Meeting summary: 11/04/19

## Present during meeting

1. Erik Schaltz (Supervisor)
2. Lajos Török (Supervisor)
3. Nicolás Murguizur
4. Nicolai Fransen
5. Estefanía Ruiz
6. Aitor Teran
7. Mihai Rusu

## Meeting discussion

1. Updates:
   1. Software development is under develop. The team has finished most of the modules, missing some control modules as well as encoder.
   2. Mechanical model of the Go-Kart has been added to the control development, regenerative braking has been tested under different circumstances, including downhill cruise control, everything seems to be working as expected.
   3. Go-Kart is ready for mechanical inspection, which is to be done during Sprint 5.
   4. Inverter has been tested under almost maximum current with a thermocouple. It seems to only be heating up to 50ºC. Even though switching losses are not maximum during the tests, it is assumed that It will not overheat with proper cooling.
   5. Batteries are ready to be tested. Once the model of the batteries is developed, it will be included in the Simulink model to test maximum regenerative braking and currents back to battery.
2. Discussion.
3. **Team has agreed to send a first draft of the documentation by the 24th of April.** This should include control chapter, software introduction and overview explanation, inverter tests and results, regenerative braking, batteries model and test results and interface board information. Supervisors propose to also consider writing introduction asap so it will as well be consider to be done after those modules.
4. Supervisors suggest that, in order to reduce computational time of the DSP, an optimization on the divisions should be done, for this, **Lajos has agreed to send information about the matter**, including library to reduce the cycles to perform divisions.
5. The team was encountering high peaks in current and torque when simulating, supervisors suggest increasing the torque loop BW to see if this will show changes in the performance.
6. Team is struggling to come up with a solution for testing control in dsp. An option is to check with RT-box. **Supervisors have agreed to inform the team if an RT-box is available for testing and to give information about how to use it.**
7. Supervisors showed concern about the safety of the laptops when running the tests on the inverter so **it was agreed to find an isolating USB device.**
8. When connecting the battery to the inverter it is possible to have current peaks on the capacitors that may harm them. For this reason a resistor for precharge of the capacitors is to be used.
9. Tasks for the next sprint
10. First and most importantly, writing must be done, a first version of the report is to be sent to supervisors as stated in 2.a.
11. Software V1 must be merged to master. This includes first version of control as well as encoder modules working as expected. To be ready to perform tests during Sprint 6.
12. Tests of VF control are to be performed on inverter-motor. The encoder must be developed for checking speeds.
13. Batteries are tested and modelled, also included in the Simulink model.
14. Go-kart is mechanically inspected and list of issues sent to heads of lab for fixing it, before sending the list, it must be showed to supervisors.