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## A Hardware Based Cluster Control And Management System

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Super-computers will be replaced more and more by PC cluster systems. Also future LHC experiments will use large PC clusters. These clusters will consist of off-the-shelf PCs, which in general are not built to run in a PC farm. Configuring, monitoring and controlling such clusters requires a serious amount of time consuming and administrative effort.

We propose a cheap and easy hardware solution for this issue. The main item of our cluster control system is the Cluster Interface Agent card (CIA).

The CIA card is a low-cost PCI expansion card equipped with a network interface. With the aid of the CIA card the computer can be fully controlled remotely, independent of the state of the node itself. The card combines a number of features needed for this remote control, including power management and reset. The card operates entirely independent of the PC and can remain powered while the PC may even be powered down. It offers a wide range of automatization features, including automatic installation of the operating system, changing BIOS settings or booting a rescue disk and also to monitor and debug the node. With the aid of PCI scans and hardware tests errors and pending failures can be easily detected in an early stage.

Working prototypes exist. The presentation will outline the status of the project and first implementation results of the preproduction devices, currently being built.

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