Developing a Modbus-RTU interface to access PLC data for the ICRH matching system

Abstract

Ion Cyclotron Resonance Heating (ICRH) system is used for plasma heating experiments in a tokamak. DAC instrumentation includes analog IOs, digital IOs, timers/counters, PWM for measurement and control from system actuators using PLC for offline matching system. It is decided that open source solution in software should be implemented. Open source based software platform has been chosen as main implementation along with Modbus-RTU interface.
Objective: The existing software have the ladder program developed for PLC and user interface is developed in proprietary software. The same interface needs to be developed using Modbus-RTU and user interface will be developed using open source tool.
Deliverables: Developed open source libraries can be easily interfaced which fulfill the aim of work. Based on Modbus-RTU interface the operation needs to be managed well with prototype and results must be benchmarked.

Academic Project Requirements:

1) Required No. of student(s) for academic project: 2

2) Name of course with branch/discipline: B.E./B.Tech. Computer Engineering/IT/MCA

3) Academic Project duration:

(a) Total academic project duration: 10 Weeks
(b) Student's presence at IPR for academic project work: 5 Full working Days per week

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