ForgeMind™

A GIS Intent Compiler, Native to MCP

ForgeMind™ is a natural-language-to-geospatial-pipeline compiler that speaks the Model Context Protocol on both sides. It consumes MCP tools — the ForgeGIS compute engine, a dataset catalog, a map client — and it exposes itself as a single MCP tool a higher-level agent can hand a whole geospatial workflow to. Where a conventional agent loops a model over tool calls and hopes, ForgeMind compiles intent into a validated pipeline deterministically — at roughly 25× lower model cost, with zero confident-wrong results across its validation campaign.

~25×
lower LLM cost
vs. an agent-loop approach to the same workflows

Zero
confident-wrong results
6,696 turns across 79 conversations, June 2026 run

2-way
MCP citizen
consumes MCP tools; exposes itself as one MCP tool

Compile, don’t loop

An agent loop pays for the model on every turn and lets it author tool calls freely. ForgeMind confines the model to intent classification and parameter extraction, then builds and type-checks the pipeline in deterministic code. Fewer model calls, no hallucinated parameters, no run-to-run drift — the source of the ~25× cost reduction.

Refusal by construction

Every candidate pipeline is validated against a type system before dispatch. A request that cannot be mapped to a valid operation is refused with a specific, machine-readable reason rather than run speculatively. Confidence is a calibrated, first-class signal — an unsure request routes to clarification, not a guess.

Delegate a whole workflow

As an MCP server, ForgeMind presents a single high-level tool: a calling agent hands it a geospatial request and gets back a validated, executed, narrated result. As an MCP client, it fans calls out to backends in parallel and guards each namespace behind a circuit breaker.

CONTINUED ON REVERSE →

WHO THIS IS FOR

Agent platforms that need geospatial reasoning grounded in real geometry

Agents that reason about where things are, what overlaps what, what is visible from a vantage point, or where a constraint is satisfied — and need the answer to be correct, not plausible. ForgeMind exposes the ForgeGIS analytic surface by intent so the calling agent does not need to understand projections, predicates, or pipeline composition.

Orchestration and MCP-native runners

ForgeMind drops into MCP-native agent runners as either a tool provider or a delegatable sub-agent. It is LLM-agnostic at its own language layer, so it composes with a platform's existing model choices rather than forcing one. Memory accumulates known-good workflow shapes that future requests retrieve and reuse — inspectable and clearable, never baked into model weights.

Builders of AI-native geospatial products

Conversational geospatial intelligence, agent-driven site selection, autonomous mission planning — product categories that did not exist when the GIS stack was designed for analysts at desktops. ForgeMind is the intent layer built for that thesis, on top of the ForgeGIS compute substrate built for it too.

PROOF POINTS

~94%
compiler eval pass rate on intent-to-validated-pipeline, incl. multi-turn cases

97
voice-routable capabilities exercised end to end

130+
deterministic core capabilities reaching into the 239-op ForgeGIS catalog

> **Multi-turn, with memory.** ForgeMind holds context across a conversation: establish a subject, then refine it ("re-run that with a wider radius," "mask it to slopes under seven degrees"), and the prior result threads through rather than starting over. Deictic references and named anchors resolve against a ledger of what the session has established.
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> **Honest denominators.** Coverage grows capability by capability as each is validated; ForgeMind advertises only what it can run correctly. The 97 figure is what the campaign exercised end to end, not a speculative tool list — the same refusal discipline applied to the capability surface.

Build with ForgeMind

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A Technical Brief with the architecture, validation methodology, and MCP integration contracts is available on request. An evaluation build is available to qualified teams.