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# C1Or2C-02: Quantum Computer Test Facility at SLAC using existing Cryogenic Infrastructure

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SLAC National Accelerator Laboratory hosts the LCLS-II, a 700-meter LINAC supported by two large 4 kW @ 2.0 K cryoplants. Located in Menlo Park, on the Stanford University campus in the heart of Silicon Valley, a hub for groundbreaking advancements in quantum technologies, which often rely on cryogenic temperatures. PsiQuantum, headquartered in Palo Alto just a few miles from SLAC, employs a unique photonics-based quantum computing technology that operates at cryogenic temperatures. Through a Cooperative Research and Development Agreement (CRADA), SLAC and PsiQuantum have partnered to integrate PsiQuantum's test facility with SLAC's advanced cryogenic infrastructure. The CRADA includes providing cryogenic capabilities ranging from 100 W to 300 W at 2.4 K. This collaboration enabled PsiQuantum to establish a fully operational cryogenic facility in just one year —a timeline that would have otherwise exceeded two years. This paper provides an overview of the partnership, focusing on the integration process, commissioning efforts, and challenges encountered.

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