

14th Technical Meeting on Control Systems, Data Acquisition, Data Management and Remote Participation in Fusion Research

Contribution ID: 126

Type: **Oral**

A more flexible design for MDSplus Device drivers

Monday, 15 July 2024 15:40 (20 minutes)

The traditional approach to building MDSplus Device drivers is rigid and lacks the ability to meet changing needs. In this paper, we introduce a novel paradigm for Device driver development that allows the tree structure to dynamically change.

This allows device drivers that can reconfigure to automatically reflect the hardware it represents, or a device that implements a variable number of queries to an external database. We have created a driver using this paradigm that communicates with a digitizer, queries the modules attached, and builds a tree structure to utilize them.

Additionally, this driver can reconfigure to match changes in the digitizer, by adding or deleting nodes using overwrite and/or delete modes. We also wrote a method for verifying both the setting provided and that the hardware matches the last known state. We have added fields to help validate settings such as min/max limits, and a list of allowed values. The definitions of the nodes which make of the device have been augmented to include help, tool tips and validation ranges. This will facilitate automated user interface generation.

We foresee a variety of possibilities and applications that the MDSplus community will discover.

Speaker's Affiliation

MIT/PSFC

Member State or IGO

United States of America

Primary authors: SANTORO, Fernando (MIT/PSFC); LANE-WALSH, Stephen (MIT)

Co-authors: STILLERMAN, Joshua (MIT Plasma Science and Fusion Center); WINKEL, Mark (MIT Plasma Science and Fusion Center)

Presenter: SANTORO, Fernando (MIT/PSFC)

Session Classification: Data Acquisition and Signal Processing

Track Classification: Data Acquisition and Signal Processing