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Leveraging IT-inspired workflows for PLC software

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PLCs play a crucial role in operating, controlling, and interlocking high-power distributed systems at CERN, including main magnet power supplies and static var compensators. The increasing number, complexity, scale, and specialization of these critical applications make development and maintenance particularly challenging for a small team. To address this, we have introduced IT-inspired engineering workflows and technologies that wrap around the UNICOS framework, balancing customization with standardization. This approach enhances engineering efficiency and software quality. This paper highlights the benefits of using continuous integration pipelines, automated functional tests, reviewed merge requests, and the necessary virtual computing infrastructure, demonstrating how these innovations streamline development and maintenance in high-power system automation.

Footnotes

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