

## EPICS Collaboration Meeting September 2022



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# ADTimePix3 areaDetector driver

*Wednesday 21 September 2022 17:00 (20 minutes)*

Detectors based on TimePix3 chips are complementary to existing, within NSLS2 synchrotron, direct detection sensors represented by Lambda, Merlin, Eiger/Eiger2, and Pilatus detectors. Compared to Eiger/Eiger2 and Pilatus family the smaller pixel size will result in a 2-fold increase in signal to noise and the physical characteristics of the device will allow us to mount it further away from the sample, resulting in another 4x increase in SNR. The total 8x increase in SNR will enable either the detection of 64x faster dynamics or a 8x better speckle contrast depending on the specific application. The timing capabilities allow new possibilities in particle and photon data collection, by providing not only characterization of synchrotron source, but also science related to timed dynamics. The timing capabilities of TimePix3 detector allows neutron measurements such as energy using intrinsic Time of Flight and similar modes. EPICS driver for TimePix3 detector is a major step in development of the science within modern synchrotron and neutron facilities.

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