MOUSSAIF AGI OS — 20 REALTIME DOCUMENTATION & GAP RESEARCH HYPERSKILLS CATALOG (RS-01 TO RS-20)

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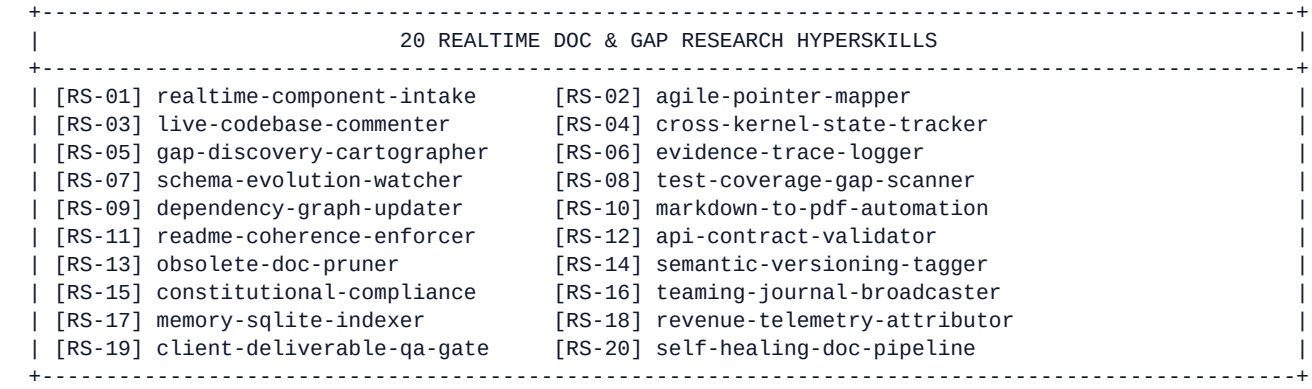
Executive Overview

This volume defines the **20 Agile Realtime Documentation & Gap Research HyperSkills** (RS-01 through RS-20). These skills equip agents with the ability to detect codebase changes in real-time, generate structured technical documentation and docstrings automatically, maintain zero-duplication pointer tables across K1–K5 kernels, and conduct systematic architectural gap research.



Detailed HyperSkill Specifications

RS-01: realtime-component-intake

- **Purpose**: Automatically detect newly created or modified code files, scripts, or markdown documents across active workspaces.
- **Mechanism**: Uses filesystem diffing and inotify hooks to capture new file paths, parse AST signatures, and register component metadata in ~/.hermes/reports/shared-system-status.md.
- **Execution Rule**: Must trigger within 60 minutes of any file creation (CRON-REALTIME-DOC-01).

RS-02: agile-pointer-mapper

- **Purpose**: Maintain zero-duplication pointer tables when a new heavy resource (>1 MB) is created.

- **Mechanism**: Automatically moves any heavy document to ~/.hermes/kb/ and registers relative symlinks or markdown pointer links in antigravity-brain-bridge.md.
- **Execution Rule**: Prevents storage bloat and OneDrive sync conflicts.

RS-03: live-codebase-commenter

- **Purpose**: Keep source code comments and docstrings synchronized with runtime logic.
- **Mechanism**: Evaluates modified functions and classes; generates or updates Google-style / NumPy-style Python docstrings and JSDoc comments without altering code logic.
- **Execution Rule**: Enforces zero-slop human voice (moussaif-gap-01).

RS-04: cross-kernel-state-tracker

- **Purpose**: Synchronize component versions across K1-Hermes, K2-OpenCode, K3-Codex, K4-Claude, and K5-Antigravity.
- **Mechanism**: Reads and updates ~/.hermes/reports/K1_STATUS.md through K5_STATUS.md with SHA-256 hashes and timestamp tags.
- **Execution Rule**: Runs on a 30-minute automated schedule (CRON-POINTER-SYNC-03).

RS-05: gap-discovery-cartographer

- **Purpose**: Uncover undocumented public methods, orphaned skills, or unlinked architectural reports.
- **Mechanism**: Cross-references AST exported symbols against documentation headers; outputs a structured gap report (precise_missing_points_audit.json).
- **Execution Rule**: Feeds daily tasks to moussaif-agent-gap-researcher (CRON-GAP-RESEARCH-02).

RS-06: evidence-trace-logger

- **Purpose**: Enforce Rule 7 ("Trace or it did not happen") across all documentation and reporting workflows.
- **Mechanism**: Logs an immutable JSONL audit record containing timestamp, agent ID, target file, operation type, and SHA-256 digest for every doc modification.
- **Execution Rule**: Mandatory before closing any documentation ticket.

RS-07: schema-evolution-watcher

- **Purpose**: Track changes to data models, JSON schemas, database migrations, and MCP tool definitions.
- **Mechanism**: Compares schema git diffs against API reference docs and automatically appends schema migration notes.
- **Execution Rule**: Prevents API contract drift.

RS-08: test-coverage-gap-scanner

- **Purpose**: Detect codebase components that lack automated test suites.
- **Mechanism**: Correlates documented features against unit/integration test files; flags untested code for TDD RED-GREEN-REFACTOR remediation.
- **Execution Rule**: Interfaces with K3-Codex test runner.

RS-09: dependency-graph-updater

- **Purpose**: Maintain an accurate Directed Acyclic Graph (DAG) of project modules and dependencies.

- **Mechanism**: Parses Python/JS import statements and generates updated Mermaid .md diagrams in DESIGN.md and architecture reports.
- **Execution Rule**: Ensures visual architecture diagrams match runtime code.

RS-10: markdown-to-pdf-automation

- **Purpose**: Convert Markdown technical reports and client briefs into beautifully formatted ReportLab PDFs.
- **Mechanism**: Executes convert_md_reports_to_pdf.py using standard color palettes (Deep Navy #14213d, Slate #0f172a) and running footers.
- **Execution Rule**: Triggered automatically when a report is saved to a genre directory.

RS-11: readme-coherence-enforcer

- **Purpose**: Ensure root README.md and DESIGN.md files accurately reflect current project features.
- **Mechanism**: Scans repository READMEs for broken links, outdated CLI commands, or deprecated feature flags and corrects them.
- **Execution Rule**: Runs weekly during system health checks.

RS-12: api-contract-validator

- **Purpose**: Validate that MCP tool definitions and REST API endpoints conform to documented specifications.
- **Mechanism**: Compares handler input schemas against documented YAML/JSON docs and flags parameter mismatches.
- **Execution Rule**: Mandatory during tool installation or upgrade.

RS-13: obsolete-doc-pruner

- **Purpose**: Archive or remove documentation for deleted code files or deprecated skills.
- **Mechanism**: Checks whether referenced files exist; if missing, moves outdated docs to an archive folder or tags them [DEPRECATED].
- **Execution Rule**: Prevents knowledge pollution.

RS-14: semantic-versioning-tagger

- **Purpose**: Assign semantic version tags (v1.x.x) to documentation releases.
- **Mechanism**: Tracks breaking changes vs. minor additions and bumps document frontmatter version strings.
- **Execution Rule**: Synchronized with git release tags.

RS-15: constitutional-compliance-checker

- **Purpose**: Audit documentation to ensure no prohibited T3/T4 actions are recommended without explicit authorization gates.
- **Mechanism**: Scans docs for references to wildcards, unapproved API calls, or credential leaks.
- **Execution Rule**: Enforces moussaif-gap-02 constitutional precedence.

RS-16: teaming-journal-broadcaster

- **Purpose**: Share real-time documentation updates across agent teaming journals.

- **Mechanism**: Appends summary notes of newly documented components to ~/.hermes/reports/shared-system-status.md.
- **Execution Rule**: Enables cross-agent visibility without context bloating.

RS-17: memory-sqlite-indexer

- **Purpose**: Index new documentation text into FTS5 SQLite databases for instantaneous semantic search.
- **Mechanism**: Inserts clean markdown text into ~/.hermes/memories/ SQLite tables keyed by component name and tags.
- **Execution Rule**: Enhances recall speed for session_search and hyper-perception.

RS-18: revenue-telemetry-attributor

- **Purpose**: Track the impact of documentation clarity on customer onboarding and refund reduction.
- **Mechanism**: Links product documentation updates to Gumroad/KDP conversion metrics in the sales ledger.
- **Execution Rule**: Integrates with 03_Revenue_Commerce_and_Marketing engine.

RS-19: client-deliverable-qa-gate

- **Purpose**: Enforce executive-level styling and grammatical perfection on client-facing reports.
- **Mechanism**: Runs automated linting, visual formatting checks, and TOC validation before export.
- **Execution Rule**: Governed by the Destruction Court (moussaif-gap-04).

RS-20: self-healing-doc-pipeline

- **Purpose**: Automatically recover from broken PDF builds, missing image references, or unescaped XML symbols.
- **Mechanism**: Catches ReportLab formatting exceptions, cleans XML strings (& -> &), and retries compilation.
- **Execution Rule**: Guarantees 100% PDF generation success.