Faculty Advisor: Abdullah Eroglu

Students: 3-4 ECE Students

Title: Sensor System for Cranes

Project Description:

It is required to develop a system to prevent cranes that are on the same track from colliding. This system will also prevent the operator from causing the load to collide with any permanent stationary objects by erecting virtual “walls” the crane cannot access unless manually overridden. RF wireless system to sense location of the trolley of the crane is desired with connection to the drives. The system must be able to prevent collisions and not allow crane loads to be lost when the cranes are being stopped. This must have a control system that can be manually overridden for maintenance on the cranes and that corrects for operator errors.

A secondary objective would be to design an anti-sway system that can prevent the block of the crane from swaying out of control and make the system easier to control for a novice operator. This would also be tied into the primary objective to override manual controls in the forbidden traveling zones.

The project would involve RF wireless sensor set-up and heavy controls system engineering. If the secondary objective were to be implemented, there could be a potential need for mechanical help with modelling motion and for momentum control. Main focus would be controls engineering. Steel Dynamics has a crane for testing the prototype and engineers for reference and advising.