Work Completed:
This week I built the motor sequences for the initial design. The programs included sub vi’s, sequences that combined sub vi’s, and all the case structures and sequence blocks necessary to complete all of the motor work.

Original Basic Servo Motor Program

This was the “Retrieve from Compartment” sub vi.

Sequence for cutting one pill
Sequence for cutting many pills

Number of Pills

Get from currently loading pill info.

1A Retrieve Pill

1B Cut 1 Pill

Picks up pills from cut pill compartment

HA to cut pill storage

N

1

N = from cutter position to storage comp. position

Vacuum On

HA Down for pill

N

1

Until pill is sucked up

HA Fully up

N = Nmax for vertical arm

Dispensing for one pill - must be told to run for each pill

Number of pills/dosage

Retrieve from currently dispensing pill info

Compartment Position must be set each time it is run so horizontal arm knows where to go.

N

1A Retrieve Pill

HA to dispenser

N

1

N = Nmax
Then the design changed so that the arm was mounted on the compartment and the cutter was above the compartments. This condensed the area of the device and eliminated one motor. Eva’s program had also included many of the loops I had added into my programs so I ended up restructuring many of the programs. Kevin and I also tested one of the servos to figure out the right frequency and duty cycle range.

**Future Work:**

Next week, all of the motors will be tested to find out the exact duty cycle for each position we will need them to go to. There will be 35 total positions that will need to be checked. (See page 51 in lab notebook).

Once the duty cycles are known, the ones that will be constant within certain servo programs will be added and the duty cycles that depend on the particular pill being dealt with will be added to the pill information array and lines fed to the correct programs.

Once the positions are known and programs adjusted, the entire program will be run with all the motors set up. This will be our first complete system test (except for PDA). Hopefully the PDA will come in this week so we can start getting it ready.

**Project Review:**

It was good to see the programming finally coming together. We are anticipating a lot of glitches will need to be worked out, but at least we have 2 more weeks. The casing should not be too bad to do. Kevin’s new design has compacted the device into a small circle which simplifies the case.

**Hours Worked:**

7