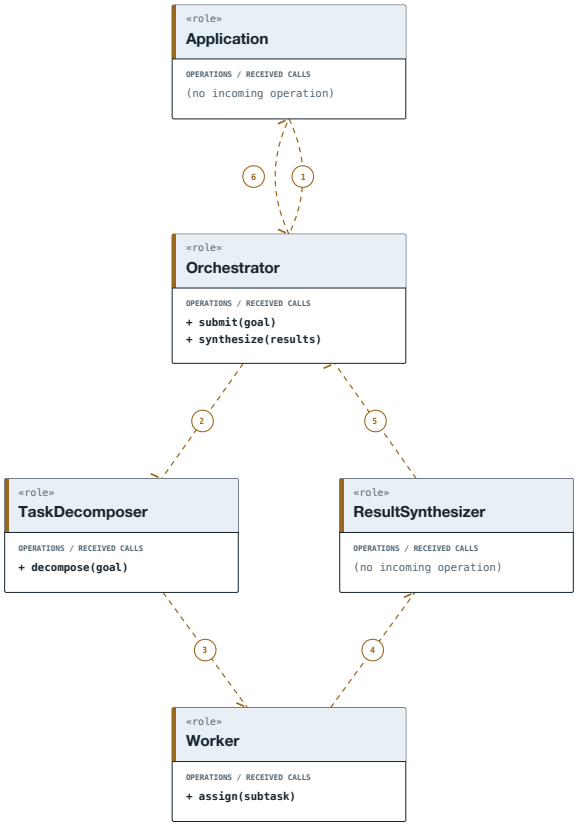
W04 Orchestrator-workers

Workflow / UML CLASS VIEW / ANALYTICAL MODEL

Generate and delegate subtasks dynamically.

UML CLASS VIEW

dashed arrow: call dependency · brown: return/failure · analytical, not an observed trace



POINTCUT / 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 / REQUIRED BEHAVIOR

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.

RELATIONSHIPS / ANALYTICAL CALLS

number · caller → callee · message

1 Application → Orchestrator submit(goal)
2 Orchestrator → TaskDecomposer decompose(goal)
3 TaskDecomposer → Worker assign(subtask)
4 Worker → ResultSynthesizer return(result)
5 ResultSynthesizer → Orchestrator synthesize(results)
6 Orchestrator → Application return(answer)

VARIATION / TEST / NEGATIVE CONTROL

VARIATION	Planner-executor, manager-worker, sub-agent registry, and dynamic graph.
TEST_OBLIGATION	Test decomposition quality, worker failure, duplicate task, and recursion cap.
NEGATIVE_CONTROL	A fixed sequence of sub-agents is W01 rather than dynamic W04.