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Assessing WinCC OA project limits to guide DCS architecture for the Phase-II ATLAS upgrade

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In preparation for the Phase-2 upgrade of the ATLAS experiment, the detector subsystems that will be upgraded to cope with the new operational conditions imposed by the High-Luminosity LHC are required to develop a Detector Control System (DCS) tailored to their specific needs. A key consideration for this upgrade is the size of WinCC OA projects in terms of various parameters. Understanding how large a WinCC OA project can be, without compromising performance, is critical for ensuring the stability and efficiency of the DCS.
This work presents a series of studies conducted on WinCC OA 3.19 projects in order to assess the limits based on the servers that are being used within the ATLAS experiment. The findings provide practical insights into the factors that influence system scalability, such as the number of datapoint elements and the distribution across projects. These results aim to support detector groups in planning and optimizing their DCS architectures, helping them decide on the appropriate number and size of WinCC OA projects based on their future operational requirements.

Footnotes

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