Since last week we have worked on trying to implement a Kalman filter for estimating speed and distance. This has given promising results. Our experiment set-up requires some strategy for dealing with the non-measurement parts, i.e. where the distance sensor doesn't give reliable data. A few approaches have been tested, e.g. assuming constant velocity in these grey-zone, using the estimated velocities in previous states and finally we tried to integrate the accelerometer data through the grey-zones. All of these strategies are corrected using predefined distances to remove unwanted bias. The strategies have given varying results and we expect to have sound solution by the end of the week.

One of our strategies, the integrate-approach gave varying results for different grey-zones. We are therefore thinking of weighting the integral. The weighting factor should be calculated for every grey-zone based on the corresponding milestone. This will give as a pseudo-adaptiv parameter.

Because the distance sensor is an essential part, it being our measurement signal, it is important to have accurate readings. Therefore we have started to develop a tool for calibrating the sensor. This tool will be implemented in the Aibo and should work without the aid of a computer.