Agentic AI Use case SCI Calculation
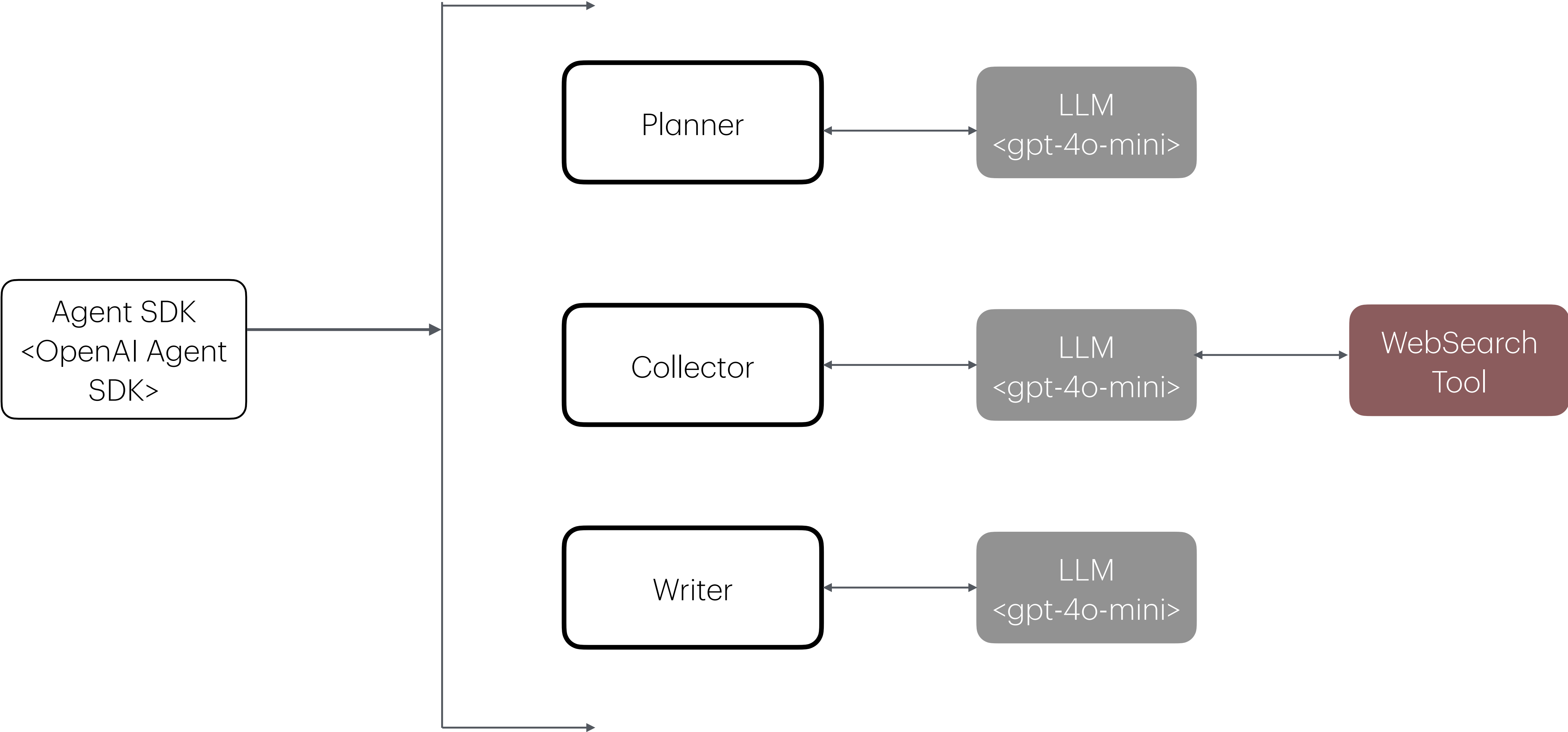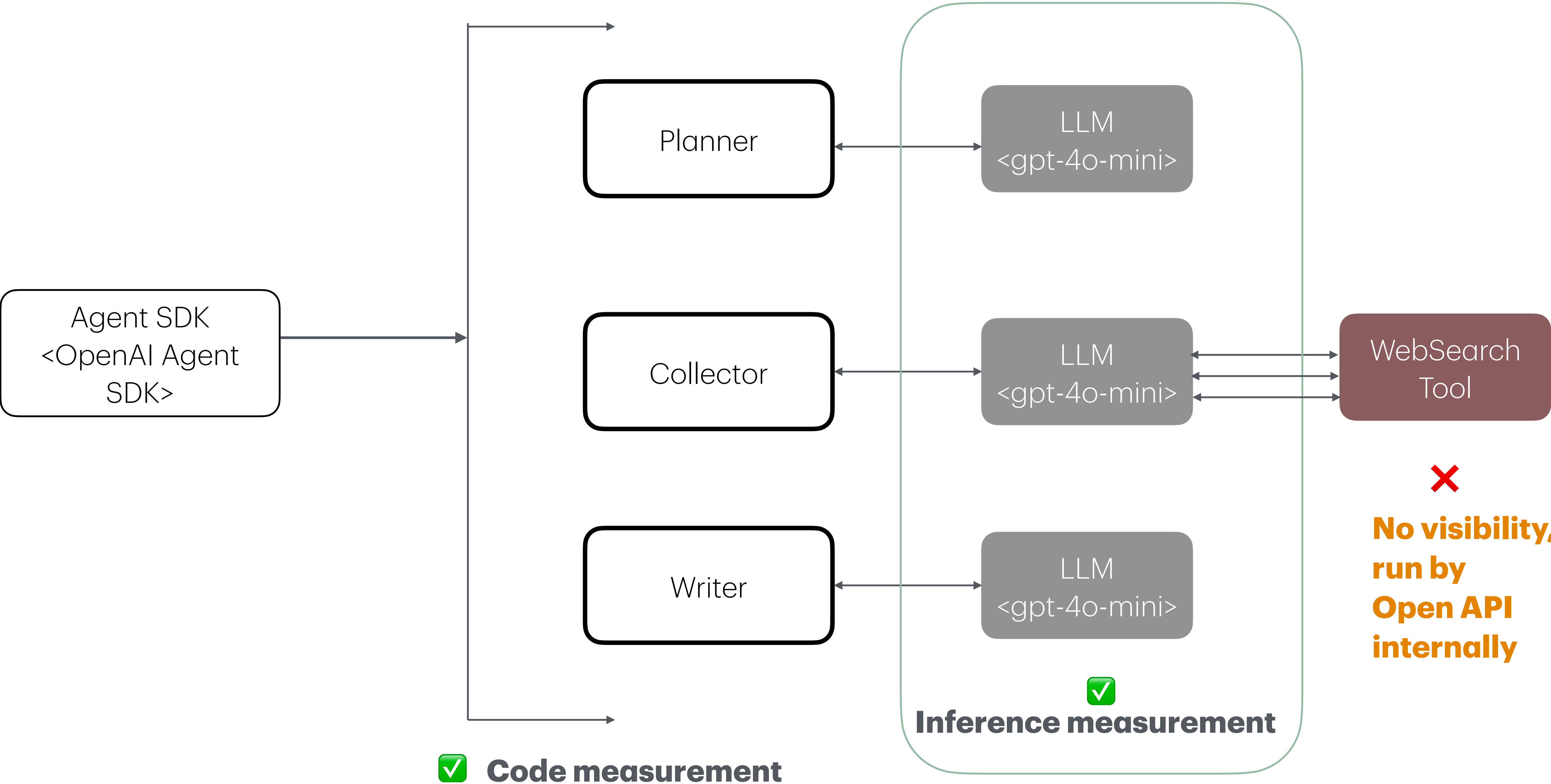
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Agentic AI Use case

Agentic AI Use case - Boundary

Planner — LLM \<gpt-4o-mini\>

Agent SDK \<OpenAI Agent SDK\>

Collector — LLM \<gpt-4o-mini\> — WebSearch Tool

Writer — LLM \<gpt-4o-mini\>

❌ No visibility, run by Open API internally

✅ Inference measurement

✅ Code measurement

Agentic AI Use case - Model Inference - Model Selection

Assume the rest of the emission parameters required for calculation remains same
i.e output_token = 590 , location

| gpt-3.5-turbo | gpt-4o | gpt-4o-mini |

gpt-3.5-turbo

Energy Consumption:
0.00614844192 kWh

GHG Emissions:
0.0041795878483776 kgCO$_2$eq

SCI Score (CO$_2$e per call):
4.1796 gCO$_2$e/call

gpt-4o

Energy Consumption:
0.06244344768000001 kWh

GHG Emissions:
0.04244780686391 0406
kgCO$_2$eq

SCI Score (CO$_2$e per call):
42.4478 gCO$_2$e/call

gpt-4o-mini

Energy Consumption:
0.0034989643200000003 kWh

GHG Emissions:
0.0023785259654496003
kgCO$_2$eq

SCI Score (CO$_2$e per call):
2.3785 gCO$_2$e/call