the other's material, and neither holds a recorded primitive to verify against.

Two questions follow. The first is whether the meeting is one exchange or two. The second is whether the two agents' decrements interact, since [0386] already coordinates two decrements within one agent, applying one decrement of the authorization budget (404) rather than two where one presenting party occasions both a receipt-presentation decrement and a first-encounter budget decrement resolving to a common origin-equivalence class (200) within a common window.

Two Pairs, Two Registers, Two Budgets

Paragraph [0393] states the mutual condition and answers both questions. Its predicate is that each of two agents (100) holds no counterparty identity record (114) of the other. On that predicate the presenting party emits its own scaffolding observation naming the canonical fields the receiver's material did not supply, with roles exchanged.

What such an observation may name is fixed by [0388]. The absent-field enumeration is computed by comparing the seeded fields of the ephemeral-tier record against the canonical fields of a counterparty identity record (114). It names exactly those canonical fields the presentation did not supply, names no field already supplied, and names no field outside the canonical set, whereby the exchange cannot solicit material a counterparty identity record (114) does not hold. A scaffolding observation carries no conduct descriptor, is not admitted to the admission evaluator (120), and is not adverse to a party that does not answer.

On the first question, [0393] states that the two exchanges are two distinct matched pairs (600), each of a scaffolding observation and the completing observation answering it alone, each recognized on its own window, neither conditioned on the other. Under [0199] a matched pair (600) comprises a first governed observation (608) and a second governed observation (610) recognized as a pair by a pairing rule within one or more of a spatial proximity window and a temporal proximity window (602), each such window declared in the governing policy object, the pair being bound into a settlement record (604) that comprises the two signed observations, a cryptographic binding over both, and an attestation of the window of recognition.

Inside a pair the completing observation is disciplined by [0389]. It references the scaffolding observation and carries a value for each named absent field, each value tested for conformance to the declared structure of its canonical field, its continuity hash field required to validate as a successor of the seeded sequence, binding the completer to the presenter by slope continuity rather than any external credential. Paragraph [0394] bounds what a completion may touch: where it carries a value for a

field seeded under the ephemeral-tier seeding, the carried value is not written, the seeded value is retained, and the agent (100) appends to the append-only lineage field (104) the carried value, its non-writing, and an identification of the seeded value retained.

On the second question, [0393] assigns each agent its own construction throughout. Each instantiates its own ephemeral-tier record, appends its own provisional-identity record, and applies its own first-encounter budget decrement against its own authorization budget (404), metered against its own first-encounter register, the class being the presented-material origin-equivalence class computed under [0391] over the material presented to that agent.

No decrement crosses. Paragraph [0393] states that no decrement of either agent is coordinated with, offset against, or credited against the decrement of the other, coordination being of two decrements of one budget (404), not across two budgets, and that each bears the cost of the meeting on its own budget. Section 4 describes budgets on the same terms: [0113] states that an issuing and a receiving semantic agent (100) are distinct parties, each maintaining its own memory field (102), append-only lineage field (104), and authorization budget (404), while [0111] states that the two roles a single agent occupies are governed by one authorization budget (404).

Where an agent instantiates an ephemeral-tier record, its material stays inert until that record resolves. Under [0390], from instantiation until promotion or timeout, that record and every conduct evaluation artifact (116) received from its party occupy a pre-settlement inert state. Each such artifact 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 self-esteem aggregate (108) is moved; 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). The state is neither denial nor rejection, and the holding is appended as a positive abstention under the conversion bar (502).

Promotion is stated in [0389] for a pair that settles. On recognition within the window the agent (100) writes a first-encounter settlement-lineage entry as the first entry of the empty encounter history, appends a first-encounter promotion record, writes the record's persistence from ephemeral to persistent tier, and writes the provisional primitive as the recorded identity primitive. The record is thereafter a counterparty identity record (114) whose recorded primitive verifies the first admissibility step, and held artifacts pass to the admission evaluator (120).

Quantities Declared, Values Left to Policy

The filed text states no numeric value for any quantity this mechanism uses; each is declared in a policy object.

- The first-encounter budget decrement is drawn from the signed policy object (112), under [0391]. No amount is stated.
- The first-encounter register records borne decrements per class per window, under [0391], and the window is given no value there. Where Section 4 expresses a metering window, at [0115], it does so as a count of successor epochs of the dynamic agent hash chain.
- The pairing window is a temporal proximity window (602), a spatial proximity window, or both, each declared in the governing policy object under [0199]. Paragraph [0200] enumerates the forms each may take, among them an absolute duration measured from the first governed observation (608) and a count of epochs of the dynamic agent hash chain.
- The authorization budget (404) carries a budget floor field holding a floor declared in the signed policy object (112), under [0117]. Responsive to the budget (404) satisfying that floor, [0128] states that the authorization gate (300) is written to the

withheld state (310) for an enumerated set of action classes, that consequence being conditioned on the floor being satisfied.

The relations by which a presented-material class is computed are likewise declared rather than fixed. Paragraph [0391] states three: two parties are common where their carried predecessors resolve to a common position, where their attested assertion-cost counter (400) states pass a common-accumulator test, or where a declared partition-entry relation holds. The second is stated structurally, one accumulator advanced by one chain with the lesser state's epoch a predecessor of the greater and their state difference not exceeding the epochs separating them, with no numeric bound. Section 2.2 states at [0063] that the enumeration of declared relation types comprises at least one relation type, an empty enumeration assigning every asserting party (118) to a distinct origin-equivalence class (200).

Position of the Mutual Case in the Filed Architecture

Within Section 10.4, paragraphs [0387] through [0390] establish the ephemeral tier, the scaffolding observation, the settled pair and promotion, and the inert state; [0391] prices and meters instantiation per presented-material class; [0392] makes the promotion reversible, writing the record's persistence back to ephemeral tier where an epoch identifier later received from a promoted party fails the two-stage continuity validation. Paragraph [0393] states what that chain does where each of two agents holds no record of the other.

The receipt half of the same section supplies the neighboring metering. Paragraphs [0380] through [0385] build the encounter receipt, the verification that turns a presented receipt into an encounter attestation, and the receipt-presentation decrement metered per presenting origin-equivalence class (200). Paragraph [0386] coordinates that decrement with the first-encounter decrement into one, and [0393] states that no such coordination runs across two budgets.

Section 2 states the terms on which a class is derived. Under [0063] the evaluation runs upon entries of the agent's own append-only lineage field (104) and upon counterparty identity records (114) it holds, without reference to a centralized registry, without query to a directory, without participation in a consensus procedure, and without coordination with a further execution node. Paragraph [0064] adds that the class so derived is local to the agent that derived it, that a second agent holding different records derives a partition that need not agree, and that no class identifier is transmitted between them.

Section 6 supplies the settlement substrate. Paragraph [0203] states three negative conditions: no third-party intermediary participates in the settlement, no centralized consensus is computed, and no pre-negotiated session state exists between the parties. No prior enrollment of either party with the other is a precondition of the pair, and a party that has never encountered the counterparty may nonetheless form one, identity being carried by the continuity mechanism of Section 6.4.

Reading This Against Handshakes, Registries, and Netting

Several established families do neighboring work, and the distinctions are structural.

Mutual authentication protocols, including mutual TLS and comparable certificate-exchange schemes, have both parties present credentials chaining to a trust anchor each is configured to accept, so enrollment with an issuing authority precedes presenting anything verifiable. Paragraph [0203] states that no prior enrollment with the other party is a precondition of the pair, and [0389] binds the completing party to the presenting party by continuity of its own hash chain.

Authenticated key-agreement handshakes produce one bidirectional session from a symmetric exchange, both directions bound into a single negotiated state. The filed construction produces two matched pairs (600), each recognized on its own window and neither conditioned on the other.

Decentralized identifier and verifiable credential exchange resolves an identifier against a verifiable data registry, and the resulting attestation is portable across relying parties. Under [0063] and [0064] the derivation here consults no registry or directory, and the class identifier confers no portable standing upon the asserting party (118).

Reputation and mutual rating systems have each side score the other after an interaction, aggregating scores into a value that travels. The decrement of [0391] is applied without regard to merit and identically whether the pair later settles, times out, or is refused, and under [0390] nothing adverse is appended during the pre-settlement holding.

Admission tolls and rate limiting, including proof-of-work postage and connection quotas, place the cost of contact on the party seeking it. The cost recited here is receiver-side: under [0391] an agent decrements its own budget (404) responsive to instantiating its own record.

Bilateral netting and reciprocal credit arrangements offset obligations running in opposite directions so that only a net amount moves. Paragraph [0393] forecloses offset and credit between the two agents by name.

None of the foregoing asserts anything about a particular product, protocol, or party; the families are named to mark what this mechanism recites structurally.

Disclosure Scope

Mutual first encounter with no cross-budget coordination is disclosed in U.S. Provisional Application No. 64/117,812 at Section 10.4, paragraph [0393]. Supporting disclosure appears at Section 10.4, paragraphs [0380] through [0392] and paragraph [0394]; at Sections 2.1 and 2.2, paragraphs [0052] through [0065]; at Section 4, paragraphs [0111] through [0117] and paragraph [0128]; and at Sections 6.1 through 6.5, paragraphs [0196] through [0207]. This article describes the mechanism as filed.

Decrement amounts, window lengths, floors, and the enumeration of declared relation types are declared by the governing policy object of a given deployment and fall outside what is disclosed here. Publication is for defensive and technical disclosure purposes and is not an offer, a license, or a representation as to claim scope.

Origin-Equivalence Normalization (/origin-equivalence)

All 49 steps → (/inventive-steps)

Metering that can't be gamed by splitting one accuser into many.

Provisional application

PRIMARY TECHNICAL DISCLOSURE

- Origin-Equivalence Normalization: Metering Refusal Per Source, Not Per Assertion (/articles/origin-equivalence/origin-equivalence-normalization)

SECONDARY TECHNICAL

- Content-Blind Encounter Commitment and the Paired Encounter Receipt (/articles/origin-equivalence/content-blind-encounter-commitment)
- Cross-Receipt Equivocation Detection: Catching an Agent That Tells Two Stories (/articles/origin-equivalence/cross-receipt-equivocation-detection)
- The Untested-Origin Saturation Bound: Pricing a Flood of Freshly Minted Identities (/articles/origin-equivalence/untested-origin-weighted-saturation-bound)
- Counterparty-Side Fork Detection: Recognizing a Split Identity From Outside (/articles/origin-equivalence/counterparty-side-fork-detection)
- The Attestation Origin-Equivalence Gate: An Anti-Collusion Bound (/articles/origin-equivalence/attestation-anti-collusion-bound)
- The Bridging Party and the Deferred Merge: Charging One Windowed Increment Against Every Origin-Equivalence Class a Single Asserting Party Bridges (/articles/origin-equivalence/bridging-party-deferred-merge)
- The Common-Execution-Node Relation Type: Charging Co-Hosted Asserting Parties as One Origin (/articles/origin-equivalence/common-execution-node-relation-type)
- Receiver-Side First-Encounter Budget Decrement: Pricing a Stranger's Arrival Per Presented-Material Origin Class (/articles/origin-equivalence/receiver-side-first-encounter-budget-decrement)

- **Mutual First Encounter Without Cross-Budget Coordination: Two Strangers, Two Matched Pairs, Two Separate Budget Decrements (/articles/origin-equivalence/mutual-first-encounter-no-cross-budget)**

APPLICATIONS · GENERAL

- Sybil-Resistant Agent Networks: When One Accuser Becomes Many (/articles/origin-equivalence/sybil-resistant-agent-networks)
- Fraud Rings in Autonomous Commerce: Metering Per Source, Not Per Claim (/articles/origin-equivalence/fraud-rings-in-autonomous-commerce)

APPLICATIONS · SPECIFIC

- W3C Decentralized Identifiers and Verifiable Credentials: Verifying an Identifier Versus Metering Its Origin (/articles/origin-equivalence/w3c-decentralized-identifiers)

TERMINOLOGY

- asserting party (/glossary#asserting-party)
- origin-equivalence class (/glossary#origin-equivalence-class)

Origin-Equivalence Normalization overview → (/origin-equivalence)