

LLM Agent (Thinking Layer)

Prompt → Decision

▼ proposed action

Governed Broker (Validation Layer)

Governance Validator Chain

YAML Rules

Eligibility

Identity

Thinking

Physical

Custom

Cognitive Memory System

Window Memory

Fixed-length sliding context window

HumanCentric Memory

Emotional salience & trauma persistence

Universal Memory

Entropy-based retention scoring

Priority Context Builder

Tier 1 — MUST

Governance rules, physical constraints, identity anchors

Tier 2 — SHOULD

Recent memory, emotional context, neighbor influence

Tier 3 — NICE

Historical trends, global statistics, background info

updated state

▼ validated action

Simulation Engine (Execution Layer)

State → Outcome

▼ domain instantiation

Flood Adaptation (CHANCE-C)

100 households × 10 years

PMT behavioral theory

Actions: elevate / insure / relocate

Irrigation Management (UCRC)

78 districts × 42 years

WSA / ACA behavioral theory

Actions: increase / decrease / efficiency