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Abstract

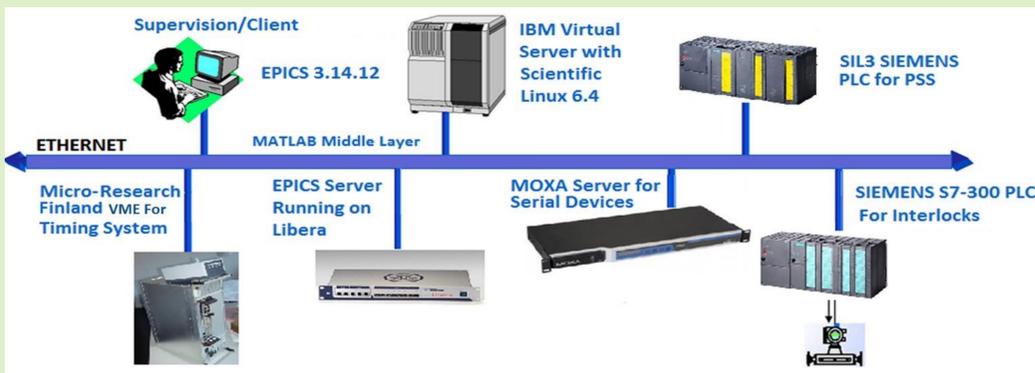
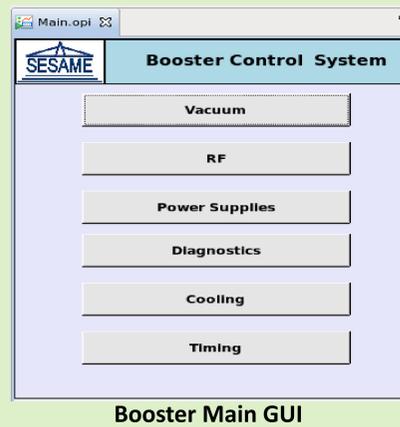
SESAME is a synchrotron light source located in Allan, Jordan. It is currently under construction. It consists of a 22MeV Microtron, an 800MeV Booster Synchrotron, and a 2.5 GeV Storage Ring. The Microtron functions as a pre-injector. SESAME succeeded in commissioning the Microtron in October 2012. The Booster is expected to be commissioned by the end of 2013, the storage ring by the end of 2015, and the first beam line in 2016. This paper presents progress made in design and development of the Booster ring's control systems. EPICS is used to build the control systems at SESAME. CSS is used to build the control system's graphical user interfaces. PLC's and one VME are used for custom control of analog and digital signals. A distributed version control system is used to track development of the control systems. Documentation at SESAME consists of a set of design notes, standards, and templates. An isolated machine network is used for communication. Future work includes design and development of PLC and VME alternatives.



Microtron and the Booster Ring

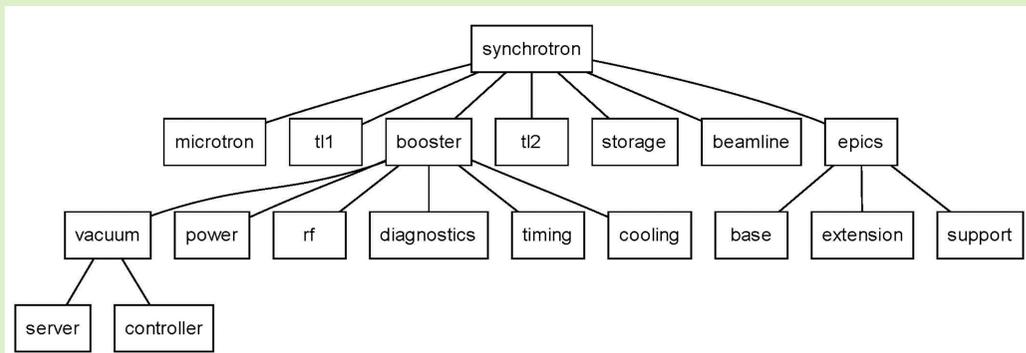
Control System Overview

- EPICS Base version 3.14.12
- Scientific Linux 6.4
- Git Version Control System
- Control System Studio 3.1.6
- SIEMENS S7-300 for Interlocks
- VME for Timing System
- Libera Electron for beam diagnostics

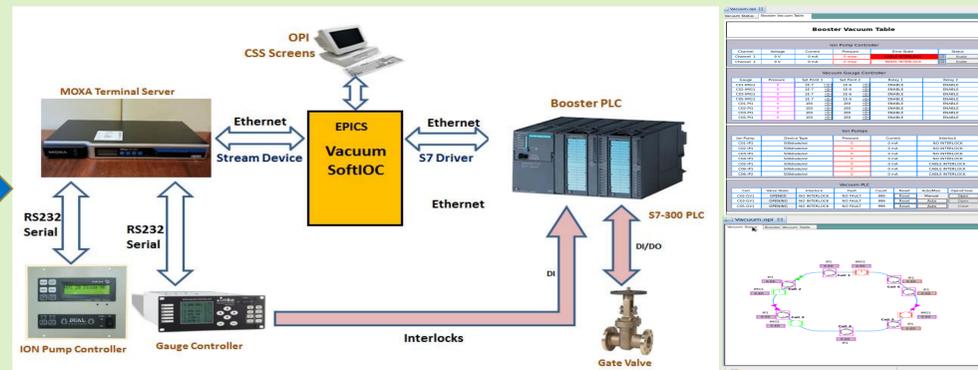


Version Control system

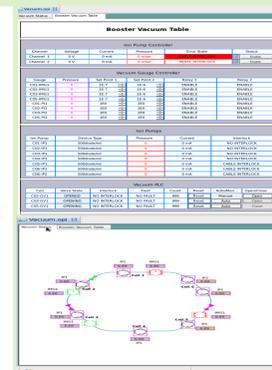
Each subsystem in the Synchrotron requires three development efforts: One for the controllers, one for the servers, and one for the clients. A version control system is used to track development. Such a system enables collaboration, revisioning, and overall better development workflow. The structure of the Synchrotron lends itself nicely to hierarchical design. At the top level is the Synchrotron. The Synchrotron consists of six stages. Each stage consists of one or more subsystems. Each subsystem requires one or more controllers, servers, and clients, regardless of whether these three components reside on the same platform or on separate platforms.



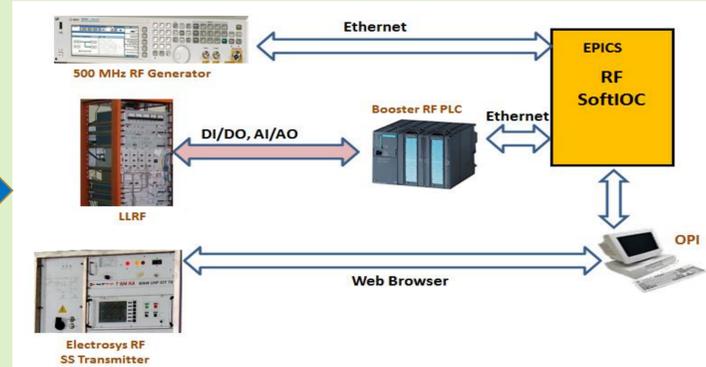
Repository Architecture



Vacuum Control System



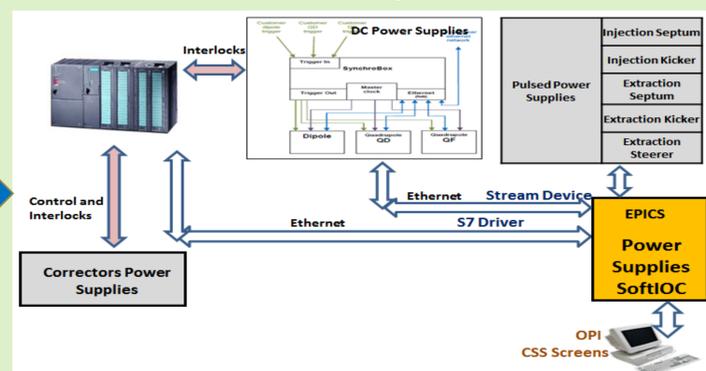
Vacuum GUIs



RF Control System



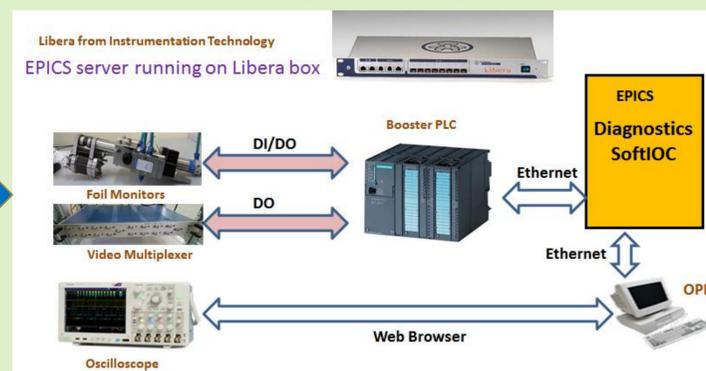
LLRF GUIs



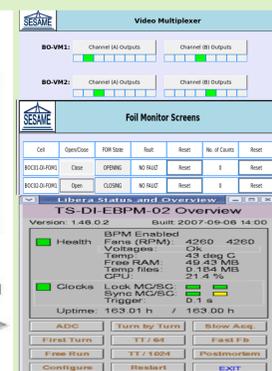
Power Supplies Control System



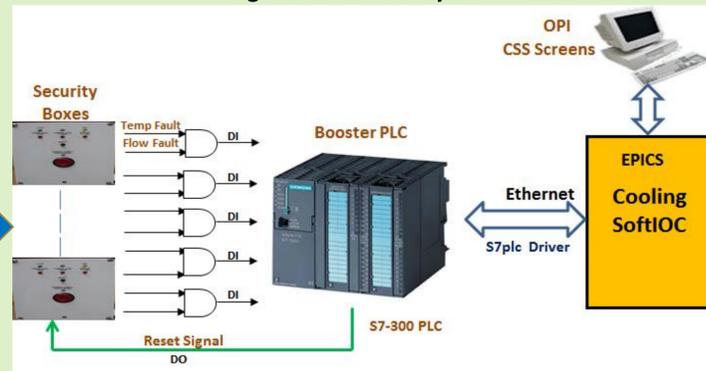
Power Supplies GUIs



Diagnostics Control System



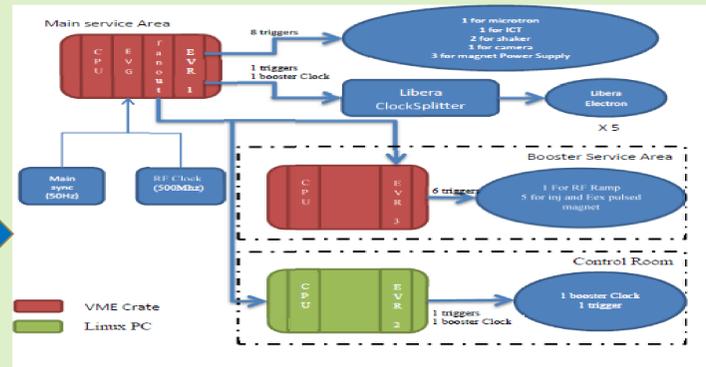
Diagnostics GUIs



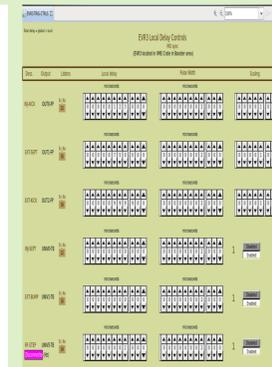
Cooling Control System



Cooling GUIs



Timing Control System



Timing GUIs