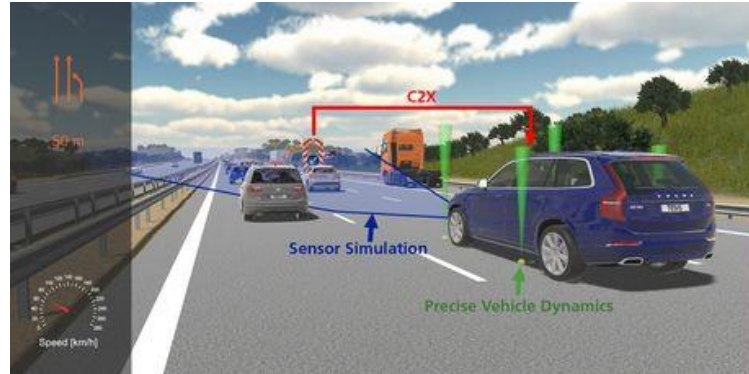


MSc project proposal  
**Adaptive speed control**



Modern e-bikes are equipped with a number of sensors which are able to measure: GPS location, forward speed, angular speed and linear acceleration of the rear frame, pedal torque support level, and the ambient temperature, at a sample rate of 2 seconds. These sensors open opportunities within the concept of IoT (Internet of Things) to have vehicle-to-vehicle and vehicle-to-infrastructure communication. This opens a whole set of new applications which can make cycling safer and more time efficient, like: collision prediction, early warning systems, adaptive speed control for green wave, or to enforce speed limits.

**Assignment:**

Your assignment will be to get yourself familiar with the modern e-bike and their current sensor setup and capabilities. Make an inventory of the opportunities you see within IoT and possible applications. Develop an experimental setup to implement a number of these applications and test these in real cycling.

**Supervisors:**

- Arend L. Schwab, TU Delft, 3mE/BmechE, [a.l.schwab@tudelft.nl](mailto:a.l.schwab@tudelft.nl)
- Jason Moore, TU Delft, 3mE/BmechE, [j.k.moore@tudelft.nl](mailto:j.k.moore@tudelft.nl)
- Richard Müller, Royal Gazelle, [r.muller@gazelle.nl](mailto:r.muller@gazelle.nl)