

## Development of the imaging RIO meter control engine (NICE) on the realtime operating system.

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We developed the imaging RIO meter control engine (NIPR Imaging RIO meter Control Engine: NICE) on the RT-Linux that is a kind of hard realtime operating system. We can use built-in TCP/IP protocol on the operating system for remote control and data translation. NICE controls the beam scanning and A/D converter based on the cyclic interrupt signal from PCI extension board. NICE has two sections; one controls hardware (a realtime device driver: NICE-R) and the other handles the files (a daemon process: NICE-D). The delay time from cyclic interrupt edge was within 50usec even though there were heavy loads on the system. This delay time was enough smaller than the time scale of observation (12.5msec). This shows that we can control the hardware using software on multi-task operating system for the time scale of the imaging RIO meter.