

Early experiences with agentic generative AI for EuXFEL operations support

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Generative AI is increasingly playing a role in supporting the operation of light sources, e.g. through support assistants or tools that cover certain recurring tasks. While LLM-based coding assistants are somewhat established, and RAG-based knowledge assistants are reaching production-readiness levels in well-defined domains, agentic generative AI, to which operational tasks are handed off, are still in an emergent state, with prototypes being tested. In this contribution, we present currently ongoing evaluations at the EuXFEL on using the model context protocol (MCP) to provide contextual awareness for agentic LLMs in a scientific operational setting. The technology stack presented utilizes FastMCP and mcp_use for MCP integration, QdrantDB as a vector database, and explores Zulip as a front-end.

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