MCTX3420 Team 4: Progress Report #10

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Work Done:
1. GUI Design
    a. Created a design document for GUI design
    b. Created GUI design using PowerPoint
    c. High level system diagram and documentation pages for each subsystem
    d. Setup webspace for team members to independently test GUI and server API
    e. Some HTML pages created, including CSS and Javascript
2. Collaboration with Electronics Team
    a. Investigated use of RT Linux - https://rt.wiki.kernel.org/index.php/Main_Page to improve consistency of sampling rate. Was unable to find or patch a BeagleBone kernel.
    b. Received list of pins and functions, and began to add into the control software.
3. Investigated issues with C170 webcam, made progress towards getting it to work on the BeagleBone
    a. The *uvcvideo* driver needs to be loaded with extra options: nodrop=1 timeout=5000 quriks=0x80
    b. With these settings, it partially works with ffmpeg
    c. More work needs to be done to getting it to work with OpenCV
4. Started on dilatometer test algorithm
5. Login and Authentication
    a. Cleaned up Login module to allow for more flexibility in terms of authentication method
        i. So that if we are unable to use pheme we can use another system
    b. Consulted some IS staff members and filed an "incident" requesting permission to bind to pheme
        i. Currently assigned and set to "Medium" priority in the system
6. Added a config file for passing parameters (such as what LDAP server to use for login) to the server

Work Todo:
1. GUI Design
    a. Need to make the GUI actually do stuff as well as just looking pretty
2. Continue adding control over real sensors/actuators to the software
    a. Testing shows that ADC reading is not thread safe. A single thread controlling all ADCs may be more efficient than placing mutexes inside the ADC_Read function.
    b. Testing shows that ADC reading likes to fail, randomly, for no apparent reason. Need to investigate. http://markmail.org/message/wr57pn4q5bkjsll2 describes the problem.
        i. We can still use the system, but there's no hope of getting a constant sampling rate
3. Continue getting C170 webcam to work with OpenCV
4. Complete and integrate dilatometer test algorithm with main server
5. Login and Authentication
    a. If we are unable to bind to pheme an alternative login system will need to be used.
    b. We will *not* be able to implement a fully fledged user management system in the time remaining.