Dome Servo Upgrade Review

(More of a progress / review at this point)

Eric Warmbier
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Background

- Documentation not finished
- Mostly small details to be worked out
  - Part numbers
  - Finding in stock items
- Need to order large items like wiring for contractor work - need to order now
- Review is more of a progress report and review of system design to this point
- More complete review to follow at later date
Schedule

- Create Project Plan Document (EW)
- Create Dome Spec Document (EW)
- Finish Technical Assessment Doc (EW)
- Order Baldor Components (MB, EW, WW)
- Create Lab Test Setup Docs (EW)
- Order Lab Parts & Wiring (EW)
- Build Lab Test Setup (DW, EW)
- Program Controller in Lab (TD)
- Create Summit/Final Docs (EW)
- Order Summit Wiring/Parts (EW)
- Run AC Wiring at Summit (GK)
- Run Motor Wiring/Conduit (GK)
- Install Drives, Software, Misc (TD, EW, IN, GK, etc)
- Install Motors Temporarily (LB, IN, TC)
- Test Dome Motor Control System (I)
- Final Installation
Major Tasks

- Order Baldor components - DONE
  - Received everything except 2 spare motors
- Finish system design - In progress
- Contractor wiring - bids out, but may need to modify
- Build lab system - NOT started
- Program controllers - NOT started
System Design

- Review google doc directly
- "Dome Servo Upgrade System Diagram"
Contractor Wiring

- Bids out, but need to modify
  - Power and feedback signals cannot be routed in the same conduit for noise reasons
  - Recommended that spacing is 3"
- Wiring for motor power is 4 x 8 AWG, and 2 twisted shielded 16 AWG pair, with an overall shield
- Propose using "armored" cable to avoid having to run more conduit.
  - Aluminum "armor" - sheathing really
Lab System

- Build lab (will be summit) electrical system on 1/4" aluminum plate to fit in electrical box presently installed at IRTF
  - Should install seamlessly at summit
  - Hook up power, motors, ethernet, and Safety Board
- Simple motor lab design
  - Coupled 3 motors together via belts with some kind of variable brake load
Programming

- Programming can be done with controllers and a +24V supply
- Will take a while to get complete lab system
Questions / Comments