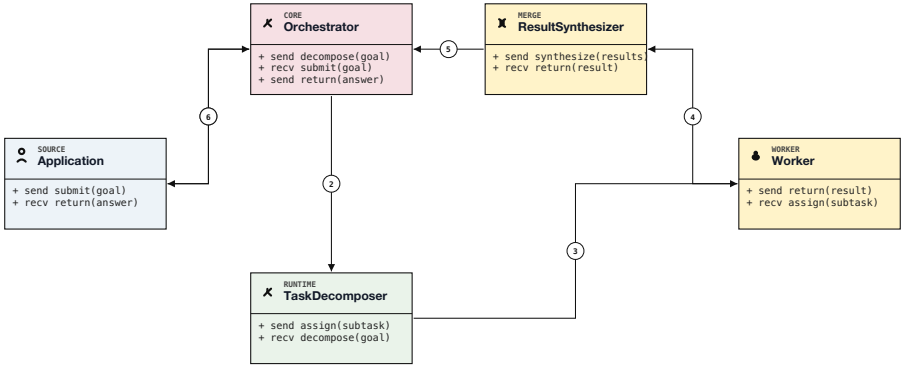
W04 Orchestrator–workers

Workflow · A² A1 · tree role collaboration

Generate and delegate subtasks dynamically.

STRUCTURE · PARTICIPANT COLLABORATION



PATTERN INTERFACE

context
A lead agent can generate tasks rather than call a fixed pipeline.

trigger
The orchestrator decomposes a goal or dispatches a subtask.

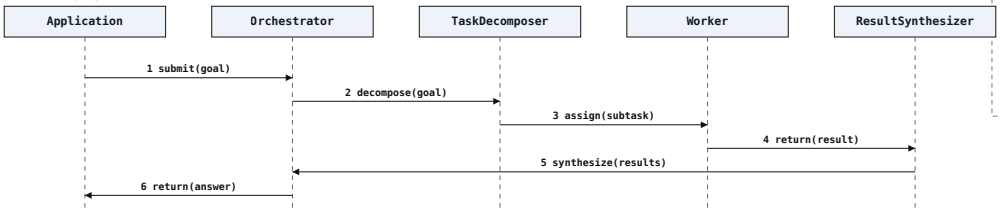
structure
Task plan, worker selection, delegation envelope, and synthesis step.

effect
Synthesized output accounts for generated task results and delegated authority.

CONTRACT ANNOTATIONS

requires	Workers advertise capabilities and share a task/result protocol.
ensures	Every dispatched task has a result or failure and the final answer links them.
invariant	Dynamic dispatch cannot create unbounded uncounted worker expansion.
violation	Unsplittable, failed, or duplicate work is reflected in synthesis.

INTERACTION



MESSAGE TRACE `1 submit(goal) → 2 decompose(goal) → 3 assign(subtask) → 4 return(result) → 5 synthesize(results) → 6 return(answer)`

Evidence: 33/41 repositories, 30/36 families; 33 trajectories (17 multi-checkpoint); exact audit: not sampled.

Variation: Planner-executor, manager-worker, sub-agent registry, and dynamic graph.

Negative control: A fixed sequence of sub-agents is W01 rather than dynamic W04.