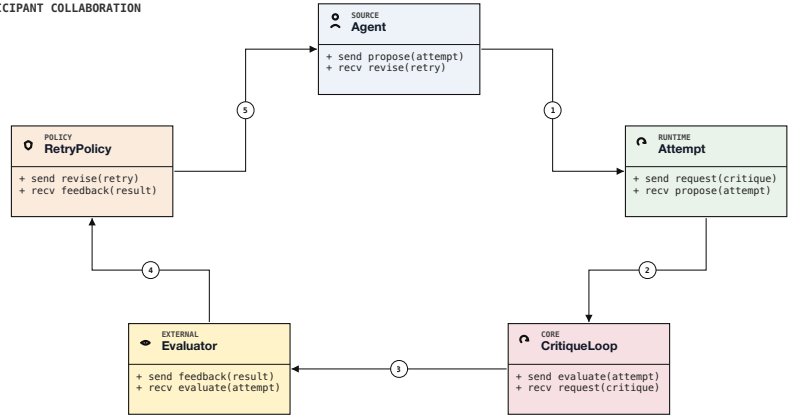
# P20 Reflection-augmented loop

***Primitive · A² A2/A3 · cycle role collaboration***

Use feedback to revise attempts.

**STRUCTURE · PARTICIPANT COLLABORATION**




**PATTERN INTERFACE**

***context***

An attempt can be evaluated before a further attempt.

***trigger***

The attempt fails or receives a critique.

***structure***

Attempt record, feedback producer, revision input, and retry bound.

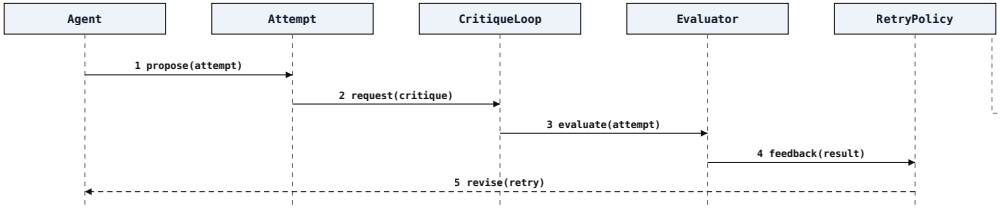
***effect***

A revised attempt uses recorded feedback while preserving attempt lineage.

**CONTRACT ANNOTATIONS**

| | |
|---|---|
| ***requires*** | Failure evidence and remaining retry budget are available. |
| ***ensures*** | Feedback is attached to the attempt that produced it and is visible to revision. |
| ***invariant*** | Self-critique is not represented as independent verification. |
| ***violation*** | Empty, contradictory, or exhausted feedback terminates or escalates. |

**INTERACTION**




**MESSAGE TRACE** `1 propose(attempt) → 2 request(critique) → 3 evaluate(attempt) → 4 feedback(result) → 5 revise(retry)`

Evidence: 32/41 repositories, 29/36 families; 32 trajectories (16 multi-checkpoint); exact audit: not sampled.

Variation: Self-critique, external evaluator, memory injection, and iterative refinement.

Negative control: A static system prompt asking the model to reflect is not enough.