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PIPELINES: A NODE-BASED EDITOR FOR STREAMLINED OPTIMISATION PROTOTYPING IN THE CONTROL ROOM

Tuesday, 31 March 2026 12:00 (2 hours)

Development shifts on accelerators are usually time-constrained and infrequent. Meanwhile, control room PCs are not designed for scrappy R\&D, and maintaining multiple workflows with python scripts is prone to error. GUI apps have been successfully deployed and used in the past to perform optimisation at accelerator facilities. However, bookkeeping can become difficult in complex tasks. Furthermore, support is missing for pre-optimisation steps such as response matrix measurements used in Slow Orbit Feedback (SOFB) machine learning algorithms. A PySide node-based visual editor has been developed and tested in the Diamond control room. A logical heirarchy of blocks define processes to perform and an inspector window allows the user to fine-tune blocks to their needs. Separate processes are spawned when compute or time-intensive blocks are run, keeping the main UI thread responsive. An optimisation problem is tackled using the app to demonstrate its usefulness.

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