



UNC CHARLOTTE

The WILLIAM STATES LEE COLLEGE of ENGINEERING

Senior Design Project Description

Company Name	Charlotte Douglas International Airport	Date Submitted	6/7/2018
Project Title	System Analysis and Simulation of Baggage Handling System to Determine Improvements in the Operation (CLT_BAGS)	Planned Starting Semester	Fall 2018

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	
Computer		Systems	5
Other ()			

Company and Project Overview:

Charlotte Douglas International Airport supports 45 million passengers a year. Facilities Maintenance operates & maintains the Checked Baggage Inspection System (CBIS), which is a large automated conveyor system. CBIS supports the airlines by conveying baggage from the ticket counters through TSA inspection to carousels on the ramp level, where the airlines collect the baggage and load on to the aircraft. The system has been in operation for the past three years. Bags will occasional cause jams which stop the operation until the jam is cleared. This project, using the operational data available, would identify areas that could be improved to minimize or eliminate jams and improve overall system performance.

Project Requirements:

The project would develop a CBIS virtual model. Using the model and operational data, the project would identify the top ten areas for improvement. A secondary objective would be to identify key system metrics to indicate the health of the system. Once developed, the model, it may potentially lead into follow-on senior projects, as the Airport and associated system grow and change.



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Expected Deliverables/Results:

- Virtual CBIS Simulation Model
- Top ten areas within the system for improvement
- Key system metrics

Disposition of Deliverables at the End of the Project:

No hardware is anticipated. Report would be the deliverable.

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

- Ability to travel to the Charlotte airport for data collection
- Design Reviews will be held at the Charlotte Airport location