Project choice: Hover Copter

**Software bring-up plan:**

* Look into recommended software (6302View)
* Research/look at other alternatives
* Configure Arduino IDE to work with the ESP32
* Configure 6302View on computer to work with ESP32
* Search for libraries to decode signals from SAE (Found ESP32Encoder library)
* Simulate signals from the SAE and use 6302View to verify the ESP32Encoder library functions.
* Create code that uses the measurements from the SAE to control the motor (control logic)
* Verify motor output is as expected

**Documentation of Board Communication:**

Using the Arduino IDE:

First time:

* Add the ESP board manager by going to preferences and pasting the link <https://dl.espressif.com/dl/package_esp32_index.json> in the Additional Board Managers field.
* Download the esp32 board manager from Tools -> Boards -> Boards Manager and search “esp32” then click the result to install it.
* Under Tools -> Boards -> ESP32 Arduino select the “ESP32 Dev Module” option.

Every Time:

* Using default settings, after creating/modifying a sketch click the upload button. Wait until the console says connecting, then hold down the “Boot” button on the ESP32 and press the “EN” button.

If using 6302View:

* Run local server.py
* Open gui.html in a browser

**Progress Memo (completed tasks):**

* Chose Hover Copter project
* Software bring-up plan
* Successfully set up the Arduino IDE environment to work with the ESP32
* Successfully uploaded a sketch (6203View example sketch called “slider\_toggle”)
* Started working on implementing shaft angle encoder code, but still looking into things

Shaft Angle Encoder: TRDA-2E2500VD (bare wire termination)

<https://cdn.automationdirect.com/static/specs/encoderld.pdf>