

Techniques nouvelles de diagnostic et de traitement des alarmes

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Configuration management and dynamic update of system critical SCADA applications

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In the last 20 years the use of SCADA systems have grown enormously and today SCADA systems are used in all areas of society. At the same time the size of the applications have grown at an even greater rate and application variables are counted in hundreds of thousands where some years ago ten thousand variables would have been considered a large application. As the uses have spread SCADA are also now commonly used in business critical areas where downtime cannot be tolerated. At the same time the systems have to be routinely updated and adjusted to take into account the ever changing environment. These three characteristics (many variables, often updated and no downtime) could describe many modern SCADA implementations and have to be taken into account when the system is designed.

In order to control the many different variables and the ever changing configurations a system or process has to be implemented so that errors are avoided and a trace is kept of the changes done. This also gives the possibility to present the variables in a structured fashion that is more natural to the system administrator than many native interfaces. Once the system or process is in place it should be easy to extract what has been changed between two given dates. This gives the possibility only to apply the changes to the system and not the complete configuration. As only the changes are being applied many SCADA systems give the possibility to apply these changes at runtime without stopping the system and thereby avoiding complete restarts with every update.

We will present the system currently installed at CERN for handling safety related alarms. The configuration management system is based on an ORACLE database with a JAVA interface. The SCADA used is PcVue from ARC Informatique.