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Integration of the EcosimPro CHL Model into EPICS using Python's OPC UA Library

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A dynamic simulation model of the Central Helium Liquefier (CHL) at the Spallation Neutron Source (SNS) has been developed using the EcosimPro commercial software. This model facilitates production system replication providing virtual environments for software testing, operator training, process analysis and troubleshooting. In this integration project, the EcosimPro model will be deployed as a standalone OPC UA server. For proof of concept, a section of the model was successfully compiled and executed on both Windows and Linux OS. In addition, a standalone Python class utilizing the opcua library has been defined and tested to interact with the OPC UA server. Consequently, an EPICS softIOC with the PyDevice support module was successfully created to communicate with the test model. Progress and status of the initiative including future plans will be presented.

Author: MARTINEZ, Marnelli (Spallation Neutron Source)

Co-author: MAEKAWA, Ryuji (Spallation Neutron Source)

Presenter: MARTINEZ, Marnelli (Spallation Neutron Source)

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