March 27, 2018 *S. Narasimhan*

Firmware for *WatHydra* (Rev0):

Mode 1[1] (Auto):

Between 2:00 AM-4:00 AM:

1. Down-sample hydrophone (H), pressure (P) and one axis (does not matter which one at this point) of acceleration (A) to 2,500 Hz for 5 minutes (25 min sleep intervals), every 30 minutes, and log to the SD card;
2. sample temperature 1 every 60 sec and log to the SD card;
3. while awake, calculate 10-sec standard deviation of H, P and A at 1 minute intervals and upload to Hologram[2] together with time, battery level[3] and temperature data.

Mode 2 (Manual):

1. Down-sample H, P and A (one axis) at 2,500 Hz and log to a SD card, unless manually canceled;
2. Sample temperature at 1/60 Hz (1 sample/min) and log to the SD card;
3. while awake, calculate 10-sec standard deviation of H at 2 minute intervals and upload to Hologram along with time.

Notes:

1. I prefer if we could switch between two modes and stop Mode 2 with a physical switch
2. Hologram is initially for us to check if the data is being logged, rather than for final use
3. Not sure if a battery level sensor can be introduced this late in the game, if not we can hold off on it for now and include it for discussion for the next version of *WatHydra*