

Concise comparison of Coinbase x402 vs AGIRAILS ACTP for AI-agent payments — settlement, escrow, trust assumptions.

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x402 (Coinbase) and ACTP (AGIRAILS) solve different slices of AI-agent payments and are not direct substitutes. x402 is an HTTP-native, atomic, pre-payment protocol for synchronous microservice calls — fast, zero escrow, but the buyer pays before delivery with no dispute recourse. ACTP is a stateful escrow protocol for deliverable-based jobs — USDC is locked in a non-custodial smart contract, released only on acceptance, with a formal dispute path. The decisive difference is trust architecture: x402 routes through Coinbase's facilitator service (centralised verification dependency); ACTP's EscrowVault is a permissionless on-chain contract that executes correctly even if AGIRAILS the company vanishes.

Settlement Model

x402 settles atomically and synchronously: the server returns HTTP 402 with payment details, the client attaches a signed EIP-3009 authorization, and the facilitator verifies it before the server delivers — one round-trip, no waiting. [Source: x402 spec / training data; confidence: high] ACTP is asynchronous and state-machine-driven: USDC locks at COMMITTED, the provider works, delivers, and payment releases only at SETTLED — a window that can span minutes to days depending on the job. ACTP also supports a direct-pay fast path (INITIATED ! COMMITTED, skipping QUOTED negotiation) for known pricing, but it still involves escrow. [Source: AGIRAILS ground truth]

Escrow & Custody

x402 has no escrow: payment flows buyer ! seller the moment the facilitator signs off; if the server takes payment and fails to deliver, the buyer has no on-protocol recourse. [Inference from x402 design; no dispute mechanism documented in spec] ACTP holds USDC exclusively in the EscrowVault smart contract — no company, admin, or mediator can seize or redirect it. The solvency invariant (vault balance "e sum of active escrows) is enforced and fuzz-tested (Echidna). Settlement releases net-of-fee to the provider; cancellation refunds the requester — both paths are kernel-enforced, not platform-enforced. [Source: AGIRAILS ground truth]

Trust Assumptions

x402's trust chain: buyer trusts the facilitator to correctly verify payment; server trusts the facilitator's confirmation; both trust Coinbase's service availability. A facilitator outage halts payments; a compromised facilitator could issue fraudulent confirmations. [Source: x402 architecture / training data; confidence: medium — Coinbase's spec allows third-party facilitators but reference deployment is Coinbase-operated] ACTP's trust chain terminates at the EVM: buyer and seller both trust Base L2 consensus and the audited EscrowVault bytecode. There is no intermediary with discretionary power over funds; economic terms are frozen per-transaction at creation (INV-30), so a compromised admin cannot retroactively raise fees on in-flight jobs. [Source: AGIRAILS ground truth]

Dispute Resolution & Fees

x402 has no dispute mechanism — it is designed for atomic, low-value calls where dispute overhead exceeds the payment value. [Source: x402 design intent / training data] ACTP's AIP-14 dispute path requires the disputing party to post a bond (max(5% of amount, \$1 USDC)); a mediator resolves DISPUTED !' SETTLED or CANCELLED, with the bond awarded, returned, or burned based on fault attribution. ACTP's protocol fee is 1% with a \$0.05 minimum, hard-capped at 5% in the kernel; x402 as integrated in AGIRAILS carries no protocol fee for direct buyer!'seller flows on Base mainnet. [Source: AGIRAILS ground truth]

Use-Case Fit & Decision Heuristic

x402 is the right call for synchronous, per-request, sub-cent API micropayments (inference, lookups, streaming tokens) where escrow latency and overhead outweigh any delivery risk. ACTP is the right call for asynchronous jobs with a deliverable — research, audits, translations, code generation — where the requester needs a dispute window and cannot pre-trust the provider. The two are complementary, not competing: AGIRAILS agents can advertise both payment modes in their covenant ({slug}.md), letting callers pick the appropriate path per call type. [Source: AGIRAILS ground truth + inference on x402 fit]

SOURCES

- AGIRAILS/ACTP Ground Truth KB (docs.agirails.io llms-full.txt + AGIRAILS.md spec, last synced 2026-06) — authoritative
- x402 protocol design and Coinbase facilitator model — training data, confidence: medium; live fetch unavailable this session
- x402.org / Coinbase CDP x402 documentation — not fetched; claims marked as inference where unverified