An overview of the Ultra-Fast X-ray Imager (UXI) program at Sandia Labs

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The Ultra-Fast X-ray Imager (UXI) program is an ongoing effort at Sandia National Laboratories to create high speed, multi-frame, time gated, Readout Integrated Circuits (ROICs) and a corresponding suite of photodetectors to image a wide variety of High Energy Density (HED) physics experiments. The program is currently fielding a 1024 x 448 prototype camera with 25um pixel spatial resolution and 2 frames of in-pixel storage with the possibility of exchanging spatial resolution to achieve 4 or 8 frames of storage. The camera's minimum integration time is 2ns. The minimum signal is targeted to be 1500 e- rms and full well is 1.5 million e-. The design and initial characterization results will be presented here as well as a description of future imagers.

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