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Cyber security from the ALICE user's perspective

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The Detector Control System (DCS) of ALICE, one of the LHC experiments at CERN in Geneva is distributed across 150 mainly Windows computers and 1200 network attached devices, most of them running some version of Linux.
Cyber security has always been one of the key elements driving its design from the very beginning. The security principles and rules have been discussed and approved by the collaboration well ahead of putting the first systems into production.
In the presentation we focus on the main architectural principles of the ALICE DCS and show how the security requirements comply with day-to-day operational needs. We discuss how the strict security rules affect the system development, operation and maintenance. We demonstrate with examples the typical problems which have to be addressed on a large system providing control of a delicate high energy physics experiment in an environment where several hundred people need worldwide access. We assess the impact of typical cyber security measures on system performance, stability and manageability. And finally, we demonstrate limitations posed by operating commercial software in a high energy physics environment.

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