Senior Design Project Description

Company Name	Charlotte Research Institute	Date Submitted	February 28, 2017
Project Title	CRI Marketing and University Research Showcase Exhibit (CRI_SHOW)	Planned Semester	Fall 2017

Personnel

Typical teams will have 4-6 students, with engineering disciplines assigned based on the anticipated Scope of the Project. 250 hours are expected per person. Complete the following table if this information is known, otherwise the Senior Design Committee will develop based on the project scope:

Discipline	Number	Discipline	Number
Mechanical	2	Electrical	1
Computer		Systems	
Other ( )			

Project Overview:

This project is intended as a continuation/next phase of the "Interactive Demonstration Board (UNCC_DEMO1)" senior design project from the Spring 2016 cycle. The aim is to create an interactive display board that utilizes a combination of touch screen panels and standard LED monitors for purposes of displaying UNC Charlotte/Charlotte Research Institute branded messages as well as information specific to University research efforts and accomplishments. Content feeds to these monitors shall support routine modification and updating of displayed materials. Displays shall support the independent display of content materials and also support the coordinated and integrated display of content images. This display shall be sufficiently portable such that it can be packed and shipped with relative ease for use at trade shows and/or conferences. The display's base location on the UNC Charlotte campus will be in the PORTAL atrium and will be used as a "university research and innovation showcase" featuring UNC Charlotte faculty and student driven research and innovation initiatives.

Initial Project Requirements:

- Not to exceed 10ft x 10ft floor footprint
- Modular in nature to support use as a total unit or smaller individual components.
- Combination of removable/interchangeable fabric panel(s) facade for graphic designs and no less than 8 total computer/LED screens, including at least 2 monitors with touch screen capability.
- A stable frame structure constructed of light weight material (composite or metal preferred) to support the screens, fabric façade, and display shelves.
- The presentation structure should be easily assembled/disassembled and packaged to be easily moved.
- Computer control to support PowerPoint and other video presentation software platforms, word documents, videos, and similar on all screens. All non-touch screen monitors shall be able to support coordinated applications and unified visuals.
- Display structure and screens to include integrated audio capabilities.
- Trade show-grade appearance of frame structure, screens, and all other display components.

Expected Deliverables/Results:

- A dynamic display board.
- A support structure for the board that is easily assembled, disassembled, and portable. ☐Display projects connected to the display board for demonstration.
- An operator's manual for the system.

Disposition of Deliverables at the End of the Project:

It is the intention of the Charlotte Research Institute to place this display in the PORTAL atrium lobby as a "UNC Charlotte Innovation and Research Showcase" public exhibit. This exhibit needs to convey the high quality of education and research offered at UNC Charlotte.

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

- Embedded system expertise
- Computing hardware expertise
- Electrical power electronics knowledge
- Mechanical design knowledge for both structural and dynamic knowledge