Duayenler Ltd. Şti. **November 19, 2018**
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November 12 - 18 Weekly Report

1 Progress

- [Team] Discuss for solution alternatives for handshake protocol is finished for standard committee. Proposed algorithmic state machine chart can be seen in *Appendix B.1*.
- [Team] For handshaking, Bluetooth and RF transceivers were tested. RF modules uses SPI interface whereas Bluetooth modules use UART. Bluetooth modules have more complicated connection procedures(slave/master etc.) than RF modules. And the latency in connection of bluetooth modules is more than desired.
- [Team] Newly ordered color sensor TCS3200 is tested to fully understand the sensor. Yet, the sensor did not satisfy our expectations.
- [Team] Two different IR sensors, which are TCRT5000 and QRD1114 , were tested for the detection of the path on two different materials. TCRT500 had more differentiable outputs in comparison to other sensor. However, the performance of RF modules exceeded our expectations. The test test environment can be seen at *Figure 1*.
- [Team] Ordered Raspberry Pi camera, Waveshare Model E, was tested. The test enverimont can be seen at *Figures 2*,3.
- [Team] The different solution alternatives for path properties were discussed.

2 Plans

- [Team] Introduction to open-cv environment using Raspberry Pi and camera.
- [Team] Discussion for integration of camera output and sensor array output

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Appendices

A Photos

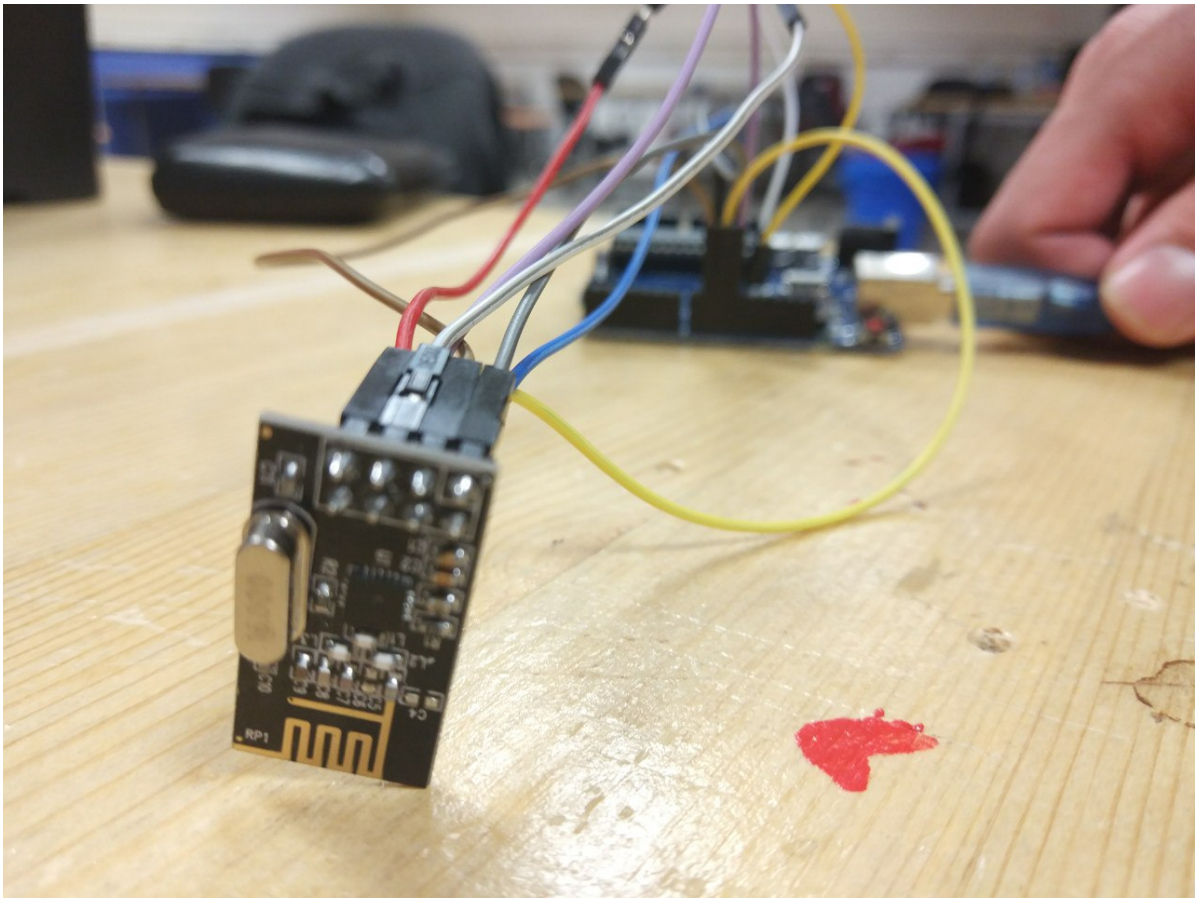

Figure 1: RF Module Test Environment

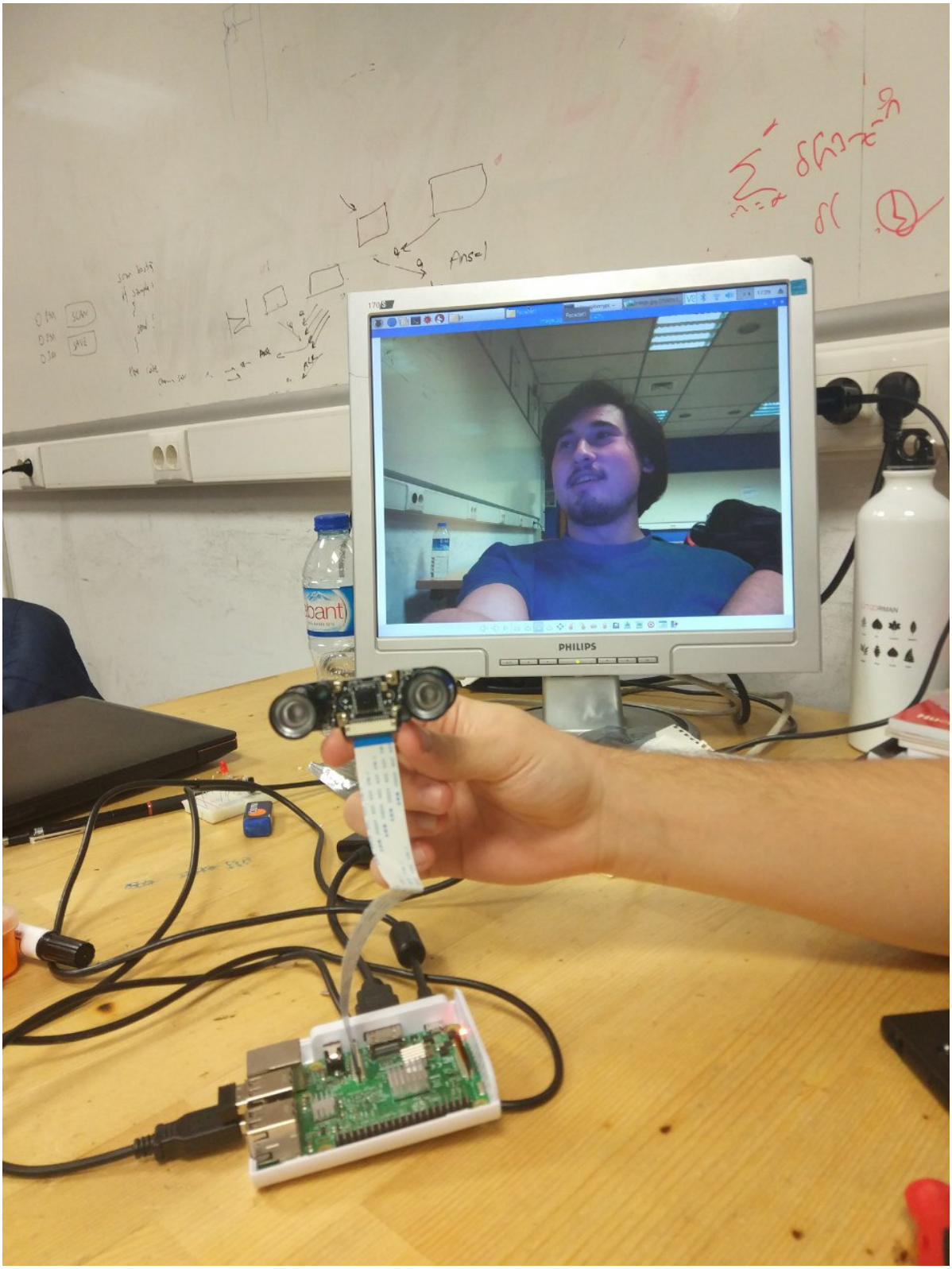

Figure 2: Camera Module Test Environment

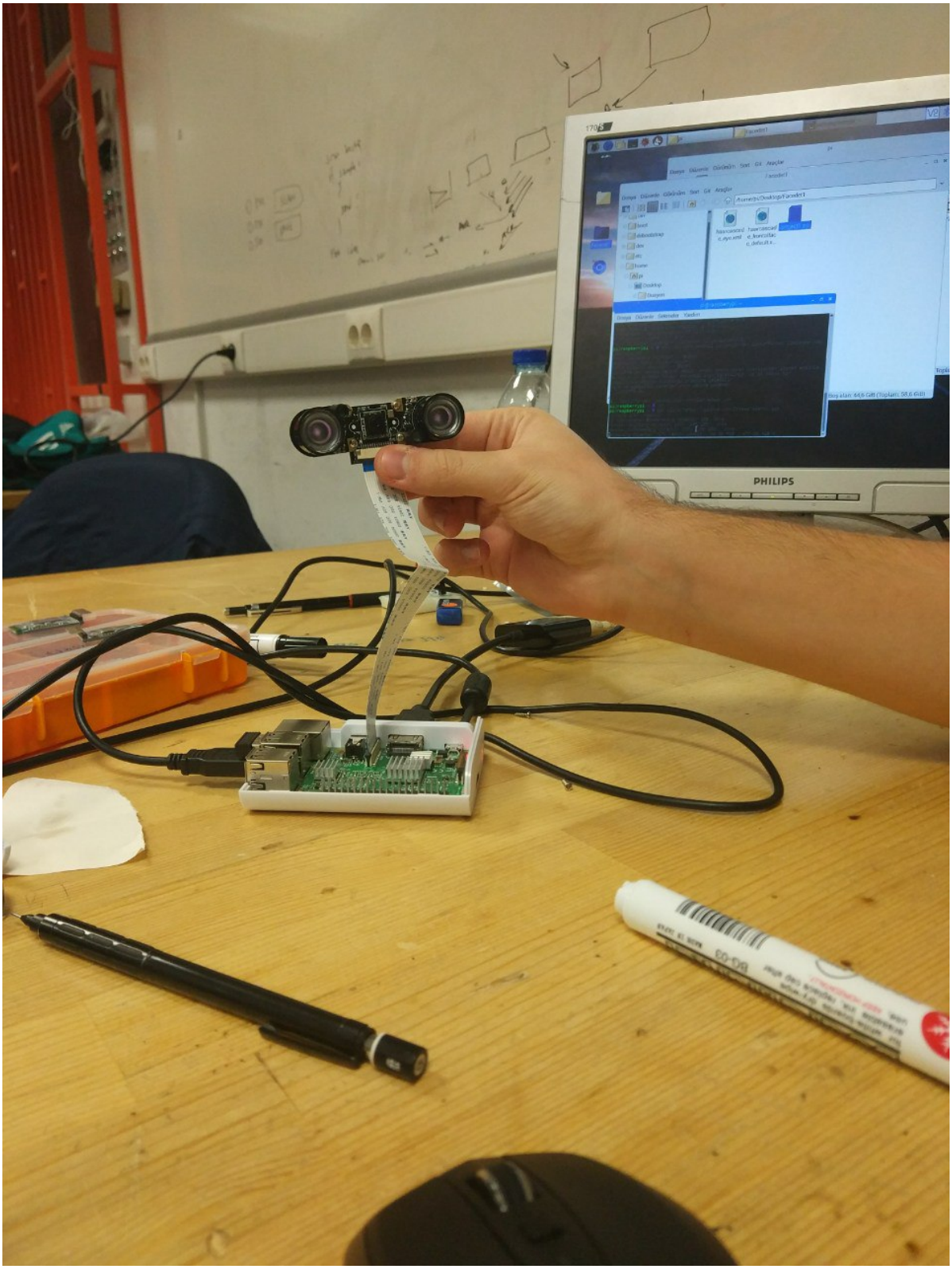

Figure 3: Other Camera Module Test Environment

B Standard Committee Homework

JSON Protocol is considered for communication between opponents, and the proposed states can be seen below;

- Send_Pairing_Message{"1":"ID","2":"Pair"}
- ACK{"1":"ID","2":"ACK"}
- Send_Stop(W){"1":"ID","2":"STOP"}
- Send_Ans(L){"1":"ID","2":"OK"}

B.1 Proposed Handshake Protocol