

Leveraging existing IT condition monitoring systems to keep track of the health of networked industrial devices and their processes.

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Nagios, a free and open source computer-software application that monitors systems, networks and infrastructure[1], was configured to monitor the health of common industrial devices. The ACNS has 14 neutron beam instruments which employ various industrial electronic components such as: Galil controllers, Rockwell programmable logic controllers, Pilz safety systems and many others. Monitoring the health of these devices and the services they run is vital in providing a reliable scientific research facility. Simple software plugins were written in Python to interface these devices to an existing nagios instance that was initially set up to monitor the IT infrastructure. If any of these systems become degraded, technical staff are notified by email so that rapid repairs or rectifications can be made. Global mechanical services like compressed air, chilled water and neutron guide vacuum levels, critical to all the instruments, are also monitored and technical staff notified when problems arise.

The results have been impressive, where technical staff were alerted of a problem before the scientific users were even aware. The aim of the system is to never use neutrons to discover the failure of a piece of equipment, or put another way, never have the users scientific experiment or its data the method of fault detection.

Currently the technical teams are notified by email but future expansion of the system is planned to include sms notification to the rostered on call technical support person.

[1] Wikipedia- <https://en.wikipedia.org/wiki/Nagios>

Formal Invitation Letter Required

No

Primary author: Mr BARTLETT, Daniel (ANSTO)

Presenter: Mr BARTLETT, Daniel (ANSTO)

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