**Project in Embedded Systems (15 hp)**

# Electron gun vacuum system control

**Microcontroller based control system interfaced**

**with industrial grade electronics**

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Report - Phase 1

# Summary

Summarize work done during this phase

During this phase most of the work has been focused on getting the screen part of the LCD-touch-display to receive instructions from the microcontroller. Also, work has been done to receive the touch-panel outputs from the display on the microcontroller. A small library providing basic functionality for drawing objects on the screen has been written. A simple GUI with a basic menu system to be used for the control system has been programmed.

# Work done (change to appropriate title)

Section describing in greater detail the work that has been done during the phase. For example, theoretical results or technical progress can be documented here. This heading can be used multiple times.

Due to some delay in getting access to the lab and the prototyping equipment the first part of this phase, a couple of days or so, was spent looking for information regarding the involved components, specifically the LCD & touch-display to be used in the project, henceforth referred to as the display. Various programs required for programming the microcontroller was installed and a git repository was set up for the project.

The display used is the MI0283QT-9A with 320 by 240 pixels and driven by an ILI9341 display driver. The particular display used in the project comes mounted on a break out board that allows easy access to the display pins.

When access was granted to the laboratory and the prototyping equipment, some decoding of cryptic data sheets had to be done in order to ensure that the display was connected correctly. It was decided to communicate with the display using the hardware SPI interface provided on the microcontroller.

# Conclusion and plan for the next phase

Summarize again what has been achieved in this phase and outline what should be done in the next phase.

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