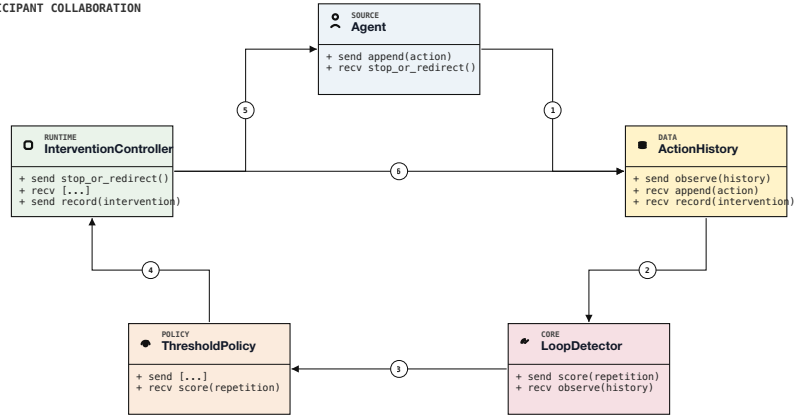
P18 Hybrid loop detection

Primitive · A² A2 · cycle role collaboration

Detect stalled or repetitive behavior.

STRUCTURE · PARTICIPANT COLLABORATION



PATTERN INTERFACE

context
Successive agent observations or actions can repeat without progress.

trigger
A loop signal crosses a configured threshold or composite condition.

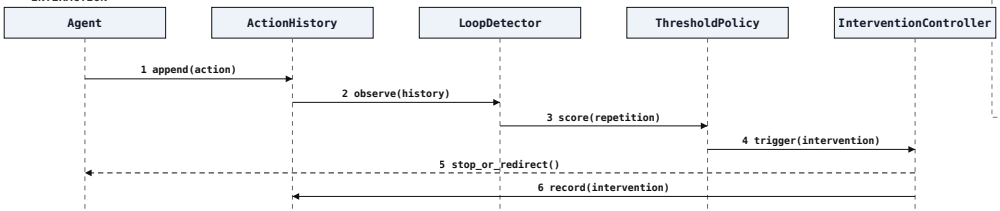
structure
Repetition signals, thresholds, and an intervention interface.

effect
The harness diagnoses a loop and stops, redirects, or escalates.

CONTRACT ANNOTATIONS

requires	Action or observation history is available in comparable form.
ensures	Intervention is attributed to explicit evidence and recorded in the trace.
invariant	A detector cannot block all exploration solely because outputs are similar.
violation	Detector error, disabled mode, or false positive has a recoverable path.

INTERACTION



MESSAGE TRACE 1 append(action) → 2 observe(history) → 3 score(repetition) → 4 trigger(intervention) → 5 stop_or_redirect() → 6 record(intervention)

Evidence: 8/41 repositories, 8/36 families; 8 trajectories (3 multi-checkpoint); exact audit: 2 supported, 0 unresolved, 1 rejected.

Variation: Action repetition, observation similarity, semantic signals, and composite thresholds.

Negative control: A recursion depth limit alone is not semantic loop detection.