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Upgrading Fermilab's accelerator controls with ACORN

Monday 22 September 2025 10:30 (15 minutes)

The Fermilab Accelerator Complex is the largest national user facility in the Office of High Energy Physics (DOE/HEP) program and the only national user facility operating at Fermilab. Fermilab serves as the host to the Long Baseline Neutrino Facility/Deep Underground Neutrino Experiment (LBNF/DUNE), the laboratory's flagship project for neutrino science that is under construction. LBNF/DUNE will be powered by megawatt beams from an upgraded accelerator, the Proton Improvement Plan II (PIP-II) that will replace the laboratory's aging linear accelerator with a new one based on superconducting radio-frequency cavities. The Accelerator Controls Operations Research Network (ACORN) Project will support LBNF/DUNE and PIP-II by modernizing the accelerator control system. The project is at the conceptual design phase and looking to achieve Critical Decision 1 (CD-1) later this year. The scope and structure of the project will be presented, along with an overview of how that has changed in the past year. Current design and technology choices will be shared. Specific challenges facing the project will be addressed, along with current thinking on solutions.

Footnotes

Funding Agency

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