VIAVI Solutions

MCP Server Framework for Custom AI Workflows

AI-Native Natural Language Integration for Network and Security Test Workflows

Manual scripting and deep product expertise are no longer prerequisites for advanced testing. The award-winning Model Context Protocol (MCP) Server Framework for Custom AI Workflows, part of the VIAVI NITRO® AI portfolio, empowers users to configure, execute, and analyze tests across TestCenter, CyberFlood, and TeraVM testing solutions simply by describing what they need in plain language.

By exposing test operations as standardized tools for AI agents, the framework drives natural language automation across network performance, security validation, and application testing, breaking down the expertise barrier and accelerating productivity at every stage of the test lifecycle.

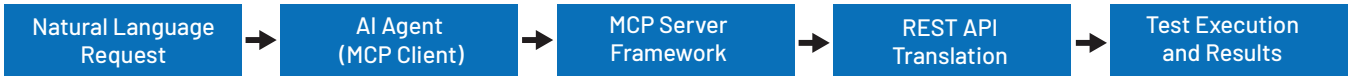
Solution Business Benefits

- Reduce time-to-test and operational cost by enabling engineers to configure, execute, and analyze complex test scenarios through a natural language AI interface, eliminating time-consuming GUI-based workflows and minimizing the need for deep product training.
- Lower the expertise barrier across teams so network engineers and security professionals can leverage VIAVI's professional-grade test solutions without requiring specialized scripting knowledge or extensive onboarding.
- Accelerate AI driven CI/CD and NOC/SOC integration by embedding VIAVI test solutions directly into AI-driven operational workflows and automation pipelines, keeping pace with deployment cycles and reducing manual intervention.
- Deliver a consistent AI productivity experience across test disciplines with a common MCP framework spanning TestCenter, CyberFlood, and TeraVM solutions, greatly improving user experience and productivity for customers already using multiple VIAVI solutions.
- Future-proof test infrastructure investments through an open MCP protocol that ensures interoperability across VIAVI's growing ecosystem of AI agents, copilots, and orchestration platforms.

Solution Architecture

The MCP Server Framework delivers three product-specific MCP servers, each exposing test operations as discrete standardized tools for AI agents:

TestCenter	CyberFlood	TeraVM
L2-3 network device and AI fabric performance and scalability testing	Security, application, and AI Inference performance testing	Secure access/ZTNA and SSL/IPsec VPN scale and performance testing



MCP servers act as an AI integration layer, translating natural-language requests into REST API calls across the VIAVI test portfolio.

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Solution Highlights

Each MCP server covers configuration and execution, real-time monitoring, and results analysis across its respective test domain. Key technical innovations include:

- **Natural language to REST API translation** enables users to configure and run complex application and security tests through conversational AI without direct API knowledge.
- **Structured agent workflow design** in TeraVM injects workflow instructions into the AI agent's context at connection time, minimizing hallucination risk and improving execution reliability.
- **Real-time Server-Sent Events (SSE) streaming** delivers live event data for agent decision-making, enabling the AI to adapt test execution dynamically as results arrive.
- **Autonomous error correction loop** provides a validation feedback mechanism that allows agents to detect and self-correct misconfigurations before test execution proceeds.
- **Human review checkpoint** ensures accuracy at critical decision points, balancing AI-driven automation with human oversight for high-stakes test scenarios.
- **Modular tool design in TestCenter** exposes a broad set of network test operations as composable, individual tools, enabling AI agents to construct and execute sophisticated multi-step scenarios previously requiring manual configuration.

Next Steps for Users

As AI agents become essential productivity tools for network engineers and security teams, controlling test infrastructure through natural language is no longer a future-state vision, it is becoming a strategic imperative. The MCP Server Framework uniquely delivers an evolving, AI-native integration across a unified performance and security test portfolio, aligning closely with how modern organizations are transforming their infrastructures and operations.

By adopting the open MCP protocol, VIAVI ensures test solutions remain first-class participants in any AI agent ecosystem, whether integrating with enterprise copilots, CI/CD pipelines, or AI-driven NOC/SOC platforms, without vendor lock-in or custom scripting overhead.

Contact us to learn how the MCP Server Framework can reduce time-to-test, lower training overhead, and integrate professional test infrastructure into your AI-driven workflows.

Request a demo and see how conversational AI transforms network and security test operations.

For more information visit: viavisolutions.com

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