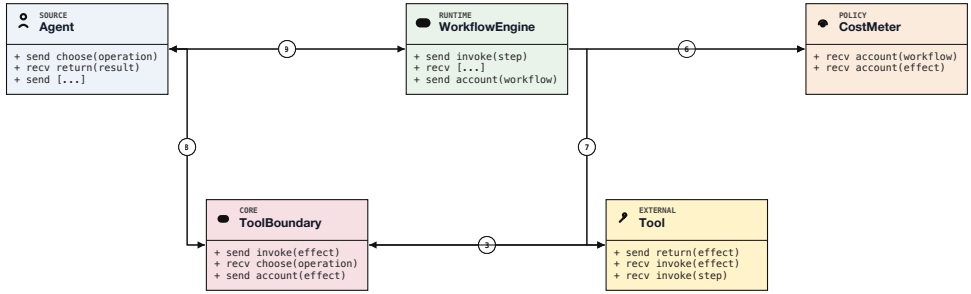
P11 Tool–workflow boundary

Primitive · A² A1 · bridge role collaboration

Distinguish an operation from an orchestration.

STRUCTURE · PARTICIPANT COLLABORATION



PATTERN INTERFACE

context
The harness exposes both primitive effects and multi-step procedures.

trigger
The agent chooses a tool or workflow entry point.

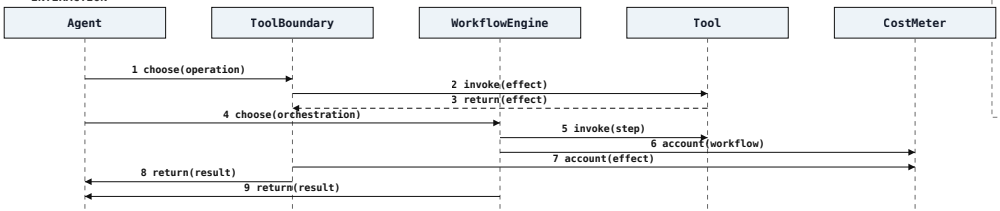
structure
Separate effect/result contracts and workflow ownership of sequencing.

effect
Workflow orchestration is not mistaken for a single external side effect.

CONTRACT ANNOTATIONS

requires	Tool and workflow descriptors have distinct schemas and execution paths.
ensures	Retry, budget, and result accounting bind to the correct unit.
invariant	A workflow cannot hide duplicate irreversible tool effects.
violation	Nested failures and retries produce explicit ownership and cost records.

INTERACTION



MESSAGE TRACE 1 choose(operation) → 2 invoke(effect) → 3 return(effect) → 4 choose(orchestration) → 5 invoke(step) → 6 account(workflow) → 7 account(effect) → 8 return(result) → 9 return(result)

Evidence: 34/41 repositories, 30/36 families; 34 trajectories (18 multi-checkpoint); exact audit: not sampled.

Variation: Workflow DSL, composite tool, procedure service, and sub-agent workflow.

Negative control: A single function that happens to call another function is not enough.