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Introducing web based technologies at GANIL SPIRAL2 control system.

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The SPIRAL2 accelerator began operating in 2021. One of the key applications of the control system is the management of all devices' parameters (magnets, RF ⋯), roughly 80000 EPICS variables. That application is fundamental for optimizing the setup time of the accelerator and for easily reproducing the configuration of a given beam from year to year. Because web-based technologies are believed to offer many advantages, such as portability, easier maintenance, optimized use of hardware resources, and centralized security, we decided to evaluate this technology in order to form our opinion from the perspective of a wider renovation project. This paper will explain how the software architecture is designed, both on the client and server side, and what technologies we used (web framework, REST APIs, web server, database and ORM). It will also describe the outcomes we achieved in terms of features of the application, such as beam characteristics management, reload of a given beam configuration and application to the devices, storage of the accelerator setup, and calculation of parameters based on the concept of optic configurations. After 4 months of operation in 2024 with that new application, we will also discuss the question: are web based technologies a good choice for SPIRAL2 control system user interface?

Footnotes

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