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SOLARIS synchrotron control system upgrade: addressing challenges and implementing solutions

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The National Synchrotron Radiation Centre SOLARIS*, a 3rd Generation Synchrotron Light Source, stands as the most advanced research infrastructure in Poland. Since its commencement of operation in 2015, SOLARIS has undergone significant expansions. Initially, system upgrades were straightforward to implement. However, as the facility matured, new beamlines were created, and the number of equipment increased significantly. This led to a rise in the complexity of upgrades, prompting the SOLARIS team to focus on creating automation tools for deployments and maintaining up-to-date libraries and software. During this period, many versions of libraries, such as Python and PyQt, as well as the CentOS operating system, became obsolete, leading to increased maintenance costs. To address these challenges, a comprehensive strategy was developed. This strategy includes transitioning from CentOS 6 and 7 to AlmaLinux 9, upgrading older versions of Python to version 3.9, and updating automation tools such as Ansible and GitLab CI/CD. This paper presents the methodology employed for the control system upgrade, detailing the architecture of the new system, the upgrade process, and the challenges encountered.

Footnotes

https://synchrotron.pl

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