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Fast x-ray and electron detectors at SLAC user facilities using CCD and CMOS technology.

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The LCLS facility has been operational since 2009, providing ultrashort pulses (from a few-fs to >100 fs), at high brightness, over an energy range from ~ 250 to $\sim 12,800$ eV, at 120 Hz. The unique characteristics of the source demanded a dedicated detector development which has produced a series of cameras used in a variety of experiments. A new upgrade project, the LCLS-II, is underway and will provide an increased repetition rate up to ~ 1 million per second. It will be the world's only X-ray free-electron laser capable of supplying a uniformly-spaced train of pulses with programmable repetition rate. These dramatic upgrade requires a correspondent detector R&D plan. To exploit synergy and complementarity with the LCLS, SLAC has developed the Ultrafast Electron Diffraction (UED) program. The facility provides multi-MeV relativistic electron pulses to achieve a temporal resolution of ~ 100 fs at 180 Hz rate requiring fast imaging electron detectors. In this talk detectors used and being developed for these facilities will be presented with particular emphasis on CCD and CMOS technologies.