Towards a new archiver for CERN SCADA systems

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Oral or poster
Oral

Track
General/Control System Upgrades or Software/Software Technology Evolution

Status
CANCELLED

Innovation
New archiver for CERN SCADA systems, with an architecture that supports multiple database technologies, improving performance of historical data retrieval and enabling new use cases, such as data analytics.

Application
Described testing and validation methods are potentially applicable to other projects. Insights on performance of Oracle, Apache Kudu and InfluxDB for storage of time series data from control systems and performance measurements of underlying communication protocol can also be of general interest.

Complexity
A complex project, both in terms of technical challenges, required testing and validation and organizational aspects (remote collaboration between CERN and Siemens/ETM).

Abstract
The paper is a follow-up for “Future Archiver for CERN SCADA Systems” ICALEPCS 2017 contribution, since which the project has reached a significant level of maturity. In this paper we share the experience gained during the work on the project, including its testing and validation methodology, lessons learned thanks to pilot deployments and performance of different database technologies. Particular attention is given to large-scale tests performed at CERN in order to ensure scalability of the archiver and its proper operation in high-load scenarios and over long periods of time. The paper is concluded with a presentation of strategy and outlook on CERN-wide migration.