

Partial Reparation Acceptance and the Residual Arc

When a semantic agent harms an identified counterparty, the resulting other-directed reparation arc is discharged only by that counterparty's own acceptance, completing a matched pair. The base rule treats acceptance as all or nothing, so a harmed party either extinguishes the whole obligation or leaves the whole amount pending against the agent's aggregate retention. Partial reparation acceptance, disclosed in U.S. Provisional Application No. 64/117,812, gives the harmed party a third path. It accepts a stated portion in a governed observation; the agent discharges that portion, removes it from the retention register, and creates a residual other-directed arc for the balance that is itself dischargeable only by a further matched pair. A conservation invariant holds the accepted portion plus the residual amount equal to the originating arc, so no split moves the total accumulated.

1. The Gap

An other-directed reparation arc (804) is the obligation a semantic agent (100) carries after it deviates in a way that harms an identified counterparty. The base discharge rule is strict for a reason: the arc is settled only by a matched pair (600) whose second governed observation (610) is the harmed party's own acceptance, produced by the receiving method of the matched-pair machinery and not by the agent, its principal, or

any appointed arbiter. Self-repair discharges nothing owed to somebody else, and while the arc stands undischarged its amount accumulates in a retention register and contributes unrectified dissonance to the integrity compliance score.

That rule, taken alone, forces a binary. The harmed counterparty either produces a reparation acceptance determination (806) that extinguishes the entire arc, or it produces nothing and the entire amount keeps standing. There is no way to record that the counterparty regards part of the tendered reparation as sufficient and the rest as not yet made good. A counterparty that declines leaves the full amount accumulating against the aggregate retention (800), pushing the agent toward the foreclosure that withholds its permission to deviate.

What is missing is a discharge path that lets a counterparty accept a portion now while the unaccepted balance stays alive as a distinct, still other-directed obligation, and never lets the total accumulated move except by genuine settlement. The filing places this path in its section on partial, bounded, and anti-weaponization reparation, and the split it defines is constrained in both directions: it can neither manufacture relief for the agent nor manufacture excess against it.

2. Mechanism

The counterparty bound to an other-directed reparation arc (804) produces a **partial reparation acceptance determination**. It is a second governed observation (610) that accepts a stated portion of the amount apportioned to that counterparty and carries the accepted portion as a field of its payload. Structurally it is an acceptance determination like any other: it is produced by the bound counterparty itself, verified against the agent's counterparty identity record (114), and it pairs with the reparation acknowledgment artifact the agent emitted as the first governed observation (608). The pairing rule is unchanged, so the two observations must share a non-empty scope-partition intersection and satisfy the identity condition, and the acceptance must arrive inside the declared discharge window.

Upon completion of that matched pair (600), three things follow.

First, the agent discharges the arc **as to the accepted portion only**. The discharge is real for that portion: it is removed from the retention register the agent maintains in the append-only lineage field (104), the dissonance it contributed ceases for that portion, and the settlement is recorded in a reparation settlement entry bound in lineage to the arc.

Second, the agent creates a **residual other-directed reparation arc** for the portion not accepted. The residual arc is not a note, a flag, or a reduced balance on the original record. It is a freshly created arc carrying the same counterparty binding field as the arc from which it derives, the same other-directed designation (804), an amount field set to the portion not accepted, and a lineage reference field naming the arc from which it derives. Because it carries the other-directed designation, it inherits every property of that designation. It is discharged only by a further matched pair (600), and never by a restorative mutation of the agent alone. A restorative mutation whose anchored reference names the underlying deviation entry is appended as a non-discharging restorative mutation record, reduces the residual by nothing, and moves no counter. Splitting the obligation therefore converts no part of it into something the agent can clear unilaterally. The unaccepted balance is exactly as binding as the whole arc was.

Third, a **conservation invariant** governs the split. The accepted portion plus the residual amount equals the amount of the originating arc, so a partial acceptance neither reduces nor increases the total accumulated. The split moves the register total by zero: the accepted portion leaves the register only because a genuine matched pair completed on it, and the residual amount stays in the register as the residual arc. What the accepted pair removes is exactly the portion the harmed party accepted, and the remainder is re-anchored as a live arc of the same weight, so no small acceptance can be induced to shrink the accumulated obligation.

The invariant is enforced in the other direction as well. The parties may negotiate the amount through the counter-observation machinery, exchanging revised terms bounded by a declared round count. Where such a counter-observation converges upon an amount exceeding the amount apportioned to that counterparty, the excess creates no further arc and is not accumulated in the retention register. The agent cannot be driven, by negotiation, to hold more obligation than the deviation actually apportioned to that party. The amount accumulated remains the amount exceeding the deviation deductible. So the conservation is two-sided: the split cannot manufacture relief for the agent, and the negotiation cannot manufacture excess against it.

A harmed counterparty can take what has been made good and keep the rest owed, the residual carrying its own counterparty binding, other-directed designation, and lineage back to the deviation. That residual comes off the register only through the harmed party's own acceptance in a completed matched pair, exactly as the original arc would have required.

3. Operating Parameters

The mechanism introduces no new tunable threshold. Its governing constraint is an equality, not a scalar, and it operates over quantities the surrounding machinery already declares in the signed policy object (112).

- **Accepted portion.** A field of the partial acceptance determination's payload, stating the portion of the amount apportioned to that counterparty which the counterparty accepts.
- **Amount apportioned.** For a single resolving counterparty this is the amount of harm exceeding the deviation deductible. Where a plurality of counterparties resolve, the amount exceeding the deductible is apportioned among them, the deductible being drawn once against the aggregate harm and not per counterparty, subject to a minimum apportioned amount and a declared quantum in the signed policy object (112).

- **Discharge window.** The temporal condition on the matched pair, declared in the signed policy object (112) and expressed as a count of successor epochs of the agent's dynamic agent hash chain, so it is not advanced by any other party or by a hosting clock. Each further matched pair on the residual arc runs under its own discharge window, running from emission of the acknowledgment artifact for that residual.
- **Round count.** Counter-observations are admitted per round through the settlement admissibility evaluator and bounded by a round count declared in the governing policy object. Non-convergence, being exhaustion of that round count, is a failure of the timeout class.
- **Aggregate retention.** The residual arc, like the arc it derives from, contributes its amount to the retention register total tested against the aggregate retention (800). That declared quantity is unchanged by the split, and the conservation invariant guarantees the tested total is unchanged by the split as well.

The only quantity the mechanism itself fixes is the equality: accepted portion plus residual amount equals the originating amount, with any converged excess above the apportioned amount held out of the register entirely.

4. Composition

Partial reparation acceptance is a discharge path layered onto the reparation-arc machinery, not a replacement for it. Section 8 supplies the antecedents: the affected-party resolution that designates an arc other-directed and binds it to a counterparty's identity primitive, the apportionment rule that produces the amount apportioned to each resolving party, and the matched-pair discharge under which the harmed party's acceptance is the second governed observation. Partial acceptance refines the final step, taking the base discharge from all-or-nothing to portion-and-residual while preserving every property that made the base discharge trustworthy.

It stands as the splittable counterpart to the dual-lock escrow of the discharge itself, disclosed in the same section of the filing. Under that alternative, the removal of the accumulated amount from the retention register is placed under a dual-lock escrow released only upon completion of the matched pair and rolled back unchanged on timeout, non-acceptance, or failed fulfillment, so a partially completed exchange effects no partial discharge at all. The two are the atomic and the splittable forms of settling one directed obligation, and the filing presents them as alternatives rather than as a single behavior.

The residual arc is a full other-directed reparation arc, so the rest of the section governs it without special cases. It counts as a pending undischarged arc against the outstanding-arc bound, so an agent cannot evade that bound by fracturing one obligation into many residuals. It is subject to the abstention-suspended accumulation record where the bound counterparty has withheld the action class of acceptance, and to the reparation containment suspension where a containment determination stands for the scope partition in which the deviation was recorded: in each case its contribution to the tested accumulation is held at its standing amount rather than discharged. And it inherits the monotonicity of the retention machinery, so it is not reduced by elapsed time, by policy succession, by a principal-resolution object, or by any composite of these. The residual amount comes off the register only through a completed matched pair with the party the record shows was harmed.

5. Prior-Art Distinction

The mechanism sits near several established categories, and the distinction in each case is structural.

Installment and partial-payment ledgers split a monetary obligation into a paid part and a remaining balance. The obligor typically discharges the balance by its own subsequent payment or transfer. Here the residual arc carries the other-directed

designation, so it is not dischargeable by any act of the obligor alone. Only the harmed party's own acceptance, in a further matched pair, retires it.

Dispute-resolution and settlement platforms often support partial settlement, but sufficiency is determined by a third party: an arbiter, an escrow agent, or the platform itself. In this architecture no arbiter, principal, or platform determines whether a portion is enough. The counterparty alone produces the acceptance, and an acceptance presented without the proper authority completes no pair and appends nothing adverse.

Double-entry accounting maintains running balances and permits write-downs by authorized entries. The distinction is the conservation invariant enforced at the primitive level: the accepted portion plus the residual equals the original by construction, the split moves the tested total by zero, and no entry writes the total down other than genuine per-portion settlement. Converged excess above the apportioned amount is held out of the register rather than booked.

Reputation and credit systems track outstanding obligations and frequently let the obligor clear an entry by self-report or by the passage of a curing period. The other-directed designation forecloses both: neither self-report nor elapsed time discharges a residual arc, and severance or demotion of the counterparty supplies no discharge either.

None of these comparisons asserts that any particular product or party practices or infringes the disclosed subject matter. They mark where the mechanism departs from familiar categories.

6. Disclosure Scope

This article describes subject matter disclosed in U.S. Provisional Application No. 64/117,812, Section 10.12, paragraph [0491], titled "Partial reparation acceptance and the residual arc." What is disclosed there is: a partial reparation acceptance determination, being a second governed observation (610) that accepts a stated portion of the amount apportioned to the bound counterparty and carries the accepted portion as a payload field; discharge of the arc as to the accepted portion upon completion of the matched pair (600), with that portion removed from the retention register maintained in the append-only lineage field (104); creation of a residual other-directed reparation arc (804) carrying the same counterparty binding field, the same other-directed designation, an amount field set to the portion not accepted, and a lineage reference field naming the arc from which it derives; discharge of the residual arc only by a further matched pair and never by a restorative mutation of the agent alone; the conservation invariant under which the accepted portion plus the residual amount equals the originating amount so a partial acceptance neither reduces nor increases the total accumulated; and the rule that where a counter-observation converges upon an amount exceeding the amount apportioned, the excess creates no further arc and is not accumulated in the retention register.

What is not represented here: no particular numeric portion, quantum, discharge-window length, round count, or aggregate-retention value is asserted as claimed by this article, those being parameters the signed policy object declares rather than fixed limits of the invention. This is a defensive technical publication and an explanation of filed subject matter. It is not a grant of any license and not an admission of the scope of any claim. The operative, citable rights are defined by the application identified above and by any patents issuing from it.

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

counterparty-reparation)

Repair directed at the harmed party — bounded and resistant to weaponization.

Provisional application

PRIMARY TECHNICAL DISCLOSURE

- [Counterparty-Directed Reparation: Repair Owed to the Party Actually Harmed \(/articles/counterparty-reparation/reparation-directed-to-the-party-harmed\)](#).

SECONDARY TECHNICAL

- [The Costly Acknowledgment Artifact \(/articles/counterparty-reparation/costly-acknowledgment-artifact\)](#).
- [Completion by Non-Worsening Re-Encounter \(/articles/counterparty-reparation/completion-by-non-worsening-re-encounter\)](#)
- [Partial Reparation Acceptance and the Residual Arc \(/articles/counterparty-reparation/partial-reparation-and-residual-arc\)](#).
- [Dual-Lock Escrow of the Discharge Itself \(/articles/counterparty-reparation/dual-lock-escrow-of-discharge\)](#)
- [Per-Integrity-Scope Aggregate Retention and OR-Firing Foreclosure \(/articles/counterparty-reparation/aggregate-retention-or-firing-foreclosure\)](#).

TERMINOLOGY

- [other-directed reparation arc \(/glossary#other-directed-reparation-arc\)](#)
- [reparation arc \(/glossary#reparation-arc\)](#).
- [restorative mutation \(/glossary#restorative-mutation\)](#).
- [unaddressed reparation arc \(/glossary#unaddressed-reparation-arc\)](#).

[Counterparty-Directed Reparation overview → \(/counterparty-reparation\)](#)