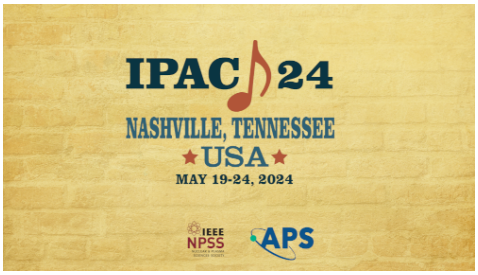

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Accelerator control system software at LANSCE: vision and strategy for improvement and modernization

Thursday, 23 May 2024 16:00 (2 hours)

The LANSCE accelerator is an 800 MeV linear accelerator delivering beams for more than fifty years. As it has aged, maintenance and upgrades to its control system software components have become challenging and often deferred due to operational and schedule constraints. As a result, we have a wide variety of new and old software, difficult to re-use, with a large staff burden. Data is stored in redundant sources, inconsistent formats, and outdated technology. Multiple tools exist for the same tasks. Some production software is updated without proper processes. We describe our approach to modernizing LANSCE control system software with proper development processes. We consider reduction of diversity, redundancies, data sources. Migration to modern technologies is also discussed. We explore the possibility of language standardization, and describe our database implementation and other future plans. Lifecycle management is also considered. This years-long effort will utilize a risk-based strategy to address the most urgent issues while also ensuring steady progress, ultimately resulting in a coherent and maintainable suite of control system software.

Footnotes

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