

Single-source-of-truth coordination of hardware/software development

A control system is made of hardware, firmware and software. The same feature set may target more than one hardware platform, sometimes involving mother/daughter board sets. The firmware includes hardware drivers, board support, communication, data structure de/encoding, and digital signal processing modules. The software design will include communication, data structure en/decoding, a GUI support layer, and connection to global controls. The same information is needed by many of these layers, but are traditionally represented differently. We have developed processes and structures to extract all needed information from a single human readable source, and use it during firmware design, synthesis, low level software generation, creation of expert screens, and more. In this workshop, we present our progress and experience using and improving this structure through application to multiple projects.

Primary author: HUANG, Gang (LBNL)

Co-authors: SERRANO PAREJA, Carlos (LBNL); DOOLITTLE, Lawrence (LBNL)

Presenter: HUANG, Gang (LBNL)