

Senior Design Project Description for SPRING 2017

Project Title: Insertion of PIC6 on 30 XV Chillers (CARR_PIC6)

Supporter: Carrier (UTC)

Supporter Technical Representative: ASSIGNED

Faculty Mentor: ASSIGNED TBD (check one)

Single Team Dual Team (check one)

Personnel (EN/ET): 2 E, 1 Cp, Cv, 1 M, 1 SE

(Complete if the number of students required is known)

Expected person-hours: (250 per student)

Description of Project:

Carrier provides sustainable and efficient cooling and heating solutions for commercial and residential buildings; one of these products is the 30XV Chiller. The Product Integrated Controller (PIC) provides control of the mechanical system for 30XV and a local interface for system operators. The newest generation of this controller family, the PIC6, has become available to Carrier. This project is to integrate the PIC6 on the 30XV platform and mold the interfaces and user experience for future carrier products.

Initial Project Requirements (e.g. weight, size, etc.):

The initial project requirements are:

- 1) Integrate existing control software into the PIC6 executive platform:
 - a. Integrate SW generally
 - b. Integrate and verify non-chiller hardware (external IO boards, communication systems)
 - c. Verify HW and SW integration on target 30XV Chiller
- 2) Complete a User Interface / User Experience study with consideration given to:
 - a. Existing carrier products
 - b. Other products in Chiller/Cooling market
 - c. Service Personnel usage
 - d. Future product integration
- 3) Develop a GUI and interactive display based on the performed study

Carrier will provide the following for the project:

- a. Access to any required development software
- b. Access to a physical PIC6 platform
- c. Access to personnel necessary to complete tasks
- d. Testing time on 30XV hardware including a chiller and any other external components



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Expected Deliverables/Results:

The deliverable will be a functioning integrated control system. An operating manual will be provided. This will include the operating instructions and programming. A testing report is also required.

List here any specific skills or knowledge needed or suggested (If none please state none):

None